Oregon Board of Forestry

Wednesday and Thursday, January 8-9, 2025
Public Meeting Agenda

Revised
12/17/24

Public Meeting Information

The meeting will be open to the public, allowing for both in-person and virtual attendance. An opportunity for the public to provide live testimony will be available, however no testimony will be accepted regarding Agenda Item 3, as the Board's decision on this item must be based on the record established in the contested case hearing process. For all other testimony, instructions to sign up for a live testimony slot can be found on our website: https://www.oregon.gov/odf/board/Pages/bofmeetings.aspx.Written testimony may be submitted by emailing the following address: boardofforerestry@odf.oregon.gov and will be accepted prior to the meeting date, and up to two weeks after the meeting has ended. Submissions should include meeting date and agenda item number/topic header with the written submission.

In-Person Location:
Oregon Department of Forestry
2600 State St., Tillamook Room
Salem, OR 97310

Virtual Meeting Link:
https://www.youtube.com/c/OregonDepartmentofForestry

January 8, 2025 Agenda

Consent Agenda

A.	**Legislative Report on Private Forest Accord Implementation** *Josh Barnard (Forest Resources Division Chief), Nicole Stapp (Forest Resources Division Policy Advisor)* Senate Bill 1501 (2022) requires the Board to submit annual progress reports regarding the implementation of the Private Forest Accord to the legislative committees related to forestry. This agenda item seeks board approval to submit the statutorily required report regarding 2024 activities. This is a decision item.
B.	**Western Oregon State Forests Management Plan** *Mike Wilson (State Forests Division Chief), Justin Butteris (State Forests Division Policy Advisor)* The Board will consider whether to initiate rulemaking for the draft Western Oregon State Forests Management Plan. This is a decision item.
C.	**Appointments to the Independent Research and Science Team (IRST)** *W. Terry Frueh (Adaptive Management Program Coordinator), Kelly Burnett (Chair, Independent Research and Science Team), Adam Coble (Water Quality and Monitoring Manager)* The Independent Research and Science Team has nominated two candidates to join and is seeking a Board decision to accept these nominations. This is a decision item.
D.	**Member Term Renewals for the Adaptive Management Program Committee** *W. Terry Frueh (Adaptive Management Program Coordinator), Adam Coble (Water Quality and Monitoring Manager)*
E.	**Vision for Oregon's Forests** *Joy Krawczyk (Public Affairs Director)* This agenda item seeks to share the published version of the Vision for Oregon's Forests with the board and

	enter it into the official board record. It will also be posted on the board's webpage, replacing the Forestry Program for Oregon. This is informational only.
F.	**Financial Dashboard** *James Short (Chief Financial Officer)* An executive financial report and summary will be captured monthly to ensure the Board of Forestry (Board) has up-to-date information for oversight of the Department's financial condition. This report will include the financial and budgetary status of the Department as well as other ancillary topics as appropriate.

Action and Information

9:00 am	**1. Opening Comments** *Chair Kelly, State Forester Mukumoto and members of the Board* Welcome and opening comments from the board chair, agency director and members of the board. This is an information item.
9:15 am	**2. Public Forum – Day 1** *Members of the Public* Sign-up instructions for providing public comments are posted on the Board's meeting webpage. Comments are limited to two minutes or less. Forum is reserved for remarks on information items and topics off the agenda. The board will not accept public comments regarding Agenda Item 3, as the Board's decision must be based on the record established in the contested case hearing process. Comment times may be reduced at the discretion of the Board Chair. This is an information item.
9:45 am	**3. Final Order – Douglas County, by and through the Douglas County Public Works Department** *Greg Wagenblast (Civil Penalties Administrator), Scott Swearingen (Field Support Unit Manager) Matt B. DeVore (Assistant Attorney General, Dept. of Justice)* The purpose of this agenda item is to consider issuance of a Final Order involving a violation of the forest practices act by Douglas County by and through the Douglas County Public Works Department. This is a decision item. No opportunity for public testimony will be provided, as the Board's decision must be based on the record established in the contested case hearing process.
10:15 am	**BREAK**
10:30 am	**4. John Krause 45 Year Service Award** *Mike Cafferata (Forest Grove District Forester)* This item serves as an opportunity for the Department and the Board of Forestry to honor staff member John Krause for his 45 years of service with the Department of Forestry. This is an information item.
10:45 am	**5. 2024 Forest Practices Operator of the Year Awards** *John Krause (Stewardship Forester), Scott Swearingen (Field Support Unit Manager)* This item will be the Board of Forestry's presentation of the Forest Practices Regional Operator of the Year awards for 2024. The Operator Recognition program encourages protecting forest resources and values by recognizing operators who have excelled in effort, innovation, cooperation, consistency, and prevention to achieve or surpass the standards of forest resource protection. This is an information item.
11:45 am	**LUNCH**

Oregon Board of Forestry

Wednesday and Thursday, January 8-9, 2025
Public Meeting Agenda

Revised
12/17/24

12:45 pm	**6. Legislative Session Information and Wildfire Funding Workgroup Update** *Derrick Wheeler (Legislative Coordinator), Kyle Williams (Deputy Director of Fire Operations)* This item serves as an opportunity for the Department to provide information on the legislative process, the 2025 legislative session, updates from the Wildfire Funding Workgroup and board member best practices for engagement with the legislative assembly. This is an information item.
1:00 pm	**7. Board Planning Calendar Overview** *Eleni Collins (Board Administrator)* This item serves as an opportunity for the Department to share a planning calendar tool that captures key dates and Board meeting content for the years of 2025 through 2026. This is an information item.
1:15 pm	**8. Annual Update on the Adaptive Management Program (AMP)** *Josh Barnard (Forest Resources Division Chief), W. Terry Frueh (Adaptive Management Program Coordinator), Seth Barnes (Co-Chair, Adaptive Management Program Committee) Stacey Detwiler (Co-Chair, Adaptive Management Program Committee), Kelly Burnett (Chair, Independent Research and Science Team), Lisa Gaines (IRST's Housing Agency, OSU/Institute for Natural Resources)* The Adaptive Management Program Committee (AMPC) Co-chairs, the Chair of the Independent Research and Science Team (IRST), staff from both OSU/Institute for Natural Resources (INR) and ODF will report on the progress of the adaptive management program. This is an information item.
2:15 pm	**9. Closing Comments** The Board Chair will offer closing comments and mop up any outstanding work. This is an information item.
2:30 pm	**Adjourn Day 1**

January 9, 2025 Agenda

Action and Information

9:00 am	**10. Public Meeting opening Comments** *Chair Kelly, State Forester Mukumoto and members of the Board* Welcome and opening comments for day 2 from the board chair, agency director and members of the board. This is an information item.
9:15 am	**11. Public Forum – Day 2** *Members of the Public* Sign-up instructions for providing public comment are posted on the Board's meeting webpage. Comments are limited to two minutes or less. Forum is reserved for remarks on information items and topics off the agenda. Comment times may be reduced at the discretion of the Board Chair. This is an information item.
9:30 am	**12. Board of Forestry Governance Committee Update** *Brenda McComb (Board Vice Chair)* This item serves as an opportunity for the Board of Forestry's Governance Committee to provide an update on their review of the Board Policies Manual and offer any recommendations for changes. This is an information item.
10:00 am	**BREAK**

Oregon Board of Forestry

Wednesday and Thursday, January 8-9, 2025
Public Meeting Agenda

Revised
12/17/24

10:15 am	**13. Oregon State University College of Forestry Panel** *Dean Thomas DeLuca* This item serves as an opportunity for the Board of Forestry to hear from Oregon State University's College if Forestry. Experts will provide an introduction and overview of their research areas and a moderated Q&A with the board members will follow. This is an information item.
12:00 pm	**LUNCH**
1:00 pm	**14. Climate Change and Carbon Plan Implementation Update** *John Tokarczyk* The Department will provide an update on the work planned under the Climate Change and Carbon Plan. This is an information item.
2:00 pm	**15. State Forester Review Process Overview** *Shauneen Scott (HR Director)* The Department will provide an overview of the bi-annual agency performance review process for agency directors of large agencies, as administered by the Department of Administrative Services (DAS). This item will inform the board of the process and expectations in advance of the State Forester's performance review. This is an information item.
2:30 pm	**16. Closing Comments** The Board Chair will mop up any outstanding work and offer closing comments. This is an information item.
3:00 pm	**Adjourn**

NOTE: Times listed on the agenda are approximate. At the discretion of the chair, the time and order of agenda items—including the addition of breaks—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.

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 generally accepts written comments on all agenda items except consent agenda items, other items specifically identified in the 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 before 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.
- To provide oral comments at an in-person meeting, register in advance using the information in the meeting agenda and 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.

- Commenters have two to three minutes to make their comments. Comment on decision items is limited to 30 minutes per decision item.

Written comments for public testimony provide a valuable reference and may be submitted before, during, or up to two weeks after the meeting for consideration by the Board. Send to boardofforestry@odf.oregon.gov. All comments to the Board will become part of the official record of the meeting and made available to the public on the Board's webpage.

Also note:

- Relating to consideration of Final Orders in contested case hearings: Under Oregon's Administrative Procedures Act, the Board cannot accept public comments because the Board's decision must be based on the record established in the contested case hearing process. (ORS 183.450). The Board may decide to accept oral arguments from the parties. (OAR 629-001-0045(3).
-
- 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).

WORK SESSIONS: Certain agenda topics may be marked with an asterisk indicating a "Work Session" item. Work Sessions provide the Board with an 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.

GENERAL INFORMATION: For regularly scheduled meetings, the Board's agenda is posted on the web at https://www.oregon.gov/odf/board/Pages/bofmeetings.aspx two weeks before 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.

If you are experiencing technical issues or require accommodations, email boardofforestry@odf.oregon.gov or contact the Board Support Office at (503) 302-6344.

To provide the broadest range of services, lead-time is needed to make the necessary arrangements for offsite locations. 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 seven working days before the meeting via telephone at 503-945-7200 or fax at 503-945-7212.

STAFF REPORT

Agenda Item No.:	A
Work Plan:	Forest Resources Division
Topic:	Implementing Legislative Direction
Presentation Title:	Legislative Report on Private Forest Accord Implementation
Date of Presentation:	January 8, 2025
Contact Information:	Josh Barnard, Division Chief, Forest Resources Division, ODF, Josh.W.Barnard@odf.oregon.gov, Nicole Stapp, Policy Advisor, Forest Resources Division, ODF, Nicole.L.Stapp@odf.oregon.gov

SUMMARY

Senate Bill 1501 (2022) requires the Board to submit annual progress reports regarding the implementation of the Private Forest Accord to the legislative committees related to forestry. This agenda item seeks board approval to submit the report included as Attachment 1 as the statutorily required report.

BACKGROUND

In 2020, conservation and forest industry groups offered to revise the Forest Practices Act (FPA) and the forest practice rules through a memorandum of understanding to include mediated discussions, known as the Private Forest Accord (PFA). Later that year, the Legislature passed Senate Bill (SB) 1602 which set helicopter pesticide application requirements and required the Governor to facilitate mediated sessions between conservation and forest industry groups. As a product of this collaborative process, the 2022 PFA Report was drafted and released by an author group comprised of representatives from those discussions. During the 2022 Legislative Session, SB 1501 and SB 1502 passed making substantial changes to the FPA and requiring the Board to incorporate the recommendations of the PFA Report into the forest practice rules through the adoption of a single rule package to support the development of a habitat conservation plan and prescribed two additional rulemaking efforts.

ANALYSIS

The report in Attachment 1 captures the Board's implementation obligations in SB 1501(2022), the status of each, and any related 2024 activities. While the report only captures 2024 activities, the Department intends to assist the Board in completing the remaining statutory obligations by:

- Proposing an agenda item for March 2025 to initiate tethered logging;
- Returning to the Board for a decision regarding the proposed post-disturbance rules as work on the draft PFA HCP with the federal services is completed and prior to November 30th, 2025 deadline;
- Continuing to draft the annual implementation progress reports for the Board's approval; and
- Preparing the required report regarding incidental take permits and petitions for the Board's consideration and approval, once the outcomes are known.

RECOMMENDATION

The Department recommends the Board direct staff to submit the report in Attachment 1 to the relevant legislative committees in the manner prescribed by law.

ATTACHMENTS

1) Private Forest Accord Implementation: 2024 Progress Report

Private Forest Accord Implementation: 2024 Progress Report

Background

In February 2020, conservation and forest industry groups offered to revise the Forest Practices Act (FPA) and forest practice rules through a memorandum of understanding known as the Private Forest Accord (PFA). In June 2020, the Legislature adopted Senate Bill (SB) 1602 which increased helicopter spray buffers; directed rulemaking for salmon, steelhead, and bull trout streams in the Siskiyou Region; and set communication laws for spraying pesticides by helicopter. The bill set the accord timeline and led to mediated sessions between representatives of the forest industry and representatives of environmental interest resulting in the PFA Report.

In March 2022, the Legislature adopted the PFA Report recommendations through SBs 1501 and 1502, and House Bill 4055. SB 1501 (2022) amongst other things, made substantial changes to the FPA, required the recommendations of the PFA Report be incorporated into the forest practice rules, requires the pursuit of incidental take permits (ITPs) through a habitat conservation plan (HCP) and requires the Board of Forestry (BOF) to undertake rulemaking related to tethered logging and post-disturbance harvest.

Additionally, SB 1501 (2022) requires the BOF to submit annual progress reports regarding PFA implementation to the legislative committees related to forestry. This report captures the BOF's implementation obligations, the status of each, and any related 2024 activities.

Implementation Activities

Statutory Requirement	Status	Deadline	2024 Activities
Adopt a single rule package consistent with the PFA Report	Complete	11/30/2022	
First appoint Adaptive Management Program Committee members	Complete	11/30/2022	
Submit a proposed draft HCP	Complete	12/31/2022	
If needed, make minor amendments to single rule package	Complete	7/1/2023	
Appoint the first voting members of the Independent Research and Science Team	Complete	Not Specified	
Report implementation progress to legislative committees	Complete	Annually	A report was submitted on 2023 activities in Sept. 2024.
Initiate tethered logging rulemaking	Not Started	3/17/2025	
Complete post-disturbance harvest rulemaking	Started	11/30/2025	On Feb. 23, 2024, the BOF considered proposed rules, made required determinations and directed the filing of a rulemaking notice.
Report to the legislative committees whether ITPs were issued by 12/31/2027 & if a petition was received from a PFA Report author	Not Started	2/1/2028 or earlier	

For more information contact: Nicole Stapp, Forest Resources Division Policy Advisor or Derrick Wheeler, ODF Legislative Coordinator.

STAFF REPORT

Agenda Item No.:	B
Work Plan:	State Forests Work Plan
Topic:	State Forests Management
Presentation Title:	Western Oregon State Forests Draft Forest Management Plan
Date of Presentation:	January 8, 2025
Contact Information:	Justin Butteris, Policy Analyst Justin.Butteris@odf.oregon.gov Michael Wilson, State Forests Division Chief Michael.Wilson@odf.oregon.gov

CONTEXT

Forest Management Plans (FMP) provide the overarching management direction for State Forests. These plans are developed pursuant to Oregon Administrative Rule and are approved by the Board of Forestry to codify the Board's finding that management direction in the FMP meets Greatest Permanent Value (OAR 629-035-0020).

After the Board approves a Forest Management Plan, it is required to be adopted as Administrative Rule (OAR 629-035-0030(6)(a)), which requires formal rulemaking under the Administrative Procedures Act (ORS 183.310 – 183.410).

The draft Western Oregon State Forests Management Plan was presented to the Board at the September 2023 meeting and has not had any substantive revisions since that presentation; however, there have been technical edits to the draft, which are reflected in the updated draft (Attachment 1). This FMP is proposed to replace the current FMPs for the State Forest lands under the Department of Forestry's management in western Oregon. The draft FMP is developed to provide policy direction consistent with the draft Western Oregon State Forests Habitat Conservation Plan (HCP).

Rulemaking

Rulemaking for the FMP is subject to more interest and scrutiny from interested parties, including the counties, residents of local communities, recreational users, timber industry, and conservationists. Because of the increased attention to the FMP, the Department endeavors to have more robust public involvement and to make increase transparency of the FMP and its associated rulemaking process.

With the Board's direction to move forward with the HCP, the Department seeks to begin implementation of the FMP and the HCP simultaneously. The exact timing of the approval of the HCP by NOAA Fisheries and US Fish and Wildlife Service and the subsequent issuance of the Incidental Take Permits is unknown. Due to this uncertainty of timing, the Department seeks approval to initiate FMP rulemaking at this time to ensure the final approval of the FMP by the Board will precede issuance of the Incidental Take Permits. This will allow the Board to set an effective date for the FMP that aligns with the implementation of the HCP, so both policy documents can be implemented simultaneously. The regular schedule of Board meetings can pose a challenge in aligning the timing of the rulemaking process to an unspecified future date.

If the Board directs the Department to initiate rulemaking for the draft FMP, the State Forests Division will take actions necessary to initiate rulemaking. The rulemaking process will include all steps required by the Administrative Procedures Act, including required notifications to stakeholders and the legislature, a public comment period and public hearings. The Department will return to the Board with a summary of the comment received, and the final proposed FMP, which includes changes recommended to be made based on the comment received. When the approximate date of issuance for the Incidental Take Permits is known, the Department will determine the desired effective date for the new FMP and finalize the rulemaking with the Secretary of State to promulgate the rule consistent with that timeline.

RECOMMENDATION

The Board directs the Department to begin rulemaking for the Western Oregon State Forests Management Plan to allow for the Board to approve the final FMP at a future date that ensures the Department can jointly implement the FMP and HCP.

NEXT STEPS

If direction is given to initiate rulemaking, the department will:

1. File necessary paperwork with the Secretary of State to begin formal rulemaking.
2. Establish a formal public comment period to solicit comment from interested stakeholders.
3. Meet with the Forest Trust Lands Advisory Committee to gather feedback on the FMP.
4. Hold public hearings.
5. Summarize comment received and provide recommendations on changes to make to the FMP based on the comment.
6. Return to the Board for final approval of the FMP.
7. Complete the process with the Secretary of State to adopt the FMP as rule with an effective date that aligns with the issuance of Incidental Take Permits.

ATTACHMENTS

1. Draft Western Oregon State Forests Management Plan, December 2024 revision

Revisions Included in the December 2024 Version of the draft Western Oregon State Forests Management Plan

Location	Description of Change	Reason for Change
3-4	Added "stands of" in front of "trees in state forest lands"	Improved clarification
3-4	Added text to "quadratic mean diameter (a measure of average tree diameter)" to read "(a measure of average tree diameter conventionally used in forestry, rather than arithmetic mean diameter)"	Improved clarification
3-4	Revised "Silvicultural prescriptions may help accelerate radial" growth in trees to read "Silvicultural prescriptions may help accelerate diameter growth in trees"	Improved clarification
3-5	Figure 3-3 caption. Revised the explanation of how quadratic mean diameter is related to habitat and tree bole merchantability to read "Quadratic mean diameter may be used as an indicator of the quality of habitat for some wildlife species and tree bole merchantability."	Improved clarification
3-16	Revised "Today, counties share in all revenues from these lands" to read "Today, most counties share in revenues from these lands"	Improved clarification
3-16	Revised "63.75% of BOF revenues are distributed to local counties and taxing districts." to read "63.75% of BOF revenues are distributed to counties and taxing districts, where revenue is generated."	Improved clarification
3-19	Replaced Traditional Ecological Knowledge (TEK) with Indigenous Traditional Ecological and Cultural Knowledge (ITECK)	Improved accuracy
3-44	Revised "disturbances, such as wildfire windthrow, logging, and road building" to "disturbances, such as wildfire, windthrow, drought, landslides, logging, and road building"	Improved accuracy
3-49	Replaced "IPs" with "DEQ TMDL Implementation Plans"	Improved accuracy
Glossary	Expanded the definition of Traditional Ecological Knowledge (TEK) to Indigenous Traditional Ecological and Cultural Knowledge (ITECK) and moved it to the correct location.	Improved accuracy

Western Oregon State Forests Management Plan

DRAFT • DECEMBER 2024

Oregon Department of Forestry Headquarters
2600 State Street
Salem, OR 97310

Suggested Citation for this Document

Oregon Department of Forestry. 2024. Western Oregon State Forests Management Plan. Draft. December. Salem, Oregon.

Document Accessibility Statement

The Oregon Department of Forestry (ODF) makes every attempt to ensure our documents are accessible. Should you need additional assistance, please contact us at **ODF.StateForestMP@ODF.oregon.gov** for accessibility assistance.

Contents

List of Figures

List of Tables

Land Acknowledgement

Indigenous tribes and bands have been with the lands that we inhabit today throughout Oregon and the Northwest since time immemorial and continue to be a vibrant part of Oregon today. We would like to express our respect to the First Peoples of this land, the nine federally recognized Tribes of Oregon: Burns Paiute Tribe, Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians, Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation, Coquille Indian Tribe, Cow Creek Band of the Umpqua Tribe of Indians, and The Klamath Tribes. It is important that we recognize and honor the ongoing legal and spiritual relationship between the land, plants, animals, and people indigenous to this place we now call Oregon. The interconnectedness of the people, the land, and the natural environment cannot be overstated; the health of one is necessary for the health of all. We recognize the pre-existing and continued sovereignty of the nine federally recognized Tribes who have ties to this place and thank them for continuing to share their traditional ecological knowledge and perspective on how we might care for one another and the land, so it can take care of us. We commit to engaging in a respectful and successful partnership as stewards of these lands, and as we are obliged by state law and policy, we will uphold government-to-government relations to advance strong governance outcomes supportive of Tribal self-determination and sovereignty.

CHAPTER 1

Introduction

1.1 Purpose and Scope of the Forest Management Plan

The Western Oregon State Forests Management Plan (plan or FMP) provides management direction for all *Board of Forestry Lands*[1] (BOFL) and *Common School Forest Lands* (CSFL) managed by the Oregon Department of Forestry (ODF) west of the crest of the Cascade Range. This plan supersedes and replaces the *2010 Northwest Oregon State Forests Management Plan*, the *2011 Elliott State Forest Management Plan*, and the *2010 Southwest Oregon State Forest Management Plan*. The *Board of Forestry* (the BOF) may review, modify, or terminate a plan at any time; however, the BOF will review the plan no less than every 10 years (Oregon Administrative Rule [OAR] 629-035-0030).

The public and various organizations were involved in developing the FMP. For more information, see Appendix A, *Engagement*.

This chapter describes or provides the following.

- Purpose and scope of the FMP, including *guiding principles* of the plan, ownership and location of the lands governed by the plan, and history of the FMP.
- Plan themes: *greatest permanent value* (GPV), *diversity, equity*, and *inclusion* (DEI), *climate change, sustainability,* and *adaptive management*.
- How the FMP relates to other plans and processes.
- An outline of the FMP chapters.

Definitions of italicized terms in this chapter and throughout the document are provided in the Glossary.

[1] Terms italicized in this document are defined in the Glossary. Defined terms are italicized at the first instance in each chapter.

1.1.1 Guiding Principles

The Forest Management Planning rule (OAR 629-035-0030) identifies required elements for FMPs. Among these are "guiding principles that include legal mandates and Board of Forestry policies." Taken together, and at the direction of the BOF, the guiding principles directed the development of this FMP.

Principle 1 – Greatest Permanent Value

The FMP will be grounded in the management mandates for BOFL as expressed in the GPV and Forest Management Planning OARs.

OAR Chapter 629, Division 35, Management of State Forest Lands, provides the foundation for the development of the FMP for the BOF. Division 35 includes definitions, findings, and principles associated with acquired lands, language defining GPV, and direction for the development of FMPs.

GPV benefits include but are not limited to:

- *Sustainable* and predictable timber harvest and *revenues*.
- *Properly functioning aquatic habitats*.
- Protection, maintenance, and enhancement of *habitat* for *native* wildlife.
- Protection of soil, air, and water.
- Provision of outdoor recreational activities.
- Consideration of *landscape context*.

Also mentioned in the OARs are protection against floods and *erosion*; protection of water supplies; grazing, foraging, and browsing for domestic livestock; forest *administrative sites*; and mining leases and contracts.

The OARs direct that the FMP include strategies that accomplish the following.

- Contribute to *biological diversity* of forest stand types and *structures* at the *landscape* level and over time.
- Apply *silvicultural* techniques that provide a variety of forest conditions and resources.
- Conserve and maintain genetic diversity of forest tree species.
- Manage forest conditions to result in a high probability of maintaining and restoring properly functioning aquatic habitats.
- Protect, maintain, and enhance native wildlife habitats.
- Recognize that forests are dynamic.
- Provide for healthy forests by using an *integrated pest management* approach and appropriate genetic sources of seed.
- Maintain or enhance forest soil productivity.
- Maintain and enhance forest productivity by producing sustainable levels of timber.

- Apply management strategies that enhance timber yield and value while contributing to the diversity of habitats for native fish and wildlife.

OAR 629-035-0000 defines *active management* of state forest lands by "applying practices over time and across the landscape to achieve site-specific forest resource goals using an integrated, science-based approach that promotes the compatibility of most forest uses and resources over time and across the landscape." Site-specific forest resource *goals* can be achieved through deliberate *passive management*, as well as the active application of silvicultural prescriptions and other activities in accordance with the future *objectives* and current characteristics of forest stands.

The OARs also direct that landscape context be considered. Landscape is defined as "a broad geographic area that may cover many acres and more than one ownership and may include a *watershed* or sub-watershed areas" (OAR 629-035-0000). Plans must contain "a description and assessment of the resources within the planning area and consideration of surrounding ownership in order to provide a landscape context" (OAR 629-035-0030).

The counties also have a recognizable interest. The OARs include the following BOF finding:

> The counties in which these forest lands are located have a protected and recognizable interest in receiving *revenues* from these forest lands; however, the Board and the *State Forester* are not required to manage these forest lands to maximize revenues, exclude all non-revenue producing uses on these forest lands, or to produce revenue from every acre of these forests lands (OAR 629-035-0010).

The OARs also direct that the FMP be based on the best science available, use *monitoring* and research to generate new information, and use an adaptive management approach. Adaptive management is defined as:

> The process of implementing plans in a scientifically based, systematically structured approach that tests and monitors assumptions and predictions in management plans and uses the resulting information to improve the plans or management practices used to implement them (OAR 629-035-0000).

Principle 2 - Biological Diversity

State forest lands will be managed, conserved, and restored to provide overall biological diversity of state forest lands, including the variety of habitats for native fish and wildlife and accompanying ecological processes. The GPV and Forest Management Planning rules are the BOF's expression of providing conservation.

The GPV and Forest Management Planning rule include references to attributes that are directly tied to providing a multitude of environmental, social, and economic benefits associated with *biodiversity* on BOFL. These references include, but are not limited to, providing and restoring properly functioning aquatic systems; protecting, maintaining, and enhancing native wildlife habitats; contributing to diversity of forest stand types and structures at the landscape level and over time; and conserving and maintaining genetic diversity of forest tree species.

Principle 3 - Revenue

The FMP will provide sufficient revenue to ensure ODF's ability to manage, conserve, and invest in the forest in order to provide GPV.

The FMP will provide sufficient revenue to support the stewardship of these forest lands and achieve the blend of economic, social, and environmental benefits. *Financial viability* is achieved over the long term through continued protection and management of the forest *asset*, and it is achieved over the short term with operational tools that ensure cash flow is available to ODF for sound management of state forest lands.

In the current business model, 98% of revenue is derived from timber sales and all BOF expenditures and revenues are managed in the *Forest Development Fund*; 63.75% of BOF revenues are distributed to local counties and taxing districts. The remaining 36.25% of revenue from state forest lands pays for the management of state forest lands. Revenue from CSFL is used to reimburse ODF for management costs and the remaining net operating income is transferred to the Oregon Department of State Lands (DSL). Expanding and diversifying revenue sources to support public benefits can increase long-term financial stability. While revenues are cyclical, financial viability is achieved over the long term with business strategies that align anticipated funding availability with services that are prioritized by GPV. Several tools are used, including business improvements, financial metrics to assess future investments, new marketing opportunities, revenue projections, *Implementation Plans* (IPs), the FMP, and risk management.

Principle 4 – Social Benefits

The FMP will provide for a range of social benefits for all Oregonians, including direct and indirect financial contributions to local and state governments, opportunities for public access and recreational use, support for diverse local employment opportunities, and the inclusion of Oregonians and their broad range of perspectives.

State forest lands support multiple social benefits on a variety of scales, and contribute to community well-being for all Oregonians. They provide *ecosystem services* including clean air, clean water, shade, *carbon sequestration* and *storage*, and wildlife habitat—services that draw in visitors and enhance the quality of life for all Oregonians. Other social benefits include various health factors such as improved mental and physical wellness, in addition to community cohesion around shared natural spaces. ODF provides opportunities for lasting and diverse outdoor recreation, education, and interpretive experiences that inspire visitors to enjoy, respect, and connect with Oregon's state forest lands. Active forest management provides revenue for counties, social services, and education. It builds communities by supporting living-wage jobs and contributing to local, regional, and state economies.

Principle 5 – Forest and Watershed Restoration

The FMP will recognize that investments in forest and watershed restoration are necessary to achieve desired outcomes that align with the GPV policy direction for the BOF.

Restoration efforts are considered to rehabilitate *degraded forest lands*. Degraded conditions may exist because of past management practices or natural *disturbances* such as fire, windstorm, floods, and outbreaks of insect or *pathogens*. Much of the state forest lands experienced significant degradation from repeated, large-scale wildfires and extensive logging in the first half of the 20th century prior to ODF management, and although they are now reforested, additional challenges remain where forests are underproductive or *aquatic* systems lack key components. Restoration efforts are carried out with the goal of restoring properly functioning ecological conditions and the ability of the forest to produce the benefits required under GPV.

Forest Restoration

Sole reliance on natural *regeneration* in the wake of large-scale disturbance events (e.g., ice storms, wind events, floods, fires) can extend periods of under-productive forest conditions and susceptibility to insects and disease. More immediate action may be required to improve *resilience* and productivity to ensure a balance of GPV outcomes in a reasonable timeframe.

The FMP recognizes these restoration needs and seeks creative funding mechanisms to implement them. Restoration efforts will contribute to diverse and *healthy forest landscapes* that allow for natural disturbance at different scales within the context of a *working forest* that will be resilient in the face of climate change, fire, or other disturbance events and stressors. Monitoring and adaptive management are key components of the restoration efforts.

Watershed Health

For over 20 years, ODF has made a concerted effort to conserve and improve rivers and watersheds throughout the state, with the direct involvement of local *Watershed Councils* and *Soil and Water Conservation Districts*. ODF's management plans and activities have been an important part of those efforts. The FMP will continue to support the Oregon Watershed Enhancement Board's mission to "help protect and restore healthy watersheds and natural habitats that support thriving communities and strong economies" and emphasize a continuing commitment to restoration activities. This commitment recognizes the vital contribution that these forests can make to the success of large-scale regional efforts like the *Oregon Plan for Salmon and Watersheds* (Oregon Watershed Enhancement Board 2006).

Principle 6 – Pace and Scale

The FMP will be developed and implemented on a scale and at a pace that provide a geographic and temporal range of economic, social, and environmental benefits.

The geographic scale of plan *strategy* and implementation will have an effect on the spatial distribution of plan *outcomes*. Likewise, the temporal pace of strategy implementation and investments will have an effect on the distribution of environmental, social, and economic outcomes over time. These dynamics will be considered in creating and implementing a plan that provides a range of benefits across space and time.

The FMP will not individually optimize environmental, social, or economic outcomes at each geographic scale or for every time period but will strive for a geographical and temporal blend of environmental, social, and economic outcomes.

Principle 7 – Varying Levels of Outcomes

The FMP will provide varying levels of social, economic, and environmental outcomes over time as fiscal conditions change. While this approach will result in short-term trade-offs among specific goals, over the long term, GPV will be achieved.

Different GPV outcomes may be emphasized at different time periods, depending on *fiscal conditions*. For example, when fiscal conditions are favorable, increased investments may be made in aquatic and watershed restoration efforts and to promote forest stand development for both commercial (stand investment) and habitat goals. Fluctuating timber market conditions may favor more or less timber harvest during specific time periods. However, over the long term, the FMP will provide a predictable and sustainable flow of timber. Protection of native fish and wildlife habitats will be maintained consistent with the strategies established in this FMP and the *Western Oregon State Forests Habitat Conservation Plan* (HCP). Services associated with non-revenue-generating activities may fluctuate based on competing priorities and budgetary constraints.

Principle 8 – Legal and Regulatory Compliance

The FMP will comply with other state and federal laws and rules.

In addition to the management mandates specific to state forest lands, the FMP will address compliance with other state and federal laws and rules including, but not limited to, the state and federal *Endangered Species Acts* (ESAs), the federal *Clean Water Act*, the Oregon Forest Practices Act (FPA), Oregon *fish passage* laws, and *cultural resource* protection administered by the *State Historic Preservation Office* and coordinated with *Tribal Nations* (also known as Tribal Partners)[2] and the Oregon State Police.

Principle 9 – Tribal Outreach and Engagement

Reach out to and engage with the nine Federally Recognized Tribes of Oregon throughout the planning and implementation processes.

ODF acknowledges Tribes and Confederation of Tribes are the original stewards of the lands currently managed by ODF, and we recognize the value and importance of integrating Tribal interests and perspectives into land management and implementation processes. To the extent possible, and with the upmost respect, we will pursue opportunities to meet with Tribal Government executives and councils,

[2] Tribal Nations include the nine federally recognized Tribes of Oregon: Burns Paiute Tribe, Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians, Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation, Coquille Indian Tribe, Cow Creek Band of the Umpqua Tribe of Indians, and The Klamath Tribes.

members, practitioners, and staff to listen, learn, and seek opportunities to build collaborative relationships.

Principle 10 – Diverse Input

Seek diverse input from Oregonians.

Understanding, acceptance, and support from interested parties contributes to long-term success in managing state forest lands. ODF is committed to open, equitable, and transparent *engagement* processes. Counties within which BOFL is managed have a statutorily established relationship with the BOF through the *Forest Trust Lands Advisory Committee*. Additionally, Tribes, the State Forest Advisory Committee, state and federal partners, and local communities provide input through public meetings and public comment periods. ODF provides accurate and timely information to ensure the committee has the information it needs to ensure parties can provide testimony and comment to the BOF and the State Forester.

Principle 11 – Cooperative Efforts

The FMP will achieve goals through cooperative efforts with other agencies and units of local government, user groups, and organizations.

Management objectives can often be achieved more effectively and efficiently through collaboration with others. Consultation and communication with other agencies and entities, including counties, will be important to identify areas where ODF's efforts intersect with other state initiatives.

Principle 12 – Managing for Climate Change

The FMP will be implemented to adapt to climate change and mitigate its impacts on the management of state forest lands. The FMP will also contribute to climate change mitigation and sequester carbon.

Temperature, precipitation, other climate variables, and *hydrologic processes* are changing, and are likely to alter the frequency and severity of disturbances, including insects eruptions, disease, wildfire, and drought. These disturbances are likely to have a disproportionate effect on marginalized communities. Within the context of ODF's adaptive management process, the FMP will contain forest management strategies intended to maintain and restore ecological processes and functional characteristics that promote resilient forest conditions. Forest stands and wood products derived from active management contribute to carbon sequestration, a factor in mitigating global climate change. A focus on strategies that adapt to climate change will increase the probability that ODF is able to provide GPV over the long term.

1.1.2 Land Ownership and Governance

State forest lands comprise 3% of Oregon's forested landscape. The FMP *planning area* covers approximately 640,000 acres of state forest lands consisting of BOFL and CSFL, two types of land that were acquired by the state of Oregon in different ways. They are owned by different state government entities. The BOF owns most state forest lands, while the *State Land Board* owns CSFL. Each land

ownership has its own set of legal and *policy* mandates. The locations of these lands are shown on the vicinity map (Appendix B, *District Maps*, Figure B-1). Lands are organized into management districts called *field districts* (Appendix B, *District Maps,* Figures B-1 through B-7).

Prior to state ownership, a majority of the acquired state forest lands had been owned and managed by private landowners. Most of these lands had been logged or burned, *salvage*-logged, and abandoned without the implementation of modern *best management practices* (BMPs). Tax-delinquent and abandoned lands reverted to county ownership. The counties entered into an agreement with the state that was codified in statute and deeded the lands to the state. Those counties share in all revenues from these lands today (Oregon Revised Statutes [ORS] 530.110, 530.010–530.040).

ODF recognizes that the lands covered by the FMP include ancestral lands of the nine federally recognized Tribes of Oregon. The people living and using the lands were displaced during private land acquisition and management, prior to the lands being deeded to the State. The Tribal Nations were engaged in the development of this FMP's cultural resources goals and strategies with the intention of integrating their interests in the lands that ODF currently manages.

1.1.3 Location

The FMP planning area is west of the crest of the Cascade Range. The planning area is distributed across 17 counties. The lands covered by this FMP include both large blocks and isolated tracts of state forest lands. The three largest blocks are the Tillamook State Forest, Clatsop State Forest, and Santiam State Forest. Smaller tracts are scattered throughout the planning area. The smaller, isolated tracts are not referred to as state forest lands but are referenced as "scattered state forest lands."

The Clatsop State Forest and Tillamook State Forest are in the northern end of the Oregon Coast Range, roughly 25 miles northwest of Portland. They are managed by the Astoria District (Appendix B, *District Maps,* Figure B-2) and Tillamook District (Appendix B, *District Maps*, Figure B-5), respectively. The Pacific Coast is a few miles to the west and the Columbia River is to the north and east. Local communities include Forest Grove to the east, Astoria to the northwest, and Tillamook to the west.

Dedication of Tillamook and Clatsop State Forests. *Governor Tom McCall speaks at the formal dedication of the Tillamook and Clatsop State Forests on July 18, 1973. Today, these lands remain Oregon's largest state forests, with Tillamook encompassing 364,000 acres and Clatsop encompassing 154,000 acres.* CREDIT XXX

At 364,000 acres, Tillamook is the largest state forest. It was dedicated in 1973, and is located in the Tillamook and Forest Grove Districts.

Located in the Astoria District, Clatsop State Forest is the second-largest state forest. It was created in 1937. By 1957, Clatsop County had transferred 141,000 acres to the state. 154,000 acres were formally dedicated to the Clatsop State Forest in 1973.

The Santiam State Forest is in the Cascade Range, roughly 25 miles southeast of Salem. It is in the North Cascade District (Appendix B, *District*

Maps, Figure B-4). Local communities include Detroit, Mill City, and Scotts Mills. Santiam is the third-largest state forest covered by this FMP. It was dedicated in 1974 and is located in the North Cascade District.

Many scattered state forest lands are in the Coast Range between Newport and Corvallis (Appendix B, *District Maps*, Figure B-7). There are additional tracts between Florence and Eugene in the Coast Range, scattered in a checkerboard pattern, and some tracts between Reedsport and the California border (Appendix B, *District Maps*, Figure B-6).

1.1.4 History of the Forest Management Plan

As with many public forests, goals and management plans for state forest lands have evolved over time in response to shifting public values, changes in environmental conditions, and better understanding of forest management effects on *ecosystem function* and biodiversity. The *Long-Range Timber Management Plan for Northwest Oregon* (ODF 1984) and *Long-Range Timber Management Plan for the Willamette Region* (ODF 1989) set sustainable timber volume targets as the objective for forest management while giving consideration to other forest resource values. By the mid-1990s, *species* listings under the federal Endangered Species Act had raised significant public concern about how state forest lands were being managed and caused substantial reductions in harvest objectives. Growing recreational use of the Tillamook State Forest also demanded attention, and the *Tillamook State Forest Comprehensive Recreation Plan* was adopted in 1993.

In 1998, the BOF adopted a set of administrative rules (OAR 629-035) that were intended to provide clarity around the benefits that Oregonians derive from state forest lands. The rules were also intended to direct the State Forester to pursue management practices that promote "compatibility of forest uses over time" and "integrate and achieve a variety of forest resource management goals" (OAR 629-035). In response to these revised rules, in 2001, ODF adopted new Northwest and Southwest Oregon State Forests Management Plans. The plans took a much more comprehensive, multi-resource, *ecosystem*-based approach to forest management than previous long-range plans and used a system of *integrated resource management* and landscape-level approach to achieve GPV. The FMP underwent modifications in 2010 as part of decadal review and updates. The modifications included *species of concern* strategies and revision of landscape design.

The State Forester is mandated to manage State Forest lands for multiple benefits including timber, recreation, and fish and wildlife habitat (ORS 530.050). In 1998, the BOF adopted the Forest Management Planning rule (OAR 629-035-0030), which provides the following further direction for state forest management.

In managing forest lands as provided in OAR 629-035-0020, the State Forester shall develop Forest Management Plans, based on the best available science, that establish the general management framework for the planning area of forest land. The Board may review, modify, or terminate a plan at any time; however, the Board shall review the plans no less than every ten years. The State Forester shall develop implementation and operations plans for forest management plans that describe smaller-scale, more specific management activities within the planning area.

Before and After. North Fork Kilchis in 1960 and fives decades later in 2012. CREDIT XXX

The North Fork Kilchis River Drainage recovery after wildfire and logging. Most state forest lands are recovering from logging or wildfire, salvage-logging, and abandonment that occurred prior to state ownership and without modern best management practices (BMPs).

1.2 Plan Themes

While the FMP was developed to address all of the guiding principles, five fundamental themes emerged that form the core of the FMP: GPV, DEI, climate change, sustainability, and adaptive management.

1.2.1 Greatest Permanent Value

The FMP is intended to achieve GPV for Oregonians through a comprehensive, multi-resource approach of integrated forest management. GPV means healthy, productive, and sustainable forest ecosystems that over time and across the landscape provide a full range of social, economic, and environmental benefits to the people of Oregon (OAR 629-035-0020).

GPV means healthy, productive, and sustainable forest ecosystems that over time and across the landscape provide a full range of social, economic, and environmental benefits to the people of Oregon (OAR 629-035-0020).

State forest lands in western Oregon are managed to create healthy, productive forest ecosystems that provide benefits from *forest resources* such as a reliable sustainable and predictable source of timber, economic benefits to rural communities and schools, clean air and water, high-quality habitat for native fish and wildlife, and a diversity of educational and recreational opportunities for the people of Oregon.

Goals have been developed for forest resources, and while all forest resources are interrelated, each forest resource and its related goal can generally be grouped into social, economic, or environmental categories. GPV category icons are used throughout Chapter 3, *Forest Resources, Goals, and Strategies*, to indicate connections with social, economic, or environmental resources and *concepts* (Figure 1-1).

Figure 1-1 Greatest Permanent Value Categories and Icons

Social	*Economic*	*Environmental*
		
Examples Include • Protection of cultural resources • Recreation, education, and interpretation opportunities • Opportunities to collect special forest products such as firewood, edible fungi, and salal	Examples Include • Sustainable and predictable production of forest products that support local and regional economies • Revenue generation for local taxing districts • Revenue generation for the management of state forest lands	Examples Include • Healthy, sustainable, resilient forests • Properly functioning aquatic habitats for native fish and aquatic life • Habitat for native wildlife • Carbon sequestration and storage

1.2.2 Diversity, Equity, and Inclusion

GPV calls for providing a full range of social, economic, and environmental benefits to the people of Oregon, which necessarily requires ODF to understand and honor the demographics of our state. While demographics have and will continue to change through time, managing Oregon's state forest lands with DEI embedded within the FMP framework will ensure that state forest lands are managed for the benefit of Oregonians.

Visitors to Tillamook Forest Center explore exhibits about the importance of woody debris for soil health and habitat. GPV calls for providing a full range of social, economic, and environmental benefits to the people of Oregon.

Foundational to the approach is to recognize Tribes as the original stewards of Oregon's state forest lands, as well as their continued contributions to these lands as sovereign nations with unique ancestral and local knowledge and stewardship since time immemorial. Further, we recognize humans—past, present, and future—as a part of state forests, not apart from state forests. Oregonians benefit from ecosystem

services that the forests provide, but our relationship with state forest lands is grounded in one of *reciprocity*—we care for the forests and the forests care for us and for our communities (Chapter 2, Figure 2-1).

Whether ensuring that ODF provides equitable and inclusive recreational opportunities to Oregonians, recognizing the rural economies and jobs provided by state forest lands, or working to understand and protect cultural resources and support communities of place, the goals and strategies of the FMP will be grounded in serving all Oregonians and will be flexible and responsive to Oregon's changing demographics.

1.2.3 Climate Change

Climate change stresses forest resources and adversely affects the delivery of benefits across GPV categories. Increased incidence of drought limits timber production, aquatic and wildlife habitat, drinking water, and some *special forest products*. Increased air and water temperature increases the spread of insect and disease, which adversely affects fish and wildlife habitat, as well as timber production. Increasing frequency and intensity of wildfire and storms can increase *landslides* and *debris flows* and *windthrow* and change *soil composition*, which can adversely affect timber production, road and trail conditions, soil productivity, and water quality. The latter changes, in turn, may adversely affect road safety, revenue, future timber productivity, fish and wildlife habitat, recreation, and tribal access opportunities.

In response to these threats to resource conditions, the FMP guides ODF to mitigate climate change and increase the forest's capacity to adapt to climate change. Chapter 2, *Management Approach*, describes the elements of *adaptive capacity*, how strategies for enhancing adaptive capacity are applied differently across the landscape depending on the resource emphasized in a particular area, and how adaptive management allows ODF to respond according to changes in forest conditions and new findings in climate science. Chapter 3, *Forest Resources, Goals, and Strategies*, describes management strategies that increase adaptive capacity. One way climate adaptation is achieved is through climate-informed silviculture, in which *management prescriptions* are set in line with *climate-smart forestry* objectives. An example could include altering planting *density* or species to grow forests to be more resilient to drought or wildfire, which would, in turn, improve long-term outcomes for social and economic goals.

The high productivity of forests in the Coast Range and Western Cascades makes them ideal for *climate change mitigation*. These forests sequester and store carbon to reduce atmospheric greenhouse gases and lessen the future impacts of climate change. Mitigation goals have co-benefits with other resource goals, such as increasing late *seral* habitat for wildlife species or producing timber that can store carbon in long-lived structures. Carbon is sequestered and stored long term on the landscape in dedicated *conservation areas* while areas with a timber production focus contribute to carbon storage in long-lived forest products.

Both adaptation and mitigation are key tenets of climate-smart forestry, in which forests are actively managed in ways intended to achieve resource goals by preparing for climate change, reducing carbon

emissions, and supporting communities reliant on wood products or negatively affected by climate change.

1.2.4 Sustainability

Consistent with the guiding principles, the FMP is adopting an *ecologically sustainable management* approach. The goal of this approach to forest management is to sustain and support the health and *function* of forest ecosystems, and thereby improve sustainable delivery of ecosystem services. Healthy, diverse, productive, and resilient forests maintain and enhance ecosystem services and the benefits the public derives from them, including timber production, and are the foundation upon which a sustainable managed forests model is built (Spies et al. 2018).

Under ecologically sustainable management, specific areas on the landscape emphasize different ecosystem services and benefits such that management incorporates a sound understanding of the underlying systems and processes that produce those services and benefits. The HCP is central in defining habitat *emphasis areas* and strategies, which safeguard conservation values while generating regulatory certainty for timber production and other active management activities covered by the HCP.

Ecologically sustainable forest management views resources and benefits within the context of societal values and the forest ecosystem in alignment with the guiding principles and GPV. This approach anticipates change and uncertainty in forest development and disturbances, societal values and demands, and future climate scenarios and effects on forest productivity, species, and ecological processes. To address change and uncertainty, management seeks outcomes to reduce risks to resources and increase future options through applying adaptive capacity strategies and an adaptive management framework. For more information, see Chapter 2, *Management Approach*.

The principles of ecologically sustainable management are reflected in Chapter 3, *Forest Resource, Goals, and Strategies*. Goals and strategies support the delivery of ecosystem services and the values articulated in the guiding principles. The strategies emphasize the function of social, economic, and environmental systems and recognize that specific approaches and the levels of commitment depend on management emphasis areas and economic goals and circumstances.

1.2.5 Adaptive Management

The FMP uses adaptive management to evaluate and learn from decisions and revise plans as changes occur in society, the economy, and the environment, as required by OAR 629-035-0020(3)(f) and 629-035-0030(3)(d). Adaptive management is a systematic and rigorous approach to learning from actions, improving management, and accommodating change. Chapter 2, *Management Approach*, describes how adaptive management is used to achieve sustainable delivery of ecosystem services. All strategies in Chapter 3, *Forest Resources, Goals, and Strategies*, are supported by adaptive management, which tests and monitors the assumptions and predictions that the strategies achieve the FMP goals. Chapter 4, *Guidelines*, describes how it is implemented at ODF.

1.3 Relationship with Other Plans and Planning Processes

Management planning includes three planning levels, as well as fiscal and biennial budgeting. The FMP informs all lower levels of planning (Chapter 4, Figure 4-1). Intermediate-level planning is conducted by ODF administrative and field districts and is documented in IPs. *Operations Plans* (OPs) and budgets (biennial and fiscal) support IP objectives over the short term (1 to 2 years). The HCP, *Forest Land Management Classification System* (FLMCS), Recreation, Education, and Interpretation programs, Operational Policies and BMPs will be used to implement strategies and further guide the shorter-term plans, and the *Adaptive Management Plan* (AMP) supports *effectiveness monitoring* and decision-making. For additional information, see Chapter 4, *Guidelines*.

1.4 Overview of the Forest Management Plan Chapters

In accordance with the Forest Management Planning rule, the following chapters are included in this FMP.

- **Chapter 2, *Management Approach*.** Chapter 2 provides a vision for forest management and describes the need to adapt management as new information becomes available to sustainably deliver a diverse array of benefits to Oregonians.
- **Chapter 3, *Forest Resources, Goals, and Strategies*.** Chapter 3 describes the forest resource conditions to provide context for management. The chapter also includes the FMP's goals and strategies. The goals are what ODF intends to achieve for each forest resource in the planning area. Strategies describe how ODF will manage the forest resources and identify management techniques the State Forester may use to achieve the plan's goals.
- **Chapter 4, *Guidelines*.** Chapter 4 states the general *guidelines* for asset management, implementation, adaptive management, plan revision, and public engagement. Asset management guidelines provide overall direction on investments, marketing, and expenses. Implementation guidelines provide the process for implementing the FMP. Adaptive management, monitoring, and research guidelines describe the approach for learning from management and applying new findings to adjust management to meet GPV. Plan revision guidelines describe what causes plans to change and how plan changes are governed. Engagement guidelines describe the various levels of public and Tribal engagement by plan level.

Additionally, the FMP includes a *Glossary* and *References* as well as three appendices: Appendix A, *Engagement*, summarizes public, stakeholder, and Tribal engagement efforts during FMP development; Appendix B, *District Maps*, shows the FMP planning area by field district; and Appendix C, *Description of Figures,* describes the content of all FMP figures for accessibility purposes.

CHAPTER 2

Management Approach

2.1 Sustainable Delivery of Ecosystem Services

For millennia, Oregon's forest *ecosystems*[1] have been a key part of Oregon's culture, history, and economy. Prior to European settlement, many bands of *Tribal Nations* inhabited Oregon's landscape for time immemorial. They managed the land to produce healthy and abundant *species* of plants and wildlife for sustenance, demonstrating the concept of *reciprocity*, where Tribal land preparations contributed to the *restoration* of natural resources while simultaneously providing healthy and *sustainable* ecosystems. Although the forests have always provided for multiple uses and benefits, the Oregon Department of Forestry's (ODF) understanding of these uses and how they are interrelated has deepened and evolved over time. From a primary focus on production and harvest of wood products, other benefits (e.g., recreation) have been recently recognized that solicited (1) more emphasis on managing for multiple uses and their associated benefits and values (e.g., clean water, rare species, diverse recreation opportunities) with varying levels of integration; and (2) a much broader recognition that forest uses (i.e., goods and services) and their associated public values are derived from forest ecosystems and ecological processes (Kline et al. 2013; Jaworski et al. 2018).

Ecosystem services are the benefits provided by ecosystems to humans; these services are categorized into the following four groups (Millennium Ecosystem Assessment 2005).

1. **Provisioning services**. Provisioning services are resources provided by forest ecosystems that include a sustainable and predictable supply of timber and *special forest products;* food, energy and mineral sources; and clean air and water.

[1] Terms italicized in this document are defined in the Glossary. Defined terms are italicized at the first instance in each chapter.

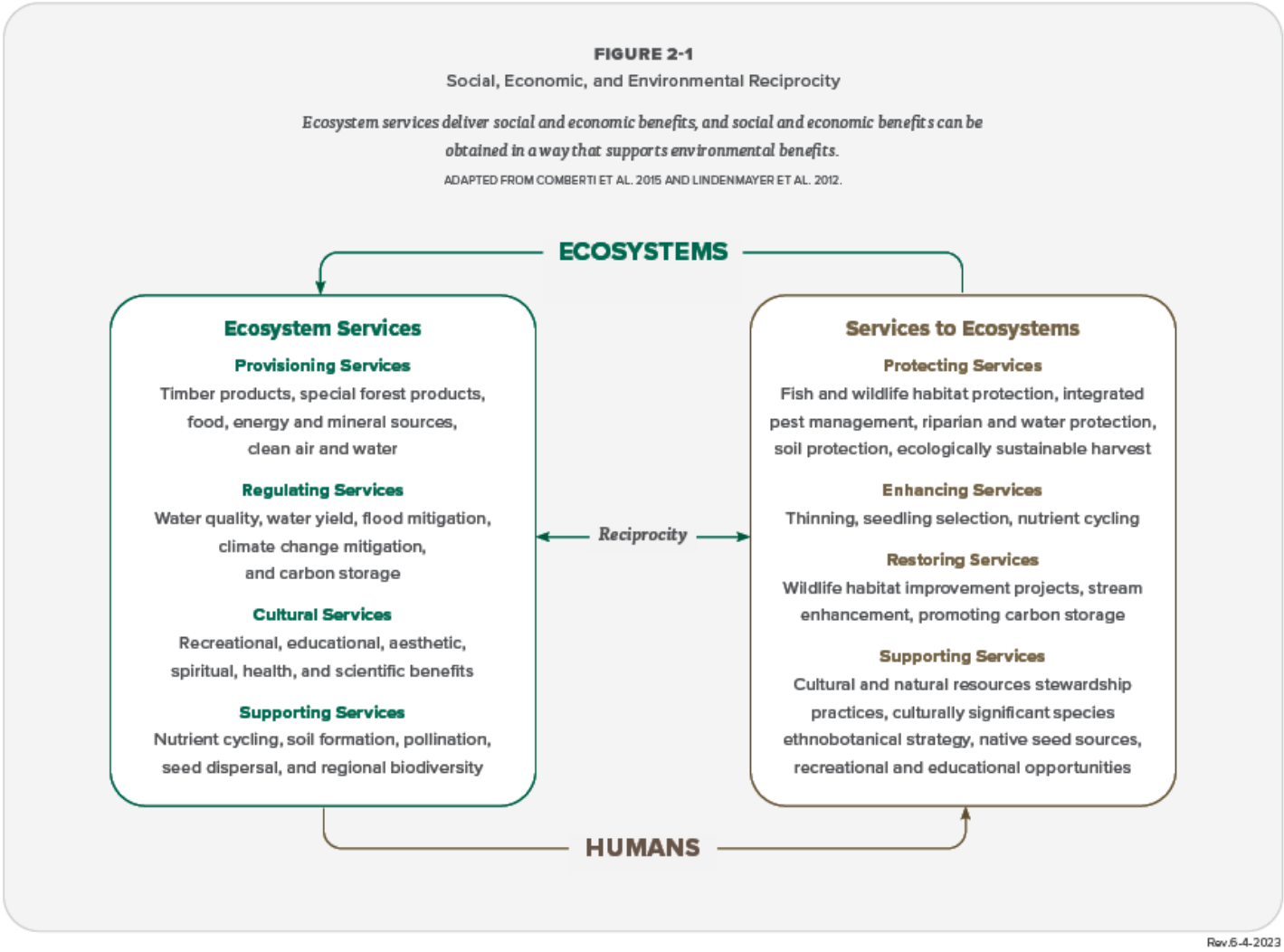
2. **Regulating services**. Forests help regulate resources and ecosystem processes.
3. **Cultural services**. Forests provide sustenance; spiritual, recreational, aesthetic, and scientific benefits; and values as numerous and diverse as the people and cultures that use them.
4. **Supporting services**. Forest ecosystems support the *function* of many systems including *nutrient cycling*, soil formation, pollination and seed dispersal, and regional *biodiversity*.

In addition to identifying many important *outcomes* that contribute to community well-being, the concept of ecosystem services creates a framework that recognizes how social and economic needs are supported by healthy ecosystems and how society provides services to those ecosystems by supporting their functions (Figure 2-1).

The overall goal of *ecologically sustainable* management is a functional ecosystem that sustainably delivers ecosystem services. This approach to forest management is to sustain and support the ecological function and productivity of the forest, and thereby improve *resilience* or *adaptive capacity of ecosystems* to change over time (Franklin et al. 2018; Lindenmayer et al. 2012; Palik et al. 2022). Healthy, diverse, productive, and resilient forests maintain and enhance ecosystem services and the varied benefits the public derives from them and are the foundation upon which sustainable working forests are built (Spies et al. 2018). In this framework, the ecosystem services provided by the forest are sustained across the *landscape* and through time (Figure 2-2).

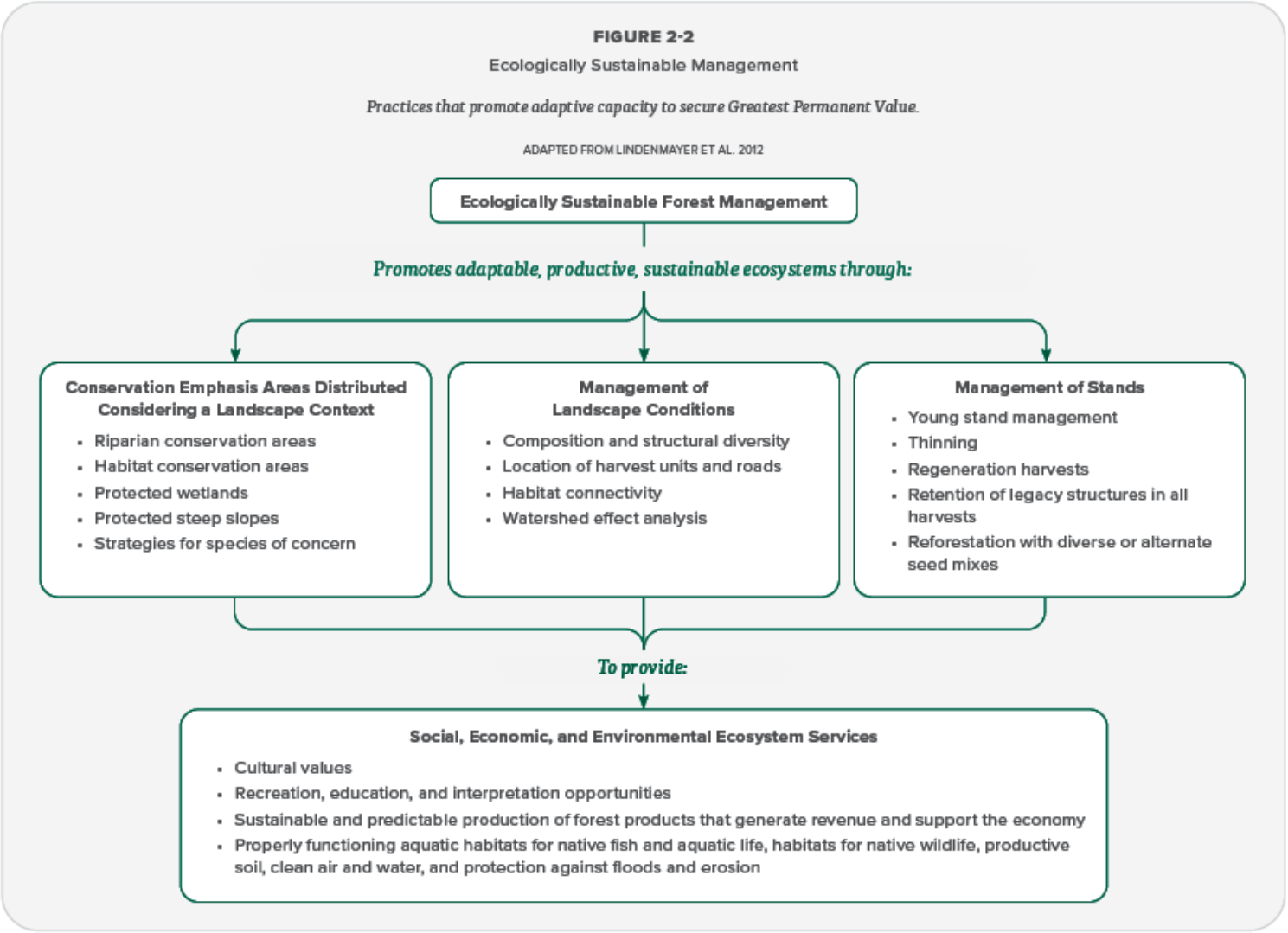
Ecologically sustainable management anticipates change and uncertainty in forest conditions and disturbances, as well as societal values and demands, forest product markets, future climate scenarios, and effects of climate variability and change on forest ecosystem services. To address change and uncertainty, ecologically sustainable management seeks outcomes that reduce risk to resources and increase future options to provide ecosystem services through an *adaptive management* framework and a focus on increasing adaptive capacity. Adaptive management is a key tenet of ecologically sustainable forest management in a changing world and society, especially given uncertainty and risks associated with long-term planning (Millar et al. 2007). Adaptive capacity of State Forests is increased when actions are taken to facilitate or improve the ability of the system to respond to changes that result in the desired ecosystem services (Aplet and Mckinley 2017). Increases in adaptive capacity may be achieved by increasing *resistance* and resilience of existing *stands* to discrete disturbance events and chronic *climate change* (Puettmann et al. 2009; Aquilué et al. 2021) or by guiding or allowing areas to transform to a new state, such as a new species *composition*.

FIGURE 2-1
Social, Economic, and Environmental Reciprocity. Ecosystem services deliver social and economic benefits, and social and economic benefits can be obtained in a way that supports environmental benefits.



Adapted from Comberti et al. 2015; Lindenmayer et al. 2012

FIGURE 2-2
Ecologically Sustainable Management. Practices that promote adaptive capacity to secure GPV.



Adapted from Lindenmayer et al. 2012.

Resistance refers to the ability of a system to avoid a disturbance. Resilience refers to the ability to recover from a disturbance. *Transformation* refers to the emergence of a new ecosystem different from its historic structure, composition, or function. Both *active* and *passive management* techniques can increase adaptive capacity, guide transformations, or respond to transformations to sustain ecosystem services (Lynch et al. 2021).

The management approach reflects complex social and ecological systems that require integrated understanding of the relationships between resources distributed across space and time and their interacting processes (Fischer 2018; Thompson et al. 2021). This understanding informs decision-making to achieve the overall goal of sustaining ecosystem services. In this context, the forest is a system that collectively provides ecosystem services. The following sections describes how ODF applies ecologically sustainable management to state forest lands.

2.2 Ecologically Sustainable Management of State Forest Lands

Under ecologically sustainable management, ODF will manage state forest lands in western Oregon to support the delivery of ecosystem services into the future to provide *greatest permanent value* (GPV) to Oregonians. The following sections layout how ODF manages state forest lands for sustainability of forest ecosystem services.

2.2.1 Emphasis Areas Integrate Ecosystem Services

GPV requires *integrated resource management* such that the *planning area* continues to produce benefits under the context of potentially transformative conditions driven by climate change. ODF's management approach achieves GPV by designing spatially explicit *emphasis areas* whose overlapping layout emphasizes different combinations of resource *goals* designed to complement each other to support long-term *ecosystem function* and increase adaptive capacity over time and across the landscape.

The *Forest Land Management Classification System* (FLMCS) is a method of describing the management emphasis of parcels of state forest lands and has been implemented in accordance with Oregon Administrative Rule (OAR) 629-035-0055. The management emphasis of FLMCS identifies the extent to which a parcel of land can be managed for a variety of *forest resources*. It also identifies when a particular forest resource may need a more focused approach in its management, or possibly an exclusive priority in its management. The spatial locations of the emphasis areas are delineated by FLMCS. The resource objectives emphasized therein, and the rules governing management activities in them, are found in the *Western Oregon State Forests Habitat Conservation Plan* (HCP) (ODF 2022), operational policies, OARs, and other laws and regulations. The Western Oregon State Forests Management Plan (FMP) Integrated Goals and Strategies apply across the landscape but are more strongly emphasized in certain locations according to the particular area's combination of emphasis areas. Management activities in any particular area must be designed to emphasize the resource goals according to the emphasis areas that apply in that particular area.

The spatial layout of emphasis areas is intentionally designed with ecosystem function and related processes in mind. In particular, the HCP's *habitat conservation area* (HCA) layout, as discussed in HCP Chapter 4, Section 4.7.6, *Conservation Action 6: Establish Habitat Conservation Areas*, is complemented by adjacent portions of the landscape that are more actively managed, an arrangement known as land sparing (Harris and Betts 2023). HCA layout provides late *seral habitat connectivity* and complexity, while more actively managed adjacent areas provide early and mid-seral stand diversity (Donato et al. 2012; Puettmann et al. 2016; Stokely et al. 2022). Forest stand and landscape diversity, complexity, and habitat connectivity support functional systems. This, in turn, promotes other elements of biodiversity and related ecosystem processes, such as seed and fungal spore dispersal, soil and nutrient cycling, water quality, and *aquatic* habitat, which further enhances function. These positive feedback loops foster adaptive capacity and, thus, resistance and resilience to stochastic and chronic disturbance within stands and across the landscape (Carey 2007; Franklin et al. 2018). Both HCAs, and more actively managed areas, individually and collectively are intended to adapt to change. Operational policies and *riparian conservation areas* (RCAs) further define and guide more actively managed areas to protect other resources where they benefit the most. In this way, all emphasis areas are integrated across the landscape, such that lands produce timber and protect other ecosystem services.

Figure 2-3 depicts how areas where timber is produced create younger forests, which supports different wildlife species than the older forests created by *conservation areas*. Together, adjacent timber production and conservation areas will be managed to support *species diversity* for multiple values, which improves GPV. Management for diversity occurs at various spatial (genes to ecosystems, individual trees to ecoregions) and temporal (annual, decadal, plan term) scales and within the context of each emphasis area.

Management strategies intended to increase adaptive capacity to climate change and other disturbances will vary across the landscape depending on how particular areas are designated by the FMP, HCP, and other laws or policies. FLMCS describes the type of management that will be applied to a particular area, the allowable range of activities in these areas, and the resources the classification is intended to address. The HCP designates lands for conservation and commits to conservation actions across the forest. Legal requirements and policies define requirements to protect resources. The FMP goals and strategies further define ecosystem benefits that will also guide management activities.

For example, FMP cultural goals and strategies include provisions for Tribal access and culturally significant species. Additionally, FMP strategies include recreation, education, and interpretation considerations for highly used trail systems, or areas that have unique interpretive and educational qualities. The following sections describe the emphasis areas and how landscape-level systems, processes, and risk are managed.

Forest Land Management Classification System

The FLMCS framework places all state forest land within one of four land management classifications: General Stewardship, Focused Stewardship, Special Use, and High Value Conservation Areas (HVCAs). Subclasses are assigned for the specific forest resources that require a Focused Stewardship

classification, Special Use classification, or HVCA classification (*for subclasses and stewardship classes, see box at right*).

FIGURE 2-3
Emphasis Areas and Their Value to the Ecosystem. The design of emphasis areas across the landscape supports diversity, connectivity, complexity, and redundancy, which support adaptive capacity of the ecosystem for sustained ecosystem services delivery under changing conditions.

Source: Oregon Forest Resources Institute 2022

Forest Land Management Classification System Subclasses

Each area designated as focused, special, or high value conservation stewardship is categorized according to subclasses that denote the resource emphasis.

SUBCLASSES

- Administrative Sites (S)
- Agriculture, Grazing, Wildlife Forage (F) (S)
- Aquatic and Riparian Habitat (F) (H)
- County or Local Comprehensive Plan (S)
- Cultural Resources (F) (S)
- Deeds (F) (S)
- Domestic Water Use (F) (S)
- Easements (F) (S)
- Energy and Minerals (F) (S)
- Operationally Limited Recreation (S)
- Plants (F)
- Recreation (F) (S)
- Research/Monitoring (F) (S)
- Transmission (F) (S)
- Unique Threatened or Endangered Plants (H)
- Visual (F) (S)
- Wildlife Habitat (F) (S) (H)

STEWARDSHIP CLASS

- (F) Focused Stewardship
- (S) Special Use
- (H) High Value Conservation Area

General Stewardship lands will be primarily managed for sustainable and predictable supply of timber. Trees younger than the criteria used in the definition of *old growth* in the HCP are available for harvest.

General Stewardship

On state forest lands, timber *revenue* funds the majority of management activities, including habitat restoration, fuels reduction management, recreation and education programs, and infrastructure. These funds are also the primary vehicle for providing economic benefits to rural communities across the state. Emphasis on timber-production goals and related *silvicultural* strategies will, therefore, take priority on a significant portion of the landscape. Production of timber will be the primary objective of General Stewardship lands. These lands will provide a suite of additional ecosystem services such as clean water, *carbon sequestration* and *storage*, and early seral wildlife habitat (Stokely et al. 2022).

According to the OAR, General Stewardship lands shall be actively managed "to provide healthy, productive, and sustainable forest ecosystems that over time and across the landscape provide a full range of social, economic, and environmental benefits to the people of Oregon" (OAR 629-035-0055(4)(a)).

General Stewardship lands provide more opportunities for harvest operations relative to other land classifications. Each harvest entry provides opportunities to increase the subsequent stand's adaptive capacity by actively resisting or directing climate change effects through planting species mix, adjusting planting densities, and other factors to maintain productivity and diversity. Retention of biological *legacies* (old growth, *leave trees*, *snags*, *downed wood*) provide for additional structure, function, and diversity in regenerating stands (Lindenmayer et al. 2012). General Stewardship lands may also employ fuels reduction management to reduce the risk of ignition and spread of wildfire, while maintaining the *standards* set forth in the HCP, and seek alternative revenue sources, such as *biochar* and small-diameter wood products. Careful *salvage* harvest of damaged stands will ensure recovery of economic values and allow new stands to be established with the species mix and planting strategies that are best suited for production under evolving conditions. Environmental goals and strategies in Chapter 3, *Forest Resources, Goals, and Strategies*, guide ODF to protect, maintain, and enhance soils, aquatic, and wildlife resources during management of General Stewardship lands.

Focused Stewardship

"Focused Stewardship lands include all those whose forest resources are managed using integrated management practices in a manner which is intended to accomplish forest management planning goals." (OAR 629-035-0055(3)(b)) "Because one or more specific forest resources on these lands require heightened or focused awareness, supplemental planning and/or modified management practices may be required to achieve the goals of forest management plans, habitat conservation plans or legal requirements." (OAR 629-035-0055(4)(b))

There are several subclassifications of Focused Stewardship lands, including areas with *cultural resources* or recreation use, where additional management strategies are designed to maintain and protect these resources. These additional strategies are considered through supplemental planning process (OAR 629-035-0055(3)(b)), described in ODF operational policies and state and federal regulations.

Special Use

Special Use areas shall be "managed for a specific forest use. Integrated management is conducted on these lands to the extent possible without interfering with the management of the specific forest use" (OAR 629-035-0055(4)(c)).

On lands classified as Special Use, "a forest management plan, habitat conservation plan, or other legal requirement identifies one or more of the following: a legal or contractual constraint dominates the management of the lands and precludes the integrated management of all forest resources; lands are committed to a specific use and management activities are limited to those that are compatible with the specific use" (OAR 629-035-0055(3)(c)). The Tillamook Forest Center and Smith Homestead day use area are examples of Special Use lands.

High Value Conservation Areas

HVCAs will be managed for a specific conservation value. "Forest management may be conducted to the extent that forest management activities promote the conservation values and are consistent with applicable legal requirements and will avoid long-term adverse impacts to the specified conservation value" (OAR 629-035-0055 4(d)). HCAs and RCAs are examples of HVCAs.

HCP Conservation Areas

HCP Chapter 4, *Conservation Strategy* defines the two types of conservation areas: HCAs and RCAs. They are delineated and guided by the requirements described in the HCP. A mix of passive and active management in HCAs will maintain and develop late-seral, structurally complex stands as they relate to specific habitat needs for covered species. Predominantly passive management in RCAs will improve habitat for covered species and increase resilience by buffering ecological function against changes in streamflow and temperatures resulting from climate change. Within HCAs and RCAs, opportunities to increase adaptive capacity through silvicultural activities are more limited than they are for General Stewardship lands. However, certain conservation actions to promote habitat enhancement will provide specific opportunities to promote adaptive capacity or guide transformation. For example, *stream* restoration and *culvert* replacement are allowed in RCAs, which can increase resilience of streams and resistance of roads to floods and *landslides*. Management of HCAs will promote habitat development and adaptive capacity with the following approach. Management of HCAs will incorporate principles of *ecological silviculture* and *adaptation silviculture* (Palik et al. 2020, D'Amato and Palik 2020). Ecological silviculture is based on the spatial heterogeneity and historical range of variation found in unmanaged old forests and seeks to emulate *stand initiation* and development processes that result from small-scale natural disturbances (e.g., *windthrow*, lightning, insects, disease) to promote within-stand diversity and complexity. Natural history (forest development, dynamics, species, and structures) is a model for management and provides insight into potential pathways, trajectories, limitations, risks, and options. Natural forest development principles (e.g., disturbance, succession) inform management strategies and prescriptions related to stand initiation and development, maintenance of forests, retention of biological legacies, and landscape mosaics (Carey 2007). Management based on historical conditions may become less relevant with climate change, leading to greater use of adaptation silviculture that increases the

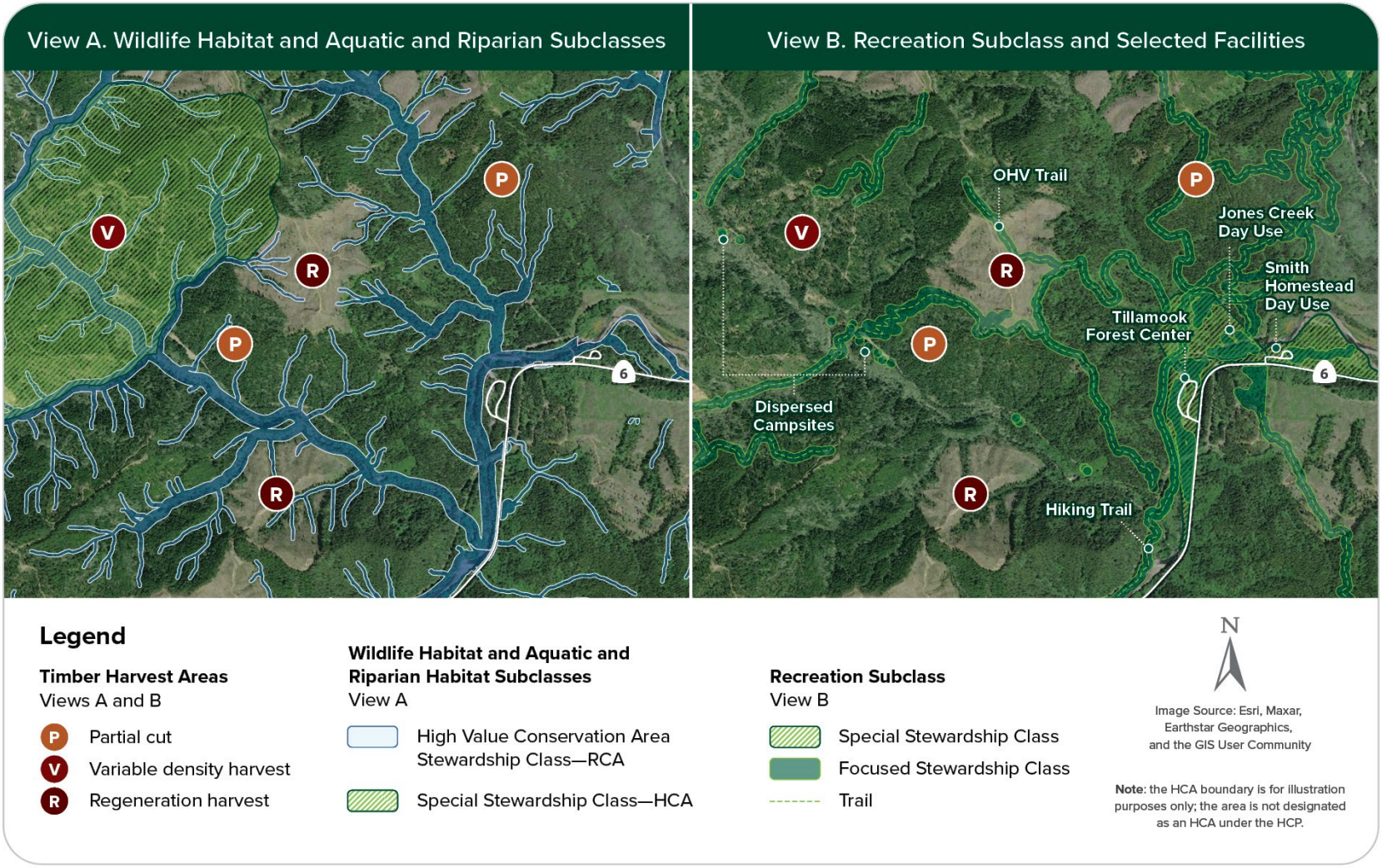
forest's ability to adapt to changing conditions and continue to deliver ecosystem services. The outcomes of ecological silviculture—stands with greater diversity and complexity—remain relevant to adapting to novel conditions (D'Amato and Palik 2020). Habitat conditions and ecosystem services will be continually assessed in HCAs in light of novel conditions to determine when to modify management principles.

At the stand level, species composition, structural complexity, and function may increase adaptive capacity (Franklin et al. 2018). Management activities will seek to create, restore, and maintain structurally complex and biologically rich stands, considering local forest types and other site-specific conditions. Prescriptions should provide complex and diverse forests of all types and stages, and activities should be timed appropriately within the context of natural forest development (Carey 2007; Puettmann et al. 2016).

Both active and passive management can be used to promote complex stands and heterogeneous landscapes that enhance adaptive capacity and have co-benefits for habitat development. For example, active management can reduce *stand density* in young stands to encourage trees more likely to withstand wind (Mitchell 2000; Moore et al. 2003). The location of limited treatments in HCAs can also be a factor to help build resistance to disturbance. Fuels can be managed in portions of HCAs identified as high fire risk, using variable-retention harvest or variable-density thinning that also creates spatial heterogeneity for habitat development purposes (e.g., robust shrub and forb communities) in closed-canopy, homogeneous stands. Conifer restoration actions in *Swiss needle cast* (SNC)-infected stands and some hardwood-dominated stands, although limited in HCAs, will be implemented to guide stand development to resilient stands with more desirable long-term habitat quality. *Reforestation* will use a diverse tree species mix with limited site preparation and young stand management, introducing complexity early in stand development. Variable density thinning will also promote spatial heterogeneity, complexity, and diversity (e.g., robust shrub and forb communities) in closed-canopy, simple stands. While treatments and management actions in HCAs will be designed to increase habitat quantity and quality, some of these treatments will result in timber revenue.

Allowing for passive development of complex older stands may also increase adaptive capacity (Nagel et al. 2017). Passive management retains biological legacies on the landscape and accommodates small-scale disturbances followed by natural *regeneration*. Both active and passive management can facilitate transformative change, e.g., by actively introducing warm-adapted tree stocks or a diverse species mix during reforestation or allowing transformation over time to warm-adapted species within the existing plant community. Transformative changes after disturbances and under climate change will be assessed with regard to habitat requirements for HCP-covered species under an adaptive management framework. The varied sizes and distribution of HCAs across the landscape, coupled with more regular distribution of RCAs, is intended to create a functional network of habitat *patches* across the plan area, which supports resilience. RCAs will produce increasingly complex and resilient *riparian* conditions over time. Figure 2-4 shows how RCAs, recreation, and timber harvest activities are integrated across the landscape.

FIGURE 2-4
Examples of Emphasis Areas across the Landscape. Active management is integrated across the landscape guided by resource management emphasis areas.



Note: the HCA boundary is for illustration purposes only; the area is not designated as an HCA under the HCP.

2.2.2 Implementation Considerations across the Landscape

HCP conservation strategies, FMP strategies, and the planning process are intended to integrate management of ecosystem services across the landscape. Planning and operations work together across the landscape to provide social, economic, and environmental benefits. During the planning process, management activities are reviewed to ensure alignment with goals and strategies. Important habitat types and ecological features are identified and managed according to the HCP and FMP. Consideration is given to recommendations, *Implementation Plan* (IP) targets, *best management practices* (BMPs), and operational policies to achieve GPV. The resulting landscape provides a range of integrated social, economic, and environmental benefits.

For example, harvest operations on General Stewardship lands are planned with the emphasis of revenue and timber production. Other values are integrated into these operations. Harvested timber contributes to carbon storage in manufactured wood products. RCAs, in addition to leave tree and downed wood requirements, defined in HCP Chapter 4, *Conservation Strategy*, contribute to carbon storage on the landscape, fish and wildlife habitat, and clean water. A special stewardship-designated campground adjacent to a harvest area may be considered a visual buffer per the FMP strategies. A special stewardship domestic water intake may be in or adjacent to a harvest area and is protected according to applicable rules and policies.

2.2.3 Adaptive Capacity, Landscape Context, and Adaptive Management

To provide GPV, state forest lands management must sustain interrelated social, economic, and environmental benefits while continuing to promote the ecosystem services that support their delivery and the adaptive capacity of the system in the face of change and uncertainty. Resources change over time, economic cycles produce swings in the value of timber harvested, species move across the landscape, disturbance events alter conditions, public use patterns change, and ecosystems undergo transformation. Regional and global conditions such as climate change create uncertainty around future forest productivity and health, species distributions and biodiversity, the severity and frequency of disturbance patterns, and the potential for ecosystem transformation. To deliver ecosystem services in the face of change and uncertainty, the management approach focuses on building adaptive capacity, evaluates *trade-offs* between ecosystem services across the landscape, and leverages adaptive management to address uncertainty and change over time.

Adaptive Capacity

Maintaining or increasing adaptive capacity across the landscape reduces risk associated with change and uncertainty. Increasing resistance reduces the likelihood of impacts, increasing resilience reduces the degree of consequences, and transformation allows for change. Examples of management actions that promote resistance to disturbance include fuels reduction management and establishment of fuel breaks prior to a fire event that can reduce the likelihood of fire spread and severe burn. Examples of management options that promote resilience to disturbance include reforesting with diverse tree

species that can reduce the extent of insect and disease on timber inventory or enhancing stream habitat conditions throughout a *watershed* to ensure sufficient aquatic resources are available to accommodate increasing fluctuations in streamflow over time. Examples of increasing transformation include allowing an HCA to follow natural fire recovery processes. In general, species diversity, structural complexity in HCAs and RCAs, and spatial heterogeneity contribute to adaptive capacity—the ability of the forest to accommodate changes from both discrete events and gradual change.

Evaluating Trade-offs in a Landscape Context

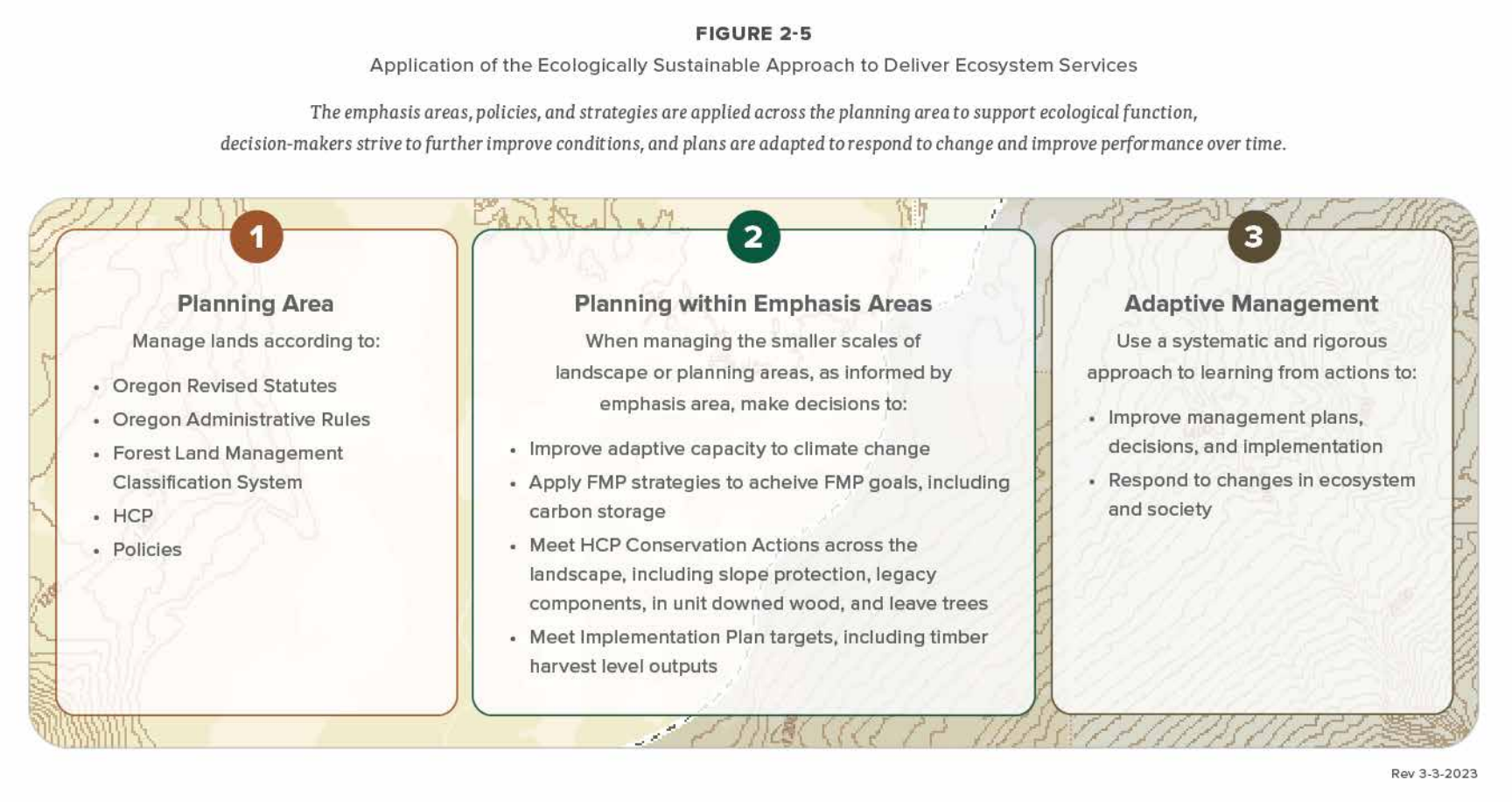
Evaluating trade-offs associated with provision of different ecosystem services is paramount to evaluation and revision of desired conditions and related strategies (Bradford and D'Amato 2012;Burton et al. 2014; Franklin et al. 2018). Trade-offs include but are not limited to management emphasis (e.g., timber, aquatic and riparian function, biological diversity and conservation, *scenic*, recreation), *desired future condition*, integration of resources, applicable *policy* restrictions, *landscape context*, and revenue.

Trade-offs are considered at every level of planning. For example, at the HCP level, they were considered in the designation of HCAs and RCAs and the development of conservation goals and objectives. At the IP level, they are considered in deciding the type and amount of activities that will occur over the life of the IP in a particular region. Site-specific trade-offs are considered during Operations Plan (OP) development, which designates operations in shorter time periods to achieve the IP. At the adaptive management level, trade-offs are evaluated prior to making any changes to IPs, FMPs, or the HCP. Additional details are provided in Chapter 4, *Guidelines*.

Adaptive Management

Adaptive management is a systematic and rigorous approach to learning from actions, improving management, and evaluating decisions in response to changes in ecosystems and society (Millar et al. 2007). FMP and HCP strategies are expected to sustain delivery of specific ecosystem services over time. Adaptive management is structured within a clear decision-making framework that connects the evaluation of management alternatives relative to important resources and values with subsequent decision points that provide the opportunities to change management approaches (Gregory et al. 2012). With an adaptive approach to management, long-term targets and modeling may require more frequent revision and adjustment based on *monitoring* to achieve the FMP goals and better understand trade-offs in delivering ecosystem services. Adaptive management is incorporated into different levels of planning to respond to changes in the ecosystem and society. For the FMP, monitoring assesses the effectiveness of strategies for meeting forest resource goals. At the HCP level, monitoring assesses whether biological goals and objectives are being met. Investments in monitoring projects for adaptive management are prioritized during IP planning while on-the-ground monitoring operations are included in OP development. ODF's decision-making framework acknowledges the different values that Oregonians present to forest management when assessing tradeoffs between management alternatives, including those affected by these decisions. Additional details of this decision framework are presented in Chapter 4, *Guidelines*. Figure 2-5 shows the process from planning area implementation, to learning and adapting actions to meet GPV.

FIGURE 2-5
Application of Ecologically Sustainable Management to Deliver Ecosystem Services. The emphasis areas, policies, and strategies are applied across the planning area to support decision-makers as they strive to further improve conditions, adapt plans to respond to change, and improve performance over time.



2.3 Strategy Integration for Ecosystem Services Delivery

The principles of ecologically sustainable management are reflected in Chapter 3, *Forest Resources, Goals, and Strategies*. Each goal represents a forest resource and management strategies are designed to deliver multiple ecosystem services: cultural values; timber production; fish and wildlife habitat enhancement; special forest products; soil processes; water quality; recreational, educational and interpretive opportunities; and carbon storage.

The strategies address climate change and other disturbance effects by adaptively managing for resistance, resilience, and directed or accepted change of ecosystems to sustainably deliver benefits. While HCAs and RCAs will receive less active management, and General Stewardship lands will have a timber-production focus, the entire forest functions as a whole; therefore, management considers the dependencies among ecosystem services to provide sustainability over time. The primary goals of the emphasis areas will guide their management.

The FMP strategies support rural economies and public services by aiming to produce a sustainable and predictable timber supply. The strategies emphasize the function of economic systems that support forest management and recognize that specific approaches and the levels of commitment depend on economic goals and circumstances. Maintaining economic benefits is key to supporting implementation of all plan activities and maintaining public trust in ODF's ability to deliver plan outcomes. Chapter 3, *Forest Resources, Goals, and Strategies*, and Chapter 4, *Guidelines*, describes the methods for implementation, operations, and adaptive management.

CHAPTER 3

Forest Resources, Goals, and Strategies

OAR 629-035-0030 requires that the *Western Oregon State Forests Management Plan* (FMP) contain "forest resource management goals, which are statements of what the State Forester intends to achieve for each forest resource within the planning area consistent with OAR 629-035-0020 (Greatest Permanent Value)" and "management strategies, which describe how the State Forester will manage the forest resources in the planning area to achieve the goals articulated in the plan. The strategies shall identify management techniques the State Forester may use to achieve the goals of the plan during the implementation phase of the plan."

Chapter 3 describes the types and conditions of *forest resources*, how they reflect greatest permanent value (GPV), and what management of each resource is intended to achieve and how. There are 16 forest resource *goals* and 40 strategies for accomplishing those goals. The resource description, goals, and strategies reflect the five plan themes (Chapter 1, Section 1.2, *Plan Themes*) and *concepts* from the management approach (Chapter 2, *Management Approach*).

Performance measures are specific measures reported to the *Board of Forestry*[1] (BOF) that track the accomplishment of select FMP goals. Review of performance measures is the pathway for feedback and

[1] Terms italicized in this document are defined in the Glossary. Defined terms are italicized at the first instance in each chapter.

adjustment in the decision-making framework for *Adaptive Management Plans* (AMPs) and policies described in Chapter 4, *Guidelines*, and shown in Figure 4-1.

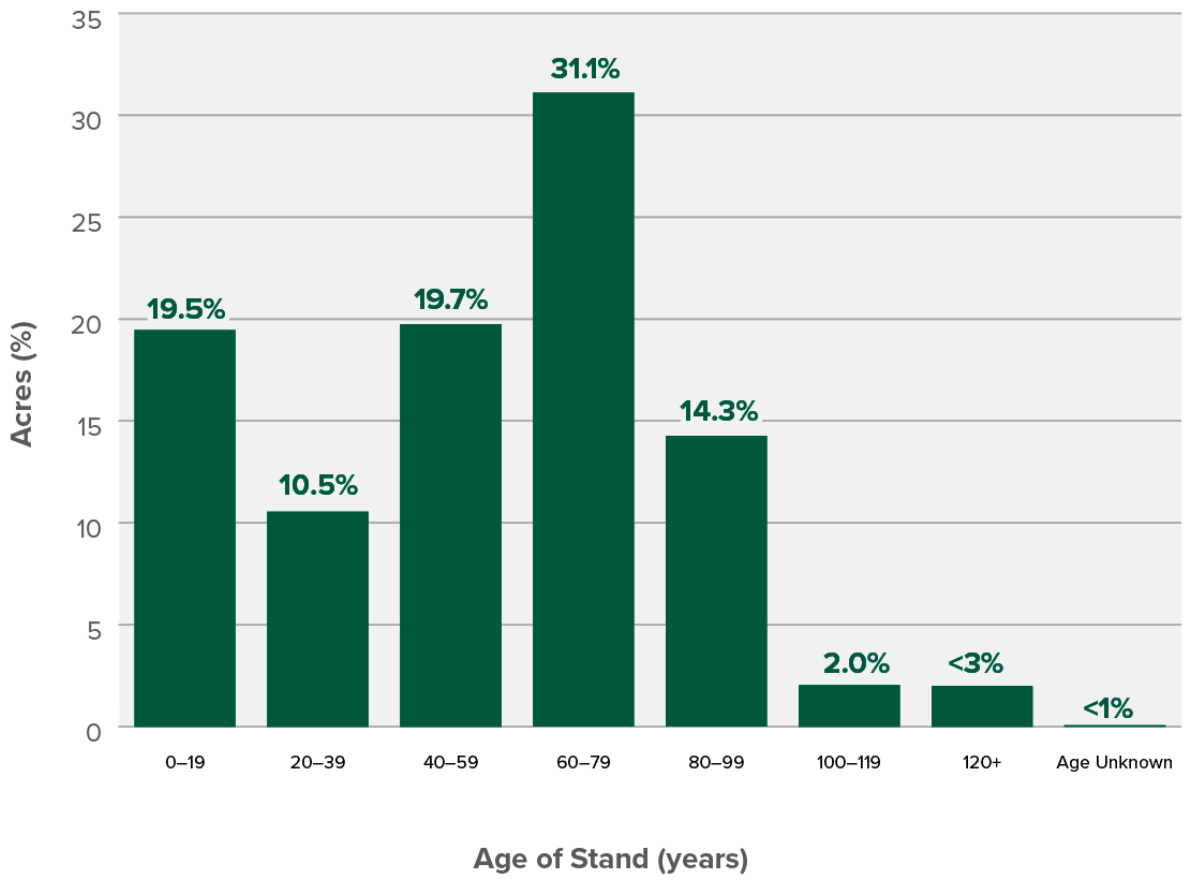
3.1 Forest Condition

State forests comprise different species of trees at different ages. The distribution of dominant tree cohort age and species has important implications for future management, particularly in the development of silvicultural pathways aimed at improving adaptive capacity of ecosystem processes to deliver GPV.

To better understand and provide context for the resource goals and strategies, the current state forest condition is detailed here. Forests are complex *ecosystems* with numerous *biotic* and *abiotic* interactions. Trees are the dominant group of plants on state forest lands. Many state forest lands were affected by repeated, large wildfires or were extensively logged prior to acquisition by the state in the first half of the 20th century. *Reforestation* and *restoration* efforts were implemented across state forest lands to replant burned or harvested lands after the State took ownership. The age and *species* distribution of state forests lands reflects the history of large fires, *salvage* logging, and reforestation (Figures 3-1 and 3-2).

The distribution of dominant tree age on state forest lands affects future management, particularly in the development of *silvicultural* pathways and conservation strategies aimed at improving *adaptive capacity* and promoting ecosystem processes that deliver high-quality *habitat*. Compared to simple *stands*, forests with complex stands will support more *biodiversity* and will be more resilient to windfall and insect infestations. Currently, approximately 45% of state forest lands in the *planning area* have a dominant *cohort* of trees between 50 and 79 years old. These lands include 53% of the merchantable standing volume in the planning area. Stand ages reflect periods of salvage logging prior to State ownership and subsequent reforestation efforts by the Oregon Department of Forestry (ODF) that occurred after a series of wildfires in 1933, 1939, 1945 and 1951, collectively known as the Tillamook Burn. However, dominant cohort age is not the only factor that influences forest functioning condition. Site productivity, past management practices, and *disturbance* and disease history interact to produce the forests that ODF manages today.

Figure 3-1. Distribution of Stand Ages as a Percentage of Western Oregon State Forests. Compared to even-aged stands, forests with uneven-aged stands often support a greater number of species and are more resistant to windfall and insect outbreaks.

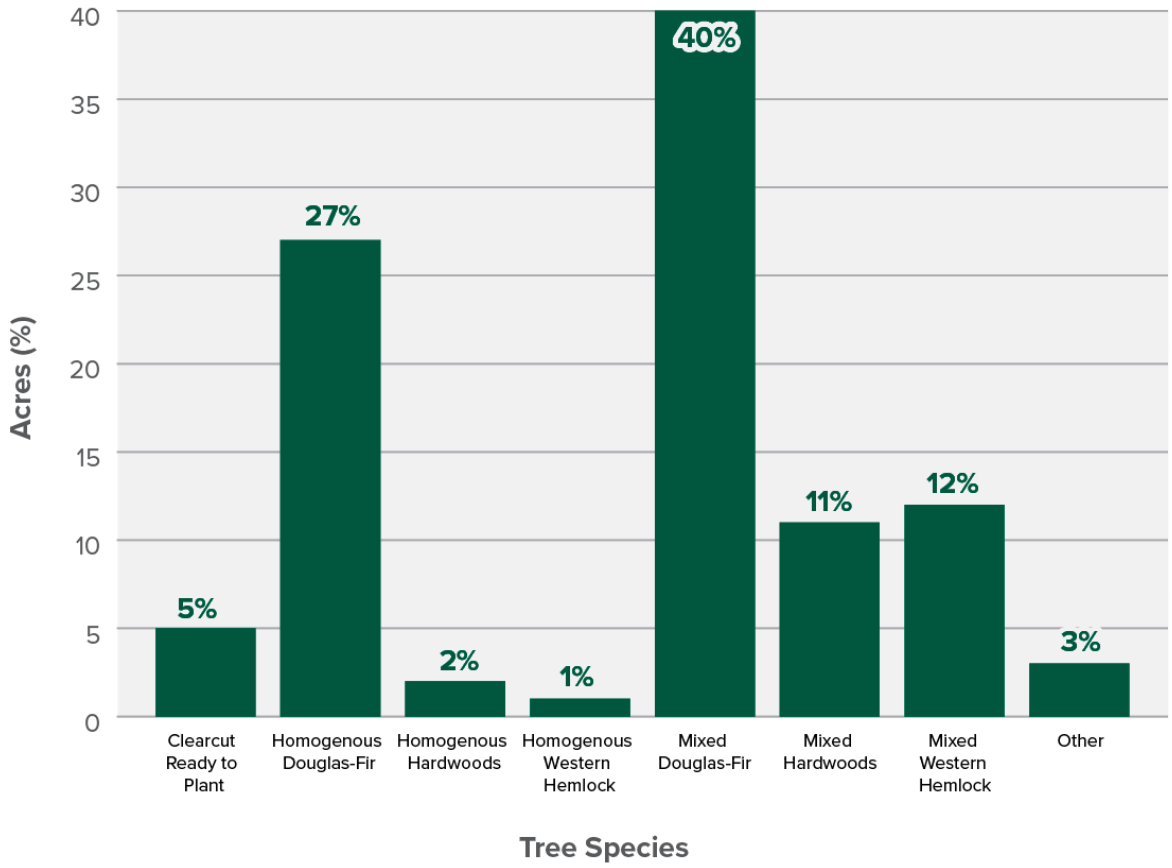


Source: ODF 2022a.

Note: Stands that experienced stand-replacing fire within the Beachie Creek Fire (North Cascade District) had their stand initiation date reset to 2020. Thus, the distribution of stand ages will likely differ markedly from previously published reports that used *Stand Level Inventory*.

Douglas-fir-dominated forests are the most common forest type on state forest lands (Figure 3-2). Western hemlock (*Tsuga heterophylla*)-dominated forests and red alder-dominated forests are the next most common forest types.

Figure 3-2. Dominant Tree Species in Western Oregon State Forests. Tree species richness and composition affect potential vulnerabilities to disturbances and stressors such as insect outbreaks, pathogens, fire, windthrow, drought, and climate change.

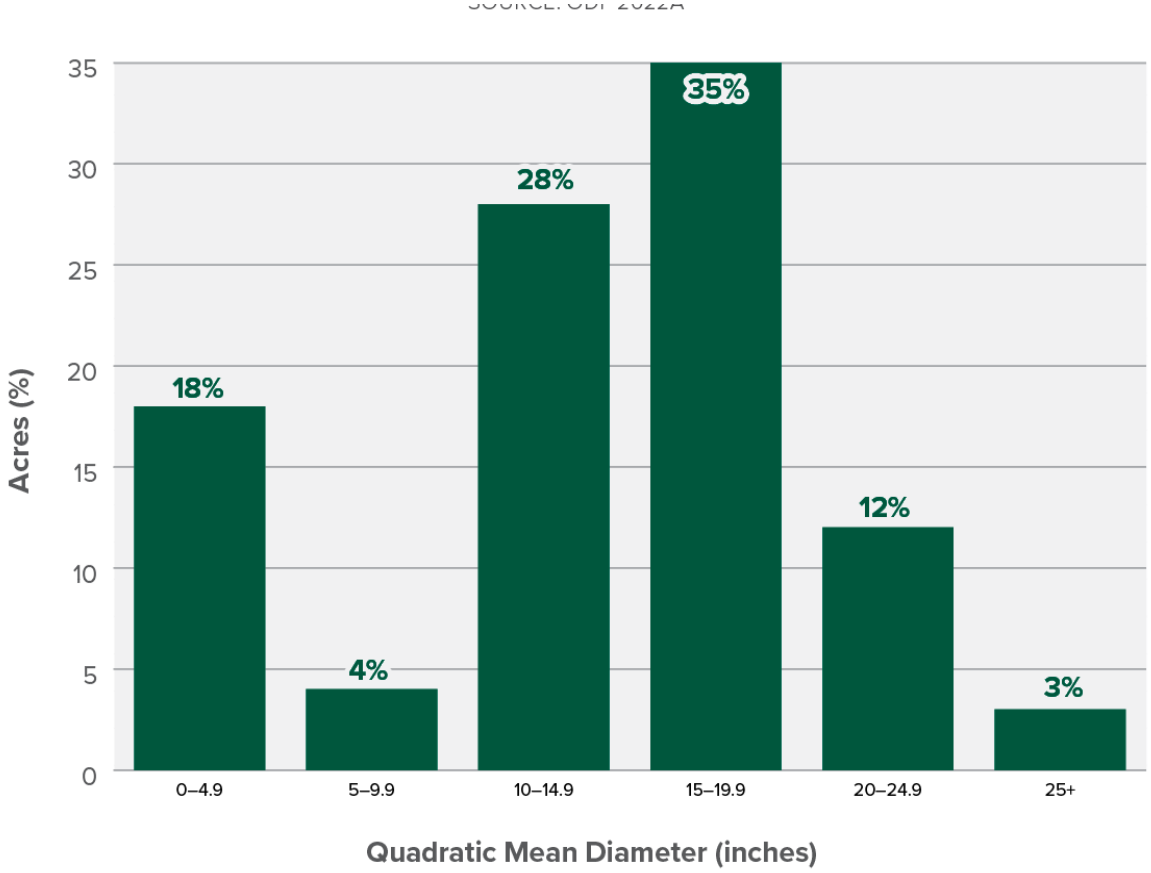


Source: ODF 2022d.

Note: Stands that experienced stand-replacing fire within the Beachie Creek Fire (North Cascade District) had their stand initiation date reset to 2020. Thus, the distribution of stand ages will likely differ markedly from previously published reports that used Stand Level Inventory.

On average, stands of trees in state forest lands have a quadratic mean diameter (a measure of average tree diameter conventionally used in forestry, rather than arithmetic mean diameter) between 11 and 20 inches (Figure 3-3). A relatively small fraction of trees in the planning area have a quadratic mean diameter of more than 20 inches, reflecting the history of fire, *regeneration harvesting*, and reforestation on state forest lands. Silvicultural prescriptions may help accelerate diameter growth in trees and may help achieve silvicultural and habitat management goals for average tree diameter.

Figure 3-3. Distribution of Quadratic Mean Diameter of Trees in Western Oregon State Forests. Quadratic mean diameter may be used as an indicator of the quality of habitat for some wildlife species and tree bole merchantability.



Source: ODF 2022a.

Note: Stands that experienced stand-replacing fire within the Beachie Creek Fire (North Cascade District) had their stand initiation date reset to 2020. Thus, the distribution of stand ages will likely differ markedly from previously published reports that used Stand Level Inventory.

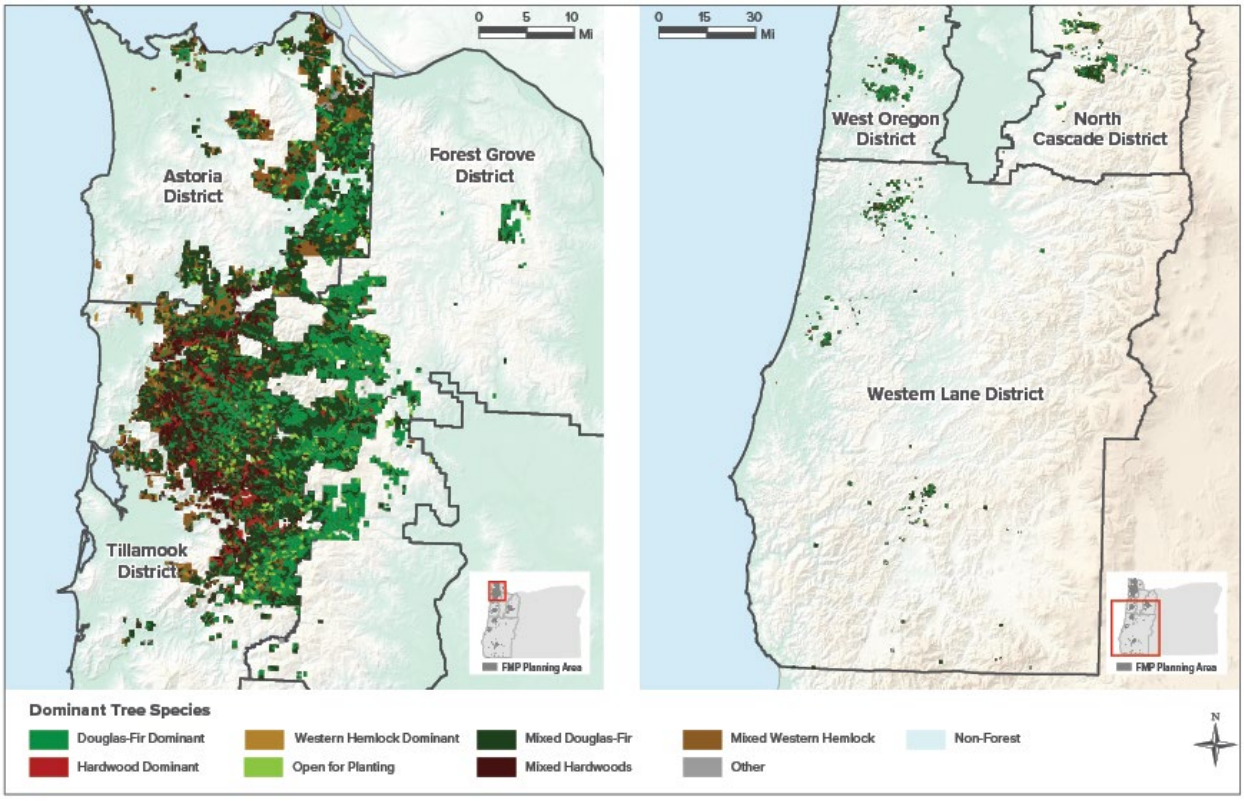
Management history and geography strongly influence the dominance of tree species and stand age across space and through time (Figure 3-4). Douglas-fir-dominated forests comprise the majority of forests. While other multispecies forest patches exist on state forest lands, they cover a minimal proportion of the planning area. In general, each of these forest types will present distinct silvicultural opportunities, offer different economic return, and provide habitat for different species. These differences are particularly relevant habitat development and timber production.

3.1.1 Hardwood Management

Native hardwood trees provide a *diversity* of ecological *functions* and resources for wildlife that complement the conifer-dominated forests typical on state forest lands (Ellis and Betts 2011).

Maintaining hardwood diversity within stands may involve appropriate silvicultural interventions, including selecting leave trees during harvests or replanting with diverse species. Management actions for hardwoods may depend on the focus of the stand, such as whether it is intended for harvest of conifers, or a *habitat conservation area* (HCA) intended to grow more complex habitat. In some cases, hardwood-dominated stands may not provide desired values, such as large trees for wildlife habitat or *carbon storage*, and may be converted, as in the example of anticipated red alder management below. At the time of writing, stands dominated by hardwoods accounted for just under 15% of total acres in the planning area.

Figure 3-4. Distribution of Dominant Tree Species on Western Oregon State Forests. Douglas-fir-dominated forests comprise the majority of all districts other than Tillamook, but forests dominated by species other than Douglas-fir or by multiple species exist in all districts.



Source: ODF 2022a.

Red alder is a native hardwood that is ecologically and commercially important. In Pacific Northwest forests, red alder readily colonizes disturbed areas, particularly when reseeding or planting of conifers does not occur. Alders contribute to soil creation and *nutrient cycling*, and improve soil nutrients by fixing nitrogen, while supporting *regeneration* of shade-tolerant conifers (Hibbs et al. 1994). This ecological role is particularly important where soil has been damaged by disturbance (e.g., high severity wildfire), such as in portions of the Tillamook Burn area that were subject to repeated fire events. Goals and strategies for soil resources are discussed in Section 3.2, *Integrated Resource Management, Soils and Geology*.

A history of repeated fires and cut-and-run logging practices, prior to the creation of state forest lands, resulted in relatively large areas dominated by alder on the North Coast and on the Tillamook and Clatsop State Forests in particular. There are more than 70,000 acres of alder-dominated stands in the Tillamook District alone. The age of the dominant cohort in red alder-dominated forests primarily ranges between 40 and 80 years old. Red alder rarely live more than 100 years (Hibbs et al. 1994); thus, red alder mortality in the Tillamook District could increase in the next 20 years as these trees approach the end of their life expectancy. Dead and dying alders provide important nesting and denning habitat for diverse wildlife species (Carey et al. 1997). As red alder-dominated stands unravel, the regenerating forest can provide diverse and complex early *seral* habitats. Goals and strategies for wildlife habitat are discussed in Section 3.2, *Integrated Resource Management, Wildlife*.

The relatively large proportion of alder stands in some state forests *landscapes* provides opportunities for both *passive* and *active management* for specific resource values. The pace, scale, and intent of active management will be different in different *emphasis areas*. In production emphasis areas, conversion of some *hardwood stands* to *conifer forests* is an important priority, but ensuring a continued supply of hardwood logs to local mills remains a priority as well. In conservation emphasis areas (including HCAs), conifer restoration treatments will be more limited, and intended to promote development of habitat for the *Western Oregon State Forests Habitat Conservation Plan* (HCP) covered species. Hardwood stands in the *riparian area* would be protected under the HCP, which does not allow conifer restoration treatments in *riparian conservation areas* (RCAs).

There are at least 30,000 acres of hardwood-dominated stands on operationally limited ground across the planning area. Stand development in these areas will continue to occur without active management. Areas that are not *actively managed* (e.g., operationally limited areas) provide a basis for comparison of strategies intended to promote conifer and habitat development. The intent is not to remove hardwoods from the landscape or ignore their key roles in biodiversity and *ecosystem function*, but rather to learn from a broad suite of management approaches in an *adaptive management* framework.

3.1.2 Forest Health

There are several *forest health* challenges for state forest lands over the planning area. Some forest health concerns are due to past practices and history of the lands, while others are due to an increase of forest visitors. For example, much of the Tillamook Burn was planted or seeded with Douglas-fir from non-local seed sources, with unknown long-term consequences and are considered part of the factors for *Swiss needle cast* (SNC) impacts on stands. Increasing popularity of recreational activities in state forest lands of northwest Oregon increases the likelihood of new invasive species being introduced, which in turn, could affect long-term forest health. Increases in the frequency, duration, and magnitude of drought and heat waves may stress the forest ecosystem. Under *climate change*, hotter and drier summers will provide more favorable conditions for insect outbreaks and will make trees more vulnerable to infestation. Drought-stressed trees are often subsequently attacked by secondary agents, such as *pathogens*.

Forest health strategies are addressed on a site-specific basis when reforestation prescriptions are developed for planting and other young *stand management* treatments. Site-specific prescriptions

consider target species, aspect, elevation, soil types, SNC risk where applicable, *Phellinus weirii* (laminated root rot) presence, required *stocking* guidelines, natural advanced regeneration, and the *desired future condition* of the stand. Such prescriptions also anticipate drier, hotter future conditions resulting from climate change. This will provide for a diverse, healthy, productive, and *sustainable* forest ecosystem over time that will be more resilient to change.

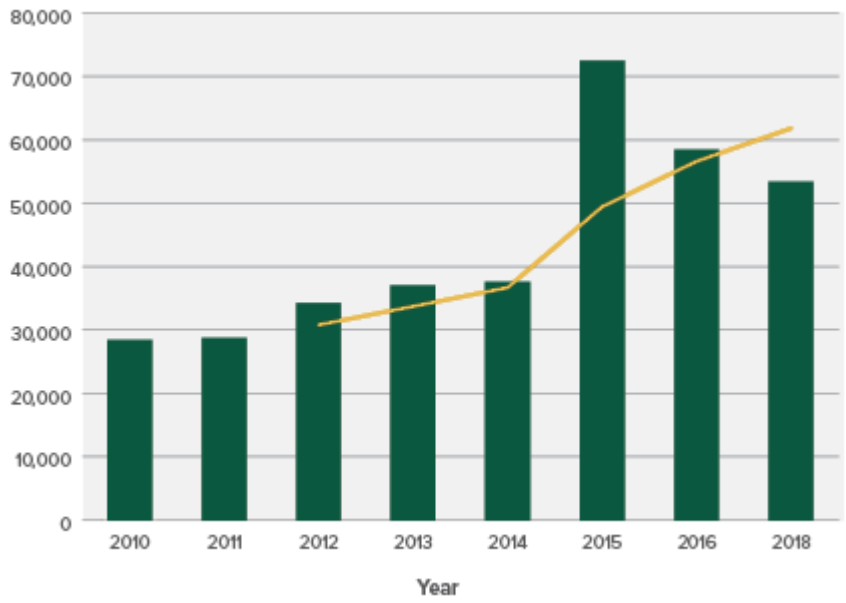
ODF will follow the *integrated pest management* process using site-specific management *objectives* while decreasing non-target impacts of control measures on other forest resources and ecosystem processes. The integrated pest management process will be similar across the landscape designations. Actual use of pest management will depend on the issue, regional context, *Forest Land Management Classification System* (FLMCS) designation, existing conditions, and desired *outcomes*. For example, insect and disease may be treated differently in HCAs than outside of HCAs, where they have wildlife benefits. Through the AMP and *Structured Decision-making* (Chapter 4, *Guidelines*) process, ODF will participate in cooperative applied research and *monitoring* projects with partner agencies, universities, and organizations that enable cross-ownership, adaptive integrated pest management.

Diseases

Swiss Needle Cast

SNC is a native disease of Douglas-fir that has intensified on coastal lands managed by ODF since 2010 (Figure 3-5). It affects trees of all ages and causes premature loss of needles, especially in the upper crown, which reduces tree growth and vigor. The growth reduction, especially if sustained, will not only reduce yields but also will affect ODF's ability to manage stands into desired conditions. While native throughout the range of Douglas-fir, SNC is most prevalent on the west slopes of the northern Coast Range from the coastline to 28 miles inland. The 2018 SNC aerial survey detected over 53,000 acres of moderate to severe SNC infection. Roughly 90% of infected acres were moderately infected. Most of the acres are concentrated on the Astoria and Tillamook Districts, followed by the West Oregon District (Table 3-1). The remaining acres were split evenly between Forest Grove, Western Lane, and North Cascade Districts. Management actions have occurred over 20 years to harvest the most severely affected Douglas-fir stands and replant with other species such as western hemlock or SNC-tolerant Douglas-fir more suited for sites.

Figure 3-5. **Swiss Needle Cast on State Forest Lands.** Annual observations and 3-year moving average of Swiss needle cast-infected acres across state forest management since 2010.



Source: Swiss Needle Cast Cooperative 2018

TABLE 3-1. **Swiss Needle Cast by District**. Results of 2018 aerial survey of Swiss needle cast-affected acres on state forest lands.

District	Acres Affected in 2018
Astoria	12,319
Tillamook	35,909
West Oregon	4,196
Remaining Districts	1,478

Laminated Root Rot

Laminated root rot, a native fungal disease that affects many conifer species, is the most widespread and destructive root disease of Douglas-fir in the Coast Range and western Cascade Range. On average, it affects about 5% of the Douglas-fir forest, but is distributed unevenly. Results from several surveys show that in *northwest Oregon state forest lands*, at least 10% of the Douglas-fir-dominated stands is affected by this disease. The acres affected in individual stands ranges from 0% to over 75% of the area. The most susceptible host species are Douglas-fir, grand fir (*Abies grandis*), and mountain hemlock (*Tsuga mertensiana*). Western hemlock and noble fir (*Abies procera*) have intermediate susceptibility, pines and cedars are resistant, and hardwoods are immune.

Black Stain Root Disease

Black stain root disease, caused by the fungus *Leptographium wageneri*, has been detected in many areas but is thought to be more localized in southwest Oregon. In recent years, reports of black stain root disease in young, intensively managed Douglas-fir stands has increased in the northwest part of the state.

Forest Insects

Douglas-fir Bark Beetle

Douglas-fir bark beetle (*Dendroctonus pseudotsugae*) usually infest trees following *windthrow*, disease, or drought. When major disturbance occur, the large supply of high-quality downed Douglas-fir allows beetle *populations* to erupt. Outbreaks typically last 2 to 4 years, though can be prolonged when conditions are favorable.

Sitka Spruce Weevil

Sitka spruce weevil (*Pissodes strobi*) commonly kills the current and 1-year-old terminal shoots of Sitka spruce. The weevil typically affects trees between 3 and 20 years old. Foresters have avoided planting Sitka spruce in western Oregon because repeated weevil outbreaks slow tree growth and produce severe stem deformations (ODF 2007).

Spruce Aphid

Spruce aphid (*Elatobium abietinum*) is an invasive species that causes premature loss of older needles in Sitka spruce and eventually kills branches or the entire tree. Much of the spruce decline along the Oregon coast is attributable to the spruce aphid.

Noxious Weeds

Noxious weeds are terrestrial, *aquatic*, or marine plants designated by the Oregon State Weed Board under Oregon Revised Statutes (ORS) 569.615 as representing the greatest public menace and are a top priority for action by weed control programs. Depending on the classification, ODF is responsible for developing and implementing an eradication plan. Currently, roughly 120 species are listed as a noxious weed across Oregon. Many of these species occur on state forest lands. The most common, Scotch broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus armeniacus*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), and Japanese knotweed (*Reynoutria japonica*) are well established throughout all state forest lands. Other non-native invasive species on the state's noxious weed list expanding on state forest lands include false brome (*Brachypodium sylvaticum*), English ivy (*Hedera helix*), garlic mustard (*Alliaria petiolata*), and non-native geraniums (*Geranium* spp.).

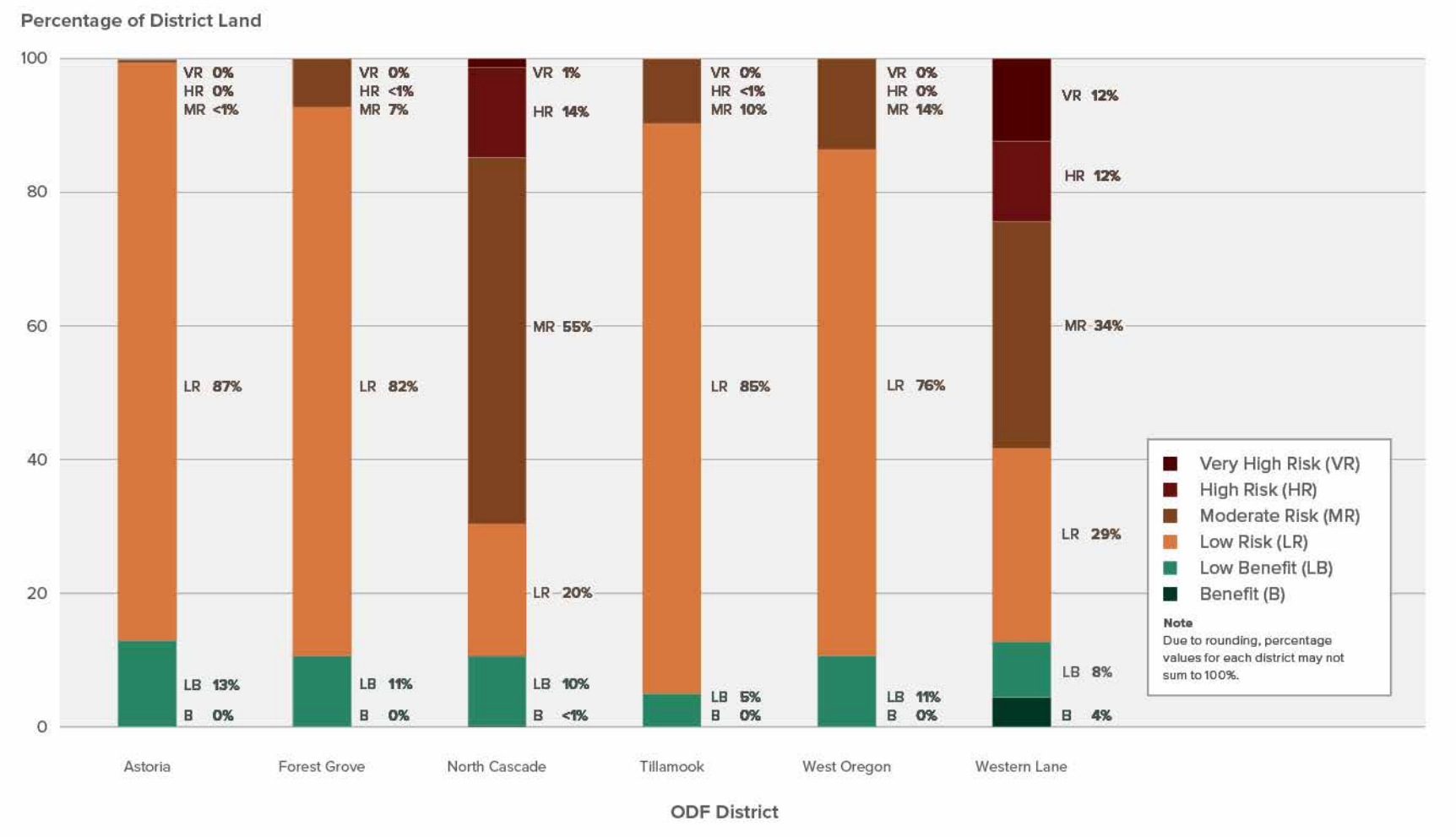
Wildfire

Rum Creek Fire burned near Ennis Riffle County Park after igniting by lightning on August 17, 2022. Wildfires have always been part of Oregon forests and can contribute to forest health and development.
Credit: ODF

The history of western Oregon state forests is connected to wildfire. There are many examples of historic fire and salvage activities across the planning area as well as catastrophic fires like Tillamook Burn (1933, 1939, 1945, 1951). The 2020 fires across Oregon had a significant impact on the Santiam State Forest. Climate projections suggest that these trends will likely accelerate in the future (Dalton and Fleishman 2021). Forest wildfires in Oregon are expected to become more frequent, burn larger areas, and possibly become more severe (Dalton and Fleishman 2021; Reilly et al. 2022).

Figure 3-6 describes the distribution of the overall fire risk level across the planning area.

Figure 3-6. Percent of Planning Area District Lands by Overall Wildfire Risk Category as of 2018. Risk is a product of the likelihood and consequences of wildfire to infrastructure and natural resources. Wildfire can be either beneficial or detrimental.



Source: USFS 2018

Areas shown as low risk, in the northwestern districts, have a lower likelihood to burn on average, but when a wildfire ignites it is more likely to be severe, because there is more biomass to burn (Reilly et al. 2022).

Areas outside of HCAs and RCAs provide a broad array of options for exploring fire mitigation and response. Options in HCAs and RCAs are limited to those consistent with the HCP, but HCAs and RCAs also provide opportunities to include alternative approaches and unmanaged control areas in monitoring programs and adaptive management.

3.1.4 Forest Resilience

Through activities on the forest (management and conservation), the over-arching goal is to ensure healthy, sustainable, and resilient forest ecosystems that over time help achieve environmental, social, and economic goals that benefit all Oregonians. Functioning ecosystems on state forest lands provide a variety of benefits including clean water, recreation, wildlife habitat, timber, and other *ecosystem services*.

The health of these forests is defined for this FMP as their ability to increase or maintain productivity while maintaining *resistance* and *resilience* to biotic and abiotic stressors. Fire, windstorms, ice storms, *landslides*, people, insects, and diseases periodically affect forest health, injuring or killing trees and other living things. These disturbances are natural and necessary processes of the forest ecosystem; however, sometimes active management is necessary to reset trajectories toward goals based on the management emphasis of the affected area.

The forest will be actively managed to achieve objectives within stands and across the landscape to create a variety of forest conditions designed to improve capacity for adapting to climate change. Resilience through management starts with successful stand initiation by planting a variety of tree species and harvest activities that retain a forest condition with multiple age groups, densities, and stand complexity that are resilient to disturbance and climate change and deliver ecosystem services. Restoration practices include diversifying tree species, spacing, spatial patterns, variable *density* thinning, and weed control (Ares et al. 2010).

Trade-offs of various silviculture prescriptions and their effectiveness are evaluated during the planning processes described in Chapter 4, *Guideline*s.

Stand Management

Stand management operations will include a full suite of silvicultural prescriptions. These include partial cuts with variable density retention, patch cuts, and *regeneration harvests*. Leave trees, *downed wood*, and stream buffer requirements are defined in the HCP as part of the conservation strategies. Stand-level management decisions and tradeoffs will be informed by other resource goals and strategies at stand, basin or landscape level.

Reforestation and Young Stand Management

Stand initiation after harvest, salvage, or areas affected by wind or fire will be conducted through tree planting on the majority of sites and some areas of natural regeneration. Stand initiation and young stand development are imperative to set a stand on course to meet its management objectives. Each area planted is assessed to determine the number of trees per acre to plant, which species to plant, size of the seedlings, and site preparation needs such as *slash* piling or herbicide treatment. In areas where there was a disease present, seedlings are selected that are more resistant or tolerant to the disease, if available.

Young stand management activities are important because they can ensure a stand is on a path to reach the long-term goal for the stand based on its emphasis areas, adaptive capacity needs, and role in meeting (*Implementation Plan* [IP]) targets. Young stand management can include precommercial thinning for spacing and species selection or release of overtopped trees to provide more growing space and accelerate tree and stand development Incorporating uneven-aged stands across the landscape promotes a diverse *structure*, with small, medium, and large trees providing a multilayered canopy. A diverse forest in species, age, and structure can provide needed or preferred habitat for many plant and wildlife species, increase the resilience of forests to climate change, and provide resistance to diseases and insect-infestations that will affect stand health and timber productivity in the long term.

Over the time of this FMP, there will likely be disturbances from wind, fire, and insect or disease. When disturbance events occur, there will be assessment of areas impacted to better determine response. The assessment will consider scale, location, and long-term goals of the forest for habitat development or management. Details for actions and activities such as salvage or no activity will be addressed at the IP and *Operations Plan* (OP) level and through operational policies.

Actions will take place to reduce the risk from wildfires to life, property within state forest lands, and the forested landscape through fuel management, prevention and education. Fuel management will prioritize restoration actions and treatment areas and may include activities such as density management, slash reduction, controlled burns, and working with *Tribal Partners* to reintegrate traditional cultural fire practices.

Disturbance Response

A necessary part of managing for sustainable timber production is responding to changing landscapes and climate change by increasing adaptive capacity and ecological function. Disturbances such as wildfire, ice damage, *windthrow,* insects, and disease affect state forest lands. These disturbances can kill or damage trees. Damaged trees often experience reduced growth and subsequent rot while *snags* begin to decay soon after dying. Chronic stressors such as increased temperatures and drought associated with climate change can affect general forest productivity and affect sustainable timber production. Strategies that provide for forest resilience and adaptive capacity are also a key component of ensuring sustainable timber production.

Silviculture and *stand management* techniques can reduce the risk of damage to timber from climate change. Among the management techniques in response to disturbance, *salvage* harvest can be used to

remove timber after a natural disturbance affects *forest health*. Harvest intensity can range from the selective harvest of individual trees to regeneration harvest, depending on the degree of the disturbance event and forest management goals. Salvaging can be employed to remove merchantable timber from disturbed areas, prevent the spread of disease or insect infestation, reduce safety hazards, and promote forest health for future harvest, while considering potential negative impacts (Lindenmayer et al. 2012). Responding to disturbance and managing state forest lands in accordance with the resource goals of a particular area, promotes sustainable *ecological silviculture* and the continuation and enhancement of ecosystem services.

3.2 Integrated Resource Management

The goals and strategies represent the integration of multipurpose, ecologically sustainable, and adaptive approaches necessary for maintaining ecosystem service*s* and GPV across state forest lands over time. Each of the management goals for the forest resources support and contribute to different aspects of GPV at varying levels. In the following sections, GPV category icons (Figure 1-1) and the resource descriptions are used to indicate connections with social, economic, or environmental resources and concepts. GPV can be tracked using the highlighted icons next to each goal.

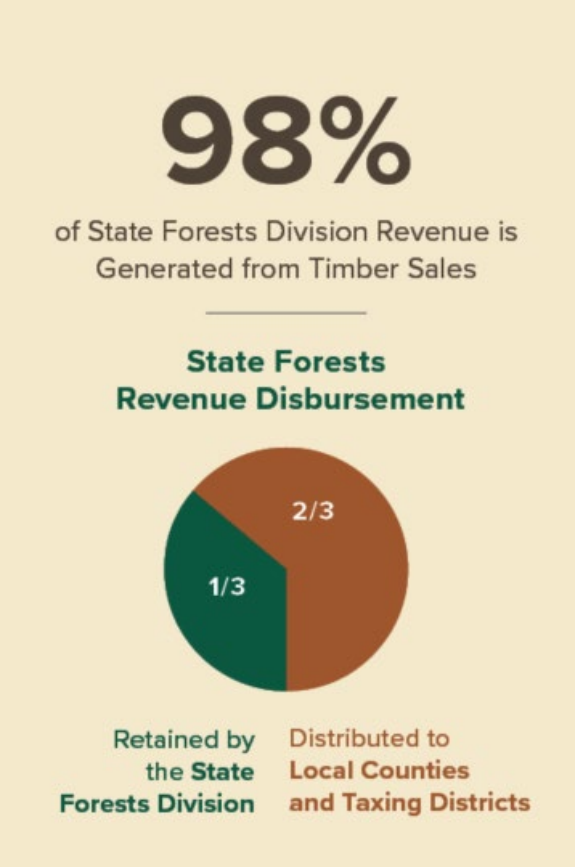
Because forest resources coexist in space and time, integration of goals and strategies is necessary to minimize conflicts, facilitate decision-making, and balance social, economic, and environmental benefits. Chapter 2, *Management Approach*, provides a discussion of FLMCS stewardship classes and across the *landscape*. Chapter 4, *Guidelines*, provides additional detail on implementation and how trade-offs are considered. *Adaptive management* (Chapter 4, *Guidelines*) enables assessment and modifications of goals and strategies and their application in response to new information and changing circumstances, such as natural disasters, climate change, and new research findings. Effective integration entails synthesis of knowledge, experience, and best available science from multiple disciplines including *forestry*, wildlife and fisheries *ecology*, *geology* and *hydrology*, *engineering,* and recreation resource management.

Timber Management

Timber is vital to Oregon's economy and job creation, especially in some rural areas of the state. Average weekly wages in the western Oregon timber industry are higher than the average weekly wages in other industries in western Oregon (Daniels and Wendel 2020). Timber harvest directly affects local jobs and mills, and indirectly affects the number of additional jobs in local communities.

Timber log deck during harvest operations in Santiam State Forest. Forest product sales are a vital part of the economy, and forest products are needed to build homes, businesses, schools, and other structures needed by society.
Credit: ODF

In addition to being a vital part of the economy, forest products and sales are used to build homes, businesses, schools, and other structures needed by society. *Revenues* from state forest lands come primarily from timber sales, while a significantly smaller contribution comes from *special forest products* sales, recreation fees, and special use fees. Today, most counties share in revenues from these lands (ORS 530.110, ORS 530.010, ORS 530.040); 63.75% of BOF revenues are distributed to counties and taxing districts, where revenue is generated. This revenue is used to pay for local community services such as education, law enforcement, roads infrastructure, and community health. Revenue from state forest lands is a significant contributor to local budgets, which support social benefits.



The remaining 36.25% of revenue from state forest lands pay for the management of Board of Forestry Lands . This management includes items such as reforestation, young stand management, *threatened and endangered species* surveys, fish and wildlife habitat improvements, fire protection, and recreation, education, and interpretation programs, staff, and infrastructure. These silvicultural activities provide environmental benefits by increasing adaptive capacity to sustain a forested landscape under climate change and improving habitat quality. Revenue from Common School Forest Lands (CSFL) is transferred to the Oregon Department of State Lands (DSL). DSL reimburses ODF for costs incurred on CSFL. Net operating income from revenues and costs is deposited into the *Common School Fund*.

Goal: Timber Production

Provide a sustainable and predictable supply of timber that provides for economic opportunity, jobs, and availability of forest products.

Strategy: Sustainable Harvest Objective

Determine a sustainable harvest objective during IP development, and complete this harvest objective with predictable year-to-year timber supply over the life of the IP.

Strategy: Timber Salvage

Implement a timely response to natural disturbances (fires, windstorms, ice storms, etc.) to salvage merchantable timber, based on the management emphasis of the affected areas and operational *policy*.

Strategy: Silviculture Practices for Stand Management and Development

In general stewardship land, silvicultural prescriptions will be designed for sustainable timber production and economic performance, whereas in HCAs, silvicultural prescriptions will be designed for resilient wildlife habitat. For example, red alder may be harvested in general stewardship and left as snags and stand diversity in HCAs. Other stewardship classes may require silviculture prescriptions that emphasize other objectives, such as safety in Recreation special use and focused stewardship classes, or traditionally important natural resources in cultural resource special use and focused stewardship classes.

Within HCAs and RCAs, opportunities to increase adaptive capacity through silvicultural activities are more limited than they are for General Stewardship lands. However, certain conservation actions to promote habitat enhancement will provide specific points to promote resiliency and resistance or to observe *transformation*. Management of HCAs will incorporate principles of ecological silviculture, which seeks to emulate stand initiation and development processes that result from small-scale natural disturbances (e.g., windthrow, lightning, insects, disease) to promote within-stand diversity and complexity and late seral stands. A proportion of HCAs that are stunted due to SNC cast will be managed early in the permit term, which will retain unaffected conifers and hardwoods, and will be replanted with habitat-suitable species mixtures. The majority of treatments to reduce fire, insect, and disease risk will occur in stands outside of the HCAs.

Bridge replacement in the Tillamook State Forest. Stream crossing improvements can help protect water quality, reduce the risk of flood damage, and improve aquatic habitat by enabling organism passage to upstream habitats.
Credit: ODF

Transportation

The road system is an integral part of achieving GPV. The road system supports economic benefits by facilitating timber and special forest product harvest and firefighting, which protects the timber resource. Roads provide access for a wide range of social benefits such as recreation and cultural activities and firefighting to protect public safety.

There are approximately 4,300 miles of road on state forest lands with 88% of all acres located within 0.25 mile of a road. Approximately 83% of the roads are surfaced. The road system has the potential to adversely impact natural resources, particularly water quality and aquatic species migration. The road system on state forest lands is managed to protect resources in accordance with the HCP, ODF guidance, best management practices (BMPs), Oregon Forest Practices Act (FPA), and other applicable laws.

Goal: Transportation System

Manage the transportation system in a manner that provides for resource protection, transportation efficiency, safety, and sound fiscal management while meeting forest management objectives.

Strategy: Transportation Planning

Use transportation planning principles, engineering *standards*, and BMPs to ensure that the transportation system facilitates achievement of GPV, provides for safe and efficient traffic flow and minimizes impacts on natural resources.

Strategy: Transportation Assessment

Periodically monitor and assess the transportation system to ensure alignment with GPV management objectives, resource protection standards, and safety.

Cultural and Historical Resources

Traditional cedar bark collection in the Astoria District. Western redcedar *(Thuja plicata;* canoe cedar) is one of the most important culturally significant trees.

Credit: Keepers of ancestral knowledge. Photograph taken by Fran McReynolds, with permission from the Confederated Tribes of Warm Springs.

Cultural and *historical resources* provide a record of our shared past, present, and future relationship with the land, and how this relationship changes over time. Remnants of past cultures and *lifeways* represent thriving cultures of the past and of today. This is often observed in physical forms, such as historic buildings, arrowheads, rock art, basketry, etc. What is not as apparent is the interconnectedness of humans and the natural and cultural resources that support them. These relationships with the land are illustrated though practices, such as preserving sites and objects of cultural importance, and cultivating plants and trees and other natural resources for traditional uses. Protecting cultural practices is a shared responsibility for all Oregonians, as they provide an opportunity to apply knowledge from past civilizations to inform management practices and approaches to living with the land.

The Tribal cultural resources goals for the FMP were developed in collaboration with the nine federally recognized Tribes of Oregon in the government-to-government forum.

Tribal Nations:[2] Natural Resources Protection

ODF recognizes that *Tribal Nations* (also referred to as Tribal Partners) lived in *reciprocity* with the landscape for time immemorial, using sustainable management practices to achieve quality, abundance and self-sustaining plant and wildlife populations. Each Tribe has a unique perspective and history, with cultural identities that are intrinsically tied to their ancestral lands. ODF acknowledges this relationship with ancestral lands that are currently considered State Forests and seeks to honor these ties by working with Tribal Nations in partnership and shared stewardship toward a sustainable future. ODF is committed to integrating Tribal cultural stewardship practices and *Indigenous Traditional Ecological and Cultural Knowledge*[3] (ITECK) into planning, implementation, and adaptive management processes to ensure that State Forests management activities respect and honor the Tribal cultures whose ancestral lands comprise these lands.

Current landscape-scale stressors and perturbations such as droughts, floods, wildfires, plant and animal extinctions, and changes in climate occurred in the past, as did human adaptations. Working with the Tribes to integrate their cultural and natural resources knowledge and stewardship practices will build adaptive capacity across the landscape. Tribal Nations, their communities, peoples, ancestors, and culturally significant places persist, as do their ancestral knowledge and practices. They hold a rich diversity of holistic strategies, technologies, and management techniques that have sustained throughout many generations and can help inform current conversations regarding climate change and landscape resiliency.

ODF is committed to working with Tribal Partners to understand, identify, manage, and provide access to native populations of culturally significant plants, trees, animals, places, and waters on ODF-managed lands. This includes working with Tribal Partners to develop *ethnobotanical* strategies that are adaptive to the effects of climate change, using native seed sources to encourage self-sustaining plant communities over time, and using fire-adapted *successional* plants to prevent *erosion*. ODF will also consider diversifying tree species in reforestation efforts to encourage proliferation of traditional plants.

The following description of culturally significant natural resources is intended to provide a generalized sense for the past and present cultural and natural resources that occur or have existed on state forest lands. Culturally significant natural resources, their uses, and associated management practices are extensive. A few examples are provided with the intention of demonstrating the concept of reciprocity, in which all plants, trees, animals, and humans were a part of and contributed to a whole and healthy ecosystem.

---

[2]Tribal Nations include the nine federally recognized Tribes of Oregon: Burns Paiute Tribe, Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians, Confederated Tribes of Grand Ronde, Confederated Tribes of Siletz Indians, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation, Coquille Indian Tribe, Cow Creek Band of the Umpqua Tribe of Indians, and The Klamath Tribes.

[3] Indigenous Traditional Ecological and Cultural Knowledge (ITECK) is grounded in social, spiritual, cultural, and natural systems that are frequently intertwined and inseparable, offering a holistic perspective. ITECK is inherently heterogeneous and unique to each Tribe, due to the cultural, geographic, and socioeconomic differences as well as their history and the surrounding environment.

Among the many traditionally important natural resources, western redcedar (*Thuja plicata*) (canoe cedar) is one of the most important culturally significant trees on ODF land (Whereat-Phillips 2016). It has healing and symbolic properties that are at the source of many Tribal Nations' ideological and cultural identities. The cultural significance of western redcedar is inextricably tied to its ideological value, as well as its many uses, including medicine-making and ceremonial use. The western redcedar provided material for basketry, mats, building materials, canoes, cups, buckets, backpacks, spears, bedding, pest abatement, and much more.

Yew (*Taxus*) and ash (*Fraxinus*) trees provide the raw material for bows. Arrows are sometimes made from hazel (*Corylus*), oceanspray (*Holodiscus discolor*), or other available plant species, and vine maple (*Acer circinatum*) are used for making net and spear handles. Sitka spruce is culturally important in basketry and the making of multiple types of fishing and foraging devices to gather eel, smelt, and salmon, etc. In addition, this tree species' versatility serves well for making larger bowls and cups and other vessels. Management of spruce required careful tending of roots to strengthen the root system and promote healthy growth. Another example of management of resources is fire management, which promotes growth of successional plants like serviceberry (*Amelanchier alnifolia*). Various parts of serviceberry were used for medicinal purposes and consumption (raw, dried, or made into a preserve), and the branches served as tool handles, ropes, and sometimes spears or arrow shafts. These species decline as forest canopy closes and shading prevents their growth. They are, therefore, prominent examples of successfully fire-managed species as they colonize created clearings.

Bear grass (*Xerophyllum tenax*), bulrush (*Typha*), hazel (*Corylus cornuta*), and fireweed (*Chamaenerion angustifolium*) are a sampling of other plant species requiring cultural burning for production and use of their many attributes. *Understory* burning also produced habitat for large and small game including elk, deer, and other sustenance-providing animals. However, animals were more than food; the animal shared its life with people to make clothing, bones for fishing implements, sinew for binding, brains for hide tanning, bones for gaming pieces, and shells for trade, jewelry, rituals, and symbolic displays. Many animals were not used for food or other utilitarian purposes but held—and continue to hold—deep symbolic meaning in the form of cultural origins, religious prescription, and qualities. For example, northern flicker (*Colaptes auratus*) flight feathers represent healing and healers who make people whole again; ravens, owls, eagles, are all of ideological and symbolic importance.

Goal: Tribal Access and Use of Natural Resources

In coordination with federally recognized Tribal governments of Oregon, ODF will provide access, availability, and enhancement of cultural resources and natural resources for their membership on state forest lands.

Strategy: Tribal Engagement

Engage Tribal Partners in planning processes for state forest lands and provide opportunities for implementation of cultural and natural resources stewardship practices appropriate to location and habitat.

Strategy: Coordinate Tribal Ethnobotanical Strategy

Coordinate with Tribal Partners to develop and implement an ethnobotanical strategy that is adaptive to the effects of climate change and ensures self-sustaining populations of culturally significant species are abundant and available on state forest lands.

Strategy: Tribal Seed Sources

Collaborate with Tribal Partners on native seed source recommendations that consider appropriate habitat in planting regimes, climate resiliency, and legacy seed source information that contributes to a *storied landscape* understanding.[4]

Strategy: Tribal Access

Work with Tribal Partners to develop and administer processes that facilitate *unimpeded*[5] *access*, with protected allowances for Tribal Partners' membership to access, use, and manage cultural and natural resources (e.g., western redcedar bark peeling, bear grass collection) on state forest lands.

Tribal Nations: Cultural Resources Protection

European settlement in western states destabilized human-ecological systems and severed ties between the past and present that are culturally significant to Tribal Nations. Historic and even modern practices, behaviors, and laws physically, emotionally, and spiritually forced Tribal peoples from their lands and ways of life. Yet the history, language, and people endure. Human remains (ancestors), funerary objects (tangible pieces of death rites and ceremonies), objects of cultural patrimony (spiritual and material associations), and culturally significant objects (religious or spiritual objects used in religion and religious ceremonies) are prevalent across Oregon, including on state forest lands. These non-renewable resources may include culturally modified trees, rock cairns, waterfalls, caves, etc. Visible evidence of ancestral communities would include items of everyday life, such as animal bones, mollusks, beads, needles, and obsidian tools. Protection of culturally significant sites and objects is critical in honoring and maintaining connections from ancestors to current Tribal members and future generations of Tribal descendants.

ODF is committed to the shared and facilitated protection and repatriation of any items[6] (spiritual or material) that are considered culturally significant by Tribal Partners. Protection includes known sites and locations, identification of undocumented sites, and avoidance of spaces and places of concern. It also extends to management and recovery activities related to fire, restoration, flooding, wind, landslides and other disturbance events.

---

[4] Within Tribal contexts, storied landscape refers to a multitude of intrinsically linked and deeply held understandings, relationships, and actions between indigenous cultures and the landscapes with which they interact throughout time, including but not limited to creation stories, landscape features and wildlife attributes that signal hunting, gathering, planting, and other seasonal use patterns.

[5] Provide reasonable opportunity for access, considering public safety, infrastructure, and topographic constraints.

[6] 43 CFR § 10 (Native American Graves Protection and Repatriation Act); 16 U.S.C. § 1B (Archaeological Resources Protection Act); 16 U.S.C. § 470 (National Historic Preservation Act), ORS 97.740–97.760, ORS 358.905–961, and ORS 390.235–390.240. Oregon EO 17–12, 368.905–358.961; 97.740–97.760; 390.235.

The FMP provides for access, availability, protection, and enhancement of cultural and natural resources on state forest lands. It recognizes these lands are a part of a long historical relationship, and access to Traditional Cultural Places[7] for spiritual, ceremonial, and traditional practices enables them to maintain cultural identity, which is deeply rooted in the land. These locations are typically kept from common knowledge because of their sanctity and are almost exclusively known to Tribes and membership; sometimes only certain groups within a Tribe are keepers of such knowledge. Traditional Cultural Places and culturally significant forest and natural resources are *confidential*, and as such, ODF is committed to shared stewardship with Tribes, with stewardship being the protection of locational knowledge, meaning, and materials (ORS 192.005–192.170). ODF is also committed to increase internal and external cultural awareness, understanding, and accountability for cultural resources protection through regular training focused on prioritizing, recognizing, and protecting cultural resources. These commitments will only be successful through shared stewardship and partnership, built from mutual respect, trust, and understanding.

Goal: Tribal Cultural Resources Protection

Take an inclusive and proactive approach to working with Tribes to identify, record, preserve, protect, and keep confidential[8] culturally significant resources, including but not limited to *archaeological* and *historic sites* and *objects*, considerations for human remains, historic artifacts, and real property.[9]

Strategy: Tribal Relationships

Develop and maintain relationships with Tribal Partners to facilitate consistent information sharing and collaboration on state forest management activities that may affect cultural resources, including timber harvest and related activities, wildfire suppression and recovery, and habitat restoration.

Strategy: Cultural Resources Inventory

Develop a comprehensive and ongoing cultural resources survey and inventory strategy to increase the understanding of culturally significant archaeological, historical, and cultural sites and objects on state forest lands and implement the strategy in coordination with Tribal Partners over time.

Strategy: Determining Level of Cultural Significance

Coordinate with Tribal Partners to identify Tribes that have direct ties to state forest lands (by location, materials, knowledge, practice, etc.); determine the level of significance of archaeological, historical, and cultural sites and objects; and solicit recommendations for protection and preservation thereof.

---

[7] The National Historic Preservation Act and the 36 CFR 800 regulations implementing it refer to "properties of traditional religious and cultural significance." They are geographic places prominent in a particular group's cultural practices, beliefs, or values, when those practices, beliefs or values: (i) are widely shared within the group, (ii) have been passed down through the generations, and (iii) have served a recognized role in maintaining the group's cultural identity for at least 50 years.

[8] Includes culturally sensitive locations in *State Historic Preservation Office* and Tribal databases, and places known by affiliated Tribes.

[9] EO 96-30; EO 17-12; ORS 358.640 and 358.653, ORS 97.740 to 97.760; 358.905 to 358.955; and 390.235.

Strategy: Cultural Resource Awareness

Increase internal and external cultural awareness, understanding, and accountability for cultural resources protection through regular training focused on prioritizing, recognizing, and protecting cultural resources.

Strategy: Intergovernmental Agreements

Use intergovernmental agreements[10] with federally recognized Tribes of Oregon to facilitate cooperation, information, and cost sharing.

Historic Cultural Resources

Historic sites and artifacts are not just records of white settlement; they record the protohistoric era where European and Tribal interactions and assimilations occurred, Chinese immigrants worked toward freedom from servitude on western railroads, and Russian colonies pre-dating, non-Spanish westward expansion. Historic sites and artifacts across Oregon's historical landscape tell a rich history of diversity, conflict, trauma, and persistence, which collectively represent in the diversity of descendants of Oregonians today.

European explorations that began in the 1830s expanded significantly with the 1850 Oregon Donation Land Law bringing over 30,000 white settlers. [11] This cultural shift, predicated on colonization and western cultivation of the landscape, brought extractive agriculture, ranching, logging, and homesteading (a foreign concept of land ownership and control for Native Americans). The European explorers and settlers also brought diseases that decimated Native American peoples and life ways. The Native Americans that survived this era of disease and genocide were forced to join an unfamiliar labor culture to provide for their families.

Other groups also found their way to what is now Oregon, despite laws that intended to keep them out. Even before Oregon became a U.S. territory, the Provisional Government enacted laws that banned both free and enslaved Blacks from Oregon and threatened violence to those who stayed. Oregon's state constitution was the first to ban Black residents and barred Chinese residents from voting, who had worked and lived in Oregon since the early 1800s. Despite these laws and bans, these marginalized communities endured. For example, Maxville, a logging camp east of the town of Wallowa, was home to a multicultural logging camp, with 400 residents, 40 to 60 of which were African American. It was the largest town in Wallowa County between 1923 and 1933 and is memorialized by the Maxville Heritage Interpretive Center.

Non-European immigrants continued to find their way to Oregon, including the Basque (primarily sheepherders), Mexicans who mined gold and tended livestock and Chinese who established mining camps in southwest and northeast Oregon, and continued to work on building the transcontinental railroad. The Chinese Exclusion Act of 1882 forced many Chinese immigrants, and their American-born

[10] ORS 190.110, National Historic Preservation Act Section 106, ORS 358.653.

[11] The1850 Donation Land Act specifically excluding Blacks, Native Americans that were not "half-breeds" and Hawaiians.

children, to leave the state. The resultant labor shortages that were filled by immigrants from Japan. and other parts of Asia. The marks of these many communities can still be found upon the state's landscape and made visible in the historic cultural resources memorializing their experiences.

Historic cultural resources are some of Oregon's most valuable and important *assets*. Buildings, structures, sites, furnishings, art objects, and items of personal property that are important to local, state, or national history can tell the story of a region's cultural history and might be protected under the National Historic Preservation Act and Oregon state law if they meet certain criteria, including being at least 50 years old.[12] ODF is committed to cultural resources stewardship, using various methodologies designed to identify and protect culturally sensitive areas and locations across state forest lands. Cultural resources protection contributes to diversity, *equity*, and *inclusion* which are *guiding principles* of the FMP and provide an opportunity for visitors to state forest lands to connect with its history and people.

Goal: Historic Cultural Resources Protection

Identify and protect historic cultural resources.

Strategy: Archaeological Review

Perform archaeological review of all operation locations and protect historic resources following applicable rules and statutes.

Recreation, Education, and Interpretation

Mountain biking on one of ODF's many trail systems. Demand for outdoor opportunities in Oregon is increasing.
Credit: ODF

ODF's recreation, education, and interpretation program manages developed and dispersed recreational opportunities in all state forest lands, with the largest concentration of recreational opportunities and use occurring in northwest Oregon on the Clatsop, Santiam, and Tillamook State Forests. Recreation, education, and interpretation programs are aimed at welcoming all visitors to enjoy and learn about Oregon's state forest lands and their stewardship, and providing lasting, diverse, and accessible outdoor recreation, education, and interpretation opportunities. Research conducted in conjunction with the *Oregon State Comprehensive Outdoor Recreation Plan 2019–2023* (Oregon Parks and Recreation Department 2019–2023) reveals that the demand for outdoor opportunities in Oregon is increasing, the popularity of specific activities is changing over time, and some groups or persons have not accessed state forest lands for a variety of reasons. This reflects ever-evolving changes in user

[12] National Historic Preservation Act Section 106, ORS 358.653.

demographics, advances in technology, shifting economic trends, and outdoor recreation trends and opportunities for more inclusion overall.

State forest lands provide recreational opportunities for both residents and visitors to the state, such as camping, hunting, boating, angling, target shooting, hiking, birding, mountain biking, horseback riding, and motorized and non-motorized trail use. Public use is regulated through OAR 629.25.

The availability of recreational activities is an ecosystem service that contributes to the quality of life, and additionally provides economic benefits to communities adjacent to state forest lands. For many Oregonians, recreation on state forest lands is part of their cultural heritage. Some of these recreational opportunities are discussed in more detail in the following sections.

Motorized Trail Use

State forest lands offer some of the most diverse and challenging off-highway vehicle (OHV) trail opportunities in the Pacific Northwest, filling an important recreational niche in the state and region. OHV staging areas (campgrounds and day-use areas) provide parking and camping opportunities that support OHV trail system access.

OHV areas in the Clatsop and Tillamook State Forests include trails for motorcycle, quad, side-by-side, and four-wheel use that range from easy to extremely challenging. OHV areas on the Santiam State Forest and the West Oregon District offer easy-to-moderate opportunities for motorcycle and quad use. The OHV trail system accommodates year-round use, with the highest use levels occurring in the spring and fall.

Non-motorized Trail Use

Non-motorized trails and supporting infrastructure, such as trailheads and campgrounds, accommodate hiking, horseback riding, trail running, and mountain biking. The non-motorized trail system is primarily used by day-use visitors. The trail system includes a variety of purpose-built mountain bike trails, including cross country and all-mountain trails, downhill trails, and free-ride opportunities. The Black Rock Mountain Bike Area in the West Oregon District is managed in collaboration with the Black Rock Mountain Bike Association.

Camping

ODF offers three types of camping opportunities: developed campgrounds, designated campsites outside of developed campgrounds, and dispersed camping across state forest lands. Developed campgrounds vary in size and amenities offered.

Campground opportunities are diverse and include regular drive-in site campgrounds that accommodate recreational vehicle (RV) and tent use, walk-in tent site campgrounds that accommodate tent use only, horse camps, that are designed for equestrian users, and OHV campgrounds designed and managed to accommodate OHV enthusiasts.

Day-Use Activities

State forests are popular destinations for day-use activities, such as swimming and water play, target shooting, fishing, hiking, mountain biking, horseback riding, OHV trail use, and picnicking. Day-use facilities provide parking and restrooms, and some locations have picnic tables and cooking grills. Facilities are generally rustic in nature, but often provide river access and support other day-use activities. Developed facilities include trailheads, picnic areas, boat launches, target-shooting lanes, interpretive sites, and a *demonstration forest*.

Aquatic Activities

State forest rivers are a destination for fishing, boating, and water play. In support of fishing and boating activities, ODF manages several primitive boat launches, some of which are managed in partnership with the Oregon Department of Fish and Wildlife (ODFW). Small lakes in the Santiam and Clatsop State Forests also provide opportunities for swimming, angling, and non-motorized boating.

Hunting

Oregon has a long history of hunting on state forests. ODF works with ODFW and hunting organizations to better manage hunting access, through *Travel Management Areas* and selected road closures to provide walk-in hunting opportunities.

Target Shooting

Target shooting is most active in districts closest to the Willamette Valley and the Portland metropolitan area. Most target shooting takes place at established shooting lanes and dispersed locations such as rock quarries, rock stockpiles, and at the end of spur roads..

Interpretation and Education Services

ODF has been supporting interpretative and educational programs since the mid-1990s, providing information about current and past land management, natural disturbance, and forest stewardship occurring on Oregon lands to both locals and a diverse array of visitors.. One facility that is a popular stopping-off point between the valley and the coast is the Tillamook Forest Center, which was constructed in the Tillamook State Forest in 2006. This center is a destination for Oregonians and out-of-state visitors and is one of the region's largest forest-based learning centers providing information about the natural and cultural history of Oregon's forests, wildfire science, and sustainable forest management. A variety of educational and interpretation opportunities are provided there, including interpretive exhibits in the museum, a movie theater showing an award-winning film about the Tillamook Burn, accessible trails, seasonal presentations, traveling exhibits, educational programs for school groups, and facility rentals at the Smith Homestead Shelter. A primary focus of the interpretive and educational services and programs is intended to assist the public in developing an understanding of basic ecological processes, which in turn may foster a sense of environmental awareness and long-term stewardship of shared natural resources.

Goal: Recreation, Education, and Interpretation

Provide forest recreation, education, and interpretation opportunities to create meaningful and enjoyable experiences that foster appreciation and understanding of state forest lands and contribute to community health, sustainable *working forests*, and economic wellbeing.

Strategy: Welcoming, Inclusive, and High-Quality Recreation, Education, and Interpretation Opportunities

Tillamook Forest Center
2021 Overview

Visitors
46,678

Volunteer Hours
3,070

Education Programs (people)
5,657

Interpretive Contacts (people)
6,575

Interpretive Programs (people)
12,306

Reimagine and adapt recreation, education, and interpretation opportunities across state forest lands to provide a diversity of experiences, services and programs, improve delivery of services, and increase access. Opportunities include interpretation and education services for forest visitors and communities to learn about and connect with Oregon's history, people, and forests.

Strategy: Visitor Use Research and Monitoring

Conduct visitor use research and monitoring to inform recreation, education, and interpretation program management, leverage capacity of future investments into recreational infrastructure and services, and enhance support for the program.

Strategy: Recreation, Education, and Interpretation Community Engagement

Enhance community *engagement* to foster partnership development, investment, and sense of ownership, as well as the capacity to advance recreation, education, and interpretation program goals.

Through these connections the recreation, education, and interpretation program can engage diverse audiences and potential partners, which in turn fosters community collaboration and support for the work of the program and promotes investment in the program and associated activities. Creating strong community connections increases the diversity, capacity, and adaptability of recreation, education, and interpretation services.

Visual Resources

Santiam State Forest. On state forest lands visitors can expect to see a wide range of forested settings, streams, rivers, lakes, and other scenery.
Credit: Zak Stone

Western Oregon state forest lands are near some of Oregon's major cities. Several *scenic* highways and rivers cross the planning area and attract people to recreational infrastructure including many campgrounds and extensive trail networks. Sightseeing is popular in state forests and visual resources play a major part in the quality of experience in social activities, such as camping, trail use, fishing, wildlife watching, rafting, and driving. Visual resources enhance the quality of social benefits and attract tourists whose spending supports the local tourism economy and contributes to revenues.

The Clatsop and Tillamook State Forests, the largest consolidated blocks of state forest lands, are the state lands most likely to dominate *viewsheds* and be recognized as state forests by the public as they visit the area. In many places, state forest lands blend with the surrounding forest and are not recognized as state land by visitors. Goals for retaining visual buffers from timber harvest are balanced with goals for maintaining safe conditions for motorists and recreationists.

State forest lands provide a unique experience as these lands are actively managed and provide for a wide range of forested settings. Visitors can expect to see settings that contain views of regeneration harvest with leave trees and snags, harvest buffers to protect resources, streams and rivers, and forest stands in stages from newly planted seedlings to mature trees. The varied views from state forest lands reflect the social, economic, and environmental values for which these forest lands are managed.

State forest lands are also home to state-designated *scenic waterways*, which are designated to create a balance between protecting the natural resources, scenic value, and recreational use of these rivers.

Scenic Highways, Byways, and Visually Sensitive Corridors

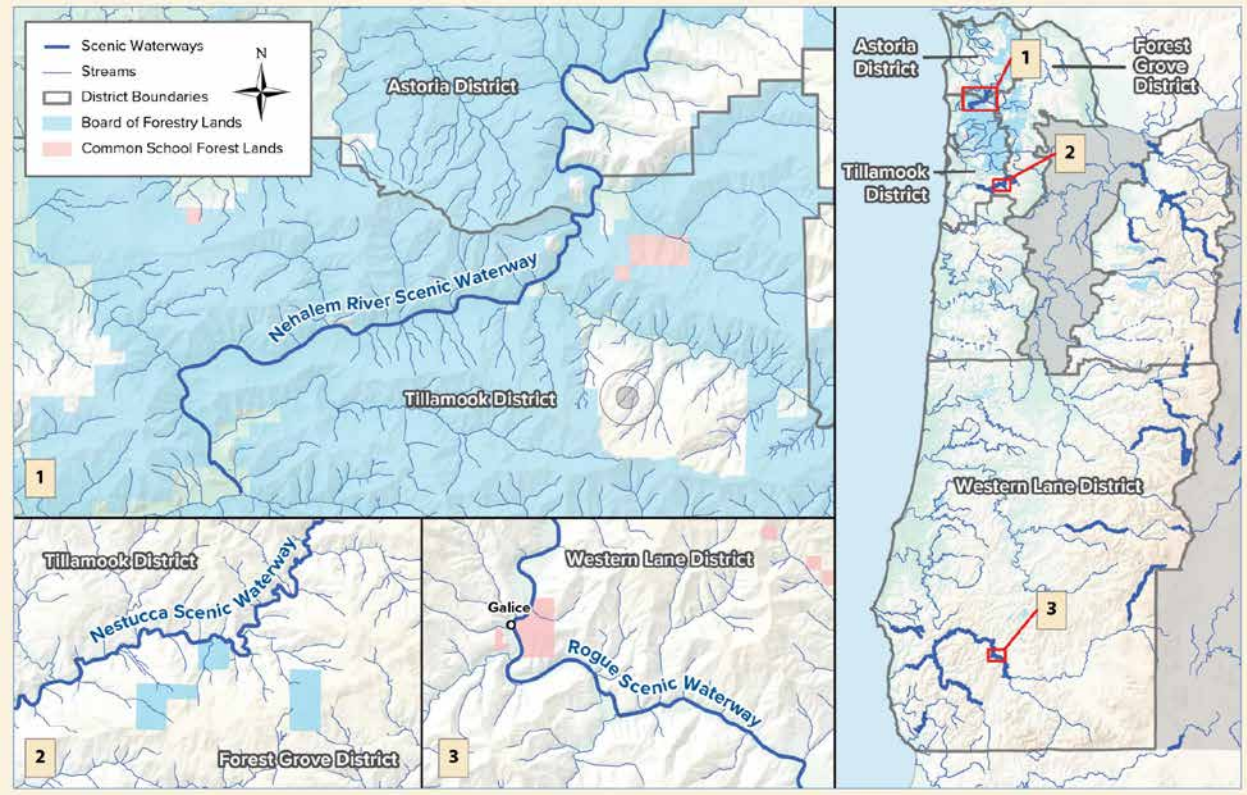
State forest lands are a major part of the view along some stretches of Highway 6 and Highway 26 in the Coast Range. Along major highways, the immediate visual foreground is protected either by Oregon Department of Transportation-owned scenic buffers or by statute. Many highways in western Oregon are designated as scenic for the purpose of visual corridor management (ORS 527.755) and are within or adjacent to state forest lands.

Special rules apply to timber harvest in *visually sensitive corridors*. Goals for retaining scenic buffers are balanced with goals for maintaining motorist safety. Additionally, Highway 6, located in the Tillamook State Forest, is designated as a portion of the Trees to Sea Scenic Byway and must be maintained as a scenic corridor per the *Trees to Seas Highway 6/131 Scenic Byway Corridor Management Plan* (ODF 2018).

Scenic Waterways

There are three state scenic waterways located on state forest lands. Management of lands in and adjacent to designated scenic waterways is subject to the provisions of ORS 390.805 to 390.925, and administrative rules adopted by the Oregon Parks and Recreation Department. The first designated waterway is the Nestucca River Scenic Waterway in Forest Grove and Tillamook Districts (designated by ORS 390.826(11); OAR 736-040-0041) (Figure 3-7). The second state scenic river is a 17.5-mile section of the Nehalem River located in the Clatsop and Tillamook State Forests (designated by Executive Order 2019-05; OAR 736-040-0120).

Figure 3-7. Scenic Waterways. Scenic-designated segments of the Nestucca, Nehalem, and Rogue Rivers flow through the planning area.



CSFL near the small town of Galice (16 miles northwest of Grants Pass) and near the well-known Grave's Creek Boat Launch are located within the corridor of the collocated Lower Rogue National Wild and Scenic River (established by Public Law 90-542) and Rogue River Scenic Waterway (designated by ORS 390.826(9)). The Lower Rogue National Wild and Scenic River was one of eight rivers established under the passage of the Wild and Scenic Rivers Act in 1968.

Goal: Visual Resources

Manage forests in ways that value scenery and a range of forested settings to meet emphasis area management objectives.

Strategy: Scenic Classification System and Considerations

Implement the scenic classification system defined in the FLMCS as Special Use and apply state and federal regulations to integrate scenic considerations into management decisions.

Special Forest Products

Hand-picked Chantrelle mushrooms *(Cantharellus formosus).* Special forest products provide social and economic benefits for communities.

Special forest products are those non-timber products that are collected for personal and commercial uses. They include firewood and other products identified by the Board of Forestry (ORS 530.050 and 164.813; OAR 629-028). In western Oregon State forest lands, special forest products include, but are not limited to, beargrass (*Xerophyllum tenax*), evergreen boughs, cedar shakes, cones, ferns, firewood, moss, mushrooms, vine maple cuttings, poles, Oregon grape (*Mahonia spp.*), salal (*Gaultheria shallon*), and Pacific yew (*Taxus brevifolia*) bark.

The special forest products industry makes an important contribution to Oregon's economy, cultural values, and social wellbeing. The quantity and quality of products vary among districts. Managing special forest products as a viable, sustainable commodity program, compatible with other forest resources, provides economic and social benefits for local communities and allows the special forest products industry to adapt and serve changing needs over time.

Goal: Special Forest Products

Provide opportunities for sustainable harvest of special forest products for recreational, personal, and commercial use.

Strategy: Special Forest Products Harvest

Sell permits for sustainable commercial harvest of special forest products and provide the public with information on locations of products, consistent with other goals and the protection of forest resources.

Mining, Agriculture, Grazing, Administrative Sites

Mining, agriculture, grazing, and *administrative sites* provide direct economic benefits by generating income and revenue and indirect social benefits by supplying education and interpretation facilities and materials for developing and maintaining the transportation network.

The mineral, oil, and gas potential of western Oregon state forest lands is largely unknown. Few systematic surveys have been conducted for most commodities, and no regional geochemical studies have been conducted to define or eliminate areas of possible metal mineralization. Mineral and *geothermal* resources are owned by the state of Oregon and managed by DSL (ORS 273.551). Revenues

derived from the sale of these mineral resources are allocated to the Common School Fund (ORS 273.780).

However, ODF may use soil, clay, stone, sand, and gravel for constructing or repairing roads or other state facilities (ORS 530.050). State forest lands have provided high-quality rock for local road surfacing and ballast rock. This rock is an important resource for road construction and maintenance of roads.

Although state laws permit agriculture and grazing on state forest lands if those uses are compatible with other forest resources, the topography of state forest lands is generally not suitable for most agricultural uses. Historically, under the open-range laws, all of the districts in western Oregon allowed grazing on burned or logged areas. As forests were re-established, grazing diminished. Open-range grazing ended in the early 1980s, and grazing is now almost non-existent on state forest lands.

Goal: Mining, Agricultural Use, Administrative Sites, Grazing, and Administrative Sites

Permit mining, agricultural use, administrative sites, and livestock grazing when these uses are compatible with other forest resource goals.

Strategy: Special Use Permit Evaluation

Consider mining, agricultural use, administrative sites, and livestock grazing on a case-by-case basis, such that use is not detrimental to the best interest of the state, is allowed by law, and is compatible with ODF resource management policies and plans.

Soils and Geology

Soil composition. Dynamic processes, such as forest succession, wind, and fire affect the accumulation of organic matter and available nutrients in the soil.

Credit: ODF

The landscape upon which forest management of any scale occurs is controlled by a historic geologic process and their resulting *formation*s. Volcanic activity, sediment deposition, *uplift*, soil formation and erosion are the driving forces that have given western Oregon its unique terrain. The soils—the most visible of the geologic materials—are the bedding from which Oregon's forests grow providing many ecosystem services key to delivering all three types of GPV. For example, timber and other plant community production is determined largely by the soil characteristics, slope aspect, and access, as well as precipitation. Road and other recreation infrastructure siting and conditions depend on soil and topographic characteristics for stability, seasonal accessibility, and visual resource offerings. Inoperable areas and landslide-prone areas, while less opportune for vegetation harvest, provide other ecosystem functions such as habitat and carbon storage. Soils and near-surface formations are moveable parts of the landscape. Landslides, part of the natural erosive process, are a testament to the changing nature of the terrain and can affect, or be affected by, forest management.

Geology

Volcanic activity below the surface of the ocean and offshore of Oregon, in conjunction with deposition of marine sediments derived from volcanoes in the Cascades Range to the east, produced a submarine assemblage of volcanic rocks layered with marine siltstones, sandstones, and mudstones.

Compression by *tectonic* activity uplifted and moved this assemblage of material east, where it added to the ancient Oregon coastline. This uplift occurred later in the northwestern-most portion of the planning area (north of the present-day Tillamook Highlands) and, as a result, that area received *deposition* of much younger marine sediments than other areas.

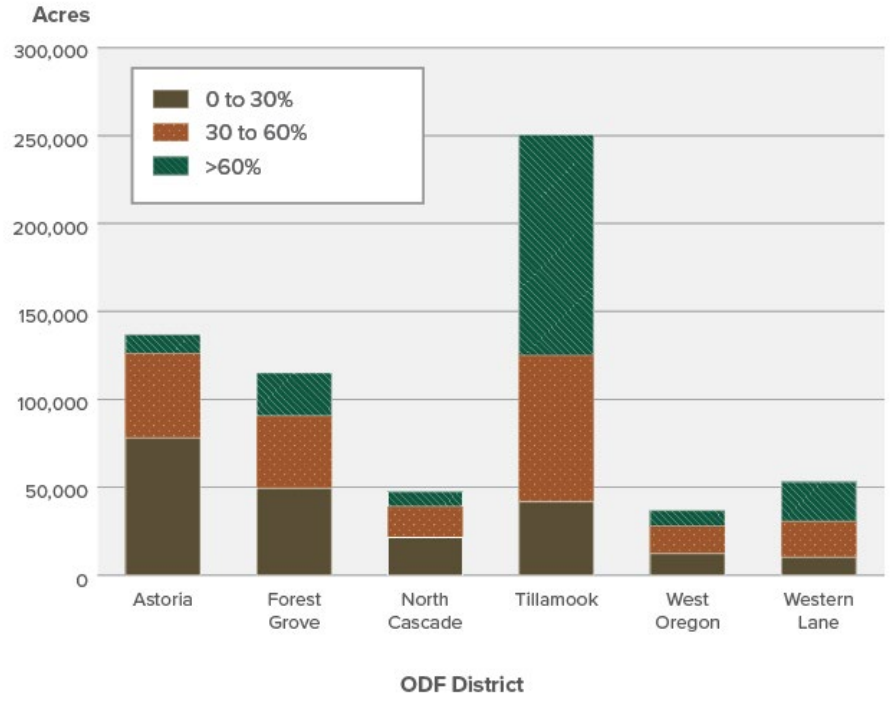
Concurrently, huge volumes of fluid basalt (flood basalts) flowed down the ancestral channel of the Columbia River Gorge, into the developing low area of the Willamette Valley, to the present margin of the coastline throughout much of the northern portion of the planning area. These flood basalts seem to be absent in the area of the Tillamook Highlands and further south, indicating that those areas were probably topographically higher at the time.

Erosion has modified this uplifted terrain to today's highly *dissected* topography. Landslides, along with down-cutting and transport of sediment by streams fueled by heavy precipitation, produced the Coast Range. Concurrent tectonic activity produced periodic large earthquakes, which may have triggered many of the largest, most deep-seated ancient landslides observable in the planning area today. Large swaths of land in the northern portion of the planning area were extensively altered by these landslides.

Concurrent with erosion along the coastal mountains, the high Cascade volcanic mountains were formed along the eastern margin of the planning area. After volcanism, major changes to topography were not only affected by erosion processes similar to the coastal mountains, but also by glaciation.

The net effect of geology, erosion, and climate is apparent in the distribution of slope steepness across the planning area. Nearly 33% of state forest lands have a slope greater than 60% (Figure 3-8).

Figure 3-8. Slope Steepness across the Planning Area. The highest percentage of steeper slopes in the planning area are on the Tillamook and Western Lane Districts.



Source: Oregon Lidar Consortium 2007–2020

Soils

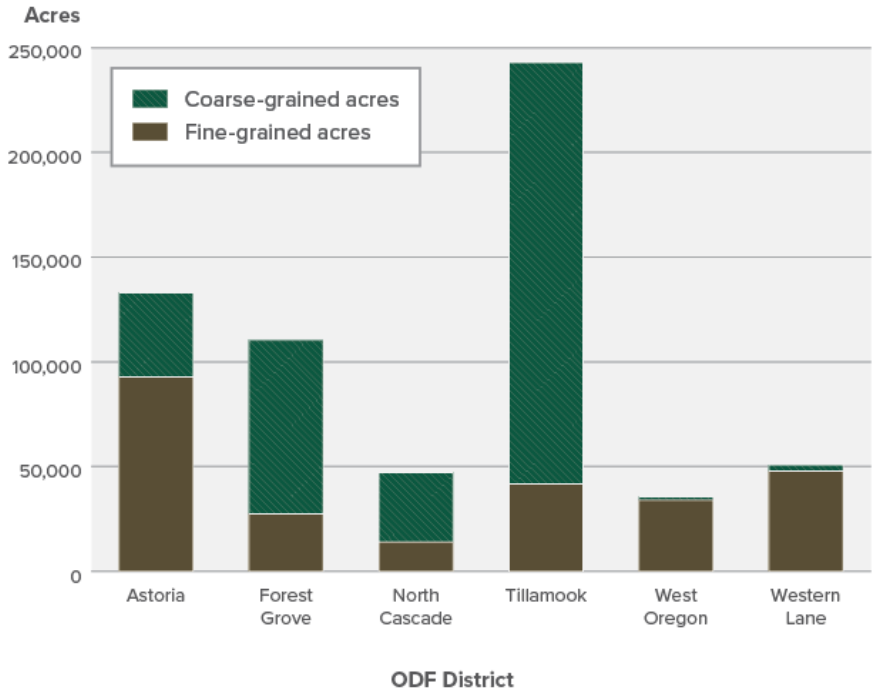
There are three general soil types: those formed from underlying volcanic formations, those from underlying marine formations, and those from alluvium (unconsolidated materials deposited by streams and rivers). Soils are almost always thinner along ridgetops and thicker in swales due to faster and deeper weathering of underlying formations, which are wetter for longer periods, and gradual downslope soil movement, which increases soil depth in low areas. All soils contain organic and biological components in addition to the mineral fraction described below.

Soils formed on volcanic formations in the planning area are classed predominantly as gravels with some sand and very few silt-sized materials. These soils are very well drained, often occur on the steepest slopes in the planning area, and tend to be thinner than soils formed from marine formations or alluvium. The highest concentration of volcanic soils is in the Tillamook Highlands, the Cascade foothills, and near the Columbia River.

Soils formed on underlying marine sedimentary formations are predominantly silts, sands, and clays with minor amounts of gravel. These occur in many areas outside the Tillamook Highlands. These soils are well drained on hillslopes but can be wet most of the year in low-lying areas. Water permeates through these fine-grained soils much slower than the volcanic soils owing. They occur on relatively flat locations in the planning area.

Due to the influence of ancient volcanism, the Forest Grove, North Cascade and Tillamook Districts have predominantly coarse-grained soils, while the remaining districts' soils are fine-grained and were derived from softer marine sediments (Figure 3-9).

Figure 3-9. Fine- and Coarse-Grained Soils by District. The Tillamook District has the highest proportion of coarse-grained soils in the planning area.



Source: ODF analysis of underlying geology in DOGAMI 2015

Forest site productivity is controlled by a complex relationship among topography, slope, aspect, soil depth, porosity, biology, and the availability of nutrients in the soil. Dynamic processes, such as forest succession, wind, and fire affect the accumulation of organic matter and available nutrients in the soil. The amount and *composition* of organic matter affect soil fertility. Small materials such as needles and twigs have the highest concentration of nitrogen. Large materials such as downed trees influence soil nutrient availability and soil moisture and can stabilize soils on moderate and steep slopes.

Most of the Coast Range soils vary from "highly productive" (Site Class I) for Douglas-fir to "limited in potential productivity" (low Site Class III). However, there are Site Class IV and V soils, many of which are located on or near steep rocky outcrops. Soils in the western Cascades vary from high productivity (Site Class II) to Site Class V for both Douglas-fir and western hemlock. *Site class* productivity depends largely on soil profile depth, gravel content, topographic position, and to some extent, soil parent material. However, in general, the parent materials of these soils all provide a potential basis for high productivity. Site class productivity has a more complex genesis than a simple relationship to geology and topography.

Slope Stability

All types of soil movement occur in both managed and unmanaged forests. Landslides occur in both mature forest and recently harvested areas, sometimes in conjunction with other anthropogenic influences such as forest roads. Slides can deliver woody debris along with gravels, sands, and silt-sized material to streams. These organic and inorganic components can contribute positively to the aquatic ecosystem.

Landslides occur when a mass of soil, rock, and debris moves downward, generally together, at similar rates. In forest management, it is useful to discuss two main categories: *shallow rapidly moving landslides* and *slow deep-seated landslides*. Examples of *mass wasting processes* of rapid and slow-moving landslides are apparent across all areas, in all ownerships and management jurisdictions in northwest Oregon. Slides are the dominant erosional process in the planning area.

Shallow rapidly moving landslides usually only involve soils and remove them entirely, along with the vegetation they support, from a steep slope. Underlying geologic formations usually form the base of these slides. Once the soil begins to move, the slide mass rapidly accelerates downslope, often entering a stream and traveling through the stream gully for thousands of feet. As the debris passes it scours soil and entrains boulders and woody debris, increasing in volume. These slides impart large forces when moving and can destroy, and sometimes remove, structures such as homes, concrete road barriers, and guardrails.

These slides then deposit material where the stream gradient becomes less steep, where the gully widens, or where a stream junction becomes too sharp for the *debris torrent* to make a turn. Often, the larger components of the resulting debris deposit may settle permanently due to the size of the host stream. In larger streams or rivers, the debris can shift and remobilize during subsequent high-water events, which will scatter the debris downstream over time.

Shallow, rapidly moving landslides can be caused or affected by forest management activities. Poor road-building practices with a major influence on *slope stability* include placement of fills on steep slopes, ill-conceived *culvert* placement, poor maintenance, and failure to recognize and plan for landslide during road alignment planning and. Timber harvest can increase the rate of occurrence of these types of slides. For a limited period after canopy removal, the frequency of slides increases in western Oregon (Turner et al. 2010; Robison et al. 1999). Data from landslide inventories after the major precipitation events in 1996 (Table 3-2) illustrate the effect of stand age and slope on landslides. Background landslide density can be inferred by examining data for the unmanaged stands (>100 years old). Between 13 and 26 slides per square mile occurred in the largest storms in stands over 100 years old. Comparing unmanaged stands to those in the <10-year-old age class implies that slide densities can increase on recently harvested steep terrain.

TABLE 3-2. Landslide Density Associated with 100-Year Storm Intensity as a Function of Stand Age and Slope. Both the age of a stand and the slope steepness affect the likelihood of slide initiation during large storms.

Stand Age (years)	Landslide Density per Square Mile (steepest slopes)	Landslide Density per Square Mile (all slopes)
0 to 9	51.2	12.9
10 to 30	22.4	7.2
31 to 100	19.2	6.5
Greater than 100	26.2	12.8

Source: Robison et al. 1999

The second type of landslide—slow-moving, deep-seated—can shift portions of the ground surface up to 20 feet each year. These phenomena commonly move 1,000 to tens of thousands of cubic yards of material, slowly changing drainage patterns, destroying road grades, and in some cases deforesting large areas.

Within the planning area there are hundreds of examples of these deep-seated landslides, a few of which are active and many more that are prehistoric and presently not moving. Almost all of these examples are naturally caused, many probably initiated by large off-shore earthquakes. However, some forest practices can affect the initiation and movement of these slides. These practices include large topographic modification such as quarrying, *aggregate* stockpiling, placement of large fills, and construction of large road cuts, especially along the bottom edges of these features. Since these practices are relatively rare, the potential for destabilization of slopes and initiation of a deep-seated slide is low in northwest Oregon forests.

Goal: Soil

Maintain natural soil processes, protect soils from damage, and increase soil carbon and other nutrients.

Strategy: Soil Protection

Follow BMPs during forest operations, such as road building, harvesting, trail construction, and site preparation to ensure protection of soils against erosion and loss of organic materials and soil structure.

Carbon

Growing trees sequester carbon. Forests provide long-term storage of carbon in trees, snags, downed wood, vegetation, and soils.
Credit: ODF

Forests provide carbon storage and sequestration as ecosystem services. Carbon storage and sequestration help mitigate climate change by reducing the amount of greenhouse gases in the atmosphere. Greenhouse gas mitigation supports sustainable GPV delivery by assisting with slowing the pace of climate change to allow systems time to adapt to climate change consequences, such as increased severity and frequency of drought, extreme heat, wildfire, insect and disease outbreaks, and storms that can otherwise damage timber, other plants, habitats, drinking water quality and quantity, air quality, infrastructure, and diminish human health and safety.

Forest vegetation sequesters carbon dioxide from the atmosphere in living tissues and provides long-term storage of carbon in trees, snags, downed wood, other plants, and soils. Areas managed as HCAs would be long-term stores for carbon dioxide. Areas of land managed for timber harvest have trees that actively sequester carbon while they grow and shift to static carbon storage as trees are harvested and transformed to wood products. Timber harvest will result in a portion of sequestered carbon released back into the atmosphere through burning or decay of harvest residuals and harvest operations (Figure 3-10). Carbon stored in wood products can serve as short-term or longer-term sinks depending on their use and longevity. Harvesting trees reduces the *carbon sequestration* capacity of the forest, but replanting seeds and seedlings after harvest maintains a landscape of actively growing trees to again act as carbon sinks as they age.

Forests in the Coast Range and Western Cascades accumulate some of the highest densities of carbon on Earth through their productivity. *Forest carbon* is distributed among different *carbon pools*, of which *live trees* is the component most affected by management (Table 3-3).

Figure 3-10. Paths of the Forest Carbon Cycle. Forest vegetation sequesters carbon dioxide from the atmosphere in living tissues and provides long-term storage of carbon in trees, snags, downed wood, other plants, and soils.

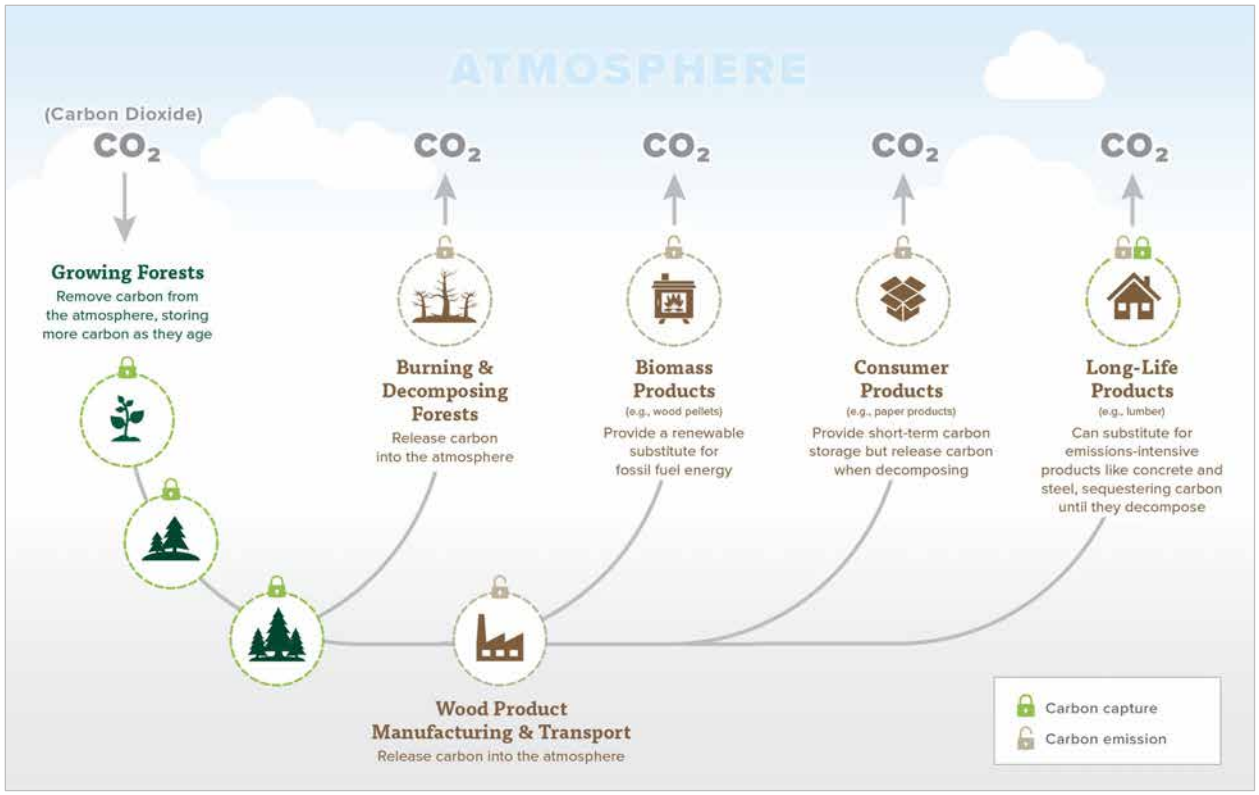


TABLE 3-3.
Forest Carbon Pools. Approximate percentage of carbon stored in each pool on state forest lands in the Oregon Coast Range.

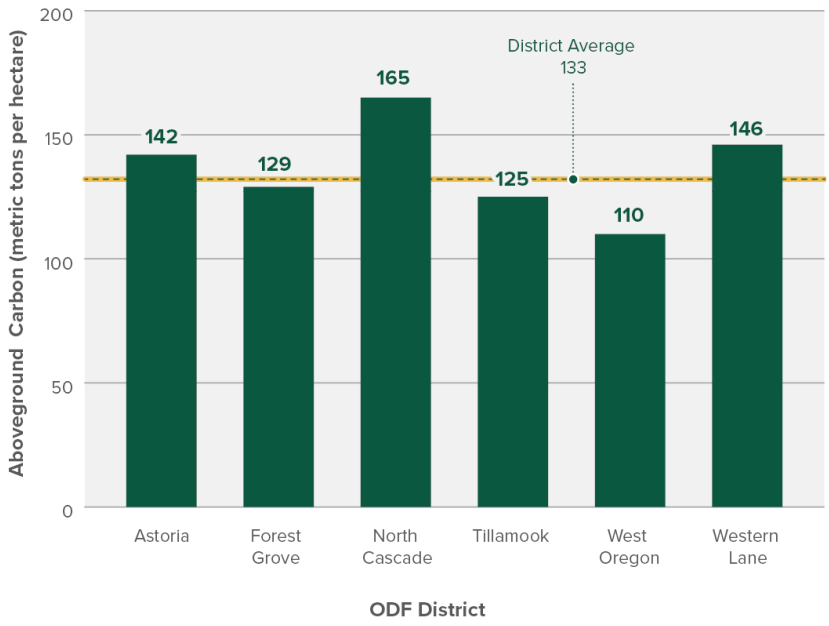
Forest Carbon Pools	Description	Percentage [a]
Live trees	Roots, bole, branches, bark, and foliage of live trees	44.8%
Standing dead trees	Roots, bole, branches, and bark of snags	2.5%
Fallen dead trees	Logs and large branches lying on the forest floor, larger than 3 inches diameter	6.6%
Forest floor	Litter, duff, and low vegetation	2.8%
Soil	Organic material, excluding coarse roots	43.3%

[a] Percentage includes some lands outside of ODF jurisdiction.
Source: Christensen et al. 2019

Forests continue to sequester carbon as trees grow. State forest lands have an average of 132.5 metric tons of aboveground carbon per hectare (mT/ha) stored in live trees. Estimates of average aboveground carbon storage varies by district due to stand types, ecoregions, and management history (Figure 3-11).

Strategies for improving carbon storage could include older stands in HCAs and RCAs, and encouraging long-lived wood products, restoring underproductive stands, or treating harvest residuals differently. Across the landscape, *conservation areas* will sequester and store a substantial amount of carbon in the forest. In contrast, other areas have a production emphasis and are actively managed for wood product production, which sequester carbon as the forest regenerates. Restoring underproductive stands and treating harvest residuals differently can also increase carbon storage. These silvicultural strategies will interact with other forest resource goals through co-benefits and trade-offs, which are evaluated during implementation planning and adaptive management. Ecological silviculture practices that can be employed are planting alternative tree species, planting in alternative planting spaces and densities, planting multiple species, to increase the adaptability under changing climate, and maintaining sustainable forests that serve to sequester carbon.

Figure 3-11. Estimated Average Aboveground Carbon in Woody Biomass across ODF Districts. Data are based on the 2020 Forest Inventory and Analysis Plots on western Oregon State forests.



Note: Data in this figure were collected prior to the 2020 Labor Day fires.

Source: ODF 2022b

Goal: Carbon Storage

Contribute to carbon sequestration and storage on state forest lands and carbon storage in harvested wood products.

Strategy: Long-term Carbon Storage

Implement silviculture treatments and management actions that improve long-term carbon storage. Evaluate proposed actions with respect to carbon storage relative to baseline state forest land carbon inventory.

The intent of this strategy is to consider long-term carbon storage impacts and benefits in the decision process in concert with other goals. Some areas of the forest will see limited or no harvest or timber management, e.g., HCAs, RCAs, and inoperable areas. Forest managers make decisions on silviculture treatments and the timing of harvest to best achieve a suite of goals and objectives.

Air Quality

Mt Jefferson as seen from the Santiam State Forest. Protecting air quality is an important part of prescribed burn management.
Credit: Zak Stone

A healthy and productive forest ecosystem provides clean air, which is an important ecosystem service that supports the health and safety of affected communities. In addition, if air quality is poor, tourists may delay or cancel their visits, which could have a negative impact on the tourism economy in local communities. Wildfires and *prescribed burns* can adversely affect air quality. Advanced planning and consideration of best burning practices protect air quality and the associated health risks to the public.

Timber harvest results in a large quantity of debris material, such as limbs, tops, and non-merchantable material. This material is an important pool of carbon, serves as an input of organic matter to humus and soil, and provides habitat for a variety of organisms. In some cases, this leftover slash can be a barrier to tree planting, be a fire hazard, and increase the potential for pest infestations (Buhl et al 2021). Where the quantity and spatial distribution of residual debris poses enough of an impediment to achieving management goals, prescribed burns may be used as a tool to remove this material. This burning can affect air quality and is regulated under the federal *Clean Air Act*, the primary law regulating air quality. Under the law, the U.S. Environmental Protection Agency (EPA) sets the National Ambient Air Quality Standards (NAAQS).

In Oregon, the Oregon Department of Environmental Quality (DEQ) develops and carries out programs to meet the NAAQS. Two air quality plans affect forest management directly: the *Oregon Smoke Management Plan* (OAR 629-048) and *Oregon Clean Air Act Implementation Plan* (OAR 340-200-0040). The *Oregon Smoke Management Plan* is intended to comply with the *Oregon Visibility Protection Plan* (OAR 340-200-0040 (5.2)).

The *Oregon Smoke Management Plan* regulates *prescribed burning* on all forest lands in Oregon, including federal, state, and privately owned lands. Some of its objectives are to protect public health, minimize smoke intrusions into designated population areas, reduce emissions from prescribed burning

in western Oregon, and protect visibility in *Class I areas*. Class I areas include national parks and certain wilderness areas (OAR 629-048-0005(5)).

Current annual levels of burning on state forest lands represent less than 10% of the total burning annually on all ownerships west of the Cascade Crest. Prescribed burning on state forest lands is estimated to contribute much less than 1% of the air pollution in western Oregon cities (ODF 2021).

When burning is used on state forest lands, slash is typically piled on a landing and burned. This results in less burning overall and more woody debris left in *harvest units*. For units that are burned, the prescribed burns are generally scheduled in the fall.

Goal: Air Quality

Maintain and protect healthy air quality.

Strategy: Smoke Management

Follow OAR 629-048 on *Smoke Management and Air Quality Control Program State Implementation Plan* (DEQ 2022a), which includes planning guidance, visibility objectives, and best practices, as well as information on regulated and sensitive areas and special protection zones to reduce smoke and smoke-related consequences.

Strategy: Reduce Burning

Dispose of slash and debris in other manners, such as selling to small-diameter timber markets.

Aquatic and Riparian Resources

Juvenile coho salmon (*Oncorhynchus kisutch*). Aquatic and riparian ecosystems provide essential habitat and resources for many species, including food and drinking water for humans *(Homo sapiens)*.
Credit: Wild Salmon Center

Management of aquatic and riparian resources contributes to a sustainable forest ecosystem that protects ecological processes and ecosystem services, provides resilience to climate change, and serves many communities. Aquatic and riparian processes support all three types of GPV. In addition to the environmental benefit of providing life-sustaining habitat to many species, major social activities, such as fishing, swimming, and sightseeing, depend on these resources in the planning area. Whereas downstream, the commercial fishing industry, which is a major component of the regional economy, relies on spawning habitat and cold water sources, originating in headwater streams such as those found in the planning area. Properly functioning aquatic and riparian systems also protect drinking water quality, quantity, and reduce flood risk to downstream infrastructure by reducing erosion,

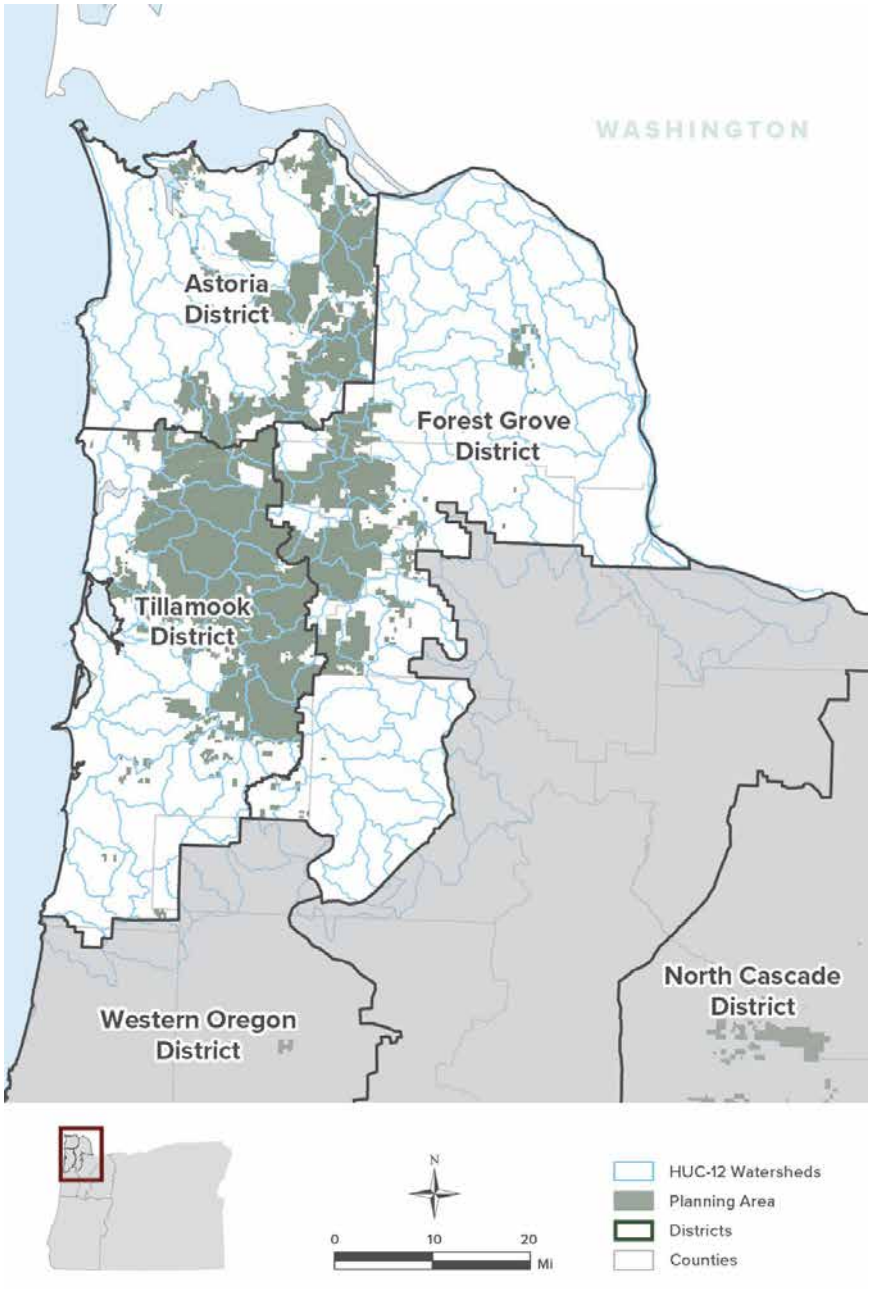
attenuating peakflows, and providing shade, thereby sustaining additional social and economic benefits associated with access and public health.

Aquatic resources include surface waters such as rivers, streams, lakes, springs, seeps, and *wetlands* and subsurface waters contained in *aquifers* or subsoils. Aquatic ecosystems interact closely with the surrounding terrestrial systems, both at the landscape scale and at the scale of *stream reaches* and riparian areas. The *riparian area* is the zone of influence between the terrestrial and aquatic environments.

In headwater streams, the riparian zone is particularly important as streams are narrow and riparian vegetation contributes strongly to shading and terrestrial organic inputs to the food web. From headwaters to downstream, riparian forests influence water temperature, filter contaminants (sediments, etc.), and provide inputs like woody debris and fine and course sediments that improve structure of habitat for some species and reduce erosion and downstream flood risk. Conversely, the structure and *composition* of riparian forests can be influenced by the aquatic environment, such as the influence of floods on forest dynamics and the *deposition* or erosion of material in the floodplain. Major disturbance events, such as floods and landslides, are natural processes that can add key elements, such as wood, boulders, and gravel, that maintain stream ecosystems. With climate change, stream temperature, floods, and droughts are expected to increase. A functioning riparian area increases the streams' adaptive capacity to deliver the multitude of ecosystem services derived from forest waterbodies. Therefore, the health of the aquatic system depends on forest management practices that recognize, maintain, and enhance the functions and processes that compose these terrestrial-aquatic interactions at a variety of spatial scales.

The level of influence ODF can have on protecting, restoring, and enhancing aquatic resources is commensurate with the proportion of the *watershed* it manages. Figure 3-12 depicts the distribution of ODF-managed lands across watersheds in the northwest districts, where ODF manages the most contiguous lands.

Figure 3-12. Watersheds Overlapping with Northwest Districts and FMP Planning Area. The median percentage of ODF-managed lands in northwest districts by HUC-12-sized[1] is 26% (range <1% to 100%).



Note: Hydrologic Unit Code (HUC)-12 watersheds are the smallest sized watershed delineated by the U.S. Geological Survey.

Waters and Protection Classification

At the time of FMP publication, the FPA Water Protection Rules classified waters for the purpose of applying protection measures, especially riparian buffers, in compliance with the *Clean Water Act* (OAR 629-635-0200; DEQ 2021; DEQ 2018). *Stream classification* is based on fish and drinking water use,

persistence of flows, and stream discharge size. The total length of streams on state forest land in the planning area is approximately 8,500 miles. Approximately 40% of the streams are classified as perennial, and 15% are classified as fish-bearing. Within the planning area, almost 50% of all streams by length, with an estimated 3,500 miles, are in the Tillamook District. The Astoria and Forest Grove Districts have the second- and third-highest concentration of streams, with 1,911 and 1,297 miles of streams, respectively (ODF 2022c).

Headwater streams are small streams at the highest end of a watershed. Due to their smaller channel widths, headwater streams are especially sensitive to changes in the surrounding riparian areas. These small streams serve important functions in maintaining water quality and quantity, providing habitat for aquatic species (sometimes only seasonally), and contributing to watershed-level processes (Olson et al. 2007).

In both fish-bearing and non-fish-bearing waters, wood pieces can slow stream velocities, reduce soil erosion, trap and store sediment and organic matter, and store water higher in the overall watershed. In-stream wood recruitment and retention will facilitate the creation of steps and pools, which creates areas of slower water velocities where sediment sorting contributes to high-value habitat for fish, amphibians, and other aquatic organisms. Wood also creates cover from predation and complex habitats for all life histories of aquatic species. Forestry practices that promote wood recruitment include preserving riparian forest, retaining trees within harvested stands, and selective slope-buffering. Headwater streams can also serve as spawning areas, *refugia* from high water, and refugia from high stream temperatures particularly in summer for some *species of concern*.

Habitat Conditions

The current conditions in aquatic systems and riparian forests are a product of soils and hydrology, and have been shaped over time by disturbances, such as wildfire, windthrow, drought, landslides, logging, and road building. According to recent studies conducted by ODFW, the overall condition of riparian and stream habitats in Oregon's coastal streams, which include state forest lands, indicate a lack of woody debris in streams and large conifers in riparian areas, compared to historical values (ODFW 2019). These results are a legacy of the area's history of large fires and historic logging practices, which included harvest and road building in riparian forests and removal of woody debris from streams, resulting in an abundance of young riparian forests in many watersheds. Increased riparian protections and active stream restoration projects during recent decades have begun to ameliorate degraded conditions on state forestlands.

Riparian vegetation can help regulate water temperature and velocities, reduce sedimentation, provide habitat for aquatic associates and nutrients for aquatic systems. Removal of riparian vegetation can increase water temperature and have cascading effects on water quality and quantity that negatively affect fish, recreation, and drinking water. Table 3-4 summarizes the extent of water temperature impairment in the planning area by district. Climate change is expected to exacerbate water quality issues by increasing stream temperature and decreasing summer low flows, which can concentrate other *pollutants*.

Table 3-4. Water Temperature Impairments. Percentages of planning area within watersheds that have temperature impairment indicating waters are warmer than DEQ standards for either part of the year, particularly during spawning of salmonids, or year-round.

District	Percent of Planning Area in Temperature Impaired Watersheds
Astoria	46%
Forest Grove	37%
North Cascade	9%[1]
Tillamook	18%
West Oregon	31%
Western Lane	18%

Source: DEQ 2022b

Note: [1]Water temperature impairment classifications in North Cascade District pre-date the 2020 wildfires.

Threatened and Endangered Fish Species and Other Aquatic Species of Concern

At least 28 species of fish occur either in the planning area or downstream of state forest lands and, therefore, may be influenced by state forest management. Some *evolutionarily significant units* (ESUs) or distinct populations of coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*Oncorhynchus tshawytscha*), steelhead trout (*Oncorhynchus mykiss*), and Oregon chub (*Oregonichthys cramer*) are *listed* as threatened or endangered under the federal ESA, or are under review for listing. At least 32 species of reptiles and amphibians also occur in the planning area, including species of concern and species designated as sensitive species in the *Oregon Conservation Strategy* (Oregon Conservation Strategy 2016). Approximately half of these species, such as torrent salamanders and the coastal tailed frog, depend on the aquatic environment for at least part of their life cycle. Of these fish and amphibian species, nine fish are listed as threatened or endangered under the state or federal ESA, two amphibians are state listed as sensitive species.

ODF's species of concern list was developed using federal and state lists of threatened, endangered, and *candidate species*, as well as the Oregon Conservation Strategy and ODFW's sensitive species list (ODFW 2021). They identify species that need immediate and focused conservation effort. The list is a component of ODF's species of concern operational policies and is updated semi-regularly and will be captured in IPs as state and federal lists are updated or new data or science becomes available. Species of concern identified as part of this FMP's associated policies are currently present or have the potential to be present on state forest lands.

Stream Restoration

Although protection of riparian areas improves conditions over the long term, direct restoration projects such as *culvert* replacements, road decommissioning, and in-stream placement of woody debris can accelerate the recovery of degraded aquatic systems (e.g. O'Neal et al. 2016; Hoffman and Dunham 2007; Whiteway et al. 2010). Recognizing American beavers (*Castor canadensis*) can enhance in-stream and riparian habitat through dam construction activities, stream restoration opportunities may also be

Improving Aquatic Organism Passage. Culvert replacements like this one on Warner Creek (Astoria District) improve aquatic organism passage, which increases habitat accessibility and habitat

identified in areas able to support beaver colonization where impounded water would benefit aquatic fish and wildlife species. Activities on state forest lands that contribute to *watershed restoration projects* (as defined by the Oregon Water Enhancement Board) include projects that directly improve in-stream habitat and road-related projects that provide aquatic organism *passage*, decouple road drainage systems from streams, and minimize sediment delivery to streams (Table 3-5). For more information on the condition of road-stream interactions, see *Transportation*. ODF is committed to ongoing stream restoration on state forest lands as described in the HCP and the strategies below.

TABLE 3-5. **Selected In-Stream and Road Projects by District Reported to Oregon Water Enhancement Board (1995–2020).** The Oregon Water Enhancement Board maintains an inventory of Oregon watershed restoration actions intended to improve habitat for aquatic species and water quality.

Stream Enhancement Projects	District			
	AT, FG, TL	NC, WO	WL	Total
Number of In-stream Projects	106	29	66	201
Number of Trees Donated	3,874	1,362	2,382	7,618
Miles of Stream Enhanced	85	32	57	173
Number of Fish Barriers Removed	252	48	51	351
Miles of Fish Access Restored	192	44	50	286
Number of Type N Crossing Fixed	1,626	600	113	2,339
Number of Road Relief Culverts Installed	3,574	717	188	4,479
Miles of Road Closed or Vacated	113	11	43	167
Miles of Road Improved or Relocated	1,005	108	67	1,180
ODF In-kind Contribution ($)	$39,818,227	$4,446,162	$3,252,727	$47,517,116
Other Contributions ($)	$5,228,014	$885,347	$4,761,886	$10,875,247

Source: OWEB 2021

AT = Astoria; FG = Forest Grove; TL = Tillamook; NC = North Cascade; WO = West Oregon; WL = Western Lane

Drinking Water

Forests produce the highest quality and most sustainable sources of fresh water on Earth (NRC 2008; Neary et al. 2009; Creed et al. 2011). Oregon's extensive and diverse forests generally produce very high-quality water—an important social, economic, and environmental benefit.

Drinking water must meet specific regulatory and engineering standards. Timber harvest, road management, and related activities can affect the supply, storage, and quality of water through various mechanisms. These mechanisms include altering annual average water yield (Moore and Wondzell 2005); changing timing, duration, and magnitude of peak flows (Grant et al. 2008); severity of summer low flows (Coble et al. 2020); the quantity of sediment yield to intakes and reservoirs; and various water quality parameters (Institute for Natural Resources 2020). Thus, forest management has the potential to affect the operations and planning of water suppliers and their ability to provide clean water to their customers especially as climate changes.

Drinking water quality is regulated by EPA through the Safe Drinking Water Act. In Oregon, DEQ and the Oregon Health Authority (OHA) implement the Safe Drinking Water Act through a partnership instituted by the Drinking Water Protection Program (DEQ 2022c). While OHA ensures that customers receive drinking water that meets Safe Drinking Water Act standards, DEQ protects the sources of drinking water by implementing the Clean Water Act. DEQ assists public water suppliers by identifying *source areas* of drinking water, developing source water assessments, and assisting in the development of place-based plans to reduce pollutants. A source area is the area in which a watershed delivers water to a water system.

The potential for ODF to affect drinking water in the planning area depends largely upon the percent of the drinking water source area under ODF management (Coble et al. 2020; Grant et al. 2008; Institute for Natural Resources 2020). Less than 1% of Oregon surface water drinking water source areas are located on ODF lands (DEQ 2017). It is possible to compare the planning area with the Drinking Water Protection Program's public water systems (PWS) (i.e., systems that serve more than three homes or connections) source areas to identify PWSs where ODF has the potential to affect public drinking water in the planning area. Three of Oregon's Public Water Systems have more than 45% of their source area on ODF lands: Timber Water Association, Hillsboro-Cherry Grove PWS' in Forest Grove District, and Jewell Sd #8 PWS in Astoria District (DEQ 2019). Very few community drinking water intakes are supplied from state forest lands. There are eight municipal or quasi-municipal points of diversion on ODF lands: three in the Astoria District, three in the Tillamook District, one in the Forest Grove District, and one in the North Cascade District.

Although not regulated by EPA, *private and domestic drinking water* can also be affected by forest management. However, only approximately 6% of known private and domestic water system intakes in Oregon are located on state or locally adjacent lands (OWRD 2023). There are 125 private or domestic points of diversion on ODF lands in six districts with Tillamook and Astoria having the most at 62 and 32, respectively (OWRD 2023). While these numbers are based on the most current data available, the number of drinking water intakes and source areas may change over time.

The FPA contains rules and the HCP contains conservation strategies that protect water quality. The FPA protects both private and domestic drinking water intakes and prevents *non-point source* pollution from entering water supplies. DEQ reviews the FPA for sufficiency to implement the Clean Water Act (DEQ 2021). By protecting riparian and aquatic ecosystems, many of the HCP conservation strategies are also protecting drinking water quality.

At the time of writing, the FPA water protection rules and the HCP conservation strategies pertain to water quality and sediment delivery, but not to annual average water supply or to the timing, magnitude, or duration of peak and low flows. In cases where state water quality standards are not met, DEQ may issue additional requirements, such as total maximum daily loads (TMDLs). The following goal and strategies serve to ensure that management is more aware of their potential impact on drinking water and coordinates with DEQ where waters may be impaired.

Goal: Aquatic and Riparian Resources

Protect, maintain, and enhance aquatic and riparian resources, that support the life history needs of aquatic and riparian-dependent fish and wildlife species.

Strategy: Aquatic Habitat

Protect, maintain, and enhance aquatic habitat for aquatic and riparian-dependent species.

Strategy: Headwater Processes

Maintain and enhance headwater processes that collectively trap and store sediments and organic matter, and export wood, substrate, and food to downstream reaches.

Strategy: Functional Landslide Processes

Maintain functional landslide processes including sediment routing and woody debris supply for slopes that could fail by identifying slopes that could fail and retaining trees on those slopes.

Strategy: Wetlands

Maintain the natural functions and attributes of wetlands, allow for new wetlands to form over time, and restore degraded wetlands where consistent with other resource goals.

Strategy: Threatened and Endangered Species and Other Species of Concern

Protect, maintain, and enhance habitat for threatened and endangered species and other species of concern. The following considerations are used to implement this strategy.

- Comply with state and federal ESA requirements and adopt management approaches that contribute to the persistence of threatened and endangered species.
- Implement the HCP and associated conservation actions targeted to benefit the species covered under the *Incidental Take Permit*.
- Conduct species assessments during IP development and related revisions to determine which species warrant special consideration and whether existing conservation measures are adequate.

Strategy: Aquatic Organisms

Incorporate aquatic organism passage considerations into transportation planning and engineering design processes to meet state and federal passage criteria.

Strategy: Partnerships for Habitat

Foster partnerships with other agencies, Tribes, universities, and non-governmental organizations to plan, implement, and monitor aquatic and riparian habitats and ecosystem function, and to conduct research that fills gaps in scientific knowledge.

Goal: Drinking Water

Protect, maintain, and enhance forest drinking water sources for private and domestic use.

Strategy: Drinking Water Effects Analysis

Develop and incorporate drinking water effects analysis into planning processes to identify and protect drinking water source catchments that overlap with the planning area.

Strategy: Department of Environmental Quality Total Maximum Daily Loads

Follow DEQ-issued TMDLs, including any additional site- or source-specific DEQ TMDL Implementation Plans, and *monitoring* and reporting requirements.

Wildlife

Blacktail deer near Roseburg, Oregon. Many species of wildlife are found in Oregon's state forest lands–individual species use different stand types and habitat features at varying spatial scales.
Credit: ODF

Like aquatic and riparian resources, management of wildlife habitat contributes to all three types of GPV. Protecting and enhancing wildlife habitat not only sustains the wildlife communities themselves but also the social and economic benefits derived from them. Abundant wildlife enhances recreation, subsistence, and cultural activities such as bird watching and hunting. These activities contribute to the local tourism economy and tax revenues from licensing fees.

Habitat Condition

The amount and quality of habitat for different species results from interactions between natural processes and management history. *Environmental gradients*, underlying geology, species distributions, and natural disturbance have always provided for variability in vegetation types across state forest lands in western Oregon. Extensive disturbances, such as wildfire and windstorms, continue to influence species' habitat.

Disturbances over smaller areas, such as insect and disease outbreaks, create spatial heterogeneity within and among individual stands.

As described in *Forest Condition*, many of the state forest lands in western Oregon have a legacy of repeated, large wildfires or had been extensively logged prior to acquisition by the state. Managing the current landscape for multiple values including timber production, forest health, aquatic systems, and wildlife habitat has ultimately produced a complex mosaic of stand types and ages and within-stand habitat features. The variety of stand types resulting from ODF's management of state forest lands provide well-dispersed diverse habitat across the landscape at regional scales and broad *connectivity* to and between older forests on federal lands, as well as habitats where comparatively little other public forest lands exist (e.g., Clatsop State Forest). Young stands and associated early seral characteristics are important for diverse game and non-game species, including many species of state or federal concern (Swanson et al. 2014). Older stands on the landscape foster and support a variety of late-seral associates, such as northern spotted owls (*Strix occidentalis caurina*), marbled murrelets (*Brachyramphus marmoratus*), and red tree voles (*Arborimus longicaudus*). Forests in mid-*seral stages* (e.g., 30–80 years old) provide habitat for most native forest species, including early and late-seral associates, and enhance broader landscape function (Swanson et al. 2014).

Current ODF forest inventory data document the age class distribution of state forest lands and provide insight into the range of habitat types provided therein (*Forest Condition*). Additional variation in stand composition and structure due to stand development, management history, site productivity, topography, region, and numerous other factors contribute to diversity across spatial scales. For example, rare or unique habitats, such as talus slopes and caves, add to landscape diversity, the broader ecological function, and resilience. There is considerable variation both within and among districts in the relative proportions of tree age classes and associated habitat types on the landscape. Individual species use different stand types and habitat features at varying spatial scales. Thus, state forest lands provide for diverse habitat across the landscape.

Harvest strategies, practices, and prescriptions in young stands have promoted high-quality, complex early seral habitat. This is important because complex early seral habitats can support a diverse and unique array of wildlife species from insect pollinators to a variety of insect-eating songbirds; to hunting opportunities for forest raptors along *edges* adjacent to older stands. With adequate snag retention in harvested units, complex early seral habitats can even provide denning and nesting cavities for sensitive species, such as fisher (*Pekania pennanti*), ringtail (*Bassariscus astutus*), purple martin (*Progne subis*), and bluebirds (*Sialia mexicana*).

Mid-seral stands are highly variable in habitat structure and function depending on natural disturbance, management history, and other factors, but all provide some degree of habitat to meet various life-history needs of native wildlife species, and also provide connectivity between other habitat types and across basins. Mid-seral habitat can provide for dispersal and foraging habitat for resident raptors, as well as cover and overall landscape connectivity for movement of forest carnivores and herbivores. Terrestrial salamanders can also be supported in early and mid-seral landscapes where adequate downed wood is retained (Kluber et al. 2008).

Late-seral habitats provide for associated wildlife when arranged in a manner that maximizes interior forest, reduces edge effects, and are arranged in a way that minimizes the distance between *patches* to maintain connectivity between mid-seral habitats and older stands. The recruitment and retention of large-diameter snags and downed wood is key for all seral stages and patch sizes across the landscape. The data also suggest state forest lands may lack habitat to support late-seral species, such as northern spotted owls and marbled murrelets. Approximately 87% of state forest lands are less than 80 years old. In general, the districts in the central and southern Coast Range and the Santiam State Forest have a greater proportion of total acreage in older stands. The Tillamook and Clatsop State Forests have comparatively little older forest, largely due to the extensive fires and logging that occurred prior to state acquisition. Despite large improvements in habitat diversity and quality since then, the state forests' habitat story largely remains one of restoration, rehabilitation, and enhancement in a young forest landscape (Figure 3-1).

General Wildlife Species

Western Oregon state forest lands currently have habitat suitable for most native species found in forests of the Coast Range and West Cascades. Vertebrate species known or suspected to be found on, adjacent to, or in some cases, downstream of, state forest lands in both aquatic and terrestrial environments include approximately 270 species, including 63 mammals, 147 birds, 32 amphibians and reptiles, and 28 fishes. This excludes the many species of marine fishes, birds, and mammals that may be found in the estuaries adjacent to state forest lands, unless they use state forest lands for some portion of their life history requirements.

Wide-ranging mammals such as deer (*Cervida*e), elk (*Cervus canadensis roosevelti*), American black bear (*Ursus americanus*), cougar (*Puma concolor*), and bobcat (*Lynx rufus*) make use of a variety of habitats in and near state forest lands to meet their life history needs. Forests stands are host to most native weasel species (*Mustelidae*), skunks (*Mephitidae*), squirrels (*Sciuridae*), voles (*Microtus*), mice (*Mus*), and other forest-floor small mammals. The full native assemblages of forest resident and migratory songbirds and raptors, including rare and sensitive species, are present on state forest lands. Upland game birds, such as grouse (*Tetraoninae*), quail (*Odontophoridae*), and Rio Grande wild turkeys (*Meleagris gallopavo intermedia*) are also present. Resident and migratory waterfowl and other aquatic birds are dependent on riparian, aquatic, and wetland habitats within state forest lands. Mammals such as river otters (*Lontra canadensis*) and American beavers (*Castor canadensis*) make almost exclusive use of these habitats. Many amphibians are associated with aquatic habitats, such as tailed frog (*Ascaphus*) and torrent salamanders (*Rhyacotritonidae*), yet other amphibians use terrestrial habitats and are strongly tied to the abundance and quality of downed wood (lungless or plethodontid salamanders; e.g., Oregon slender salamander [*Batrachoseps wright*], clouded salamander [*Aneides ferreus*]). Many birds, reptiles, and some mammals use rocky habitats (including caves or rock outcrops) for a variety of life history needs. Bats (*Chiroptera*) make use of many structures throughout the forest for roosting and hibernation and forage over nearby aquatic habitats.

Threats to wildlife on state forest lands include poaching, illegal dumping, habitat destruction and modification from management activities or public misuse, and extreme natural disturbances. Many of

these issues can be addressed via forest planning and management in collaboration with other agencies and stakeholders. The long-term effects of climate change on wildlife are more difficult to assess and address by management. Changes in temperature, precipitation, and other aspects of climate will likely alter the quantity and quality of many species' habitats.

Under GPV, the overarching goal of ODF's strategies for wildlife is to protect, maintain, and enhance habitat for native wildlife species. Restoration and enhancement needs remain where fire and subsequent salvage logging or reforestation have reduced the extent or quality of habitat for some species (e.g., in the Tillamook Burn). Vegetation complexity and late-seral features, in particular, will take many decades to develop through both passive and active management. While moving the landscape toward more diverse habitat conditions, some individual species of concern, and their habitats may require special consideration.

Species of Concern

Species of concern are wildlife species that have been identified as at risk due to declining populations or other factors (e.g., having a limited range). Some (e.g., coastal marten and Pacific fisher) appear to be largely missing from forests in the region although habitat for the species seems to be present. These and many others are species of concern to state and federal managers and the public. Numerous public and private entities designate wildlife species of concern for conservation and management, from local to global scales. The U.S. Fish and Wildlife Service, U.S. Forest Service, and U.S. Bureau of Land Management publish relevant lists for the Coast Range and Cascade Mountains Districts. At the state level, ODFW and the Oregon Biodiversity Information Center (formerly Oregon Natural Heritage Program) publish state-wide and county lists.

ODF's species of concern list was developed with federal and state lists of threatened, endangered, and candidate species, as well as the Oregon Conservation Strategy and ODFW's sensitive species list (ODFW 2021). They identify species that need immediate and focused conservation effort. The list is a component of ODF's species of concern operational policies and is updated semi-regularly and will be captured in the IPs as state and federal lists are updated or new data or scientific understanding become available. Species of concern identified as part of this FMP's associated policies are currently present or have the potential to be present on state forest lands.

Threatened or Endangered Species

Forest management activities must comply with all federal and state laws, including those related to protection and conservation of wildlife populations and their habitat (e.g., the state and federal ESAs, federal Bald and Golden Eagle Protection Act, federal Migratory Bird Treaty Act, FPA). Although many laws apply to the management of state forest lands, legal requirements for protection of threatened or endangered species can have some of the most significant effects on planning and operations.

ODF has an extensive survey history for ESA-*listed species* (i.e., northern spotted owls and marbled murrelets) and continues to monitor activity at known sites on an annual basis. ODF, in various capacities over time, has supported research related to habitat relationships of numerous species (e.g., deer, elk, owls, murrelets, early seral birds, tree voles) and wildlife responses to forest management

practices (songbirds, small mammals, amphibians). However, because relatively little inventory or monitoring work has been conducted on state lands for non-game species, some species may be present that have not been detected or documented yet (e.g., coastal marten). Other listed species are not currently known to be present but could become re-established as a result of habitat improvements, regional population recovery, or potential re-introductions (e.g., Pacific fisher, Oregon spotted frog).

The HCP (ODF 2022d) describes the status and occurrence of five wildlife species listed under state and federal endangered species protection acts. Species include northern spotted owl, marbled murrelet, Oregon slender salamander, coastal marten, and red tree vole. Fish are discussed under *Aquatic and Riparian Resources*. There are many other species of concern including birds, bats, and aquatic amphibians. Habitat needs vary for listed species of concern. Some species of concern are associated with late-seral habitats, others (e.g., flycatchers and warblers) are associated more with complex early seral habitats, and others (e.g., bats) are associated with more specific habitat elements like suitable roost structures or hibernacula.

Goal: Wildlife

Maintain, protect, and enhance functional and resilient landscapes that provide the variety and quality of habitat types and features necessary for long-term persistence of all native wildlife species.

Strategy: Habitat Diversity

Manage for diverse habitats across the landscape and over time.

a. Manage for a diverse array of seral stages.

b. Protect, maintain, and enhance habitats that account for the range of forest types, topography (slopes, aspects, elevations), and habitat features at the district level.

c. Identify and protect rare and unique habitats, particularly those that are fragile, sensitive, or potentially vulnerable to climate change.

The intent of this strategy is to conserve and enhance diversity as it promotes resilience and ecosystem function, which provides for many ecosystem services (e.g., pest control, pollination) and public benefits (hunting, fishing, birding, existence value). Managing for diversity helps ensure the full suite of habitats for native wildlife persist on the landscape in spite of short-term disturbances or chronic perturbations.

HCAs will provide the majority of late-seral stands and the total amount of late-seral forest increases therein over time. Early and mid-seral stands will exist both inside and outside of HCAs and contribute to the diversity of habitat types on the landscape. Treatment of 30,000 acres of SNC and hardwood-dominant stands over the first 30 years of the HCP permit will provide a complex early seral component in HCAs, as will natural disturbances. RCAs and leave-tree strategies provide for some older habitat components outside of HCAs. Operationally limited areas contribute to diversity and older age classes outside of HCAs. HCAs were designed to account for the range of forest types and topography and most habitat features at the district level. Rare, unique, and otherwise vulnerable habitat types and features

outside of HCAs can be addressed with fine-filter strategies (e.g., bat hibernacula) and other policies (e.g., wetlands).

Strategy: Habitat Complexity

Manage for complex habitats of all ages and types.

a. Promote structural complexity, compositional diversity, and spatial heterogeneity at stand and landscape scales.

b. Adapt standards to regional and stand-level goals (e.g., habitat enhancement, forest restoration, fuels and fire risk, timber production, harvest age), and over time as stand and landscape conditions change.

The intent of this strategy is to conserve and manage for habitat complexity as it enhances function of many ecosystem processes and services. Complexity is a key feature of high-quality habitat at all spatial scales for many species of concern and contributes to forest and habitat resiliency through time. The following considerations are used to implement this strategy.

- Protect, maintain, and enhance *legacy structures*, including remnant old growth trees, residual green trees, snags, and downed wood. Allow exceptions for public safety.
- Promote vertical layering where habitat restoration or enhancement are primary concerns or compatible with other goals and where species composition makes this strategy reasonably attainable.

Stands in HCAs are the foundation for this strategy and will provide the majority of complex stands of mid- to late-seral forest. Management in HCAs (thinnings and regeneration harvest of SNC and alder) will enhance complexity over time and provide for a complex early seral component. Outside of HCAs, leave-tree strategies, RCAs, and operationally limited areas contribute to stand and landscape complexity. Multi-species plantings inside and outside of HCAs further promote complexity and resilience. Silvicultural prescriptions will vary at the stand-level based on past management, current conditions, and desired future condition (e.g., production-emphasis versus habitat emphasis, fuels reduction management needs). These will also vary by district based on forest types, HCP covered species distribution, ownership patterns, and forest health concerns.

Strategy: Functional Landscapes

Manage for functional landscapes for native wildlife.

a. Create a variety of patch types, patch sizes, and patch arrangement over time.

b. Provide for adequate interior forest habitats.

c. Maintain connectivity between habitats, and broad landscape permeability, for diverse wildlife species including species of concern.

d. Foster and maintain *redundancy* at various ecological scales (e.g., species, stand types).

The intent of this strategy is to develop functional patches and resource arrangements with redundancy to help ensure resistance, resilience, and long-term persistence that meets GPV with climate change and long-term sustainability in mind. The following considerations are used to implement this strategy.

This strategy will mostly be achieved by HCP conservation actions inside and outside of HCAs. HCAs were designed to provide for functional landscapes for the covered species. As habitat develops therein, it will promote a variety of patch types, sizes, and arrangement, adequate interior forest habitat, and broadscale connectivity. Outside of HCAs, leave-tree strategies, RCAs, and inoperable areas further enhance landscape function, habitat distribution, and connectivity. Northern spotted owl dispersal habitat requirements further enhance the function of the areas outside of HCAs. Age-class structure outside of HCAs contributes to the variety of patch types on the landscape. Redundancy occurs both inside and outside of HCAs and contributes to forest resilience.

Strategy: Rare and Unique Habitats

Identify, protect, and restore rare and unique habitats, particularly those that are fragile, sensitive, or potentially vulnerable to climate change.

The intent of this strategy is to target locations on the landscape that are unique and support the life history needs of vulnerable species.

Strategy: Threatened and Endangered Wildlife Species and Other Species of Concern

Protect, maintain, and enhance habitat for threatened and endangered species and other species of concern. Use the following considerations to implement this strategy.

a. Comply with state and federal ESA requirements and adopt management approaches that contribute to the survival and recovery of threatened and endangered species and other species of concern.

b. Implement the HCP and associated conservation actions targeted to benefit the species covered under the Incidental Take Permit.

c. Conduct species assessments during IP development and related revisions to determine which species warrant special consideration and whether existing conservation measures are adequate.

d. Collaborate across ownership boundaries to meet common wildlife conservation goals.

e. Support habitats beneficial to pollinator species (including invertebrates) by integrating alternative management practices, where appropriate.

The intent of this strategy is to comply with state and federal ESA requirements and the HCP, while also managing for other species of concern. ODF will implement management approaches that contribute to the persistence of threatened and endangered wildlife species. Where appropriate, ODF will also apply these approaches to the conservation of species of concern not formally listed under state or federal ESA. Implementation ensures that wildlife habitats are managed in a way that meets all legal requirements and that listed and imperiled species will persist on the landscape using the conservation actions specified in the HCP. While the HCP captures currently listed and some candidate species, ODF will continue to remain informed about any potential future candidate species and species listings.

Applying the above considerations to management approaches provides a *coarse filter - fine filter* approach to addressing species of concern, while following the directions within the HCP ensures ESA compliance. Other species of concern are determined through regular policy review with assessment of need for additional fine filter strategies beyond FMP and HCP commitments. This strategy ensures ODF is managing habitat for all native species as required under GPV, while also working to prevent future listings.

HCP commitments provide the majority of tactics needed to achieve this goal. The HCAs' leave-tree strategies, northern spotted owl dispersal habitat outside of HCAs, and RCAs are the primary coarse filters for species of concern. Additional fine filters are added during IP development and implementation to address species of concern that have habitat requirements inadequately addressed by coarse filters. Fine filters are species- and site-specific, and generally of minor/minimal impact or complementary to operations. Examples include 1) protecting rock outcrops and caves of known use by Townsend's big-eared bats; 2) creating/retaining smaller-diameter, short snags on ridgetops in areas of known purple martin occupancy; and 3) implementing seasonal restrictions near known active peregrine falcon nests.

ODF considers pollinator habitat as part of wildlife habitat restoration efforts for species of concern. Pollination is an important ecosystem service that benefits forest health and resiliency. Pollinators have more specialized habitat needs that can be pursued alongside other management objectives with small shifts in practices or in areas unsuitable for timber production (Buhl et al 2021). In general, pollinator abundance and diversity may benefit from more open forest canopies and from native plant communities (Hanula et al. 2016). Focus for these practices could be within HCAs and stewardship classes with a subclass designation of cultural resources, plants, research/monitoring, unique threatened or endangered plants, or wildlife subclasses. Where practices are implemented, pollinators would provide ecosystem services to adjacent stewardship areas and nearby agricultural lands (Rivers 2018).

Sensitive Plants

Coast Range fawn lily (*Erythronium elegans*). Sensitive and rare plants provide environmental and social benefits and are protected by the Oregon Department of Agriculture Native Plan Conservation Program.
Credit: ODF

State forest lands have hundreds of species of plants. Native plants fill many roles in the forest ecosystem. They provide organic matter to forest soils, influence micro-climate, support native pollinators, contribute to biodiversity, and are used as cover and forage by many animals. In addition to their ecological functions, some plant species are harvested commercially or for cultural uses. Commercial uses of understory plants are discussed in the *Special Forest Products* section. This section focuses on threatened, endangered or rare plants (collectively, *sensitive plants*), as listed under the state of Oregon's ESA and

administratively protected by the Oregon Department of Agriculture Native Plant Conservation Program (ORS 564.105; OAR 603-073).

The Oregon Biodiversity Information Center provides a list of sensitive plants that may be found on state forest lands, as well as records of known locations. Most of these species occur in non-forested areas, such as open, high-elevation rocky areas; open meadows; bluffs; and coastal areas. Six sensitive plant species are known to be present on state forest lands: Coast Range fawn lily (*Erythronium elegans*), Nelson's checkermallow (*Sidalcea nelsoniana*), Saddle Mountain bittercress (*Cardamine pattersonii*), cold-water corydalis (*Corydalis casea*na ssp. *Aquae-gelida*e), Chambers' paintbrush (*Castilleja chambersii*), and frigid shootingstar (*Dodecatheon austrofrigidum*). ODF is not aware of any other state-listed plant species that are likely to occur on state forest lands.

ODF protects listed plant species in accordance with the state and federal ESAs. ODF has identified listed species that occur, or are suspected to occur, on state forest lands and continues to update these lists (listings and occurrences) in consultation with the Native Plant Conservation Program. During operations planning, the districts determine if listed species occur or are likely to occur on lands where management activities are planned. If so, the district will determine whether the proposed management activities are consistent with the conservation program for the listed species and whether specific protection or mitigation measures are warranted.

Goal: Sensitive Plants

Ensure the long-term persistence of sensitive plant species.

Strategy: Sensitive Plants

Identify, protect, maintain, enhance, and adaptively manage sensitive plant species.

CHAPTER 4
Guidelines

This chapter describes the processes for implementation and revision of the Western Oregon State Forests Management Plan (FMP).

4.1 Asset Management Guidelines

Assets,[1] as they are discussed in this section, are the tangible resources and infrastructure (e.g., parcels of land, forest products, forest roads and related improvements, trails, campground facilities) on state forest lands. Maintaining or enhancing value of assets described in this plan is fundamental to long-term *sustainability* of resources described in the *greatest permanent value* (GPV) rule (Oregon Administrative Rule [OAR] 629-035-0020) such as timber, revenue, *aquatic* and wildlife *habitat*, and recreation. The asset management *guidelines* discussed in this section align with the Oregon Revised Statutes (ORS), OAR, and Oregon Department of Forestry (ODF) *policy*.

Implementation of the FMP will be consistent with these guidelines to ensure that the asset value of the forest is maintained or enhanced. The guidelines are influenced by the following implementation priorities under which the State Forests Division (Division) is operating.

- Conserve forest lands by maintaining the state forest land base.
- Maintain a land exchange and acquisition program to consolidate state forest lands for management efficiencies, economic values, or enhanced stewardship.
- Implement marketing strategies that increase the value of forest products.

[1] Terms italicized in this document are defined in the Glossary. Defined terms are italicized at the first instance in each chapter.

- Prioritize and invest in *stand management* activities that increase quality and quantity of timber and enhance other *ecosystem services*.
- Maintain, develop, and protect investments in infrastructure such as roads, bridges, and facilities, while recognizing that in some cases investments may need to be moved, removed, or decommissioned.
- Maintain existing assets that support recreation, education, and interpretation activities, while recognizing that in some cases investments may need to be moved, removed, or decommissioned.
- Maintain investments in forest inventory, *geographic information system* (GIS) technologies, and timber harvest-tracking technologies that support planning and implementation processes and contribute to *adaptive management*.
- Prioritize and undertake investments in research and *monitoring* consistent with Section 4.3, *Decision-Making, Adaptive Management, Monitoring, and Research Guidelines*.
- Maintain a budgeting and financial management system that tracks *revenues* and expenses and aids in financial decision-making.
- Implement and maintain accountability strategies and systems that ensure the state and other beneficiaries receive anticipated financial and other benefits from the forest.

4.1.1 Implementation Priorities

Funding levels for plan implementation vary with cyclical economic trends. FMP implementation is primarily funded through timber harvest revenues. There may be periods where revenues limit funding. Annual budget instructions for developing fiscal budgets reflect the *Forest Development Fund* (FDF) balance and the projected FDF balance. The highest level of implementation and investment occurs when the FDF balance exceeds 12 months of operating expenses, and the balance is forecast to be relatively steady or increasing. The lowest level occurs when the FDF balance is less than 6 months of operating expenses, and the balance is forecast to decrease (Table 4-1). To avoid service level decreases, ODF may seek external federal, state, and non-governmental organization (NGO) funding sources, such as grants or legislative funding through policy option packages or legislative *concepts*. Table 4-1 shows the forest management investment levels based on the revenue forecast and FDF balance.

TABLE 4-1
Forest Management Investment-Level Guidance Based on Revenue Forecast and FDF Balance

	Increasing 3-year Revenue Forecast	Decreasing 3-year Revenue Forecast
FDF Contains Greater than 12 Months of Operating Expenses	Level 1: Maintain or expand existing investments and fund new strategic investments	Level 2: Maintain or expand existing investments and explore additional strategic investments
FDF Contains 6 to 12 Months of Operating Expenses	Level 2: Maintain or expand existing investments and explore additional strategic investments	Level 3: Invest in deferred maintenance and maintain select strategic investments.
FDF Contains Less than 6 Months of Operating Expenses	Level 3: Invest in deferred maintenance and maintain select strategic investments.	Level 4: Maintain core business and meet legal obligations; no new investments

Note: Level 1 is the highest level of investment, while level 4 is the lowest.

External funding sources should be considered at investment level 2 and pursued if the investment level is projected to be at level 3 or level 4.

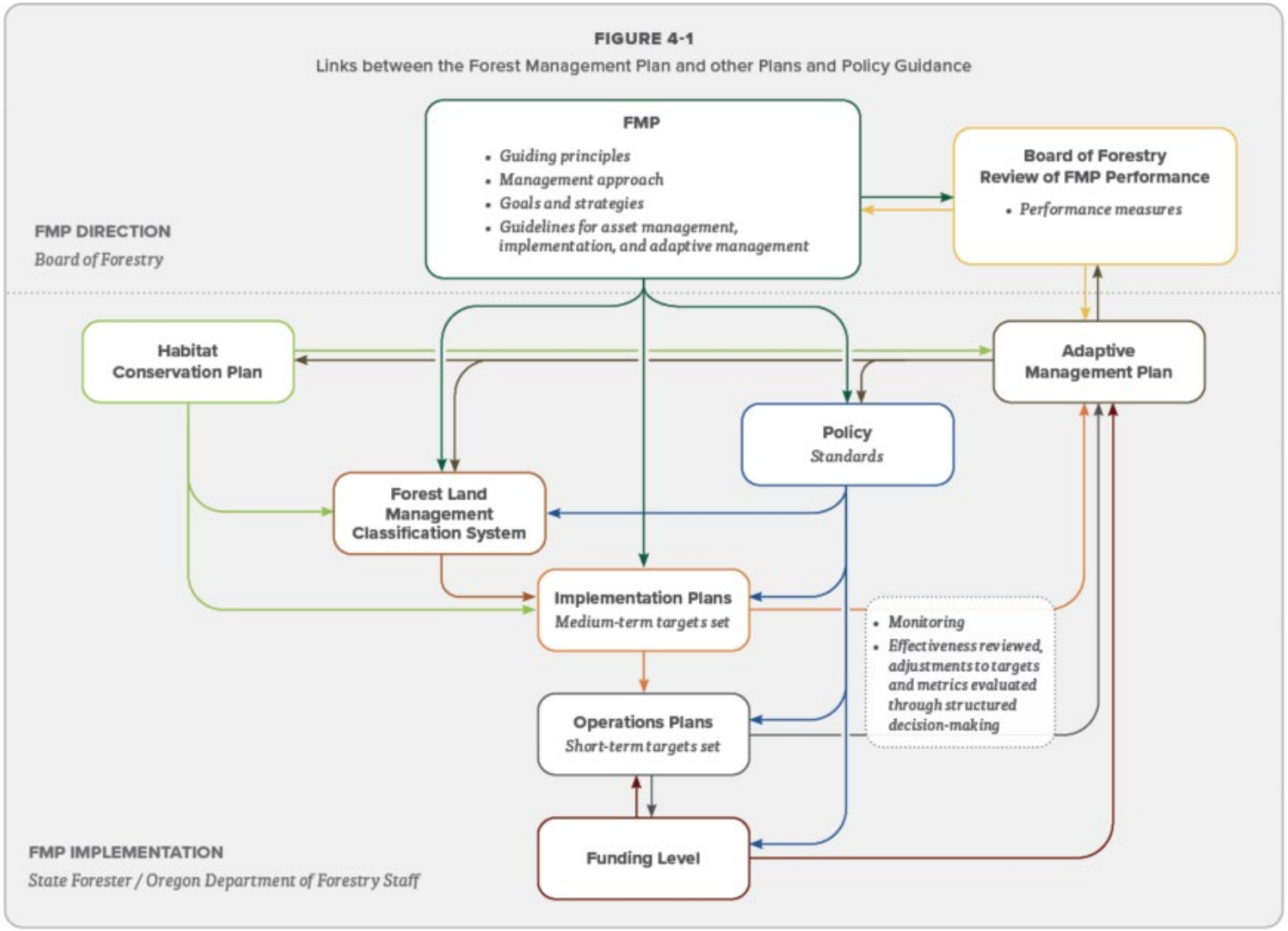
4.2 Implementation Guidelines

The FMP, approved by the *Board of Forestry* (the BOF), identifies the resource management *goals* and strategies that are intended to achieve an appropriate blend of resources. GPV is achieved through integration of forest management activities through ecologically sustainable management and using an adaptive framework across western Oregon state forests. The FMP does not focus on a single *objective*, but considers several key social, environmental, and economic goals at different scales. Land managers are tasked with considering all of the goals and strategies, identifying and addressing *trade-offs*, and meeting GPV when implementing the FMP. The process for implementing the FMP relies on the following set of tools and processes presented in Figure 4-1.

FIGURE 4-1
Links among the FMP and Other Plans and Policy Guidance

FIGURE 4-1

Links between the Forest Management Plan and other Plans and Policy Guidance



FMP implementation is supported by the following elements.

- ***Western Oregon State Forests Habitat Conservation Plan* (HCP).** The HCP enables ODF to comply with the federal *Endangered Species Act* (ESA) for certain covered *species* while conducting land management activities on state forest lands west of the Cascade crest. During the development of the HCP, land managers, and partners identified and provided feedback on trade-offs. The HCP biological goals and objectives document these decisions, which are implemented through *Implementation Plans* (IPs) and *Operations Plans* (OPs).
- **Performance measures.** *Performance measures* and their targets are developed with direct input from the BOF. Performance measures are monitored and enable the BOF and others to track progress toward FMP goals and to maintain accountability for management commitments.
- **Operational policies.** While the FMP sets certain management *standards*, primarily associated with resource protection, there are many instances where different management options may achieve FMP goals and IP objectives. Operational policies guide decisions within this range of options by defining specific procedures and best management practices that allow for management flexibility, while ensuring sound management and resource protection. Operational standards describe quantitative measures tied to laws and regulations and FMP and HCP goals and strategies, such as minimum leave trees. These policies and standards enable forest managers to develop IPs and OPs and to evaluate trade-offs. Operational policies are developed within the Division at the direction of the *State Forests Division Chief*.
- **Modeling.** Modeling is used as a decision-support tool to evaluate trade-offs and objective levels at various spatial and temporal scales, and the costs and outputs associated with each scenario. Modeling aids forest managers in evaluating potential effects and making decisions about allocation of resources across uses.
- **Implementation Plans.** IPs quantify shorter time periods (for example 8–12 years) associated with objectives for each resource at the district or multiple district-level. IPs describe the management approaches and activities designed to achieve the FMP goals and the HCP goals and objectives. IPs provide linkages among the FMP, HCP, operational policies, and on-the-ground activities that are described in OPs. Trade-offs are assessed and considered at the *landscape* level and are then incorporated into the IPs.
- **Forest Land Management Classification System (FLMCS).** As codified in OAR 629-035-0050, the FLMCS is a method of describing the management emphasis of parcels of state forest lands. The FLMCS is recorded as a GIS layer. The management emphasis identifies the extent to which a parcel of land can be managed for a variety of *forest resources*. It also identifies when a particular forest resource may need a more focused approach in its management, or possibly an exclusive priority as designated by this FMP, the HCP, and other laws or commitments. This information is used in the development of IPs and during operational planning.
- **Operations Plans.** OPs describe individual projects for achieving expected FMP and HCP *outcomes*, over the near term (for example 1 to 2 years), that align with fiscal budgets and IPs.

OPs prioritize activities and investments in the forests (e.g., inventory, young stand management, recreation development) on the basis of implementation levels as described in Section 4.1, *Asset Management Guidelines*.

- **Adaptive Management Plan (AMP).** The AMP describes the adaptive management process used to monitor outcomes, evaluate trade-offs, determine if the strategies are meeting the goals of the FMP and HCP, determine if assumptions used in developing the strategies need to be updated, and inform management decisions.

4.2.1 Implementation Responsibilities

The State Forests Division Chief and *Area Directors* provide guidance for implementing the FMP and HCP through IPs and OPs. They review IPs, which are approved and signed by the *State Forester*. *District Foresters* implement the FMP and HCP within their districts through the oversight of OPs. The tasks and responsibilities for IP and OP development are described in Table 4-2.

TABLE 4-2
Roles and Responsibilities of Decision-Makers in the Implementation, Operations, and Revision Approval Process

Task	Responsible Party
Approves IPs and major revisions	State Forester
Approves OPs	District Forester
Implements IPs and OPs	District Forester

4.3 Decision-Making, Adaptive Management, Monitoring, and Research Guidelines

Meeting the goals of the FMP in a changing environment requires adaptive management within a decision-making framework. *Adaptive management* is "the process of implementing plans in a scientifically based, systematically structured approach that tests and monitors assumptions and predictions in management plans and uses the resulting information to improve the plans or management practices used to implement them (OAR 629-035-0000(2))."

Adaptive management is "the process of implementing plans in a scientifically based, systematically structured approach that tests and monitors assumptions and predictions in management plans and uses the resulting information to improve the plans or management practices used to implement them (OAR 629-035-0000(2))."

These guidelines describe how adaptive management informs decisions, determines whether strategies are meeting FMP goals, and tests if the assumptions used in the development of the strategies need updating.

The land manager's dedication to learning from management, applying new findings, and acknowledging uncertainty is key to maintaining the social, economic, and environmental benefits of forests (Bormann et al. 2017). While the language of adaptive management is widespread in natural resource management, it is often difficult in practice to change course or evaluate whether an alternative will improve management. More monitoring or greater scientific understanding may not translate into improved management—the uncertainty of outcomes and *diversity* of values and objectives hinder decision-makers (Gregory et al. 2012). Adaptive management needs to be tailored to the agency's mandate and the social decision-making processes within the institution (Minkova and Arnold 2020). Adaptive management, which includes monitoring and research, supports a decision-making framework that guides the use of new information within the agency.

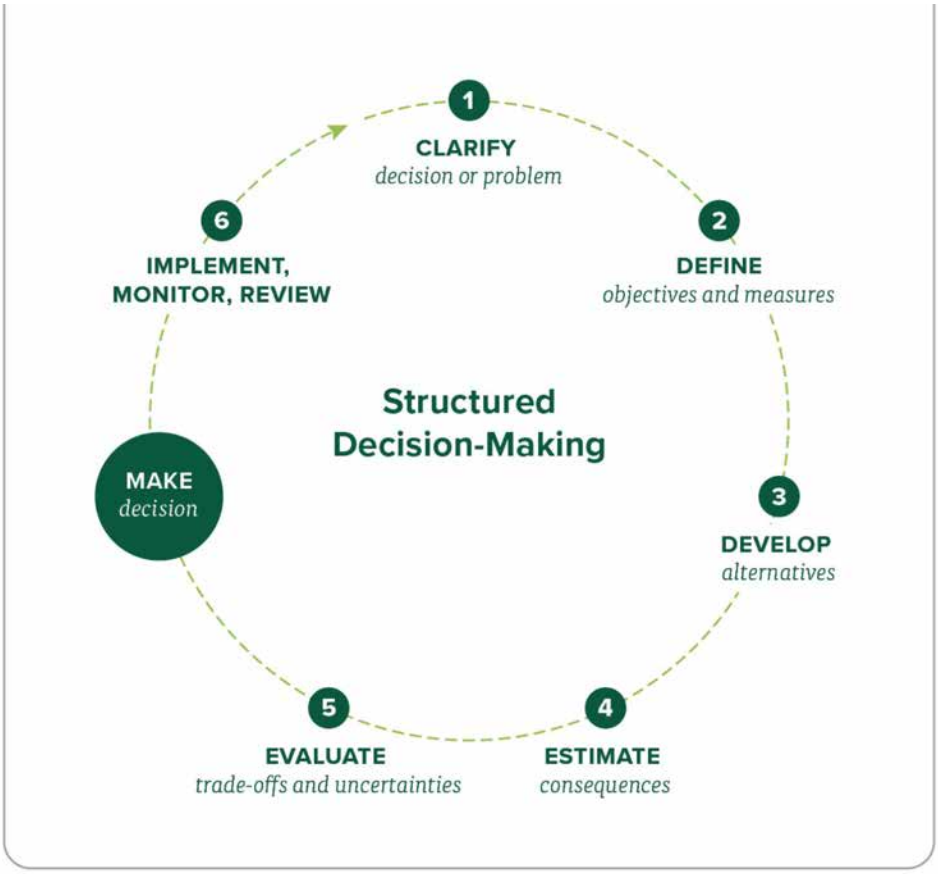
The guidelines for decision-making, adaptive management, monitoring, and research are presented in this section. They are followed by an outline of the accompanying AMP, which describes how ODF integrates new information, designs monitoring projects, reports on *metrics*, and facilitates decision-making. The AMP may be changed as we learn how to improve the process to work more effectively.

4.3.1 Decision-Making Framework

ODF will improve its management by applying *decision analysis*, a process used to simplify decisions by breaking them down into key parts to work through in sequence (Hemming et al. 2022). The PrOACT acronym (Problem, Objectives, Alternatives, Consequences, and Trade-offs) is a popular ordering of the components that go into making a decision (Hammond et al. 2002). These steps for decision analysis have been adapted to many disciplines, and *structured decision-making* (SDM) is the predominant process in natural resource management for making complex, multi-objective decisions that emphasize deliberation, estimating outcomes of alternative actions, and clarifying choices upon which the decision-maker can act (Figure 4-2) (Gregory et al. 2012). One benefit of SDM is that it scales to the decision's complexity, proving useful for a single person or small group brainstorming management alternatives, for a facilitated process with public input at the level of an IP, or for the BOF evaluating the FMP success through performance measures.

The decision-making framework assesses management questions and trade-offs across multiple objectives for different forest resources; addresses adaptive management needs described in the FMP, HCP, and other policy documents; and updates the learning process following advances in forest management and decision science.

FIGURE 4-2
Structured Decision-Making Process. The process supports multi-objective decision-making based on deliberation, estimated outcomes of alternative actions, and clear choices upon which decision-makers can act.



Adapted from Gregory et al. 2012 Figure 1.1.

The SDM process (Figure 4-2), whether conducted with ODF staff or external interested parties, has six steps. Previous steps can be revisited during the process to make refinements as needed.

- **Step 1.** Clarify the decision by determining its scope, the relevant management objectives, and the decision-makers.
- **Step 2**. Define the objectives (i.e., "what matters") and the measures that will be assessed if the objectives are met.
- **Step 3.** Develop meaningful management alternatives that approach the problem from different angles that may prioritize different objectives.
- **Step 4**. Estimate the potential consequences, including the uncertainty, of each alternative using technical analysis or expert judgment.
- **Step 5**. Evaluate the trade-offs across multiple objectives and select the preferred alternatives, which may differ among participants, to present to the decision-maker.

- **Step 6.** Monitor the outcomes after the decision is implemented to inform the next iteration of the decision-making process.

Engagement in the SDM process depends on the scope and impact of the decision, with greater public outreach for more significant decisions. Public and Tribal participation provides feedback to the technical working group on objectives, alternatives, consequences and trade-offs.

Adaptive Management

Adaptive management is most relevant to decision-making when management has a high impact on the resource objective, the consequences of management alternatives are uncertain, and resolution of uncertainty affects management decisions (Williams et al. 2009). In this case, the time dedicated to learning from different management treatments reaps benefits that outweigh the potential delay in meeting the resource objective. In a situation where the uncertainty about the effects of management is low or has little effect on decision-making, adaptive management is not as useful. Assessing the potential costs and benefits of engaging in adaptive management can be part of the SDM process. In other words, SDM addresses a wider variety of decision-making situations than adaptive management (Gregory et al. 2012).

Adaptive management can vary in effort and experimental design, but the key component is learning from alternative management treatments (Williams et al. 2009). Generally, *active adaptive management* is for cases with high uncertainty and a need for learning about the cause-and-effect relationship of management on the resource objective. Active adaptive management uses a statistically robust experimental design to evaluate alternative management approaches. In *passive adaptive management*, monitoring data are collected to evaluate the effects of management on a resource. The experiment may not include controls, replicates, or randomized application of *management prescriptions*, so it is more difficult to establish cause and effect (Williams 2011).

Monitoring

There are a variety of monitoring approaches the Division uses depending on the objectives. Compliance monitoring (i.e., *implementation monitoring*) involves gathering information to determine whether rules, regulations, or requirements are being followed. *Effectiveness monitoring* assesses whether the implementation of management actions has the intended outcomes, such as tracking whether forest treatments increase occupied habitat of a species of concern. Effectiveness monitoring may require *status monitoring* or *trend monitoring* to judge management success. Status monitoring involves determining the state of a resource (e.g., spotted owl occupancy, snag density) at a point in time. Trend monitoring is an extension of status monitoring, where the change in status over time is examined. Trend monitoring can be used to assess whether management thresholds are being breached (e.g., spread of invasive weeds increased beyond a target density) or whether there appears to be a pattern of change across time (e.g., habitat quality is increasing) (Hilton et al. 2022).

Decision-making processes such as SDM may include a monitoring component to evaluate the effects of the decision and the state of the resource. The outcomes of monitoring inform the next iteration of decision-making. The ideal monitoring approach may change with time. As resource

objectives, monitoring technology, and the understanding of the system change over time, the accompanying monitoring efforts also need to adjust to continue providing reliable and relevant information. *Adaptive monitoring* is a framework that reassesses monitoring questions and protocols in light of these changes while maintaining the integrity of long-term records (Lindenmayer and Likens 2009).

As an example of how new monitoring may be planned, a snapshot estimate (status monitoring) of a resource is compared with the desired state of the resource to determine if a problem exists (Nichols and Williams 2006). Before monitoring begins, hypotheses are developed about how the larger system affects the resource. The differences among the hypotheses capture the range of possibilities about how the system *functions*. The hypotheses can also affect where and how frequently data are collected. This thoughtful approach helps ensure that the monitoring provides useful information—both an estimate of the resource condition and a test of which hypothesis is best supported. The resource estimate allows the condition of the resource to be evaluated in the absence of temporal data demonstrating a trend, thereby helping to determine whether a management intervention or more targeted monitoring is needed.

Research

Research in the context of the FMP is intended to generate reliable scientific information to guide management actions. New research performed by the agency would be designed within a decision framework. The agency supports and relies on several research cooperative partnerships to advance scientific understanding in strategic areas important for achieving management objectives. ODF offers planning support and special use permitting for research performed on state forest lands by scientists outside of the agency.

The decision-making framework describes the process for incorporating new information to ensure that the FMP is using the best available science. Peer-reviewed, published research may change the credibility or applicability of the assumptions that were used to develop the FMP strategies. New information fits into the SDM cycle when assessing the management alternatives, consequences, trade-offs, and uncertainty. Revisiting prior steps in the decision-making cycle is expected when new information is incorporated.

4.3.2 Adaptive Management Plan

The AMP offers direction and administration for (1) facilitating decision analysis and adaptive management; (2) designing monitoring; (3) reporting monitoring results, analyses, and decisions; and (4) identifying and integrating information and decision needs within state forest lands.

The AMP is a separate document from the FMP that provides a current roadmap for monitoring that supports the implementation of the FMP and improves management over time (see box at right). The need for an AMP comes from the expanded scope of this FMP that includes adaptive management as a key tenet of its management approach, a companion HCP with extensive monitoring requirements, and a commitment to accountability to the BOF and all Oregonians. Monitoring, reporting, and decision-making support will be continuously updated in the AMP and reported in a more nimble and integrative manner that enables timely management responses to new information.

Vision for the Adaptive Management Plan

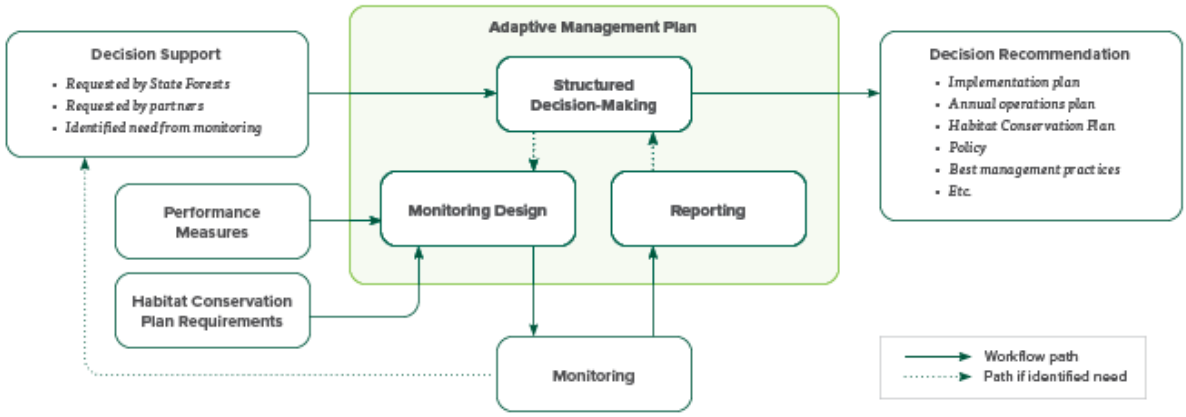
- **Transparent.** Interested parties and ODF staff can easily access current work plans and planning documents for decision-making processes and anticipated timelines for delivering results.
- **Understood.** Interested parties and ODF staff know about the AMP and understand its mission and purpose, and the AMP is written in plain language.
- **Effective.** State Forests manages its lands to achieve Greatest Permanent Value and can make changes to management practices based on new information.
- **Inclusive.** The AMP invites interested and affected parties and ODF staff into its processes and incorporates their feedback.
- **Efficient and timely.** The AMP focuses on informing planning and management via developing adaptive monitoring efforts that deliver useable results as quickly as possible.
- **Responsive.** When State Forests detects issues through monitoring, it works to address manage ment problems creatively, transparently, and effectively.
- **Valued.** Interested parties and State Forests recognize the social and technical benefit that AMP products provides to State Forests and all Oregonians.
- **Reliable.** Decision analysis and monitoring design use the best available science to produce reliable metrics.

Workflows for Decision Analysis, Monitoring, and Assessment of Information Needs

The AMP serves as a hub for information gathering and decision support across other policies and plans that incorporate adaptive management in their objectives. With support from the AMP, decisions are made by individuals or groups at the relevant planning level. For example, if monitoring shows the need for a fundamental change in FMP strategies, the decision would be made by the BOF after a formal public involvement process and codified through OARs. A smaller change, for instance in operational policy or management standards, could be made by the State Forests Division Chief after engaging interested parties through the decision-making process, which may suggest monitoring or adaptive management be included.

In the examples shown in the workflow diagram (Figure 4-3), a need for decision support may be identified by State Forests, interested parties, or metrics falling outside a range of acceptable targets identified in the HCP or performance measures adopted by the BOF. The AMP guides the SDM process (Figure 4-2) to develop recommendations for the decision-maker to consider. As shown by the dashed lines in Figure 4-2, SDM may include designing new monitoring and reporting results as needed for decision support. Decisions may affect IPs and OPs through the process described in Section 4.2, *Implementation Guidelines*.

FIGURE 4-3
Adaptive Management Plan Workflow. This workflow shows key AMP roles and how they can affect FMP implementation through decision support, monitoring, and reporting.



Key Monitoring Needs

The AMP designs monitoring, provides reporting, and responds to needs for additional decision support. Monitoring will include HCP compliance and effectiveness monitoring, BOF performance measures, monitoring of FMP strategies, and adaptive management monitoring recommended through potential SDM processes. These measures are called reporting metrics in the AMP, which describes the *strategy* for developing new metrics and tracks how data are collected, analyzed, and reported for each metric. Many reporting metrics will have quantifiable targets and acceptable ranges designated to assess whether management is meeting the desired outcomes that were monitored (i.e., lagging indicators) or that are predicted from modeling (i.e., leading indicators). Monitoring and reporting for the HCP and BOF-adopted performance measures are two major commitments addressed in the AMP (Figure 4-3).

Implementation of the HCP requires a detailed program of monitoring and adaptive management to ensure compliance and verify progress toward achieving the biological goals and objectives (HCP Chapter 6, *Monitoring and Adaptive Management*). The AMP serves as the structure for the adaptive management program required by the HCP to assess data gaps and scientific uncertainty that could affect how species are managed and monitored over time. The *HCP Administrator* at ODF serves as the key coordinator to initiate the process when triggers for action are identified from either over- or under-accomplishment of biological goals and objectives, or when alternative conservation

practices are available. The HCP adaptive management process fits well within the decision-making framework described in Section 4.3.1, *Decision-Making Framework,* with additional regulatory considerations and involvement with the federal permitting agencies.

The performance measures assess the impact state forest lands have on social, economic, and environmental wellbeing. Performance measures adopted by the BOF will include targets and acceptable ranges that will increase the likelihood of progress toward FMP goals. Some performance measures may be supported through new or existing monitoring programs, which will be organized through the AMP. The AMP develops reporting dashboards to track performance measures for the BOF and public and Tribal engagement.

Project Prioritization and Timeline

The AMP contains a broad suite of monitoring and reporting needs to implement, which may be dependent on the Division's resources. Multiple sources (public and Tribal engagement, the Division's business needs, the HCP, and the BOF) identify needs for decision analysis, adaptive management, or monitoring that will be integrated and prioritized for efficiency.

The AMP sets priorities to develop workplans based on the following criteria comparing potential projects.

- Regulatory requirements, such as HCP compliance monitoring.
- Potential impact on GPV.
- Likelihood of influencing future management decisions.
- Degree of uncertainty or knowledge gap.
- Capacity or feasibility of getting answers in reasonable time and at a reasonable cost.
- Efficient integration with ongoing or planned monitoring.
- Potential for research partnerships.

The timeline for reporting decision analysis products and monitoring results aims to complement IP revisions and comprehensive reviews of HCP implementation. The IP is the key opportunity for the decision-making process, public and Tribal engagement, and adaptive management changes based on monitoring. The AMP workflow focuses on IP information needs in the 2 years leading up to planned IP revisions. New information needs will occur outside of the IP and HCP cycles; the AMP is responsive to opportunities to integrate decision analysis into other Division needs.

4.3.3 Performance Measures

Performance measures are a select set of metrics that the BOF will use to evaluate management outcomes with respect to the objectives and intent expressed through the FMP guiding principles, management approach, and goals (Figure 4-1). The ten performance measures listed below (see box) have specific components that will be monitored and reported under the process described in

the AMP. Quantifiable targets and acceptable ranges designated by the BOF for performance measures' components will indicate whether FMP strategies are working as intended to provide GPV. While performance measures do not encompass all aspects of ODF monitoring and reporting, their purpose is to provide an up-to-date dashboard for the BOF and the public to track management outcomes readily across a broad range of key ecosystem services provided by State Forests.

Performance Measures (arranged alphabetically)

- Adaptive Capacity of Forests
- Aquatic Habitat
- Carbon Storage
- Community Engagement and Public Support
- Division Finances
- Economic Opportunities
- Financial Support for Counties
- Harvest and Inventory
- Recreation, Education, and Interpretation Opportunities
- Terrestrial Habitat

4.4 Revision Guidelines

As the environment changes, revisions to plans and processes may be necessary to implement adaptive management and to incorporate new information.

4.4.1 Forest Management Plan

The BOF reviews the management focus of the FMP no less than every 10 years in light of current social, economic, scientific, and *silvicultural* considerations (OAR 629-035-0020). It may require 10 years or more for monitoring to establish trends. As new information becomes available, it is evaluated in the context of the guiding principles, goals, and strategies of the FMP. If implementation of the FMP is not achieving desired results, as indicated by the performance measures, the Division will revise operational policies. If poor performance cannot be corrected through revised operational policies, or if research or monitoring shows the need for a fundamental change in FMP strategies, the BOF and the State Forester will weigh the scientific, operational, Tribal, and public input in a transparent and formal public process to determine if changes are needed to the FMP. Any changes will then be codified through OARs.

4.4.2 Habitat Conservation Plan

The HCP modification process is described in HCP Chapter 8, *Implementation*. HCP or permit modifications are expected to be rare and informed by the adaptive management process as outlined in HCP Chapter 6, *Monitoring and Adaptive Management*. The U.S. Fish and Wildlife Service and National Oceanic Atmospheric Administration Fisheries are key decision-makers in the modification process.

4.4.3 Operational Policy

Changes to operational policy occur as needed, in response to information from the adaptive management process, changing laws or conditions, new technology, improved management strategies, or new direction from the BOF or ODF leadership. Key decision-makers depend on the policy.

4.4.4 Implementation Plan

As new information becomes available, the IP may be revised in response to changing conditions or development of new or better implementation strategies identified through adaptive management. Revisions made at the IP level may include the types or amounts of management opportunities and their spatial arrangement. Key decision-makers are outlined in Table 4-2.

4.4.5 Forest Land Management Classification System

Revisions may be needed to the FLMCS when there is a change to the management emphasis on a parcel of land. Examples of such changes include the development of a new campground, a new wild and *scenic river* designation, or the removal of a research area after completion of a project. Definitions of minor and major revisions can be found in OAR 629-035-0060.

4.5 Engagement Guidelines

The goals for public involvement in forest land planning are outlined in OAR 629-035-080 and include providing information, seeking insight, building understanding, and providing public comment opportunities. The goals for Tribal engagement are outlined in Chapter 3, *Forest Resource, Goals, and Strategies*.

The purpose of engagement is to create a relationship that provides meaningful opportunities to contribute to planning decisions. Engagement is most beneficial during the IP process, when input can have the most influence on the levels and types of planned management activities. Input may contribute to setting priorities and identifying general locations of management activities. Input provided at the Operations Plan level would focus on small changes, refinements, or clarification of the plan. Table 4-3 shows the engagement opportunities by plan level.

TABLE 4-3
Engagement Opportunities and Examples

Plan Level	Engagement Areas	Topic	Example Comment
AMP	• Feedback and participation in the SDM process with regard to objectives, alternatives, consequences, and trade-offs • Performance measures adopted for the BOF to assess the FMP	**SDM public engagement**	Our user group would like XYZ objectives included in the decision analysis, and this is how the impact of management alternatives on our user group could be measured.
		BOF public meeting	The BOF should request an evaluation of the trend in the XYZ Performance Measure reported on the public dashboard because objectives for XYZ resource are not being met and management may need to change. The BOF should promote the development and implementation of Tribal engagement policies to ensure ongoing consultation and coordination regarding potential impacts from forest management activities at every level.
		Monitoring prioritization	Recreational surveys should be prioritized during this IP to gather information that may be used to reduce conflict between user groups. Integrate Tribal Partners' priorities and practices to ensure protection and proliferation of cultural and natural resources.

Plan Level	Engagement Areas	Topic	Example Comment
IP	• Harvest levels, harvest types, priorities, and general locations • Recreation, education, and interpretation development/activity levels, types, priorities, and general locations • Stream enhancement levels, types, priorities, and general locations • Road project levels, types, priorities, and general locations • Monitoring and adaptive management priorities	**Management activity type and location**	I would like more mountain biking trails, preferably built inside HCAs to reduce potential conflicts with harvesting. Work with Tribal Partners to integrate culturally important plant and animal species (such as bear grass, camas, and spruce root). Work with Tribal Partners to encourage access and co-management opportunities, including cultivation techniques that promote culturally significant attributes, and sharing native seed sources and native seedlings. Coordinate with Tribal Partners to identify sales that may affect ancestral lands, level significance, and potential measures that may be needed to protect culturally significant resources.
		Stream enhancement/road project priority and location	I propose the "generic" watershed as a high priority for stream enhancement and road improvement projects to align with work being done by the "Generic" Watershed Council in the next 5 years to replace non-fish-passable culverts and enhance 5 miles of the "generic" stream. Engage Tribal Partners in prioritizing and identifying partnership opportunities to protect culturally significant aquatic species, such as salmonids and lamprey.

Plan Level	Engagement Areas	Topic	Example Comment
OP	• Ensured consistency with the IP and/or FMP • Improved efficiency or effectiveness • Clarified description of planned operations • Additional information or correction of an error • Solution-oriented comments to increase the probability of achieving GPV goals and objectives	**Efficiency/effectiveness**	The boundary of XYZ sale could be extended to the southwest where the terrain flattens out. Extending the boundary would eliminate the need to work through young stands while harvesting the timber during future sales. The XYZ sale includes a culturally significant site that requires coordination with XYZ Tribes to implement XYZ protection measures.
		Clarification	I don't understand the terminology being used in this plan. Can you include definitions for BA, shelterwood and MBF in the document? XYZ Tribe did not have awareness of this sale and has potential concerns and would like more information.
		Solutions-oriented	The XYZ sale area will affect approximately one mile of the existing trail. I realize that the forest is a working forest and ask for the following considerations: Limit the timing so the harvest operation is not active during prime horse riding season (July–Sept). If this is not possible then: Fall trees away from the trail whenever possible. Have all slash removed from the trail so the trail is in equal or better shape than pre-harvest conditions. Have trails open for use on weekends if possible.

References

Chapter 1, Introduction

Oregon Department of Forestry (ODF). 1984. *Long-Range Timber Management Plan/Northwest Oregon Area Forests*. Salem, OR: Oregon Department of Forestry.

———. 1989. *Long-Range Timber Management Plan/ Willamette Region.* Salem, OR: Oregon Department of Forestry.

Oregon Watershed Enhancement Board. 2006. *Oregon Plan for Salmon and Watersheds*. Available: https://www.oregon.gov/oweb/resources/pages/opsw.aspx. Accessed: September 19, 2022.

Spies, T.A., P.A. Stine, R. Gravenmier, J.W. Long, and M.J. Reilly (tech coords). 2018. *Synthesis of Science to Inform Land Management within the Northwest Forest Plan Area*. U.S. Department of Agriculture, Pacific Northwest Research Station, General Technical Report: PNW-GTR-966.

Chapter 2, Management Approach

Aplet, G.H., and P.S. Mckinley. 2017. A portfolio approach to managing ecological risks of global change. *Ecosystem Health and Sustainability* 3(2):e01261. https://doi.org/10.1002/ehs2.1261.

Aquilué, N., C. Messier, K.T. Martins, V. Dumais-Lalonde, and M. Mina. 2021. A simple-to-use management approach to boost adaptive capacity of forests to global uncertainty. *Forest Ecology and Management* 481:118692. https://doi.org/10.1016/j.foreco.2020.118692.

Bradford, J.B., and A.W. D'Amato. 2012. Recognizing trade-offs in multi-objective land management. *Frontiers in Ecology and the Environment* 10(4):210–216. https://doi.org/10.1890/110031.

Burton, J.I., L. Ganio, and K.J. Puettmann. 2014. Multi-scale spatial controls of understory vegetation in Douglas-fir-western hemlock forests of western Oregon, USA. *Ecosphere* 5(12):1–34. http://doi.org/10.1890/ES14-00049.1.

Carey, A.B. 2007. *AIMing for Healthy Forests: active, intentional management for multiple values.* U.S. Department of Agriculture, Pacific Northwest Research Station, General Technical Report: PNW-GTR-721.

Comberti, C., T.F. Thornton, V.W. De Echeverria, and T. Patterson. 2015. Ecosystem services or services to ecosystems? Valuing cultivation and reciprocal relationships between humans and ecosystems. *Global Environmental Change* 34:247–262. http://doi.org/10.1016/j.gloenvcha.2015.07.007.

D'Amato, A.W., and B.J. Palik. 2020. Building on the last "new" thing: exploring the compatibility of ecological and adaptation silviculture. *Canadian Journal of Forest Research* 51:172–180. https://doi.org/10.1139/cjfr-2020-0306.

Donato, D.C., J.L. Campbell, and J.F. Franklin. 2012. Multiple successional pathways and precocity in forest development: can some forests be born complex? *Journal of Vegetation Science* 23(3):576–584. https://doi.org/10.1111/j.1654-1103.2011.01362.x.

Fischer, A.P. 2018. Forest landscapes as social-ecological systems and implications for management. *Landscape and Urban Planning* 177:138–147. https://doi.org/10.1016/j.landurbplan.2018.05.001.

Franklin, J.F., K.N. Johnson, and D.L. Johnson. 2018. *Ecological Forest Management*. Long Grove, IL: Waveland Press, Inc.

Gregory, R., L. Failing, M. Harstone, G. Long, T. McDaniels, and D. Ohlson. 2012. *Structured Decision Making: A Practical Guide to Environmental Management Choices*. Hoboken, NJ: John Wiley & Sons.

Harris, S.H., and M.G. Betts. 2023. Selecting among land sparing, sharing and triad in a temperate rainforest depends on biodiversity and timber production targets. *Journal of Applied Ecology* 60(4):737–750. https://doi.org/10.1111/1365-2664.14385.

Jaworski, D., J.D. Kline, C. Miller, K. Ng, M. Retzlaff, H. Eichman, and D. Smith. 2018. *Evaluating Ecosystem Services as Management Outcomes in National Forest and Grassland Planning Assessments*. U.S. Department of Agriculture. Pacific Northwest Research Station, General Technical Report: PNW-GTR-968.

Kline, J.D, M.J. Mazzotta, T.A. Spies, and M.E. Harmon. 2013. Applying the ecosystem services concept to public lands management. *Agricultural and Resources Economics Review* 42(1):139–158. https://doi.org/10.1017/S1068280500007668.

Lindenmayer, D.B., W.F. Laurance, and J.F. Franklin. 2012. Global Decline in Large Old Trees. *Science* 338(6112):1305–1306. https://doi.org/10.1126/science.1231070.

Lynch, A.J., L.M. Thompson, E.A. Beever, D.N. Cole, A.C. Engman, C. Hawkins Hoffman, S.T. Jackson, T.J. Krabbenhoft, D.J. Lawrence, D. Limpinsel, R.T. Magill, T.A. Melvin, J.M. Morton, R.A. Newman, J.O. Peterson, M.T. Porath, F.J. Rahel, G.W. Schuurman, S.A. Sethi, and J.L. Wilkening. 2021. Managing for RADical ecosystem change: applying the Resist - Accept - Direct (RAD) framework. *Frontiers in Ecology and the Environment* 19(8):461–469. https://doi.org/10.1002/fee.2377.

Millar, C.I., N.L. Stephenson, and S.L. Stephens. 2007. Climate change and forests of the future: managing in the face of uncertainty. *Ecological Applications* 17(8):2145–2151. https://doi.org/10.1890/06-1715.1.

Millennium Ecosystem Assessment. 2005. *Ecosystem and Human Well-being: Synthesis*. Washington, D.C.: Island Press. 137 p.

Mitchell, S.J. 2000. Stem growth responses in Douglas-fir and Sitka spruce following thinning: implications for assessing wind-firmness. *Forest Ecology and Management* 135:105–114. https://doi.org/10.1016/S0378-1127(00)00302-9.

Moore, J. R., S.J. Mitchell, D.A. Maguire, and C.P. Quine. 2003. Wind damage in alternative silvicultural systems: review and synthesis of previous studies. *In* Proceedings of an International Conference on Wind Effects on Trees. pp. 16–18.

Nagel, L.M., B.J. Palik, M.A. Battaglia, A.W. D'Amato, J.M. Guldin, C.W. Swanston, M.K. Janowiak, M.P. Powers, L.A. Joyce, C.I. Millar, D.L. Peterson, L.M. Ganio, C. Kirchbaum, and M.R. Roske. 2017. Adaptive silviculture for climate change: a national experiment in manager-scientist partnerships to apply an adaptation framework. *Journal of Forestry* 115(3):167–178. https://doi.org/10.5849/jof.16-039.

Oregon Department of Forestry (ODF). 2022. *Western Oregon State Forests Habitat Conservation Plan*. Public Draft. February. (ICF 00250.19) Seattle, WA. Prepared for Oregon Department of Forestry, Salem, OR. Available: https://www.oregon.gov/odf/aboutodf/pages/hcp-initiative.aspx. Accessed: April 18, 2023.

Oregon Forest Resources Institute (OFRI). 2022. *Adventure Awaits: Explore the wonders of Oregon's forests and their many benefits*. Available: https://oregonforests.org/sites/default/files/2022-09/OFRI_WOWFbooklet_DIGITAL.pdf. Accessed: April 12, 2023.

Palik B.J., A.W. D'Amato, J.F. Franklin, and K.N. Johnson. 2020. *Ecological Silviculture: Foundations and Applications*. Long Grove, IL: Waveland Press, Inc.

Palik, B.J., P.W. Clark, A.W. D'Amato, C. Swanston, and L. Nagel. 2022. Operationalizing forest‐assisted migration in the context of climate change adaptation: Examples from the eastern USA. *Ecosphere* 13(10):e4260. https://doi.org.10.1002/ecs2.4260.

Puettmann, K.J., K.D. Coates, and C. Messier. 2009. *A Critique of Silviculture: Managing for Complexity*. Washington, D.C.: Island Press.

Puettmann, K.J., A. Ares, J.I. Burton, and E.K. Dodson. 2016. Forest Restoration Using Variable Density Thinning: Lessons from Douglas-Fir Stands in Western Oregon. *Forests* 7(12):310. https://doi.org/10.3390/f7120310.

Spies, T.A., P.A. Stine, R. Gravenmier, J.W. Long, M.J. Reilly, and R. Mazza. 2018. *Synthesis of science to inform land management within the Northwest Forest Plan area*. U.S. Department of Agriculture, Pacific Northwest Research Station, General Technical Report: PNW-GTR-970.

Stokely, T.D., U.G. Kormann, J. Verschuyl, A.J. Kroll, D.W. Frey, S.H. Harris, D. Mainwaring, D. Maguire, J.A. Hatten, J.W. Rivers, S. Fitzgerald, and M. Betts. 2022. Experimental evaluation of herbicide use on biodiversity, ecosystem services and timber production trade-offs in forest plantations. *Journal of Applied Ecology* 59(1):52–66. https://doi.org/10.1111/1365-2664.13936.

Thompson, L.M., A.J. Lynch, E.A. Beever, A.C. Engman, J.A. Falke, S.T. Jackson, T.J. Krabbenhoft, D.J. Lawrence, D. Limpinsel, R.T. Magill, T.A. Melvin, J.A. Morton, R.A. Newman, J.O. Peterson, M.T. Orath, F.J. Rahel, S.A. Sethi, and J.L. Wilkening. 2021. Responding to ecosystem transformation: Resist, accept, or direct? *Fisheries* 46(1):8–21. https://doi.org/10.1002/fsh.10506.

Chapter 3, Forest Resources, Goals, and Strategies

Ares, A., A.R. Neill, and K. J. Puettmann. 2010. Understory abundance, species diversity and functional attribute response to thinning in coniferous stands. *Forest Ecology and Management*. 260(7):1104–1113. https://doi.org/10.1016/j.foreco.2010.06.023.

Buhl, C., G. Ritkova, W. Williams, K. Ripley, and D. DePinte. 2021. Forest Health Highlights in Oregon – 2021. Available: https://www.oregon.gov/odf/forestbenefits/Documents/forest-health-highlights.pdf. Accessed: April 21, 2023.

Carey, A.B., T.M. Wilson, C.C. Maguire, and B.L. Biswell. 1997. Dens of northern flying squirrels in the Pacific Northwest. *The Journal of Wildlife Management* 61(3):684–699. https://doi.org/10.2307/3802176.

Christensen, G.A, A.N. Gray, O. Kuegler, and A.C. Yost. 2019. Appendix 2: 2007–2016 Oregon FIA forest carbon inventory tables. *Oregon Forest Ecosystem Carbon Inventory: 2001–2016*. U.S. Forest Service, Pacific Northwest Research Station, and the Oregon Department of Forestry: PNW Agreement No. 18-C-CO-11261979-019.

Coble, A., H. Barnard, E. Du, S. Johnson, J. Jones, E. Keppeler, H. Kwon, T.E. Link, B.E. Penaluna, M. Reitner, M. River, K. Puettmann, and J. Wagenbrenner. 2020. Long-term hydrological response to forest harvest during seasonal low. *Science of the Total Environment* 730:138926. https://doi.org/10.1016/j.scitotenv.2020.138926.

Creed, I.F., G.Z. Sass, J.N. Buttle, and J.A. Jones. 2011. Hydrological principles for sustainable management of forest ecosystems. *Hydrological Processes* 25(13):2152–2160. https://doi.org/10.1002/hyp.8056.

Dalton, M., and E. Fleishman (eds). 2021. *Fifth Oregon Climate Assessment*. Oregon Climate Change Research Institute, Oregon State University, Corvallis, Oregon. Available: https://ir.library.oregonstate.edu/concern/technical_reports/pz50h457pAccessed: November 2022.

Daniels, J., and K. Wendel. 2020. Table 24: Employment, wages, unemployment and population for the State of Oregon, by county, 1994–2019. Production, prices, employment, and trade in

Northwest forest industries: 1994–2019. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

Oregon Department of Geologic and Mineral Industries (DOGAMI). 2015. Digital Data Series: Oregon Geologic Data Compilation, release 6. Available: https://www.oregongeology.org/pubs/dds/p-OGDC-6.htm. Accessed: May 2023.

Ellis, T. M., and M.G. Betts. 2011. Bird abundance and diversity across a hardwood gradient within early seral plantation forest. *Forest Ecology and Management* 261(8):1372–1381. https://doi.org/10.1016/j.foreco.2011.01.018.

Grant, G.E., S. Lewis, F. Swanson, J. Cissel, and J. McDonnell. 2008. Effects of forest practices on peak flows and consequent channel response: A state-of-science report for Western Oregon and Washington. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, General Technical Report: PNW-GTR-760.

Hanula, J.L., M.D. Ulyshen, and S. Horn. 2016. Conserving pollinators in North American forests: A review. *Natural Areas Journal* 36.4:427–439. http://doi.org/10.3375/043.036.0409.

Hibbs, D.E., D.S. Debell, and R.F. Tarrant. 1994. The biology and management of red alder. Oregon State University Press: Corvallis, OR.

Hoffman, R., and J. Dunham. 2007. *Fish Movement Ecology in High Gradient Headwater Streams: Its Relevance to Fish Passage Restoration Through Stream Culvert Barriers*. U.S. Geological Survey, Open File Report: OFR 2007- 1140. p. 40.

Institute for Natural Resources. 2020. Trees To Tap: Forest Management and Community Drinking Water Supplies. Final Report to the Oregon Forest Resources Institute.

Kluber, M.R., D.H. Olson, and K.J. Puettmann. 2008. Amphibian distributions in riparian and upslope areas and their habitat associations on managed forest landscapes in the Oregon Coast Range. *Forest Ecology and Management* 256(4):529–535. https://doi.org/10.1016/j.foreco.2008.04.043.

Lindenmayer, D.B., P.J. Burton, and J.F. Franklin. 2012. Salvage logging and its ecological consequences. Island Press.

Moore, D.R., and S.M. Wondzell. 2005. Physical hydrology and the effects of forest harvesting in the Pacific Northwest: a review. *Journal of the American Water Resources Association 41*(4):763–784.

National Research Council (NRC). 2008. Hydrologic Effects of a Changing Forest Landscape. Washington, DC: The National Academies Press. https://doi.org/10.17226/12223.

Neary, D.G., G.G. Ice, and C.R. Jackson. 2009. Linkages between forest soils and water quality and quantity. *Forest Ecology and Management* 258(10):2269–2281. https://doi.org/10.1016/j.foreco.2009.05.027.

Commented [SJ1]: Cannot find valid doi, JAWRA doi does not work - invalid results

Olson, D.H., P.D. Anderson, C.A. Frissell, H.H. Welsh Jr, and D.F. Bradford. 2007. Biodiversity management approaches for stream–riparian areas: perspectives for Pacific Northwest headwater forests, microclimates, and amphibians. *Forest Ecology and Management* 246(1):81–107. https://doi.org/10.1016/j.foreco.2007.03.053.

O'Neal, J.S., P. Roni, B. Crawford, A. Ritchie, and A. Shelly. 2016. Comparing Stream Restoration Project Effectiveness Using a Programmatic Evaluation of Salmonid Habitat and Fish Response. *North American Journal of Fisheries Management* 36(3):681–703. https://doi.org/10.1080/02755947.2016.1165773.

Oregon Conservation Strategy. 2016. Oregon Department of Fish and Wildlife, Salem, OR. Available: https://www.oregonconservationstrategy.org/overview/. Accessed: March 2023.

Oregon Department of Environmental Quality (DEQ). 2017. Map 1: Oregon Surface Water Drinking Water Source Areas with Land Use/Ownership. Available: https://www.oregon.gov/deq/FilterDocs/dwpMap1OrLandCover.pdf. Accessed: May 2023.

———. 2018. Memorandum Addendum to Antidegradation IMD Clarifying Procedures When Allowing a Lowering of Water Quality.

———. 2019. Surface Water Drinking Water Source Areas in Oregon, GIS layers. Available: https://www.oregon.gov/deq/get-involved/Pages/GIS.aspx. Accessed: June 14, 2022.

———. 2021. Memorandum Item A: DEQ/ODF Water Quality Memorandum of Understanding (Informational). November 17, 2021, EQC and Board of Forestry joint meeting.

———. 2022a. Regional Haze: 2018–2028 State Implementation Plan. Available: https://www.oregon.gov/deq/rulemaking/Pages/rhsip2028.aspx. Accessed: January 23, 2023.

———. 2022b. EPA Approved, 2022 Integrated Report. Available: https://www.oregon.gov/deq/wq/Pages/epaApprovedIR.aspx. Accessed: April 2023.

———. 2022c. About Drinking Water Protection. Available: https://www.oregon.gov/deq/wq/programs/Pages/dwp.aspx. Accessed: 6/14/2022.

Oregon Department of Forestry (ODF). 2007. White Pine Weevil, "Sitka spruce weevil" (*Pissodes strobi)*. *Forest Health Note*. Available: https://entomology.oregonstate.edu/sites/agscid7/files/entomology/WhitePineWeevil.pdf. Accessed: April 2023.

———. 2018. *Trees to Sea Highway 6/131 Scenic Byway Corridor Management Plan*. Washington County Visitors Association and Visit Tillamook Coast. Available: https://www.oregon.gov/ODOT/Programs/TDD%20Documents/Trees-to-Sea-Management-Plan.pdf. Accessed: April 2023.

———.2021. *Smoke Management Annual Report*. Forest Protection Division. Available: https://www.oregon.gov/odf/documents/fire/smr2021.pdf. Accessed: April 2023.

———. 2022a. Stand Level Inventory Annual Report. Available: https://www.oregon.gov/odf/Documents/workingforests/stand-level-inventory-annual-report.pdf. Accessed: November 8, 2022.

———. 2022b. State Forests Carbon and Inventory. State Forests Work Plan Staff Report. Available: https://www.oregon.gov/odf/board/bof/20220907-bof-item-07.pdf. Accessed: December 14, 2022.

———. 2022c. Forest Resource Assessment Western Oregon State Forests (Draft).

———. 2022d. *Western Oregon State Forests Habitat Conservation Plan.* Public Draft. February. (ICF 00250.19) Seattle, WA. Prepared for Oregon Department of Forestry, Salem, OR. Available: https://www.oregon.gov/odf/aboutodf/pages/hcp-initiative.aspx. Accessed: April 18, 2023.

Oregon Department of Fish and Wildlife (ODFW). 2019. *Instream Habitat Trends*. Completed for the Oregon Department of Forestry. May 2019.

——— 2021. ODFW Threatened, Endangered, and Candidate Fish and Wildlife Species. Available: https://www.dfw.state.or.us/wildlife/diversity/species/threatened_endangered_candidate_list.asp. Accessed: January 22, 2023.

Oregon Parks and Recreation Department. 2019–2023. Oregon Statewide Comprehensive Outdoor Recreation Plan. Outdoor Recreation in Oregon: Responding to Demographic and Societal Change. Available: https://www.oregon.gov/oprd/PRP/Documents/SCORP-2019-2023-Final.pdf. Accessed: April 7, 2023.

Oregon Watershed Enhancement Board (OWEB). 2021. Oregon Watershed Restoration Inventory. Available: https://www.oregon.gov/oweb/data-reporting/Pages/owri.aspx.

Oregon Water Resources Department (OWRD). 2023. Statewide Water Right Spatial Data. Domestic, Domestic and Livestock, Domestic Expanded, and Domestic including Lawn and Garden use codes query. Available: https://www.oregon.gov/owrd/access_Data/Pages/Data.aspx. Accessed: June 1, 2023.

Reilly, M.J., A Zuspan, J.S. Halofsky, C. Raymond, A. McEvoy, A.W. Dye, D.C. Donato, J.B. Kim, B.E. Potter, N. Walker, R.J. Davis, C.J. Dunn, D.M. Bell, M.J. Gregory, J.D. Johnston, B.J. Harvey, J.E. Halofsky, B.K. Kerns. 2022. Cascadia Burning: The historic, but not historically unprecedented, 2020 wildfires in the Pacific Northwest, USA. *Ecosphere* 13(6):e4070. https://doi.org/10.1002/ecs2.4070.

Rivers, J.W, S.M. Galbraith, J.H. Cane, C.B. Schultz, M. D. Ulyshen, U.G. Kormann. 2018. Review of research needs for pollinators in managed conifer forests, *Journal of Forestry* 116(6):563–572. https://doi.org/10.1093/jofore/fvy052.

Robison, E.G., K.A. Mills, J. Paul, L. Dent, and A. Skaugset. 1999. Oregon Department of Forestry Storm Impacts and Landslides of 1996: Final Report. Oregon Department of Forestry, Salem, OR. Forestry Practices Monitoring Program: Forest Practices Technical Report Number 4.

Swanson, M.E., N.M. Studevant, J.L. Campbell, and D.C. Donato. 2014. Biological associates of early-seral pre-forest in the Pacific Northwest. *Forest Ecology and Management* 324:160–171. https://doi.org/10.1016/j.foreco.2014.03.046.

Swiss Needle Cast Cooperative. 2018. Annual Statewide Aerial Survey Maps. Oregon State University, College of Forestry. Accessible: https://sncc.forestry.oregonstate.edu/. Accessed: April 2023.

Turner, T.R., S.D. Duke, B.R. Fransen, M.L. Reiter, A.J. Kroll, J.W. Ward, J.L. Bach, T.E. Justice, and R.E. Bilby. 2010. Landslide densities associated with rainfall, stand age, and topography on forested landscapes, southwestern Washington, USA. *Forest Ecology and Management* 259(12):2233–2247. https://doi.org/10.1016/j.foreco.2010.01.051.

U.S. Forest Service (USFS). 2018. Pacific Northwest Quantitative Wildfire Risk Assessment (Oregon Data). Available: https://spatialdata.oregonexplorer.info/geoportal/details;id=d437b41e36254af4a97ceda3a0392632. Accessed: November 2022.

Whereat-Phillips, P. 2016. Ethnobotany of the Coos, Lower Umpqua, and Siuslaw Indians. Oregon State University Press.

Whiteway, S.L., P.M. Biron, A. Zimmermann, O. Venter, and J.W. Grant. 2010. Do in-stream restoration structures enhance salmonid abundance? A meta-analysis. *Canadian Journal of Fisheries and Aquatic Sciences* 67(5):831–841. https://doi.org/10.1139/F10-021.

Chapter 4, Guidelines

Bormann, B.T., B.K. Williams, and T. Minkova. 2017. *Learning to Learn: The Best Available Science of Adaptive Management*. Pages 102–115 in D. H. Olson and B. Van Horne, editors. *People, Forests, and Change*. Washington, D.C.: Island Press/Center for Resource Economics.

Gregory, R., L. Failing, M. Harstone, G. Long, T. McDaniels, and D. Ohlson. 2012. *Structured decision making: a practical guide to environmental management choices*. Hoboken, NJ: John Wiley & Sons.

Hammond, J.S., R.L. Keeney, and H. Raiffa. 2002. *Smart Choices: A Practical Guide to Making Better Life Decisions*. New York City, New York: Broadway Books.

Hemming, V., A.E. Camaclang, M.S. Adams, M. Burgman, K. Carbeck, J. Carwardine, I. Chadès, L. Chalifour, S.J. Converse, L.N.K. Davidson, G.E. Garrard, R. Finn, J.R. Fleri, J. Huard, H.J. Mayfield, E.M. Madden, I. Naujokaitis-Lewis, H.P. Possingham, L. Rumpff, M.C. Runge, D. Stewart, V.J.D. Tulloch, T. Walshe, and T.G. Martin. 2022. An introduction to decision science for conservation. *Conservation Biology* 36(1):e13868. https://doi.org/10.1111/cobi.13868.

Hilton, M., J.C. Walsh, E. Liddell, and C.N. Cook. 2022. Lessons from other disciplines for setting management thresholds for biodiversity conservation. *Conservation Biology* 36(1):e13865. https://doi.org/10.1111/cobi.13865.

Lindenmayer, D.B., and G.E. Likens. 2009. Adaptive monitoring: a new paradigm for long-term research and monitoring. *Trends in Ecology & Evolution* 24(9):482–486. https://doi.org/10.1016/j.tree.2009.03.005.

Minkova, T.V., and J.S. Arnold. 2020. A Structured Framework for Adaptive Management: Bridging Theory and Practice in the Olympic Experimental State Forest. *Forest Science* 66(4):478–489. https://doi.org/10.1093/forsci/fxz011.

Nichols, J., and B. Williams. 2006. Monitoring for conservation. *Trends in Ecology & Evolution* 21(12):668–673. https://doi.org/10.1016/j.tree.2006.08.007.

Williams, B.K. 2011. Passive and active adaptive management: Approaches and an example. *Journal of Environmental Management* 92(5):1371–1378. https://doi.org/10.1016/j.jenvman.2010.10.039.

Williams, B.K., R.C. Szaro, and C.D. Shapiro. 2009. *Adaptive management: the US Department of the Interior Technical Guide.* Washington, D.C.: US Department of the Interior, Adaptive Management Working Group.

Further Reading

Gunther 1973. Ethnobotany of Western Washington: The Knowledge and use of Indigenous Plants by Native Americans. University of Washington Press: Seattle, WA.

Moore, M. 2011. *Medicinal plants of the Pacific Northwest.* Museum of Mexico Press, Albuquerque, New Mexico.

Oregon Department of Environmental Quality (DEQ). 2016. Source Water Assessment Results for Public Water Systems Using Surface Water. Available: https://www.deq.state.or.us/wq/dwp/swrpts.asp. Accessed: June 14, 2022.

Oregon Coastal Salmon Restoration Initiative (OSRI). 1997. Oregon Plan for Salmon and Watersheds. Available: https://digital.osl.state.or.us/islandora/object/osl%3A106915/datastream/OBJ/view. Accessed: January 23, 2023.

Smith, H.I., B.D. Compton, B. Rigsby, and M. Tarpent. 1997. Ethnobotany of the Gitksan Indians of British Columbia. University of Ottawa Press.

Glossary

A

active management, actively managed	Active application of silvicultural prescriptions and other activities in accordance with the future objectives and current characteristics of forest stands.
adaptive capacity (of ecosystems)	The ability of the system to sustain delivery of desirable ecosystem services under changed climate conditions and other disturbances via resistance and resilience to disturbance or transformative change to an acceptable new equilibrium. The Intergovernmental Panel on Climate Change defines adaptive capacity as the degree to which adjustments in practices, processes, or structures can moderate or offset the potential for damage or take advantage of opportunities created by a given change in climate.
adaptive management	A systematic and rigorous approach to learning from actions, improving management, and accommodating change. Adaptive management is defined as the process of implementing plans in a scientifically based, systematically structured approach that tests and monitors assumptions and predictions in management plans and uses the resulting information to improve the plans or management practices used to implement them (Oregon Administrative Rule [OAR] 629-035-0000). • active adaptive management - A range of alternative management strategies are implemented in an experimental framework so that learning is a primary objective. Even though some alternatives may be suboptimal in achieving management objectives, decision-makers can identify and refine an optimal management strategy through a targeted study that reduces uncertainty • passive adaptive management - Outcomes of a single course of action are monitored and the management decisions are adjusted, if needed, based on the results of the monitoring. Learning, or reducing uncertainty, is a secondary objective and alternatives are not tested experimentally.

Adaptive Management Plan (AMP)	Describes the adaptive management process used to monitor outcomes, evaluate trade-offs, determine if the strategies are meeting the goals of the Western Oregon State Forests Management Plan (FMP) and *Western Oregon State Forests Habitat Conservation Plan* (HCP), determine if assumptions used in developing the strategies need to be updated, and inform management decisions.
adaptive monitoring	Iterative evolution of a monitoring program in response to new management questions; new or changing environmental or socioeconomic conditions, improved monitoring methods, models, and tools; and experience implementing the monitoring program. See definition for *monitoring*.
adaptation silviculture, adaptive silviculture	Use of silvicultural techniques to increase the forest's ability to adapt to changing conditions and continue to deliver ecosystem services.
administrative sites	Lands where administrative requirements restrict the integrated management of forest resources. These lands include but are not limited to building sites, rock stockpile sites, log storage/sorting sites, and demonstration areas (OAR 629-035-0055 39(c)(B)(i).
aggregate	Sand and pebbles added to cement to make concrete, or that are used in road construction.
archaeological and historic resources	Sites, buildings, structures, and artifacts that possess material evidence of human life and culture of the prehistoric and historic past.
archaeological or historic object	An object that is at least 75 years old; is part of the physical record of an indigenous or other culture found in the state or waters of the state; and is material remains of past human life or activity that are of archaeological significance, including, but not limited to, monuments, symbols, tools, facilities, technological by-products, and dietary by-products (Oregon Revised Statutes [ORS] 358.905).

archaeological or historic site	A geographic locality in Oregon, including but not limited to, submerged and submersible lands and the bed of the sea within the state's jurisdiction, that contains archaeological objects and the contextual associations of the archaeological objects with each other, or with biotic or geological remains or deposits (ORS 358.905). Specific types of sites, as defined in Oregon law, are: • pre-historic archaeological site - Created and/or used by humans indigenous to the area before Euro-American inhabitance. • historic archaeological site - Created and/or used by humans since the time of Euro-American inhabitance; usually belowground and/or aboveground diminishing remains. • historic site - Created and/or used by humans since the time of Euro-American inhabitance; usually aboveground structurally intact remains. • site of archaeological significance - Any archaeological site in, or eligible for inclusion in, the National Register of Historic Places as determined in writing by the State Historic Preservation Officer, or any archaeological site that has been determined significant in writing by an Indian tribe (ORS 358.905).
aquatic	In or on the water; aquatic habitats are in streams or other bodies of water, as contrasted with riparian habitats, which are near water.
aquatic organism passage, passage, fish passage	Aquatic organism passage is the term for removal or improvement of structures that restricts the movement of aquatic animals, such as fish, turtles, amphibians, and insects within and between streams.
aquifer	A sand, gravel, or rock formation that is capable of storing or transporting water below the surface of the ground.
area directors	Leads of the two administrative areas covered by this FMP: northwest and southern Oregon. The northwest Oregon area covers Astoria, Tillamook, Forest Grove, West Oregon, and North Cascade Districts. The southern Oregon area covers the Western Lane district.
asset(s)	Tangible resources and infrastructure on state forest lands.

B

best management practices (BMPs)	Oregon Forest Practices Act (FPA) rules adopted by the Board of Forestry (BOF) to minimize the impact of forest operations on water quality. These rules ensure that, to the maximum extent practicable, forest operations meet the water quality standards established by the Environmental Quality Commission. The rules focus on reducing nonpoint source discharges of pollutants resulting from forest operations.
biochar	Charred forest material, such as slash or dead plants, which can improve soil productivity and water quality and sequester carbon. The practice of charring forest material and mixing it with soil was used for thousands of years by indigenous people in the Amazonian basin. The practice created rich soils, called "terra preta de Indio", in otherwise infertile soils. Modern technologies use pyrolysis to produce biochar. Pyrolisis prevents harmful emissions and produces valuable byproducts in addition to biochar. Pyrolysis is the thermal decomposition of plant material in the absence of oxygen, which prevents combustion (burning). By preventing combustion, the production process prevents the release of greenhouse gases, particulates, and other toxicants to the atmosphere and instead produces bio-oil and synthesis gas, which are captured and can be used as fuel or precursors to other chemical products. Like coal, biochar is a stable form of carbon that can store carbon in the soil for hundreds to thousands of years.
biodiversity or biological diversity	The genetic variation and the variety of microbial, plant, and animal life.
biotic	Any living aspect of the planet.
Board of Forestry (BOF)	The BOF is a seven-member citizen board appointed by the governor and confirmed by the Oregon State Senate. At least one member must reside in each of the state's three administrative regions (east, south, and northwest). No more than three members may receive any significant portion of their income from the forest products industry. The BOF supervises all matters of forest policy in Oregon; appoints the state forester; adopts rules regulating forest practices; and provides general supervision of the state forester's management of the Oregon Department of Forestry (ODF).

Board of Forestry Lands (BOFL)	BOFL were acquired by the BOF under ORS 530.010–530.040. Most were transferred from counties to the BOF in exchange for a portion of future revenue from the lands. Some lands were acquired by direct purchase.

C

candidate species	Species being considered by the Secretary of the Interior for listing as an endangered or a threatened species, but not yet the subject of a proposed rule.
carbon pools	Reservoirs of carbon that have the capacity to both take in and release carbon.
carbon sequestration, carbon storage	The process of capturing and storing atmospheric carbon dioxide.
Class I areas	National park lands and some wilderness areas are designated as federal mandatory Class I areas under the Clean Air Act.
Clean Air Act	Federal law passed in 1970 and amended several times since. The authority to implement the act is delegated to states. The Clean Air Act is implemented, in part, through a permit system.
Clean Water Act	Federal law was passed in 1948 under the Federal Water Pollution Control Act but was significantly reorganized and expanded in 1972 and has been known as the Clean Water Act since then. This act, which has been amended several times since 1972 as well, establishes the basic structure for regulating discharges of pollutants into the waters of the United States; states may have their own Clean Water Acts whose standards must meet or exceed the federal mandates.
clearcut	Traditionally, a silvicultural system in which the entire stand of trees is cleared from an area at one time. Some residual trees, snags, and downed wood from the existing stand are retained to meet HCP goals and objectives and FPA requirements. Clearcutting and planting (if needed) result in the establishment of a new even-aged stand of trees.

climate change	Per the United Nations, involves long-term shifts in temperatures and weather patterns. These shifts may be natural, but since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels (like coal, oil, and gas), which produces heat-trapping gases.
climate change mitigation	Reducing heat-trapping greenhouse gases in the atmosphere by reducing sources (e.g., the burning of fossil fuels for electricity, heat, or transport) of and sequestering these gases.
climate-smart forestry	An extension of sustainable forest management developed to guide management of forests in ways specific to climate change adaptation and mitigation efforts and to support climate-affected communities. Climate-smart forestry principles can be enacted through climate-informed silviculture, such as reforestation using alternative tree species; reforestation using alternative planting spacings and densities; reforestation using diverse species mix (bet hedging); and leaving legacy trees and downed wood to store carbon on the landscape.
coarse filter – fine filter	An operational approach managing for biological diversity. The coarse-filter component is based on the premise that maintaining a range of seral stages, stand structures, and sizes, across a variety of ecosystems and landscapes, will meet the needs of most organisms. Fine-filter management superimposes specific management actions for individual species or habitats that require special consideration, such as species with unique or limited distributions.
cohort	A group of trees regenerating after a single disturbance. The age range within a cohort may be as narrow as 1 year or as wide as several decades, depending on how long trees continue invading after a disturbance.
Common School Fund	A permanent fund or account managed to provide revenues to the common schools. The State Land Board (governor, secretary of state, and treasurer) is the trustee of the Common School Fund (CSF).

Common School Forest Lands (CSFL)	Common School trust lands that have been listed by the State Land Board for the primary goal of managing these lands for the generation of the greatest amount of income for the Common School Fund over the long term, consistent with sound techniques of land management. Common School trust lands that have been listed by the State Land Board for the primary use of timber production are called Common School Forest Lands. Other Common School trust lands are designated as rangelands or for other uses.
composition	The nature of something's ingredients or constituents; the way in which a whole or mixture is made up. For an ecosystem, composition refers to the different species of plants and animals that live therein. The dynamic attributes of a forest ecosystem are composition, function, and structure. Composition is the proportion of various species. Function is the processes taking place in the system. Structure includes kinds and distribution of stand components such as trees, snags, and logs of various sizes and shape.
concept(s)	An abstract or generic idea generalized from particular instances.
confidential	Limited to persons authorized or entrusted with the information.
conifer forest	These stands occupy most of the state forest lands. ODF classifies conifer stands as those in which conifer species compose 50 percent or more of the basal area. Although conifers are the principal species with economic value in these stands, the stands may also include substantial amounts of other vegetation types such as hardwoods, brush, grass, and ferns, which contribute to a diverse forest ecosystem. These types are either intermixed with the conifers or are in clumps too small to map and inventory separately.
connectivity	A measure of how well different areas (patches) of a landscape are connected by linkages, such as habitat patches or corridors. At a landscape level, the connectivity of ecosystem functions and processes is of equal importance to the connectivity of habitats.

conservation area(s)	Designated land where conservation strategies are applied for the purpose of attaining specific conservation objectives; this may include cultural or biological aspects. In State Forests, conservation areas include habitats used by northern spotted owls and marbled murrelets, riparian conservation areas, rare or unique habitats, and areas requiring special protection for other resource values. Management within conservation areas is aimed at maintaining desired conditions.
cultural resources	An aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. A cultural resource may be tangible, a place or space, or a cultural practice. Tangible cultural resources are categorized as sites, buildings, structures, and objects for listing in the National Register of Historic Places and as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources. A cultural place or space may include areas containing a variety of natural and cultural resources that associated people define as heritage resources, including plant and animal communities, geographic features, and structures. Cultural practices may be associated with plant and animal communities or particular places, acknowledge past events or people, and have significant meaning to practitioners.
culvert	Structure that channels water past an obstacle, under a roadway, or to a subterranean waterway. Typically surrounded by soil or road fill (embedded), a culvert may be made from a pipe, reinforced concrete, or other material.

D

debris torrent, debris flow	Rapid movement of a large quantity of materials, including wood and sediment, down a stream channel. This generally occurs in smaller streams during storms or floods, which scours the streambed.
decision analysis	A process used to simplify decisions by breaking them down into key parts to work through in sequence.

deep-seated landslide	Slides in which the bulk of the slide plane lies below the roots of the forest trees, with a depth ranging from 10 feet to several hundreds of feet. These slides are usually caused by a change in the geologic and hydrologic processes in the area of the landslide, such as seismic shaking or increased levels of groundwater. Once formed, deep-seated landslides can persist for a few years or even centuries. See definition for *landslide*.
degraded forest lands	Degraded forest land conditions are those where the forest's biodiversity and ecological processes are diminished or severely constrained. These conditions may exist because of past management practices or large-scale disturbances such as fire, windstorms, floods, and outbreaks of insects or pathogens. Degraded forest land conditions may exist because of past management practices or natural disturbances such as fire, windstorm, floods, and outbreaks of insect or pathogens.
demographics	Demographics is the collection and analysis of general characteristics about groups of people and populations, such as age, gender, and income.
demonstration forests	Timberland that is managed for forestry education, research, and recreation. It demonstrates innovations in forest management, watershed protection and restoration, and environmentally sensitive timber harvesting techniques.
density	The average number of individuals or units per unit of space. In terms of forestry, density is often the number or size of a population (trees, species, etc.) in relation to a unit of space. In silviculture, stand density is measured as the amount of tree biomass per unit area of land. This can be measured as the number of trees, basal area, wood volume, or foliage cover. Also see "stand density" and "stand density index."
deposition	Deposition is when rocks or particles of soil or silt are carried from one location and placed in another, usually by moving water or wind. The wind or water can physically pick up and carry small particles, and these particles are deposited when there is not enough energy to carry them any longer.

desired future condition	A planning goal that describes the conditions land managers are attempting to achieve over a specified period of time in a given geographic area. In some cases, the land may already be in the desired condition and land managers would focus on maintaining those conditions. If the natural area is not currently in the desired condition, managers may take actions to encourage a different pattern of change over time to reach the desired conditions. The desired future condition describes the land or resource conditions of the forest given implementation of management direction contained in the plan if goals and objectives are fully achieved.
dispersal habitat	For northern spotted owls', can be conifer and mixed mature conifer-hardwood stands with a canopy cover greater than or equal to 40 percent but has no suitable nesting habitat and contains understory features that inhibits foraging both through decreased visibility of prey (overgrown vegetation or high twig density) or inadequate understory vegetation to support prey species. (Habitat neither suitable for nesting nor foraging.)
dissected	A landscape that has been cut into hills and valleys by the process of erosion.
district forester	The lead forester for an ODF district. See definition for *field districts* and *ODF district*.
disturbance	A force that causes significant change in an ecosystem's structure and/or composition. Disturbance can be caused by natural events such as fires, floods, extreme winds, earthquakes, and insect or disease outbreaks, or by human activities.
diversity	Variety encompassed within a group. In terms of diversity, equity and inclusion (DEI), diversity means honoring and including people of different backgrounds, identities, and experiences collectively and as individuals. It emphasizes the need for sharing power and increasing representation of communities that are systemically underrepresented and under-resourced. These differences are strengths that maximize the state's competitive advantage through innovation, effectiveness, and adaptability.
downed wood, woody debris	Fallen trees or pieces of trees on the forest floor or in the stream channel that provide many important functions such as mineral cycling, nutrient mobilization, maintenance of site productivity, natural forest regeneration (nurse logs), substrates for mycorrhizal formation, and diverse habitats for fish and wildlife species.

E

ecological silviculture	Based on the spatial heterogeneity found in unmanaged old forests and seeks to emulate stand initiation and development processes that result from small-scale natural disturbances (e.g., windthrow, lightning, insects, disease) to promote within-stand diversity and complexity.
ecologically sustainable management, ecologically sustainable approach	A management approach that focuses on supporting the function of forest ecosystems and processes, to improve capacity to adapt and sustainable delivery of ecosystem services.
ecology	The biological science that deals with the relations of organisms to one another and to their physical environment.
ecosystem function(s) or functioning	The many and varied biotic and abiotic processes that make an ecosystem capable of reproducing outcomes over time (e.g., biogeochemical processes, nutrient cycling, decomposition, regeneration, and succession that supports survival of a common set of species over time).
ecosystem goods and services	Goods produced by ecosystems such as water, food, medicine, fuel, construction materials; and services produced by ecosystems such as clean air, clean water, heat mitigation, flood risk mitigation, water storage, and erosion control.
ecosystem(s)	A complex system comprising populations of organisms considered together with their physical environment and the interacting processes that exchange energy and matter between them (e.g., marsh, watershed, lake ecosystems). Ecosystems do not have boundaries fixed in time or space, or fixed biological or physical compositions, because the form and function of ecosystems change at various rates, depending on prevailing environmental factors and their resistance and resilience to disturbances.
edge(s)	The point where two different plant communities (different vegetation types, successional stages, or conditions) meet. Edges may be created by a soil or topographical feature of the site, or where short-term effects are created by natural or human-caused disturbances.
effectiveness monitoring	Monitoring designed to evaluate whether a given management action was effective in meeting a stated management objective. See definition for *monitoring*.

emphasis areas	Spatially explicit areas managed with an emphasis in management to achieve different combinations of resources goals. Layout of emphasis areas across the landscape supports diversity, connectivity, complexity, and redundancy, which support adaptive capacity for sustained ecosystem services delivery under changing conditions.
endangered species	As defined by the Endangered Species Act of 1973 (ESA), any species (including subspecies or qualifying population) that is in danger of extinction throughout all or a significant portion of its range.
Endangered Species Act (ESA)	Provides a framework to conserve and protect endangered and threatened species and their habitats both domestically and abroad.
engagement	The involvement and participatory actions of the public and Tribes in planning and decision-making processes.
engineering	The science or profession of developing and using nature's power and resources in ways that are useful to people (as in designing and building roads, bridges, dams, or machines and in creating new products).
environmental gradient	Changes in physical or chemical characteristics across space, such as elevation, soil characteristics, ground slope, air or stream temperature, soil moisture or humidity, average annual precipitation.
equity	The quality of being fair and impartial. As part of DEI, equity acknowledges that not all people, or all communities, are starting from the same place due to historic and current systems of oppression. Equity is the effort to provide different levels of support based on an individual's or group's needs to achieve fairness in outcomes. Equity actionably empowers communities most affected by systemic oppression and requires the redistribution of resources, power, and opportunity to those communities.
erosion	The geological process in which earthen materials are worn away and transported by natural forces such as wind or water.
ethnobotanical	The scientific study of the traditional knowledge and customs of a people concerning plants and their medical, religious, and other uses.

Evolutionarily Significant Unit (ESU)	An ESU is a group of stocks or populations that 1) are substantially reproductively isolated from other population units of the same species; and 2) represent an important component in the evolutionary legacy of the species. This term is used by the National Marine Fisheries Service (NMFS) as guidance for determining what constitutes a distinct population segment for the purposes of listing Pacific salmon species under the ESA. For example, the Oregon Coast chinook ESU is a delineation that encompasses all populations of chinook salmon from the Necanicum River on the northern Oregon coast, to Cape Blanco on the south coast.

F

field districts	The FMP planning area is organized into management districts, or field districts. Northwest districts are Astoria, Tillamook, Forest Grove, West Oregon, and North Cascade. The southwest district covered in this FMP is Western Lane.
financial viability	Achieved over the long term through continued protection and management of the forest asset; achieved over the short term with operational tools that ensure cash flow is available to ODF for sound management of state forest lands.
fine filter	See definition for *coarse filter-fine filter*.
fiscal conditions	Describes a government's ability to meet its financial and service obligations. If an agency is able to meet these obligations, it is in good fiscal condition; if not, it may experience fiscal stress.
fish passage	See definition for *aquatic organism passage*.
FMP area	See definition for *planning area*.
forest carbon	Atmospheric carbon dioxide that is assimilated by trees and other vegetation through the process of photosynthesis and released during respiration and decomposition.
Forest Development Fund	Fund through which all BOF expenditures and revenues are managed.
forest health, healthy forest landscapes	Severity, extent, and frequency of events causing injury or death of trees and other organisms living in the forest; ability of forest to resist or recover from disturbance events; ecosystem health.

Forest Land Management Classification System (FLMCS)	As codified in OAR 629-035-0050, a method of describing the management emphasis of parcels of state forest lands. The FLMCS is recorded as a geographic information system (GIS) layer. The management emphasis identifies the extent to which a parcel of land can be managed for a variety of forest resources. It also identifies when a particular forest resource may need a more focused approach in its management, or possibly an exclusive priority as designated by the FMP, the HCP, and other laws or commitments. State forest lands are classified as General Stewardship, Focused Stewardship, Special Stewardship, or High Value Conservation Areas.
forest resources	As defined by OAR 629-035-0000, include, but are not limited to: (a) Timber production and harvest; (b) Salmonid, and other native fish and wildlife habitats; (c) Soil, air, and water; (d) Forage and browse for domestic livestock; (e) Landscape effect; (f) Protection against flood and erosion; (g) Recreation; (h) Mining; (i) Use of water resources; and (j) Administrative sites.
Forest Trust Lands Advisory Committee	An advisory group of elected county commissioners mandated by statute that advise the BOF and state forester on matters related to state forestland managed by ODF. The council represents the 15 counties with state forest lands on policy matters related to the management of the forestlands and distributions of revenues produced from those lands. The counties that receive revenues from these forestlands are Benton, Clackamas, Clatsop, Columbia, Coos, Douglas, Josephine, Klamath, Lane, Lincoln, Linn, Marion, Polk, Tillamook, and Washington. The committee's member roster is established during the middle of November each year when the Council of Forest Trust Land Counties elects their board of directors at the annual meeting of the Association of Oregon Counties.

forestry	The science and practice of establishing, managing, and conserving forests and associated resources in a sustainable manner to meet desired goals, needs, and values.
formation	The action of forming or process of being formed. In geology, a formation is a group of strata, or layers, of the same sort of rock or mineral, or rock having common characteristics. A formation is usually defined distinctive enough in appearance that a geologic mapper can tell it apart from the surrounding rock layers.
fragmentation	The relationship of the landscape matrix to other types of patches; as fragmentation increases, the matrix becomes geometrically more complex. Maximum landscape fragmentation occurs when no dominant patch exists. Fragmentation is also defined as the spatial arrangement of successional stages across the landscape as the result of disturbance and is often used to refer specifically to the process of reducing the size and connectivity of late successional or old growth forests.
function(s), ecological function	An activity or process that occurs in an ecosystem; some typical functions are plant growth, animal reproduction, and decay of dead plants.

G

geographic information system (GIS)	A system for management analysis and display of geographic knowledge that is represented using a series of information sets such as maps and globes, geographic data sets, processing and workflow models, data models, and meta data.
geology	The science that deals with the earth's physical structure and substance, its history, and the processes that act on it.
geothermal	Of or relating to the internal heat of the earth.
goals	A concise, broad statement of an organization's end or process that programs are designed to achieve.
Greatest Permanent Value (GPV)	Healthy, productive, and sustainable forest ecosystems that over time and across the landscape provide a full range of social, economic, and environmental benefits to the people of Oregon as defined in OAR 629-035-0020.

guidelines	A set of recommended or suggested methods or actions that should be followed in most circumstances to assist administrative and planning decisions, and their implementation in the field. They are provided as a broad framework of recommended actions to be taken and, thus, provide some flexibility for decision-making.
guiding principles	The overall rules, goals, and responsibilities that guide the planning process for the northwest Oregon state forests.

H

habitat	The resources, conditions, and factors necessary to support living organisms over space and through time. Improving habitat means improving the resources or conditions that support a species' health and longevity or the population's persistence.
habitat conservation area (HCA)	A protected area with site-specific boundaries established by the HCP intended to conserve, maintain, and enhance habitat for the terrestrial covered species.
habitat conservation plan (HCP)	A comprehensive planning document that is a mandatory component of an Incidental Take Permit (ITP) application pursuant to section 10(a)(2)(A) of the ESA. The *Western Oregon State Forests HCP* enables ODF to comply with the federal ESA for certain covered species while conducting land management activities on state forest lands west of the Cascade Crest.
habitat conservation plan (HCP) administrator	Serves as the key coordinator to initiate the process when triggers for action are identified from either over- or under-accomplishment of biological goals and objectives, or when alternative conservation practices are available.
hardwood stand	Found on a minority of state forest lands. ODF classifies hardwood stands as those in which hardwood species comprise more than 50 percent of the tree canopy.
harvest units	Delineated forest parcels that reflect potential logical harvest operation areas considering topography and access. A unit for clearcut and thinning choices.
healthy forest landscapes	See *forest health*.

historic or historical resources	Defined by state and federal law, these include artifacts, property, and sites: • historic artifacts - Three-dimensional objects including furnishings, art objects, and items of personal property that have historic significance. Historic artifacts do not include paper, electronic media, or other media that are classified as public records (ORS 358.635). • historic property - Real property that is listed in the National Register of Historic Places, established and maintained under the National Historic Preservation Act of 1966, or approved for listing on an Oregon Register of Historic Places. • historic site - Sites created and/or used by humans since the time of Euro-American inhabitance; usually above-ground structural intact remains.
hydrologic processes	Describes how water is exchanged (cycled) through Earth's soil, geology, vegetation, and atmosphere through evaporation, transpiration, condensation, precipitation, infiltration, and subsurface flow. Hydrologic processes relate to how the landscape is shaped by water, for example how streams and floodplains form and change over time.
hydrology	The study of the properties, distribution, and effects of water on the landscape, under the surface, in the rocks, and in the atmosphere.

I

implementation monitoring	Used to determine if objectives, standards, and management practices specified by law, regulation, policy, or the HCP are being implemented. Implementation monitoring is used to determine whether specified actions or criteria are being met. See definition for *monitoring*.
Implementation Plan (IP)	An ODF plan that describes the management approaches and activities designed to achieve the FMP goals and the HCP goals and objectives within a shorter timeframe (e.g., 8–12 years).

Incidental Take Permit	An Incidental Take Permit (ITP) is a federal exemption to take prohibition of Section 9 of the ESA; the ITP is issued by the U.S. Fish and Wildlife Service pursuant to Section 10(a)(1)(B) of the ESA. An ITP is also referred to as a Section 10 Permit or Section 10(a)(1)(B) Permit. To take is to "... to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" with regard to federally listed endangered species of wildlife (Section 3(18) of the ESA). Federal regulations provide the same taking prohibitions for threatened wildlife species (50 CFR 17.31(a)).
inclusion	The action or state of including or of being included within a group or structure. In terms of DEI, inclusion is a state of belonging when persons of different backgrounds, experiences, and identities are valued, integrated, and welcomed equitably as decision-makers, collaborators, and colleagues. Ultimately, inclusion is the environment that organizations create to allow these differences to thrive.
Indigenous Traditional Ecological and Cultural Knowledge (ITECK)	Tradition is ideas and beliefs which are passed from one generation to another generation. Culture is a collective term to identify ideas, behavior, and customs. ITECK is a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes through interaction and experience with the environment. TEK can be developed over millennia, passed from one generation to another, and continues to develop. ITECK includes understanding based on evidence acquired through direct contact with the environment and long-term experiences, as well as extensive observations, lessons, and skills passed from generation to generation. ITECK is grounded in social, spiritual, cultural, and natural systems that are frequently intertwined and inseparable, offering a holistic perspective. ITECK is inherently heterogeneous and unique to each Tribe, due to the cultural, geographic, and socioeconomic differences, as well as their history and the surrounding environment.

integrated pest management	A systematic approach that uses a variety of techniques to reduce pest damage or unwanted vegetation to economically and socially tolerable levels. Integrated pest management techniques may include the use of natural predators and parasites, genetically resistant hosts, environmental modifications, and, when necessary and appropriate, chemical pesticides or herbicides.
integrated resource management	The management of two or more resources in the same general area and period of time (e.g., water, soil, timber, grazing, fish, wildlife, and forests). Integrated resource management means that the design and application of management practices must consider the effects and benefits of all of the forest resources in such a way that those effects and benefits lead to achieving the goals in the FMP over time and across the landscape.

L

landscape	In ecological terms, an area of land containing a mosaic of patches, often within which a particular "target" patch is embedded. Also defined as a unit of land with separate plant communities or ecosystems forming ecological units with distinguishable structure, function, geomorphology, and disturbance regimes.
landscape context	Refers to the spatial relation of different patches (land management, habitat type, ecological processes, hydrological process, etc.) within the landscape and the values, constraints, or risks they impose on each other. See *landscape*.
landslide(s)	The dislodging and fall of a mass of earth and rock. There are many types of landslides, including debris slides, earthflows, rock block slides, slumps, slump blocks, and slump earthflows. The different types of landslides vary tremendously in how they occur, how far they move, what type of materials move, etc.
leave area	An area of standing timber retained among areas of logging activity to satisfy management objectives, such as seed source, wildlife habitat, or landscape management constraints.
legacy structures, legacies	Structural components within a forest stand that are retained during harvest operations, and that provide habitat diversity in the future stand. Examples of legacy structure include live trees, snags, and downed wood.

lifeways	A traditional way of life reflecting an all-encompassing aspect customs, practices, and belief systems. This may include foods consumed, materials collection, religious practices, and so on.
listed, federally listed, or listed species	Species, including subspecies and distinct vertebrate populations, of fish, wildlife, or plants, listed at 50 CFR 17.11-17.12 as either endangered or threatened.
live trees	Live trees that are retained to provide short-term habitat needs of wildlife species, to serve as a source of future snags and downed wood, and to provide legacy trees in future stands. This term also refers to live trees present in a stand that are legacies of a previous cohort of trees.

M

management prescription	The management practices and intensity selected and scheduled for application on a specific area to attain predefined goals and objectives.
mass wasting processes	Down slope movement of rock or soil due to the force of gravity. The four most common types of mass-wasting are falls, slides, flows, and creep. Falls are abrupt movements of rocks that have detached from steep slopes of cliffs. Slides are the movement of a mass of earth and rock from a mountain or cliff and can occur slowly or quickly. Examples of flow type are debris, mud, or earth. Creep (or soil creep) is a slow, long-term mass wasting process. The steeper the slope the faster the creep. Precipitation, chemical weathering, lithology (type of rock), and steepness of slope(s) contribute to mass wasting processes.
metrics	A quantifiable value, characteristic, or condition measured by monitoring programs (see definition for *monitoring*).

monitoring	The measurement of metrics to determine resource status or trends in some aspect of environmental quality. • adaptive monitoring - Iterative framework that enables monitoring questions and protocols to change over time in response to new information or new questions. • implementation monitoring - Asks the question, "Did we do what we said we would do?" For example, did we leave the number of snags during a timber harvest required by law or policy? • effectiveness monitoring - Asks the question, "Are the management practices producing the desired results?" For example, are snag retention practices resulting in improved habitat for a species of interest? • status monitoring – Asks the question, "What is the state of the resource?" For example, what is the snag density at a point in time? • trend monitoring – Extension of status monitoring, asks the question, "What is the change in status over time?" For example, how has the snag density changed over time?

N

native	Indigenous to Oregon and not introduced.
non-point source	Entry of a pollutant into a body of water from widespread or diffuse sources, with no identifiable point of entry. The source is not a distinct, identifiable source such as a discharge pipe. Erosion is one example of a non-point source.
northwest Oregon state forests	Includes all state forest lands in the FMP planning area. See definition for *planning area*.
noxious weeds	Terrestrial, aquatic, or marine plants designated by the Oregon State Weed Board under ORS 569.615 as representing the greatest public menace and a top priority for action by weed-control programs.
nutrient cycling	Circulation or exchange of elements, such as nitrogen and carbon dioxide, between living and nonliving portions of the environment.

O

objective	A clear and specific statement of results to be achieved within a defined time period. An objective is measurable and implies precise time-phased steps to be taken and resources to be used, which, together, represent the basis for defining and controlling the work to be done.
old growth	A forest stand whose typical characteristics are a patchy, multi-layered, multi-species canopy dominated by large overstory trees, some with broken tops and decaying wood; numerous large snags; and abundant downed wood (such as fallen trees) on the ground. In western Oregon, old-growth characteristics begin to appear in unmanaged forests at 175–250 years of age.
Operations Plan (OP)	Describe individual projects for achieving expected FMP and HCP *outcomes*, over the near term (for example 1 to 2 years), that align with fiscal budgets and IPs.
Oregon Conservation Strategy	Created by the Oregon Department of Fish and Wildlife (ODFW) to outline a set of priorities and recommendations for addressing Oregon's fish, wildlife, and habitat conservation needs. Strategy species in the Oregon Conservation Strategy are Oregon's species of greatest conservation need because they are experiencing population decline, habitat loss, and other issues that put them at risk.
outcomes	Management or plan outcomes.

P

passive management	Typically allows resources to change over time with minimal human intervention. For example, forest stands could be allowed to grow and regenerate along their current trajectory—no reforestation, thinning, harvesting, site preparation or prescribed burning activities would be used.
patch	A term fundamental to landscape ecology and silviculture, it is defined as a relatively homogeneous (same/similar) area of habitat or forest stand that differs from its surroundings. Patches are the basic unit of the landscape that change and fluctuate, a process called patch dynamics.

pathogen	A specific causative agent (such as a bacterium, fungus, or virus) of a disease.
people of Oregon	People living in the state of Oregon.
performance measure(s)	Developed by the BOF, a select set of metrics with targets or acceptable ranges that track progress toward FMP goals and indicate if the FMP strategies are working as intended to provide GPV.
planning area, plan area, or FMP area	Approximately 640,000 acres consisting of BOFL, Common School lands, and administrative sites west of the Cascade Crest.
policy	A definite, stated method or course of action adopted and pursued by an entity that guides and determines present and future decisions and actions. A policy establishes a commitment by which an entity is held accountable.
pollutant	A substance of such character and existing in such quantities as to degrade an environmental resource (i.e., water, air, or soil) by impairing its usefulness (including its ability to support living organisms).
population(s)	The organisms that constitute a particular group of a species, or that live in a particular habitat or area. A group of fish (e.g., Nehalem River fall chinook salmon) that spawn in a particular area at a particular time, and that do not interbreed to any substantial degree with any other group spawning in a different area, or in the same area at a different time are considered a population (OAR, Division 7, 635-07-501(38)).
prescribed burn/burning	Controlled fire burning under specified conditions to accomplish planned objectives; also called slash burning, as a frequent objective is to reduce the amount of slash left after logging. Objectives may include site preparation for planting and reduction of fire hazards or pest problems.
private and domestic drinking water	Systems serving three or fewer homes or connections with a water use permit issued by the Oregon Water Resources Department.
properly functioning aquatic habitat *or* condition	The range of diverse aquatic and riparian conditions over time and space that emulate the habitat conditions that resulted from natural disturbance regimes under which native species evolved. There is no one condition that is properly functioning.

R

reciprocity	Ecosystem services deliver social and economic benefits, and social and economic benefits can be obtained in a way that supports environmental benefits.
redundancy	The duplication of components or functions of a system with the intention of increasing the resilience of the system.
reforestation	A management action to renew tree cover by establishing young trees. This can be accomplished by planting an area with trees or aerial seeding or letting an area naturally seed in. This work is done to maintain appropriate forest cover, achieve a desired ecological condition, and/or restore forests for wildlife, watersheds, and recreational experiences.
refugia	Locations and habitats that support population of organisms that are limited to small fragments of their previous geographic range, and areas that remain unchanged while surrounding areas change markedly (the areas serve as a refuge for those species requiring specific habitats). The changes could be short term, such as wildfires, elevated stream temperatures, or human activity, or much longer term, such as periods of glaciation.
regeneration	The process of renewal of a forest or stand of trees, or young trees in a stand.
regeneration harvest(s), regeneration harvesting	The removal of trees to make regeneration possible or to assist in the development of the established regeneration (young trees). Regeneration harvests can range from a clearcut to a retention cut. A clearcut removes almost all trees from a stand (see definition for *clearcut*) resulting in a new even-aged stand of trees. A retention cut retains more residual trees within the unit (between 33 and 80 square feet of basal area per acre), similar in look to a heavy thinning resulting in a stand with two distinct ages of trees following tree planting.
resilience, resiliency, resilient	The ability to recover from the disturbance.
resistance	The ability of a system to withstand the disturbance.

restoration	Management actions taken to rehabilitate degraded forest lands to properly functioning condition such that lands are delivering ecosystem goods and services such as timber, fish and wildlife habitat, special forest products, carbon sequestration, and drinking water.
revenue(s)	The total income produced by an organization's operations, such as income generated by timber harvest operations.
riparian conservation area (RCA)	A protected area with site-specific boundaries established by ODF; the width varies according to the stream classification or special protection needs. The purpose of an RCA is to protect the stream, aquatic resources, and riparian area. Aquatic resources include water quality, water temperature, fish, stream structure, and other resources.
riparian, riparian area	Three-dimensional zone of direct influence and/or interaction between terrestrial and aquatic ecosystems. The boundaries of the riparian area extend outward from the streambed or lakeshore.

S

salvage harvesting	The utilization of standing or downed trees that are dead, dying, or deteriorating, for whatever reason, before the timber values are lost.
scenic	Providing or relating to views of impressive or beautiful natural scenery.
scenic waterways, scenic river	A river, lake, or segment thereof, including related adjacent land and the airspace above, that has been so designated by or in accordance with the Scenic Waterways Act (ORS 390.805–390.925)
sensitive plants	Threatened, endangered, or rare plants (collectively, sensitive plants), as listed under the state of Oregon's ESA and administratively protected by the Oregon Department of Agriculture Native Plant Conservation Program (ORS 564.105; OAR 603-073).
seral, seral stages	Developmental stages that succeed each other as an ecosystem changes over time; specifically, the stages of ecological succession as a forest develops.

shallow, rapid landslide	Debris-flow slides that occur in the forest rooting zone, generally less than 10 feet deep. They are typically initiated by intense rainfall and/or rapid snowmelt. Shallow slides usually follow a long saturation period that is punctuated by an intense burst of precipitation over several hours or a few days. At some point, gravity overtakes the hillside and the muddy soil mass breaks loose. See definitions for *landslide* and *debris flow*.
silvicultural, silviculture	The practice of controlling the establishment, composition, health, quality, and growth of the vegetation of forest stands. Silviculture involves the manipulation, at the stand and landscape levels, of forest and woodland vegetation, and the control or production of stand structures such as snags and downed wood to meet the needs and values of society and landowners such as wildlife habitat, timber, water resources, and recreation.
site class	A measure of an area's relative capacity for producing timber or other vegetation. It is an index of the rate of tree height growth, with lower values indicating faster-growing trees. The site index is expressed as the height of the tallest trees in a stand at an index age. In this document, an age of 50 years is used. The five site classes are defined below. Site class I 135 feet and up Site class II 115–134 feet Site class III 95–114 feet Site class IV 75–94 feet Site class V below 75 feet
slash	Logging debris left in the forest after a harvest such as tree limbs and tops. Sometimes called logging residue.
slope stability	The degree to which a slope resists the downward pull of gravity. The more resistant, the more stable.
snag	A standing dead tree.

Soil and Water Conservation Districts (SWCD)	The Oregon Department of Agriculture's SWCD Program provides services to the 45 Soil and Water Conservation Districts throughout Oregon. The districts work with local landowners and residents, natural resource organizations, natural resource users, and local, state, and federal governments to conserve natural resources, control and prevent soil erosion, conserve and develop water resources and water quality, preserve wildlife, conserve natural beauty, and promote collaborative conservation efforts to protect and enhance healthy watershed functions. The Oregon Department of Agriculture Soil and Water Conservation District Program offers trainings to help support district operations, directors, and staff. Their staff is also available to provide operational technical assistance by phone, email, or in person. SWCDs in Oregon are governed by an independently elected board of directors.
soil composition	The mixture of minerals, dead and living organisms (organic materials), air and water that make up soil. This mix of ingredients varies from place to place as soil composition varies.
source areas	Areas in which a watershed is delivering water to a water system.
special forest products	Products, other than timber, collected for personal and commercial uses from forests.
species	When referring to the federal ESA, "…any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature" [Section 3(15) of the ESA].
species diversity	Diversity among species in an ecosystem. Species diversity accounts for the number of different species (species richness) and the relative abundance of each species (species evenness).
species of concern	Those species included on federal or state ESA lists, state sensitive species, and ODFW's Oregon Conservation Strategy species, which are currently present or have the potential to be present on state forest lands.
stand density	In silviculture, measured as the amount of tree biomass per unit area of land. This can be measured as the number of trees, basal area, wood volume, or foliage cover.

stand initiation	Begins when new seedlings actively invade or sprout or are planted and begin to grow following a disturbance such as timber harvest, fire, or wind has killed or removed most or all of the larger trees, or when brush fields are cleared for planting.
Stand Level Inventory	Acquires and updates state forest vegetation information at the specific site level (forest stand). This information is used for tactical and operational decision-making. The Stand Level Inventory includes vegetation sampling protocols, forest stand data arranged in a database, computer programs for managing and using the information, and documentation of inventory elements.
stand management	Silvicultural techniques to be applied at the stand level in pursuit of the owner's management objectives. See *silviculture*.
stand(s)	A contiguous group of trees sufficiently uniform in composition, structure, age, size, class, distribution, spatial arrangement, condition, or location on a site of uniform quality to distinguish it from adjacent communities.
standard(s)	A working principle that establishes the measure of performance extent, values, quantity, or quality for a given activity or item.
state forester	The BOF-appointed chief executive officer and secretary of the State Forestry Department (ORS 526.031).
state forests division chief	The head of the State Forest Division.
State Historic Preservation Office	Created in 1966 by federal statute. It administers the Statewide Plan for Historic Preservation and submits Oregon's nominations for the National Register of Historic Places.
State Land Board	Composed of the governor, secretary of state, and state treasurer. It was established under the Oregon Constitution to manage Common School Trust Lands and serve as trustee of the CSF.
status monitoring	A snapshot in time of the status of a variable or resource. For example, status monitoring answers a question like, "how many acres are affected by this insect infestation?" See definition for *monitoring*.
stocking	A measure of the number of trees or basal area per acre in a stand.

storied landscape	Within Tribal contexts, refers to a multitude of intrinsically linked and deeply held understandings, relationships, and actions between indigenous cultures and the landscapes with which they interact throughout time, including but not limited to creation stories, landscape features and wildlife attributes that signal hunting, gathering, planting, and other seasonal use patterns.
strategy	A carefully considered plan or method, more encompassing and on a larger scale than tactics, for achieving an objective.
stream	A water course having a distinct channel that carries flowing surface water during some portion of the year, including associated beaver ponds, oxbows, side channels, and stream-associated wetlands if these features are connected to the stream by surface flow during any portion of the year. Ephemeral overland flow is not a stream because this type of flow does not have a defined channel.
stream classification	Used to apply stream protections. Streams are classified using a combination of Oregon FPA and Western Oregon State Forests HCP classifications.
stream reach	A section of a stream along which similar hydrologic conditions exist, such as channel gradient, form, or other physical parameters.
structure	The physical parts of an ecosystem that can be seen and touched; typical structures in a forest are trees of various sizes, standing dead trees (snags), and fallen dead trees.
structured decision-making	A process that supports multi-objective decision-making based on deliberation, estimated outcomes of alternative actions, and clear choices upon which decision-makers can act.
successional	A series of changes by which one group of organisms succeeds another group; a series of developmental stages in a plant community.
sustainability or sustainable	Sustainability is the ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time. Sustainable forest management describes forest management regimes that maintain the productive and renewal capacities, as well as the genetic, species, and ecological diversity of forest ecosystems.

Swiss needle cast (SNC)	A foliage disease specific to Douglas fir caused by the fungal pathogen *Nothophaeocryptopus gaeumannii*. SNC symptoms include yellow needles and decreased needle retention, resulting in sparse crowns and reduced diameter and height growth.

T

tectonic	Resulting from changes in the Earth's crust.
threatened and endangered species	Endangered species are those plants and animals that have become so rare they are in danger of becoming extinct. Threatened species are plants and animals that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Federal and state agencies make formal classifications of wildlife species, according to standards set by federal and state ESAs.
trade-offs	An exchange of one thing for another. Understanding trade-offs is a critical part of decision-making and planning where benefits to all resources are not attainable at the same time.
transformation	The process of changing the ecosystem to a condition that is different from historic structure, composition, or function. Both active and passive management techniques can guide or allow transformation, respectively. In academic literature, "Ecosystem transformation can be defined as the emergence of a self-organizing, self-sustaining, ecological or social–ecological system that deviates from prior ecosystem structure and function." (Thompson et al. 2021)
Travel Management Area(s)	Designated areas where it is restricted to operate or to be transported in a motor-propelled vehicle during certain dates as designated by the Oregon Department of Fish and Wildlife.
trend monitoring	Designed to uncover change in target variables over space and time. For example, trend monitoring may answer a question like, "How many acres are affected by an insect infestation each year?" See definition for *monitoring*.

Tribal Partners, Tribal Nations, federally recognized Tribes	Representatives of one or more of the nine federally recognized Tribes of Oregon. ORS 182.162–168 define state agencies' relations with federally recognized Tribes in Oregon when an agency develops or implements programs that may affect Tribes. The nine federally recognized Tribes of Oregon are Burns Paiute Tribe; Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians; Confederated Tribes of Grand Ronde; Confederated Tribes of Siletz Indians; Confederated Tribes of the Umatilla Indian Reservation; Confederated Tribes of the Warm Springs Reservation; Coquille Indian Tribe; Cow Creek Band of the Umpqua Tribe of Indians; and The Klamath Tribes.

U

understory	The layer of vegetation beneath the main canopy of a forest.
unimpeded access	Provides reasonable opportunity for access, considering public safety, infrastructure, and topographic constraints.
Uplift (geologic)	The process by which Earth's surface slowly rises either due to an increasing upward force applied from below or decreasing downward force (weight) from above.

V

viewshed	An area of land, water, or other environmental element that is visible to the human eye from a fixed vantage point and often is considered valuable or worth preserving for aesthetic reasons.
visually sensitive corridor	The area within 150 feet (measured on the slope) of the outermost edge of the roadway along both sides of the highway.

W

watershed	An area within which all water that falls as rain or snow drains to the same stream or river. Watersheds can vary greatly in size, from that of a small stream to a larger waterbody.

Watershed Council	Based in local communities across the state. While natural resource specialists lead the councils, their boards of directors are made up of local community members. They assess and monitor environmental conditions and conduct voluntary conservation projects to restore and enhance the waters and lands for native species and people. They work with local landowners, community members, companies, elected officials and agencies. The Oregon legislature encourages local governments to form watershed councils (ORS 541.910).
watershed restoration project	Per the Oregon Watershed Enhancement Board, specifies involvement of an on-the-ground element such as riparian planting, fish habitat construction, wetland restoration, livestock grazing plans, and water conservation projects that support watershed processes, which support watershed health.
wetland	As defined in Oregon's Forest Practice Rules OAR 629-24-101 (77), wetlands are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."
windthrow	Trees felled by high winds.
working forest(s)	As defined by Oregon Forests Resources Institute,[1] "forests where the sustainable production of timber is carefully balanced with protecting other important resources such as water quality and wildlife habitat are known as 'working forests.' After timber is harvested from these forests, they are replanted and harvested again in a sustainable process that may span decades, and even lifetimes."

[1] https://oregonforests.org/working-forests#:~:text=Forests%20where%20the%20sustainable%20production,sustainable%20process%20that%20may%20span

APPENDIX A

Public Engagement

The engagement process ensures that interested parties had opportunities to provide meaningful input on the development of the Western Oregon State Forests Management Plan (FMP). This appendix serves as a high-level summary of the stakeholder, public, and Tribal engagement efforts, including the engagement approach, goals, and activities.

Goals, Methods, and Key Audiences

A comprehensive strategy for public engagement and communications was developed early in the FMP process. The goals of the stakeholder engagement process include the following items.

- Fully informing counties, Tribes, stakeholders, and the general public throughout the FMP development process.
- Providing counties, Tribes, stakeholders, and the public with opportunities to engage and offer input at multiple levels throughout the process.
- Obtaining a better understanding of what Oregonians care about when it comes to forest management.
- Ensuring state agencies are engaged as an integral part of the process and are supportive of the FMP outcomes.
- Providing clear expectations for how stakeholder and public input will be used and integrated into the FMP.
- Aligning engagement and outreach opportunities with related processes such as the *Western Oregon State Forests Habitat Conservation Plan* (HCP) National Environmental Policy Act (NEPA) process and other ODF processes.

The Oregon Department of Forestry (ODF) developed the FMP through a combination of content development by staff and technical experts and feedback from stakeholders and the public. The process for developing the FMP and integrating feedback from stakeholders and the public is listed below.

- **Internal content development**. ODF worked with staff and technical experts to develop draft content.
- **Internal review**. ODF distributed content to ODF leadership, field staff, executive sponsors, and state partners for review.
- **Internal revisions**. ODF staff and technical experts reviewed internal feedback and revised content.
- **Leadership review and approval**. ODF leadership reviewed revised content and requested additional edits or approved content for external sharing.
- **Share content with the Board of Forestry (BOF) and committees**. ODF shared content with the BOF, Forest Trust Lands Advisory Committee, and State Forests Advisory Committee.
- **External review and input**. ODF shared content with the public and stakeholders for review.
- **Review of external feedback and revisions**. ODF reviewed external input and revised content accordingly.

Key Audiences

The engagement effort sought to involve all potentially affected and/or interested individuals, communities, and organizations. The process involved the following groups.

- The BOF
- Business and economic organizations
- Civic groups
- Conservation and wildlife groups
- Counties, including the Forest Trust Land Advisory Committee
- Elected officials
- Existing ODF advisory groups, including the State Forests Advisory Committee
- Federal and state agencies
- General public
- Groups involved in forest management including foresters and fisheries
- Media
- ODF district staff
- Recreational users of the forest

- Small woodland, private forest landowners, and farm and agricultural interest groups
- Tribal representatives
- Timber and forest products industry

The following sections outline the key stakeholder and public engagement activities and include details on the convening interviews, surveys, FMP state agency meetings, meetings open to the public, and stakeholder meetings.

Interviews

A variety of stakeholders and county representatives provided their reflections from the past HCP engagement process, discussed ideas and suggestions for an effective FMP public engagement process, and expressed key interests and concerns related to FMP development. Thirteen virtual interviews took place with individuals of the following entities.

- 350PDX
- Association of Oregon Counties
- Association of Oregon Loggers
- Cascadia Wildlands
- County Commissioners
- EcoTrust
- Forest Land Trust Advisory Committee
- Hampton Lumber
- Oregon Forest and Industry Council
- Oregon Wildlife Society
- Rasmussen Group
- State Forests Advisory Committee
- State Forests Advisory Committee and Recreation
- The Nature Conservancy
- Trout Unlimited
- Wild Salmon Center
- 350PDX

Surveys

ODF developed two surveys to gather feedback from the public on draft goals and strategies. For the draft goals survey, participants were asked to rank support for each goal and provide general feedback. ODF then summarized the goals and posted them to the project website. For the draft strategies survey, participants were asked if the strategies were sufficient to meet their corresponding goal. Participants were also asked to share if the strategies were on the right track, if anything was missing, or if any modifications were needed. A feedback summary was posted to the website. The following is a summary of those results.

- The survey on the Draft FMP Goals was sent out in August 2021; 54 individuals responded, providing a total of 459 comments.
- The survey on the Draft FMP Strategies was sent out in December 2021; 1,344 individuals responded, providing a total of 3,322 comments.
- ODF also solicited email feedback from stakeholders and the public on the Draft FMP Strategies and received 318 email responses.

State Agency Meetings

ODF has continued to work with state agencies throughout the development of the FMP. The FMP state agencies include government agency representatives from the Oregon Department of Environmental Quality, the Oregon Department of State Lands, and the Oregon Department of Fish and Wildlife. Members have been meeting approximately monthly from June 2021 through spring 2023. Members voluntarily work together to provide advice on how the FMP can achieve a mutually acceptable outcome that satisfies, to the greatest degree possible, the interests of all participants. FMP state agencies also serve on the HCP Scoping Team, allowing for continuity between the two processes.

Meetings Open to the Public

Because of COVID-19 concerns and safety precautions, ODF held public meetings via webinars. Stakeholders and members of the public were invited to meetings open to the public using ODF's GovDelivery notification system. GovDelivery was also used to share links to materials, meeting recordings, and surveys.

Five western Oregon FMP meetings open to the public took place between May 2021 and January 2023. The meetings open to the public included updates on the FMP process, presentations, and question and answer discussions followed by informal discussions with meeting participants to discuss topics of most interest to participants. During meetings open to the public, ODF answered questions and received comments on the development of the FMP. Following the meetings, comments related to goals and strategies were provided to ODF to inform revisions.

ODF notification to inform stakeholders and the public about the meetings included the following methods.

- Email distributions to interested parties
- Posts on ODF social media including Facebook and Twitter
- Meeting notices via FlashAlert to media in areas that would be potentially covered in the HCP (including Portland media)
- Posts on the ODF news site
- Posts on the HCP and FMP project webpages

The meetings open to the public received strong participation and engagement. Attendance ranged from approximately 40 to 90 participants (Table A-1).

Table A-1 Public Meetings

Open Public Meeting Date	Attendees	Meeting Purpose
May 6, 2021	Over 70 members of the public attended via webinar	• Provide an introduction to the FMP project and describe the engagement process for this effort. • Provide an update on the HCP and orientation to the Draft HCP on the ODF website. • Provide updates on the HCP NEPA process.
August 10, 2021	Over 70 members of the public attended via webinar	• Provide an update on the FMP project and describe the engagement process for this effort. • Provide an update on the Administrative Draft HCP. • Provide an update on the HCP NEPA process.
October 12, 2021	40 members of the public attended via webinar	• Provide an update on the FMP and regional project and describe the engagement process for this effort. • Provide an update on the Administrative Draft HCP. • Provide an update on the HCP NEPA process.

Open Public Meeting Date	Attendees	Meeting Purpose
December 7, 2021	Over 50 members of the public attended via webinar	• Provide an update on the FMP and regional project and describe the engagement process for this effort. • Provide an update on the Administrative Draft HCP. • Provide an update on the HCP NEPA process.
February 7, 2023	Over 90 members of the public attended via webinar	• Provide an update on the FMP and describe the upcoming engagement process. • Provide an update on the Administrative Draft HCP. • Provide an update on the HCP NEPA process.

Stakeholder Meetings

The project team conducted meetings with interested parties who expressed a cross-section of interests. The purpose of these meetings was to review and discuss FMP goals and strategies or topics as requested. The project team conducted three large meetings and several small meetings as requested. Stakeholder groups included conservation interests, industry representatives, and recreation interests.

ODF held several joint stakeholder meetings to discuss the development of the FMP (Table A-2). These meetings provided an opportunity for stakeholders to learn more about the FMP development process and to provide specific feedback on the draft and strategies of the FMP. Feedback from the meetings was captured in meeting summaries and shared with ODF to inform the FMP. Links to meeting summaries, recordings, and surveys were made available to participants via email.

Table A-2 Stakeholder Meetings

Meeting Date	Attendees	Meeting Purpose
Joint Stakeholders		
August 18, 2021	24 stakeholders attended the meeting, 71 comments received	• Review and discuss draft FMP goals.
December 9, 2021	42 stakeholders attended the meeting	• Review and discuss draft FMP strategies on climate change, carbon, drinking water, forest resilience, wildfire, and soil.

Meeting Date	Attendees	Meeting Purpose
December 13, 2021	40 stakeholders attended the meeting	• Review and discuss draft FMP strategies on timber production, restoration, wildlife, aquatics and riparian, revenue, and recreation, education, and interpretation.
Conservation Interests		
June 24, 2021	Two stakeholders attended the meeting	• Discuss drinking water issues related to the FMP.
February 14, 2022	Three stakeholders attended the meeting	• Discuss FMP goals and strategies feedback.
Industry Representatives		
February 17, 2022	Three stakeholders attended the meeting	• Discuss FMP goals and strategies feedback.

ODF also engaged in several meetings and phone calls with individual stakeholders throughout the process to check in on the development of the FMP and to understand their interests, concerns, feedback, and suggestions as they relate to the FMP.

Forest Trust Land Advisory Committee

ODF provided updates on the FMP during the following Forest Trust Land Advisory Committee meetings.

- May 28, 2021
- August 27, 2021
- September 17, 2021
- October 8, 2021
- December 3, 2021
- February 18, 2022
- August 12, 2022
- February 24, 2023
- April 14, 2023

State Forests Advisory Committee

ODF provided updates on the FMP during the following State Forests Advisory Committee meetings.

- April 23, 2021
- June 11, 2021
- October 29, 2021
- April 8, 2022
- June 24, 2022
- October 27-28, 2022
- April 7, 2023
- June 1–2, 2023

Tribal Sovereign Nations' Coordination

ODF has engaged Tribal Partners in the Government-to-Government framework on the development of the cultural resources goals and strategies through six individual Tribal Workgroup meetings from August 2021 to March 2022. ODF will continue to work with Tribal Partners in this forum to integrate their interests in ODF's planning and implementation processes at every level.

Tribal Partners include the following nine federally recognized Tribes of Oregon: Burns Paiute Tribe; Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians; Confederated Tribes of Grand Ronde; Confederated Tribes of Siletz Indians; Confederated Tribes of the Umatilla Indian Reservation; Confederated Tribes of the Warm Springs Reservation; Coquille Indian Tribe; Cow Creek Band of the Umpqua Tribe of Indians; and The Klamath Tribes.

APPENDIX B

District Maps

FIGURE B-1

Western Oregon FMP Planning Area

639,542 Acres Managed by ODF

FIGURE B-2

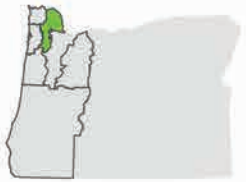
Astoria District Planning Area

136,856 Acres Managed by ODF

FIGURE B-3

Forest Grove District Planning Area

115,004 Acres Managed by ODF



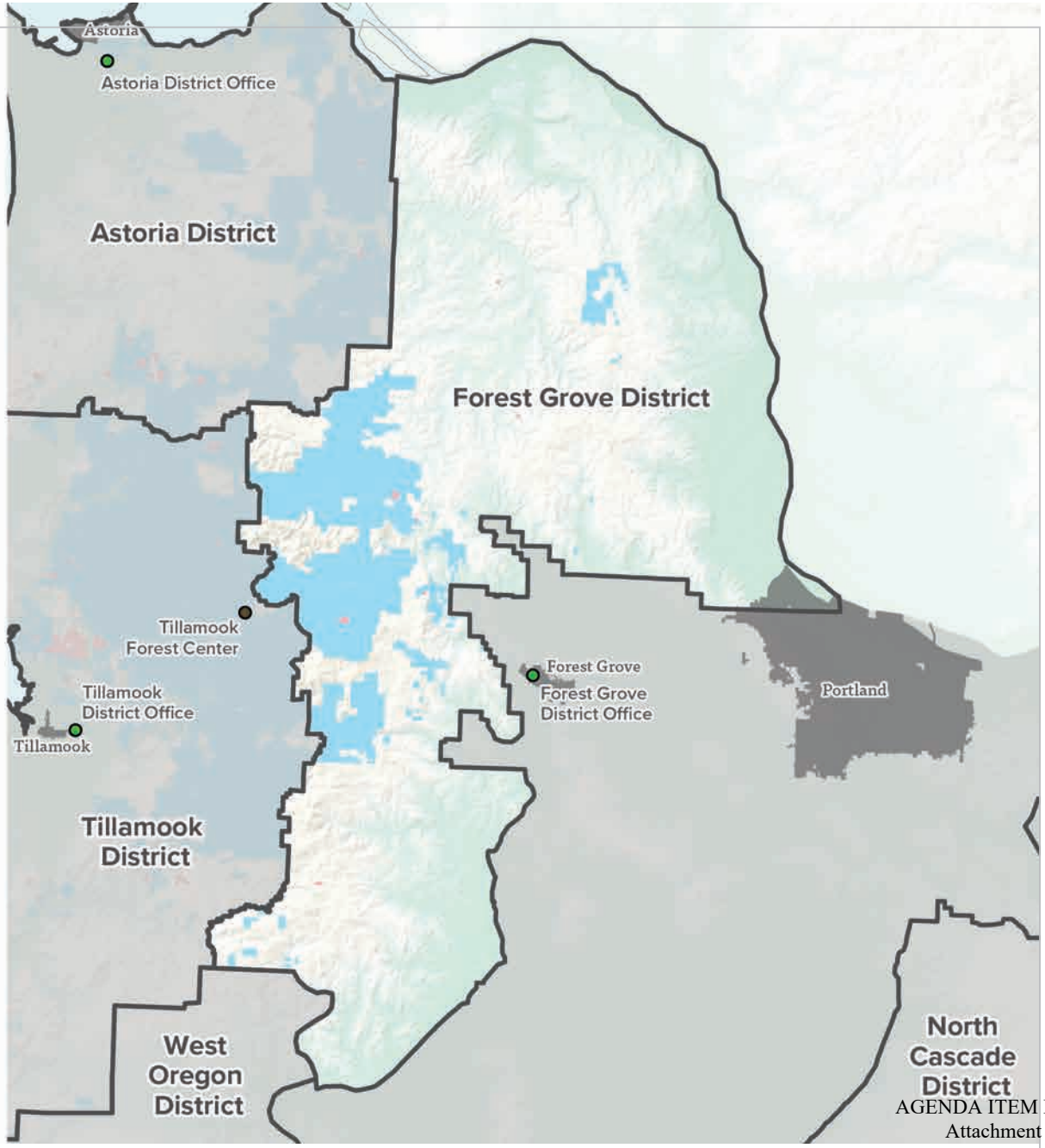


FIGURE B-4

North Cascade District Planning Area

47,475 Acres Managed by ODF

FIGURE B-5

Tillamook District Planning Area

250,583 Acres Managed by ODF

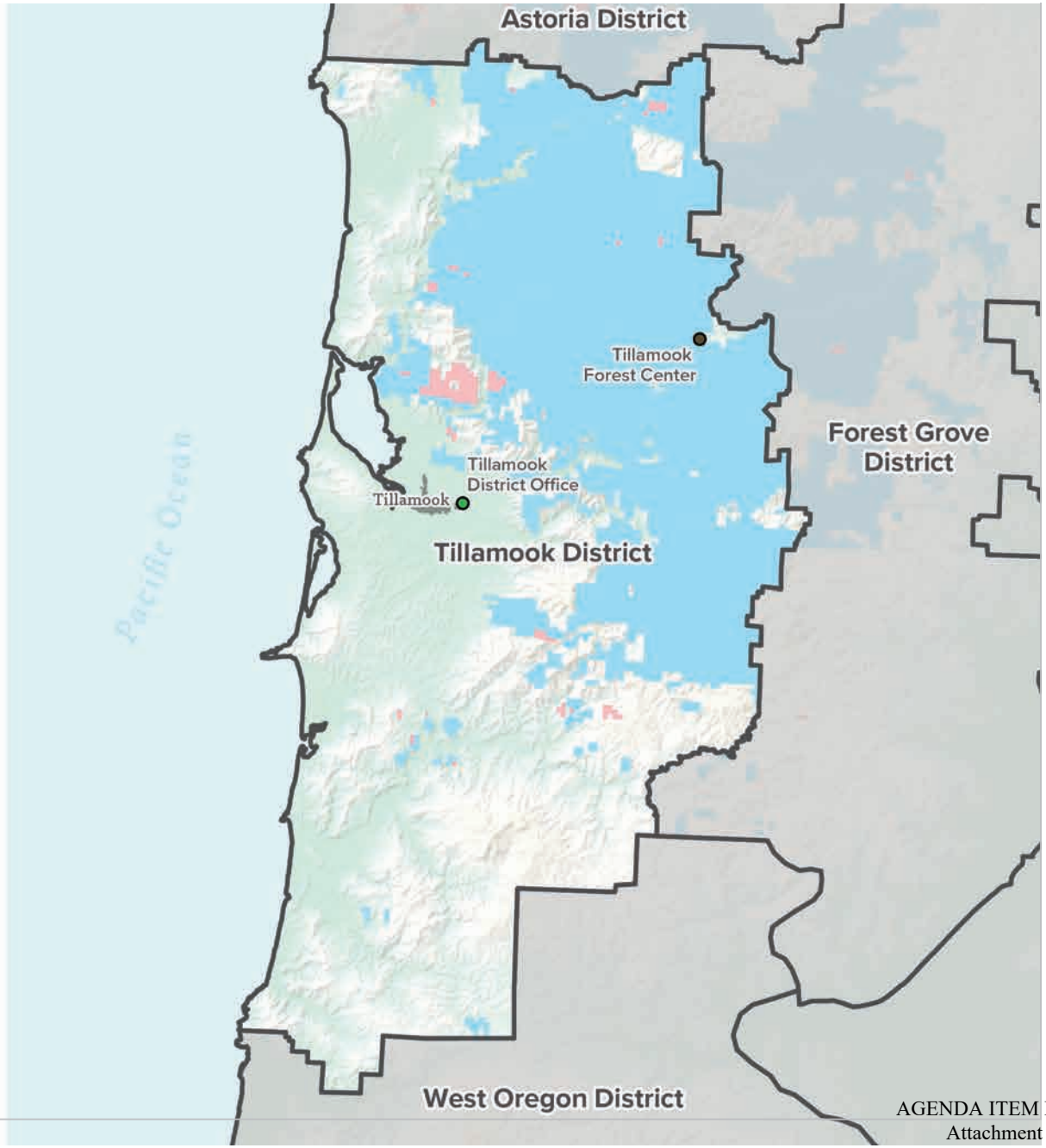


FIGURE B-6

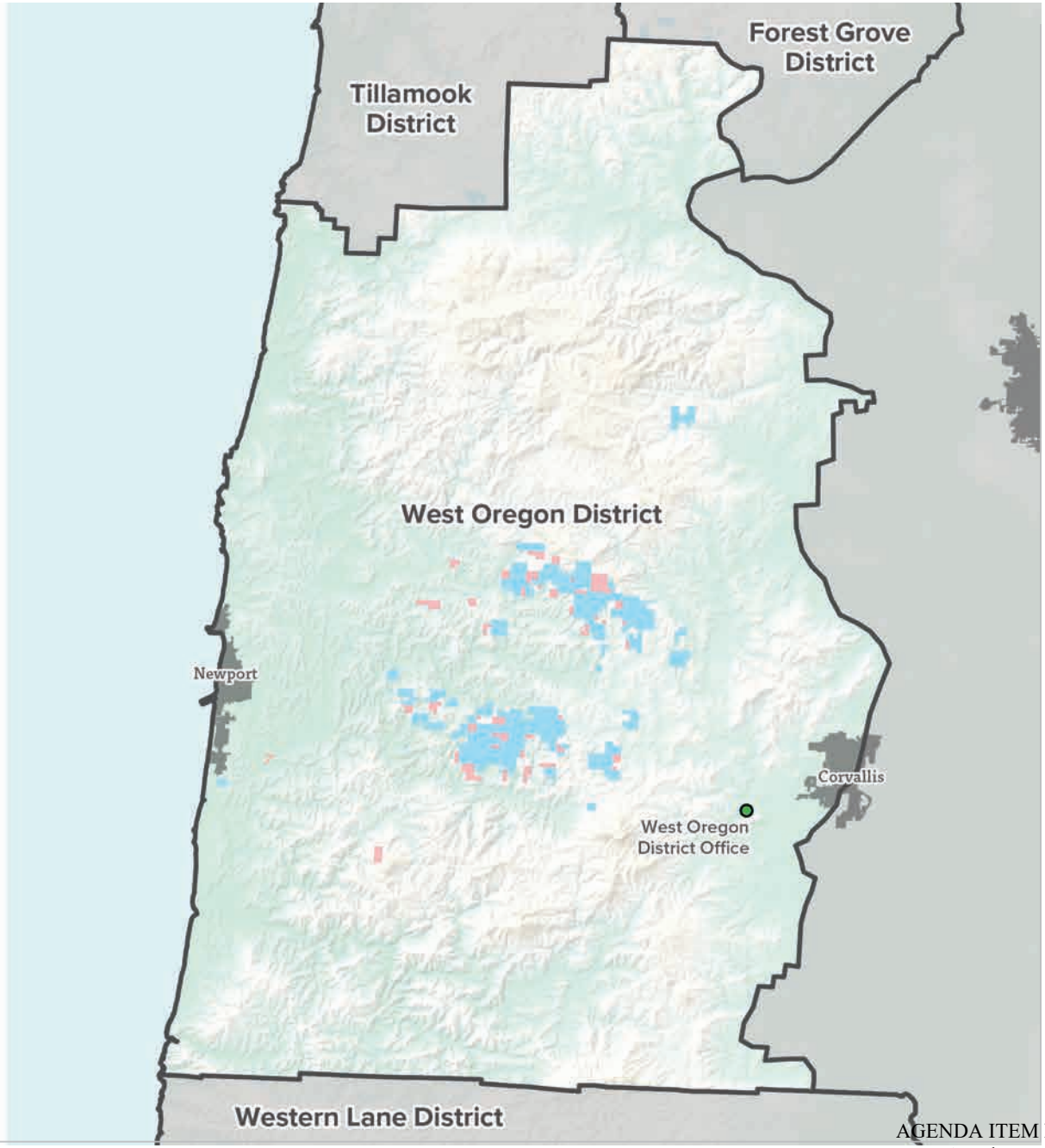
Western Lane District Planning Area

53,035 Acres Managed by ODF

FIGURE B-7

West Oregon District Planning Area

36,587 Acres Managed by ODF



Appendix C
Description of Figures

The Oregon Department of Forestry (ODF) makes every attempt to ensure our documents are accessible. Should you need additional assistance, please contact us at ODF.StateForestMP@ODF.oregon.gov for accessibility assistance.

Acknowledgements

No figures.

Executive Summary

No figures.

Chapter 1 Introduction

Figure Number	Figure Title	Description of Figure
1-1	**Greatest Permanent Value Categories and Icons.** GPV category icons are used throughout Chapter 3, *Forest Resources Goals, and Strategies*, to indicate connections with social,	Examples of social connections include the protection of cultural resources; recreation, education, and interpretation opportunities; and opportunities to collect special forest products (e.g., firewood, edible fungi, and salal). Examples of economic connections include sustainable and predictable production of forest products that support local and regional

Figure Number	Figure Title	Description of Figure
	economic, and environmental resources and concepts.	economies, including revenue generation for local taxing districts and management of state forest lands. Examples of environmental connections are healthy, sustainable, resilient forests; properly functioning aquatic habitats for native fish and aquatic life; habitat for native wildlife; and carbon sequestration and storage.

Chapter 2 Management Approach

Figure Number	Figure Title	Description of Figure
2-1	**Social, Economic, and Environmental Reciprocity.** Ecosystem services deliver social and economic benefits, and social and economic benefits can be obtained in a way that supports environmental benefits.	Figure 2-1 is a flowchart that depicts the connections between ecosystems, humans, and the reciprocity between ecosystem services and services to ecosystems. Ecosystem services provided by the ecosystem itself include provisioning services like timber products, food, and clean air and water, regulating services like carbon storage, cultural services like recreational and spiritual benefits, and supporting services like soil formation and pollination. Human actions that can serve ecosystems include protecting services like fish and wildlife habitat protection, enhancing services like thinning, restoring services like stream enhancement projects, and supporting services like natural resource stewardship practices.
2-2	**Ecologically Sustainable Management.** Practices that promote adaptive capacity to secure GPV.	Figure 2-2 is a flowchart of ecologically sustainable forest management that promotes adaptable, productive, sustainable ecosystems through conservation emphasis areas in a landscape context, management of landscape conditions, and management of stands. Ecologically sustainable forest management aims to provide social, economic, and environmental ecosystem services, such as recreation, education, and interpretation opportunities; properly functioning aquatic habitat for fish and aquatic life;

Figure Number	Figure Title	Description of Figure
		habitats for native wildlife; clean air and water; and other important services.
2-3	**Emphasis Areas and Their Value to the Ecosystem**. The design of emphasis areas across the landscape supports diversity, connectivity, complexity, and redundancy, which support adaptive capacity of the ecosystem for sustained ecosystem services delivery under changing conditions.	Figure 2-3 shows three pictures characterizing different forest ages: young, middle-age, and older. All emphasis areas contribute value to the ecosystem. The design of emphasis areas across the landscape supports diversity, connectivity, complexity, and redundancy, which enhance function and improve adaptive capacity. Young forests (depicted by picture of a deer) are sunlight-filled and provide many wildlife species with abundant food resources, including berries, forbs, and grasses. Middle-age forests (depicted by picture of a salamander) are transitional forests contributing to wildlife habitat connectivity as they mature and develop stand characteristics found in older forests. Older forests (depicted by picture of an owl) contain multi-layered canopies, large trees, snags, and downed wood that provide wildlife nesting, roosting, and denning habitats.
2-4	**Examples of Emphasis Areas across the Landscape.** Active management is integrated across the landscape guided by resource management emphasis areas.	Figure 2-4 shows two aerial views of the same landscape highlighting different subclasses and stewardship classes. View A shows an emphasis on aquatic and riparian habitat subclasses with the stewardship class focused on areas of high value conservation around and near streams in a landscape of partial-cut, variable-density, and regeneration harvest. View B shows recreation subclass emphasis areas, where special stewardship and focused stewardship classes are depicted.
2-5	**Application of the Ecologically Sustainable Approach Management to Deliver Ecosystem Services.** The emphasis areas, policies, and strategies are applied across the planning area to support decision-makers as they strive to further improve	Figure 2-5 is an infographic with three text boxes describing different planning and management levels in western Oregon state lands. Box 1: Within the overall planning area, lands are managed according to: Oregon Revised Statutes, Oregon Administrative Rules, Forest Land Management Classification System (FLMCS), Habitat Conservation Plan (HCP), and policies. Box 2: When managing the smaller scales of landscape or planning areas, as informed by emphasis

Figure Number	Figure Title	Description of Figure
	conditions, adapt plans to response to change; and improve performance over time.	area, decisions are made to improve adaptive capacity to climate change; apply Forest Management Plan (FMP) strategies to FMP goals, including carbon storage; meet HCP Conservation Actions across the landscape, including slope protection, legacy components, in-unit downed wood, and leave trees; and meet Implementation Plan targets, including timber harvest level outputs. Box 3: Adaptive management uses a systematic and rigorous approach to learning from actions to improve management plans, decisions, and implementation; and respond to changes in ecosystem and society.

Chapter 3 Forest Resources, Goals, and Strategies

Figure Number	Figure Title	Description of Figure
3-1	**Distribution of Stand Ages as a Percentage of Western Oregon State Forests.** Compared to even-aged stands, forests with uneven-aged stands often support a greater number of species and are more resistant to windfall and insect outbreaks.	Figure 3-1 is a bar graph showing the age distribution of stands in western Oregon State forests in percentages by 20-year-old age groups. The percent of acres with stands 0–19 years old is 19.5%, 20–29 years old is 10.5%, 40–59 years old is 19.7%, 60–79 years old is 31.1%, and 80–99 years old is 14.3%. The rest of the age-class groupings, from 100 years or older, are <2% of forests.
3-2	**Dominant Tree Species in Western Oregon State Forests.** Tree species richness and composition affect potential vulnerabilities to disturbances and stressors such as insect outbreaks, pathogens, fire, windthrow, drought, and climate change.	Figure 3-2 is a bar graph showing the percent of acres of different tree species in western Oregon State forests in percentages. The dominant forests are mixed Douglas-fir at 40%, followed by homogenous Douglas-fir at 27%. Hemlock and mixed hemlock stands are approximately 13%. Hardwoods and mixed hardwoods are 12%. Open and ready for planting is at 5%, and other species and non-forested lands are at approximately 3%.

Figure Number	Figure Title	Description of Figure
3-3	**Distribution of Quadratic Mean Diameter of Trees in Western Oregon State Forests.** Quadratic mean diameter affects the quality of habitat for some wildlife species and tree bole merchantability.	Figure 3-3 is a bar graph showing the distribution of the quadratic mean diameter of trees in western Oregon State forests as a percentage of forest acres. There is approximately 18% of stands that are non-forested or 0.1–4.9 inches. There is 4% that range between 5 and 99 inches, 28% that is 10–14.9 inches, 35% that is 15–19.9 inches, 12% that is 20–24.9 and 3% that is 25 inches or greater.
3-4	**Distribution of Dominant Tree Species on Western Oregon State Forests.** Douglas-fir-dominated forests comprise the majority of all districts other than Tillamook, but forests dominated by species other than Douglas-fir or by multiple species exist in all districts.	Figure 3-4 shows two side-by-side maps showing tree distribution in different districts on western Oregon State forest lands. One map shows the districts in the north which includes Astoria, Forest Grove, and Tillamook. The other map shows the districts in the south which includes West Oregon, North Cascade, and Western Lane. Douglas-fir-dominated forests comprise most of all districts other than Tillamook, which also has a large proportion of mixed hardwoods and hardwood-dominated forests. However, forests dominated by species other than Douglas-fir or by multiple species are present in all districts.
3-5	**Swiss Needle Cast on State Forest Lands.** Annual observations and 3-year moving average of Swiss needle cast-infected acres across state forest management since 2010.	Figure 3-5 is a combination of a bar graph showing acres infected by Swiss needle cast on state forest lands in annual observations from 2010 until 2018 and a line graph showing the 3-year moving average. From 2010 to 2014, the total and average acres infected remained below 40,000. In 2015, the annual observations increased to 70,000 acres and 3-year average increased to 50,000. By 2018, while the annual observation of acres has dropped since 2015 to approximately 55,000, the moving average has continued to increase to above 60,000.

Figure Number	Figure Title	Description of Figure
3-6	**Percent of Planning Area District Lands by Overall Wildfire Risk Category as of 2018.** Risk is a product of the likelihood and consequences of wildfire to infrastructure and natural resources. Wildfire can be either beneficial or detrimental.	Figure 3-6 is a bar graph that describes the overall fire risk level for each district by percentage of its' land within wildfire risk categories as of 2018. Most district lands are low risk, with 76–85% falling within that category and ≤14% in any of the moderate, high, or very high risk classifications. Two districts have higher wildfire risk than other districts. North Cascade has 55% of its lands at moderate risk and 14% at high risk, with 1% at very high risk. Western Lane has 34% at moderate risk, 12 % at high risk, and 12% at very high risk.
3-7	**Scenic Waterways.** Scenic-designated segments of the Nestucca, Nehalem, and Rogue Rivers flow through the planning area.	Figure 3-7 is a four-panel map showing the scenic-designated segments of rivers within different districts of the planning area. One panel shows an overview of western Oregon State forest districts and the state's scenic-designated water ways. The other panels show details of which districts have sections of scenic waterways. A segment of the Nehalem River Scenic Waterway flows through the Astoria and Tillamook Districts. A segment of the Nestucca Scenic Waterway flows through both Tillamook and Forest Grove Districts. And a segment of the Rogue Scenic Waterway flows through Western Lane District.
3-8	**Slope Steepness across the Planning Area.** The highest percentage of steeper slopes in the planning area are on the Tillamook and Western Lane Districts.	Figure 3-8 is a bar graph showing acres of each district that are 0–30% slope, 30–60% slope, and >60% slope. Tillamook District has approximately 125,000 acres of the total district area of 250,583 acres that have slopes greater than 60%, the largest area of all districts.
3-9	**Fine- and Coarse-Grained Soils by District.** The Tillamook District has the highest proportion of coarse-grained soils in the planning area.	Figure 3-9 is a bar graph showing acres of each district that are either fine- or coarse-grained soils. Astoria, West Oregon, and Western Lane Districts have predominantly fine-grained soils. Forest Grove, North Cascade, and Tillamook Districts have predominantly coarse-grained soils.
3-10	**Paths of the Forest Carbon Cycle.** Forest vegetation	Figure 3-10 is a flow diagram showing carbon dioxide capture and emissions as part of a forest's carbon

Figure Number	Figure Title	Description of Figure
	sequesters carbon dioxide from the atmosphere in living tissues and provides long-term storage of carbon in trees, snags, downed wood, other plants, and soils.	cycle. Carbon dioxide is removed from the atmosphere as forests grow and age. Carbon dioxide is released by fire, decomposition, biomass products like wood pellets, and short-term consumer products like paper. Long-lived products, like lumber, can sequester carbon until they start to decompose.
3-11	**Estimated Average Aboveground Carbon in Woody Biomass across ODF Districts**. Data are based on the 2020 Forest Inventory and Analysis Plots on western Oregon State forests.	Figure 3-11 is a bar graph of aboveground carbon in woody biomass measured by metric tons per hectare. The average aboveground carbon of all districts is 133. The aboveground carbon of individual districts are as follows: Astoria is 142, Forest Grove is 129, North Cascade is 165, Tillamook is 125, West Oregon is 110, and Western Lane is 146.
3-12	**Watersheds Overlapping with Northwest Districts and FMP Planning Area**. The median percentage of ODF-managed lands ownership in northwest districts by HUC-12-sized is 26% (range <1% to 100%).	Figure 3-12 is a map of the FMP planning area districts with Hydrologic Unit Code (HUC)-12 watersheds overlayed. HUC-12s are the smallest-sized watershed delineated by the U.S. Geological Survey.

Chapter 4 Guidelines

Figure Number	Figure Title	Description of Figure
4-1	**Links among the FMP and Other Plans and Policy Guidance**	Figure 4-1 is a flow diagram showing the connections and feedback between FMP direction and implementation. FMP direction described as falling under the Board of Forestry (BOF), shows two boxes with arrows connecting them in both directions: one for the FMP and one for the BOF review of FMP performance measures. The FMP box in turn connects to a separate section with many interacting components under FMP implementation, which is carried out by the State Forester/ODF Department of Forestry staff. Implementation Plans,

Figure Number	Figure Title	Description of Figure
		which set medium-term targets are informed by the FMP, FLMCS, HCP, and policies lead to Operation Plans, which set short-term targets. Funding level, Operation Plans, and monitoring lead back to adaptive management plans that are reviewed by the BOF and then informs the FMP, HCP, and FLMCS, and operational policies.
4-2	**Structured Decision-Making Process.** The process supports multi-objective decision-making based on deliberation, estimated outcomes of alternative actions, and clear choices upon which decision-makers can act.	Figure 4-2 is a diagram depicting the circular connection between the five steps for making decisions in a structured process; all steps are connected by a dashed line. After the five steps are taken and a decision is made, step six is to implement, monitor and review, which connects back to step one of the process.
4-3	**Adaptive Management Plan Workflow.** This workflow shows key AMP roles and how they can affect FMP implementation through decision support, monitoring, and reporting.	Figure 4-3 is a workflow diagram for adaptive management, which uses a structured decision-making process that necessitates monitoring and reporting. Monitoring leads to decision support for adaptive management and reporting that will inform any needed structured decision-making. Monitoring is also designed to incorporate performance measures and habitat conservation plans. Decision recommendations through the adaptive management structured decision-making process leads to Implementation Plans, HCPs, policies, best management practices, etc.

Glossary

No figures.

References

No figures.

Appendix A Engagement

No figures.

Appendix B District Maps

Figure Number	Figure Title	Description of Figure
B-1	**Western Oregon FMP Planning Area.,** 639,542 Acres Managed by ODF	Figure B-1 is a map of the FMP planning area with all districts managed by ODF that are west of the Cascade Mountains.
B-2	**Astoria District Planning Area,** 136,856 Acres Managed by ODF	Figure B-2 is a map of the Astoria District that is in the north-coast part of the FMP planning area.
B-3	**Forest Grove District Planning Area,** 115,004 Acres Managed by ODF	Figure B-3 is a map of the Forest Grove District that is in the northern part of the FMP planning area, east of the Astoria and Tillamook Districts.
B-4	**North Cascade District Planning Area,** 47,475 Acres Managed by ODF	Figure B-4 is a map of the North Cascade District that is in the northern part of the FMP planning area. The North Cascade District is east of Astoria, Tillamook, Forest Grove, and Western Oregon Districts. The district goes as far north as the Astoria District and ends in the south at the Western Lane District, but state forest lands are generally east of Salem.
B-5	**Tillamook District Planning Area,** 250,583 Acres Managed by ODF	Figure B-5 is a map of the Tillamook District that is in the north-coast part of the FMP planning area, south of the Astoria District and west of the Forest Grove District.
B-6	**Western Lane District Planning Area,** 53,035 Acres Managed by ODF	Figure B-6 is a map of the Western Lane District that is in the southern part of the FMP planning area. The Western Lane District lies south of all other western districts.
B-7	**West Oregon District Planning Area,** 36,587 Acres Managed by ODF	Figure B-7 is a map of the West Oregon District that is in the western part of the FMP planning area. It is north of the Western Lane District and south of the Tillamook and Forest Grove Districts.

STAFF REPORT

Agenda Item No.:	C
Work Plan:	Forest Resources Division
Topic:	Implementing Legislative Direction
Presentation Title:	Appointments to the Independent Research and Science Team
Date of Presentation:	January 8, 2025
Contact Information:	Josh Barnard, Division Chief, Forest Resources Division, ODF, Josh.W.Barnard@odf.oregon.gov;Terry Frueh, Adaptive Management Program Coordinator, Forest Resources Division, ODF, Terry.Frueh@odf.oregon.gov Kelly Burnett, Chair, Independent Research and Science Team

SUMMARY

The Independent Research and Science Team (IRST) has nominated two candidates to join the IRST and is seeking a Board decision to accept these nominations. This is a decision item.

CONTEXT

The legislature directed the board to set up an adaptive management program. The program's purpose is to help inform future rulemaking and support an application for a programmatic habitat conservation plan (HCP), and subsequent incidental take permits from NOAA Fisheries and the US Fish and Wildlife Service. The goal of the program is to use best available science to assess the rule effectiveness for protecting several fish and other aquatic species. The program requires the Adaptive Management Program Committee (AMPC) to direct the program's work. The IRST oversees research requested by the AMPC and reports the associated results to the Board and the AMPC.

BACKGROUND

In February 2020, a coalition of conservation groups, the Oregon Small Woodlands Association, and forest industry representatives agreed to revise the Forest Practices Act and administrative rules through a memorandum of understanding, which included mediated discussions, known as the Private Forest Accord (PFA). The bill set the timeline and topics for making changes to the Forest Practices Act and rules from which the Board could apply for a programmatic HCP. The PFA concluded in late 2021. In March 2022, the legislature adopted the PFA recommendations through Senate Bills 1501 and 1502, and House Bill 4055. Senate Bill 1501 incorporated by reference the Private Forest Accord Report dated February 2, 2022. The PFA Report further detailed the recommended changes to the Act and rules and a pathway for an HCP. The HCP has a statutorily-mandated approval deadline of Dec. 31, 2027. A key part of the rules is the adaptive management program. In addition to the Board, this program has two primary participants:

1. The AMPC develops the policy direction for the program.
2. The IRST oversees the research and monitoring to address the policy direction.

ANALYSIS

The AMPC recommended in June 2023 that the Board appoint the initial slate of IRST nominees. According to law, the AMPC nominated IRST members to ensure at least one representative from each of three groups (public institution, timber, and conservation) per section 38(2)(b), chapter 33, Oregon Laws 2022. Although the AMPC did not specifically identify which nominee represents the public institution, timber, and conservation seats, they worked to ensure balanced representation of perspectives and consistency with statutory requirements.

The IRST is requesting the Board appoint two new members to the IRST. The IRST decided to add two members to the group because:

1. IRST is currently at the minimum number (5) of members specified in law, and they sometimes have insufficient attendance to make substantial decisions. Adding two members will keep them moving forward in a timely manner and complies with the statutory provision that the total voting membership must be an odd number.
2. The IRST needs disciplinary expertise in hydrology and geomorphology to help with the current slate of research questions on which they are working.

The IRST developed a process (described here) to nominate new members, which they used for the first time in nominating the two potential members. The IRST values inclusion of diverse ideas and perspectives in support of the Adaptive Management Program, as noted in its founding charter. When discussing the scientific disciplines needed to fill key gaps in IRST expertise, the IRST considered the overall composition of its members through a DEI lens and contacted a diverse group of individuals to apply for potential IRST membership. The IRST will continue to incorporate diverse perspectives into its work.

RECOMMENDATION

The IRST recommends that the Board appoint the following nominees to the IRST:

IRST Nominee	Organization
Josh Roering, Ph.D.	University of Oregon
Michael J. Furniss, M.S.	Smith River Alliance; Sacred Groves; Cal Poly U.-Humboldt (adjunct)

The nominees' CVs are available by following the link below, or by scanning the QR code.
https://www.oregon.gov/odf/board/bof/bof-irst-cv-furniss-and-roering.pdf

NEXT STEPS
The department will coordinate with the IRST Housing Agency named in rule (the Institute for Natural Resources at Oregon State University) to onboard the new IRST members.

ATTACHMENT

1. IRST nomination packet

Oregon State University

Institute for Natural Resources

Oregon State University, 234 Strand Agricultural Hall | Corvallis, Oregon 97331

Phone 541-737-9918 | Fax 541-737-1887 | http://inr.oregonstate.edu

September 18, 2024

Dear Chair Kelly and Board of Forestry Members,

At the meeting of the Independent Research and Science Team (IRST) on September 4, 2024, a process to nominate new members was voted on as a substantial decision and unanimously approved consistent with Oregon Laws 2022, section 38(6), chapter 33 and OAR 629-603-0400(2)(f). The IRST followed this process, based on Robert's Rules of Order, in nominating the two additional members, who we are now submitting to the Board of Forestry for approval.

In compliance with ORS section 38(6), chapter 33, the current composition of the IRST contains one voting member representing "a public institution, the timber industry, and a nongovernmental organization that promotes conservation of freshwater aquatic habitat." Given that the IRST meets this requirement, the two factors prompting our interest in adding members are described below.

The first factor is improving the continuity and decision-making ability of the team. The current five-member team is the minimum number specified in law. If one member leaves, replacing them will likely take several months to complete the recruitment, nomination, and approval processes. Thus, the IRST will fall below the minimum membership, which will prevent all substantial decisions and open non-substantial decisions to challenge until a new member is added. The IRST determined that adding two members best addresses the need and complies with the statutory provision that the total voting membership must be an odd number. This accommodates temporary absences, enabling flexibility in meeting the legal requirement that "the team shall make substantial decisions by a vote of at least two-thirds of team members" and maintains overall efficiency in decision making.

The second factor is the mix of disciplines deemed necessary for providing the highest quality, unbiased science to meet the immediate and near-future policy demands of the Adaptive Management Program Committee (AMPC) and the Board of Forestry. The two research questions that have been posed by the AMPC to the IRST concern monitoring the hydrologic connectivity of roads and a literature review of steep slopes in eastern Oregon. Based on discussions with the Chairs of the AMPC, the IRST anticipates beginning work on three additional topics over the next year. These involve developing: 1) studies of the

amphibians considered in the Private Forest Accord Report, 2) a strategy to monitor the efficacy of the steep slopes model that is used to identify Slope Retention Areas and Designated Debris Flow Traversal Areas under OAR 629 Division 630, and 3) a program to monitor the status and trends of stream and riparian characteristics, such as large wood, shade, and fine sediment, for effectiveness monitoring under OAR 629-603-0100(1)(a). Given these five topics and taking into account the expertise of current members, the IRST prioritized adding a forest hydrologist, geomorphologist, forest/roads engineer, or forest ecologist/riparian ecologist. Another consideration was to add someone with applied experience.

Within this overarching context, the IRST is fortunate to be nominating for Board of Forestry approval two highly respected experts, Dr. Josh Roering, who is a geomorphologist, and Mr. Michael Furniss, who is a forest hydrologist with applied expertise related to roads.

Respectfully submitted on behalf of the IRST,

Kelly Burnett

Kelly M. Burnett, PhD
Chair, Independent Research and Science Team

CC: Lisa Gaines, PhD
Director, Institute for Natural Resources

Oregon State University

Institute for Natural Resources

Oregon State University, 234 Strand Agricultural Hall | Corvallis, Oregon 97331

Phone 541-737-9918 | Fax 541-737-1887 | http://inr.oregonstate.edu

September 19, 2024

Dear Chair Kelly and Board of Forestry members,

It is my honor to recommend Dr. Josh Roering as a member of the Independent Research and Science Team (IRST). Dr. Roering is a highly respected geomorphologist and a Professor in the Department of Earth Sciences at the University of Oregon. His studies underpin much of what we know about landslides and debris flows in the Pacific Northwest. Dr. Roering's research emphasizes understanding about how tectonics, climate, fire, and anthropogenic activities impact floods, soils, erosion, and landslides. Results of this research have been disseminated in over 100 peer-reviewed publications. His career during the past 25 years includes advancing theoretical perspectives in geomorphology and applying that theory to address real-world challenges related to public safety and land management.

Dr. Roering will bring outstanding skills in geomorphology to the IRST that include topographic and statistical analyses, laboratory analyses, field experimentation, and modeling. He will also contribute to the collaborative nature of the IRST in that he has routinely worked across cultures and disciplines. He has experience collaborating with tribal communities and with professionals from disparate technical fields such as engineering, biology, atmospheric science, insurance policy, anthropology, risk management, and soil science.

Dr. Roering has led and participated on numerous teams with various objectives related to planning, conducting, overseeing, and evaluating science. Among these, he served as the Head of the Department of Earth Sciences at the University of Oregon and on the Board of Directors for the University Navstar Consortium (UNAVCO), which is a 110+ employee, non-profit, NSF-funded consortium for measuring the Earth's surface. Dr. Roering has been a member of several scientific committees, including those of the National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF). He also was on the editorial team of the top peer-reviewed journals in his field. Through such service along with his own history of successfully funded research, Dr. Roering has extensive expertise in drafting and reviewing scientific proposals and manuscripts.

Dr. Roering has demonstrated experience in interpreting science for policy makers, the public, and other scientists. He currently serves on the advisory committee for the Center for Scientific Communication Research at the University of Oregon. In 2018, Dr. Roering was recognized as a Fellow of the American Geophysical Union (AGU), which is the largest international organization dedicated to Earth and space sciences. Fellows "demonstrate scientific eminence in science through achievements in research" and "exemplary leadership in following and promulgating AGU values such as mentoring, public engagement, and communication."

I have collaborated with Dr. Roering on research projects that resulted in peer-reviewed publications and can personally attest to his scientific excellence, integrity, objectivity, and collegial spirit. The State of Oregon will be exceedingly fortunate to have a scientist of Dr. Roering's caliber join the ranks of the IRST in supporting the missions of the Adaptive Management Program Committee and the Board of Forestry.

Respectfully submitted,

Kelly Burnett

Kelly M. Burnett, PhD
Chair, Independent Research and Science Team

CC: Lisa Gaines, PhD
Director, Institute for Natural Resources

Oregon State University

Institute for Natural Resources

Oregon State University, 234 Strand Agricultural Hall | Corvallis, Oregon 97331

Phone 541-737-9918 | Fax 541-737-1887 | http://inr.oregonstate.edu

September 19, 2024

Dear Chair Kelly and Board of Forestry members,

I am honored to recommend Mr. Michael Furniss as a member of the Independent Research and Science Team (IRST). He is a forest hydrologist and one of the nation's experts on forest roads. Mr. Furniss has developed training materials and software as well as authored numerous peer-reviewed publications, technical reports, and science syntheses regarding roads. These products address topics such as transportation analysis and planning, fish passage through road-stream crossings, responses of roads to floods and landslides, methods of monitoring roads and assessing risk, and evaluating potential hydrologic connectivity of roads and implications for water quality and aquatic habitat.

Throughout his career, Mr. Furniss has designed and implemented monitoring systems that promoted accountability and enabled adaptive management. He developed a system for monitoring the implementation and effectiveness of Best Management Practices in the National Forests of California, which was adapted for use in all National Forests and Grasslands across the United States. Mr. Furniss also served for two years as Team Leader during development of the Aquatic and Riparian Effectiveness Monitoring Program (AREMP) for the 27 million acres of federal lands in Oregon, Washington, and California managed under the Northwest Forest Plan.

In addition to his applied work with the U.S. Forest Service, Mr. Furniss has conducted research and consulted internationally on matters related to land management and adapting to a changing climate. He is an Adjunct Professor at the California Polytechnic University-Humboldt in the Department of Environmental Resource Engineering and in the Department of Forestry, Fire, and Rangeland Management. Mr. Furniss has advised governments and taught foresters in the United States, Vietnam, India, Ecuador, Columbia, and Peru. For example, he served as a team leader, curriculum developer, and lecturer for a short course in "Environmental Monitoring" presented at the Forest Research Institute of India to senior foresters and policy makers.

Mr. Furniss has extensive experience collaborating on and leading interdisciplinary teams. His practical and scientific knowledge along with excellent communications skills resulted in his appointment at the

Pacific Northwest Research Station as a "Boundary Spanner." That position was created to facilitate dialogue among policy makers, practitioners, and researchers for the purpose of advancing and applying the most relevant watershed science to forest management.

I have had the good fortune to interact professionally with Mr. Furniss on many occasions over the last 30 years. He is the rare individual who can draw on a deep well of technical knowledge to solve practical problems. Mr. Furniss is one of the most effective and compelling communicators I have encountered. He seems to have the capacity to engage any audience when translating complex technical issues into common-sense understanding. Given his knowledge of forest hydrology, applied experience, collegial approach, and outstanding ability to communicate, Mr. Furniss will be a valuable asset to the IRST. Further, his experience working in California and the Rocky Mountains will benefit the IRST when tackling issues for Oregon's drier private forestlands. The State of Oregon will be exceedingly fortunate to add Mr. Furniss' broad portfolio to help fulfill the role of the IRST in supporting the Adaptive Management Program Committee and the Board of Forestry.

Respectfully submitted,

Kelly Burnett

Kelly M. Burnett, PhD
Chair, Independent Research and Science Team

CC: Lisa Gaines, PhD
Director, Institute for Natural Resources

Statement of Interest, Independent Research and Science Team, Oregon Board of Forestry
Josh Roering, Eugene, Oregon, 3-September-2024

My interest in serving on the IRST stems from my decades-long focused study of geomorphic processes in forested steeplands. While the early stages of my academic career were devoted to advancing theoretical perspectives in geomorphology, more recently my priorities have shifted to improve our use of theory and emerging datasets to address pressing challenges. More specifically, my research group uses an array of tools, such as topographic and statistical analyses, analog experiments, computational models, and laboratory analyses, to document and quantify landscape form and geomorphic process rates and tackle questions relevant to public safety and land management. These questions often require us to bridge highly disparate timescales and decipher how tectonics, climate, and anthropogenic activities impact erosion, landslides, floods, and soils. Because the Earth's surface is the product of a complex and fascinating suite of processes, our ability to be predictive demands a well-articulated geomorphic perspective that is informed by the long term trajectory of landscapes. Serving on the IRST will enable me to contribute my experience and skills to assess how forest management influences mass wasting processes in eastern Oregon, which is an understudied question, as well as assess the accuracy of models for steepland processes, particularly landslides, in western Oregon.

My ability to serve on IRST is compatible with my academic appointment at the University of Oregon. My teaching, research, and administrative commitments afford substantial flexibility to commit to IRST meetings and project work. In addition, I have the ability to draw upon the expertise and availability of my graduate students, who are highly skilled in numerous analyses and characterization of the literature.

Over the course of my career, I have evaluated and interpreted science in a wide range of venues. For example, I served as an associate editor for two prominent scientific journals, reviewed >600 scientific manuscripts and proposals, and delivered over 100 talks to scientific communities as well as the general public. I have been interviewed by a wide array of national news outlets, such as the New York Times and Fox Weather Channel, on multiple occasions, and I currently serve on the advisory committee for the Center for Scientific Communication Research at the University of Oregon. My research program enables me to collaborate broadly and my recent scientific papers include colleagues from disparate fields, such as engineering, biology, atmospheric science, insurance policy, anthropology, risk management, and soil science.

In recent years, I gained substantial experience working and collaborating in teams. During my 7 years as department head and associate department head, I oversaw the instructional, research, and outreach activities for over 180 people, including faculty, researchers, students, and staff. More recently, my work on two multi-disciplinary National Science Foundation projects focused on landslide hazards in SE Alaska has allowed me to work directly with tribal communities to inform their efforts to become more resilient and mitigate risk related to landslides and floods. Thus far, this work has resulted in the creation of landslide warning systems, hazard maps, and meaningful partnerships between tribes, governmental agencies, non-profit organizations, and academic institutions. Finally, as an Oregonian (at least since 2000), I am deeply committed to advancing our understanding of Oregon landscapes.

September 1, 2024

Michael J. Furniss

I am writing to express my strong interest in joining the IRST group. I understand the position requires significant part-time work, which aligns with my availability and professional goals.

With over four decades of experience in forest watershed management, I can bring valuable expertise to your team. My background includes:

- 40+ years of experience in watershed- and fish-friendly roads, including teaching, technology development, transportation analysis and planning, inventory, research, and monitoring of wildland road impacts to water quality and aquatic habitats.
- 20 years of specialized work in fish passage through road-stream crossing culverts, including as the primary developer of the FishXing software and learning system, which remains in use worldwide.
- 35 years of developing and implementing land management monitoring systems that promote accountability and adaptive results. With two others, I developed a system for monitoring the implementation and effectiveness of Best Management Practices for the National Forests of California. After ~10 years of implementation, this system was seen as highly effective and efficient and was adapted for use in all National Forests and Grasslands in the USA. The national system has been in use for ~14 years and provides robust accountability and findings that directly support adaptive corrections. I was primarily responsible for the roads portion of the National BMPs and the associated BMP monitoring.

Throughout my career, I have collaborated across disciplines with professional teams. My interdisciplinary approach and broad knowledge of both science and management led to my appointment at the Pacific Northwest Station in 2000 as a "Boundary Spanner," where my primary role was to bridge scientific research and land management.

I retired from the Forest Service in 2013. I have stayed active, teaching about climate change and vulnerability assessment internationally in SE Asia, South Asia, and NW South America, as well as conducting many large-scale climate vulnerability assessments of infrastructure on public lands in the western US. I function as the primary Subject Matter Expert for the Forest Service's annual International Seminar in Climate Change. I am also a developer of a green, tree-based cemetery near here and contribute expertise to others doing conservation burial work.

My background in watershed management, wildland road impacts, aquatic ecology, and monitoring systems, combined with my collaborative, team-oriented approach, would be an asset to your team.

I am excited about possibly contributing to the IRST's important work.

Thank you for your consideration.

Sincerely,

Michael J. Furniss
Adjunct Professor
Department of Forestry, Fire, and Rangeland Management
California Polytechnic University, Humboldt

STAFF REPORT

Agenda Item No.:	D
Work Plan:	Forest Resources Division
Topic:	Implementing Legislative Direction
Presentation Title:	Appointments to the Adaptive Management Program Committee
Date of Presentation:	January 8, 2025
Contact Information:	Josh Barnard, Division Chief, Forest Resources Division, ODF, Josh.W.Barnard@odf.oregon.gov; Terry Frueh, Adaptive Management Program Coordinator, Forest Resources Division, ODF, Terry.Frueh@odf.oregon.gov

SUMMARY

This agenda item is for the Board to renew the terms of several Adaptive Management Program Committee (AMPC) members. This is a decision item.

CONTEXT

The legislature directed the Board to set up an adaptive management program. The program's purpose is to help inform future rulemaking and support an application for a programmatic habitat conservation plan, and subsequent incidental take permit. The goal of the program is to use best available science to assess the rule effectiveness for protecting several fish and other aquatic species. The program requires the AMPC to direct the work. The AMPC's main functions are to set the research agenda for the program and make recommendations to the Board based on research findings.

BACKGROUND

Following mediated discussions between conservation and forest industry groups (i.e., Private Forest Accord), the legislature adopted the accord recommendations through Senate Bills 1501 and 1502, and House Bill 4055. Senate Bill 1501 incorporated by reference the Private Forest Accord Report dated February 2, 2022. The PFA Report further detailed the recommended changes to the Act and rules and a pathway for an HCP. A key part of the rules is the Adaptive Management Program.

ANALYSIS

Senate Bill 1501 names ten voting and three non-voting organizations on the AMPC. The department solicited names from these organizations to serve as committee members and were asked to consider diversity in the nominations. The Board approved the initial list of AMPC nominees at their November 16, 2022 meeting. Representatives for the Coalition for Oregon Land Trusts (COLT) and the Associated Oregon Loggers (AOL) terms expire on December 31, 2024. COLT and AOL request that their respective representatives' terms be renewed. Biographies of each AMPC member can be found here.

RECOMMENDATION

The department recommends that the Board reappoint the following people to the AMPC:

Member	Organization	Term expires December 31 of:
Wendy Gerlach	COLT	2028
Amanda Sullivan-Astor	AOL	2028

ATTACHMENT

None.

STAFF REPORT

Agenda Item No.:	E
Presentation Title:	*Vision for Oregon's Forests*
Date of Presentation:	January 8, 2025
Contact Information:	Joy Krawczyk, Public Affairs Director

SUMMARY

- This consent agenda item is intended to close out work on the first iteration of the *Vision for Oregon's Forests* by entering the final product into the official Board record.
- Design work on the *Vision for Oregon's Forests*, effective January 2025, is complete. The 13-page, full color publication is now ready for broader release and incorporation into all facets of agency operations.
- The focus for 2025 is to build the necessary connections between the *Vision for Oregon's Forests* and all lines of Department business. See "Next Steps" below for more details.

NEXT STEPS

- Post *Vision for Oregon's Forests* in key locations on the Department's website, including the Board's webpage.
- Rollout new mission, vision, values and priorities to Department staff throughout 2025, beginning in February.
- Develop and implement agency planning processes that build upon the foundation provided in the *Vision for Oregon's Forests,* are informed by other key agency plans and strategies, and promote aligned annual and biennial plans and operations across all levels of the agency.

ATTACHMENTS

- *Vision for Oregon's Forests*, January 2025

*The **Oregon Board of Forestry** and*

***Department of Forestry's** shared*

Vision for Oregon's Forests

Adopted: September 2024

Our shared vision: Complex and resilient forest ecosystems that endure and adapt.

Our shared mission: To protect and promote resilient forests that benefit all Oregonians.

Our shared values

Healthy ecosystems

Healthy, functioning ecosystems provide many benefits to people, including timber, food, clean air and water, recreation, habitat, regional biodiversity, carbon storage, and so much more.

Ecosystems support

People's actions are critically important to the continued resilience and adaptive capacity of forest ecosystems, including habitat protection, wildfire management, seedling selection, cultural and natural resources stewardship, restoration activities, and water and soil protection.

Forestry infrastructure

The forest products sector—including its workforce and infrastructure—plays a vital role in supporting healthy ecosystems and resilient forests and communities.

Climate-smart forestry

Addressing the management needs related to climate change requires a holistic approach that considers adaptation, mitigation and the social dimension of forestry, which includes community and economic aspects.

Relationships

Strong, respectful relationships are the backbone of our organization. Those relationships are built and maintained through transparent, honest, effective communication.

Workforce

Our workforce is our greatest asset. We provide them with a safe, diverse and inclusive workplace that encourages continuous learning and improvement.

Safety

Much of the work we do—including firefighting—is both inherently dangerous and necessary to accomplishing our mission. Therefore, safety of our workforce and the public must be a top priority.

Public service

Through efficient and effective stewardship of natural and public resources, we strive for excellence in our service to the public.

Sound decision making

We empower our workforce to make decisions in the best interest of Oregonians based on science, best practices and lessons learned.

Accountability

We are transparent about our actions and take ownership of the outcomes. We do what we say we're going to do.

Purpose

Forests are an integral part of the social economic and environmental fabric of our state. The benefits we derive from our forests—clean air and water, sustainable forest products, biodiversity, public health and safety, and many more—are all reliant upon a foundation of resilient and healthy forest ecosystems.

The risk of catastrophic disturbances in our forests is increasing, due in part to ever intensifying climate driven stressors—such as insects, storms, heat and wildfire—as well as historic management decisions. This vulnerability requires bold action in our forests to ensure that our forests can continue to provide the many benefits that are essential to a good quality of life in Oregon.

Recognizing the importance and urgency of this work, the Oregon Board of Forestry and Oregon Department of Forestry collaboratively developed this bold, forward looking strategic *Vision for Oregon's Forests* that will best serve Oregon's forests and people into the future. The purpose of this document is to articulate the board and department's shared vision for the future of forestlands across Oregon. This strategic direction will guide the board and department's policy and operational decisions and serve as the foundation for key board and department planning efforts.

Context and Commitments

The board and department recognize that:

Bold, science-based actions are needed to address the composition and structure of the forests in Oregon.

- Policies will be responsive and adaptable to global and local climate change while mitigating threats to ecosystems, human health and safety, and economies.
- Policies will strive for a reciprocal relationship between forests and human cultures representing multiple identities. There is a responsibility to take care of forests so that forests can take care of us.

- Policies will support development of local and regional economies. Diversification and innovation in all aspects of forest management should promote the adaptive capacity of forests.

Oregon's rural, urban and suburban populations have varying social perceptions and expectations about forests and how forests should be managed to benefit humans and other species.

- The vision and goals put forth in this document are applicable statewide. The policies to enact these goals will be applied in a place-based manner at the regional and local level.
- Policies will seek to reflect and integrate the needs of all communities and identities including those which have been, and continue to be, marginalized.
- The board and department will provide clear and accurate information about forests in Oregon and accessible opportunities for all Oregonians to provide meaningful input on policies and decisions.

The state has unique and specific government-to-government relationships with the nine federally recognized Tribes in Oregon.

- Policies will honor government-to-government relationships with Sovereign Nations and meet obligations to protect tribal cultural resources.
- Policies will encourage collaboration with Tribes by pairing western science with indigenous knowledge.

Workforce supply continues to be a challenge, and there is a reduction in the ability of managed forests to cover associated costs in this dynamic state of climate and social change.

- Policies will recognize the changing educational requirements for a trained and skilled workforce that will support the work needed in Oregon.
- Policies will promote educational and employment opportunities that include communities and identities that have been and continue to be excluded from the profession.

The *Vision for Oregon's Forests* is forward looking and aspirational, which means that not all strategies can be immediately implemented with the authorities and resources currently available to the board and department.

- The board and department will work together to identify opportunities and solutions to challenges.
- There is a shared commitment to working within state government budgeting and policy processes to promote and fulfill the needs to implement this vision.

Priority	Goal
Resilient Forests	To reduce the vulnerability of Oregon's forests from a myriad of catastrophic climate driven disturbances, ODF will direct its policy, management and educational actions to enable and promote all forestland managers to make intentional decisions that increase adaptive capacity of forest ecosystems.
Resilient Communities	Policy and management decisions foster healthy relationships between humans and forests, so that forests support resilient human communities through social, economic, and ecological change.
Addressing the Wildfire Crisis	Prevent, suppress and mitigate wildfire to protect communities and expedite forest restoration activities that promote the adaptive capacity of Oregon's forests.
Climate Leadership	The Board and Department will build capacity for climate-smart leadership.
Organizational Excellence	Strengthen trust and confidence in ODF's ability to effectively accomplish its mission and provide excellent service to Oregonians.

Resilient Forests

Goal

To reduce the vulnerability of Oregon's forests from a myriad of catastrophic climate driven disturbances, ODF will direct its policy, management and educational actions to enable and promote all forestland managers to make intentional decisions that increase adaptive capacity of forest ecosystems.

Context

Changes related to climate, social values and economics are resulting in changes to ecosystem functions and ecosystem services provided to our society. Society recognizes the importance of reciprocal relationships between humans and forests; relationships in which humans support forests so that forests can support humans and other species.

The range of components that describe forest complexity, structure and function in each ecoregion in Oregon will be defined at multiple spatial scales (individual forest stand- to landscape-level) and temporal scales (stand initiation to old-growth). Beyond the legal requirements of the Endangered Species Act, the Clean Water Act and the Clean Air Act, and state forest practices act rules, complex, functional forests representing a wide range of seral stages from early successional to old-growth contribute to maintaining populations of native species over space and time in each Oregon forest type. Forest complexity can be enhanced at all stages of stand development using management based on best available science and continuous learning.

Communities in rural, suburban, and urban environments can support forest management if communities can see their values considered and represented in the outcomes of that management, including clean water and air, fish and wildlife habitat, timber for jobs and housing, and recreational opportunities. Complex, functional forest ecosystems in each of Oregon forest types hold the greatest opportunities for providing these values over space and time.

The Board of Forestry believes that all forest owners and stewards have a social responsibility to improve the resilience and adaptive capacity of their lands. The Department of Forestry has the tools to incentivize and support this work.

Resilient Communities

Goal

Policy and management decisions foster healthy relationships between humans and forests, so that forests support resilient human communities through social, economic, and ecological change.

Context

Forests have both direct and indirect effects on quality of life, economic opportunities for communities, and ecological conditions in rural, suburban, and urban areas across the state. Resilience varies regionally and between communities of place and culture. Forests provide a range of benefits to Oregonians and contribute to community resilience. Place-based and scientifically informed management approaches support forests to contribute a full range of benefits to enhance community resilience by meeting their needs.

Priority: Addressing the Wildfire Crisis

Goal

Prevent, suppress and mitigate wildfire to protect communities and expedite forest restoration activities that promote the adaptive capacity of Oregon's forests.

Context

Wildfire has been a force that has helped shape Oregon's forests for millennia. Naturally occurring and prescribed fire, as well as suppression of fire, have played important roles in creating the forests we have today. Across Oregon, fire in forests has always existed in a variety of regimes, from frequent, low intensity fire to stand-replacing events, and mixed severity fires that present a spectrum of disturbance patterns.

Over the past decade, wildfires in Oregon have been trending toward larger, more complex, and more challenging and costly due to climate change and current forest conditions. With more people living in or near forests, there are far more lives, property and infrastructure threatened every year. Beyond immediate physical safety concerns, wildfire and smoke have broader impacts on public health, community wellbeing, local economies and our state's natural resources, including water and air quality.

This plan seeks a balanced approach that recognizes the role of fire suppression in protecting life and property, the role of active management to mitigate risk and control forest fuels, and the ecological role of fire on the landscape. Place-based solutions based on robust assessments of current conditions and desired outcomes will be essential to promoting forests that are resilient and can continue to provide abundant benefits to Oregonians.

Climate Leadership

Goal

The Board and Department will build capacity for climate-smart leadership.

Context

The Board adopted its Climate Change and Carbon Plan in November 2023, which centered climate-smart forest management to guide activities contributing to adaptation and mitigation, as well as social dimensions of the effects of climate change. Climate-smart forestry is a holistic approach for addressing the management needs related to the existential pressures exerted from climate change.

Organizational Excellence

Goal

Strengthen trust and confidence in ODF's ability to effectively accomplish its mission and provide excellent service to Oregonians.

Context

Oregon state agencies have an obligation to the Oregonians they serve to continually improve business processes to promote organizational efficiency and effectiveness in their delivery of services. Achieving this requires alignment: internally at all levels; with the direction provided by the Board of Forestry, Executive Branch and Legislature; with our partners; and with the public we serve. Organizational excellence requires a well-trained, highly competent and diverse staff of professionals and a culture that values and encourages individual and team learning and continuous improvement.

About Us

Oregon Board of Forestry (est. 1907)

For more than a century, the Board of Forestry and Department of Forestry have been caring for Oregon's forests. The board was established in 1911, along with the positions of state forester and deputy state forester. Together, they were charged with preventing forest fires and coordinating the response when fires did start. This was the start of Oregon's complete and coordinated fire protection system that is still a crucial part of our suppression success today.

Less than a decade after being founded, the Board of Forestry adopted a forest policy for the state that identified the need for increased forest protection, a forest nursery, insect control, and formation of state forests. This policy was the starting point for the broad portfolio of work the board and department are responsible for today.

The Oregon Board of Forestry is a seven-member citizen board appointed by the Governor and confirmed by the state Senate. The board's primary responsibilities are to:

- Supervise all matters of forest policy within Oregon.
- Appoint the State Forester, who also serves as the director of ODF.
- Adopt rules regulating forest practices.
- Provide general supervision of the State Forester's duties in managing ODF.

The board is charged with representing the public interest. No more than three members may receive any significant portion of their income from the forest products industry. At least one member must reside in each of the state's three major forest regions: northern, southern, and eastern. The term of office is four years, and no member may serve more than two consecutive full terms. The State Forester serves as secretary to the board.

Oregon Department of Forestry (est. 1911)

The Department of Forestry's work is truly a team effort. The policy and direction established at the headquarters level guides the work happening in the field statewide. The department's headquarters are in Salem, but much of the on-the-ground work is done by the leadership and staff of ODF's 12 districts with 24 units from Astoria to Wallowa and all the way down to Lakeview and Medford. The dedicated public servants in these offices are the people responsible for fighting fires, assisting landowners and managing our state forestlands every day for their fellow Oregonians. ODF also partners with three forest protective associations as part of the fire protection program.

ODF's Fire Protection Division is the state's largest fire department and protects 16 million acres of private, state, and some federal lands. ODF has been protecting Oregon's forests for 110 years. The department emphasizes preventing human-caused fires, reducing wildfire risks through improved forest health and resiliency, and keeping those fires that do start as small as possible. This approach minimizes resource loss, fire danger and smoke impact to communities, and suppression costs. ODF leads Oregon's complete and coordinated fire protection system. This system relies on partnerships with local, state, tribal, and federal government; the structural fire service; landowners; forest operators; contractors and more.

ODF's Forest Resources Division is responsible for several key areas of operation that contribute to sustainable, healthy forests. The most prominent work they do involves the administration of the Forest Practices Act, which is a cornerstone of natural resource protection in Oregon that encourages sound management of forestlands.

Division staff also:

- Monitor and help preserve forest health across the state,
- Provide technical assistance to landowners, and
- Support local urban and community forestry efforts.

The division also houses the Federal Forest Restoration Program that, along with the Good Neighbor Authority, enables ODF to assist its federal partners in forest restoration and resiliency work on federally managed forestlands. Since the federal government is responsible for so much of Oregon's forests, the condition of these lands has a dramatic effect on the health of the state's total forestland.

ODF's State Forests Division manages more than 760,000 acres of working forests—also known as Board of Forestry lands—to provide social, economic and environmental benefits for Oregonians, which is not an easy task. The way the division's work is funded adds to the complexity. State forestland management is funded by a portion of the revenues received from timber sales on these lands. The majority of the revenue goes to the counties in which the timber sales are located and helps fund essential local services. ODF retains 36.25% of the revenues, which has to support all aspects of state forestland management. Essentially, all recreation and environmental work on state forestlands is paid for by timber sales. The ability to build trails, maintain campgrounds, and improve wildlife habitats are all dependent upon timber being harvested off those same lands.

STAFF REPORT

Agenda Item No:	F
Work Plan:	Administrative
Topic:	Financial Dashboard
Presentation Title:	Department Financial Report for September, October, November and December 2024
Date of Presentation:	January 8, 2025
Contact Information:	James Short, Department Chief Financial Officer (503) 302-8478, james.short@odf.oregon.gov

SUMMARY AND CONTEXT

An executive financial report and summary will be submitted monthly to ensure the Board of Forestry (Board) has up-to-date information for oversight of the Department's financial condition. This report will include the financial and budgetary status of the Department as well as other ancillary topics as appropriate.

BACKGROUND AND ANALYSIS

This consent item is transparent publishing of the Department's transmittal of monthly financial reports to the Board of Forestry. While executive-level in nature, the financial report provides information on various topics that are either germane, or have direct impacts on the financial status of the agency, or other administrative functions of the organization during any given month.

This financial report will continue to evolve. As the Department's reporting ability matures and insights into its operational and administrative work improve, this financial report will reflect those improvements. These improvements could include operational or process improvements or introducing new systems and technologies that enhance the Department's administrative capabilities.

NEXT STEPS

The Board will receive the Department's Financial Report the third week of every month, whether a Board meeting is occurring or not. This will allow the Department to report on the previous month while allowing for the fiscal month closing process to conclude.

ATTACHMENTS

1) Department of Forestry Financial Report for September 2024
2) Department of Forestry Financial Report for October 2024
3) Department of Forestry Financial Report for November 2024
4) Department of Forestry Financial Report for December 2024 *(will be available in January)*

Oregon
Tina Kotek, Governor

Department of Forestry
State Forester's Office
2600 State St
Salem, OR 97310-0340
503-945-7200
www.oregon.gov/ODF

October 1, 2024

Sen. Kate Lieber, Co-Chair
Rep. Tawna Sanchez, Co-Chair
Joint Committee on Ways and Means
900 Court St. NE, H-178
Salem, OR 97301

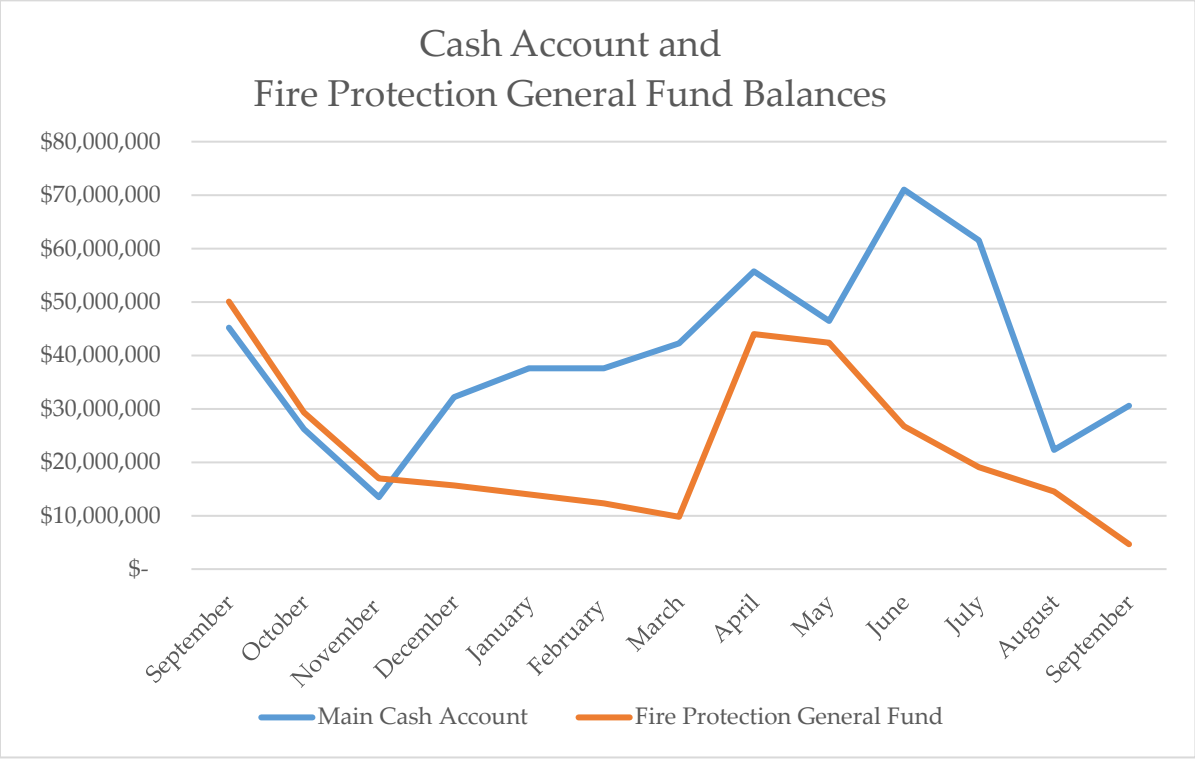
Re: Oregon Department of Forestry (ODF)—Monthly financial condition report

Dear Co-Chairs,

Cash and General Fund Balances

As of September 27, ODF's principal cash account balance was $30 million, and the 2023-25 Protection Division General Fund appropriation balance was $5 million (Figure 1). Between August and September, there was an increase of $8 million to the cash account balance, and the Protection Division General Fund balance had a net decrease of $10 million.

Figure 1 - Cash Account and Fire Protection/Cash Flow General Fund Balances as of September 26, 2024.



Financial Projections

As a result of fiscal year-end financial reporting activities, the budgetary months of July and August closed in the calendar month of September; thus, the corresponding projections compared to actuals are both included in the table below.

Over the next few months, the department will continue to have high expenditures associated with fire season 2024. Processing of vendor payments in the coming months will be aided by the receipt of the September Emergency Board funds in early October. Additionally, to manage cash flow, the agency is limiting discretionary spending and postponing some larger purchases, and DAS will be covering our payroll through the end of the year, much as they did in 2019. But the most important thing is that our people—which includes the vendors who fought alongside us all summer—will get paid. The agency will be going back to the E-Board in December with a request for the remainder of the fire season costs.

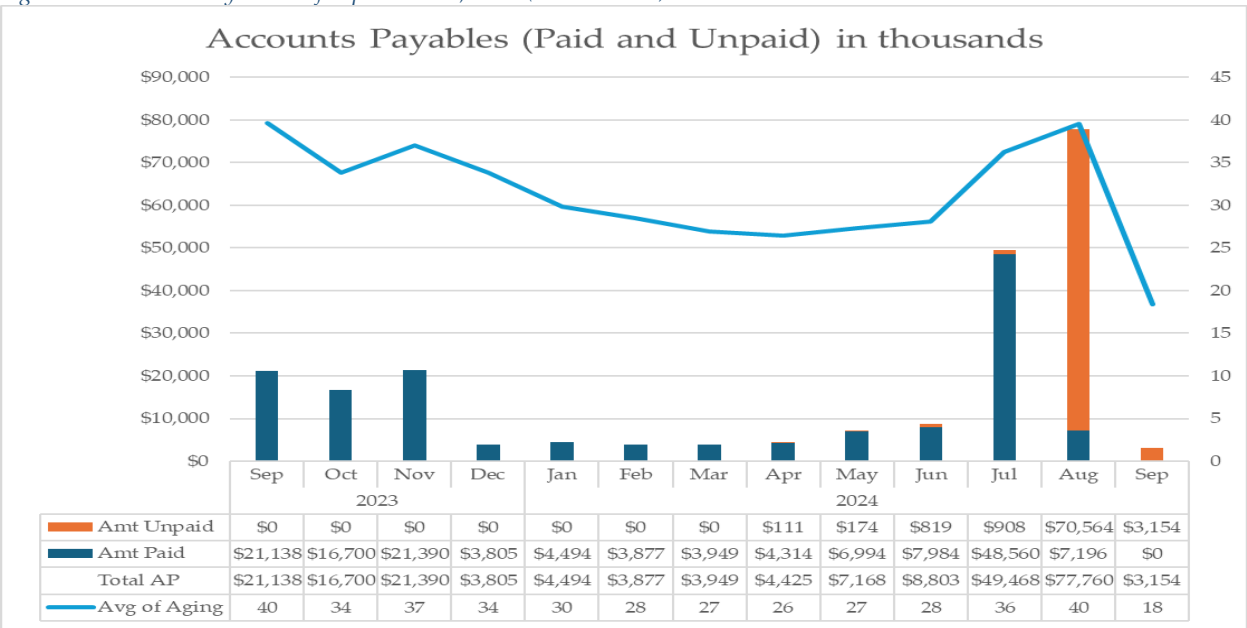
Table 1 - Financial Projections through September 26, 2024 (in thousands)

	24-Jul		24-Aug		24-Sep	24-Oct
	Projection	Actual	Projection	Actual	Projection	Projection
Total Revenue	$27,854	$51,377	$27,847	$31,911	$29,373	$63,002
Total Expenditures	($51,442)	($72,744)	($47,766)	($52,974)	($39,075)	($72,931)
Net Total Exp/Rev	($23,588)	($21,367)	($19,918)	($21,063)	($9,702)	($9,929)
Beginning Cash Balance	$87,379	$87,379	$63,791	$66,749	$45,876	$36,173
End of Month Cash Balance*	$63,791	$66,749	$43,872	$45,876	$36,173	$26,244
Less: Dedicated Funds	($25,000)	($25,058)	($25,000)	($25,618)	($15,777)	($15,000)
End of Month Main Cash Balance	$38,791	$41,691	$18,872	$20,258	$20,396	$11,244
Available GF Appr	N/A	$59,606	N/A	$37,239	$27,239	$23,239
Available Resources	$101,334	$101,297	$73,065	$57,497	$47,635	$34,483

Accounts Payable

Department-wide expenditure has increased since the last reporting period (Figure 2), this is consistent with a high fire season. An increase in accounts payable balances will continue as the 2024 fire season evolves.

Figure 2 - Accounts Payable as of September 26, 2024 (in thousands)



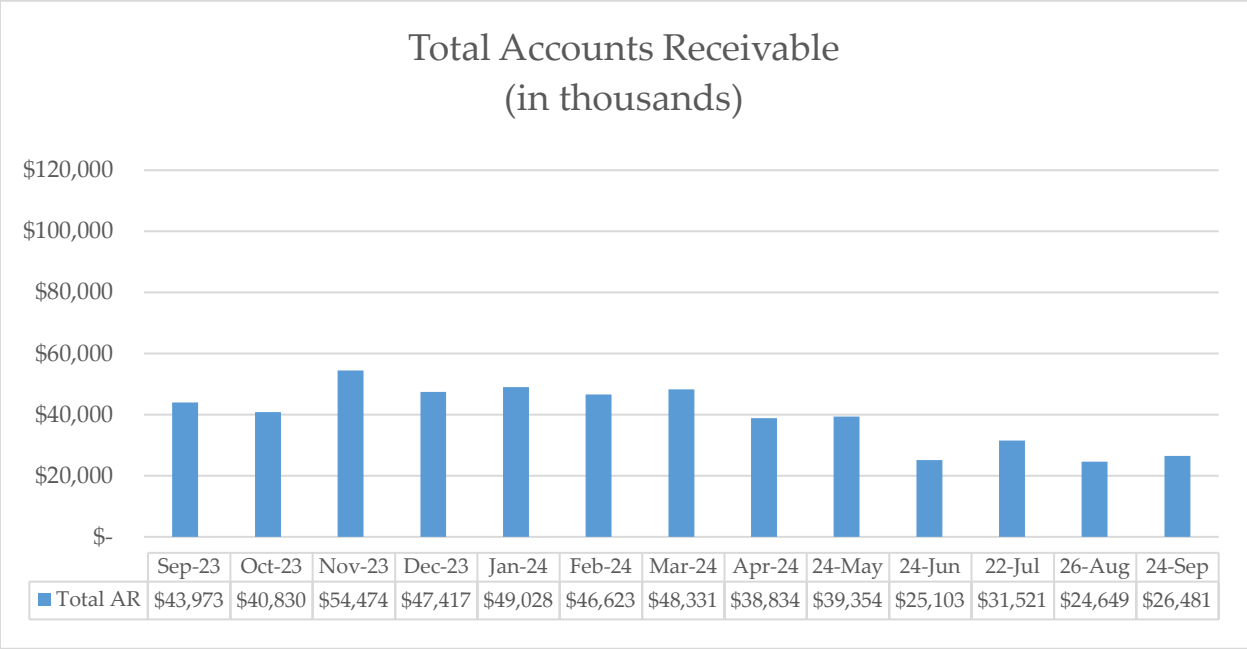
	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024
Amt Unpaid	$0	$0	$0	$0	$0	$0	$0	$111	$174	$819	$908	$70,564	$3,154
Amt Paid	$21,138	$16,700	$21,390	$3,805	$4,494	$3,877	$3,949	$4,314	$6,994	$7,984	$48,560	$7,196	$0
Total AP	$21,138	$16,700	$21,390	$3,805	$4,494	$3,877	$3,949	$4,425	$7,168	$8,803	$49,468	$77,760	$3,154
Avg of Aging	40	34	37	34	30	28	27	26	27	28	36	40	18

Accounts Receivable

Between August and September, there was a net increase of $1.8 million in the total accounts receivable balance (Figure 3).

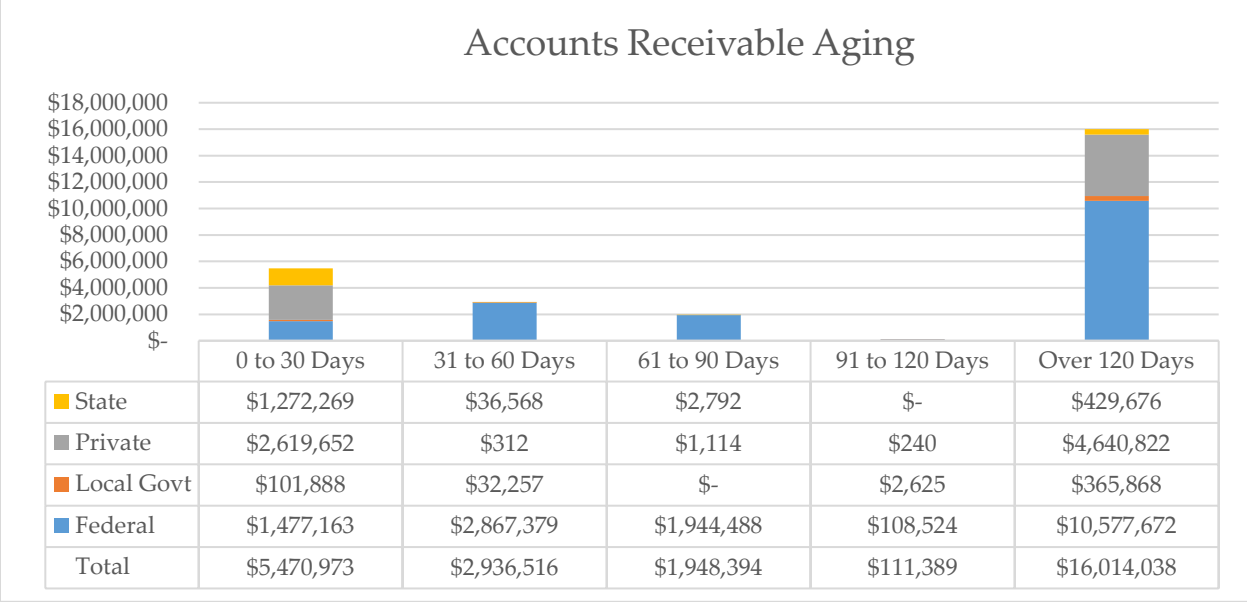
Accounts older than 120 days equate to $16.0 million, or 60.8% of the total balances owed to ODF (Figure 4). Of these accounts, the majority are due from FEMA ($3.3 million), other federal partners ($12.8 million), and private parties for cost recovery ($7.2 million).

Figure 3 - Accounts Receivable as of September 23, 2024



	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	24-May	24-Jun	22-Jul	26-Aug	24-Sep
Total AR	$43,973	$40,830	$54,474	$47,417	$49,028	$46,623	$48,331	$38,834	$39,354	$25,103	$31,521	$24,649	$26,481

Figure 4 – Accounts Receivable Aging as of September 23, 2024



	0 to 30 Days	31 to 60 Days	61 to 90 Days	91 to 120 Days	Over 120 Days
State	$1,272,269	$36,568	$2,792	$-	$429,676
Private	$2,619,652	$312	$1,114	$240	$4,640,822
Local Govt	$101,888	$32,257	$-	$2,625	$365,868
Federal	$1,477,163	$2,867,379	$1,944,488	$108,524	$10,577,672
Total	$5,470,973	$2,936,516	$1,948,394	$111,389	$16,014,038

Fire Costs

The department recovers some fire costs through two FEMA grant programs; however, not all fire costs are recovered through FEMA. Fire costs may also be collected via the fire funding framework, cost-share agreements, and cooperative agreements, which are all included in the numbers provided in Table 2.

Table 2 – Gross Fire Cost Summary (red indicates estimates – in millions) as of September 26, 2024

Fire Protection Fire Cost Summary							
Fire Season	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Fire Costs	**33.66**	**139.85**	**149.18**	**53.49**	**93.86**	**293.11**	**763.15**
Currently Invoiced	**(0.18)**	**(5.54)**	**(2.10)**	**(3.77)**	**(4.02)**	**(10.31)**	**(25.92)**
Outstanding to Invoice	**(0.45)**	**(0.87)**	**(3.52)**	**(16.93)**	**(31.93)**	**(232.77)**	**(286.47)**

FEMA-Public Assistance (PA) grants are awarded to the ODEM, who, in turn, passes the funds through to ODF. FEMA-Fire Management Assistance grants (FMAG) are awarded directly to ODF, and the department has immediate access to the funds once obligated.

FEMA grant applications submitted.
As of September 26, 2024, 12 grant applications totaling $2.6 million have been submitted to FEMA, of which $1.47 million are obligated grant applications pending ODEM audit/review and distribution to ODF.

FEMA grant applications not yet submitted.
An additional $4.42 million in estimated FEMA-PA and FMAG grant applications (12) have yet to be submitted to FEMA. This includes estimated fire costs for the 2023 fire season. Nine

FEMA-FMAG applications associated with administrative costs ($325,000) cannot be forwarded to FEMA until all ODF and subrecipient grants have been obligated by FEMA.

Three FEMA grant applications ($4.09 million) are associated with estimated suppression costs. They will be submitted to FEMA after completing all cost-share and fire payment reconciliations.

Sincerely,

Cal Mukumoto
Oregon State Forester

c:
Legislative Fiscal Office
Chief Financial Office
Oregon State Treasury
Board of Forestry
Governor's Office

Oregon
Tina Kotek, Governor

Department of Forestry
State Forester's Office
2600 State St
Salem, OR 97310-0340
503-945-7200
www.oregon.gov/ODF

November 1, 2024

Sen. Kate Lieber, Co-Chair
Rep. Tawna Sanchez, Co-Chair
Joint Committee on Ways and Means
900 Court St. NE, H-178
Salem, OR 97301

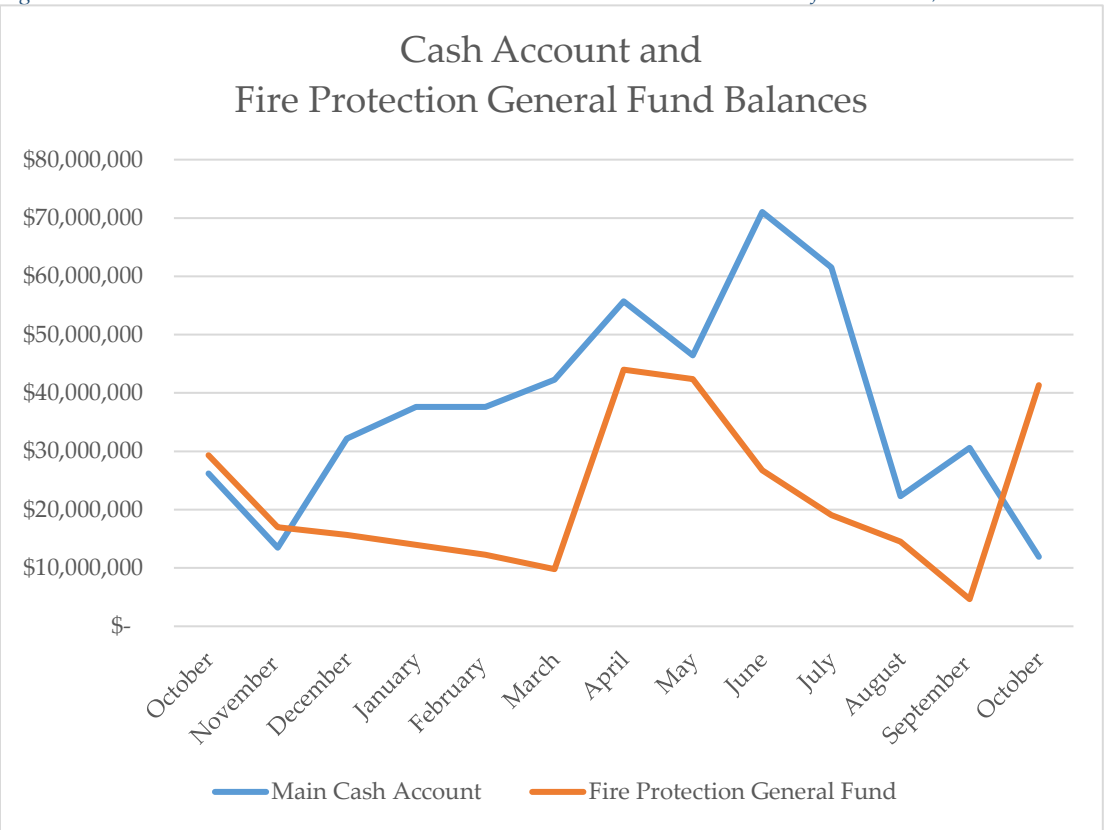
Re: Oregon Department of Forestry (ODF)—Monthly financial condition report

Dear Co-Chairs,

Cash and General Fund Balances

As of October 24, ODF's principal cash account balance was $11.9 million, and the 2023-25 Protection Division General Fund appropriation balance was $41.3 million (Figure 1). Between September and October, there was a decrease of $18.6 million to the cash account balance, and the Protection Division General Fund balance had a net increase of $36.7 million.

Figure 1 - Cash Account and Fire Protection/Cash Flow General Fund Balances as of October 24, 2024.



Financial Projections

Net financial activity for September 2024 resulted in a net increase of $5.9M. In September, the department received $13M for the Tyee Ridge Complex cost share settlement (fire season 2023) contributing to the variance between projected and actual.

Over the next few months, the department will continue to have high expenditures associated with fire season 2024. Processing of vendor payments has been aided by the receipt of the September Emergency Board funds received in early October. The agency continues to limit discretionary spending and postpone larger purchases. DAS will be covering payroll through November and the agency will be going back to the Emergency Board in December.

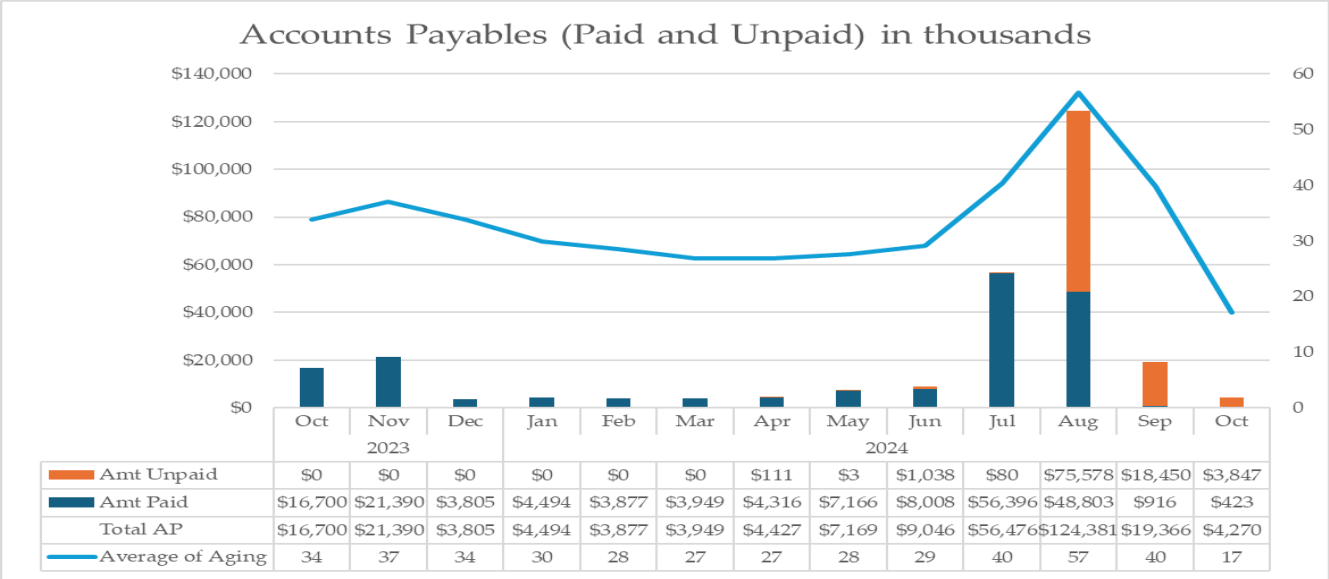
Table 1 - Financial Projections through October 25, 2024 (in thousands)

	24-Sep		24-Oct	24-Nov
	Projection	Actual	Projection	Projection
Total Revenue	$29,373	$47,096	$51,002	$72,826
Total Expenditures	($39,075)	($41,194)	($72,931)	($68,063)
Net Total Exp/Rev	($9,702)	$5,902	($21,929)	$4,764
Beginning Cash Balance	$45,876	$45,876	$48,907	$19,868
End of Month Cash Balance*	$36,173	$48,907	$19,868	$25,559
Less: Dedicated Funds	($15,777)	($15,752)	($16,127)	($19,727)
End of Month Main Cash Balance	$20,396	$33,156	$3,741	$5,832
Available GF Appr	$27,239	$25,896	$37,896	$12,896
Available Resources	$47,635	$59,052	$41,637	$18,728

* Includes reconciliation for non-cash revenue and expenditure transactions.

Accounts Payable Department-wide expenditure has increased since the last reporting period (Figure 2), this is consistent with a high fire season. An increase in accounts payable balances will continue as the 2024 fire season is completed.

Figure 2 - Accounts Payable as of October 25, 2024



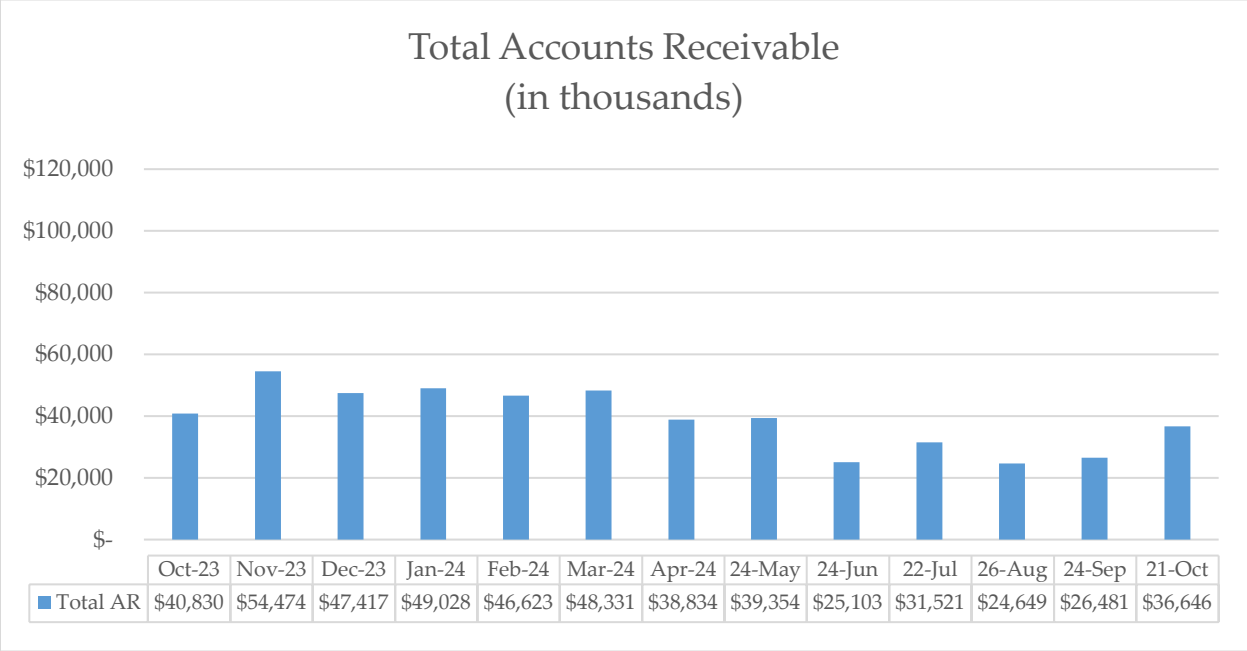
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
	2023			2024									
Amt Unpaid	$0	$0	$0	$0	$0	$0	$111	$3	$1,038	$80	$75,578	$18,450	$3,847
Amt Paid	$16,700	$21,390	$3,805	$4,494	$3,877	$3,949	$4,316	$7,166	$8,008	$56,396	$48,803	$916	$423
Total AP	$16,700	$21,390	$3,805	$4,494	$3,877	$3,949	$4,427	$7,169	$9,046	$56,476	$124,381	$19,366	$4,270
Average of Aging	34	37	34	30	28	27	27	28	29	40	57	40	17

Accounts Receivable

Between September and October, there was a net increase of $8.3 million in the total accounts receivable balance (Figure 3).

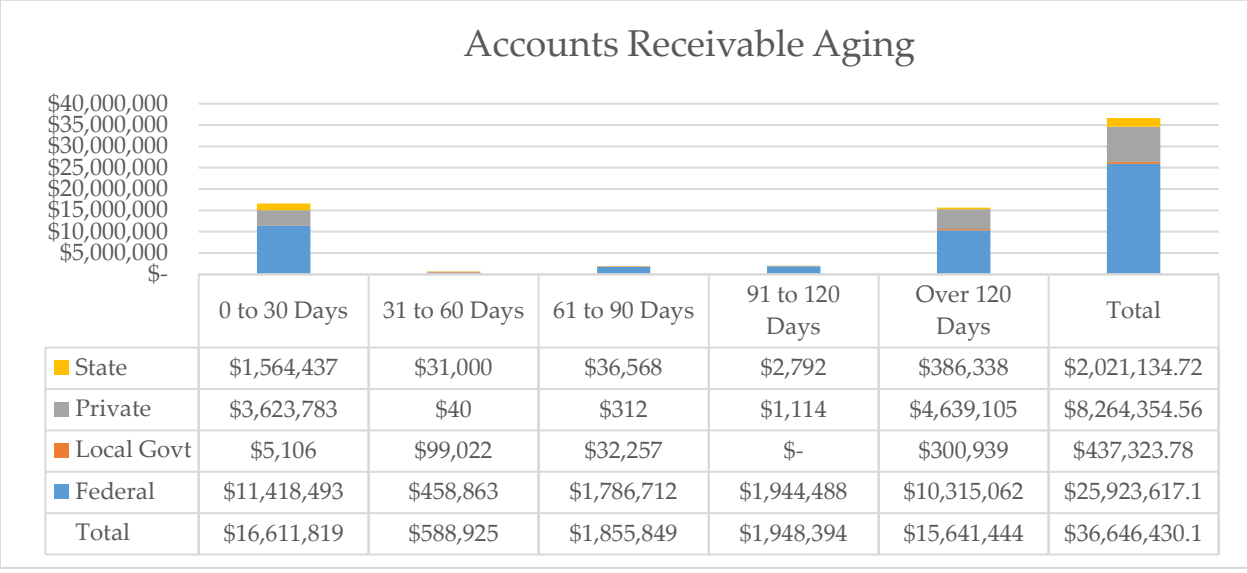
Accounts older than 120 days equate to $15 million, or 42.7% of the total balances owed to ODF (Figure 4). Of these accounts, the majority are due from FEMA ($3.3 million), other federal partners ($22.7 million), and private parties for cost recovery ($8.2 million).

Figure 3 - Accounts Receivable as of October 21, 2024



	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	24-May	24-Jun	22-Jul	26-Aug	24-Sep	21-Oct
Total AR	$40,830	$54,474	$47,417	$49,028	$46,623	$48,331	$38,834	$39,354	$25,103	$31,521	$24,649	$26,481	$36,646

Figure 4 – Accounts Receivable Aging as of October 21, 2024



	0 to 30 Days	31 to 60 Days	61 to 90 Days	91 to 120 Days	Over 120 Days	Total
State	$1,564,437	$31,000	$36,568	$2,792	$386,338	$2,021,134.72
Private	$3,623,783	$40	$312	$1,114	$4,639,105	$8,264,354.56
Local Govt	$5,106	$99,022	$32,257	$-	$300,939	$437,323.78
Federal	$11,418,493	$458,863	$1,786,712	$1,944,488	$10,315,062	$25,923,617.1
Total	$16,611,819	$588,925	$1,855,849	$1,948,394	$15,641,444	$36,646,430.1

Fire Costs

The department recovers some fire costs through two FEMA grant programs; however, not all fire costs are recovered through FEMA. Fire costs may also be collected via the fire funding framework, cost-share agreements, and cooperative agreements (separate from large fire), which are all included in the numbers provided in Table 2.

Table 2 – Gross Fire Cost Summary (red indicates estimates – in millions) as of October 27, 2024

Fire Protection Fire Cost Summary							
Fire Season	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Fire Costs	33.66	139.85	149.18	53.49	93.86	324.99	795.03
Currently Invoiced	(0.18)	(5.54)	(2.10)	(2.65)	(4.15)	(10.22)	(24.84)
Outstanding to Invoice	(0.45)	(0.87)	(3.52)	(16.93)	(31.93)	(263.59)	(317.29)

FEMA-Public Assistance (PA) grants are awarded to the ODEM, who, in turn, passes the funds through to ODF. FEMA-Fire Management Assistance grants (FMAG) are awarded directly to ODF, and the department has immediate access to the funds once obligated.

FEMA grant applications submitted.
As of October 28, 2024, 11 grant applications totaling $2.6 million have been submitted to FEMA, of which $2 million are obligated grant applications pending ODEM audit/review and distribution to ODF.

FEMA grant applications not yet submitted.
An additional $65.9 million in estimated FEMA-PA and FMAG grant applications (34) have yet to be submitted to FEMA. This includes estimated fire costs for the 2024 fire season. Nine FEMA-FMAG applications associated with administrative costs ($325,000) cannot be forwarded to FEMA until all ODF and subrecipient grants have been obligated by FEMA.

Twenty-five FEMA grant applications totaling $65.6 million are associated with estimated suppression costs. They will be submitted to FEMA after completing all cost-share and fire payment reconciliations.

Sincerely,

Cal Mukumoto
Oregon State Forester

c:
Legislative Fiscal Office
Chief Financial Office
Oregon State Treasury
Board of Forestry
Governor's Office

Oregon
Tina Kotek, Governor

Department of Forestry
State Forester's Office
2600 State St
Salem, OR 97310-0340
503-945-7200
www.oregon.gov/ODF

December 2, 2024

Sen. Kate Lieber, Co-Chair
Rep. Tawna Sanchez, Co-Chair
Joint Committee on Ways and Means
900 Court St. NE, H-178
Salem, OR 97301

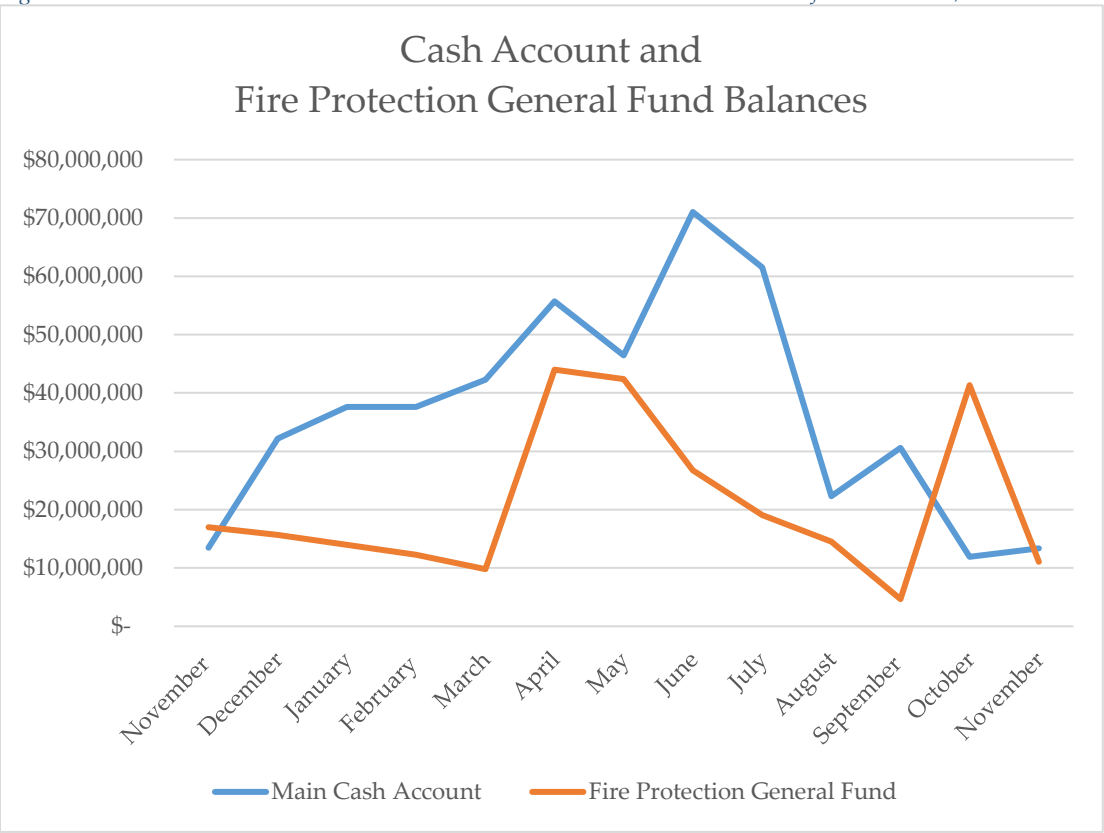
Re: Oregon Department of Forestry (ODF)—Monthly financial condition report

Dear Co-Chairs,

Cash and General Fund Balances

As of November 2024, ODF's principal cash account balance was $13.4 million, and the 2023-25 Protection Division General Fund appropriation balance was $11.1 million (Figure 1). Between October and November, there was an increase of $1,468,908 million to the cash account balance, and the Protection Division General Fund balance had a net decrease of $30,259,963million.

Figure 1 - Cash Account and Fire Protection/Cash Flow General Fund Balances as of November 25, 2024.



Financial Projections

Net financial activity for September 2024 resulted in a net increase of $5.9M. In September, the department received $13M for the Tyee Ridge Complex cost share settlement (fire season 2023) contributing to the variance between projected and actual.

Over the next few months, the department will continue to have high expenditures associated with fire season 2024. Processing of vendor payments has been aided by the receipt of the September Emergency Board funds received in early October. The agency continues to limit discretionary spending and postpone larger purchases. DAS will be covering payroll through November and the agency will return to the Emergency Board in December.

Table 1 - Financial Projections through October 25, 2024 (in thousands)

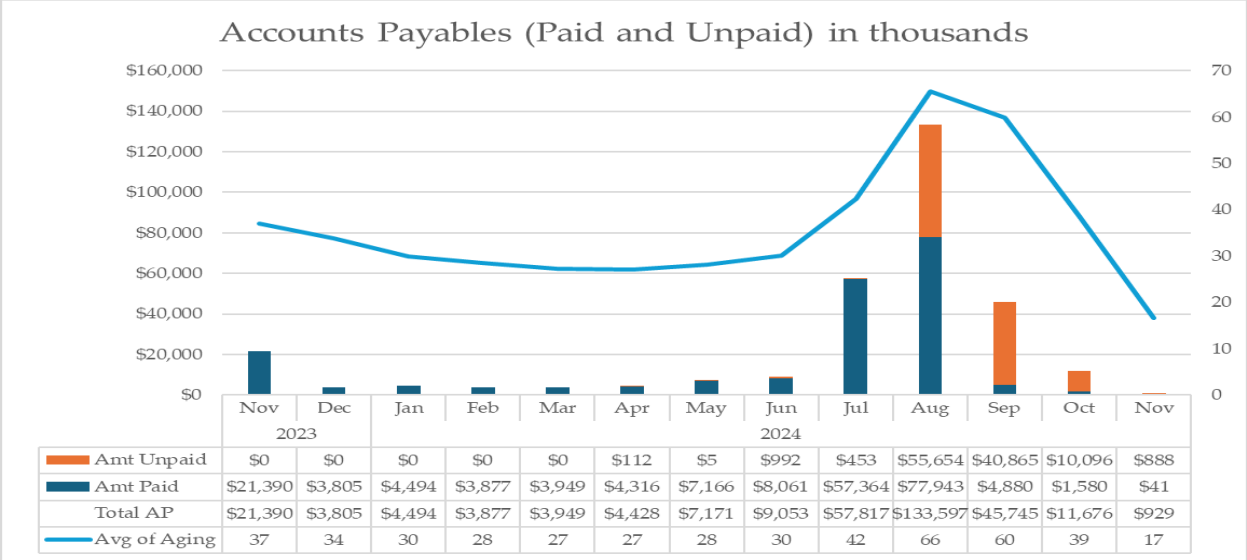
	24-Sep		24-Oct	24-Nov
	Projection	Actual	Projection	Projection
Total Revenue	$29,373	$47,096	$51,002	$72,826
Total Expenditures	($39,075)	($41,194)	($72,931)	($68,063)
Net Total Exp/Rev	($9,702)	$5,902	($21,929)	$4,764
Beginning Cash Balance	$45,876	$45,876	$48,907	$19,868
End of Month Cash Balance*	$36,173	$48,907	$19,868	$25,559
Less: Dedicated Funds	($15,777)	($15,752)	($16,127)	($19,727)
End of Month Main Cash Balance	$20,396	$33,156	$3,741	$5,832
Available GF Appr	$27,239	$25,896	$37,896	$12,896
Available Resources	$47,635	$59,052	$41,637	$18,728

* Includes reconciliation for non-cash revenue and expenditure transactions.

Accounts Payable

Department-wide expenditure has decreased since the last reporting period (Figure 2), this is consistent with after-fire season operations. Expenditures for the 2024 fires season will continue to be added as fires are audited.

Figure 2 - Accounts Payable as of November 25, 2024



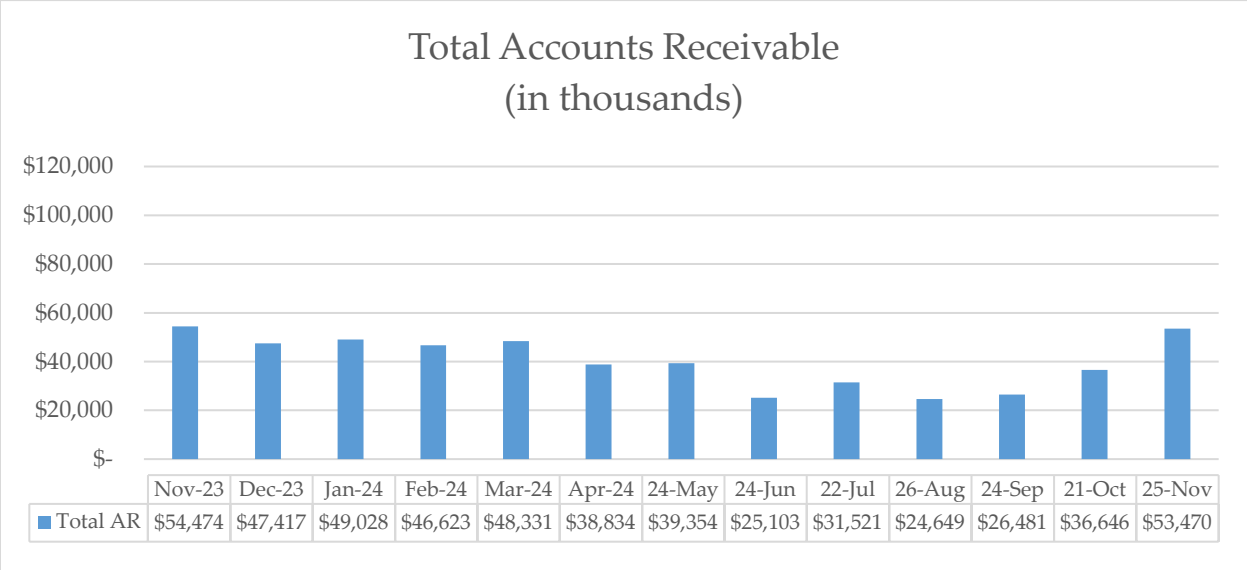
	Nov 2023	Dec	Jan 2024	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Amt Unpaid	$0	$0	$0	$0	$0	$112	$5	$992	$453	$55,654	$40,865	$10,096	$888
Amt Paid	$21,390	$3,805	$4,494	$3,877	$3,949	$4,316	$7,166	$8,061	$57,364	$77,943	$4,880	$1,580	$41
Total AP	$21,390	$3,805	$4,494	$3,877	$3,949	$4,428	$7,171	$9,053	$57,817	$133,597	$45,745	$11,676	$929
Avg of Aging	37	34	30	28	27	27	28	30	42	66	60	39	17

Accounts Receivable

Between October and November, there was a net increase of $29.3 million in the total accounts receivable balance (Figure 3).

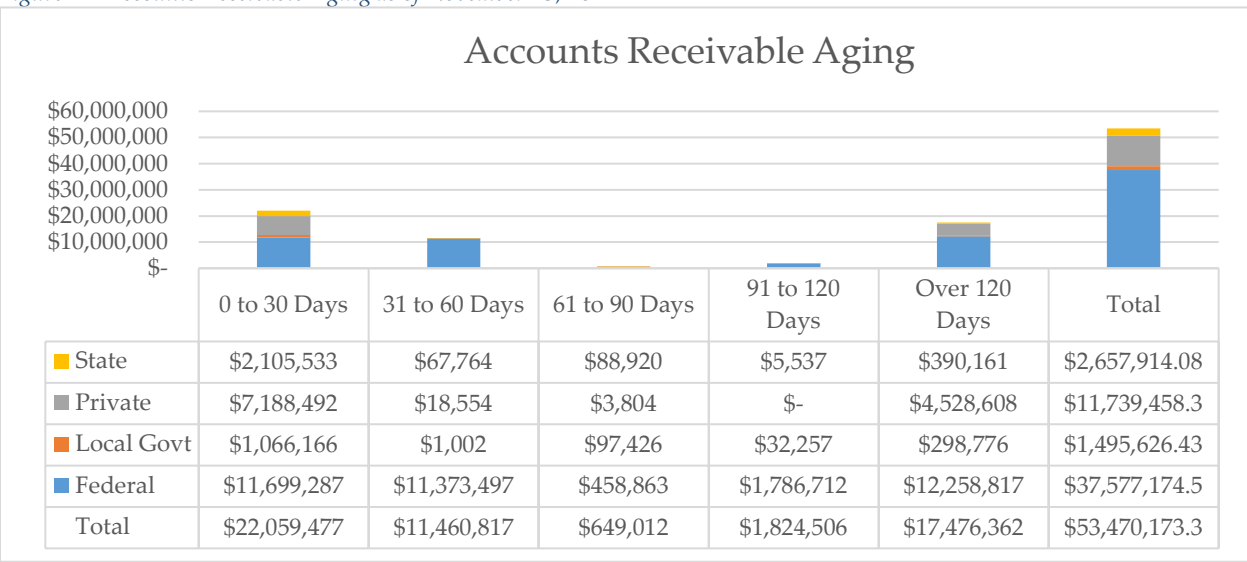
Accounts older than 120 days equate to $17 million, or 32.7% of the total balances owed to ODF (Figure 4). Of these accounts, the majority are due from FEMA ($3.3 million), other federal partners ($9 million), and private parties for cost recovery ($4.5 million).

Figure 3 - Accounts Receivable as of November 25, 2024



	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	24-May	24-Jun	22-Jul	26-Aug	24-Sep	21-Oct	25-Nov
Total AR	$54,474	$47,417	$49,028	$46,623	$48,331	$38,834	$39,354	$25,103	$31,521	$24,649	$26,481	$36,646	$53,470

Figure 4 – Accounts Receivable Aging as of November 25, 2024



	0 to 30 Days	31 to 60 Days	61 to 90 Days	91 to 120 Days	Over 120 Days	Total
State	$2,105,533	$67,764	$88,920	$5,537	$390,161	$2,657,914.08
Private	$7,188,492	$18,554	$3,804	$-	$4,528,608	$11,739,458.3
Local Govt	$1,066,166	$1,002	$97,426	$32,257	$298,776	$1,495,626.43
Federal	$11,699,287	$11,373,497	$458,863	$1,786,712	$12,258,817	$37,577,174.5
Total	$22,059,477	$11,460,817	$649,012	$1,824,506	$17,476,362	$53,470,173.3

Fire Costs

The department recovers some fire costs through two FEMA grant programs; however, not all fire costs are recovered through FEMA. Fire costs may also be collected via the fire funding framework, cost-share agreements, and cooperative agreements (separate from large fire), which are all included in the numbers provided in Table 2.

Table 2 – Gross Fire Cost Summary (red indicates estimates – in millions) as of October 27, 2024

Fire Protection Fire Cost Summary							
Fire Season	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**Total**
Fire Costs	33.66	139.85	149.18	53.49	93.86	324.99	795.03
Currently Invoiced	(0.18)	(5.54)	(2.10)	(2.65)	(4.15)	(10.22)	(24.84)
Outstanding to Invoice	(0.45)	(0.87)	(3.52)	(16.93)	(31.93)	(263.59)	(317.29)

FEMA-Public Assistance (PA) grants are awarded to the ODEM, who, in turn, passes the funds through to ODF. FEMA-Fire Management Assistance grants (FMAG) are awarded directly to ODF, and the department has immediate access to the funds once obligated.

FEMA grant applications submitted.
As of November 8, 2024, 13 grant applications totaling $5.3 million have been submitted to FEMA, of which $2 million are obligated grant applications pending ODEM audit/review and distribution to ODF.

FEMA grant applications not yet submitted.
An additional $63.1 million in estimated FEMA-PA and FMAG grant applications (34) have yet to be submitted to FEMA. This includes estimated fire costs for the 2024 fire season. Nine FEMA-FMAG applications associated with administrative costs ($325,000) cannot be forwarded to FEMA until all ODF and subrecipient grants have been obligated by FEMA.

Twenty-five FEMA grant applications totaling $62.8 million are associated with estimated suppression costs. They will be submitted to FEMA after completing all cost-share and fire payment reconciliations.

Sincerely,

Cal Mukumoto
Oregon State Forester

c:
Legislative Fiscal Office
Chief Financial Office
Oregon State Treasury
Board of Forestry
Governor's Office

Placeholder for Department of Forestry Financial Report for December 2024

Board of Forestry
Public Meeting

1. Board Member and State Forester Comments – Day 1

This item serves as an opportunity for the State Forester to brief the Board of Forestry of the Department or related topics of importance. Individual members of the Board can offer comments for the Chair, Secretary, and Board consideration. Comment times may be reduced at the discretion of the Board Chair.

This is an information item.

2. Public Forum – Day 1

This item serves as the vehicle for the public to comment on information items or topics, not on the agenda. Comment times may be reduced at the discretion of the Board Chair.

This is an information item.

Agenda Item No.:	03
Work Plan:	Administrative Work Plan
Topic:	Final Orders
Presentation Title:	Final Order – Douglas County, By and through the Douglas County Public Works Department
Date of Presentation:	January 8, 2025
Contact Information:	Greg Wagenblast, Civil Penalties Administrator, Private Forests Division 541-525-6462 greg.wagenblast@odf.oregon.gov Scott Swearingen, Field Support Manager, Private Forests Division 503-945-7473 Scott.Swearingen@odf.oregon.gov

SUMMARY

The Department issued a citation to the Douglas County Public Works Department alleging that the County violated the Forest Practices Act by failing to file a Notification of Operation prior to removing trees along Hubbard Creek Road. Douglas County contested the Notice of Violation, Cease and Repair Orders. The matter was referred to the Office of Administrative Hearings for a contested hearing. The parties each filed motions for summary determination. Administrative Law Judge Bradley Schmidt ruled in favor of the Department and issued a proposed order upholding the Department's actions. The Board is now called upon to consider issuance of a Final Order.

FACTUAL BACKGROUND for ODF Case No. 23-DG021

On August 24, 2023, lightning strikes started a series of wildfires that combined to form the Tyee Ridge Complex Fire in northern Douglas County, Oregon, near and adjacent to Hubbard Creek Road. The fire burned approximately 8,000 acres. The Tyee Ridge Complex Fire was contained on September 18, 2023.

Hubbard Creek Road is a county roadway under the maintenance jurisdiction of Douglas County ("Respondent"). It is set in a low valley with steep hillsides and provides access to industrial timberland, several homesites, and farmland.

As part of the response to the Tyee Ridge Complex Fire, timber fallers within the Department's Incident Management Teams cut trees that they found to be a hazard to fire crews, structures, or roadways, including trees along Hubbard Creek Road.

From approximately September 14, 2023, when the fire was ending, to around September 19, 2023, Respondent's arborist evaluated and inventoried trees which posed a hazard to the traveling public on Hubbard Creek Road.

From September 25, 2023, to September 27, 2023, Respondent obtained consent (in the form of a "license") from three landowners with land abutting Hubbard Creek Road. This license

provided Respondent with permission to enter the private property and remove hazard trees near and adjacent to Hubbard Creek Road. On October 18, 2023, the Douglas County Commissioners approved the licenses.

On October 19, 2023, Department Stewardship Foresters (SFs) Kyle Temple and Cody Frieler were traveling along Hubbard Creek Road and observed tree felling activities along Hubbard Creek Road. The activities were on lands adjacent to Hubbard Creek Road owned by various landowners, including Cannonball Timber Holdings, LLC, and Betty Lamb.

SFs Temple and Frieler stopped along Hubbard Creek Road and talked to Marq Randall of Dig N Haul Excavation, Inc. (Dig N Haul) and Respondent's Public Works Director, Scott Adams. Mr. Adams stated that he was directing the activities on behalf of Respondent. Mr. Adams further stated that no NOAP was needed for the felling and removal of the hazard trees, but that if the trees were to be sold at a later date, then a NOAP would be filed at that time. SF Temple stated that he believed a NOAP was required for the entire project.

On October 23, 2023, SF Temple and SF Cody Lokan visited the site again. They talked to Mr. Randall. SF Temple observed that the felling and removal of trees was still occurring along Hubbard Creek Road.

On October 27, 2023, Respondent Commissioner Tim Freeman contacted SF Tyler Ramos to confirm Respondent's position that it would not be filing a NOAP.

On October 30, 2023, SF Temple served a citation on Respondent, through Mr. Adams, at the Douglas County Courthouse. SF Temple also delivered a courtesy copy to Mr. Randall at the site.

On October 30, 2023, the Oregon Department of Forestry (Department) issued a Notice of Violation/Citation, Order to Cease Further Violation, and Order to Repair Damage or Correct Unsatisfactory Condition Caused by Violation (Repair Order) to Douglas County, by and through the Douglas County Public Works Department (Respondent).

On November 21, 2023, Respondent requested a hearing, and the Department referred the hearing request to the Office of Administrative Hearings (OAH).

OFFICE OF ADMINISTRATIVE HEARINGS

The OAH assigned Senior Administrative Law Judge (ALJ) Bradley A. Schmidt to preside over the matter. On February 21, 2024, ALJ Schmidt convened a prehearing conference to review the hearing issues, schedule the hearing, and set related deadlines.

Pursuant to the agreed upon motion schedule, the parties filed Motions for Summary Determination, along with responses and replies, as well as supporting exhibits, affidavits and declarations. In addition, the parties jointly provided Stipulated Facts for Motion for Summary Determination.

ALJ Schmidt issued a ruling on the Motions for Summary Determination and issued a Proposed Order on October 2, 2024 (Attachment 01). The Proposed Order finds in favor of the Department's action. Specifically, the Proposed Order denies Douglas County's motion and grants the Department's motion.

The proposed order included Undisputed Facts as he determined from the records, motions and affidavits submitted. These Undisputed Facts are provided in Attachment 01, page 3 through page 8.

ALJ Schmidt determined there were two issues involved with this contested case:

1. Whether there are any genuine issues as to any material facts and, if not, whether one of the parties is entitled to a favorable ruling as a matter of law. OAR 137-003-0580.

2. Whether Respondent's failure to file a Notification of Operations (NOAP) related to its contracting for the removal of hazard trees along Hubbard Creek Road in October 2023 violated the notice requirements of the Forest Practices Act (FPA). ORS 527.670(6); OAR 629-605-0150(1).

For purposes of the proposed order, the ALJ considered the following records: the pleadings, the motions, the responses, the replies, the Stipulated Facts, the Affidavit of Dominic M. Carollo, the Affidavits of Scott Adams, Respondent's Exhibits 1 through 8, the Affidavits of Kyle Temple, the Declarations of Matthew B. DeVore, and Department Exhibits A01, A02, A04, A18, A32, A35, A48, A65, A67, and A73 through A83.

ALJ Schmidt determined the following Conclusions of Law based on the contested case:

1. There are no genuine issues as to any material facts and the Department is entitled to a favorable ruling as a matter of law.

2. Respondent's failure to file a NOAP related to its contracting for the removal of hazard trees along Hubbard Creek Road in October 2023 violated the notice requirements of the FPA.

The Proposed Order denies Douglas County's Motion for Summary Determination and grants the Department's Motion for Summary Determination. The Proposed Order further proposes that the Department issue an order that Douglas County, by and through the Douglas County Public Works Department, failed to submit to the State Forester a Notification of Operations and Application for Permit of Power Driven Machinery prior to conducting forest operations in violation of ORS 527.670(6) and OAR 629-605-0150(1).

EXCEPTIONS

The Administrative Procedures Act allows parties to make objections to proposed orders, in the form of "exceptions." ORS 183.460; OAR 137-003-0650. Consistent with the Department's rules, the Proposed Order explained that "exceptions shall be confined to factual and legal

issues which are essential to the ultimate and just determination of the proceeding." OAR 629-001-0040(1). Exceptions "shall be based only on grounds that:

(A) A necessary finding of fact is omitted, erroneous, or unsupported by the preponderance of the evidence on the record;

(B) A necessary legal conclusion is omitted or is contrary to law or the board's policy; or

(C) Prejudicial procedural error occurred." OAR 629-001-0040(2)(a).

In addition, the Proposed Oder explained that exceptions must specify the disputed finding, opinions, or conclusions. The party submitting exceptions must specify the nature of the suggested error and provide alternative or corrective language. OAR 629-001-0040(2)(b).

The Proposed Order set a deadline for filing exceptions of seven days after the date of the filing of the proposed order. Douglas County requested, and the Department agreed, to extend the deadline for filing exceptions to October 18, 2024. Douglas County filed timely exceptions on October 17, 2024, via email and hardcopy received by US Mail on October 21, 2024. Those exceptions are attached to this report.

RECORD OF PROCEEDING

The record of the proceedings is available for Board members to review prior to the Board of Forestry meeting by contacting Greg Wagenblast at (541)525-6462 or greg.wagenblast@odf.oregon.gov and a hardcopy will be available at the Board of Forestry meeting.

The Board's decision must be based on the record established through the contested case hearing process. ORS 183.482(7). Any information about the facts at issue that Board members acquire from other sources may be ex parte communication. Ex parte communication is defined as "an oral or written communication to an agency decision maker during its review of the contested case not made in the presence of all parties to the hearing, concerning a fact in issue in the proceeding." OAR 137-003-0660(1). However, this definition specifically excludes "any communication from agency staff or counsel about legal issues or about facts in the record." OAR 137-003-0660(1). If a Board member receives an ex parte communication during their review of the contested case, the Board member must give all parties notice of the substance of the communication or a copy of the communication, and provide the other party with an opportunity to rebut the substance of the ex parte communication. ORS 183.462; OAR 137-003-0660(2).

BOARD'S ALTERNATIVES

Upon review of the proposed order and record presented in this case, pursuant to OAR 629-001-0045(3) the Board can:

1. Entertain written and/or oral argument from the State Forester and any party that filed exceptions to the proposed order if the board determines it is necessary or

appropriate to assist the board in the proper disposition of the case. If allowed, oral argument will be limited to matters raised in written exceptions and shall be presented under time limits determined by the board chair; or

2. Remand the matter to the administrative law judge for further hearing on such issues as the Board specifies and to prepare a revised proposed order as appropriate under OAR 137-003-0655(2); or

3. Enter a final order adopting the recommendations (proposed order) of the hearings officer; or

4. Reject the hearing officer's proposed order and adopt a different final order that contains the necessary findings of fact and conclusions of law based on the record.

RECOMMENDATION

The Department recommends that the Board approve Alternative 3 and issue a Final Order adopting the ALJ's proposed order. A draft Final Order is included as Attachment 03.

ATTACHMENTS

(1) Ruling on Motions for Summary Determination and Proposed Order for ODF Case No. 23-DG021
(2) Exceptions for ODF Case No. 23-DG021 filed by Douglas County attorney
(3) Draft Final Order for ODF Case No. 23-DG021

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
OREGON DEPARTMENT OF FORESTRY
PRIVATE FORESTS

IN THE MATTER OF:	)	**RULING ON MOTIONS FOR**
	)	**SUMMARY DETERMINATION**
DOUGLAS COUNTY, BY AND	)	**AND PROPOSED ORDER**
THROUGH THE DOUGLAS	)	
COUNTY PUBLIC WORKS	)	OAH Case No. 2023-ABC-06272
DEPARTMENT	)	Agency Case No. 23-DG021

HISTORY OF THE CASE

On October 30, 2023, the Oregon Department of Forestry (Department) issued a Notice of Violation/Citation, Order to Cease Further Violation, and Order to Repair Damage or Correct Unsatisfactory Condition Caused by Violation (Repair Order) to Douglas County, by and through the Douglas County Public Works Department (Respondent).[1] On November 21, 2023, Respondent requested a hearing, and the Department referred the hearing request to the Office of Administrative Hearings (OAH). The OAH assigned Senior Administrative Law Judge (ALJ) Bradley A. Schmidt to preside over the matter.

On February 21, 2024, ALJ Schmidt convened a prehearing conference to review the hearing issues, schedule the hearing, and set related deadlines. Attorney Dominic M. Carollo represented Respondent. Assistant Attorney General (AAG) Matthew B. DeVore represented the Department, with Department employees Greg Wagenblast and Kirk Ausland also attending. ALJ Schmidt scheduled the hearing for October 29, 2024, in Roseburg, Oregon. The parties agreed to file any Motions for Summary Determination (MSDs) by May 31, 2024, with responses due on June 21, 2024, and replies to responses due on July 5, 2024.

On May 23, 2024, the Department filed a motion to change the MSD deadlines, with no objection from Respondent. ALJ Schmidt granted the motion, which changed the deadline for filing an MSD to July 12, 2024, with responses due August 2, 2024, and replies due August 16, 2024.

On July 12, 2024, the Department and Respondents each filed an MSD. With its MSD, the Department filed an Affidavit of Kyle Temple (First Temple Affidavit), a Declaration of

[1] The Repair Order only directed Respondent to file a Notification of Operations (NOAP) related to the removal of hazard trees along Hubbard Creek Road.

Matt DeVore,[2] and Exhibits A01, A02, A04, A32, A35, A65, A67, A74, and A75. Respondent included Exhibits 1 through 8 and the Affidavit of Scott Adams (First Adams Affidavit) with its MSD. In addition, the parties jointly provided Stipulated Facts for Motion for Summary Determination.

On August 2, 2024, the parties filed responses in opposition to the other party's MSD with additional supporting documents, as follows: the Department provided an Affidavit of Kyle Temple (Second Temple Affidavit), a Declaration of Matt DeVore, Exhibit A18, and Exhibits A76 through A82; Respondent provided the Second Affidavit of Scott Adams (Second Adams Affidavit).

On August 16, 2024, the parties filed replies. With its reply, the Department included a Declaration of Matt DeVore and Exhibit A83. ALJ Schmidt took the matter under advisement.

ISSUES

1. Whether there are any genuine issues as to any material facts and, if not, whether one of the parties is entitled to a favorable ruling as a matter of law. OAR 137-003-0580.

2. Whether Respondent's failure to file a Notification of Operations (NOAP) related to its contracting for the removal of hazard trees along Hubbard Creek Road in October 2023 violated the notice requirements of the Forest Practices Act (FPA). ORS 527.670(6); OAR 629-605-0150(1).

DOCUMENTS CONSIDERED

For purposes of this ruling and proposed order, the ALJ considered the following: the pleadings, the MSDs, the responses, the replies, the Stipulated Facts, the Affidavit of Dominic M. Carollo, the Affidavits of Scott Adams, Respondent's Exhibits 1 through 8, the Affidavits of Kyle Temple, the Declarations of Matthew B. DeVore, and Department Exhibits A01, A02, A04, A18, A32, A35, A48, A65, A67, and A73 through A83.[3]

STIPULATED FACTS

1. On August 24, 2023, lightning strikes started a series of wildfires that combined to form the Tyee Ridge Complex Fire in northern Douglas County, Oregon, near and adjacent to Hubbard Creek Road. The fire burned approximately 8,000 acres. The Tyee Ridge Complex Fire was contained on September 18, 2023.

2. Hubbard Creek Road is a county roadway under the maintenance jurisdiction of Respondent. It is set in a low valley with steep hillsides and provides access to industrial

[2] The Department's three Declarations of Matt DeVore attested to the authenticity of other documentary evidence but did not contain independent assertions of fact. As such, they receive no subsequent citation.

[3] This constitutes all of the exhibits submitted for consideration with the MSD, the responses, and the replies (the Department did not mark its exhibits in sequential numerical order).

timberland, several homesites, and farmland.

3. As part of the response to the Tyee Ridge Complex Fire, timber fallers within the Department's Incident Management Teams cut trees that they found to be a hazard to fire crews, structures, or roadways, including trees along Hubbard Creek Road.

4. From approximately September 14, 2023, when the fire was ending, to around September 19, 2023, Respondent's arborist evaluated and inventoried trees which posed a hazard to the traveling public on Hubbard Creek Road.

5. From September 25, 2023 to September 27, 2023, Respondent obtained consent (in the form of a "license") from three landowners with land abutting Hubbard Creek Road. This license provided Respondent with permission to enter the private property and remove hazard trees near and adjacent to Hubbard Creek Road. On October 18, 2023, the Douglas County Commissioners approved the licenses.

6. On October 19, 2023, Department Stewardship Foresters (SFs) Kyle Temple and Cody Frieler were traveling along Hubbard Creek Road and observed tree felling activities along Hubbard Creek Road. The activities were on lands adjacent to Hubbard Creek Road owned by various landowners, including Cannonball Timber Holdings, LLC, and Betty Lamb.

7. SFs Temple and Frieler stopped along Hubbard Creek Road and talked to Marq Randall of Dig N Haul Excavation, Inc. (Dig N Haul) and Respondent's Public Works Director, Scott Adams. Mr. Adams stated that he was directing the activities on behalf of Respondent. Mr. Adams further stated that no NOAP was needed for the felling and removal of the hazard trees, but that if the trees were to be sold at a later date, then a NOAP would be filed at that time. SF Temple stated that he believed a NOAP was required for the entire project.

8. On October 23, 2023, SF Temple and SF Cody Lokan visited the site again. They talked to Mr. Randall. SF Temple observed that the felling and removal of trees was still occurring along Hubbard Creek Road.

9. On October 27, 2023, Respondent Commissioner Tim Freeman contacted SF Tyler Ramos to confirm Respondent's position that it would not be filing a NOAP.

10. On October 30, 2023, SF Temple served a citation on Respondent, through Mr. Adams, at the Douglas County Courthouse. SF Temple also delivered a courtesy copy to Mr. Randall at the site.

UNDISPUTED FACTS

1. Since 2022, Respondent has contracted with Dig N Haul for county road services, including the removal of hazard trees, in situations where Respondent lacks the manpower and/or equipment to complete the required services. (Ex. 7 at 1; First Adams Aff. at 4-5; Second Adams Aff. at 3.)

2. Between September 14, 2023 and September 19, 2023, Respondent's arborist identified 279 trees to be removed from along Hubbard Creek Road (55 within and 224 outside of the county's right of way) as follows: 155 Douglas firs, 6 madrones, 12 cedars, 33 maples, 32 grand firs, and 41 others (such as hemlock, Oregon myrtle, and chinquapin). (Ex. A75 at 1, 3-15.) The trees ranged in height from 20 feet to 160 feet, with an average height of approximately 70 feet. (*Id.* at 2.)

3. Prior to the completion of Respondent's hazard abatement along Hubbard Creek Road, none of the landowners had applied to convert the land to a use other than as forestland. (Second Temple Aff. at 1.)

4. Hubbard Creek Road is located between steep slopes in the Tyee Core area, a geographical region with features increasing the risk of landslides. In 1996, a rapid landslide occurred along Hubbard Creek Road due to a clearcut and heavy rains, resulting in multiple deaths. (First Temple Aff. at 2.)

5. The Department uses the 15-day waiting period following the filing of the NOAP to complete or examine existing geotechnical (or "geotech") studies of landslide danger in the operation area to ensure that the operation will not negatively impact public safety. (First Temple Aff. at 7; Ex. A32 at 5-10.) The Department also uses the 15-day waiting period to determine whether the operation will impact riparian resources. (First Temple Aff. at 7; Ex. A32 at 2.)

6. After speaking with Mr. Randall and Mr. Adams on October 19, 2023, SF Temple contacted Gabe Crane of Cannonball Timber Holdings and Roseburg Forest Products. SF Temple informed Mr. Crane that no NOAP had been filed for the operation occurring along Hubbard Creek Road. Mr. Crane filed NOAP number 2023-730-11302 that evening. (First Temple Aff. at 4; Ex. A04 at 1.) The NOAP covered only the property owned by Cannonball Timber Holdings. (First Temple Aff. at 5; Ex. A04 at 1.) The Department had an existing geotech study for this property from 2020. (Ex. A04 at 5-8.)

7. Also on the afternoon of October 19, 2023, SF Temple emailed Mr. Adams to reiterate that Respondent needed to file a NOAP related to the hazard abatement along Hubbard Creek Road. (First Temple Aff. at 5; Ex. A02 at 1.)

8. On October 30, 2023, Mr. Crane filed a NOAP for the Betty Lamb property. (First Temple Aff. at 7; Ex. A32 at 1.) During the 15-day waiting period, the Department conducted a geotech study and riparian impact evaluation. (First Temple Aff. at 7; Ex. A32 at 2-10.) The Department found that this property contained High Landslide Hazard Locations (HLHLs). (First Temple Aff. at 7; Ex. A32 at 8.) The Department also found that the property contained a fish-bearing stream, which would normally require the filing of a written plan before the commencement of an operation. (First Temple Aff. at 7; Ex. A32 at 2.)

9. The hazard tree abatement contracted by Respondent and completed by Dig N Haul along Hubbard Creek Road between October 18, 2023 and October 30, 2023 resulted in the felling of between approximately 200 and 500 trees. (First Temple Aff. at 7; Exs. A48 at 1, A73 at 1.)

10. At least some of the trees felled in Respondent's hazard abatement represented a danger to the county roadway and the traveling public using Hubbard Creek Road. (First Adams Aff. at 2; Second Adams Aff. at 3; First Temple Aff. at 8.) A failure to remove the trees could have increased the risk of landslide along Hubbard Creek Road in the impending wet season. (First Adams Aff. at 2-3.)

11. Subsequent to the removal of the hazard trees, Respondent undertook efforts to revegetate the slopes above Hubbard Creek Road to further mitigate the landslide danger. (First Adams Aff. at 6.)

12. In abating the hazard trees along Hubbard Creek Road, Dig N Haul felled the trees, removed them from their original locations on the slope above Hubbard Creek Road, limbed them, sawed them into logs consistent with commercial timber sales, and decked them, *i.e.*, stacked them in an area that could be used as a staging area for their removal. (First Temple Aff. at 3, 7; Exs. A48 at 1, A73 at 1; First Adams Aff. at 4; Second Adams Aff. at 2.) The decking area was located on the property of Betty Lamb. (First Temple Aff. at 3.)

13. As of April 19, 2024, some or all of the decked logs remained where they were left at the conclusion of the hazard abatement activity. (Second Temple Aff. at 1-2.)

14. On December 21, 2021, the Department promulgated in its publicly available Forest Practices Rule Guidance the following official analysis of the term "forestland" as used to determine FPA applicability and as defined in OAR 629-600-0100(26), in relevant part:

> *** * * Is the activity on "forestland?"**
>
> Forestland defined for Forest Practices Administration.
> "Forestland" is defined broadly in ORS 527.620 "Definitions" and includes any land being used to grow and harvest forest tree species, even if that is not the **primary** use of the land. The zoning, tax status, other state or local statutes, ordinances, rules or regulations that may apply to the parcel are not considered when making the forestland determination. If forest tree species are growing on the land and activities for managing or harvesting trees for commercial purposes have been or are being conducted, it is forestland.
>
> **Forestland**: Any size tract or patch of trees that can be harvested for a commercial forest product regardless of the surrounding land use or zoning of the land, including:
> - Strips of timber along streams on farm or range land. There is an exemption for the *establishment* and *management* of forested patches intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters, or shade strips immediately adjacent to actively farmed lands. This exemption does

not apply to the *harvest* of such forested patches.

- Patches of timber that remain inside urbanized areas that are not exempted by the FPA definition of "operation."
- Patches of timber within the urban growth boundary of local governments that have not adopted land use regulations that supplant the FPA.
- Natural or unmaintained areas of public parks and campgrounds (Not including areas of publicly-accessible parks and campgrounds maintained for public use, as these are considered to be already converted to non-forest land).
- The forested portions of rights-of-ways are considered "forestland" for purposes of FPA administration.

Non-forestland, considered to be already converted to a non-forest use, includes:

- "Yard" or grounds around maintained residential structures and outbuildings to the extent of 1.5 times the height of on-site trees currently growing in the vicinity, per guidance for hazard trees from Oregon Occupational Safety and Health Division.
  - The portions of parks, campgrounds, and day-use areas that are maintained/landscaped, or developed with maintained buildings or other structures, and where people are normally present.
    - Includes publicly- and privately-owned parks, campgrounds, and day-use areas, with the condition that the public is invited to use the facilities.
    - "Developed with building or other structures" does not include:
      - Hiking trails outside publicly-accessible parks, campgrounds and day-use areas.
      - Privately-owned facilities not generally open for public use.
  - Developed and maintained public campgrounds and park areas that are not managed for the growing and harvesting of tree species, rather are managed exclusively for recreation. Incidental tree harvests in public campgrounds or parks that are non-forestland would not be reforested with the intent of future commercial tree harvest.
  - Tree nurseries and seed orchards.
    - Statute excludes from the definition of "operation" those activities relating to tree nurseries and seed orchards (ORS 527.620).
    - The 1995 Memorandum of Agreement on pesticide regulation between the Board of Forestry and ODA states that the definition of forestland does not include tree nurseries or seed orchards.
  - "Utility rights-of-way" such as power line or gas pipeline

corridors, where commercial trees have already been harvested. However, within the non-forestland portion of the ROW, notifications are required for incidental commercial forest harvest for DOR and PDM purposes only. There is typically a federal/state/regional/local process for such conversions. ODF's policy is that it wants to be included in the planning stages, but that most of its resource protection concerns would be addressed in the existing formal process. **Note:** Notifications are needed for stream crossings, road building and harvesting. Where written plans are needed, they would usually be in the form of existing planning documents. Other concerns, such as landslides and public safety should be considered in the planning process.

Because the definition of an "operation" reads ". . . activity relating to the establishment, management or harvest of forest tree species . . .," forest practice's jurisdiction extends to adjacent land crossed in order to access forestland. Examples: A road, used however occasionally in forest operations, that crosses residential or agricultural land to reach forestland. ODF will regulate the resource-affecting activities on a road crossing federal land to access an operation on private forestland.

(Ex. A65 at 21-22, emphasis original.)

15. On January 12, 2022, the Department promulgated the following official interpretation of OAR 629-605-0500 in its publicly available Forest Practices Rule Guidance:

APPLICATION:

This rule is not used for enforcement. A PFAP [Plan for Alternate Practice] is required to modify a forest practice rule **relating to the listed waters and their RMAs** [riparian management areas], to address forest health or public safety concerns. The operator must comply with the standard practice unless there is an approved PFAP. Without such a plan, ODF takes enforcement action under that rule for failure to follow the standard practice.

ADMINISTRATION:

This rule only allows the reduction of protection requirements (not an increase or more restrictive requirements). It does not relax administrative requirements for notifications, written plans or their waiting periods.

Note: In circumstances where a hazard immediately threatens life or improved property such as homes and public roads (an "emergency"), actions to respond to and mitigate the emergency would not be considered an "operation" under the Oregon FPA. Thus, in these limited

circumstances, the FPA would not apply on forestland. After the emergency has passed, any subsequent activities related to growing and harvesting of forest tree species would be forest practices and subject to the protection standards and administrative requirements of the Act.

The SF must use his/her best professional judgment in determining if there is a legitimate forest health or public safety hazard involving streams, lakes, wetlands, and their RMAs. The potential hazard tree zone is considered to be 1.5 time[s] tree heights from the road or other infrastructure, plus additional distance for upslope hazard trees or snags. In making this determination, the SF may consult with appropriate other agencies or Salem staff. One objective of this rule is to improve forest health by allowing removal of diseased or infested trees that pose a substantial risk to upland stands. This objective of the rule does not extend to salvaging all dying trees from the RMA.

* * * * *

In public safety situations, often individual trees or groups of trees will need to be harvested to protect improvements. In those situations, if the basal area target can be met by other trees in the RMA, then there is no need to modify the basal area requirements. Example: Unstable woody debris in a stream directly threatens a culvert or bridge. An acceptable PFAP would allow the woody debris to be approved for removal from the aquatic area.

Note: Nothing in this rule allows the department to suspend the mandatory comment period required before approving a PFAP that is part of a statutory written plan as discussed in OAR 629-605-0173(3).

Hazard trees and snags felled under this section must be left in place unless moved only as necessary to abate the hazard or used for stream improvement. OAR 629-642-0100(3), -0105(7), -0400(3).

The operator may wish to remove a hazard tree in an RMA which would otherwise be required to be retained. Because of the public safety hazard that leaving this tree poses, the rules allow for this modification even though the result is not “equal or better”, OAR 629-605-0100(2)(d) and -0173.

Note: Non-forestland, considered to have been already converted to non-forest use, includes the distance around residential structures that is 1.5 times the tree height, plus additional distance for upslope hazard trees or snags. Non-forestland is not under the FPA jurisdiction. See guidance for OAR 629-600-0100 that addresses activity on forestland[.]

(Exs. 4 at 84-85, A67 at 84-85, emphasis original.)

CONCLUSIONS OF LAW

1. There are no genuine issues as to any material facts and the Department is entitled to a favorable ruling as a matter of law.

2. Respondent's failure to file a NOAP related to its contracting for the removal of hazard trees along Hubbard Creek Road in October 2023 violated the notice requirements of the FPA.

OPINION

Standard of Review for Motion for Summary Determination

OAR 137-003-0580 addresses motions for summary determination. It provides, in relevant part:

> (6) The administrative law judge shall grant the motion for a summary determination if:
>
> (a) The pleadings, affidavits, supporting documents (including any interrogatories and admissions) and the record in the contested case show that there is no genuine issue as to any material fact that is relevant to resolution of the legal issue as to which a decision is sought; and
>
> (b) The agency or party filing the motion is entitled to a favorable ruling as a matter of law.
>
> (7) The administrative law judge shall consider all evidence in a manner most favorable to the non-moving party or non-moving agency.
>
> (8) Each party or the agency has the burden of producing evidence on any issue relevant to the motion as to which that party or the agency would have the burden of persuasion at the contested case hearing.
>
> * * * * *
>
> (12) If the administrative law judge's ruling on the motion resolves all issues in the contested case, the administrative law judge shall issue a proposed order in accordance with OAR 137-003-0645 incorporating that ruling * * *.

Issues may be resolved on a motion for summary determination only where the application of law to the facts requires a single, particular result. Therefore, the issues on summary determination must be purely legal. *King v. Department of Public Safety Standards and*

Training, 289 Or. App. 314, 321 (2017) (citing *Hamlin v. PERB*, 273 Or App 796, 798 (2015)). An ALJ may not grant a motion for summary determination simply because the weight of the evidence favors one party over the other. *Id*. at 322 (citing *Watts v. Board of Nursing*, 282 Or App 705, 714 (2016) ("If there is evidence creating a relevant fact issue, then no matter how 'overwhelming' the moving party's evidence may be, or how implausible the nonmoving party's version of the historical facts, the nonmoving party, upon proper request, is entitled to a hearing.")); *see also Staten v. Steel*, 222 Or App 17, 31 (2008), *rev den*, 345 Or 618 (2009) (stating that a court does not weigh the evidence on a motion for summary judgment).

Pursuant to OAR 137-003-0580(6)(a), I considered the pleadings, the MSDs, the Responses, the Replies, the Stipulated Facts, the Affidavit of Dominic M. Carollo, the Affidavits of Scott Adams, Respondent's Exhibits 1 through 8, the Affidavits of Kyle Temple, the Declarations of Matthew B. DeVore, and Department Exhibits A01, A02, A04, A18, A32, A35, A48, A65, A67, and A73 through A83. Pursuant to OAR 137-003-0580(7), I reviewed the evidence in a light most favorable to Respondent.[4] Based upon that review, there are no material facts in dispute regarding whether Respondent was required to file a NOAP under the FPA. The Department is entitled to a favorable ruling, thus resolving all issues in this matter. The currently scheduled hearing will be cancelled in light of this Ruling and Proposed Order.

Respondent's Failure to File NOAP

The Department contends that Respondent failed to file a NOAP as required by ORS 527.670(6), part of the Oregon Forest Practices Act (FPA), codified at ORS 527.610 through ORS 527.770, ORS 527.990(1), and ORS 527.992. ORS 527.610(1). Respondent contends that it was not subject to the notice requirement in ORS 527.670(6).

ORS 527.670(6) states, in relevant part:

> An operator, timber owner or landowner, before commencing an operation, shall notify the State Forester. The notification shall be on forms provided by the State Forester and shall include the name and address of the operator, timber owner and landowner, the legal description of the operating area, and any other information considered by the State Forester to be necessary for the administration of the rules promulgated by the board pursuant to ORS 527.710. Promptly upon receipt of such notice, the State Forester shall provide a copy of the notice to whichever of the operator, timber owner or landowner did not submit the notification.

A systematic analysis of the above law with regard to the stipulated and undisputed facts shows that Respondent's hazard abatement activities in October 2023 fell within its purview.

The FPA's general framework

[4] However, to the extent that the affidavits submitted by the parties asserted legal conclusions, such as whether certain statutory definitions applied, these legal conclusions were disregarded. All legal conclusions contained herein are those of the ALJ based upon an application of the relevant laws and rules to the undisputed facts.

The FPA directs the actions of the Department and the State Board of Forestry (Board) with regard to "forestland," defined as "land that is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied." ORS 527.620(8). The Board is a seven-member panel appointed by the governor to supervise forest policy and, with the Department, promulgate rules in accordance with the legislature's mandates. ORS 526.009(1); ORS 526.016(1); ORS 526.031(1); ORS 526.041(1). The Oregon legislature set forth the policy concerns and purpose of the FPA in ORS 527.630, as follows in relevant part:

> (1) Forests make a vital contribution to Oregon by providing jobs, products, tax base and other social and economic benefits, by helping to maintain forest tree species, soil, air and water resources and by providing a habitat for wildlife and aquatic life. Therefore, it is declared to be the public policy of the State of Oregon to encourage economically efficient forest practices that ensure the continuous growing and harvesting of forest tree species and the maintenance of forestland for such purposes as the leading use on privately owned land, consistent with sound management of soil, air, water, fish and wildlife resources * * * and to ensure the continuous benefits of those resources for future generations of Oregonians.
>
> (2) It is recognized that operations on forestland are already subject to other laws and to regulations of other agencies which deal primarily with consequences of such operations rather than the manner in which operations are conducted. It is further recognized that it is essential to avoid uncertainty and confusion in enforcement and implementation of such laws and regulations and in planning and carrying out operations on forestlands.
>
> (3) To encourage forest practices implementing the policy of [the FPA], it is declared to be in the public interest to vest in the State Board of Forestry exclusive authority to develop and enforce statewide and regional rules pursuant to ORS 527.710 and to coordinate with other state agencies and local governments which are concerned with the forest environment.
>
> (4) It is recognized that ensuring compliance with, and enforcing, [the FPA] and rules and orders adopted or issued thereunder is essential to protect Oregon's natural resources. It is further recognized that onsite inspections are necessary to further the policy of [the FPA].
>
> (5) It is recognized that enforcement of the policy of [the FPA] is necessary to support the integrity of the policy and give the public confidence that standards for forest practices are being followed. It is further recognized that an effective enforcement program must include:

(a) Adequate training and education of enforcement officers, operators, timber owners and landowners.

(b) Clear technical guidance.

(c) Implementation expectations that are transparent and easily understood by operators, timber owners and landowners.

(6) It is declared to be the policy of the State of Oregon that the program for implementing enforcement under [the FPA] be adequately funded, and that the board:

(a) Use inspections and enforcement as tools to deter future violations and to educate and train operators, timber owners and landowners.

(b) In exercising enforcement discretion, including discretion to impose penalties, prioritize addressing significant violations, other consequential violations and the actions of repeat violators.

* * * * *

(8) The board shall adopt and enforce forest practice rules to reduce the risk of serious bodily injury or death from a rapidly moving landslide only in accordance with ORS 527.710(10). As used in this subsection, "rapidly moving landslide" has the meaning given in ORS 195.250.[5]

As set forth in ORS 527.670, the Oregon legislature contemplated that certain forest operations would require a notice filed with the Department. ORS 527.670(1) states that "[t]he State Board of Forestry shall designate the types of operations for which notice shall be required."

Similarly, ORS 527.710 states, in relevant part:

(1) In carrying out the purposes of [the FPA], the State Board of Forestry shall adopt, in accordance with applicable provisions of ORS chapter 183 [the Administrative Procedures Act], rules to be administered by the State Forester establishing standards for forest practices in each region or subregion.

(2) The rules shall ensure the continuous growing and harvesting of forest tree species. Consistent with ORS 527.630, the rules shall provide for the overall maintenance of the following resources:

(a) Air quality;

[5] "'Rapidly moving landslide' means a landslide that is difficult for people to outrun or escape." ORS 195.250(3).

(b) Water resources, including but not limited to sources of domestic drinking water;

(c) Soil productivity; and

(d) Fish and wildlife.

* * * * *

(10) In addition to its responsibilities under subsections (1) to (3) of this section, the board shall adopt rules to reduce the risk of serious bodily injury or death caused by a rapidly moving landslide directly related to forest practices. The rules shall consider the exposure of the public to these safety risks and shall include appropriate practices designed to reduce the occurrence, timing or effects of rapidly moving landslides. As used in this subsection, "rapidly moving landslide" has the meaning given that term in ORS 195.250.

Under the above laws, the legislature delegated broad authority to the Board and Department to set rules and provide technical guidance regarding forest practices. This includes the authority to designate which forest operations require the filing of a notice. The Board adopted rules in OAR Chapter 629, divisions 600 through 680 to implement the directives in the FPA. OAR 629-600-0050.

The hazard abatement was an "operation" requiring the filing of a notice.

In ORS 527.620(13), the Oregon legislature provided the following relevant definition for purposes of the FPA:

> "Operation" means any commercial activity relating to the establishment, management or harvest of forest tree species[6] except as provided by the following:
>
> (a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.
>
> (b) The establishment, management or harvest of hardwood timber,

[6] ORS 527.620(7) states:

> "Forest tree species" means any tree species capable of producing logs, fiber or other wood materials suitable for the production of lumber, sheeting, pulp, firewood or other commercial forest products except trees grown to be Christmas trees as defined in ORS 571.505 on land used solely for the production of Christmas trees.

including but not limited to hybrid cottonwood * * *.

(c) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.

(d) The establishment, management or harvest of ornamental, street or park trees within an urbanized area, as that term is defined in ORS 221.010.

(e) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.

(f) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.

(g) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

See also OAR 629-600-0100(93) (echoing the above definition).

Respondent argues that the above definition of "operation" does not apply to its hazard abatement for multiple reasons. First, Respondent contends that the hazard abatement did not involve the "harvest" of forest tree species. This contention is not persuasive. The legislature did not define the word "harvest" for purposes of the above statute, and the Board did not adopt a definition of the word in its related rules. The term "harvest" is not defined by statute or rule in the context of the FPA. Therefore, one must begin with the plain, ordinary meaning of the term. *PGE v. Bureau of Labor and Industries*, 317 Or 606, 611 (1993) ("[W]ords of common usage typically should be given their plain, natural, and ordinary meaning."). The usual source for determining the ordinary meaning of statutory terms is a dictionary of common usage. *State v. Murray*, 340 Or 599, 604 (2006) ("Absent a special definition, we ordinarily would resort to dictionary definitions, assuming that the legislature meant to use a word of common usage in its ordinary sense."). The common definition of "harvest" is "the act or process of gathering in a crop." *Webster's Third New Int'l Dictionary* 1036 (unabridged ed 1993). The parties provided no evidence that the legislature intended the word "harvest" to be interpreted other than as in this common usage. *State v. Gaines*, 346 Or 160, 171-72 (2009).

A review of related statutes supports the conclusion that the legislature intended the common definition of "harvest" to apply. In ORS 527.620(9) through (11), the legislature defined harvest types 1, 2, and 3; all are operations involving the felling of forest tree species requiring various levels of subsequent remediation (*e.g.*, reforestation). *See also* OAR 629-600-0100(64) – (67) (mirroring the statutory definitions and adding "Harvest type 4" involving the

commercial thinning of residual trees). Because the hazard abatement involved the felling of trees and the gathering of logs to a decking area, it met the common definition of "harvest" regardless of Respondent's purposes or its expectations regarding the potential sale of the logs.

Respondent also argues that its hazard abatement was not an "operation" because it was not "commercial." As with the word "harvest," the legislature did not define the word "commercial" as used in the above statute. However, the Board adopted the following definition in OAR 629-600-0100(23):

> "Commercial" means of or pertaining to the exchange or buying and selling of commodities or services. This includes any activity undertaken with the intent of generating income or profit; any activity in which a landowner, operator, or timber owner receives payment from a purchaser of forest products; any activity in which an operator or timber owner receives payment or barter from a landowner for services that require notification under OAR 629-605-0140; or any activity in which the landowner, operator, or timber owner barters or exchanges forest products for goods or services. This does not include firewood cutting or timber milling for personal use.

Respondent contends that because it contracted for the removal of trees for the sole purpose of hazard abatement, the activity was not "undertaken with the intent of generating income or profit." Respondent argues that the abatement thus did not meet the above definition of "commercial." Although the Department alleges that Respondent or a landowner bartered, exchanged, and/or sold some or all the resulting logs, Respondent has provided evidence to contradict these allegations. As such, the exchange or sale of forest products cannot form a basis for finding the abatement was "commercial" in the present ruling.

Nevertheless, the undisputed facts compel the conclusion that the hazard abatement "pertain[ed] to the exchange or buying and selling of commodities or services" in fulfillment of OAR 629-600-0100(23). First, whether or not Respondent or the landowners at any point took further action to appraise or pursue a sale of the resulting logs, Respondent unquestionably purchased a service from its contractor, Dig N Haul, to carry out a harvest of forest species. In addition, the undisputed evidence established that this harvest involved the limbing, sawing, and decking of the felled trees. This resulted in stacks of merchantable logs. In other words, the process employed by Respondent through its contractor transformed the trees from a natural feature of the landscape into a commonly sold raw material ready for offsite sale and use.

Respondent argues that its processing of the felled trees was merely a commonsense way to handle the logistics of the hazard abatement, especially given that to leave the trees in place on the steep slope could result in their eventual slide into the roadway. Even accepting this argument as true, it does not change the commercial nature of this processing, particularly because of the scale of the project. Respondent abated the hazard by commodifying hundreds of trees over several days of work. Given the scope of Dig N Haul's undertaking and the number of decked logs, Respondent's contention that these should be considered merely incidental to a noncommercial project is unpersuasive. In addition, none of the enumerated exceptions to the

definition of "operation" apply. ORS 527.620(13)(a) – (g). Respondent's hazard tree abatement was thus an operation under ORS 527.620(13). As the entity conducting that operation, Respondent was an operator under ORS 527.620(14). Therefore, Respondent was required to file a NOAP under ORS 527.670(6).

Respondent further argues that the agency's definition of "commercial" in OAR 629-600-0100(23) is overbroad and exceeds the rulemaking authority of the agency. This argument is not persuasive. In its rulemaking process, the Board could have defined operations as "commercial" only if initiated with the primary purpose of generating profits. Instead, it decided to consider an operation "commercial," as in the present matter, merely by the way it is carried out, such as by a paid private contractor and/or by converting trees into saleable logs. The rule's definition is entirely consistent with the rulemaking authority granted to the Board and the policy considerations set forth in the FPA. In ORS 527.670(1), the legislature delegated to the Board the authority to determine what operations require the filing of a notice. As such, while reasonable minds might disagree on what constitutes a "commercial" operation, it was entirely within the Board's authority to extend the notice requirement to operations "commercial" by how they are carried out rather than by their aims. Because the legislature specifically distinguished the FPA from other forest-related regulations due to its concern with "the manner in which operations are conducted," the Board appears to be effectuating the legislature's purposes in defining operations as "commercial" merely by the way they are conducted. ORS 527.630(2). Finally, to the extent that the determination of the "commercial" nature of the hazard abatement relies upon the Department's interpretation of the definition contained within OAR 629-600-0100(23) rather than the text of the definition itself, that interpretation deserves substantial deference given the broad authority granted by the legislature. *State v. Acosta*, 112 Or App 191, 195-96 (1992) (quoting *Bailey v. Board on Police Standards*, 100 Or App 739, 742 (1990)).

Respondent also disputes that its hazard abatement fell within Department or FPA jurisdiction based on the question of whether it occurred on "forestland." However, the undisputed facts established that the area of the hazard abatement extended from Respondent's right-of-way to privately-owned land outside the right-of-way and contained hundreds of mature trees, such as Douglas firs and maples. There was no effort by the landowners to convert the land to a non-forestland use. Although the parties dispute whether Respondent (or the landowners) ever intended to barter or sell the resulting logs, there is no evidence to dispute that these logs constitute merchantable lumber. While the landowners might not have chosen October 2023 as the time to harvest the trees on that segment of land in the absence of the Tyee Ridge Complex Fire, the undisputed facts showed that the growth of lumber was at least one use of the land.

The Department's official guidance explains that "forestland" means "[a]ny size tract or patch of trees that can be harvested for a commercial forest product regardless of the surrounding land use or zoning of the land, including * * * [t]he forested portions of rights-of-ways." Exhibit A65 at 21. It further states that "[i]f forest tree species are growing on the land and activities for managing or harvesting trees for commercial purposes * * * are being conducted, it is forestland." *Id.* Under the legislature's broad grant of authority to the Department to regulate and provide technical guidance regarding forest practices, this official guidance must receive substantial deference. *Acosta*, 112 Or App at 195-96 (quoting *Bailey*, 100 Or App at 742). The abatement occurred on forestland under the purview of the FPA.

The County Roads Act does not exempt Respondent from the notice requirement.

Alternatively, Respondent argues that the County Roads Act, codified in ORS chapter 368, exempts it from filing the notice required by ORS 527.670(6). Respondent unquestionably bears the responsibility for, and attendant authority to carry out, maintenance of its county roads and the prevention of hazards thereon. ORS 368.016; *see also, e.g.*, *Donaca v. Curry County*, 303 Or 30 (1987) (declining to grant counties blanket tort immunity for failure to abate county road hazards). But the question of whether this responsibility and authority exempt it from having to file a NOAP when performing road hazard abatements is a separate question.

Referring to the County Roads Act, Respondent specifically argues that ORS 368.271, titled "Abatement of road hazard by county," empowers counties to abate road hazards without having to submit to Department procedures. This argument is unpersuasive. ORS 368.251 through ORS 368.281 address road hazards on county roads, defined as "public road[s] under the jurisdiction of a county." ORS 368.001(1). ORS 368.256 sets the relevant guidelines landowners must follow to prevent hazards to county roads:

> (1) Except as authorized by the county governing body, an owner or lawful occupant of land shall not allow:
>
> * * * * *
>
> (b) Any * * * tree * * * or other natural or man-made thing on that land to present a danger to or create a hazard for the public traveling on a public road or facilities within the right of way of the public road by obstructing, hanging over or otherwise encroaching or threatening to encroach in any manner on a public road that is under county jurisdiction.
>
> (2) A person is not in violation of this section if there is no reasonable method for the person to control, stop or remove the cause of the violation.

Under ORS 368.261(1) and (2), a county road official can issue an order directing a person in violation of ORS 368.256 to abate the violation within a specified period. If the person does not abate the violation by the deadline, ORS 368.261(3) and ORS 368.266 provide for the holding of a hearing before the county governing body. If at the hearing the county governing body determines that the violation of ORS 368.256 occurred as alleged, it "shall order that person to abate the violation within a time fixed by the county governing body, which time shall not be less than 10 days." ORS 368.266(3).

In arguing that the County Roads Law exempts it from filing a notice of operation, Respondent primarily relies upon ORS 368.271, which can sometimes allow the county to abate violations of ORS 368.256 without turning to the order and hearing process described above. ORS 368.271 states in relevant part:

> (1) A county road official may abate a violation of ORS 368.256 at any

time if any of the following occur:

(a) If the period of time established for abatement of the violation under ORS 368.266 passes and the person ordered to abate the violation has not done so within that time.

(b) If a reasonable attempt to provide service [of a notice of hearing] under ORS 368.266 has been made and no owner or lawful occupant of the property has been located and served.

(c) If the county road official determines that the violation creates a substantial risk of damage, injury or other emergency condition that requires abatement without delay and without notice or hearing. A county road official is not required to comply with ORS 368.261 and 368.266 when the county road official abates a violation under this paragraph.

(2) A county road official may take any reasonable actions under this section to abate the violation of ORS 368.256.

(3) A county and its officers, agents and employees are exempt from liability for any reasonable acts performed under this section, including, but not limited to, any reasonable trespass or conversion of personal property.

Respondent's reliance upon this statute is misplaced. The County Roads Act contains no explicit exemptions from the FPA. ORS 368.251 – ORS 368.281. Both parties submitted evidence of the legislative history of the County Roads Act, none of which evinces a legislative intent to completely release counties from the FPA when abating hazards. A county's authority to abate emergency hazards without resorting to the order and hearing process under ORS 368.271 thus does not necessarily exempt the county from the notice requirement of ORS 527.670(6) where the abatement involves the harvesting of forest species from forestland. Indeed, ORS 527.630(2) recognizes that laws outside the FPA govern forest practices, and ORS 527.630(3) commissions the Department with coordinating with local governments regarding forest practices governed by those other laws, such as the County Roads Act. This coordination can take the form of, for example, requiring a NOAP to alert the Department when a county intends to initiate the harvest of forest tree species. In other words, given the context of the statutes in question, Respondent and other counties are generally bound by the FPA's notice requirements when engaged in operations, even when those operations involve the abatement of county road hazards.

That said, there may be cases where circumstances would make it reasonable for a county to harvest hazard trees without submitting to the Department's notice process. Where this is the case, the liability shield within ORS 368.271(3) could potentially apply. However, even construing all evidence in favor of Respondent, the evidence established that it was not reasonable for it to proceed in the present matter without filing the notice required by ORS 527.670(6). As of September 19, 2023, Respondent's arborist had catalogued the extent of the

hazard to be abated. This consisted of a list of trees to be removed from private property near and within the county's right-of-way. There was no evidence that Respondent did not understand the scope of the hazard to be abated (and was thus incapable of filing an accurate NOAP) once its arborist completed this catalogue. Respondent reached out to the relevant landowners starting on September 25, 2025, to contract for its entry onto private property to remove the trees. This evidence further establishes that Respondent was planning an operation well in advance of the operation's commencement, which did not occur until after the County Commissioners approved the landowner licenses on October 18, 2023.

OAR 629-605-0150(1) requires that operators give only 15 days advance notice before commencing an operation. Moreover, under OAR 629-605-0150(2), the Department may grant a waiver of the 15-day timeline where "the State Forester has already previewed the operation site or has otherwise determined the operation to have only minor potential for resource damage." As such, the undisputed evidence showed that Respondent did not have a reasonable basis not to file the required notice between the time when it apprehended the extent of the hazard and when it began its abatement.

Respondent's resort to ORS 368.271(3) is also complicated by the fact that the undisputed evidence demonstrates Respondent's hazard abatement did not proceed under ORS 368.271 at all. Respondent made no effort to direct the landowners to abate the hazard or submit to a hearing process as contemplated by ORS 368.261 and ORS 368.266, despite having ample time to do so. Rather, Respondent engaged in its approximately month-long process of seeking the landowners' agreement and having its commissioners approve the resulting licenses. As such, the undisputed evidence shows that, rather than proceed immediately with the expectation that "any reasonable trespass or conversion of personal property" resulting from the hazard abatement would be excused by ORS 368.271(3), Respondent charted a careful course with the cooperation of the landowners without resorting to the more punitive measures outlined in ORS 368.261, ORS 368.266, and ORS 368.271. Respondent could have shown similar care with regard to the Department's mandates but did not do so. Because Respondent's failure to file the notice did not constitute a "reasonable act performed under" ORS 368.271, ORS 368.271(3) does not shield it from enforcement by the Department.

Potential notice exceptions for certain hazardous conditions

The Department's regulations provide for exceptions to the notice requirement of ORS 527.670(6) where operators encounter certain unsafe conditions. OAR 329-605-0400; OAR 629-605-0500. OAR 629-605-0400 states:

> Compliance with worker safety regulations is essential for ensuring the safety of operators and their employees. Regulation of forest practices must be achieved in a manner which allows operators to comply with applicable federal and state safety requirements. In administering the forest practice rules to meet the resource protection goals, especially requirements related to working near snags, residual green trees and unstable material, the State Forester shall use appropriate discretion.

Similarly, OAR 629-605-0500 states:

> Protection requirements for streams, lakes, wetlands and riparian management areas may be modified by approval of a plan for an alternate practice by the State Forester for reasons of forest health or because of hazards to public safety or property. Hazards to public safety or property include hazards to river navigation and hazards to improvements such as roads, bridges, culverts, or buildings. Forest health concerns include fire, insect infestations, disease epidemics, or other catastrophic events not otherwise addressed in OAR 629-642-0600. Such modifications of protection requirements should prevent, reduce or alleviate the forest health conflict or hazard while meeting the intent of the protection goals as much as possible.

Neither of these provisions apply in the present matter. Respondent did not harvest tress as a matter of *worker* safety. The undisputed evidence showed that the operation at issue involved the removal of trees as a matter of danger to the public and a county road. The harvest was not required to maintain the safety of workers already present in the operation's location for other purposes. Therefore, OAR 629-605-0400 does not apply.

By its explicit terms, OAR 629-605-0500 also does not appear to apply. Respondent did not request a modification to the notice requirement; it merely elected not to file the NOAP. Setting this detail aside, the Department's published guidance interprets OAR 629-605-0500 as exempting from the definition of "operation" the felling of trees presenting an immediate threat to life or improved property, such as roads. This guidance would not apply to the present matter because Respondent converted the timber into saleable logs rather than leaving them unprocessed. Exhibit 4 at 85; Exhibit A67 at 85. Moreover, as explained above, Respondent did not consider the trees it felled to constitute an immediate hazard requiring immediate action, as shown by its decision to negotiate licenses with the landowners rather than trespass the land to abate the hazard under the protection of ORS 368.271(3). Therefore, OAR 629-605-0500 does not provide a basis to absolve Respondent of the notice requirement between its identification of the hazard around September 19, 2023, and its initiation of the abatement on or about October 18, 2023.

Indeed, Respondent's failure to file the NOAP had the potential to further increase the danger to Hubbard Creek Road and the traveling public. As explained above, one of the purposes of the FPA, and one of the Department's mandates thereunder, is to mitigate the danger of landslides related to forest practices. ORS 527.710(10). The Board and Department adopted the "shallow, rapidly moving landslide and public safety rules" in OAR Chapter 629, division 623 "to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides directly related to forest practices." OAR 629-623-0000(2) – (3). Under OAR 629-623-0100(1), the Department is required "to screen proposed operations for high landslide hazard locations [HLHLs] that may affect exposed populations." As part of this process, the Department may mandate a geotech review to assess the danger of a proposed operation in HLHLs. OAR 629-623-0250(3).

The undisputed evidence shows that the purpose of the 15-day waiting period is to allow the Department to complete a geotech review if necessary. The undisputed evidence also shows that the hazard abatement area contains HLHLs. Granted, there is no allegation that Respondent's hazard abatement actually increased the danger along Hubbard Creek Road given the nature of the hazard abated and Respondent's subsequent revegetation efforts. But the failure to file a NOAP prevented the Department from carrying out its mandate to review operations for landslide risk. Given the specific danger of landslides in the hazard location, acknowledged by both parties, the evidence is persuasive that this failure fell afoul of the legislature's expressed intentions in the FPA. Had such an operation been carried out by a less competent county administration, a failure to file a NOAP could easily have increased landslide risks. Respondent was required to facilitate coordination with the Department by filing a NOAP before initiating its hazard abatement.

It must be noted that the present ruling does not represent a commentary on Respondent's competence to manage hazards without Department assistance. It may well be that Respondent has correctly characterized the Department's requirement of a NOAP as a needless distraction in the present situation. Nevertheless, an examination of the relevant laws and rules establishes that, as dictated by the Oregon legislature, it is a requirement the Department is entitled to impose upon Respondent under the specific circumstances of this case. Therefore, Respondent violated the notice requirement of ORS 527.670(6) when it failed to file a NOAP related to the removal of hazard trees along Hubbard Creek Road in October 2023.

RULINGS AND ORDER

The Motion for Summary Determination filed by Douglas County, by and through the Douglas County Public Works Department, is DENIED.

The Oregon Department of Forestry's Motion for Summary Determination is GRANTED.

I propose the Oregon Department of Forestry, Private Forests issue the following order:

Douglas County, by and through the Douglas County Public Works Department, failed to submit to the State Forester a Notification of Operations and Application for Permit of Power Driven Machinery prior to conducting forest operations in violation of ORS 527.670(6) and OAR 629-605-0150(1).

Bradley A. Schmidt
Senior Administrative Law Judge
Office of Administrative Hearings

EXCEPTIONS TO PROPOSED ORDER

If this proposed order is adverse to you or to the agency, you or the agency may file exceptions within seven days after the date of the filing of the proposed order with the board if no other time is specified. Exceptions must be filed with the agency.

Please send any exceptions to:

Greg Wagenblast, Civil Penalties Administrator
Department of Forestry, Private Forests Division
2600 State Street
Salem, OR 97310

The exceptions shall be confined to factual and legal issues that are essential to the ultimate and just determination of the proceeding, and shall be based only on grounds that:

1. A necessary finding of fact is omitted, erroneous, or unsupported by the preponderance of the evidence on the record;

2. A necessary legal conclusion is omitted or is contrary to law or the board's policy; or

3. Prejudicial procedural error occurred.

The exceptions shall be numbered and shall specify the disputed finding, opinions or conclusions. The nature of the suggested error shall be specified and the alternative or corrective language provided.

After the board has received and reviewed the proposed order and the exceptions, if any, the board may:

1. Entertain written and/or oral argument if the board determines it is necessary or appropriate to assist the board in the proper disposition of the case. If allowed, oral argument will be limited to matters raised in written exceptions and shall be presented under time limits determined by the board chair;

2. Remand the matter to the ALJ for further proceedings on any issues the board specifies, and to prepare a revised proposed order as appropriate, under OAR 137-003-0655(2);

3. Enter a final order adopting the recommendations of the ALJ; or

4. Enter an amended proposed order or final order that modifies or rejects the recommendations of the ALJ. If the board decides to modify or reject the proposed order, the board must comply with OAR 137-003-0655 and 137-003-0665.

RECONSIDERATION AND REHEARING

Under the provisions of OAR 137-003-0675, you may file a petition for reconsideration or rehearing of the final order with the board within 60 calendar days after this order is served. Any such petition shall set forth the specific grounds for reconsideration or rehearing and the remedy sought. The petition may be supported by a written argument. Under OAR 629-001-0050, you must file a petition for reconsideration as a condition for further appeal.

APPEAL

You may appeal by filing a petition for judicial review with the Oregon Court of Appeals within 60 days following the date the final order on reconsideration or rehearing is issued, or within 60 days following denial of the request for reconsideration or rehearing. *See* Oregon Revised Statutes 183.480 *et seq.*

SERVICEMEMBERS' CIVIL RELIEF ACT

Unless otherwise stated in this order, the Office of Administrative Hearings (OAH) has no reason to believe that a party to this proceeding is subject to the Servicemembers' Civil Relief Act (SCRA). If a party to this proceeding is a servicemember who did not appear for the hearing, within the servicemember's period of service, or 90 days after their termination of service, that party should immediately contact the agency to address any rights they may have under the SCRA.

CERTIFICATE OF MAILING

On October 2, 2024, I mailed the foregoing RULING ON MOTIONS FOR SUMMARY DETERMINATION AND PROPOSED ORDER issued on this date in OAH Case No. 2023-ABC-06272.

By: Electronic Mail and Certified Mail

Dominic Carollo
Carollo Law Group
PO Box 2456
Roseburg OR 97470
Email: dcarollo@carollolegal.com

Nolan Smith
Carollo Law Group LLC
PO Box 2456
Roseburg OR 97470
Email: nsmith@carollolegal.com

By: Electronic Mail

Douglas County, by and through The Douglas County Public Works Department
c/o Paul Meyer
1036 SE Douglas Avenue
Roseburg OR 97470
Email: dcarollo@carollolegal.com

Kisha Harp
Carollo Law Group LLC
PO Box 2456
Roseburg OR 97470
Email: kharp@carollolegal.com

Greg Wagenblast
Agency Representative
Oregon Department of Forestry
2600 State Street
Salem OR 97310
Email: greg.wagenblast@ODF.oregon.gov

Matthew B Devore
Assistant Attorney General
Department of Justice
1162 Court St NE
Salem OR 97301
Email: matt.b.devore@doj.oregon.gov

Anesia N Valihov
Hearing Coordinator

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
FOR THE
OREGON DEPARTMENT OF FORESTRY
PRIVATE FORESTS

IN THE MATTER OF:	)
	) RESPONDENT'S EXCEPTIONS TO
DOUGLAS COUNTY, BY AND THROUGH THE DOUGLAS COUNTY PUBLIC WORKS DEPARTMENT	) PROPOSED ORDER
	)
	) OAH Reference No.: 2023-ABC-06272
	) Agency Case No.: 23-DG021
	)
Respondent.	)

EXCEPTIONS

Respondent hereby takes exception to the Ruling on Motions for Summary Determination and Proposed Order ("Proposed Order") filed in this matter on October 2, 2024. Counsel for the Oregon Department of Forestry ("ODF" or "Department") represented that the Department agreed to accept these exceptions if submitted on or by October 18, 2024. These exceptions are being submitted on October 17, 2024, and are therefore timely submitted in the manner provided by the Proposed Order.

Respondent takes exception as follows:

1. Exception is taken to the Proposed Order's omission of findings of fact and conclusions of law concerning the Oregon Department of Forestry's past practice or policy of allowing hazard tree abatement to occur without filing of a Notification of Operations and Application for Permit ("NOAP"). Exhibit 1, page 4 of the Affidavit of Dominic M. Carollo in support of Douglas County's Motion for Summary Determination states that ODF is not aware of any instances in the past ten years where a county has been subject to a Notice of Violation/Citation arising out of efforts to cut, fell, remove, harvest, or sell trees in connection with removing or

mitigating a hazard tree.

The following corrective language is required:

The Department admits that it is not aware of any instances in the past ten years where a county has been subject to a Notice of Violation/Citation arising out of efforts to cut, fell, remove, harvest, or sell trees in connection with removing or mitigating a hazard tree. The Department may not exercise its discretion inconsistent with its prior agency practice without explaining any inconsistency. Viewed in the light most favorable to Respondents, the record indicates that the Department has a prior agency practice of allowing Oregon counties to cut, fell, or remove hazard trees without first filing a NOAP.

2. Exception is taken to the erroneous conclusion that Respondent's hazard tree abatement did not proceed under ORS 368.271, and to the omission of findings and conclusions concerning Mr. Scott Adam's affidavit describing Mr. Adam's determination of a need for immediate hazard tree abatement without delay. ORS 368.271(1)(c) provides that a county road official need not comply with ORS 368.261 and 368.266 when the official determines that there is a "substantial risk of damage, injury or other emergency condition that requires abatement without delay." Scott Adams, Douglas County's road official, stated in his first affidavit that he "determined that these hazard trees and landslide risks created a substantial risk of damage or injury to Hubbard Creek Road and the travelling public, and that an emergency condition existed that required immediate abatement without delay." First Adams Aff. at ¶ 7. The Department has not refuted this statement, therefore it is uncontested that Mr. Adam's made the requisite determination for abatement without delay under ORS 368.271(1)(c).

The following corrective language is required:

It is uncontested that Respondent relied on ORS 368.271(1)(c) to abate hazard trees without delay. Respondent's road official, Mr. Scott Adams, made the requisite determination that the hazard trees and landslide risks adjacent to Hubbard Creek Road "created a substantial risk of damage or injury to Hubbard Creek Road and the travelling public, and that an emergency condition existed that required immediate abatement without delay." First Adams Aff. at ¶ 7. This determination waived Respondent's duty to comply with ORS 368.261 and 368.266. This determination also triggered Respondent's authority to abate the necessary hazard trees through any reasonable actions taken without delay.

3. Exception is taken to the lack of any legal conclusions regarding the phrase "without delay" as used in ORS 368.271(1)(c). The Proposed Order indicates that notice of hazard trees abated under the authority of ORS 368.271 must be provided to ODF, triggering a 15-day waiting period, before abatement may occur. Respondent requests findings and conclusions on the Legislature's intent to allow hazard tree abatement to occur "without delay" where the county road official makes the requisite determination under ORS 368.271(1)(c).

The following corrective language is required:

The phrase "without delay" indicates an intent of the Legislature to allow counties to remove hazard trees without interference from any procedural requirements, including the requirements of the FPA, where the county road official has determined that a hazard tree(s) "creates a substantial risk of damage, injury or other emergency condition that requires abatement without delay and without notice or hearing." Requiring counties to wait up-to 15 days to abate hazard trees, following the requisite finding by the county road official, is inconsistent with the intent of the Legislature, as revealed by the plain text of ORS 368.271(1)(c).

4. Exception is taken to the Proposed Order's erroneous or omitted conclusions

concerning the effect of ODF's guidance which explains, among other things, that "[i]n circumstances where a hazard immediately threatens life or improved property such as homes and public roads (an 'emergency'), actions to respond to and mitigate the emergency would not be considered an 'operation' under the Oregon FPA. … The potential hazard tree zone is considered to be 1.5 time tree heights from the road or other infrastructure, plus additional distance for upslope hazard trees or snags. … Hazard trees and snags felled under this section must be left in place unless moved only as necessary to abate the hazard[.]" Carollo Aff. at 128—129. Respondent requests additional conclusions on the legal consequence of this exception to the NOAP requirement for "operations."

The following corrective language is required:

The Department has adopted a written policy exempting the mitigation of hazard trees from the FPA where said trees pose an immediate threat to public roads. The uncontested evidence establishes that the trees adjacent to Hubbard Creek Road posed such an immediate threat to the road. First Adams Aff. at ¶ 7. Thus, the Department's written policy instructs that Respondent's efforts to remove hazard trees did not constitute an "operation" subject to the FPA.

5. Exception is taken to the omission of findings and conclusions concerning the necessity of removing trees from the landscape upslope of Hubbard Creek Road, and the proper means of accomplishing said removal. The Proposed Order acknowledges that a failure to remove the hazard trees upslope of Hubbard Creek Road could have increased the risk of landslide. ODF's written guidance allows for the removal of hazard trees without the filing of a NOAP "as necessary to abate the hazard[.]" Carollo Aff. at 129. The Proposed Order concludes, without explanation, that Respondent's limbing, bucking, and decking of hazard trees rendered the Department's written exceptions to the FPA in the felling and removal of hazard trees inapplicable. The second

affidavit of Scott Adams was uncontested in explaining that Douglas Cunty "felled and removed trees from the hillside along Hubbard Creek Road because, in the County's professional judgment as the authority over its roadways, the trees posed a hazard to the travelling public. The County's contractor de-limbed the trees, and cut them to a certain length, because it was necessary to safely place the trees in a location where they would not pose a risk to the travelling public. It would have been impossible, and incredibly unsafe, to try and remove whole, un-limbed, trees from their location above Hubbard Creek Road … The trees that were placed in log decks were placed there because that was the safest option." Second Adams Aff. at ¶ 4. Respondent requests findings and conclusions regarding whether the removal of hazard trees was necessary in the circumstances, and whether Respondent's means of removal of the trees was proper given the safety risks and logistical impossibilities of removing between 200 and 500 whole, un-limbed, and un-bucked, trees.

The following corrective language is required:

The Department's guidance allows for the removal of hazard trees as necessary to abate hazards, without complying with the FPA. Carollo Aff. at 129. The uncontested evidence establishes that removal of the hazard trees upslope from Hubbard Creek Road was necessary to abate the risk of trees sliding into the roadway, and landslides. Adams Aff. at ¶ 7—11; Second Adams Aff. at ¶ 4. The Department's guidance does not place restrictions on how the removal of hazard trees is to be accomplished. Where a substantial number of hazard trees must be removed, the practical and logistical limitations of removing entire trees, limbs and all, must be considered. In this instance, the removal of 200—500 hazard trees, and space limitations along Hubbard Creek Road, made it practically impossible for trees to be removed whole. Given that the Department's guidance does not prohibit the bucking, limbing, and decking of hazard trees where necessary to

abate hazards, Respondent lawfully accomplished its hazard tree abatement by placing hazard trees in log decks, where they no longer posed a risk to Hubbard Creek Road, and where the risk of tree slide or landslide was fully abated. This action was consistent with the Department's guidance on the matter.

REQUESTED RELIEF

Respondent requests the following relief in response to the above exceptions:

a. A Final Order addressing the exceptions described above, and granting Respondent's motion for summary determination;

b. Any other relief the OAH or Department determines just, equitable, and/or necessary to properly address the issues raised in this case.

DATED October 17, 2024.

CAROLLO LAW GROUP
s/ Dominic M. Carollo
Dominic M. Carollo, OSB No. 093057
Email: dcarollo@carollolegal.com
Nolan G. Smith, OSB No. 215034
Email: nsmith@carollolegal.com
CAROLLO LAW GROUP LLC
MAIL: P.O. BOX 2456
ROSEBURG, OR 97470
OFFICE: 2315 OLD HIGHWAY 99 SOUTH
ROSEBURG, OR 97471
PH: (541) 957-5900
Of Attorneys for Respondents

CERTIFICATE OF FILING AND SERVICE

I certify that on October 17, 2024, I filed the foregoing RESPONDENT'S EXCEPTIONS TO PROPOSED ORDER with the Oregon Department of Forestry by mail and email to:

Greg Wagenblast, Civil Penalties Administrator
Department of Forestry, Private Forests Division
2600 State Street
Salem, OR 97310
greg.wagenblast@ODF.oregon.gov

I further certify that on October 17, 2024 I served a true and correct copy of the foregoing RESPONDENT'S EXCEPTIONS TO PROPOSED ORDER on the parties by email at the following address:

Greg Wagenblast
2600 State Street
Salem OR 97310
Primary: (541) 525-6462
greg.wagenblast@ODF.oregon.gov
Agency Representative

Matthew B Devore
1162 Court St NE
Salem OR 97301
Primary: (503) 947-4342
matt.b.devore@doj.state.or.us
Attorney for Oregon Department of Forestry

DATED October 17, 2024.

CAROLLO LAW GROUP

s/Dominic M. Carollo
Dominic M. Carollo, OSB #093057
dcarollo@carollolegal.com
Carollo Law Group LLP
Mail: P.O. Box 2456
Roseburg, OR 97470
Office: 2315 Old Highway 99 South
Roseburg, OR 97471
Telephone: 541-957-5900
Attorney for Respondent

BEFORE THE BOARD OF FORESTRY
STATE OF OREGON

IN THE MATTER OF: **DOUGLAS COUNTY, BY AND THROUGH THE DOUGLAS COUNTY PUBLIC WORKS DEPARTMENT** *Respondent.*	**FINAL ORDER** OAH Case No. 2023-ABC-06272 Agency Case No. 23-DG021

The Board of Forestry, at a meeting in Salem on January 8, 2025, by consensus affirms the Citation 2023-DG021, issued by Kyle Temple, Stewardship Forester, and adopts and incorporates by reference the attached proposed order issued by Administrative Law Judge Bradley A. Schmidt, on October 2, 2024. Douglas County, by and through the Douglas County Public Works Department submitted exceptions to the proposed order which were considered by the Board, but did not justify any changes to the proposed order.

Dated this _____ day of January, 2025

By: _____
Cal Mukumoto
State Forester and
Secretary to the Board of Forestry

RIGHT TO JUDICIAL REVIEW

If you are dissatisfied with the Order, you may request rehearing or reconsideration by the Board. To do so, you must file a petition for rehearing or reconsideration pursuant to OAR 137-003-0675 and OAR 629-001-0050 within 60 days from the day this Order was served on you. If this Order was personally delivered to you, the date of service is the day you received the Order. If this Order was mailed to you, the date of service is the day it was *mailed,* not the day you received it. A petition for rehearing or reconsideration must state with specificity the grounds for objection to the order, and the remedy sought. If you do not file a petition for rehearing or reconsideration within the time limits provided, you will lose your opportunity for rehearing or reconsideration and you will lose your right to appeal to the Oregon Court of Appeals. (OAR 137-003-0675 and OAR 629-001-0050).

If, after you have filed a petition for rehearing or reconsideration, the Board issues an Order you are dissatisfied with, you have the right to appeal that Order to the Oregon Court of Appeals pursuant to ORS 183.482. To appeal, you must file a petition for judicial review with the Court of Appeals within 60 days from the day the Order was served on you.

If, 60 days after you have filed a petition for rehearing or reconsideration, the Board has not issued an order, your petition will be considered denied and at that time you will have the right to appeal the original Order to the Court of Appeals pursuant to ORS 183.480 and ORS 183.482. To appeal, you must file a petition for judicial review with the Court of Appeals within 60 days from the day that your petition is deemed denied. If you do not file a petition for judicial review within the 60-day time period, you will lose your right to appeal.

4. John Krause 45 Year Service Award

This item serves as an opportunity for the Department and the Board of Forestry to honor staff member John Krause for his service to the Department.

This is an information item.

Agenda Item No.:	05
Work Plan:	Forest Resources Division
Topic:	Ceremonial Events and Recognitions
Presentation Title:	2024 Forest Practices Operator of the Year Awards
Date of Presentation:	January 8, 2025
Contact Information:	Greg Wagenblast, Policy Analyst, Forest Resources Division 541-525-6462, Greg.Wagenblast@odf.Oregon.gov Scott Swearingen, Field Support Unit Manager, Forest Resources Division (541) 580-7485, scott.swearingen@odf.oregon.gov

SUMMARY
The Board of Forestry recognizes Operators of the Year. This year's award recipients are BTO Forestry Solutions, Inc., D & H Logging Co. and R.D. Reeves Construction, Inc..

BACKGROUND
The Oregon Forest Practices Act aims to provide for the overall maintenance of air quality, water resources, soil productivity, and fish and wildlife. These forest resources are important to all Oregonians. The Operator of the Year program recognizes operators who voluntarily protect these resources in a conscientious and diligent way. To recognize operators who meet or exceed Forest Practice Act requirements, typically the Board names one Operator of the Year per Region and one or more Merit Award recipients; ODF districts may also issue Letters of Commendation. Program goals are to:

1. Recognize operators who consistently meet or exceed the Oregon Forest Practices Act and voluntarily raise industry standards; and,
2. Improve public understanding of the Forest Practices Act, its administration, and its effectiveness in protecting natural resources.

PROCESS
Anyone may nominate candidates for the Operator of the Year. Agency staff screen the nominees for minimum requirements. The Regional Forest Practices Committees review the nominations for their region. Each committee chooses a recipient based on innovative techniques, cooperative spirit, consistent performance, and measures taken to protect forest resources. To make the selection, Regional Forest Practices Committee members tour the sites, review nominations, and watch videos that capture the operator's work.

The 2024 Operators of the Year are:

For the Eastern Oregon Region –
BTO Forestry Solutions, Inc. of Enterprise, Oregon earned the award for their efforts as a consistently conscientious logging company since 1966, and for tackling challenging harvest operations. Mike Wiedeman, owner of BTO Forestry Solutions, earned Operator of the Year for tackling a timber harvest on steep slopes leading down to a fish-bearing stream in canyonlands of Wallowa County. Methodical planning and experience allowed BTO Forestry Solutions to develop a harvest plan and layout to achieve the goals of the landowner while protecting resources in a unit with challenging terrain. BTO Forestry protected stream buffers, water quality, steep slopes and the safety of the crew while working in the Wallowa County canyonlands with skyline spans of over 5,000 feet. Because of a lack of anchor stumps, Mike had to buy extra dozers to serve as anchors for these long span-cables. Mike also modified his yarder to ensure enough suspension, so logs did not create ruts as they were hauled upslope. BTO Forestry has successfully faced these types of challenges and completed their operations while protecting the resources and their crew consistently for many years.

Southwest Oregon Region–
D & H Logging Co. of Coos Bay, Oregon earned the award for its diligent planning and harvesting practices. The company has a record of long-term, conscientious logging practices that meet or exceed the Oregon Forest Practices Act (FPA). Their thoughtful planning and innovative techniques allowed them to protect medium and small fish-bearing streams, small nonperennial streams, and restricted equipment zones along tributary streams, successfully harvest the unit with no damage to the streams or their buffers. D&H Logging made extra efforts to protect the stream buffers and new protection zones by changing yarding patterns and spans of over 3,000ft. Their efforts left healthy, intact buffers with minimal soil disturbance. The owner and crew maintained excellent communication and coordination with the landowner and ODF throughout the harvest. They thoroughly trained their crews in the new Forest Practice Act rules that went into effect this year, which helped them meet the new resource protection standards and still operate safely.

Northwest Oregon Region –
R.D. Reeves Construction, Inc. of Rainer, Oregon earned the award for their efforts as a consistently conscientious logging company. This company began in 1969 and has not had a citation in the fifty-five years they have been in business. The company goes above & beyond in their preoperational planning efforts. Protection of resources is a high priority for the company. They take preventive actions to protect water quality, for example, by installing silt fences and hay bales if there's even a slight chance sediment might reach a stream or wetland. The company is innovative in their use of new tools and technologies for harvesting. The nominated operation had protected resources including streams, a Riparian Management Area's (RMA) through the middle of the unit, wetlands, roads, steep slopes requiring HLHL protections with downstream homes adjacent to the harvest unit. The company's attention to detail is demonstrated when they finish an operation. Thorough cleanup and maintenance are completed prior to leaving the site, assuring there are no issues in the future after they have gone.

PUBLICITY

The department recognizes the operators through news releases, social media posts, and at annual statewide industry events, including the Associated Oregon Loggers Convention, the Oregon Logging Conference, and the Oregon Small Woodland Association Conference.

All nominees met or exceeded Forest Practices laws and improved Oregon's forests in multiple ways, from enhancing fish and wildlife habitat to forest management planning for private landowners to improving fire safety and forest health, and safeguarding water quality and soil.

Merit Award and Letter of Commendation recipients will be recognized at local functions.
The Merit Award recipients for 2024 are:

- Arrowhead Logging, LLC of Prineville, OR – Eastern Oregon Region Merit Award
- Green Diamond Resource Company in Klamath Falls, OR - Eastern Oregon Region Merit Award
- Brothers Excavation & Construction, LLC of Central Point, OR-SW Oregon Region Merit Award
- Card Logging Company, Inc. of Eugene, OR – NW Oregon Region Merit Award
- Chilton Logging, Inc. of Woodland, WA – NW Oregon Region Merit Award
- Haley Construction Company of Lebanon, OR – NW Oregon Region Merit Award
- Mt St Helens Reforestation, Inc. of Chehalis, WA – NW Oregon Region Merit Award
- Weyerhaeuser NR Company, Springfield Area Logging crew of Eugene, OR – NW Oregon Region Merit Award

The Letter of Commendation recipient for 2024 is:

- Gerald Smallwood Logging, Inc. of Waldport, OR – Western Oregon District/NW Regional Forest Practices Committee Letter of Commendation

All of the videos for the merit award winners can be found at: Oregon Department of Forestry - YouTube *(https://www.youtube.com/@OregonDepartmentofForestry)*

Staff will give a brief presentation, including videos, and operator recognition.

- BTO Forestry Solutions, Inc.:
  Eastern Oregon Operator of the Year for 2024, Winner - BTO Forestry Solutions, Inc.
  (*https://www.youtube.com/watch?v=ZcE22ZAA8I8&t=83s*)

- D & H Logging Co.:
  Southwest Oregon Operator of the Year for 2024, Winner - D&H Logging
  (https://www.youtube.com/watch?v=A1eTDEcXQiY)

- R.D. Reeves Construction, Inc.:
  Northwest Oregon Operator of the Year for 2024, Winner - R.D. Reeves Construction, Inc.
  (https://www.youtube.com/watch?v=EUsBwxBZiEo&t=2s)

RECOMMENDATION

The Department recommends the Board of Forestry present the recipients with plaques uniquely recognizing each operator for excellent forestry work.

6. Legislative Session and Wildfire Funding Workgroup Information

This item serves as an opportunity for the Department to provide information on the legislative process, the 2025 legislative session, updates from the Wildfire Funding Workgroup and board member best practices for engagement with the legislative assembly.

This is an information item.

STAFF REPORT

Agenda Item No.:	7
Presentation Title:	*Board of Forestry Planning Calendar*
Date of Presentation:	January 8, 2025
Contact Information:	Eleni Collins, Board Administrator

SUMMARY

The Board of Forestry Planning Calendar is a tool for Board Members, Department Staff and members of the public to refer to. The purpose of this tool is for all interested parties to have awareness of key dates related to board agenda topics. The key dates and agenda items listed come from the Department Divisions, including Forest Resources, State Forests, Protection, and Administration, as well as informational dates related to Board Member terms, Agency Budget process and the Legislative Sessions.

NEXT STEPS

- Post *Board of Forestry Planning Calendar* on the Department's website, specifically on the "About the Board of Forestry" webpage, under the Resources Section.
- Collaborate with Division leaders to monitor the legislative session and identify any changes or additions that need to be made to the *Board of Forestry Planning Calendar.*
- Post updated versions of the *Board of Forestry Planning Calendar* to the Department's website as appropriate.

ATTACHMENTS

- *Board of Forestry Planning Calendar*, January 2025

2025 Board of Forestry Annual Planning Calendar

LEGEND:	Purple - Board / Administration (B)
* = Statutorily Required	Green - State Forests (SF)
BOLD = Decision Agenda Item	Blue - Forest Resources (FR)
regular = Information Agenda Item	Gold - Protection Division (P)
italics = Notes	Grey - Informational Dates

January*

1	**FR - Adaptive Management Program (AMP) Committee Appointments**
2	**FR - Private Forest Accord (PFA) Legislative Progress Report**
3	**SF - Initiate Forest Management Plan (FMP) Rulemaking**
4	FR - Adaptive Management Program (AMP) Annual Progress Report
5	FR - Operator of the Year Awards
6	B - Governance Committee proposed changes for Board Policies Manual
	Legislative Session begins January 21, 2025

February - no meeting; info only

Heath Curtiss term ends on Feb 28
Bob Van Dyk term ends on Feb 28
February round for Senate confirmed appts
Legislative Session cont.

March*

1	**FR -Private Forest Accord (PFA) Post-Disturbance Harvest Rulemaking**
2	**B - Adopt the Governance Committee's proposed changes for Board Policies Manual (BPM)**
3	FR - Private Forest Accord (PFA) Tethered Logging Rulemaking
4	FR - Forest Practices Act (FPA) Annual Agency Meeting Report
5	B - Legislative Key Performance Measure (KPM) #2 Board Governance - Notice of Survey
6	B - State Forester's Annual Financial Transactions
7	SF - Forest Management Plan (FMP): Modeling Progress Update
	DAS: State Forester performance review initiated
	Legislative Session cont.

April (Tour & Social)

Proposed for South Coast tour
April round for Senate confirmed appointments
Legislative Session cont.

May (Special Meeting with FTLAC)

1	SF - Forest Management Plan (FMP): Present Modeled Outcomes, Tradeoffs Discussion
	DAS: State Forester performance review complete
	Legislative Session cont.

June*

1	**P - *Forest Protection District and Rangeland Protection budgets**
2	**FR - Committee for Family Forestlands Appointments**
3	P - Review Letters from Forest Protection Associations to State Forester
4	P - Fire Season Readiness and Outlook
5	B - Legislative Key Performance Measure (KPM) #2 Board Governance - Survey Results
	Legislative Session ends June 29, 2025

July (Special Meeting)

1	**SF - Forest Management Plan (FMP): Performance Measure Targets and related thresholds discussion**

*September

1	**FR - *Private Forest Accord (PFA) Post-Disturbance Harvest Rulemaking**
2	**FR - Private Forest Accord (PFA) Tethered Logging Rulemaking**
3	**FR - Adaptive Management Program (AMP) Budget for Approval**
4	**FR -Adaptive Management Program (AMP) Committee Appointments**
5	**FR - Regional Forest Practice Committee Appointments**
6	**SF - Forest Management Plan (FMP) rulemaking compelete; FMP adopted**
7	FR - Climate Smart Forestry Award
8	FR - Compliance Monitoring Report
9	FR - Committee for Family Forestlands (CFF) Annual Activity Report
10	P - Fire Season Reports
11	B - Full Agency Legislative Key Performance Measure (KPM) Report

October (Retreat)

1	B - Legislative KPM #2 Board Governance - Review and Discussion

2026 Board of Forestry Annual Planning Calendar

LEGEND:	Purple - Board / Administration (B)
* = Statutorily Required	Green - State Forests (SF)
BOLD = Decision Agenda Item	Blue - Forest Resources (FR)
regular = Information Agenda Item	Gold - Protection Division (P)
italics = Notes	Grey - Informational Dates

January*

1	**FR - Adaptive Management Program Committee Appointments**
2	FR - AMP Annual Progress Report
3	FR - Operator of the Year Awards
	Legislative Session begins January 20, 2026, and ends on February 23, 2026.

February - No meeting, info only

The Department of Forestry / Board of Forestry need to submit proposed Key Performance Measure changes to Chief Financial Officer / Legislative Fiscal Analyst for review by April 30.

March*

1	FR - FPA Annual Agency Meeting Report
2	B - Legislative Key Performance Measure (KPM) #2 Board Governance - Notice of Survey
3	B - State Forester's Annual Financial Transactions

April - No meeting, info only

ODF/BOF need to submit proposed KPM changes to CFO and LFO analyst for review by April 30.

June*

1	**P - *Forest Protection District and Rangeland Protection bu**
2	**FR - Committee for Family Forestlands Appointments**
3	P - Review Letters from Forest Protection Associations to Stat
4	P - Fire Season Reports
5	B - Legislative Key Performance Measure (KPM) #2 Board Governance - Survey Results
	KPM change review by CFO/LFO by June 30 .

August

ODF submits Agency Request Budget (ARB) to the Governor'

*September

1	FR - Climate Smart Forestry Award
2	FR - Committee for Family Forestlands (CFF) Annual Activity I
3	P - Fire Season Reports
4	P - Smoke Management Rules Update
5	B - Full Agency Legislative Key Performance Measure (KPM) Report
	Brenda McComb Term Expires 9-27
	Joe Justice Term Expires 9-27

October (Retreat)

1	B - Legislative KPM #2 Board Governance - Review and Discussion

December

	Governor presents the Governor's Recommended Budget (GRB) first monday in December.

STAFF REPORT

Agenda Item No.:	8
Work Plan:	Forest Resources Division
Topic:	Implementing Legislative Direction
Presentation Title:	Update on the Adaptive Management Program
Date of Presentation:	January 8, 2025
Contact Information:	Josh Barnard, Division Chief, Forest Resources Division, ODF, Josh.W.Barnard@odf.oregon.gov; Terry Frueh, Adaptive Management Program Coordinator, Forest Resources Division, ODF, Terry.Frueh@odf.oregon.gov; Seth Barnes, Co-chair, AMPC; Stacey Detwiler, Co-chair, AMPC. Kelly Burnett, Chair, IRST; Lisa Gaines, Director, IRST's Housing Agency (OSU/Institute for Natural Resources)

SUMMARY

This Adaptive Management Program Committee (AMPC) Co-chairs, the Chair of the Independent Research and Science Team (IRST), and staff from both OSU/Institute for Natural Resources (INR) and ODF will report on the progress of the adaptive management program.

CONTEXT

The legislature directed the board to set up an adaptive management program. The program will help inform future rulemaking and support an application for a programmatic habitat conservation plan (HCP), and subsequent incidental take permits from NOAA Fisheries and the US Fish and Wildlife Service. The goal of the program is to use the best available science to assess the effectiveness of rules for achieving the biological goals and objectives described in the HCP.

BACKGROUND

In February 2020, a coalition of conservation groups, the Oregon Small Woodlands Association, and forest industry representatives agreed to revise the Forest Practices Act and administrative rules through a memorandum of understanding, which included mediated discussions, known as the Private Forest Accord (PFA). The bill set the timeline and topics for making changes to the Forest Practices Act and rules from which the Board could apply for a programmatic HCP. The PFA concluded in late 2021. In March 2022, the legislature adopted the PFA recommendations through Senate Bills 1501 and 1502, and House Bill 4055. Senate Bill 1501 incorporated by reference the Private Forest Accord Report dated February 2, 2022. The PFA Report further detailed the recommended changes to the Act and rules and a pathway for an HCP. The HCP has a statutorily-mandated approval deadline of Dec. 31, 2027. A key part of the rules is the adaptive management program. In addition to the Board, this program has two primary participants:

1. The AMPC develops the policy direction for the program.

2. The IRST oversees the research and monitoring to address the policy direction.

ANALYSIS

This analysis summarizes past and future work of the two committees of the adaptive management program, the AMPC and the IRST.

In 2024, the AMPC:

- Provided an update to the Board in January;
- Added development of an effectiveness monitoring strategy to their list of priorities, and took initial steps in developing the strategy;
- Refined a periodic process for proposing and prioritizing preliminary research questions into their workplan;
- Developed two sets of preliminary research questions and associated contextual information. These questions address eastern Oregon steep slopes, and hydrologic disconnection of forest roads;
- Provided feedback to the IRST to finalize the aforementioned two sets of research questions; and
- Collaborated with the IRST on a field tour to learn more about the amphibians covered in the HCP.

In 2025, the AMPC will focus on:

- Revisiting the AMPC charter;
- Updating the Board on the status of AMPC work;
- Collaborating with the IRST to develop an effectiveness monitoring strategy;
- Reviewing IRST-developed scoping proposals on the research questions;
- Completing preliminary research questions and associated contextual information on the amphibians topic;
- Providing feedback to the IRST to finalize the aforementioned amphibians research questions; and
- Using IRST scoping proposals and AMPC priorities to finalize the research agenda and sending the associated budget to the Board for a vote.

In 2024, the IRST:

- Met 14 times, and have two more meetings scheduled in December 2024;
- Have held monthly meetings of the IRST chair and chair-elect with the INR staff to develop IRST meeting agendas and clarify direction from the IRST to INR;
- Developed and approved the charter;
- Elected IRST chairs;
- Finalized the structure for scoping proposals;
- Developed standards for best available science;

- Formalized a process for nominating new IRST members, and then followed that process to nominate two new members for Board approval;
- Worked with the AMPC to finalize research questions addressing eastern Oregon steep slopes, and hydrologic disconnection of roads;
- Developed the scoping proposal on the eastern Oregon steep slopes literature review from the AMPC, with an anticipated delivery to the AMPC of December 31, 2024; and
- Made significant progress on the scoping proposals for research questions related to hydrologic disconnection of roads.

In 2025, the IRST will focus on:

- Completing scoping proposals by March 1, 2025 for the previously-delivered AMPC research questions on hydrologic disconnection of roads;
- Finalizing the 2025 work plan upon receiving direction from the AMPC and/or the Board. Anticipated direction includes:
    - New research questions from AMPC, which will initiate IRST scoping proposals on amphibians; and
    - Any approved research agenda and budget, which will initiate steps by the IRST that establish projects to further the research agenda;
- Collaborating with the AMPC on developing an effectiveness monitoring strategy; and
- Reporting to the AMPC and the Board on progress of the research agenda.

The IRST will continue to meet at least monthly during 2025, and already has meetings scheduled through March 2025.

RECOMMENDATION

This item is information only.

ATTACHMENTS

None

9. Closing Comments – Day 1

This item serves as an opportunity for the Board Chair to reflect on the public meeting and mop-up any outstanding business. Individual members of the Board can offer comments for the Chair, Secretary, and Board consideration. Comment times may be reduced at the discretion of the Board Chair.

This is an information item.

10. Board Member and State Forester Comments – Day 2

This item serves as an opportunity for the State Forester to brief the Board of Forestry of the Department or related topics of importance. Individual members of the Board can offer comments for the Chair, Secretary, and Board consideration. Comment times may be reduced at the discretion of the Board Chair.

This is an information item.

11. Public Forum – Day 2

This item serves as the vehicle for the public to comment on information items or topics, not on the agenda. Comment times may be reduced at the discretion of the Board Chair.

This is an information item.

12. Board Governance Committee Update

This item serves as an opportunity for the Board of Forestry's Governance Committe to offer updates regarding the Board Policies Manual.

This is an information item.

13. Oregon State University College of Forestry Panel

This item serves as an opportunity for the Board of Forestry's to hear from the Oregon State University's College of Forestry.

This is an information item.

14. Climate Change and Carbon Plan Update

This item serves as an opportunity for the Department to share updates on the work done under the Climate Change and Carbon Plan.

A staff report will be provided to board members prior to the meeting start date.

This is an information item.

15. State Forester Review Process Overview

This item serves as an opportunity for the Department to brief the Board on the Department of Administrative Services' process for reviewing Agency Directors biannually.

This is an information item.

16. Closing Comments – Day 2

This item serves as an opportunity for the Board Chair to reflect on the public meeting and mop-up any outstanding business. Individual members of the Board can offer comments for the Chair, Secretary, and Board consideration. Comment times may be reduced at the discretion of the Board Chair.

This is an information item.