

## ES.0 Executive Summary

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### ES.1 Introduction

Plum Creek Timber Company (Plum Creek) initiated an effort in 1997 to develop a conservation strategy for native salmonid fishes (trout, steelhead, salmon, and whitefish) occurring on approximately 1.6 million acres of Plum Creek's timberlands in Montana, Idaho, and Washington (Map ES-1). Plum Creek's purpose is to help conserve native salmonids and their ecosystems while conducting commercial timber harvest within a framework of long-term regulatory certainty and flexibility. Plum Creek developed a draft Native Fish Habitat Conservation Plan (NFHCP) and submitted an application for an Incidental Take Permit (Permit) as authorized under Section 10(a)(1)(B) of the Endangered Species Act (ESA) of 1973, as amended. Plum Creek's intent with the NFHCP is to provide a significant contribution to the conservation of native salmonids that would allow for, or not preclude, the recovery of listed Permit species and would help remove threats to unlisted species. This NFHCP would provide Plum Creek with a Permit authorizing the take of federally listed species covered in the NFHCP for a proposed time period of 30 years. The Permit process is intended to provide incentives to non-federal land managers, like Plum Creek, to help conserve listed and unlisted species.

The Proposed Action being addressed in this Environmental Impact Statement (EIS) is the issuance of a Permit under the ESA that would authorize the incidental take of federally listed species covered in the NFHCP. The proposed project, which

#### What Federal Action Requires this EIS Evaluation?

The Proposed Action being addressed in this Environmental Impact Statement (EIS) is the issuance of an Incidental Take Permit under the Endangered Species Act to Plum Creek Timber Company. If issued by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, the Permit would authorize the incidental take of the federally listed native fish covered in Plum Creek's Native Fish Habitat Conservation Plan (NFHCP).

is analyzed as one of three action alternatives, is Plum Creek's NFHCP. Issuance of a Permit by the Services is a federal action that may affect the Permit species as well as other aspects of the human environment. Therefore, since this action is subject to National Environmental Policy Act (NEPA) compliance, the U.S. Department of the Interior, Fish and Wildlife Service (FWS), and the U.S. Department of Commerce, National Marine Fisheries Service (NMFS) (used together, the Services) have prepared this EIS. The Services relied on three major data sources to prepare this document: original data, technical reports, and white papers prepared by Plum Creek; documents prepared by various federal, state, and tribal agencies; and scientific publications.

Plum Creek worked with the Services to develop the NFHCP and a draft Implementing Agreement (IA). The IA would legally bind the Services and Plum Creek to the requirements and responsibilities of the NFHCP and the Permit.

## ES.2 Covered Species

Plum Creek has proposed that the NFHCP adopt a multi-species, aquatic ecosystem approach spanning all watersheds within the 1.6-million-acre Project Area. The NFHCP is designed to maintain, improve, or provide habitat that serves the biological needs of 17 species of native salmonids (the Permit species). The ESA defines a species to include any species or subspecies of fish, wildlife, or plant, and any Distinct Population Segment (DPS) or Evolutionarily Significant Unit (ESU) of any vertebrate species that interbreeds when mature. Eight of these species are listed as threatened, and are identified by an asterisk (\*). The common name for each Permit species, presented below in plain text, will be used throughout this document (scientific names are in italics):

- Resident Freshwater Species
  - Columbia River Basin bull trout DPS (*Salvelinus confluentus*)\*
  - Redband trout (*Oncorhynchus mykiss*)
  - Coastal rainbow trout (*Oncorhynchus mykiss*)
  - Southwestern Washington/ Columbia River coastal cutthroat trout DPS (*Oncorhynchus clarki clarki*)—includes anadromous form
  - Westslope cutthroat trout (*Oncorhynchus clarki lewisi*)
  - Mountain whitefish (*Prosopium williamsoni*)
  - Pygmy whitefish (*Prosopium coulteri*)
- Anadromous Species
  - Snake River steelhead ESU (*Oncorhynchus mykiss*)\*
  - Mid-Columbia River steelhead ESU (*Oncorhynchus mykiss*)\*

- Lower Columbia River steelhead ESU (*Oncorhynchus mykiss*)\*
- Snake River spring/summer chinook salmon ESU (*Oncorhynchus tshawytscha*)\*
- Snake River fall chinook salmon ESU (*Oncorhynchus tshawytscha*)\*
- Upper Columbia River summer/fall chinook salmon ESU (*Oncorhynchus tshawytscha*)
- Mid-Columbia River chinook salmon ESU (*Oncorhynchus tshawytscha*)
- Lower Columbia River chinook salmon ESU (*Oncorhynchus tshawytscha*)\*
- Lower Columbia River/Southwest Washington coho salmon ESU (*Oncorhynchus kisutch*)
- Columbia River chum salmon ESU (*Oncorhynchus keta*)\*

## ES.3 Affected Area

Two landscape scales are used in this EIS/NFHCP. The Project Area includes 1.6 million acres of Plum Creek's property in Montana, Idaho, and Washington. This land is where the timber harvest management strategies would be applied if a Permit is issued. The Planning Area is 10 times larger (16.5 million acres), includes and surrounds the Project Area, and could be affected by the management strategies, because fish do not stay within property lines and an ecosystem approach is needed. The Planning Area is comprised of 15 Planning Area basins (Map ES-1). These watershed units subdivide the 17-million-acre Planning Area so that alternatives could be analyzed in a meaningful way for Permit species.

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To customize some of the NFHCP conservation commitments based on specific habitat needs, Plum Creek categorized the Planning Area basins based on bull trout biology. This species was chosen because the bull trout is the most widely distributed native salmonid in the Project Area, it has the most specific habitat requirements, and Plum Creek has the most data for this species on their lands. Those portions of Planning Area basins with known bull trout spawning and rearing are identified as Tier 1 watersheds, where some protection measures are prioritized or enhanced to ensure protection of those sensitive life-history stages. All other portions of Planning Area basins are Tier 2 lands, where bull trout may use foraging, migration, and overwintering habitat. Conservation benefits designed for bull trout in Tier 1 and Tier 2 lands would also protect other Permit species.

## ES.4 Covered Activities

Plum Creek management activities covered in the NFHCP and associated Permit application include the following:

- Commercial forestry and associated activities
  - Silvicultural activities such as tree planting, site preparation, timber harvest in riparian and upland areas, stand maintenance, prescribed burning, and forest nurseries and seed orchards
  - Logging road construction
  - Logging road maintenance
  - Gravel quarrying primarily for logging road construction
- Forest fire suppression
- Open range cattle grazing

- Miscellaneous forest and land product sales
  - Gravel
  - Landscaping stones
- Conservation activities
  - Habitat enhancement and restoration
  - Scientific surveys and studies
- Special forest use permits
  - Commercial outfitting
  - Special recreation permits, such as club activities on Plum Creek land
  - Electronic facility sites
- Manufacturing of forest products (such as milling activities, lumber mills, plywood mills, remanufacturing plants)

## ES.5 Purpose and Need

The purpose and need statement is essentially a goals statement, and can help evaluate the NFHCP, other action alternatives, and No Action Alternative. This approach helps a decision maker to decide whether to issue a Permit and to choose an alternative, or a combination of alternatives, to be implemented.

### ES.5.1 Purpose of the Action

The federal Proposed Action being addressed herein is the issuance of a Permit under the ESA. The purpose of the Proposed Action is to authorize incidental take of the Permit species by Plum Creek and to provide Plum Creek with reasonable assurances consistent with the “No Surprises” Final Rule. This action is desired so Plum Creek can implement an

HCP that provides a sufficient and significant contribution to the conservation of native salmonids that would allow for, or not preclude, the recovery of listed Permit species and would help remove threats to unlisted species. This forms a dual purpose: the assurance of conservation of native salmonids, and the assurance of long-term regulatory certainty for Plum Creek.

The NFHCP articulates the dual purpose of and need for this action with a set of both biological and business goals. The biological goals set forth the framework for conservation and provide a standard from which success in meeting the purpose of the NFHCP can be measured. The biological goals are based on the Four C's of habitat quality for all native salmonids, as follows:

- **Cold.** Protect stream temperatures where they are suitable for fish and contribute to restoration of temperatures where they are unsuitable because of past Project Area management.
- **Clean.** Protect in-stream sediment levels where they are suitable for fish and contribute to restoration of in-stream sediment levels where they have been impacted by past Project Area management.
- **Complex.** Protect in-stream habitat diversity where it is suitable for fish and contribute to restoration of in-stream habitat diversity where it has been impacted by past Project Area management.
- **Connected.** Protect and contribute to the restoration of connectivity among sub-populations of native fish in the Project Area.



Plum Creek has stated its NFHCP business goals to the Services in the NFHCP, expressing their motivation as a landowner seeking a Permit. These business goals help the Services determine whether the conservation measures offered meet the “maximum extent practicable” criterion for Permit issuance. The NFHCP business goals are as follows:

- **Long-Term Sustainability and Business Certainty.** Create an environment of regulatory predictability to preserve the ability to confidently make long-term business decisions.
- **Cost-Effective Conservation.** Implement cost-effective conservation so that finite resources can be allocated where they provide the most benefit.
- **Scientific Credibility.** Apply a high level of scientific rigor to the task of generating creative solutions.
- **Operational Practicality and Flexibility.** Ensure a high degree of implementation success by developing a plan that is practical to implement and preserves management flexibility.

## **ES.5.2 Need for the Action**

The Services are required to authorize incidental take of listed species if an HCP developed by a Permit applicant adequately conserves those species according to the criteria specified in Section 10(a) of the ESA. Adequate conservation includes meeting the purposes of the ESA to conserve species' ecosystems and allow for their recovery, in part by minimizing and mitigating incidental take resulting from the covered activities of a Permit and HCP.

Commercial timber harvest and associated activities can potentially negatively impact habitats essential to species listed under the ESA under federal regulation (50 CFR 17.3, definition of "harm"). Significant alteration of essential habitat might constitute take of listed species, which would be prohibited by Section 9 of the ESA unless otherwise excepted, or permitted. Section 10(a)(1)(B) of the ESA provides non-federal entities, including private landowners, with a legal mechanism to receive authorization to take listed species by obtaining a Permit from the Services. In addition, unlisted species can be covered in the Permit if their conservation needs are adequately addressed in the HCP.

The listing of the bull trout and seven other Permit species as threatened species under the ESA, as well as the listing or potential listing of other native salmonids in the Project Area, poses regulatory uncertainty for Plum Creek as they manage forests and harvest timber. This uncertainty could result in significant curtailing of timber harvest, or could otherwise reduce management flexibility, which may reduce economic viability for Plum Creek. Instead, Plum Creek seeks to ensure

greater economic viability and increase regulatory certainty and flexibility through productive long-term forest management, while conserving habitat for the bull trout and other native salmonids and allowing for recovery of listed species by seeking a Permit and agreeing to implement their NFHCP.

## **ES.6 Alternatives Evaluated**

Four alternatives representing a range of management strategies were selected for detailed analysis. The reasonable range of management strategies spanned by the proposed NFHCP, two other action alternatives, and the No Action Alternative is reflected in the themes associated with each, as follows:

- **Existing Regulations—No Action Alternative.** The No Action Alternative would provide applicable compliance with federal and state laws, including forest practice regulations, but no Incidental Take Permit would be issued and the NFHCP would not be implemented. This alternative would lack the regulatory certainty offered by a Permit under the ESA that any take that may occur would be authorized.
- **Plum Creek's Native Fish Habitat Conservation Plan (NFHCP)—Proposed NFHCP.** This plan represents Plum Creek's HCP to conserve native salmonids and their habitat as required under Section 10(a) of the ESA. The proposed NFHCP is intended to satisfy the requirements of Section 10(a)(2)(A) of the ESA so the Services can issue the Permit authorizing the incidental take of the Permit species.

- **Internal Bull Trout Conservation Plan Alternative.** This alternative consists of a package of defensive, science-based land management practices and conservation measures that could be developed and implemented by Plum Creek. Plum Creek’s intent would be to avoid take of ESA-listed fish species, but the measures could be adequate as HCP commitments to authorize incidental take for some of the proposed Permit species. This alternative could potentially be used to authorize incidental take for a single-species or listed species only HCP. This alternative and the NFHCP alternative serve to contrast a single-species approach with a multi-species approach that includes unlisted species.
- **Simplified Prescriptions Alternative.** This represents a general approach to road, riparian buffer, and grazing restrictions, with either no or minimal commitments to other practices that conserve fish. This alternative, if developed further, would be intended to be adequate for Permit issuance. This general approach contrasts with the focused conservation approach of the proposed NFHCP.

The proposed NFHCP and the two other action alternatives were selected for detailed analysis because they could each potentially result in the issuance of a Permit by the Services to Plum Creek. They also represent a reasonable range of viable alternatives that meet the project purpose and need for the Services as well as Plum Creek. All of the proposed management strategies comply with federal and state land management regulations. However, they vary from one another in several ways:

#### How are the Alternatives Evaluated?

Three action alternatives, which could result in issuance of a Permit, and the No Action Alternative are evaluated in this EIS, as follows:

- Existing Regulations—No Action Alternative. Only employs existing state and federal regulations.
- Plum Creek’s Native Fish Habitat Conservation Plan—Proposed NFHCP. Multi-species conservation package.
- Internal Bull Trout Conservation Plan. Single-species conservation package.
- Simplified Prescriptions. Applies standard habitat conservation measures beyond existing regulations.

The alternatives were compared in three major ways: the number and extent of conservation commitments in eight conservation categories, such as land use planning and riparian management; the effects on resource categories, such as vegetation and economics; and the achievement of the Four C’s and fully functioning riparian and in-stream habitat.

- Approaches to ESA compliance
- Number and extent of conservation commitments
- Degree to which adaptive management would be implemented
- Consistency with recovery actions on federally managed lands

The No Action Alternative may not meet project purpose and need from the Services’ or Plum Creek’s perspectives, but its analysis is required in an EIS under NEPA regulations. Analysis of the

alternatives focuses on effects at a proposed Permit length of 30 years, but also briefly examines potential effects at optional Permit lengths of 10 years and 20 years.

Impact avoidance and minimization and mitigation activities in the proposed NFHCP and each alternative may be grouped within eight categories of conservation measures that affect native fish, specifically native salmonids:

- Environmental Principles
- Forest Road and Upland Management
- Riparian Management
- Range Management
- Land Use Planning
- Legacy and Restoration
- Administration and Implementation
- Adaptive Management and Monitoring

The eight conservation categories were developed for the NFHCP to counter potential adverse effects of forest management and associated activities proposed for coverage under the Permit. Table ES-3, presented on page 20 of this *Executive Summary*, shows the extent of conservation commitments within each category for the proposed NFHCP, each of the other action alternatives, and the No Action Alternative. Generally, the number of conservation categories and the extent of conservation commitments that would be implemented are greatest under the proposed NFHCP and least under the No Action Alternative.

### **ES.6.1 Effects of the Alternatives**

In the EIS, the alternatives are analyzed according to the following resource categories:

- Geology and Soils

- Water Resources and Hydrology
- Water Quality and Contaminants
- Vegetation Resources
- Fisheries and Aquatic Resources
- Wildlife Resources
- Land Use
- Recreation Resources
- Visual and Aesthetic Resources
- Cultural Resources
- Social Resources
- Economic Resources
- Air Quality

The alternatives were analyzed with respect to environmental baseline, or existing conditions. Then, the alternatives were compared against each other. For fish habitat, the EIS applied the concept of fully functioning habitat to represent conditions thought to be similar to what may have existed prior to historic human impacts on Permit species. The fully functioning habitat concept provides a common basis for describing how well each alternative achieves the Four C's and benefits fish. This concept was not a conservation goal or requirement in the development of the HCP, but is an indicator of how the alternatives relate to fish, how well the alternatives relate to one another, and which alternatives would potentially benefit fish most.

A combination of the most conservative features of the proposed NFHCP and Simplified Prescriptions Alternative provide the greatest likelihood, of the four alternatives analyzed, for moving rapidly towards achieving fully functioning habitat conditions. For example, implementing the road and upland conservation commitments under the proposed NFHCP, coupled with the riparian conservation commitments from the Simplified Prescriptions Alternative, would result in

the maximum rate of sediment reduction and riparian habitat protection possible under all alternatives. Plum Creek could achieve the most rapid trend toward fully functioning habitat if they implemented all the most aggressive habitat mitigation and restoration efforts in these two alternatives and did not implement any new timber harvest, road building, or other development projects during the next 30 years that could impact Permit species' habitat. However, such an approach of little or no timber harvest and road building across the Project Area for the Permit period was not evaluated because it would not meet Plum Creek's economic needs and therefore is beyond the scope of this EIS. Conversely, an approach that minimizes fish conservation, such as the No Action Alternative, also would likely not meet Plum Creek's business goals because they would be unlikely to receive regulatory assurances from the Services.

Implementation of only the combination of conservation commitments in the Plum Creek NFHCP would serve to reduce impacts and multiple threats to Permit species and their habitat, while allowing Plum Creek to achieve their business goals. Figure ES-1 is an example based on actual applications of the array of NFHCP conservation commitments in the Project Area. Shroder Creek is a Tier 1 watershed in the Thompson River Drainage in northwest Montana. It shows specific NFHCP conservation measures and the locations and dates they are likely to be applied. For example, an irrigation diversion near the mouth of Shroder Creek is thought to have prevented bull trout passage and isolated a small resident population for 100 years. Successful removal of this barrier would restore migration opportunity for bull trout while riparian stand recovery upstream provides

for restoration of riparian function in bull trout and westslope cutthroat trout spawning reaches. Additional active conservation measures include legacy and restoration projects along the Thompson River, livestock exclusion, and road upgrades and abandonment. Land use planning commitments would also help minimize risks of construction development along the Thompson River where there is high real estate value. The combination of active conservation measures applied on the Thompson River, a Key Migratory River, begins a restoration process for riparian function in migration and overwintering habitat while intermingled federal ownership in headwater streams allows for a more conservative federal approach to complement these active measures. Not all watersheds in the Project Area would require or provide the opportunity for such a wide range of conservation measures, but the figure illustrates how the comprehensive approach of the NFHCP would address a spectrum of threats to reduce the risk that limiting factors for Permit species are allowed to persist.

In addition to conservation on Plum Creek lands that would be gained through one or more of the alternatives analyzed in this document, the Services have additional opportunities in the Planning Area to ensure adequate conservation of Permit species is achieved. For example, through future ESA consultations with federal land managers, the majority landowner in the Planning Area, the Services can ensure implementation of measures that complement Plum Creek's efforts to conserve Permit species across the landscape.

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## **ES.6.2 Comparison of the Alternatives**

Based on the analyses and comparisons of the resource topics and conservation commitments described in the previous sections, the NFHCP, closely followed by the Simplified Prescriptions Alternative, would be most beneficial to the Permit species and their habitat. These two alternatives would contribute substantially to the maintenance or improvement of habitat conditions expressed through the Four C's (clean water, cold water, complex habitat, and connected habitat), which are crucial to the well-being of native salmonid populations. The No Action Alternative would be least beneficial to Permit species, with future conditions expected to be only slightly better than at present, and improvements realized relatively slowly. Benefits associated with the Internal Conservation Plan Alternative would exceed those of the No Action Alternative. However, there would be considerably fewer benefits than associated with the NFHCP or the Simplified Prescriptions Alternative, primarily because many prescriptions of the Internal Conservation Plan Alternative focus on selected Tier 1 watersheds and would not be as extensive or rigorous as for the other action alternatives.

The No Action and Internal Conservation Plan Alternatives also do not provide the degree of assurances Plum Creek seeks regarding the risk of future ESA-related regulation of their land management activities.

There are essentially no differences in effects on Permit species from any of the other covered activities among the four alternatives. Other covered activities besides road use and riparian timber

harvest include tree planting, site preparation, prescribed burning, timber sale preparation, stand maintenance, gravel quarrying, special use permits, and other similar activities.

Longer Permit terms generally provide greater benefits for Permit species. Long-term risk is low because of the ability to adapt, suspend, or revoke the Permit. Variation of effects of different Permit lengths among the four alternatives is minimal.

The proposed NFHCP would best achieve the stated, dual purpose and need for this project by reducing threats to Permit species while also allowing Plum Creek to implement viable timber management actions on their lands with reduced uncertainties regarding future ESA-related regulation. The Simplified Prescriptions Alternative would reduce threats to Permit species and the degree of Plum Creek's risk of future regulation. However, it would have a greater impact on Plum Creek's ability to manage timber on their lands than the proposed NFHCP, primarily because of the larger riparian buffers and road abandonment program, as well as the reduced opportunity to build roads for management.

The proposed NFHCP would accelerate conservation efforts and move most active conservation to the first decade of the proposed 30-year Permit. This alternative would also allow for the use of project monitoring data, or other data, to continuously determine whether such levels of conservation are adequate to conserve Permit species. If agreed-to levels of conservation for meeting the clean, cold, complex, and connected biological goals are deemed inadequate,

the Services and Plum Creek would use the best scientific data to adjust conservation levels to ensure that they are adequate. The NFHCP adaptive management strategy would rely on implementation, monitoring, evaluation, and management response. This scientific information would then be evaluated against the NFHCP Biological Goals and specific habitat objectives using habitat component metrics and triggers or thresholds to determine when mandatory management responses are required. For example, under the biological goal for clean water, one of the specific habitat objectives is to reduce sediment delivery from existing roads. One of the studies would measure actual sediment reduction achieved. The measurement used for evaluation is the percent reduction in sediment delivery from the beginning of the Permit with the trigger set at 49 percent. If the trigger is not met, then Plum Creek and the Services would evaluate whether this is relevant for fish, what was the cause of falling short of the goal, and then revise road prescriptions if necessary to better meet the goal. Table ES-1 summarizes adaptive management commitments by Plum Creek.

If the NFHCP would not, or could not, be adapted to ensure adequate conservation, then the Services may suspend, in whole or in part, the Permit under certain, specified conditions outlined in the IA. If continued implementation of the Permit terms would likely jeopardize the continued existence of a Permit species, then the Services must revoke the Permit. Ultimately, however, this HCP is designed to provide incentives for both the Permittee and the Services to seek opportunities to

not relinquish, suspend, or revoke the Permit because of the loss of take coverage for the Permittee, and the loss of species' conservation for the Service.

This proposed NFHCP approach allows for maintaining land management flexibility while achieving species conservation. In contrast, the Simplified Prescriptions Alternative would reduce Plum Creek's forest management flexibility while it would also reduce uncertainty for the Services at the outset of the Permit. The need to rely on adaptive management would be less under the Simplified Prescriptions Alternative. There would also be less risk of Permit suspension or revocation, related to riparian management, if a Permit is issued under the Simplified Prescriptions Alternative, because of the reduced risk to species provided at the outset of the Permit period.

See Table ES-2 for a comparison of the effects of the four alternatives analyzed. Under the NFHCP alternative:

- Sediment delivery from roads would be reduced by 49 percent.
- Stream water temperatures would be reduced by 1°F, and canopy cover would increase by 0 to 44 percent across the Project Area.
- Large woody debris (LWD) input would range from 36 to 166 pieces per 1,000 feet of stream length, spanning the natural average of 78 pieces of LWD per 1,000 feet of stream length in unmanaged riparian areas.

**TABLE ES-1**

Summary Table of Effectiveness Monitoring and Adaptive Management Commitments

Specific NFHCP Habitat Objectives	NFHCP Commitments	Performance Metrics (Success Indicators)	Triggers (If...)	Management Response (Then...)
<p><b>Cold Biological Goal:</b></p> <p>Specific Habitat Objectives 1-3 include minimizing impacts on canopy closure from timber harvest; restoring riparian vegetation; and creating a net increase in canopy closure in the Project Area</p>	<p>Riparian and Range Management</p>	<ul style="list-style-type: none"> <li>Water temperature is suitable for fish</li> <li>Riparian vegetation trends are positive</li> <li>Canopy closure increases</li> </ul>	<ul style="list-style-type: none"> <li>Stream temperature increases by 1°C with timber harvest</li> <li>Inadequate trend in riparian vegetation status</li> <li>No net increase in canopy cover</li> </ul>	<ul style="list-style-type: none"> <li>Revise or create riparian prescription enhancements</li> <li>Revise grazing BMPs</li> </ul>
<p><b>Clean Biological Goal:</b></p> <p>Specific Habitat Objectives 4-7 include minimizing sediment delivery to streams from ongoing activities; reducing sediment delivery to streams from existing roads; ensuring a net reduction in sediment delivery; and restoring riparian and in-stream habitat</p>	<p>Road and Upland, and Legacy and Restoration</p>	<ul style="list-style-type: none"> <li>Net sediment reduction</li> <li>Riparian and in-stream habitat restoration is effective</li> </ul>	<ul style="list-style-type: none"> <li>Significantly less than 49% reduction in net sediment delivery</li> <li>Inadequate riparian and in-stream habitat restoration effectiveness</li> </ul>	<ul style="list-style-type: none"> <li>Revise or create enhanced BMPs for new roads or old road upgrades</li> <li>Revise habitat restoration efforts</li> </ul>
<p><b>Complex Biological Goal:</b></p> <p>Specific Habitat Objectives 8-12 include minimizing impacts on LWD recruitment and bank stability in harvested streamside stands; restoring grazed and harvested riparian areas; and providing a net improvement in riparian function and in LWD</p>	<p>Riparian, Range Management, and Legacy and Restoration</p>	<ul style="list-style-type: none"> <li>LWD recruitment models are valid</li> <li>Riparian vegetation trends improve</li> <li>Riparian and in-stream habitat restoration is effective</li> <li>Riparian stand composition improves</li> </ul>	<ul style="list-style-type: none"> <li>Original LWD forecasts are wrong</li> <li>Inadequate trend in riparian vegetation status</li> <li>Inadequate riparian and in-stream habitat restoration effectiveness</li> <li>No increase in average diameter or relative density of the largest 88 trees per acre in riparian stands</li> </ul>	<ul style="list-style-type: none"> <li>Revise or add enhanced riparian prescriptions to increase LWD recruitment and pool formation</li> <li>Revise grazing BMPs</li> <li>Revise habitat restoration efforts</li> </ul>
<p><b>Connected Biological Goal:</b></p> <p>Specific Habitat Objectives 13-15 include avoiding creating fish passage barriers; restoring fish passage where existing road stream crossings restrict passage; and cooperating to restore fish migration where restricted by other means</p>	<p>Road and Upland, and Legacy and Restoration</p>	<ul style="list-style-type: none"> <li>Observe increase in connectivity</li> <li>Verify by third-party audit</li> </ul>	<ul style="list-style-type: none"> <li>Third-party audit determines fish passage is not being provided in all documented cases where passage must be improved</li> </ul>	<ul style="list-style-type: none"> <li>Develop and implement an action plan for providing adequate fish passage</li> </ul>
<p><b>Compensation for Underperformance:</b></p> <p>The adaptive management plan requires specific actions if habitat objectives are not met. Additional mitigation may be required if significant impacts on Permit species occur before the adaptive management solution is implemented.</p>		<p>Compliance with NFHCP commitments as determined by state or external audits, or observed by the Services</p>	<p>A major departure from NFHCP compliance, with significant impacts to achieving any of the 4 Biological Goals</p>	<p>A plan to mitigate for riparian function lost because of departure would be developed and implemented within 1 year</p>

**TABLE ES-2**  
EIS Alternatives Summary of Effects

	<b>EIS Alternatives</b>			
	<b>No Action</b>	<b>NFHCP</b>	<b>Internal Conservation Plan</b>	<b>Simplified Prescriptions</b>
<b>Clean</b>				
Roads: Net reduction in sediment delivery from baseline conditions	28%	49%	33%	35%
Grazing: reduction of sediment delivery resulting from trampled stream banks	none	large	moderate	large
Road abandonment	none	~1,000 miles	~200 miles	~1,950 miles
<b>Cold</b>				
Net increase in canopy cover in timbered riparian stands	0-33%	0-44%	0-42%	7-47%
Grazing: reduction in "severely impacted" stream reaches through restoration of riparian vegetation	0%	100%	9%	< 100%
Increase in shrubby and woody canopy cover associated with legacy and restoration work	none	moderate	some	none
<b>Complex</b>				
Provide large woody debris to streams (pieces per 1,000 feet of stream)	30-73	36-166	33-78	49-181
Restoration of streambank integrity due to grazing measures	none	large	moderate	large
Increase in overhanging banks associated with legacy and restoration projects	none	large	some	none
<b>Connected</b>				
Restore fish passage where restricted by road culverts	some	Essentially all fish passage restored by year 15	some	moderate
Restore fish passage where impacted by diversions	none	Eliminate and minimize impacts from some to most diversions	none	none

- Essentially all known fish passage barriers in the Project Area would be removed, provided that removal of the barrier enhances recovery of Permit species (that is, for example, barrier removal may not occur if it would allow incursion of exotic species into habitat occupied by Permit species).

Other benefits to native fish habitat would likely occur under Range, Land Use Planning, Legacy and Restoration, and other commitments that are not quantified in Table ES-2, or accounted for in the summary figures for NFHCP effects reported above.

## ES.7 Coordination with Others

NEPA regulations direct project sponsors to involve agencies and the general public in preparing EISs. The Services and Plum Creek have made public involvement an integral part of the EIS/NFHCP development process. The coordination between the Services and interested agencies and entities and the public that began in early project planning continued to occur periodically throughout EIS development. Issues identified during scoping were considered during preparation of the EIS/NFHCP. The Services and Plum Creek continued to receive comments from the public during EIS development, and encouraged such participation on their web sites and through personal contacts. The Services did not share detailed information concerning the development of conservation commitments with agency cooperators or other interested scientists during much of the development of the HCP, at the request of the applicant to respect the proprietary nature of information shared with the Services. Some agency cooperators and interested scientists were involved in review of Plum

Creek technical documents at the request of the Services.

FWS sought government-to-government meetings, provided written communications to, made phone calls to, and requested information from 14 Native American Tribes in the Planning Area on multiple occasions between September 1997 and August 2000.

## ES.8 DEIS Release and Public Involvement

A complete mailing list of all agencies, bureaus, organizations, groups, and individuals that received the DEIS is available upon request from Ted Koch, Project Manager, Snake River Basin Fish and Wildlife Office, 1387 South Vinnell Way, Room 368, Boise, ID 83709. Six public hearings were held on the DEIS. Following are the hearing dates, times, and locations:

- Kelso, Washington, on January 11, 2000, at Red Lion Hotel, from 3:30 to 7:30 p.m.
- Yakima, Washington, on January 12, 2000, at Cavanaugh's Gateway, from 3:30 to 7:30 p.m.
- Libby, Montana, on January 17, 2000, at Venture Inn, from 3:30 to 7:30 p.m.
- Kalispell, Montana, on January 18, 2000, at Outlaw Inn, from 3:30 to 7:30 p.m.
- Missoula, Montana, on January 19, 2000, at Holiday Inn Parkside, from 3:30 to 7:30 p.m.

- Coeur d’Alene, Idaho, on January 20, 2000, at Shilo Inn, from 3:30 to 7:30 p.m.

## ES.9 FEIS Development

The public comment period opened with the announcement of the availability of the DEIS in the Federal Register on December 17, 1999. The comment period was originally established at 60 days and scheduled to end on February 17, 2000. The Services granted an extension request and the public comment period closed on March 17, 2000.

Comments were received by mailed letter, fax, and e-mail. The Services received 83 separate pieces of correspondence. These written comments, and the responses from the Services, are provided in Appendix F, *Public Comments*. Section F.3, *Written Comments*, contains the full text of all comments received.

A total of 95 people attended six public meetings, with the attendance at each meeting location as follows:

- Kelso, Washington: 5
- Yakima, Washington: 10
- Libby, Montana: 12
- Kalispell, Montana: 22
- Missoula, Montana: 27
- Coeur d’Alene, Idaho: 19

The meetings were conducted in an open-house format. All of the information displayed on boards at the information station was included in the *Executive Summary* of the DEIS. Copies of the *Executive Summary* were available to the public to take home. Officials from FWS, NMFS, and Plum Creek staffed each of the stations to answer questions and receive comments. Comments received at

public meetings were treated the same as written comments. They are presented in Appendix F with the written comments.

## ES.10 Summary of Revisions to the NFHCP

Many issues were identified during the DEIS comment period that resulted in improvements to the NFHCP. The most notable changes are cited under the headings below.

### ***Adaptive Management***

Most issues addressed by changes in the NFHCP were related to adaptive management. These changes include the following:

- Adding a significantly expanded and detailed description of the scientific studies to be conducted for effectiveness monitoring.
- Clarifying that adaptive management decisions are an equal partnership. This responds to the public’s concern that Plum Creek was retaining “veto power” over deciding whether any changes to the plan would be made.
- Adding a new commitment to establish a process for adding Tier 1 watersheds for any Permit species.
- Providing a new commitment to monitor landslides.

### ***Riparian***

Many issues were related to riparian management. Changes included the following:

- Improving 8 out of 9 commitments with more specific language.
- Adding more fish habitat protection for intermittent streams.
- Extending perennial stream measures to intermittent streams that flow through unstable features on the landscape.
- Adding measures to mitigate for impacts of streamside roads.
- Incorporating a clearcut limitation into Interface Caution Areas (ICAs).

## **Roads**

The following changes were related to road management issues:

- Improving 5 out of 8 commitments with more specific language.
- Identifying specific watersheds for high priority treatment, and for Road Sediment Delivery Analyses (RSDAs).
- Incorporating a requirement to avoid building new roads on steep slopes.

- Developing a new, site-specific commitment to address landslide risk at Papoose Creek in the Lochsa River Planning Area basin.

## **Administration and Implementation**

A few issues were related to administration and implementation of the NFHCP. The greatest of these was a concern whether the Services would have sufficient resources to continue a creative partnership once the Permit is issued. The following changes resulted from these issues:

- Improving 2 out of 6 commitments with more specific language to help ensure a self-implementing conservation plan.
- Developing a specific protocol for third-party audits. Financed by Plum Creek, this will provide objective oversight to verify compliance while streamlining the Services' involvement.

**TABLE ES-3**  
Habitat Conservation Prescriptions Contained in the Alternatives<sup>1</sup>

<b>Commitments and Prescriptions</b>	<b>No Action</b>	<b>Plum Creek NFHCP</b>	<b>Internal Bull Trout Conservation Plan</b>	<b>Simplified Prescriptions</b>
Environmental Principles	None.	Practice forestry according to Plum Creek Environmental Principles in the Project Area for the Permit term <b>(EP1)</b> .	Practice forestry according to Plum Creek Environmental Principles, subject to change at any time.	None.
<b>Forest Road and Upland Management</b>				
State Regulations and BMPs	Practice state regulations/BMPs for forest roads and other upland activities.	Practice state regulations/BMPs for forest roads and other upland activities.  Comply with Montana's non-regulatory (voluntary) BMPs covering roads and upland forest management for the Permit term <b>(R1)</b> .	Practice state regulations/BMPs for forest roads and other upland activities.	Practice state regulations/BMPs for forest roads and other upland activities.
New Road Construction	Design and construct remaining transportation system to state standards for forest roads. Estimated new road construction is 1,300 miles in first 10 years.	Design and construct remaining transportation system to state standards for forest roads. Estimated new road construction is 1,300 miles in first 10 years.  Apply enhanced BMP standards to new roads in NFHCP Project Area. For each new mile of road built, at least 2 miles of existing road will be upgraded or abandoned <b>(R2)</b> .	Design and construct remaining transportation system to state standards for forest roads. Estimated new road construction is 1,300 miles in first 10 years.  Apply enhanced BMP standards to new roads in Tier 1 watersheds only.	Design and construct remaining transportation system to state standards for forest roads. Limit new road construction up to 650 miles in first 10 years.  Apply limited BMP enhancements. Three-to-one abandonment commitment (see road abandonment section).
Road Condition Tracking	None.	Implement Geographic Information System (GIS) databases that record the condition (BMP status) of all existing and abandoned road segments in NFHCP Project Area <b>(R3)</b> .	Implement GIS databases that record the condition (BMP status) of all existing road segments in Tier 1 watersheds.	None.
Road Condition Inspections (RCIs)	None.	Inspect condition and BMP status of forest roads to update road database. Inspect 100% of road segments in Project Area by the end of Year 5 <b>(R4)</b> .	Inventory condition and BMP status of forest roads to update road database concurrent with and incidental to ongoing routine forestry activities. Inspect 100% of Tier 1 roads by the end of Year 5.	Inventory condition of forest roads to identify hot spots. Inspect 95% of known roads by the end of Year 10.

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<b>Commitments and Prescriptions</b>	<b>No Action</b>	<b>Plum Creek NFHCP</b>	<b>Internal Bull Trout Conservation Plan</b>	<b>Simplified Prescriptions</b>
Upgrade of Old Roads	Upgrade road segments in Project Area to state BMP standards. Upgrade segments as they are used. Upgrades projected to be incorporated on 90% of Project Area roads by Year 25.	Upgrade inventoried road segments in Project Area to enhanced BMP standards. In high priority watersheds, projected to be complete by Year 10. In the rest of the Project Area, projected to be complete by Year 15 <b>(R5)</b> .	Upgrade inventoried road segments in Tier 1 to enhanced BMP standards and in Tier 2 to state BMP standards. Upgrade segments as they are used. In Tier 1, projected to be substantially complete by Year 10.	Upgrade road segments in Project Area to state BMP standards, with limited enhanced BMPs. Upgrades projected to be incorporated on 90% of Project Roads by Year 25.
Hot Spot Treatments	Treatments will occur concurrently with road upgrades.	Throughout the Project Area, legacy road system hot spots identified in Road Condition Inventories (RCIs) and other defined hot spot locations will be treated. Develop and implement site-specific action plans to mitigate negative effects <b>(R6)</b> .	In Tier 1 watersheds only, legacy road system hot spots identified in RCIs and other defined hot spot locations will be treated. Develop and implement site-specific action plans to mitigate negative effects.	Throughout the Project Area, legacy road system hot spots identified in RCIs and other defined hot spot locations will be treated. Develop and implement site-specific action plans to mitigate negative effects.
Abandonment of Surplus Roads	None.	Identify and abandon all surplus roads in Tier 1 and Tier 2 watersheds. Abandonment will occur in conjunction with the upgrade of adjacent roads. Abandon roads if used to access poaching areas <b>(R7)</b> .	Identify and abandon surplus roads in Tier 1 watersheds only. Abandonment will occur in conjunction with the upgrade of adjacent roads.	Abandon 3 miles of surplus roads for each mile of new road construction. Abandon roads prioritized by proximity to streams. Project 1,950 miles to be abandoned.
Periodic Re-inspection and Maintenance	Maintain roads to comply with state BMPs.	After upgrade of old roads is completed, maintain road segments every 5 years in high priority watersheds and every 7 years in all other watersheds. Put inactive roads to sleep <b>(R8)</b> .	After upgrade of old roads in Tier 1 is completed, maintain road segments every 5 years in Tier 1 and near Key Migratory Rivers. Maintain remaining Tier 2 roads as needed to comply with state BMPs.	Maintain active road segments in all watersheds every 5 years, or as they are used.

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Habitat Conservation Prescriptions Contained in the Alternatives<sup>1</sup>

<b>Commitments and Prescriptions</b>	<b>No Action</b>	<b>Plum Creek NFHCP</b>	<b>Internal Bull Trout Conservation Plan</b>	<b>Simplified Prescriptions</b>
Road Sediment Delivery Analyses	None.	Perform Road Sediment Delivery Analyses for all roads in three prioritized fourth-order watersheds annually for the first decade. Implement remedial actions suggested by the analysis by end of following year. Use results to improve RCIs and road upgrade standards and to evaluate Core Adaptive Management Project #1 <b>(R9)</b> .	Perform Road Sediment Delivery Analyses in three fourth-order watersheds annually, up to 25% of Tier 1 acreage for only Plum Creek lands. Implement remedial actions suggested by the analysis by end of following year. Use results to improve RCIs and road upgrade standards.	Develop and implement a sediment management and control plan for road management on Plum Creek Project Area roads.
Poaching Mitigation	None.	Implement a strategy, in cooperation with state agencies, to minimize bull trout and other native salmonid mortality from poaching through access restrictions, and enforcement agreements <b>(R10)</b> .	None.	None.
Road Restrictions	None.	Implement road restrictions and closures judiciously by road type, and manage using Road Database. Restrict unauthorized public vehicle access to new roads where practicable <b>(R11)</b> .	Implement road restrictions and closures opportunistically, based on bull trout conservation needs.	Restrict public access to most of Plum Creek's road system to minimize sediment delivery from road use. Public access would be limited to primary roads (approximately 10% of Plum Creek's road system).
Papoose Creek Landslide Assessment	None.	Conduct an analysis of landslides and landslide risks on Project Area lands in the Papoose Creek watershed (tributary to the Lochsa River, Idaho) and prepare a detailed management plan to reduce landslides by the end of Year 1. Implement by end of Year 3 <b>(R12)</b> .	None.	None.

**TABLE ES-3**  
Habitat Conservation Prescriptions Contained in the Alternatives<sup>1</sup>

Commitments and Prescriptions	No Action	Plum Creek NFHCP	Internal Bull Trout Conservation Plan	Simplified Prescriptions
<b>Riparian Management</b>				
State Regulations and BMPs.	Implement state riparian management regulations/BMPs.	Implement state riparian management regulations/BMPs. State riparian rules as a basis for additional commitments. In Washington, use NFHCP Washington Rule Set as basis ( <b>Rp1</b> ).	Implement state riparian management regulations/BMPs. State riparian rules as a basis for additional commitments.	Implement state riparian management regulations/BMPs. State riparian rules as a basis for additional commitments.
High Sensitivity Channel Migration Zones (CMZs) on Perennial Streams that May Support Fish (MSF) (Tier 1)  Stream Type: <sup>2</sup> MT Class 1 ID Class I WA Fish Bearing	Apply state Forest Practices Act/ Streamside Management Zone (FPA/SMZ) regulations.	<p>If:</p> <ul style="list-style-type: none"> <li>• Tier 1 watershed east of Cascades crest;</li> <li>• High sensitivity CMZ</li> </ul> <p>Then (<b>Rp2</b>):</p> <ol style="list-style-type: none"> <li>1. No timber harvest will occur within the CMZ.</li> <li>2. Apply Limited Harvest Rule (88 trees per acre [tpa]) and provisions to 50 feet from CMZ.</li> </ol> <p>If western Washington (WW), implement western Washington fish-bearing stream (WW fish) prescriptions.</p> <ol style="list-style-type: none"> <li>1. No CMZ harvest</li> <li>2. No harvest for 75 feet from CMZ</li> <li>3. Limited harvest (retain 70 tpa) for 25 to 50 more feet</li> </ol>	<p>If:</p> <ul style="list-style-type: none"> <li>• Tier 1 watershed;</li> <li>• High sensitivity CMZ</li> </ul> <p>Then:</p> <ol style="list-style-type: none"> <li>1. No timber harvest will occur within the CMZ.</li> <li>2. Apply Limited Harvest Rule (88 tpa) and provisions to 50 feet from CMZ.</li> </ol>	<p>Apply Fish-Bearing Stream Prescription:</p> <ol style="list-style-type: none"> <li>1. No timber harvest or equipment in CMZ.</li> <li>2. No harvest for 50 feet from CMZ (slope distance).</li> <li>3. From 50 to 100 feet, retain 60 tpa &gt;10-inch diameter.</li> <li>4. From 100 to 200 feet, retain 40 tpa &gt;10-inch diameter.</li> </ol>

**TABLE ES-3**

Habitat Conservation Prescriptions Contained in the Alternatives<sup>1</sup>

Commitments and Prescriptions	No Action	Plum Creek NFHCP	Internal Bull Trout Conservation Plan	Simplified Prescriptions
Moderate Sensitivity CMZs on Perennial Streams that MSF (Tier 1)	Apply state FPA/SMZ regulations.	If: <ul style="list-style-type: none"> <li>• Tier 1 watershed east of Cascades crest;</li> <li>• Moderate sensitivity CMZ</li> </ul> Then ( <b>Rp3</b> ): 1. Apply Limited Harvest Rule (88 tpa) and provisions within CMZ and up to 50 feet from CMZ. 2. Retain 25-foot no-cut zone. 3. Apply CMZ equipment exclusion rule. If WW, apply WW fish (above).	If: <ul style="list-style-type: none"> <li>• Tier 1 watershed;</li> <li>• Moderate sensitivity CMZ</li> </ul> Then: 1. Apply Limited Harvest Rule (88 tpa) and provisions within CMZ and to 50 feet from CMZ. 2. Retain 25-foot no-cut zone. 3. Apply CMZ equipment exclusion rule.	Apply Fish-Bearing Stream Prescription (above).
High and Moderate Sensitivity CMZs on Tier 2 Lands Perennial Streams that MSF	Apply state FPA/SMZ regulations.	If: <ul style="list-style-type: none"> <li>• Tier 2 CMZ east of Cascades crest</li> </ul> Then ( <b>Rp4</b> ): 1. Apply Limited Harvest Rule (88 tpa) and provisions within CMZ. 2. Apply Limit Harvest Rule (88 tpa) and provisions for 50 feet outside of CMZ. If WW, apply WW fish (above)	Apply state FPA/SMZ regulations.	Apply Fish-Bearing Stream Prescription (above).

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<b>Commitments and Prescriptions</b>	<b>No Action</b>	<b>Plum Creek NFHCP</b>	<b>Internal Bull Trout Conservation Plan</b>	<b>Simplified Prescriptions</b>
High Sensitivity Perennial Streams without CMZs that MSF (Tier 1)	Apply state FPA/SMZ regulations.	<p>If:</p> <ul style="list-style-type: none"> <li>• Tier 1 watershed east of Cascades crest;</li> <li>• High sensitivity where forced pool riffle/plane bed;</li> <li>• Extends <math>\geq 100</math> feet above indicators</li> </ul> <p>Then (<b>Rp5</b>):</p> <ul style="list-style-type: none"> <li>• Retain 25-foot no-cut zone (within the FPA/SMZ regulations buffer)</li> <li>• Apply streamside roads mitigation provision</li> </ul> <p>If WW, apply WW fish (above)</p>	<p>If:</p> <ul style="list-style-type: none"> <li>• Tier 1 watershed;</li> <li>• High sensitivity where forced pool riffle/plane bed;</li> <li>• Extends <math>\geq 100</math> feet above indicators</li> </ul> <p>Then:</p> <ul style="list-style-type: none"> <li>• Retain 25-foot no-cut zone (within the FPA/SMZ regulations buffer)</li> <li>• Apply streamside roads mitigation provisions</li> </ul>	Apply Fish-Bearing Stream Prescription (above).
Remaining Perennial Streams without CMZs that MSF	Apply state FPA/SMZ regulations.	<p>If:</p> <ul style="list-style-type: none"> <li>• Tier 1 and not high sensitivity or Tier 2 east of the Cascade Crest</li> </ul> <p>Then (<b>Rp6</b>):</p> <ol style="list-style-type: none"> <li>1. Apply state FPA/SMZ regulations.</li> <li>2. Follow prescribed conservation guidance</li> <li>3. Apply limited harvest provisions.</li> </ol> <p>If WW, apply WW fish (above)</p>	<p>If:</p> <ul style="list-style-type: none"> <li>• Tier 1 and not high sensitivity</li> </ul> <p>Then:</p> <ol style="list-style-type: none"> <li>1. Apply state FPA/SMZ regulations.</li> <li>2. Follow prescribed conservation guidance.</li> <li>3. Apply limited harvest provisions.</li> </ol>	Apply Fish-Bearing Stream Prescription (above).
<p>Connected Perennial Headwater Streams and Connected Intermittent Streams Associated with Unstable Features</p> <p>Stream Type:<sup>2</sup> MT Class 1 ID Class II WA Non-fish-bearing</p>	Apply state FPA/SMZ regulations.	Apply a continuous, 50-foot riparian management zone, retain 35 tpa and apply limited harvest provisions ( <b>Rp7</b> ).	Tier I watersheds apply a continuous, 50-foot riparian management zone, retain 35 tpa and apply limited harvest provisions.	<p>Apply non-fish-bearing, perennial stream prescription:</p> <ol style="list-style-type: none"> <li>1. No harvest for 25 feet (slope distance) from channel (ohwm).</li> <li>2. Retain 60 tpa from 25 to 50 feet from channel.</li> <li>3. Retain 40 tpa from 50 to 100 feet from channel.</li> </ol>

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Intermittent Headwater Streams (including disconnected perennials)  Stream Type: <sup>2</sup> MT Class 2,3 ID Class II WA Non-fish-bearing	Apply state FPA/SMZ regulations.	<ul style="list-style-type: none"> <li>Apply state FPA/SMZ regulations in Idaho and Montana.</li> <li>Apply 30-foot equipment exclusion zone in Washington.</li> <li>Extend perennial non-fish riparian management zone where unstable features occur.</li> <li>East of the Cascades Crest, retain hardwoods, shrubs, and sub-merchantable timber</li> </ul>	<ul style="list-style-type: none"> <li>Apply state FPA/SMZ regulations.</li> </ul>	Apply intermittent stream prescription: <ol style="list-style-type: none"> <li>Retain 20 tpa &gt;10-inch-diameter and all trees without economic value up to 50 feet from channel.</li> <li>Prohibit equipment from 50 feet from channel.</li> <li>In Montana, apply state SMZ rule, which is more restrictive.</li> </ol>
Interface Caution Areas (ICA) Perennial Streams: MT Class I ID Class I, II WA Fish-bearing and Non-fish-bearing	None.	East of Cascades Crest apply ICA provisions.  A minimum average of 150 feet from stream <b>(Rp8)</b> .  Follow ICA requirements and conservation guidance: <ul style="list-style-type: none"> <li>Prohibit new roads, most clearcutting, broadcast burning.</li> <li>Minimize skid trails, site prep.</li> <li>Require supplemental tree retention.</li> </ul>	None.	None.
Riparian Harvest Deferrals	None.	Defer streamside harvest along fish-bearing streams until Year 10 in seven fourth-order watersheds <b>(Rp9)</b> .	None.	None.
<b>Range Management</b>				
State and Other Regulations and BMPs	Apply open range law without mandated management. Allotment management plans may be in use.	Apply open range law without mandated management. Allotment management plans may be in use.	Apply open range law without mandated management. Allotment management plans may be in use.	Apply open range law without mandated management. Allotment management plans may be in use.

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Landowner-Specific BMPs	None.	Implement Plum Creek's Grazing BMPs on all grazing leases in the Project Area through lessees for the life of the NFHCP, including <b>(G1)</b> : <ul style="list-style-type: none"> <li>• Annual Range Management Plans.</li> <li>• Management practices to achieve riparian goals.</li> <li>• Riparian monitoring.</li> <li>• End of year reports.</li> </ul>	Implement Plum Creek's Grazing BMPs on all grazing leases in Tier 1 watersheds through lessees, including: <ul style="list-style-type: none"> <li>• Annual Range Management Plans.</li> <li>• Management practices to achieve riparian goals.</li> <li>• Riparian monitoring.</li> <li>• End of year reports.</li> </ul>	Cancel grazing leases and seek to eliminate open range grazing throughout the Project Area.
Grazing Enclosures	None.	By the end of Year 9, implement all required riparian cattle enclosures. Exclude livestock from trampling known spawning redds <b>(G2)</b> .	Implement riparian cattle enclosures when opportunities arise through cooperation with lessee.	Implement fenced enclosures to reduce riparian grazing where grazing occurs under open range law.
Monitoring of Riparian Function Associated with Grazing	None.	Establish long-term riparian monitoring to determine the rate of trend toward improvement of habitat function and as adaptive management feedback for refinement of Grazing BMPs <b>(G3)</b> .	None.	Monitor effects of grazing where grazing occurs under open range law.
Status of Vacated Leases	Vacated leases will be re-leased, generally to the successor of the previous lessee.	Vacated leases will be re-leased only after an assessment determines that <b>(G4)</b> : <ul style="list-style-type: none"> <li>• Riparian function is adequate to meet environmental trend indicators; and</li> <li>• The lease area is suitable for grazing.</li> </ul>	Vacated leases will be re-leased immediately, or after a rest period, at the discretion of the Unit Manager.	None.
Rancher Training	None.	Provide rancher and appropriate Plum Creek personnel training for Grazing BMPs implementation <b>(G5)</b> .	None.	None.
<b>Land Use Planning</b>				
State and Local Regulations	Implement state and local land use planning regulations.	Implement state and local land use planning regulations.	Implement state and local land use planning regulations.	Implement state and local land use planning regulations.

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Land Use Principles	None.	Implement Plum Creek’s Land Use Principles to guide conservation-oriented land use planning ( <b>L1</b> ).	Implement Plum Creek’s Land Use Principles to guide conservation-oriented land use planning.	None.
Land Use Planning Measures	None.	<p>Create incentives (<b>L9</b>) for propagating conservation or increasing conservation certainty when land transactions occur, through the use of:</p> <ul style="list-style-type: none"> <li>• Conservation land sales (<b>L2</b>).</li> <li>• Conservation easements (<b>L3</b>).</li> <li>• Deed restrictions (<b>L4</b>).</li> <li>• Sales that retain NFHCP measures (<b>L5</b>).</li> <li>• Limits to unrestricted land dispositions (<b>L6</b>).</li> <li>• Extension of NFHCP conservation commitments to acquired lands (<b>L7, L8</b>).</li> </ul>	None.	Deminimus (small, scattered parcels) land sales are restricted to 5 percent of the Project Area.
<b>Legacy and Restoration</b>				
State Regulations	None.	None.	None.	None.
Riparian Condition Survey—Assessment	None.	Conduct a riparian condition survey on all Key Migratory Rivers (see <b>Lg2</b> and <b>G2</b> ). For riparian areas not functioning properly, describe cause, condition, impact rating, and solution. Complete assessment by the end of Year 7 ( <b>Lg1</b> ).	None.	None.
Riparian Vegetation Restoration—Implementation	None.	Prepare restoration plan for impacted areas identified in <b>Lg1</b> in first 8 years and implement within the first 15 years of the Permit ( <b>Lg2</b> ).	None.	None.

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Riparian Vegetation Restoration—Monitoring	None.	Monitor and evaluate riparian/stream condition and fish habitat treated under <b>Lg2</b> to quantify benefits and costs of restoration ( <b>Lg3</b> ).	None.	None.
Engineered Fish Habitat Restoration	None.	Use guiding and ecoclassification to diagnose fish habitat needs and design restoration projects using large woody debris, boulders, or bank stabilization techniques ( <b>Lg4</b> ).	None.	None.
Irrigation Diversions	None.	Inventory irrigation diversions on Plum Creek land and develop a management plan by the end of Year 3 to mitigate the impacts. Implement plan throughout Permit period ( <b>Lg5</b> ).	None.	None.
Brook Trout Suppression Experiment	None.	Develop a proposal to conduct brook trout suppression in Gold Creek to determine ( <b>Lg6</b> ): <ul style="list-style-type: none"> <li>• Conservation effectiveness for bull trout.</li> <li>• Feasibility for wider use.</li> </ul>	None.	None.
State Fish and Game Enforcement Agreements	None.	Seek agreements with state fish and game agencies to increase and focus enforcement activities on violations that impact native fish, such as poaching and targeting listed fish by outfitters ( <b>Lg7</b> ).	None.	None.
Watershed Cooperation	None.	Participate as a cooperator and exchange information in multi-stakeholder watershed planning groups ( <b>Lg8</b> ).	Participate as a cooperator and exchange information in multi-stakeholder watershed planning groups in Tier 1 watersheds.	None.

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<b>Administration and Implementation</b>				
State Regulations	Conduct state BMP audits, and Forest Practices Act inspections.	Conduct state BMP audits, and Forest Practices Act inspections.	Conduct state BMP audits, and Forest Practices Act inspections.	Conduct state BMP audits, and Forest Practices Act inspections.
Field Implementation Manual	None.	Produce a field implementation manual for Plum Creek foresters within 3 months of Permit issue. The manual will include <b>(A1)</b> : <ul style="list-style-type: none"> <li>Working definitions.</li> <li>Prescription keys for consistent application.</li> </ul>	Produce a field implementation manual for Plum Creek foresters by April 2000. The manual will include: <ul style="list-style-type: none"> <li>Working definitions.</li> <li>Prescription keys for consistent application.</li> </ul>	None.
Forester and Contractor Training	None.	Conduct forester and contractor training within 4 months of Permit issue and every 2 years thereafter <b>(A2)</b> .	Conduct forester and contractor training as needed.	None.
Logger Certification and Training	None.	Certified training for contract loggers will be required for tree harvesting on Plum Creek land within 2 years of Permit issue, and for harvesting on other ownerships when logs are purchased by Plum Creek <b>(A3)</b> .	None.	None.
Conservation Plan Internal Audits	None.	Perform internal Plum Creek audits each of first 3 years of Permit with Services invited to participate <b>(A4)</b> .	Perform internal audits every 5 years to ensure implementation.	None.
Conservation Plan External Audits	None.	Contract for third-party audits of NFHCP measures every 5 years throughout the life of the Permit <b>(A5)</b> .	None.	Employ federal oversight to verify implementation of Simplified Prescriptions.

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Habitat Conservation Prescriptions Contained in the Alternatives<sup>1</sup>

<b>Commitments and Prescriptions</b>	<b>No Action</b>	<b>Plum Creek NFHCP</b>	<b>Internal Bull Trout Conservation Plan</b>	<b>Simplified Prescriptions</b>
HCP Metrics and Reporting	None.	<ul style="list-style-type: none"> <li>• Minor reporting annually on basic plan implementation metrics.</li> <li>• Major report every 5 years with monitoring results, documenting successes and improvement areas. Prepare summary report for public distribution (<b>A6</b>).</li> </ul>	None.	Report on HCP implementation and effectiveness to the Services annually for basic metrics and every 5 years for monitoring results.
<b>Adaptive Management and Monitoring</b>				
State Regulations	Implement new conservation measures as required by state and federal law.	Implement new conservation measures as required by state and federal law.	Implement new conservation measures as required by state and federal law.	Implement new conservation measures as required by state and federal law.
Core Adaptive Management Projects (CAMPs)	None.	Perform six studies with input from Services to evaluate: <ol style="list-style-type: none"> <li>1. Road BMPs (<b>AM1</b>).</li> <li>2. Riparian management (<b>AM1</b>).</li> <li>3. Temperature effects (<b>AM1</b>).</li> <li>4. Grazing BMPs (<b>AM1</b>).</li> <li>5. Effectiveness of riparian restoration along Key Migratory Rivers (see <b>Lg3</b>).</li> <li>6. Gold Creek Experimental Brook Trout Suppression Project (see <b>Lg6</b>).</li> </ol>	None.	None.
Adaptive Management; Commitment to Responsive Management	None.	Improve management practices using the NFHCP Implementation Framework through ( <b>AM2</b> ): <ul style="list-style-type: none"> <li>• Mandatory pre-defined management response.</li> <li>• Mandatory collaborative management response.</li> <li>• Collaborative management response.</li> </ul>	None.	Improve HCP by revising management practices according to results of compliance and effectiveness monitoring that maintain or improve the ability to meet biological goals.

**TABLE ES-3**  
Habitat Conservation Prescriptions Contained in the Alternatives<sup>1</sup>

<b>Commitments and Prescriptions</b>	<b>No Action</b>	<b>Plum Creek NFHCP</b>	<b>Internal Bull Trout Conservation Plan</b>	<b>Simplified Prescriptions</b>
Changed Circumstances	None.	Develop a site-specific plan for changed circumstances that can be reasonably planned for and as they occur for forest fires, floods, and landslides ( <b>AM3</b> ).	None.	Develop a site-specific plan for changed circumstances that can be reasonably planned for and as they occur for forest fires, floods, and landslides.
Native Fish Assemblages (NFA)	None.	Conduct watershed analyses and develop site-specific prescriptions with the Services in eight Planning Area watersheds designated as NFA ( <b>AM4</b> ).	None.	None.
Landslide Monitoring	None.	All new landslides will be monitored as they are discovered. Data will be collected and reported at 5-year intervals ( <b>AM5</b> ). Findings may be used to develop a Cooperative Management Response ( <b>AM2</b> ).	None.	None.
Designation of Additional Tier 1 Watersheds	None.	Up to 12 new Tier 1 watersheds may be designated for any and all Permit species during the term of the Permit. The Services and/or Plum Creek may nominate watersheds at every 5-year reporting cycle, with the necessary biological justification. Once designated, all Tier 1 prescriptions will be applied ( <b>AM6</b> ).	None.	None.

<sup>1</sup>All commitments and prescriptions apply to the entire NFHCP Project Area and for the lifetime of the Permit, unless stated otherwise.

<sup>2</sup>Stream type definitions for Montana, Idaho, and Washington are given in Appendices Rp1 and Rp2 of the NFHCP at the end of Chapter 3.

(Xn) Letter-Number combinations presented in bold refer to the numbered prescriptions in the NFHCP.