# Executive Summary

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

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

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

## ES.1 Overview of the Planning Process

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

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

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

## ES.1.1 HCP Program Goals

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

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

## ES.1.2 HCP Planning Structure

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

### ES.1.2.1 Steering Committee

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

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

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

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

### ES.1.2.2 Scoping Team

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

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

### ES.1.2.3 Public Engagement

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

## ES.2 Scope of the HCP

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

## ES.2.1 Permit Area and Plan Area

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

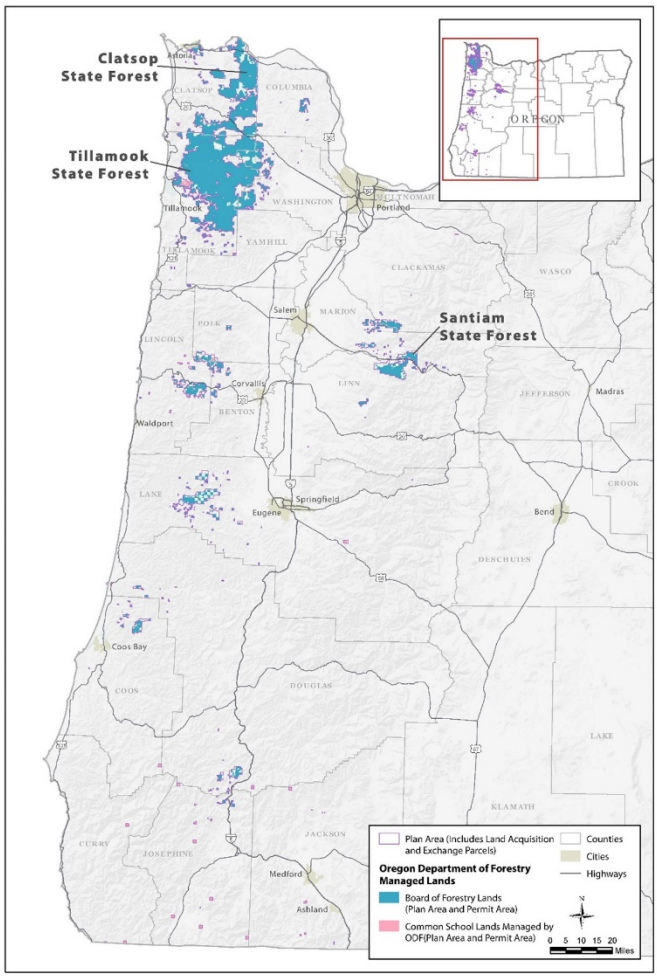
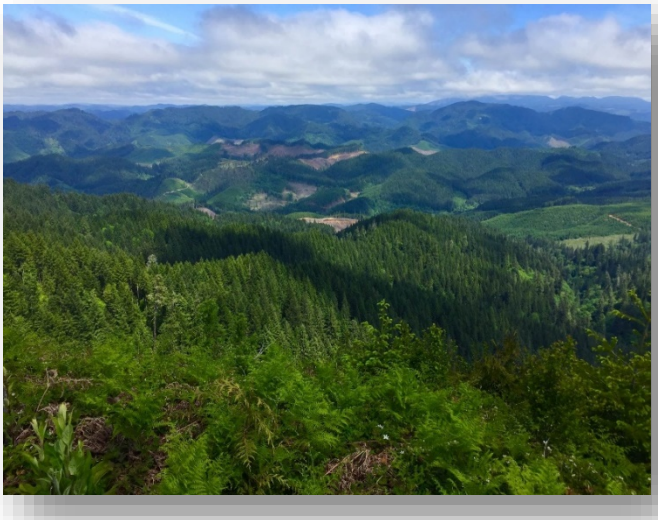



**Figure ES-1. Plan Area and Permit Area**

## ES.2.2 Covered Activities

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



Covered activity categories include:

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

## ES.2.3 Covered Species

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

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

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

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

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

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

[a] The full name of the listed entity is Pacific marten, Coastal Distinct Population Segment.

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

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

### ES.2.4 Permit Term

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

## ES.3 Conservation Strategy

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

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

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

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

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

## ES.3.1 Aquatic Conservation Strategy

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

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

| | Minimum Management Area Width (feet)[a] | |
|---|---|---|
| **Stream Type** | **Type F** | **Type N** |
| Large | 120 | 120 |
| Medium | 120 | 120 |
| Small | 120 | See Table ES-3 |
| Seasonal[b] | 120 | See Table ES-3 |

[a] Distance will be measured horizontally, which results in the implementation of larger buffers in steeper terrain.

[b] Seasonal: A stream that does not have surface flow after July 15.

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

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

[a] Distance will be measured horizontally, which results in the implementation of larger buffers in steeper terrain.

[b] Potential debris flow tracks: Reaches on seasonal Type N streams that have the potential to deliver wood to a Type F stream.

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

[d] Seasonal: A stream that does not have surface flow after July 15.

[e] A 35-foot equipment restriction zone will apply to these streams.

## ES.3.2 Terrestrial Conservation Strategy

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

The HCAs are designed to:

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

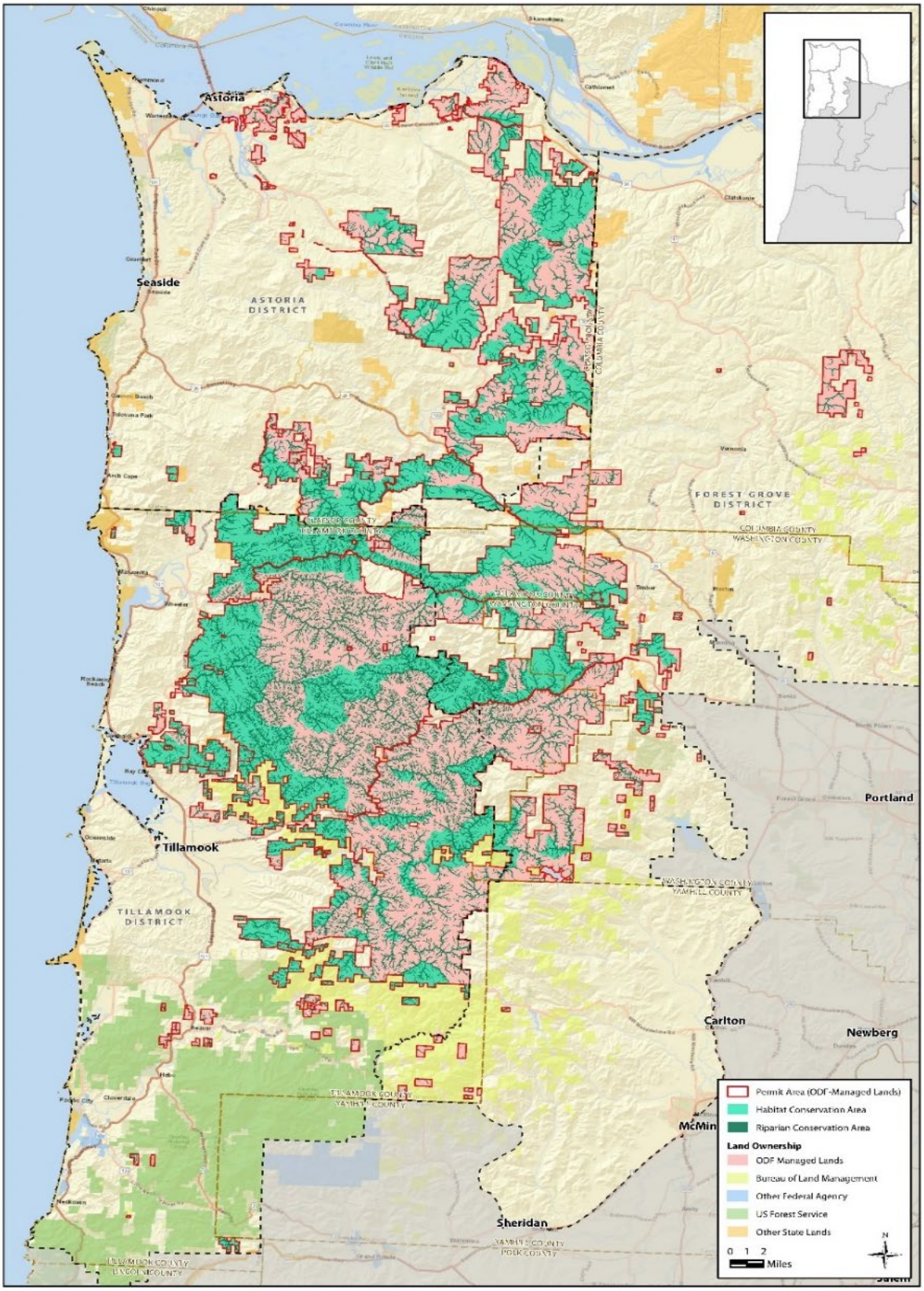



**Figure ES-2. Habitat Conservation Areas and Riparian Conservation Areas in Northwestern Oregon**

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

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

## ES.3.3 Conservation Fund

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

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

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

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

[a] Habitat includes modeled nesting, roosting, and foraging habitat.

[b] Habitat includes modeled suitable and highly suitable habitat.

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

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

[e] 28 out of 31 active northern spotted owl activity centers are inside of HCAs.

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

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

### ES.3.4 Monitoring and Adaptive Management

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

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

## ES.4 Implementation, Cost, and Funding

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

### ES.4.1 Reporting

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

### ES.4.2 Costs and Funding

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

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

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