

Oregon Board of Forestry – Virtual Public Special Meeting

Tuesday, May 10, 2022

The meeting will be streamed live on the department’s YouTube channel. Written testimony may be submitted for all information items, before or up to two weeks after the meeting day to [boardofforestry@odf.oregon.gov](mailto:boardofforestry@odf.oregon.gov), and include the agenda item number with the submission.

**Link to view Board of Forestry Meeting available at**  
<https://www.youtube.com/c/OregonDepartmentofForestry>

Prior meetings’ audio and this meeting’s written material is available on the web [www.oregon.gov/odf/board](http://www.oregon.gov/odf/board).

**Action and Information**

- 1:00 – 1:15     **1. Welcome and Overview** ..... Chair Kelly, State Forester Mukumoto, Sylvia Ciborowski  
*Opening remarks*
- 1:15 – 2:00     **2. Presentation on Western Oregon State Forests Habitat Conservation Plan (HCP) Draft Environmental Impact Statement (DEIS)** ..... Deb Bartley, ICF and Sarah Reich, ECONorthwest  
*The National Environmental Policy Act (NEPA) Team will provide information to the Board on the Draft Environmental Impact Statement.*
- 2:00 – 2:10     Break
- 2:10 – 3:10     **3. Q&A: Opportunity for Board members to ask questions of the National Environmental Policy Act (NEPA) team and Federal Services** ..... NEPA Team and Federal Services  
*NOAA Fisheries: Kate Wells, Jeff Young  
USFWS: Paul Henson, Joe Zisa  
Facilitation of questions from Board members to the NEPA Team and Federal Services about the DEIS.*
- 3:10 – 3:25     Break
- 3:25 – 4:50     **4. Facilitated Conversation between Board of Forestry members and Forest Trust Land Advisory Committee (FTLAC) members** ..... Sylvia Ciborowski, Facilitator  
*Facilitated conversation between Board members and FTLAC members about the DEIS and Public Draft HCP. The FTLAC is a statutorily established committee that advises the Board on State Forests policy.*
- 4:50 – 5:00     **5. Closing Comments** ..... Chair Kelly and Board Members, Sylvia Ciborowski  
*Facilitator to summarize meeting’s action items and Chair Kelly to provide closing comments.*

The times listed on the agenda are approximate. At the discretion of the chair, the time and order of agenda items—including the addition of an afternoon break—may change to maintain meeting flow. The board will hear public testimony [\*excluding marked items] and engage in discussion before proceeding to the next item. \* A single asterisk preceding the item number marks a work session, and public testimony/comment will not be accepted.

**Reference Materials:**

- [Draft Environmental Impact Statement](https://media.fisheries.noaa.gov/2022-03/wosf-hcp-draft-eis-2022.pdf) (https://media.fisheries.noaa.gov/2022-03/wosf-hcp-draft-eis-2022.pdf)
- [Public Draft Habitat Conservation Plan](https://media.fisheries.noaa.gov/2022-03/wosf-hcp-feb-2022.pdf) (https://media.fisheries.noaa.gov/2022-03/wosf-hcp-feb-2022.pdf)
- [April 6 Virtual Public Meeting Recording](https://www.youtube.com/watch?v=Q_CZ7hi5jM0) (https://www.youtube.com/watch?v=Q\_CZ7hi5jM0)
- [Public Draft Habitat Conservation Plan Key Changes](https://www.oregon.gov/odf/board/documents/fmp-hcp/hcp-summary-of-key-changes.pdf) (https://www.oregon.gov/odf/board/documents/fmp-hcp/hcp-summary-of-key-changes.pdf)
- [Public Draft Habitat Conservation Plan Executive Summary](https://www.oregon.gov/odf/board/documents/fmp-hcp/hcp-executive-summary.pdf) (https://www.oregon.gov/odf/board/documents/fmp-hcp/hcp-executive-summary.pdf)

**BOARD WORK PLANS:** Board of Forestry (Board) Work Plans result from the board's identification of priority issues. Each item represents the commitment of time by the Board of Forestry and Department of Forestry staff that needs to be fully understood and appropriately planned. Board Work Plans form the basis for establishing Board of Forestry meeting agendas. The latest versions of these plans can be found on the Board's website at: <https://www.oregon.gov/odf/Board/Pages/AboutBOF.aspx>

**PUBLIC TESTIMONY:** The Board of Forestry places great value on information received from the public. The Board will only hold public testimony at the meeting for decision items. The Board accepts written comments on all agenda items except consent agenda and Work Session items [see explanation below]. Those wishing to testify or present information to the Board are encouraged to:

- Provide written summaries of lengthy, detailed information.
- Remember that the value of your comments is in the substance, not length.
- For coordinated comments to the Board, endorse rather than repeat the testimony of others.
- To ensure the Board will have an opportunity to review and consider your testimony before the meeting, please send comments no later than 72 hours prior to the meeting date. If submitted after this window of time the testimony will be entered into the public record but may not be viewed by the Board until after the meeting.
- For in-person meetings, sign in at the information table in the meeting room when you arrive. For virtual meetings, follow the signup instructions provided in the meeting agenda.

Written comments for public testimony provide a valuable reference and may be submitted before or up to two weeks after the meeting for consideration by the Board. Please submit a copy to [boardofforestry@odf.oregon.gov](mailto:boardofforestry@odf.oregon.gov), and written comments received will be distributed to the Board. Oral or written comments may be summarized, audio-recorded, and filed as a record. Audio files and video links of the Board's meetings are posted within one week after the meeting at <https://www.oregon.gov/odf/Board/Pages/BOFMeetings.aspx>

The Board cannot accept comments on consent agenda items or a topic for which a public hearing has been held and the comment period has closed.

**WORK SESSIONS:** Certain agenda topics may be marked with an asterisk indicating a "Work Session" item. Work Sessions provide the Board opportunity to receive information and/or make decisions after considering previous public comments and staff recommendations. No new public comment will be taken. However, the Board may choose to ask questions of the audience to clarify issues raised.

- During consideration of contested civil penalty cases, the Board will entertain oral argument only if Board members have questions relating to the information presented.
- Relating to the adoption of Oregon Administrative Rules: Under Oregon's Administrative Procedures Act, the Board can only consider those comments received by the established deadline as listed on the Notice of Rulemaking form. Additional input can only be accepted if the comment period is formally extended (ORS 183.335).

**GENERAL INFORMATION:** For regularly scheduled meetings, the Board's agenda is posted on the web at [www.oregonforestry.gov](http://www.oregonforestry.gov) two weeks prior to the meeting date. During that time, circumstances may dictate a revision to the agenda, either in the sequence of items to be addressed or in the time of day the item is to be presented. The Board will make every attempt to follow its published schedule and requests your indulgence when that is not possible.

To provide the broadest range of services, lead-time is needed to make the necessary arrangements. If special materials, services, or assistance is required, such as a sign language interpreter, assistive listening device, or large print material, please contact our Public Affairs Office at least three working days before the meeting via telephone at 503-945-7200 or fax at 503-945-7212.

Use of all tobacco products in state-owned buildings and on adjacent grounds is prohibited.

## **Welcome and Overview**

## STAFF REPORT

Agenda Item No.:	2
Work Plan:	State Forests Work Plan
Topic:	State Forests Management
Presentation Title:	State Forests HCP Draft Environmental Impact Statement
Date of Presentation:	May 10 <sup>th</sup> , 2022
Contact Information:	Kate Skinner, State Forests Division Chief (503) 815-7001 <a href="mailto:Kate.J.Skinner@Oregon.gov">Kate.J.Skinner@Oregon.gov</a> Cindy Kolomechuk, HCP Project Lead (503) 502-5599 <a href="mailto:Cindy.Kolomechuk@Oregon.gov">Cindy.Kolomechuk@Oregon.gov</a>

### CONTEXT

The Public Draft Habitat Conservation Plan (HCP) is a continuation of work at the direction of the Board to pursue programmatic solutions to Endangered Species Act (ESA) compliance and stability of harvest levels. The State Forests Division (Division) has had a Strategic Initiative for improvements to ESA compliance beginning in 2015, and the work to develop an HCP began in earnest with the application of a grant to support development of the HCP in March 2017. The Board directed the Division to move forward with the HCP project in November 2017. The Division has successfully implemented two programmatic ESA compliance approaches to-date.

- Safe Harbor Agreement for northern spotted owls on the Western Lane District associated with barred owl removal experiments, and
- Candidate Conservation Agreement with Assurances for Pacific fisher.

The HCP represents the largest effort yet, designed to provide long-term certainty associated with 17 species of fish and wildlife across all the lands that the Division manages west of the Cascades.

In October 2020, the Board of Forestry (Board) directed the Division to complete the National Environmental Policy Act (NEPA) process for a possible HCP for Western Oregon State Forests as a method to comply with the ESA, while allowing for operational certainty over a 70-year permit term. NOAA Fisheries – the NEPA Lead Agency – in coordination with the US Fish and Wildlife Service (USFWS) completed the first phase of the NEPA process (Public Scoping) in spring 2021. NOAA Fisheries and USFWS (Services) launched the second phase by publishing the Notice of Availability of the Draft Environmental Impact Statement (DEIS) and the Public Draft HCP in the *Federal Register*, dated March 18, 2022. The NEPA process must be completed within two years (i.e., by March 2023). The current timeline anticipates completion of the final EIS in January 2023, and Record of Decision in February 2023 (Attachment 1).

The purpose of the May 10<sup>th</sup> Board Meeting is to provide an opportunity for the Board to receive more information on the DEIS and work directly with the Services to get clarity on the intent, methodology, and outcomes of the analyses presented in the DEIS. The meeting also includes a facilitated discussion between the Forest Trust Land Advisory Committee

(FTLAC) and the Board. Engagement with the FTLAC is intended to recognize the distinct relationship between the Forest Trust Land Counties and Board of Forestry Lands, as well as provide a forum to share their perspectives and feedback with the Board. The Division also invites the public to provide written testimony to the Board on this topic. Please note that this testimony is directed to the Board and is separate from the NEPA public comment period described below, which is comment submitted directly to the federal Services.

## **BACKGROUND AND ANALYSIS**

The National Environmental Policy Act requires that federal agencies consider the potential effects of their actions on the human environment. The DEIS evaluates the broad environmental consequences of the Services' potential issuance of incidental take permits (ITPs) associated with the Western Oregon State Forests HCP. The permits, if issued, would authorize take of the covered species that may occur incidental to ODF's otherwise legal forest management activities. The DEIS presents effects of the proposed HCP and four alternatives on geology and soils, water resources, vegetation, fish and wildlife, air quality, aesthetics, recreation, cultural resources, Tribal resources, socioeconomics, and environmental justice, and greenhouse gas emissions and carbon storage.

This federal action launched a 60-day public comment period (March 18 to May 17, 2022) for the DEIS and the Public Draft HCP. An extension to the comment period was requested and approved by the Services with a final deadline now set for June 1, 2022. A public hearing was held on April 6, 2022, to provide an overview of the HCP and the DEIS, and to receive public comment. All public comment on the draft EIS and the Public Draft HCP is being accepted on [NOAA Fisheries' website](#). The complete DEIS and Public Draft HCP are also available on this website. The Services and ODF will review and provide responses to all public comment.

### **Draft Environmental Impact Statement Summary**

The DEIS is an assessment of the environmental effects of the proposed action and a reasonable range of alternatives, developed from the Services' Public Scoping process. The Final EIS will include responses to comments received during the review period for the Draft EIS; those responses can come in the form of updates to the document itself as well as direct responses to the comments. In addition to public comment, the Services will receive technical feedback on the DEIS from the Division, specifically related to the presentation of the modelling methodology, potential data improvements, and clarity of the assumptions used for the DEIS. Complete summaries of the DEIS and the Public Draft Western Oregon HCP are provided in Attachments 2 and 3, respectively.

The DEIS evaluated potential economic, environmental, and social outcomes from the Proposed Action (HCP) and the following 4 Alternatives:

- Alternative 1: No Action (Current FMP under take avoidance policies)
- Alternative 2: Proposed Action (HCP)
- Alternative 3: Increased Conservation (HCP with greater protections for aquatic species)
- Alternative 4: Reduced Permit Term (HCP of 50 years rather than 70 years)

- Alternative 5: Increased Harvest (HCP with 10% reduction of, and increased harvest within, Habitat Conservation Areas)

When considering the outcomes of DEIS, it is important to understand the underpinnings of the analysis. The modeling used for the Comparative Analysis presented to the Board in October 2020 was used for Alternatives 1 (No Action Alternative) and 2 (Proposed Action). The contractor (ICF) developed additional modeling for Alternatives 3 (increased conservation) and 5 (increased timber harvest). Outcomes for Alternative 4 (decreased permit term) were simply extracted from the first 50 years of modeling for Alternative 2.

The DEIS estimates that all alternatives would have higher harvest levels than the No Action Alternative. The amount of carbon sequestered in the forest ecosystem varies among the alternatives, but sequestration is expected to exceed emissions under all of the alternatives. It also projects that Alternatives 1 and 3 provide more conservation value than the other Alternatives over the permit period. Harvest levels and habitat outcomes associated with Alternative 1 are based on assumed future management constraints from increased threatened and endangered species listings. The No Action Alternative has fewer monitoring and adaptive management requirements than the other alternatives. This, coupled with the survey and manage approach to ESA compliance, creates greater uncertainty for outcomes such as habitat quality and harvest levels over time than all the other alternatives. This also results in greater uncertainty regarding the ability of the Department to adequately fund management of state forestlands, as the State Forests Division is funded almost entirely from a portion of timber harvest revenues.

The DEIS is a high-level assessment of potential impacts to the overall environment; reported outcomes are not precise predictions or quantifications of “take<sup>1</sup>” for the species covered under the HCP. Concurrent to the Final EIS, each of the Services will be developing a Biological Opinion for species under their respective jurisdictions. Each Biological Opinion will quantify the incidental take associated with the HCP, and whether the action will jeopardize the survival and recovery of all listed species. The Biological Opinions are critical in the Services’ decision to issue Incidental Take Permits (ITP). It is important to note that the proposed action is not required to exceed the conservation outcomes of all alternatives to meet permit issuance criteria. The purpose of the federal action to issue an ITP associated with the HCP is to provide relief to the applicant for take of threatened and endangered species with assurance that the covered activities will not jeopardize continued existence of the covered species.

The Division has worked collaboratively with the Services and State agencies (Department of Fish and Wildlife, Department of Environmental Quality, and Department of State Lands) for over five years to integrate a diversity of technical and policy expertise to develop the HCP conservation actions designed to protect covered species. In addition to

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<sup>1</sup> Take is defined as, “to harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 U.S. Code [USC] 1532). Harm is further defined as including “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering” (50 Code of Federal Regulations [CFR] 17.3).

this collaborative process, the Division has implemented a transparent and inclusive public engagement process to integrate a diversity of perspectives in the HCP. Because of this rigorous and inclusive process, the Division is confident that the HCP is a sound approach to ESA compliance, and provides an appropriate blend of the environmental, economic, and social outcomes articulated in the Greatest Permanent Value mandate. The HCP provides high-quality habitat and durable conservation commitments for the covered species and ensures operational certainty and stability in harvest levels over the 70-year permit term.

### **NEPA Final EIS**

The EIS will be updated to reflect any potential changes to the Proposed Action (draft HCP), as directed by the Board, and in consultation with the Services. The final EIS will include a description of the public review and comment period and a summary of updates between draft and final EIS. The Notice of Availability of the final EIS and final HCP will be published in the *Federal Register*. Publication launches a 30-day waiting period during which comments may be submitted on the final EIS. These comments will be reviewed by the Services, but no response is required. The agency decision document (Record of Decision) will be published after this 30-day period and prior to the permit decision. The Division will present the Record of Decision, the final EIS, and the Incidental Take Permits to the Board for consideration in April 2023.

### **RECOMMENDATION**

Information only.

### **NEXT STEPS**

Over the next several months, the Division will:

- Work with NOAA Fisheries and the USFWS to respond to public comment on the Public Draft HCP and DEIS.
- Provide an HCP/NEPA update in September 2022<sup>2</sup>, summarizing public comment on the Public Draft HCP and the DEIS.
- Provide an update on the Draft FMP to the Board in November 2022.
- Complete the NEPA process in Jan 2023.
- Continue engaging with our state and federal partner agencies, as well as, the county partners, Tribes, interested stakeholders and members of the public on the HCP and draft FMP and Implementation Plan development projects.

### **ATTACHMENTS**

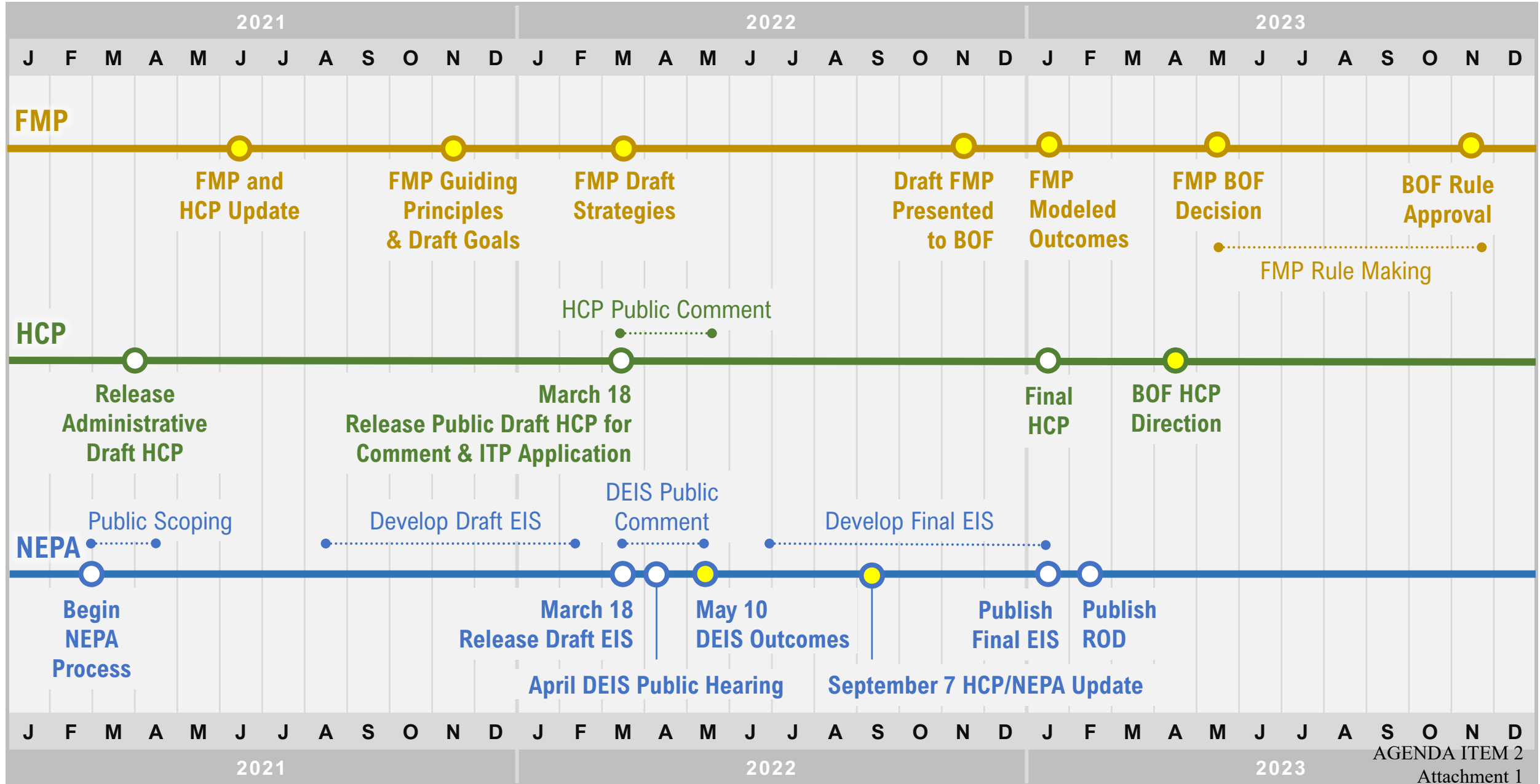
1. Working FMP – HCP – NEPA Timeline
2. Draft Environmental Impact Statement Executive Summary
3. Public Draft HCP Executive Summary

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<sup>2</sup> The Board approved workplan (March 2022) contains an error indicating in the narrative this update would occur in June 2022. Attachment 1 to this staff report and the timeline matrix in the work plan correctly indicate this update for September 2022.

# Working FMP – HCP – NEPA Timeline

● BOF Presentation / Decision





## ES.1 Introduction

The Oregon Department of Forestry (ODF) prepared the Western Oregon State Forests Habitat Conservation Plan (HCP) to support its applications for incidental take permits (ITPs) from the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) (collectively, the Services). The ITPs would authorize take of endangered and threatened species resulting from ODF's forest and recreation management activities on state-owned and managed forestlands in accordance with the requirements of the Endangered Species Act (ESA). Section 9 of the ESA and Federal regulations prohibit the taking of a species listed as endangered or threatened. The ESA defines "take" to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. NMFS and FWS may issue permits, under limited circumstances to take listed species incidental to, and not the purpose of, otherwise lawful activities. Section 10(a)(1)(B) of the ESA and implementing regulations provide for authorizing incidental take of listed species.

The proposed issuance of an ITP is considered a federal action under the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321 et seq.). This environmental impact statement (EIS) was prepared to meet the Services' NEPA requirements. NMFS is the federal lead agency responsible for preparing the EIS, and FWS is a cooperating agency.

## ES.2 Proposed Federal Action and Decisions to be Made

The Services are reviewing the ITP applications, received on February 9, 2022. The Services will base their decisions on the statutory and regulatory criteria of the ESA. Their decisions will also be informed by the data, analyses, and findings in this EIS and public comments received on the EIS and HCP. The Services will independently document their determinations in an ESA Section 10 findings document, ESA Section 7 biological opinion, and NEPA Record of Decision developed at the conclusion of the ESA and NEPA compliance processes. If the Services find that all requirements for issuance of the ITPs are met, they will issue the requested permits, subject to terms and conditions deemed necessary or appropriate to carry out the purposes of ESA Section 10.

## ES.3 Purpose and Need for Federal Action

The purpose of ITP(s) issuance to ODF is to protect the covered species and their habitat while allowing the applicant to manage the permit area in compliance with the ESA. The need for the federal action is to respond to the applicant's request for ITPs for the covered species and covered activities as described in the HCP.

## ES.4 Public Involvement

NMFS initiated the public scoping process for this EIS by publishing the Notice of Intent (NOI) to prepare an EIS in the *Federal Register* (FR) on March 8, 2021 (86 FR 13337). The NOI can be accessed at <https://www.fisheries.noaa.gov/action/notice-intent-prepare-environmental-impact-statement-western-oregon-state-forests-habitat>. The NOI announced NMFS' intent to prepare an EIS, provided information on the public scoping meeting, and requested comments from all interested parties on the scope of issues and alternatives to consider in preparing the EIS. The original comment period was from March 8, 2021, to April 7, 2021, which NMFS extended to April 21, 2021, in response to commenter requests (86 FR 18268). NMFS hosted a virtual scoping meeting on March 31, 2021. The *Scoping Report* (Appendix 1-C) summarizes comments received during the scoping period, which NMFS considered when developing this EIS.

The Draft EIS and HCP are concurrently released for public review. All comments must be submitted within the published comment period, which will close 60 days after the U.S. Environmental Protection Agency publishes a Notice of Availability of the Draft EIS in the FR. NMFS will consider all comments in preparing the Final EIS. A virtual public meeting will be held during the comment period, and attendees may give oral comments at this meeting. Written comments submitted via [www.regulations.gov](http://www.regulations.gov) and oral comments received at the virtual public meeting will be considered and addressed in the Final EIS.

## ES.5 Alternatives

NMFS analyzed five alternatives in detail in the Draft EIS, including the no action alternative and the proposed action (Western Oregon State Forests HCP). All alternatives include the forest and recreation management activities described in Section 2.1.2.2, *Covered Activities*. Chapter 2 and Appendix 2-A describe additional alternatives that NMFS considered but eliminated from detailed study.

### ES.5.1 Alternative 1: No Action

Under the no action alternative, the applicant would not request and the Services would not issue ITPs for the proposed covered activities (i.e., forest and recreation management activities) described in Section 2.1.2.2. Current management practices would continue to guide management of ODF lands and the applicant would continue to conduct these activities in the absence of the HCP. ODF would manage riparian areas using the strategy delineated in the Northwest and Southwest Oregon State FMPs (ODF 2010a, 2010b) or in the most current FMP. These plans include riparian management areas (RMAs) based on stream classification and apply wider RMAs in areas designated as aquatic anchors, which are intended to provide additional riparian protections. ODF would manage lands outside of RMAs using the strategy delineated in its 2010 FMPs, which includes a structure-based management approach intended to develop a mosaic of stand types that shifts across the landscape. Species-related harvest constraints are based on the avoidance of sites occupied by listed species, specifically marbled murrelets and northern spotted owls. Harvest is not permitted in areas occupied by listed species but can occur after an area becomes unoccupied. No additional conservation measures would be implemented beyond what is required by the current Northwest and Southwest Oregon State FMPs and Oregon Forest Practices Act (FPA) (Oregon Revised Statutes [ORS] 527 and Oregon Administrative Rules [OAR] 629).

ODF's forest and recreation management activities would continue to be subject to the Endangered Species Act (ESA). ODF currently manages state forests consistent with their FMPs with an intent to avoid and minimize the risk of take of any listed species (ODF 2010a, 2010b) and would continue to do so under the no action alternative.

The no action alternative is the baseline against which other alternatives are compared in the analysis of environmental consequences.

## **ES.5.2          Alternative 2: Proposed Action**

Under the proposed action, the Services would approve the HCP and issue ITPs with 70-year permit terms to the applicant for incidental take of covered species from covered activities in the permit area. The proposed action is described in more detail in Section 2.1, *Alternatives Analyzed in Detail*.

### **Covered Activities**

The covered activities are the forest and recreation management activities, as well as the activities needed to carry out the conservation strategy, projects, and activities for which ODF is requesting take authorization and include the following:

- Timber harvest activities
- Reforestation and young stand management
- Road system management activities
- Minor forest product harvest
- Quarries
- Fire management
- Recreation infrastructure and maintenance
- Conservation strategy implementation activities

### **Covered Species**

The covered species include 17 species as listed in Table ES-1.

**Table ES-1. Covered Species in the Western Oregon State Forests HCP**

<b>Species</b>
<b>NMFS</b>
Oregon Coast coho ( <i>Oncorhynchus kisutch</i> )
Oregon Coast spring Chinook ( <i>O. tshawytscha</i> )
Southern Oregon/Northern California Coast coho ( <i>O. kisutch</i> )
Southern Oregon/Northern California Coast spring Chinook ( <i>O. tshawytscha</i> )
Lower Columbia River coho ( <i>O. kisutch</i> )
Upper Willamette River spring Chinook ( <i>O. tshawytscha</i> )
Upper Willamette River steelhead ( <i>O. mykiss</i> )
Columbia River chum ( <i>O. keta</i> )
Lower Columbia River Chinook ( <i>O. tshawytscha</i> )
Eulachon ( <i>Thaleichthys pacificus</i> )
<b>FWS</b>
Northern spotted owl ( <i>Strix occidentalis</i> )
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )
Oregon slender salamander ( <i>Batrachoseps wrighti</i> )
Columbia torrent salamander ( <i>Rhyacotriton kezeri</i> )
Cascade torrent salamander ( <i>R. cascadae</i> )
Coastal marten ( <i>Martes caurina</i> )
Red tree vole ( <i>Arborimus longicaudus</i> )

NMFS = National Marine Fisheries Service; FWS = U.S. Fish and Wildlife Service

## Conservation Strategy

The HCP's conservation strategy consists of a series of conservation actions that ODF would implement to achieve the biological goals and objectives for the covered species and to avoid, minimize, and mitigate impacts of take on listed species. The conservation strategy includes the following actions:

- Conservation Action 1, Establish Riparian Conservation Areas, establishes riparian conservation areas (RCAs) around streams, which would be intended to increase habitat complexity, channel stability, and channel form and function by maintaining or increasing large wood and gravel recruitment (including requiring ODF to leave trees in areas identified as high hazard for landslide initiation), stream shading, nutrient input, and streambank integrity.
- Conservation Action 2, Riparian Equipment Restriction Zones, limits covered activities near streams.
- Conservation Action 3, Stream Enhancement, commits ODF to completing in-stream improvement projects.
- Conservation Action 4, Remove or Modify Artificial Fish-Passage Barriers, commits ODF to repairing or replacing culverts that are barriers to fish passage.
- Conservation Action 5, Standards for Road Improvement and Vacating, sets standards for prioritizing and selecting road projects.

- Conservation Action 6, Establish Habitat Conservation Areas, establishes habitat conservation areas (HCAs) intended to support the persistence of northern spotted owl, marbled murrelet, red tree vole, Oregon slender salamander, and coastal marten by conserving, maintaining, and enhancing habitat in and adjacent to existing occupied habitat, as well as to increasing overall habitat values for covered species at the landscape level.
- Conservation Action 7, Manage Habitat Conservation Areas, limits and restricts management activities within HCAs.
- Conservation Action 8, Conservation Actions Outside Habitat Conservation Areas and Riparian Conservation Areas, commits ODF to management standards for areas outside of HCAs and RCAs, including landscape-wide requirements for dispersal habitat for northern spotted owl, legacy tree retention, and stand-level structure goals.
- Conservation Action 9, Strategic Terrestrial Species Conservation Actions, commits ODF to conducting certain strategic terrestrial conservation actions.
- Conservation Action 10, Operational Restrictions to Minimize Effects on Terrestrial Species, sets species-specific restrictions intended to minimize effects of the covered activities to covered species.
- Conservation Action 11, Road Construction and Management Measures, commits ODF to applying techniques and guidelines intended to minimize effects on covered species by reducing erosion and stream sedimentation during road construction and maintenance.
- Conservation Action 12, Restrictions on Recreational Facilities, limit development of new recreational facilities in HCAs and RCAs.

### **ES.5.3 Alternative 3: Increased Conservation**

Under Alternative 3, the HCP would include the same covered activities, covered species, permit term, and monitoring and adaptive management program as the proposed action but Conservation Actions 1 and 5 would be modified to increase conservation. Under Conservation Action 1, RCA widths on certain stream types and protections related to landslide initiation sites would be expanded. Conservation Action 5 would include increased commitments related to prioritizing and selecting road projects.

### **ES.5.4 Alternative 4: Reduced Permit Term**

Under Alternative 4, the HCP would include the same covered activities, covered species, conservation strategy, and monitoring and adaptive management program as the proposed action, but would have a shorter permit term, 50 instead of 70 years.

### **ES.5.5 Alternative 5: Increased Timber Harvest**

Under Alternative 5, the HCP would include the same covered activities, covered species, permit term, and monitoring and adaptive management program as the proposed action but Conservation Actions 6 and 7 would be modified to increase harvest. Conservation Action 6 would include reduced acreage of HCAs. Conservation Action 7 would increase allowable harvest of Swiss needle cast stands in HCAs.

## **ES.6 Summary of Impact Analysis**

Table ES-2 summarizes the impacts that could occur under the proposed action and alternatives for all environmental issues analyzed in the EIS. Chapter 3 provides a detailed analysis of potential effects.

**Table ES-2. Summary of Potential Impacts**

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<b>Geology and Soils</b>		
<p>Timber harvest and road management could increase frequency of shallow-rapid landslide and debris flow/debris torrent, which have associated adverse effects (stream channel scour and delivery of fine sediment to streams) and beneficial effects (large wood recruitment and coarse sediment delivery to streams) on stream geomorphology and soil productivity. Riparian protections would encourage recruitment of large wood and coarse sediment to streams in the event of shallow-rapid landslide. In addition, use of heavy equipment near streams that removes vegetation and compacts soils would increase the delivery of fine sediment to streams. Continued implementation of the current practices would reduce these adverse effects and increase beneficial effects.</p>	<p>Types of effects would be the same as described for the no action alternative. Modeled increases in harvest and road activities could further increase the frequency of shallow-rapid landslide and associated events in the permit area. Expanded riparian protections would decrease adverse effects and increase beneficial effects on stream geomorphology in the event of landslide compared to the no action alternative.</p>	<p><b>Alternative 3:</b> Effects would be the same as described for the proposed action, except that further expanded riparian protections would further decrease adverse effects and increase beneficial effects on stream geomorphology in the event of landslide.</p> <p><b>Alternative 4:</b> Effects would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects would be the same as described for the proposed action, except that further increased harvest could result in greater potential to increase frequency of shallow-rapid landslide.</p>
<b>Water Resources</b>		
<i>Surface Water: Water Supply</i>		
<p>Timber harvest, young stand management, and road construction would result in increases in water yield at the local level. These effects of harvest would occur primarily in the first 15 years following harvest. The modeled increase in forest cover across the study area at three intervals over the analysis period showed slight average decreases in water supply, with varying localized effects depending on location and activity level.</p>	<p>Covered activities would affect water supply as described for the no action alternative. Because the timing and location of activities would differ from the no action alternative, localized effects would differ accordingly.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be nearly the same as the proposed action.</p>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<i>Surface Water: Peak Flows and Channel Condition</i>		
<p>Based on modeling, harvest is not expected to increase peak flows at the subwatershed scale. However, in the absence of restrictions on level of harvest per subwatershed, adverse effects could occur at this scale. Where stream reaches drain areas with significant forest cover loss from harvest, road construction, and other activities, peak flows would increase and channel structure would be adversely affected at the local scale.</p> <p>Riparian buffers would be expected to increase wood recruitment to streams over the analysis period, mitigating some adverse effects.</p>	<p>As with the no action alternative, modeled harvest is not expected to increase peak flows at the subwatershed scale, but the potential for adverse effects would remain in the absence of restrictions on level of harvest per subwatershed. Modeled increases in harvest and road construction would result in increases in adverse effects at the local scale, described for the no action alternative. Expanded riparian protection under the proposed action would further mitigate some adverse effects.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that expanded riparian protections would further mitigate some adverse effects.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action.</p>
<i>Surface Water: Low Flows</i>		
<p>Timber harvest may reduce low flows at the local stream scale, but because the change would be small relative to the study area and offset by effects of young and old growth, effects are not expected at the subwatershed scale. Road construction and controlled burns would increase low flows, while quarry development, road vacating, and water drafting would decrease low flows. Riparian buffers temper reductions in low summer flows.</p>	<p>Types of effects would be the same as described for the no action alternative. Modeled changes in stand distribution would result in increased reductions in low flows compared to the no action alternative but expanded riparian buffers would better mitigate these effects.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action but adverse effects would be greater (lower summer low flows) due to increased harvest.</p>
<i>Surface Water: Water Quality</i>		
<p>Timber harvest and stand management would increase stream temperature, sedimentation, and turbidity. Riparian buffers would reduce some of these adverse effects.</p> <p>Road construction and use would increase sedimentation, turbidity, and other contaminants; new roads near water bodies could increase public access and related</p>	<p>Types of effects would be the same as described for the no action alternative. Modeled increases in harvest compared to the no action alternative would result in greater potential adverse impacts on streams; however, expanded riparian buffers would further minimize adverse effects. Limits on salvage harvest in</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that expanded riparian protections and more stringent road repair and vacating measures would further reduce adverse effects.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as</p>



<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>recreation activity impacts. Road closure and vacating would reduce some of these effects. Controlled burns would temporarily increase stream temperature, sedimentation, turbidity, pH levels, and other contaminants. Quarries can increase turbidity, sedimentation, oil and grease, mineral concentration, and pH of surface water.</p> <p>Water drafting would increase water temperature.</p> <p>The construction of recreation infrastructure could increase sediment delivery to streams, increase water temperature, and increase fecal bacteria.</p> <p>Stream enhancement and barrier removal could temporarily decrease water quality but result in long-term improvements.</p> <p>Maintenance activities would have a beneficial effect on water quality by repairing drainage features and addressing septic system issues but would have an adverse effect if herbicides or pesticides are used.</p> <p>Implementation of BMPs in compliance with CWA and state regulations would minimize and avoid water quality effects from quarries, water drafting, recreation infrastructure, and stream enhancement and barrier removal.</p>	<p>RCAs and HCAs would reduce associated effects compared to the no action alternative.</p> <p>The modeled increase in road construction under the proposed action would increase associated effects compared to the no action alternative, but increased equipment restriction zones would further mitigate these effects.</p> <p>Limitations on recreation infrastructure in RCAs would reduce associated effects compared to the no action alternative.</p> <p>Compliance with existing regulations would minimize and avoid water quality effects described for the no action alternative.</p>	<p>described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action; however, increased harvest would result in greater potential adverse effects on streams.</p>
<i>Groundwater</i>	<p>Types of effects would be the same as the no action alternative. However, lower average tree age and a larger road network compared to the no action alternative could reduce groundwater recharge compared to the no action alternative, while expanded riparian protections would increase groundwater recharge potential in certain locations.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that further expanded riparian protections and additional road system management standards could further increase groundwater recharge.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as</p>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>of management activities. Construction activities and some recreation infrastructure would pose some risk to groundwater quality; these effects would be minimized and mitigated through compliance with existing regulations.</p>		<p>described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that further increased harvest activity would further decrease groundwater recharge potential and increase the potential for groundwater contamination.</p>
<i>Flood Hazard</i>		
<p>Timber harvest, young stand management, controlled burns, and road construction could increase flood hazard by decreasing floodwater storage or conveyance capacity, redirecting floodwaters, increasing flood flow velocity, erosion and sedimentation potential. Road maintenance, road drainage repair, and closing or vacating roads in floodplains could reduce flood hazard by improving drainage and infiltration capacity, increasing floodwater storage capacity, and decreasing flood velocity.</p>	<p>Types of effects would be the same as described for the no action alternative. Modeled increase in harvest and road construction but could further increase flood hazard compared to the no action alternative. However, expanded riparian protections and commitments to road best management practices would better mitigate flood hazards under the proposed action.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action except that further expanded riparian protections and additional road system management requirements would reduce the magnitude of effects of flood hazards compared to the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p>
<b>Vegetation</b>		
<i>Forest Structure and Type</i>		
<p>Modeled harvest and reforestation would change forest structure and type under the no action alternative over the analysis period in the following ways:</p> <ul style="list-style-type: none"> <li>• Greater average tree age and trunk diameter.</li> <li>• Greater understory complexity in late-seral forests</li> <li>• Less mid-seral forest and more late-seral forest.</li> </ul>	<p>Modeled harvest and reforestation under the proposed action shows the following differences in changes in forest structure and type compared to the no action alternative:</p> <ul style="list-style-type: none"> <li>• Age of trees harvested would be older on average over the permit term</li> <li>• More mid-seral forest and a less in late-seral forest</li> </ul>	<p><b>Alternative 3:</b> Forest structure and type would be the same as the proposed action, with the following exceptions:</p> <ul style="list-style-type: none"> <li>• In riparian areas, more hardwood stands, higher average tree age, more green tree retention, and more understory complexity than under the proposed action</li> </ul>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<ul style="list-style-type: none"> <li>• Lower percent of Douglas-fir and hardwood stands and higher percent of western hemlock stands. In riparian areas, dominant forest types would remain conifer, mixed conifer, or hardwood forest</li> </ul> <p>Salvage following disturbance events could alter forest structure and type, likely reducing understory complexity, but specific effects are uncertain. Prescribed burns would result in nutrient release, fuels reduction, a more heterogeneous forest structure, and decreased understory structure.</p>	<ul style="list-style-type: none"> <li>• Higher percent of western hemlock stands and lower percent of mixed conifer stands</li> <li>• In riparian areas, increased hardwood stands, tree age, green tree retention, and understory complexity</li> </ul> <p>With restrictions on salvage harvest in HCAs and RCAs under the proposed action, less overall salvage harvest would occur, resulting in more standing dead matter, more understory organic matter, and more structural complexity. The potential for changes to forest structure and type would remain in areas outside of the RCAs and HCAs.</p>	<ul style="list-style-type: none"> <li>• Slightly less mid-seral forests and slightly more late-seral forest than the proposed action</li> <li>• Higher percent of mixed conifer and hardwood stands and slightly lower percent of Douglas-fir and Western hemlock stands than the proposed action</li> </ul> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Forest structure and type would be the same as the proposed action, with the following exceptions:</p> <ul style="list-style-type: none"> <li>• Lower average tree age and less structurally developed forest stands throughout the permit area</li> <li>• Less mid-seral forest</li> <li>• Less late-seral forests</li> <li>• More western hemlock stands</li> </ul>
<i>Permanent Removal of Vegetation</i>		
<p>Construction of roads, recreational infrastructure, and quarries would result in permanent removal of vegetation.</p>	<p>The modeled increase in road construction could result in increased vegetation removal while increased RCAs could reduce the removal of vegetation near streams compared to the no action alternative.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but further increased RCAs could further reduce removal of vegetation near streams.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p>

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<i>Invasives</i>		
Ground disturbance could allow noxious weeds to establish in the study area but would be minimized using best management practices.	Based on modeling, ground disturbance would increase under the proposed action, which could result in increased potential for spread of noxious weeds compared to the no action alternative. This impact would be minimized using best management practices.	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p> <p><b>Alternative 5:</b> Ground disturbance would increase under Alternative 5 compared to the proposed action and no action alternative, which could result in increased potential for spread of noxious weeds. This impact would be minimized using best management practices.</p>
<i>Wetland Vegetation</i>		
Timber harvest, salvage harvest, and prescribed burns in wetlands would reduce wetland function. Based on modeling, clearcut harvest and thinning would affect an annual average of 48 acres of documented wetlands over the analysis period. Salvage harvest could affect additional areas depending on the future disturbance. Effects of harvest and thinning on wetlands would be minimized through compliance with existing regulations and management practices.	Types of effects would be the same as described for the no action alternative. Based on modeling, clearcut harvest and thinning would affect an annual average of 88 acres of documented wetlands over the analysis period. Restrictions on salvage harvest in HCAs and RCAs would reduce potential for effects in these areas.	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p>
<i>Special-Status Plant Species</i>		
Forest management activities have the potential to affect special-status plant species in the permit area through habitat degradation and removal. Best management practices would minimize the loss of special-status plant species.	Same as the no action alternative.	

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<b>Fish and Wildlife</b>		
<i>Covered Salmonids</i>		
<p>Timber harvest, road construction and use, construction and operation of quarries and auxiliary facilities, water drafting, and recreation infrastructure development and maintenance would reduce the quality of salmonid habitat in the study area through effects on wood recruitment, sedimentation, stream temperature, peak and low flows, and habitat complexity, quantity, and connectivity. Timber harvest and equipment restrictions in riparian areas (RMAs), road vacating, and culvert removals would contribute to improved habitat quality for covered salmonids.</p>	<p>Types of effects would be the same as described for the no action alternative. Modeled increases in timber harvest and related activities (reforestation, road construction activities) compared to the no action alternative, would increase the effects of these activities. Wider riparian buffers (RCAs) and additional restrictions near streams would improve overall riparian health and reduce adverse effects from covered activities compared to the no action alternative. Commitments to stream enhancement and fish passage barrier removal would increase the likelihood of these projects and their beneficial effects on habitat quality and quantity. Monitoring and adaptive management commitments for fish and aquatic habitat as described for under the proposed action would increase beneficial effects for covered salmonids.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that expanded riparian protections and additional road vacating requirements would further improve habitat quality for covered salmonids.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that adverse effects from timber harvest would increase.</p>
<i>Eulachon (covered)</i>		
<p>Effects of forest and recreation management activities under the no action alternative would be the same as described for covered salmonids and would adversely affect eulachon habitat. Restrictions on these activities and riparian protections would reduce these effects, as described for covered salmonids.</p>	<p>Modeled increases in harvest and related activities would increase effects compared to the no action alternative. Wider riparian buffers (RCAs) and additional restrictions near streams would improve overall riparian health and reduce adverse effects from covered activities compared to the no action alternative. Commitments to stream enhancement and fish passage barrier removal would increase the likelihood of these projects and their beneficial effects on habitat quality and quantity. Monitoring and adaptive management commitments for fish and aquatic habitat would increase beneficial effects for eulachon.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but expanded riparian protections and additional road system management requirements would further increase beneficial effects to habitat.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that</p>

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<i>Torrent Salamanders (covered)</i>		
<p>Timber harvest, road construction and use, construction and operation of quarries and auxiliary facilities, water drafting, and recreation infrastructure development and maintenance would reduce the quality of torrent salamander habitat in the study area through effects on wood recruitment, sedimentation, stream temperature, peak and low flows, and habitat complexity, quantity, and connectivity. These effects would be greatest in habitat with narrow or nonexistent riparian buffers (RMAs).</p> <p>Timber harvest and other activities could directly harm torrent salamanders through injury or mortality.</p> <p>Road construction, use, and maintenance would reduce habitat connectivity.</p> <p>Harvest and equipment restrictions in riparian areas (RMAs), road vacating, and culvert removals would reduce adverse effects on torrent salamanders.</p>	<p>Types of effects would be the same as described for the no action alternative. Modeled increases in timber harvest and related activities would increase adverse effects of these activities compared to the no action alternative.</p> <p>Wider riparian buffers (RCAs) and additional restrictions near streams would reduce adverse effects from covered activities compared to the no action alternative, but adverse effects would remain in seasonal, non-fish bearing streams that are not high energy or debris flow tracks. Monitoring and adaptive management plan for torrent salamanders would increase knowledge of torrent salamanders occurring in perennial streams and would increase beneficial effects on torrent salamanders.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that expanded riparian protections would increase beneficial effects and reduce some adverse effects on habitat quality compared to the proposed action and additional road system management requirements would increase overland dispersal capacity for torrent salamanders.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that adverse effects from timber harvest would increase.</p>
<i>Noncovered Fish Species</i>		
<p>Effects on noncovered fish species would be similar to the effects described above for covered salmonids and eulachon; habitat quality would be reduced for a range of non-covered, native fish.</p>	<p>Modeled increases in activity levels would result in increased effects, while expanded riparian and aquatic protections would further minimize and mitigate effects compared to the no action alternative.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that further expanded riparian protections and additional road system management requirements would reduce adverse effects.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p>

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<i>Noncovered Stream-Dependent Wildlife</i>		
<p>Effects on noncovered stream-dependent wildlife species that rely on fishless areas would be similar to the effects described above for torrent salamanders. Effects on noncovered stream-dependent wildlife species that may or may not coexist with fish would be similar to the effects described for covered salmonids and eulachon. The no action alternative would adversely affect species that rely more on fishless streams.</p>	<p>Effects on noncovered stream-dependent wildlife species under the proposed action that rely on fishless areas would be similar to those described above for torrent salamanders. Effects on noncovered stream-dependent wildlife species that may or may not coexist with fish would be similar to those described for covered salmonids and eulachon. Adverse effects would be reduced compared to the no action alternative in all but small, fishless seasonal streams that are not high energy or debris flow tracks.</p>	<p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action but effects related to harvest would increase.</p> <p><b>Alternative 3:</b> Effects compared to the no action alternative would be similar to those described for the proposed action, except that further-expanded riparian buffers and more stringent road-vacating requirements would increase beneficial effects.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action except that adverse effects related to harvest would increase with increased acreage of harvest.</p>
<i>Oregon Slender Salamander (covered)</i>		
<p>Activities leading to injury or mortality of Oregon slender salamander would be prohibited when Oregon slender salamander becomes federally listed. Timber harvest, including salvage harvest, would modify Oregon slender salamander habitat and could reduce survival. Total modeled habitat decreases over the analysis period but highly suitable habitat increases. Assured habitat connectivity would be limited to riparian corridors. Road construction and quarry and recreational development could cause inadvertent direct injury or mortality and would result in potential habitat removal or modification. Avoidance of occupied habitat would shift if species distribution shifted following disturbance, but</p>	<p>Types of effects would be the same as described for the no action alternative. Unlike the no action alternative, take of Oregon slender salamander in the form of injury, mortality, or habitat modification would be permitted even when the species becomes listed during the permit term. This take would be minimized and mitigated by protection of habitat in HCAs (Conservation Action 6), increase in the quantity and quality of habitat over the permit term, inside HCAs (Conservation Action 7), and retention of legacy structure, including downed wood, in harvested stands outside of the HCAs (Conservation Action 8).</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action would be the same as the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>restoration of disturbed areas would not be required and salvage in these areas would remove habitat. Monitoring would be limited to pre-harvest surveys to determine species presence.</p>	<p>Modeled habitat is similar to the no action alternative, but with slightly more overall modeled habitat and slightly less high-quality modeled habitat. Habitat connectivity would be greater.</p> <p>Effects of other activities would be the same as under the no action alternative, except that the modeled increase in road miles could increase related habitat removal and access-related disturbance.</p> <p>The locations of conservation areas would not move if species move in response to disturbance, but restrictions of salvage in HCAs would promote restoration of disturbed areas in HCAs.</p> <p>The required monitoring and adaptive management would provide greater certainty compared with the no action alternative that the conservation needs of the species in the study area would be met.</p>	
<i>Northern Spotted Owl (covered)</i>		
<p>Take of northern spotted owl would not be authorized and ODF would continue to avoid active spotted owl sites. Habitat removal or modification through timber harvest would be the primary effect on northern spotted owl. Nesting and roosting habitat would increase, while foraging and dispersal habitat would decrease over the analysis period. Assured habitat connectivity and dispersal habitat would be limited to riparian corridors. Road construction and quarry and recreational development would result in potential habitat removal or modification and increased access-related disturbance. Avoidance of occupied habitat would shift if species distribution shifted following disturbance, but restoration of</p>	<p>Types of effects would be the same as described for the no action alternative. Unlike the no action alternative, take of northern spotted owl would be authorized. This take would be minimized and mitigated by protection of occupied habitat within HCAs (Conservation Action 6), management of HCAs (Conservation Action 7), retention of legacy structure in harvested stands outside of the HCAs (Conservation Action 8), and protection of nest trees (Conservation Action 10). Most of the known active northern spotted owl sites in the permit area would be protected in HCAs and stand management activities in HCAs would increase habitat quality for northern spotted</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as under the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action.</p>



<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>disturbed areas would not be required and salvage in these areas would remove habitat. Monitoring would be limited to pre-harvest surveys to determine species presence.</p>	<p>owls over the permit term (Conservation Actions 6 and 7). Modeled nesting and roosting habitat increase over the permit term but less than projected under the no action alternative. Modeled foraging habitat decreases over the permit term, similar to the no action alternative. Modeled dispersal habitat decreases through year 25 and remains stable through the remainder of the permit term, resulting in more dispersal habitat by the end of the permit term and greater habitat connectivity than the no action alternative. Effects of other activities would be the same as under the no action alternative, except that the modeled increase in road miles could increase related habitat removal and access-related disturbance. The locations of conservation areas would not move if species move in response to disturbance, but restrictions of salvage in HCAs would promote restoration of disturbed areas in HCAs. The required monitoring and adaptive management would provide greater certainty compared with the no action alternative that the conservation needs of the species in the study area would be met.</p>	
<i>Marbled Murrelet (covered)</i>		
<p>Take of marbled murrelet would not be authorized and ODF would continue to avoid active marbled murrelet sites. Habitat removal or modification through timber harvest would be the primary effect on marbled murrelet. Total modeled habitat decreases over the analysis period. Assured habitat connectivity and dispersal habitat would be limited to riparian corridors. Road construction and</p>	<p>Types of effects would be the same as described for the no action alternative. Unlike the no action alternative, take of marbled murrelet would be authorized. This take would be minimized and mitigated by protection of occupied habitat within HCAs (Conservation Action 6), management of HCAs (Conservation Action 7), retention of legacy structure in harvested stands outside of the HCAs</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action. <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>quarry and recreational development would result in potential habitat removal or modification and increased access-related disturbance. Avoidance of occupied habitat would shift if species distribution shifted following disturbance, but restoration of disturbed areas would not be required and salvage in these areas would remove habitat. Monitoring would be limited to pre-harvest surveys to determine species presence.</p>	<p>(Conservation Action 8), and protection of nest trees (Conservation Action 10). The majority of the known occupied marbled murrelet sites in the permit area would be protected in HCAs. Modeled habitat increases over the permit term but less than projected under the no action alternative. Focusing management in contiguous areas of suitable habitat within HCAs would increase habitat connectivity. Effects of other activities would be the same as under the no action alternative, except that the modeled increase in road miles could increase related habitat removal and access-related disturbance.</p> <p>The locations of conservation areas would not move if species move in response to disturbance, but restrictions of salvage in HCAs would promote restoration of disturbed areas in HCAs.</p> <p>The required monitoring and adaptive management would provide greater certainty compared with the no action alternative that the conservation needs of the species in the study area would be met.</p>	<p><b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action.</p>
<i>Coastal Marten (covered)</i>		
<p>ODF would continue to avoid management activities in occupied coastal marten habitat that could cause take. Harvest activities (especially clearcut harvest, retention cutting, and thinning) in unoccupied habitat would be the primary factor adversely affecting coastal marten habitat through reduction in habitat quality and quantity. Fragmentation of habitat would increase predation risk. Assured habitat connectivity and dispersal habitat would be limited to riparian corridors. Road construction and quarry and recreational development</p>	<p>The covered activities would have the same types of effects as described for the no action alternative. Unlike the no action alternative, take of coastal marten would be authorized. This take would be minimized and mitigated by protection of occupied habitat within HCAs (Conservation Action 6), management of HCAs (Conservation Action 7), retention of legacy structure in harvested stands outside of the HCAs (Conservation Action 8), and operational restrictions in occupied habitat outside HCAs (Conservation Action 10).</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>would result in potential habitat removal or modification and increased access-related disturbance. Avoidance of occupied habitat would shift if species distribution shifted following disturbance, but restoration of disturbed areas would not be required and salvage in these areas would remove habitat. Monitoring would be limited to pre-harvest surveys to determine species presence.</p>	<p>The majority of the known occupied marbled murrelet sites in the permit area would be protected in HCAs. Modeled habitat increases over the permit term but less than projected under the no action alternative. Focusing management in contiguous areas of suitable habitat within HCAs would increase habitat connectivity. Effects of other activities would be the same as under the no action alternative, except that the modeled increase in road miles could increase related habitat removal and access-related disturbance.</p> <p>The locations of conservation areas would not move if species move in response to disturbance, but restrictions of salvage in HCAs would promote restoration of disturbed areas in HCAs.</p> <p>The required monitoring and adaptive management would provide greater certainty compared with the no action alternative that the conservation needs of the species in the study area would be met.</p>	
<i>Red Tree Vole (covered)</i>		
<p>Under the no action alternative, activities leading to injury or mortality of red tree vole would be prohibited when red tree vole becomes federally listed. Total modeled habitat increases over the analysis period with highly suitable habitat increasing substantially and suitable habitat decreasing slightly. Assured habitat connectivity would be limited to riparian corridors. Road construction and quarry and recreational development would result in potential habitat removal or modification and access-related disturbance. Avoidance of occupied habitat would shift if species distribution shifted following</p>	<p>The covered activities would have the same types of effects as described for the no action alternative. Unlike the no action alternative, take in the form of injury, mortality, or habitat modification would be permitted even if the species becomes listed during the permit term. This take would be minimized and mitigated by protection of occupied habitat within HCAs (Conservation Action 6), management of HCAs (Conservation Action 7), retention of legacy structure in harvested stands outside of the HCAs (Conservation Action 8), and protection of nest trees (Conservation Action 10).</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action.</p>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>disturbance, but restoration of disturbed areas would not be required and salvage in these areas would remove habitat. Monitoring would be limited to pre-harvest surveys to determine species presence.</p>	<p>Modeled habitat increases over the permit term but less than under the no action alternative. Focusing management in contiguous areas of suitable habitat within HCAs would increase habitat connectivity. Effects of other activities would be the same as under the no action alternative, except that the modeled increase in road miles could increase related habitat removal and access-related disturbance. The locations of conservation areas would not move if species move in response to disturbance, but restrictions of salvage in HCAs would promote restoration of disturbed areas in HCAs. The required monitoring and adaptive management would provide greater certainty compared with the no action alternative that the conservation needs of the species in the study area would be met.</p>	
<i>Noncovered Forest-Dependent Wildlife</i>		
<p>Timber harvest, reforestation, and young stand management would remove mid- and late-seral forest stands. Species occurring in these habitats could be injured or killed by equipment or tree felling. Removal of mid- and late-seral forest stands would adversely affect noncovered wildlife species that depend on this habitat type during at least part of their lifecycle, while benefiting wildlife species dependent on early-seral forest. The modeled increase in total late-seral forest over the analysis period (with the greatest changes occurring in the first 25 years of the analysis period) would benefit wildlife species dependent on this forest type, but could increase habitat for species dependent on early-</p>	<p>Types of effects would be the same as described for the no action alternative. Based on modeling, late-seral habitat would increase less and mid-seral habitat would decrease less compared to the no action alternative. As described for the no action alternative, the greatest changes occur in the first 25 years of the permit term. Habitat connectivity would increase compared to the no action alternative. The modeled increase in road miles compared with the no action alternative could reduce habitat connectivity and dispersal ability for some amphibian and invertebrate species that do not tend to cross roads.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be similar to the proposed action, but expanded riparian protections may provide more habitat and improved connectivity.  <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.  <b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action but increased harvest would reduce overall forested habitat.</p>

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
seral forest and open forest structure. Habitat connectivity would decrease.		
<i>Noncovered Species Dependent on Wetlands and Riparian</i>		
Timber harvest could reduce riparian and wetland function through removal of vegetation and ground disturbance. Effects of other activities would be nominal due to existing regulatory guidance and practices.	The modeled acreage of potential habitat effects from timber harvest is greater under the proposed action than no action alternatives. Effects of other activities would be nominal due to existing regulatory guidance and practices	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as the proposed action, except that road vacating requirements under Alternative 3 would increase beneficial effects for wetland species by improving water quality.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be nearly the same as the proposed action.</p>
<b>Air Quality</b>		
Forest and recreation management activities would result in emissions from the use of vehicles and equipment that emit air pollutants. Emissions would be distributed across the permit term and would not be likely to violate ambient air quality standards, cause an adverse effect on long-term air quality, or impair visibility.	Same as no action alternative.	Same as no action alternative.
<b>Aesthetics</b>		
<i>Vegetation Patterns</i>		
Forest and recreation management activities would affect forest structure and type, causing localized visual changes. ODF would continue to conduct management activities according to existing plans and policies and high-quality views and dynamic visual environments would continue to exist in the study area.	Same as no action alternative.	Same as no action alternative.

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<i>Visual Access</i>		
<p>Forest and recreation management activities would continue to preserve and protect visual access to recreational areas the quality of associated views. The modification of forest road systems would cause shifts in visual access for viewers using forest roadways for dispersed recreation. Increases in the road network to access harvest units could increase recreational access in the permit area. Some access may be removed due to road closure and vacating.</p>	<p>Types of effects would be the same as described for the no action alternative. The modeled increase in road construction compared to the no action alternative could further increase recreational access in the permit area.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for Same as the proposed action, but additional road system management requirements could decrease visual access compared to the proposed action in RCAs and HCAs.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p>
<i>Wild and Scenic Rivers</i>		
<p>ODF would continue to protect views associated with Wild and Scenic Rivers through compliance with state restrictions and screening requirements.</p>	<p>Same as the no action alternative.</p>	<p>Same as the no action alternative.</p>
<i>Scenic Byways</i>		
<p>ODF would continue to implement scenic buffers along scenic corridors to protect immediate foreground views from these roadways.</p>	<p>Same as the no action alternative.</p>	<p>Same as the no action alternative.</p>
<b>Recreation</b>		
<i>Supply of Recreation</i>		
<p>ODF would continue to manage harvests to minimize impacts on developed recreation and would retain existing roads that facilitate recreation access. Harvest activities may temporarily restrict access to recreation sites. Increased spur roads for forest management over the analysis period could expand recreation access.</p>	<p>As under the no action alternative, ODF would continue to manage harvests to minimize impacts on developed recreation and retain existing roads that facilitate recreation access. Harvest activities may temporarily restrict access to recreation sites. The modeled increase in spur roads over the permit could further</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but additional road system management requirements could reduce recreational access.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p>

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
Development of new recreational facilities would increase the supply of recreation.	expand recreation access compared to the no action alternative. Restrictions on siting of recreational facilities in HCAs and RCAs would affect the location of certain facilities but is not expected to affect the overall supply compared to the no action alternative.	<b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but a larger road network could further increase recreational access.

*Quality or Value of Recreation*

Recreational views would be protected as described above for <i>Visual Access</i> . Access to all types of forest would be available across the permit area, but the change in spatial distribution over time would have varying effects on different recreation uses. Effects on fish and wildlife species and habitat could increase or decrease recreational value depending on the activity.	Recreational views would be protected as described above for <i>Visual Access</i> . Access to all types of forest would be available across the permit area. Because the change in spatial distribution over time would differ from the no action alternative, effects on different recreation uses would also vary. Effects on fish and wildlife species and habitat would have similar varying effects on recreational value as the no action alternative, though beneficial effects on fish habitat quality would benefit recreational anglers.	<b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but expanded riparian protections could improve riparian habitat quality, further improving some recreational opportunities. <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action. <b>Alternative 5:</b> Effects compared to the no action alternative would be similar to those described for the proposed action.
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**Cultural Resources**

Forest and recreation management activities under the no action alternative would cause ground disturbance or changes to the setting and have the potential to result in adverse effects on cultural resources. ODF will continue to comply with all policies and procedures and adhere to regulations relevant to cultural resources, which would minimize and mitigate for adverse effects on cultural resources.	Under the proposed action and Alternatives 3, 4, and 5, effects on cultural resources would be similar to the no action alternative, and ODF will continue to comply with applicable regulations, policies and procedures.
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**Tribal Resources**

*Fish and Wildlife Species*

<b>Alternative 1: No Action</b>	<b>Alternative 2: Proposed Action</b>	<b>Alternatives 3 through 5</b>
<p>Timber harvest and reforestation activities would provide some habitat types for deer and elk but remove others and would reduce habitat connectivity.</p> <p>Forest and recreation management activities would reduce the quality of fish habitat in the study area. Restrictions in riparian areas, road vacating, and culvert removals would reduce these effects but would not fully protect the ecological function of the habitat.</p> <p>Expansion of the operational road network over the analysis period could increase access to fish and wildlife species valued by tribes.</p>	<p>Increased habitat connectivity would benefit deer and elk movement compared to the no action alternative but decreased edge could decrease forage habitat compared to the no action alternative.</p> <p>Modeled increases in timber harvest and related activities compared to the no action alternative would increase adverse effects of these activities on fish habitat; however, Conservation Actions 1, 2, 7, 8, and 12 would further reduce adverse effects of the covered activities and provide more protection to streams and riparian areas.</p> <p>The modeled increase in the road network compared to the no action alternative could increase access to fish and wildlife species valued by tribes.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except that expanded riparian protections and additional road system management requirements would contribute to increased habitat quality for fish and wildlife species valued by tribes.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action but with greater adverse effects related to harvest.</p>
<i>Availability of or Access to Plants</i>		
<p>Forest management activities would reduce availability of or access to some plants valued by the tribes. Availability of certain plants valued by tribes, specifically that rely on late-seral forest, would increase over the permit term in areas where harvest is restricted.</p>	<p>Forest management activities would reduce availability of or access to some plants valued by the tribes. Availability of certain plants valued by tribes, specifically that rely on late-seral forest, would increase over the permit term but less than under the no action alternative based on model projections. Availability of riparian and wetland plants would increase compared to the no action alternative.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but expanded riparian protections would further increase availability of riparian and wetland plants.</p> <p><b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action.</p> <p><b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but increased harvest would reduce availability of plants valued by the tribes compared to the proposed action.</p>



Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<i>Timber Harvest and Available Forest Products</i>		
<p>Activities in the permit area generate various forms of economic activity, some of which could contribute to employment and income for tribal groups. The distribution of employment impacts on tribal groups (like other specific groups) depends on contractual relationships over space and time and cannot necessarily be inferred from aggregate economic effects. Additional detail on these effects for each alternative is included under Socioeconomics.</p>	<p>See explanation under no action alternative.</p>	
<i>Minor Forest Products</i>		
<p>Modeled increases in late-seral stage forests over the analysis period would favor plant species that occur in older, more diverse forests. Timber harvest sites would continue to provide opportunities for firewood collection although access may change over the analysis period. Construction of spur roads may improve access for collection of minor forest products.</p>	<p>Effects would be the same as described for the no action alternative, but increased forest diversity compared to the no action alternative could increase the variety of plant species and opportunities for harvest and the availability of timber suitable for processing as firewood. The increased road network could improve access to minor forest products.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action.  <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.  <b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, but increased harvest could increase availability of timber suitable for processing as firewood.</p>
<b>Socioeconomics</b>		
<i>Income or Employment Levels</i>		
<p>Forest management activities would provide direct jobs and labor income and support non-forestry jobs, labor income, value added, and output through indirect and induced effects. Based on modeling, total direct jobs would support approximately \$3.4 billion in employee compensation, including wages and benefits, over the analysis period.</p>	<p>Based on modeling, employee compensation would increase compared to the no action alternative over the permit term with compensation from direct jobs increasing by 29.5 percent.</p>	<p><b>Alternative 3:</b> Based on modeling, employee compensation would increase compared to the no action alternative over the permit term with compensation from direct jobs increasing by 28.3 percent.  <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.</p>

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<p><b>Alternative 5:</b> Based on modeling, employee compensation would increase compared to the no action alternative over the permit term with compensation from direct jobs increasing by 33.7 percent.</p>		
<p><i>Government Revenue</i></p>		
<p>Forest management activities would generate timber sale revenues for state agencies, and local county governments, and taxing districts. Based on modeling, most entities would see revenue from timber sales decrease over the analysis period compared to existing conditions.</p>	<p>Based on modeling, timber sale revenues would increase overall compared to the no action alternative. Generally, timber sale revenue distributions would increase for all counties (and associated taxing districts) with Board of Forestry lands except Marion County.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be similar to the proposed action but slightly lower overall.  <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.  <b>Alternative 5:</b> Effects compared to the no action alternative would be similar to the proposed action but slightly higher overall.</p>
<p><i>Value of Ecosystem Services</i></p>		
<p>There would be mixed effects on the value of special forest products depending on changes to forest structure and type. Effects on fish and wildlife habitat would depend on the location and intensity of forest management activities, so the value of ecosystem services like fishing, hunting, and the existence of sensitive, threatened, and endangered species would vary.                      The value of carbon sequestration would increase over the analysis period.                      There would be minimal change to the value of ecosystem service related to surface water quality regulation.                      The value of cultural services from old-growth forests would increase slightly.                      The value of forest-based educational services would not change.</p>	<p>The modeled difference in stage age distribution compared to the no action alternative would change the availability of certain forest products. Continued availability of all habitat types in the permit area would limit impacts on value of hunting. Riparian protections could increase the value of fishing compared to the no action alternative.                      The modeled value of carbon sequestration is lower than the no action alternative.                      The value of sensitive, threatened, and endangered species would be similar to the no action alternative.                      Other effects would be the same as the no action alternative.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same or nearly the same as described for the proposed action.  <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.  <b>Alternative 5:</b> Effects compared to the no action alternative would be the same or nearly the same as described for the proposed action.</p>

Alternative 1: No Action	Alternative 2: Proposed Action	Alternatives 3 through 5
<b>Environmental Justice</b>		
<p>Potential disproportionately high and adverse effects were identified for socioeconomics (income and employment, government revenue, and the value of ecosystem services).</p>	<p>Potential disproportionately high and adverse effects were identified for recreation and socioeconomics (income and employment, government revenue, and the value of ecosystem services). Potential disproportionately high and adverse effects related to income and employment and government revenue and would be less adverse than the no action alternative.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be the same as described for the proposed action, except potential disproportionately high and adverse effects related to government revenue and value of ecosystem services would be lower.  <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.  <b>Alternative 5:</b> Effects compared to the no action alternative would be the same as described for the proposed action, with slightly reduced adverse effects related to government revenue.</p>
<b>Greenhouse Gas Emissions and Carbon Storage</b>		
<p>Forest management activities would result in greenhouse gas emissions, but modeled carbon stored in the forest continues to increase. The study area would sequester more carbon than covered activities would emit; therefore, the no action alternative would not affect climate change.</p>	<p>Based on modeling, increased harvest activity compared to the no action alternative would result in increased emissions and decreased carbon storage. However, the study area would sequester more carbon than covered activities would emit; therefore, the proposed action would not affect climate change.</p>	<p><b>Alternative 3:</b> Effects compared to the no action alternative would be nearly the same as under the proposed action, with slightly decreased emission and increased carbon sequestration.  <b>Alternative 4:</b> Effects compared to the no action alternative would be the same as described for the proposed action through year 50.  <b>Alternative 5:</b> Effects compared to the no action alternative would be nearly the same as described for the proposed action, with slightly increased emission and slightly less carbon sequestration.</p>

# Executive Summary

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The Western Oregon State Forests Habitat Conservation Plan (HCP) has been developed by the Oregon Department of Forestry (ODF) to support applications for federal Endangered Species Act (ESA) incidental take permits from the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the U.S. Fish and Wildlife Service (USFWS). This HCP describes potential effects on a suite of 17 federally listed species potentially at-risk from ODF's forest management activities, including timber harvest, stand management, habitat restoration, and construction and maintenance of recreation facilities over a 70-year permit term. The HCP also describes a conservation strategy to avoid, minimize, and mitigate any effects from those activities during that timeframe.

This Executive Summary provides an overview of the HCP, including the following:

1. Overview of the Planning Process
2. Scope of the HCP
3. Conservation Strategy
4. Implementation, Cost, and Funding

## ES.1 Overview of the Planning Process

In November 2018 the Oregon Board of Forestry (BOF) unanimously directed ODF staff to begin work on an HCP. The HCP would enable ODF to comply with the federal ESA when conducting land management activities on State Forests west of the Cascade Mountains. The HCP would also facilitate permit applications to the USFWS and NOAA Fisheries for programmatic take<sup>1</sup> authorization for those activities (covered activities) and for select species (covered species) over a 70-year permit term. Between November 2018 and March 2021 ODF staff completed this administrative draft HCP in coordination with state and federal environmental and wildlife agencies, and with engagement from counties, Tribal governments, members of the public, and representatives from key stakeholder sectors.

Throughout the development of the HCP, ODF provided updates and briefings to the BOF to help them assess the ability of a potential HCP to meet ODF's Endangered Species Act obligations and its Greatest Permanent Value mandate, which encompasses economic, conservation, and social outcomes. ODF implemented a structured public engagement process to facilitate an inclusive information sharing and feedback process. BOF checkpoints were built into this process where the BOF provided direction to ODF on the approach to the HCP and the strategy for public engagement. In October 2020, the BOF unanimously voted to direct ODF staff complete the administrative draft HCP and the National Environmental Policy Act (NEPA) assessment of the HCP. After the NEPA process and federal permit decisions, the BOF will determine whether to implement the incidental take permits associated with the r Western Oregon State Forests HCP.

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<sup>1</sup> *Taking* is defined as, "to harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 U.S. Code [USC] 1532). *Harm* is further defined as including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering" (50 Code of Federal Regulations [CFR] 17.3).

## ES.1.1 HCP Program Goals

ODF staff developed a set of six broad program goals for the HCP in collaboration with the Steering Committee. These program goals were used as a foundation to develop the biological goals and objectives and the conservation strategy described in Chapter 4, *Conservation Strategy*:

- Meet the regulatory requirements of the federal and state ESA through an approved HCP, using a multi-species approach to managing forest ecosystems across the landscape, in accordance with formal consultation with the Services under Section 7 and Section 10 of the ESA.
- Ensure active and sustainable management of state forest lands under a Western Oregon HCP and an associated Forest Management Plan designed to meet the social, economic, and environmental goals articulated in the Greatest Permanent Value Rule.
- Increase operational certainty, cost savings, and predictability of revenue generation (including related timber harvest, jobs, and other economic values) using the HCP as a programmatic approach to comply with the federal and state ESA over the permit term.
- Increase certainty for long-term persistence of covered wildlife species by protecting and maintaining high-quality habitats, conducting habitat enhancement activities in areas of lower quality habitat, and mitigating the impacts of covered activities on covered species.
- Advance partnerships and engagement related to management approaches and outcomes associated with, but not limited to, revenue generation and economic outcomes, conservation, forest conditions and health, tribal interests and traditional cultural uses, research, monitoring, education, recreation, and the equitable enjoyment of benefits that state public forests provide.
- Use science-based forestry to promote conditions that create sustainable, productive forests that are resilient to large fires, climate change impacts, and other disturbance events. Use an adaptive management approach to address uncertainty and change over time.

## ES.1.2 HCP Planning Structure

The HCP was led by ODF and advised by a team of policy and technical experts who were organized into a Steering Committee and Scoping Team. The final decisions on the contents of the HCP were made by ODF. All other participants were engaged to provide technical and policy advice. Planning participants provided valuable input during the planning process, as described below.

### ES.1.2.1 Steering Committee

The HCP Steering Committee consists of state and federal government agency representatives. Members worked together to provide advice on how ODF can achieve a mutually acceptable outcome that satisfies, to the greatest degree possible, the interests of all participants, while still meeting all regulatory requirements of the ESA. The role of the Steering Committee was to provide overall guidance for the HCP process and to provide direction and support to the Scoping Team. The Steering Committee met approximately bi-monthly during HCP development.

Member agencies of the Steering Committee are discussed in Chapter 1, *Introduction*, and include:

- Oregon Department of Forestry (convener)
- Oregon Department of State Lands

- Oregon Department of Environmental Quality
- Oregon Department of Fish and Wildlife
- Oregon State University
- U.S. Fish and Wildlife Service
- National Oceanic and Atmospheric Administration Fisheries

### **ES.1.2.2 Scoping Team**

The HCP Scoping Team was composed of terrestrial and aquatic biologists and technical specialists from state and federal agencies. The role of the Scoping Team was to provide technical expertise and to develop technical recommendations for the Steering Committee to consider when advising ODF in the development of a potential HCP. The Scoping Team met twice monthly during HCP development. Member agencies of the Scoping Team were the same as those for the Steering Committee. Technical experts from Oregon State University provided review of key data and work products.

The Scoping Team provided input, guidance, and feedback on development of all aspects of the HCP. This important feedback included species to be covered, how to analyze effects on those species, and the type and extent of conservation actions described in the HCP. The Scoping Team also reviewed early drafts of the HCP to support ODF's development of a legally compliant, scientifically sound, and operationally feasible planning document.

### **ES.1.2.3 Public Engagement**

During the development of the HCP, ODF hosted public informational meetings prior to each BOF meeting to provide an opportunity for the counties, Tribes, public, stakeholders, department staff, and consultants to share feedback, provide information regarding HCP development, and explore ideas for improvement. Follow-up meetings with these entities were also scheduled upon request to further discuss the information presented during the meetings open to the public and to provide more detail on the components of the HCP.

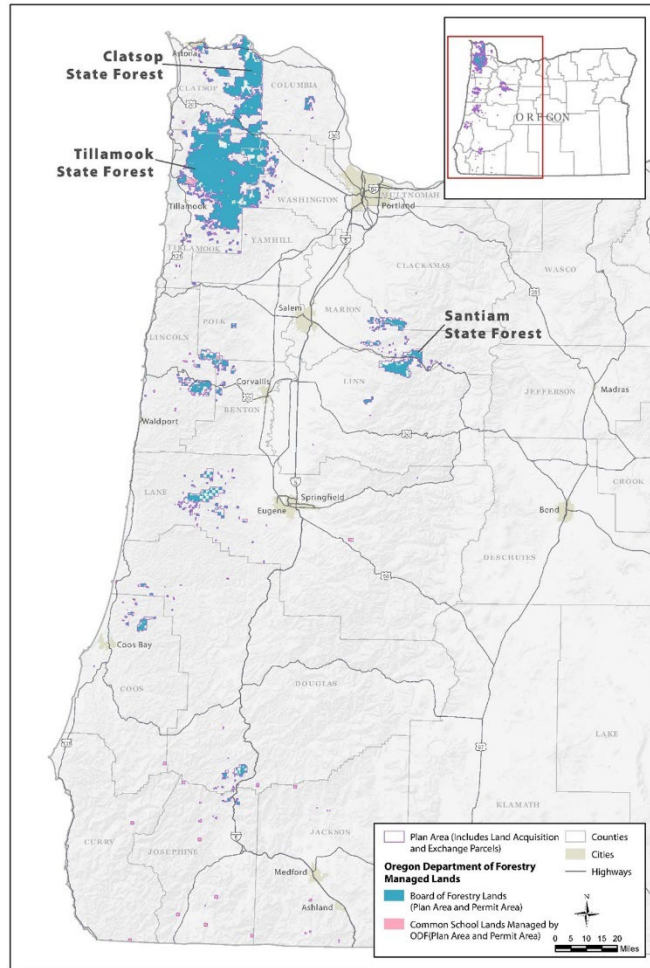
## **ES.2 Scope of the HCP**

This section provides a summary of the scope of the HCP, including the location of the permit area and plan area, the activities and species covered by the HCP, and the duration of the permit requested.

## ES.2.1 Permit Area and Plan Area

The location where the HCP and ESA permit coverage would apply must be defined and is called the *permit area*. The permit area in this HCP is defined as the area where incidental take is covered

under the incidental take permit, which includes the portion of the plan area that ODF currently controls and where all covered activities will occur and where conservation measures will apply. This includes all Board of Forestry Lands acquired pursuant to Oregon Revised Statutes (ORS) Chapter 530 and Common School Forest lands owned by the Oregon Department of State Lands but managed by ODF pursuant to ORS 530.490 through 530.520. Collectively these lands encompass 639,489 acres. An 84,206-acre buffer surrounding parts of the permit area has been identified where ODF has the potential to acquire or exchange lands with neighboring landowners in the future. An additional 10,000 acres in the vicinity of ODF lands have not yet been identified in Land Acquisition and Exchange Plans but may be acquired by ODF. Following a land exchange, the HCP and permits would apply to any lands newly acquired by ODF, and permits would no longer apply to any lands that ODF no longer managed. The *plan area* encompasses the permit area plus this additional 94,206-acre buffer. Figure ES-1 shows the plan area and permit area for the Western Oregon State Forests HCP. Additional details on how the plan area and permit area were defined are provided in Chapter 1.



**Figure ES-1. Plan Area and Permit Area**

## ES.2.2 Covered Activities

This HCP and permits are proposed to cover and provide incidental take authorization for ODF's land management activities in the permit area, other activities that ODF has jurisdiction over, and the activities needed to carry out the conservation strategy. Covered activities must be "under the control" of the permit holder and occur within the permit term and in the permit area in order to receive coverage. Broad categories of the covered activities are listed below; detailed descriptions of the selection process and all covered activities are provided in Chapter 3, *Covered Activities*.

Covered activity categories include:

- Timber Harvest
- Stand Management
- Road System Management
- Recreation Infrastructure Construction and Maintenance
- HCP Conservation Actions



## ES.2.3 Covered Species

Covered species are those species for which USFWS and NOAA Fisheries will provide take authorization to ODF to authorize take that may occur during the implementation of covered activities. Species were selected for coverage if all four of the following criteria were met:

1. The species range overlaps with the permit area.
2. The species is currently listed under the ESA or is likely to become listed during the permit term.
3. The species is likely to be impacted by covered activities.
4. There is enough data available to adequately assess the potential for covered activities to impact the species and to create a conservation strategy for the species that will adequately avoid, minimize, and mitigate the impact of any taking of the species that occurs from covered activities.

There are 17 species proposed for coverage in the draft HCP: 10 fish, 2 birds, 3 salamanders, and 2 mammals (Table ES-1).



**Table ES-1. Proposed Covered Species**

Species	Listing Status		Federal Agency Jurisdiction
	Federal	State	
<b>Fish</b>			
Oregon Coast coho ( <i>Oncorhynchus kisutch</i> )	FT	FT	NOAA Fisheries
Oregon Coast spring-run chinook ( <i>O. tshawytscha</i> )	UR	UR	NOAA Fisheries
Lower Columbia River chinook ( <i>O. tshawytscha</i> )	FT	--	NOAA Fisheries
Lower Columbia River coho ( <i>O. kisutch</i> )	FT	SE	NOAA Fisheries
Columbia River chum ( <i>O. keta</i> )	FT	--	NOAA Fisheries
Upper Willamette River spring-run chinook ( <i>O. tshawytscha</i> )	FT	--	NOAA Fisheries
Upper Willamette River winter steelhead ( <i>O. mykiss</i> )	FT	--	NOAA Fisheries
Southern Oregon/Northern California Coast coho ( <i>O. kisutch</i> )	FT	--	NOAA Fisheries
Southern Oregon/Northern California Coastal spring-run chinook ( <i>O. tshawytscha</i> )	UR	UR	NOAA Fisheries
Eulachon ( <i>Thaleichthys pacificus</i> )	FT	--	NOAA Fisheries
<b>Birds</b>			
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	FT	ST	USFWS
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	FT	SE	USFWS
<b>Amphibians</b>			
Oregon slender salamander ( <i>Batrachoseps wrighti</i> )	--	ST	USFWS
Columbia torrent salamander ( <i>Rhyacotriton kezeri</i> )	UR	ST	USFWS
Cascade torrent salamander ( <i>R. cascadae</i> )	UR	--	USFWS
<b>Mammals</b>			
Coastal marten ( <i>Martes caurina</i> ) <sup>a</sup>	T	--	USFWS
Red tree vole, North Oregon Coast population ( <i>Arborimus longicaudus</i> ) <sup>b</sup>	--	--	USFWS

SE = State Endangered; ST = State Threatened; FT = Federal Threatened; UR = Under Review

<sup>a</sup> The full name of the listed entity is Pacific marten, Coastal Distinct Population Segment.

<sup>b</sup> ODF is proposing the red tree vole for coverage under this HCP despite red tree vole not being listed as endangered or threatened under the ESA. In 2019, the USFWS determined that red tree vole did not warrant listing as endangered or threatened (84 *Federal Regulations* 69707). The Center for Biological Diversity is currently seeking an

order to vacate USFWS's not-warranted finding and remand the matter to the Service to issue a new determination regarding whether red tree vole warrants protection under the ESA as an endangered or threatened species. ODF finds the likelihood of future listing of red tree vole to be high enough to propose the species for coverage under this HCP.

## ES.2.4 Permit Term

The HCP and associated permits are proposed to have concurrent terms of 70 years. The 70-year permit term was selected to balance the risks associated with shorter and longer terms. A term of less than 70 years would limit ODF's ability to conduct long-term forest management practices, which are typically conducted on roughly 10-year management cycles. A term of more than 70 years would increase the risk that unpredictable ecological changes could adversely affect the status of the covered species in the plan area and increases the uncertainty associated with modeling those changes. Both of these items could compromise the conservation strategy. The level of certainty associated with a 70-year term enables ODF to make long-term plans and investments with the assurance that they will be able to continue managing the forest in a manner that complies with ESA requirements. In addition, the monitoring and adaptive strategy detailed in Chapter 6, *Monitoring and Adaptive Management*, outlines how implementation of the conservation strategy will be monitored and reported, and how changes will be made, if needed, in response to monitoring results, to manage in response to change. This will further allow ODF to manage uncertainty that may arise during the permit term.

## ES.3 Conservation Strategy

The conservation strategy includes measures to avoid, minimize, and mitigate the impact of the taking on covered species from covered activities. The conservation strategy relies on (1) implementing best management practices when conducting covered activities to minimize effects on covered species, (2) designating areas on the landscape that will be managed for the benefit of covered species, and (3) creating a Conservation Fund that would be used to implement species and habitat management activities that would directly benefit covered species during the permit term.

The conservation strategy is best summarized by the biological goals and objectives for each covered species. Biological goals and objectives state the intentions of the HCP, and the measurable biological objectives become the threshold by which the success of the HCP will be judged. Biological goals and objectives for covered fish and aquatic salamanders focus on continual improvement of aquatic habitat quality. Specifically, biological objectives state intentions for improving instream habitat quality through the recruitment of large woody debris, execution of stream enhancement projects, removal of barriers to fish movement, and protection against sediment and stream temperature increase. Biological goals and objectives for terrestrial covered species focus on increasing habitat quality and quantity during the permit term. Commitments are made to initially conserve and maintain habitat that is currently suitable or occupied and then increase the total acres of habitat through enhancement, including both passive and active management.

Twelve conservation actions are described in the draft HCP that will be used to achieve the biological goals and objectives:

- Conservation Action 1: Establish Riparian Conservation Areas
- Conservation Action 2: Riparian Equipment Restriction Zone

- Conservation Action 3: Stream Enhancement
- Conservation Action 4: Remove or Modify Artificial Fish-Passage Barriers
- Conservation Action 5: Standards for Road Improvement and Vacating
- Conservation Action 6: Establish Habitat Conservation Areas
- Conservation Action 7: Manage Habitat Conservation Areas
- Conservation Action 8: Conservation Actions Outside Habitat Conservation Areas and Riparian Conservation Areas
- Conservation Action 9: Strategic Terrestrial Species Conservation Actions
- Conservation Action 10: Operational Restrictions to Minimize Effects on Covered Species
- Conservation Action 11: Road and Trail Construction and Management Measures
- Conservation Action 12: Restrictions on Recreational Facilities

### ES.3.1 Aquatic Conservation Strategy

The centerpiece of the aquatic conservation strategy is the establishment of Riparian Conservation Areas (RCAs), which are stream buffers designed to protect against negative effects from increased sedimentation and stream temperature. RCAs are further designed to maximize the amount of large woody debris that could be naturally recruited into aquatic systems from streamside sources and from debris flows in the upper watersheds. RCAs vary by stream type, including stream size, seasonality, and whether it is a fish-bearing stream. Approximately 35,000 acres are proposed to be designated as RCAs across the permit area. There would be no forest management in RCAs. Activities would be limited to only essential activities needed to implement covered activities (e.g., road construction and maintenance) or to complete stream enhancement actions, including placement of large woody debris, channel restoration, and fish barrier removal. For additional details on covered activity occurrence within RCAs see the Frequency Table in Appendix E. Additional conservation actions create operational and design standards for roads, equipment use, and the timing of activities to minimize effects on covered species and the stream environment. Tables ES-2 and ES-3 summarize the RCAs by stream type and illustrate their location in northwest Oregon in Figure ES-2. For additional details on these and other aquatic conservation actions, see Chapter 4, *Conservation Strategy*, Conservation Actions 1 through 5.

**Table ES-2. Buffer Widths (Horizontal Distance) for All Type F and Large and Medium Type N Streams**

Stream Type	Minimum Management Area Width (feet) <sup>a</sup>	
	Type F	Type N
Large	120	120
Medium	120	120
Small	120	See Table ES-3
Seasonal <sup>b</sup>	120	See Table ES-3

<sup>a</sup> Distance will be measured horizontally, which results in the implementation of larger buffers in steeper terrain.

<sup>b</sup> Seasonal: A stream that does not have surface flow after July 15.

**Table ES-3. Minimum Riparian Conservation Area Widths (Horizontal Distance) for Small Perennial and Seasonal Type N Streams**

Stream Type	Minimum Management Area Width (feet) <sup>a</sup>	
	Within 500-foot Process Zone	Upstream of 500-foot Process Zone
Perennial small Type N	120	35
Potential debris flow track (Seasonal Type N) <sup>b</sup>	50	35
High energy (Seasonal Type N) <sup>c</sup>	50	35
Seasonal other (Type N) <sup>d</sup>	0 <sup>e</sup>	0 <sup>e</sup>

<sup>a</sup> Distance will be measured horizontally, which results in the implementation of larger buffers in steeper terrain.

<sup>b</sup> Potential debris flow tracks: Reaches on seasonal Type N streams that have the potential to deliver wood to a Type F stream.

<sup>c</sup> High Energy: Reaches on seasonal Type N streams that have the potential to deliver wood and sediment to a Type F stream during a high-flow event.

<sup>d</sup> Seasonal: A stream that does not have surface flow after July 15.

<sup>e</sup> A 35-foot equipment restriction zone will apply to these streams.

## ES.3.2 Terrestrial Conservation Strategy

The centerpiece of the terrestrial conservation strategy is the establishment of Habitat Conservation Areas (HCAs), which are designed to conserve, maintain, and enhance habitat for the terrestrial covered species. HCAs comprise approximately 275,000 acres across 262 units to support the persistence of northern spotted owl, marbled murrelet, red tree vole, Oregon slender salamander, and coastal marten. These HCAs (and the portion of RCAs within them) represent 43% of the permit area that will be conserved, maintained, and enhanced to provide habitat for covered species throughout the permit term. The size of HCAs varies widely, due to land ownership patterns, habitat availability, and covered species needs. In locations where ODF land ownership includes large blocks (e.g., north coast), HCAs are generally larger (Figure ES-2). In locations where ODF land ownership is more scattered and intermixed with private and federal landowners, the HCAs are generally smaller. Smaller HCAs are found throughout the permit area, typically where ODF managed lands are smaller and more scattered. These smaller HCAs are designated to protect and enhance known species occurrence and provide connectivity between federal lands within smaller patchwork ownership patterns.

The HCAs are designed to:

- Conserve, maintain, and enhance existing habitat for terrestrial covered species in the permit area over the permit term.
- Improve low-quality habitat for the covered species and develop new habitat in HCAs, where necessary and where such treatments can be implemented effectively and efficiently. Treatments will include expanding and connecting existing habitat to improve landscape-level habitat function.
- Limit management activities in HCAs to those necessary and prudent to improve habitat quantity and quality over the permit term.

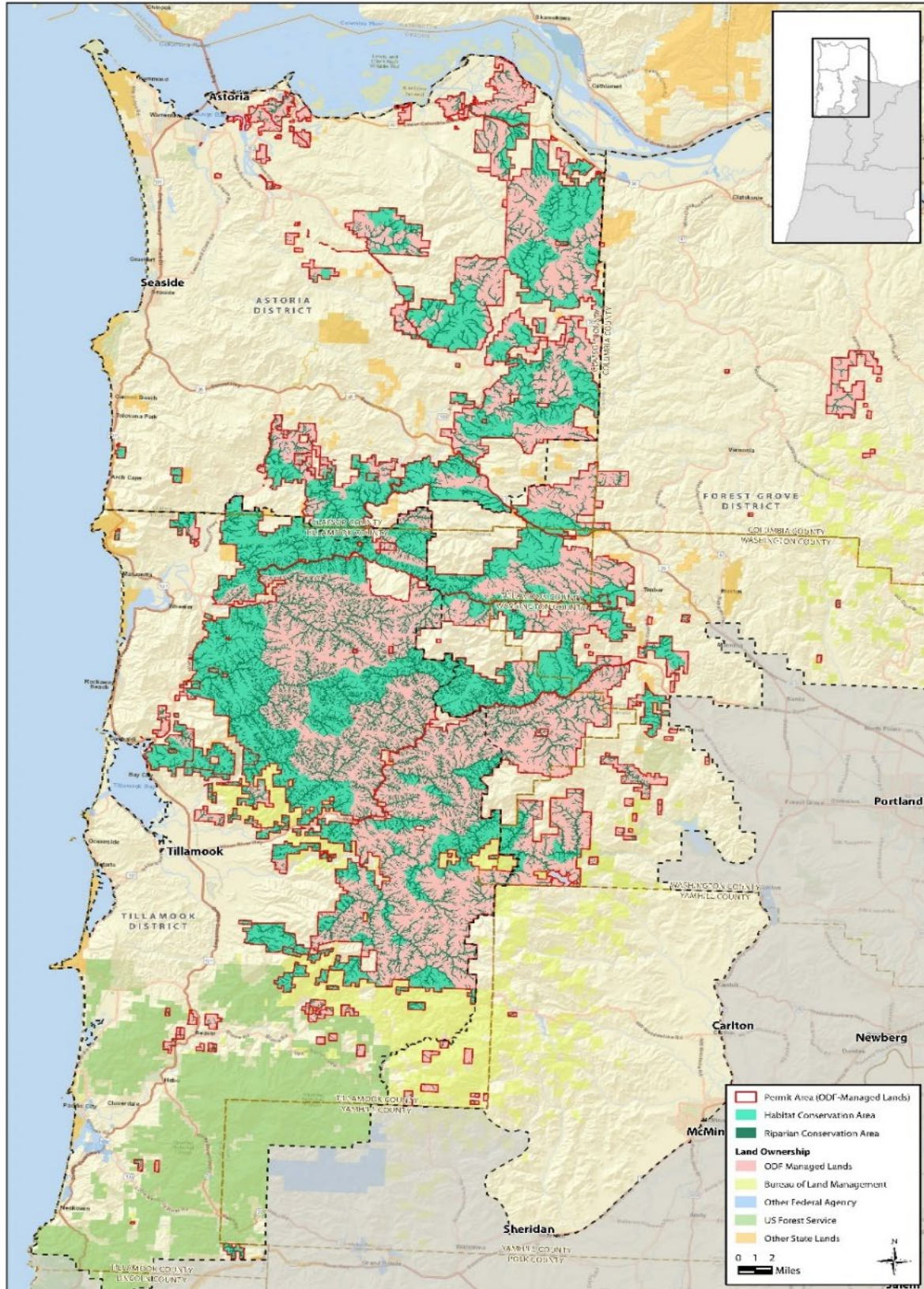


Figure ES-2. Habitat Conservation Areas and Riparian Conservation Areas in Northwestern Oregon

Within HCAs, all management activities are designed to promote and improve habitat. Both passive and active management will be used to increase habitat quality and quantity for terrestrial covered species over the 70-year permit period. Habitat for terrestrial species is estimated to increase in both quality and quantity during the permit term (Table ES-4). Those new acres of suitable habitat are primarily located inside of HCAs and are the result of passive management but also targeted active management of key stands to grow habitat faster. Active management will include treatment of Douglas-fir stands infected by Swiss needle cast and hardwood stands that are less likely to grow into habitat without intervention. Forest management prescription (e.g., thinning) will also be used to promote tree growth and understory diversity. The anticipated increase in the quality and quantity of habitat for covered terrestrial species is the primary tool used to offset the impact of the taking from continued habitat loss due to covered activities during the same period. For additional details on these and other terrestrial conservation actions, see Chapter 4, Conservation Actions 6–9.

In conjunction with the implementation of targeted management prescriptions to increase and improve habitat inside HCAs, additional conservation actions are included to retain important habitat features on the landscape outside of HCAs and RCAs. This includes retaining habitat trees and leaving downed wood during forest management activities. ODF will continue to minimize effects on sites known to support covered species, specifically by imposing seasonal restrictions on operations in known nesting locations for northern spotted owl and marbled murrelet.

### ES.3.3 Conservation Fund

The conservation strategy will result in an increase in habitat for all of the terrestrial covered species, but other factors may remain that limit the ability of covered species to take advantage of the new habitat and for populations to increase. The Conservation Fund, described in Chapter 9, *Costs and Funding*, will provide funding on an annual basis to address these limiting factors. The priorities for how the Conservation Fund is used will change during the permit term, but ODF will work with species experts and other state and federal partners to identify where and how Conservation Fund monies are spent. Conservation Fund monies will be derived from ODF's share of timber sale revenues, at a rate of \$5 per thousand board feet harvested. This fund will be used to implement three types of conservation projects to directly benefit the covered species: (1) aquatic habitat enhancement projects, (2) terrestrial habitat projects, and (3) strategic initiatives. Examples of aquatic habitat enhancement projects include placement of large wood into streams, side-channel reconnection projects, and fish passage improvements. Terrestrial habitat enhancement includes habitat restoration in HCAs and research on covered species response to management actions in HCAs. Strategic initiatives are projects designed to speed the recovery of covered species. For example, ODF has committed to participating in regional barred owl management to increase habitat availability for northern spotted owl. Strategic initiatives may also include facilitation of research and monitoring projects designed to better understand species distribution and conservation needs and species response to conservation actions.

The creation of the Conservation Fund allows ODF to meaningfully engage with partners to implement conservation projects to benefit covered species. Funds will be accrued annually, but there will be flexibility to roll funds over year to year in order to fund larger and more complex conservation projects. Based on modeled harvest estimates the Conservation Fund is estimated to accrue on average \$1 million/year throughout the permit term. Expenditures of the Conservation Fund are expected to equally support aquatic and terrestrial species conservation needs. A more detailed description can be found in Chapter 9.

**Table ES-4. Acres of Covered Species Habitat in Habitat Conservation Areas at the Beginning and End of the 70-Year Permit Term**

<b>Species</b>	<b>Habitat in HCAs at the Beginning of Permit Term</b>	<b>% of HCAs that are Habitat at the Beginning of Permit Term<sup>f</sup></b>	<b>Habitat Commitment in HCAs at End of Permit Term<sup>g</sup></b>	<b>% of HCAs that are Habitat at End of Permit Term<sup>f</sup></b>	<b>% Increase in Habitat Acres During Permit Term</b>
Northern spotted owl <sup>a</sup>	88,000 <sup>e</sup>	32%	134,000	49%	52%
Marbled murrelet <sup>b</sup>	63,000	23%	142,000	52%	125%
Red tree vole <sup>b</sup>	53,000	19%	117,000	43%	120%
Oregon slender salamander <sup>c</sup>	16,000	6%	19,000 <sup>c</sup>	7%	19%
Coastal marten <sup>d</sup>	27,000	10%	27,000	10%	0%

<sup>a</sup> Habitat includes modeled nesting, roosting, and foraging habitat.

<sup>b</sup> Habitat includes modeled suitable and highly suitable habitat.

<sup>c</sup> Habitat includes the extent of Oregon slender salamander range in the permit area. In addition to the 19,000 acres that will be managed as Oregon slender salamander habitat in HCAs, retention standards described in Conservation Action 8: *Conservation Actions Outside Habitat Conservation Areas and Riparian Conservation Areas*, will ensure that Oregon slender salamander can persist in areas that are subject to harvest within the species range.

<sup>d</sup> Any portion of the permit area from northern Lane County south to the California border, west of Interstate 5 is considered habitat. The amount of habitat in the permit area will not change substantially during the permit term unless ODF acquires new lands. All of the 27,000 acres of coastal marten habitat in HCAs are expected to be improved during the permit term, resulting in habitat quality at the end of the permit term that is expected to be higher than it is at the beginning of the permit term.

<sup>e</sup> 28 out of 31 active northern spotted owl activity centers are inside of HCAs.

<sup>f</sup> HCAs comprise approximately 275,000 acres. Species distribution does not cover the entire extent of HCAs so the percentage is not indicative of habitat quality. For example, Oregon slender salamander only occurs in the North Cascades, which comprises less than 15% of the permit area.

<sup>g</sup> Commitments to conserve, maintain, and enhance acres of covered species habitat are based on the assumption that at least 50% of nesting and roosting habitat and 80% of foraging habitat modeled to grow within HCAs over the 70-year permit term can be achieved.

### ES.3.4 Monitoring and Adaptive Management

The HCP includes a monitoring program to demonstrate that ODF is operating in compliance with the commitments made in the HCP and associated incidental take permits. The monitoring program also helps to assess whether the conservation strategy is performing as expected. Compliance monitoring will focus on whether the HCP is being implemented properly and as required by the permits. Compliance monitoring results will be summarized in an annual report to USFWS and NOAA Fisheries. Effectiveness monitoring will be completed to track progress towards the biological goals and objectives. Effectiveness monitoring will include validation of habitat development as estimated by species habitat models and species response to changes in habitat quality. Collectively, these monitoring programs will track long-term trends in habitat quality to allow for an examination of whether the HCP is making progress towards the biological goals and objectives, or whether changes are needed through the adaptive management program. Monitoring and adaptive management are integrated processes, and monitoring will inform changes in management actions to continually improve outcomes for covered species.

The monitoring framework will be operationalized by ODF as part of each 10-year Implementation Planning cycle, during which ODF will assess monitoring priorities, using this framework as a guide. The adaptive management program is also generally aligned with these 10-year Implementation Planning cycles.

## ES.4 Implementation, Cost, and Funding

ODF will oversee HCP implementation, including staffing internal positions, hiring consultants, reporting, monitoring, and maintaining all program records. ODF staff includes biologists, foresters, administrators, and other natural resource specialists who will carry out planning, monitoring, and adaptive management. ODF is also responsible for coordination with state and federal wildlife agencies during HCP implementation and providing regular reports to NOAA Fisheries and the USFWS. Implementation of the HCP will be integrated with existing State Forest Division planning cycles, grounded in the 10-year implementation planning periods associated with the forest management plan.

### ES.4.1 Reporting

Reporting will occur on three timescales during implementation: (1) annual reports, (2) 5-year check-ins, and (3) 10-year comprehensive reviews. Annual reports will focus on assessing compliance with the HCP and permits. Longer term 5- and 10-year reviews will focus on assessments of the effectiveness of HCP conservation actions. The 10-year comprehensive reviews are specifically designed to inform the 10-year implementation planning process, which guides forest management planning for the State Forests Division. For more details on reporting, see Chapter 8, *Implementation*.

### ES.4.2 Costs and Funding

Chapter 9 of the HCP details the cost of administering the HCP, including implementation of the conservation strategy and monitoring program. Chapter 9 also outlines how the HCP commitments will be funded for the duration of the permit term. Income from timber revenue on State Forests will



provide the primary support for HCP implementation. The major cost categories described in the HCP include:

- HCP Administration and Staffing
- Conservation Strategy
- Monitoring and Adaptive Management

**Question and Answer Opportunity for the Board**

**Board of Forestry and Forest Trust Land Advisory Committee Facilitated  
Discussion**

**Special Meeting Closing Comments**