



Landscape Assessment to Meet Older Forest Targets in Western Washington

Board of Natural Resources
July 2, 2024
Cameron Crump



Agenda

- Older Forest Definition
- DNR's Authorizing Framework
- DNR Policy for Sustainable Forests (PSF)
- 1997 Habitat Conservation Plan (HCP)
- Landscape Assessment Process
- Results

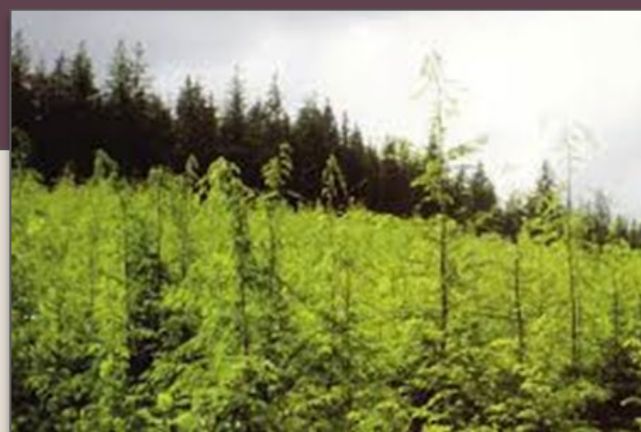


Stand Development Stages

- Foundation of Ecological Forestry (*Carey, Franklin, et al.*)
- Interrelationships of biodiversity, function, and structure
- Use to assist in silviculture decision making

	Summarized Stand Development Stage	Stand Development Stage
Less Complex Forest	Ecosystem Initiation	Ecosystem Initiation
	Competitive Exclusion	Sapling Exclusion
Pole Exclusion		
Large Tree Exclusion		
Understory Development		
Botanically Diverse		
More Complex Forest	Structurally Complex	Niche Diversification
		Fully Functional

Older Forests



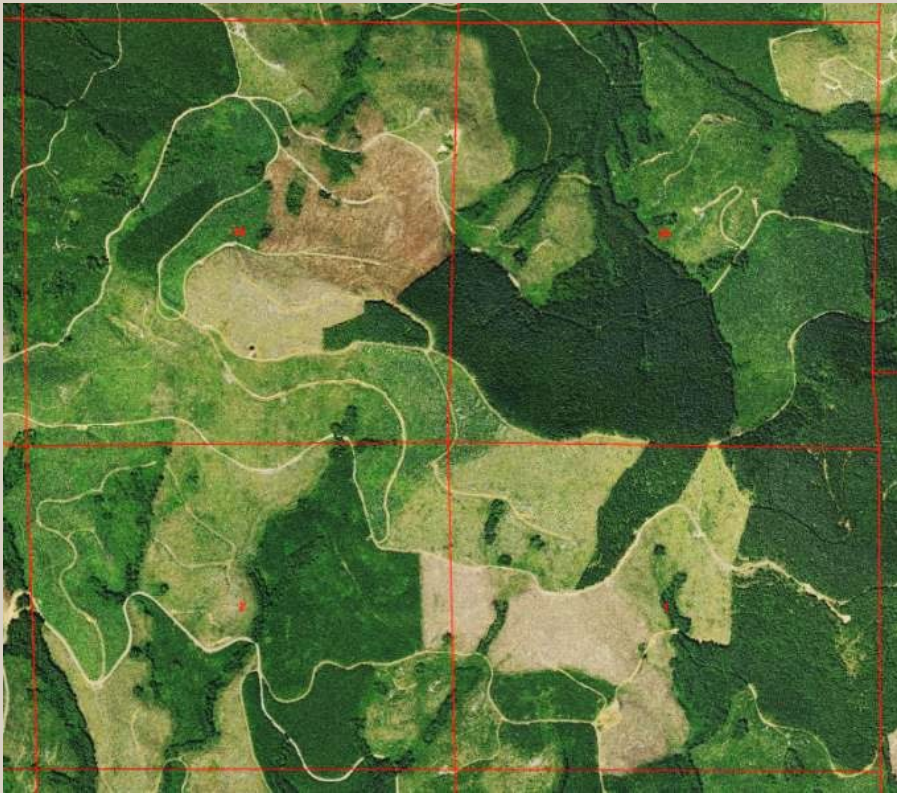
Landscapes Reflect Management Goals & Values



USFS



DNR



Private Ownership

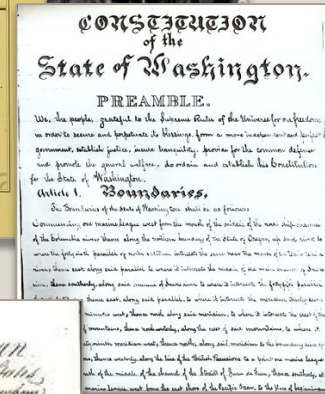
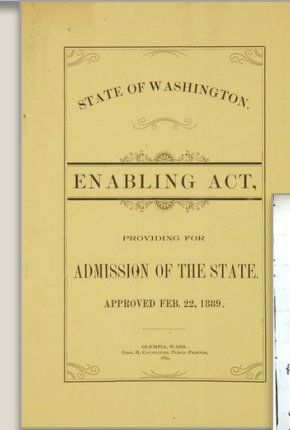
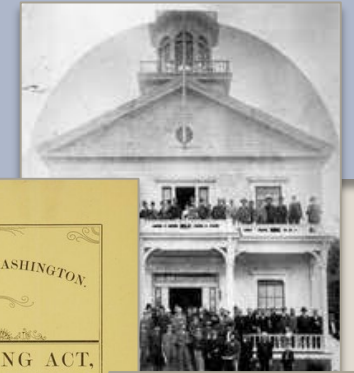
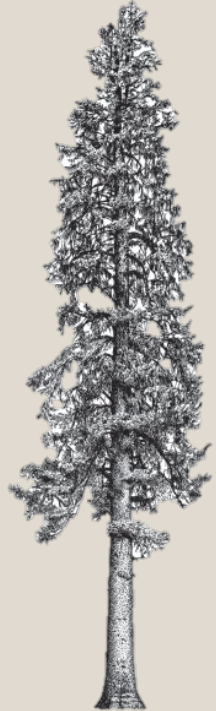




DNR's Authorizing Framework

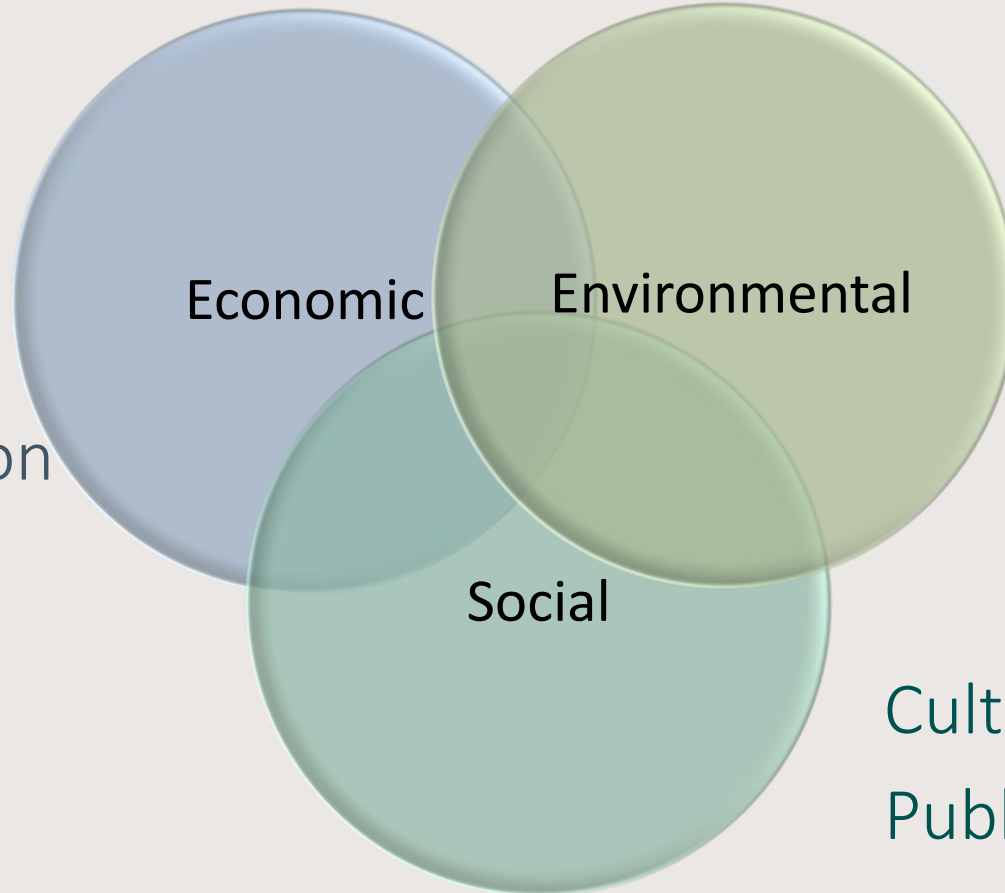
Policies comply with a Legal Framework

- Enabling Act ¹⁸⁸⁹, Constitution ¹⁸⁸⁹
- Federal Laws, e.g. Endangered Species Act ¹⁹⁷³
- Tribal Treaties ¹⁸⁵⁴⁻⁵⁶
- Powers of the Board (RCW 43.30.215) ¹⁹⁵⁷
- Multiple Use (RCW 79.10.100 - .120) ¹⁹⁷¹
- Sustainable Harvest (RCW 79.10.300 - .340) ¹⁹⁷¹
- Laws of General Applicability





Policy Framework - Sustainability



Revenue Generation
Support Local
Economies



Healthy ecosystems
Habitat conservation
Watershed protection

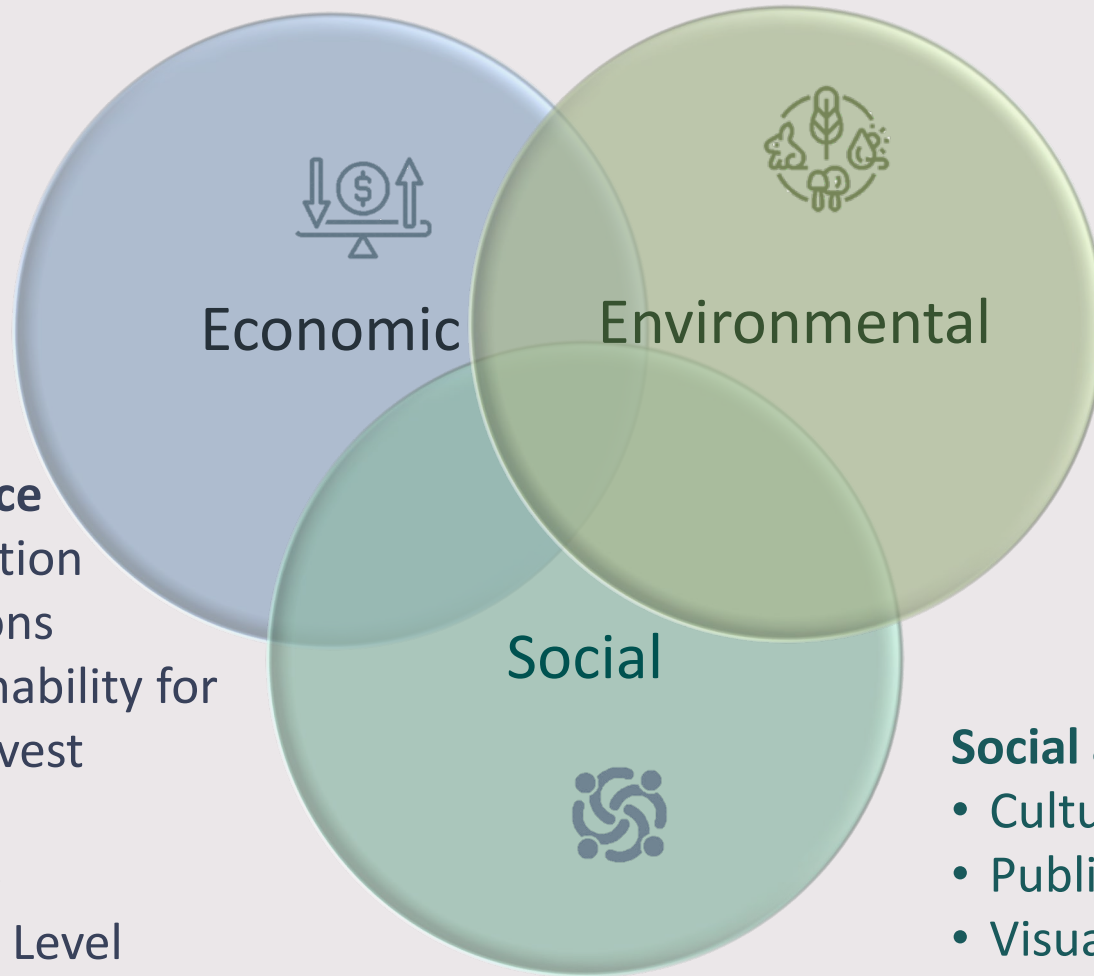
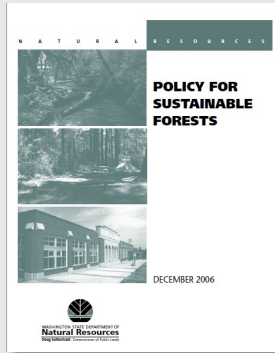


Cultural and Historical Resources
Public Access and Use
Supporting Critical Local Services





Policy for Sustainable Forests (2006)



Forest Ecosystem Health and Productivity

- Forest Health
- Catastrophic Loss Prevention
- Old-Growth Stands in Western Washington
- Wildlife Habitat
- Watershed Systems
- Riparian Conservation
- Special Ecological Features
- Genetic Resource

Social and Cultural Benefits

- Cultural Resources
- Public Access and Recreation
- Visual Impacts
- Local Economic Vitality

Economic Performance

- Financial Diversification
- Financial Assumptions
- Definition of Sustainability for the Sustainable Harvest Calculation
- Recalculation of the Sustainable Harvest Level
- Harvest Deferral Designations

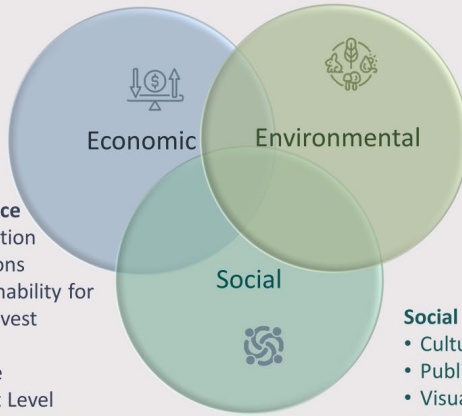




Policy for Sustainable Forests - Implementation



Policy for Sustainable Forests (2006)



Economic Performance

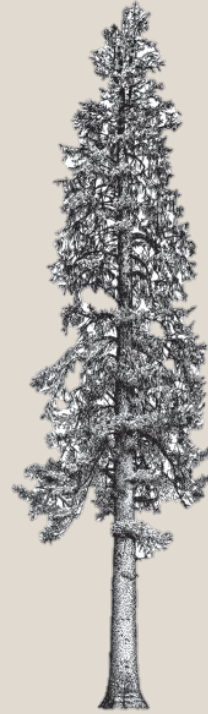
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Implementation

- Forest Land Planning
- General Silvicultural Strategy
- Forest Roads
- Research
- External Relationships
- Implementation, Reporting and Modification of the Policy for Sustainable Forests





Implementing Sustainable Forestry



Silviculture:

The art and science of cultivating forests to achieve objectives

POLICY ON GENERAL SILVICULTURAL STRATEGY

- The department will provide professional management of forested state trust lands through active management and stewardship of the greatest possible portion of these lands.
- The department will carry out active management as an integral part of the department’s fiduciary responsibilities to achieve, on a landscape basis, a combination of forest structures that, over time, provide for broad and balanced economic, ecological and social benefits.
- The department will use intensive and innovative silviculture to guide the desired progression of stand development to simultaneously produce trust revenue and create structural diversity across the landscape.
- The department will target 10-15 percent of each Western Washington *Habitat Conservation Plan* planning unit for “older” forests—based on structural characteristics—over time.
- Through landscape assessments, the department will identify suitable structurally complex forest stands to be managed to help meet older-forest targets. Once older-forest targets are met, structurally complex forest stands that are not needed to meet the targets may be considered for harvest activities. However, old growth is addressed in the Old-Growth Stands in Western Washington policy.



Summary

The department will:

- Provide professional management of forested lands through active management and stewardship of the greatest possible portion of these lands
- Balance economic, ecological and social benefits
- Use intensive and innovative silviculture to produce structural diversity and revenue
- Target 10-15% for “older” forests *over time*, and use landscape assessments to identify stands that help meet targets

[WADNR 2006 Policy for Sustainable Forests, page 47](#)





Development of Older Forest Targets

Policies that shaped our current management

- 1997 Habitat Conservation Plan
- 2006 Policy for Sustainable Forests
- 2019 Marbled Murrelet Long-term Conservation Strategy – Habitat Conservation Plan Amendment



Landscape Management Activities under the Habitat Conservation Plan



HCP Multi-species Conservation Strategy
Uncommon Habitat



HCP Riparian Conservation Strategy
Riparian Buffer



Policy for Sustainable Forests
Sustainable Harvest Level



HCP Marbled Murrelet Conservation Strategy
Occupied Site



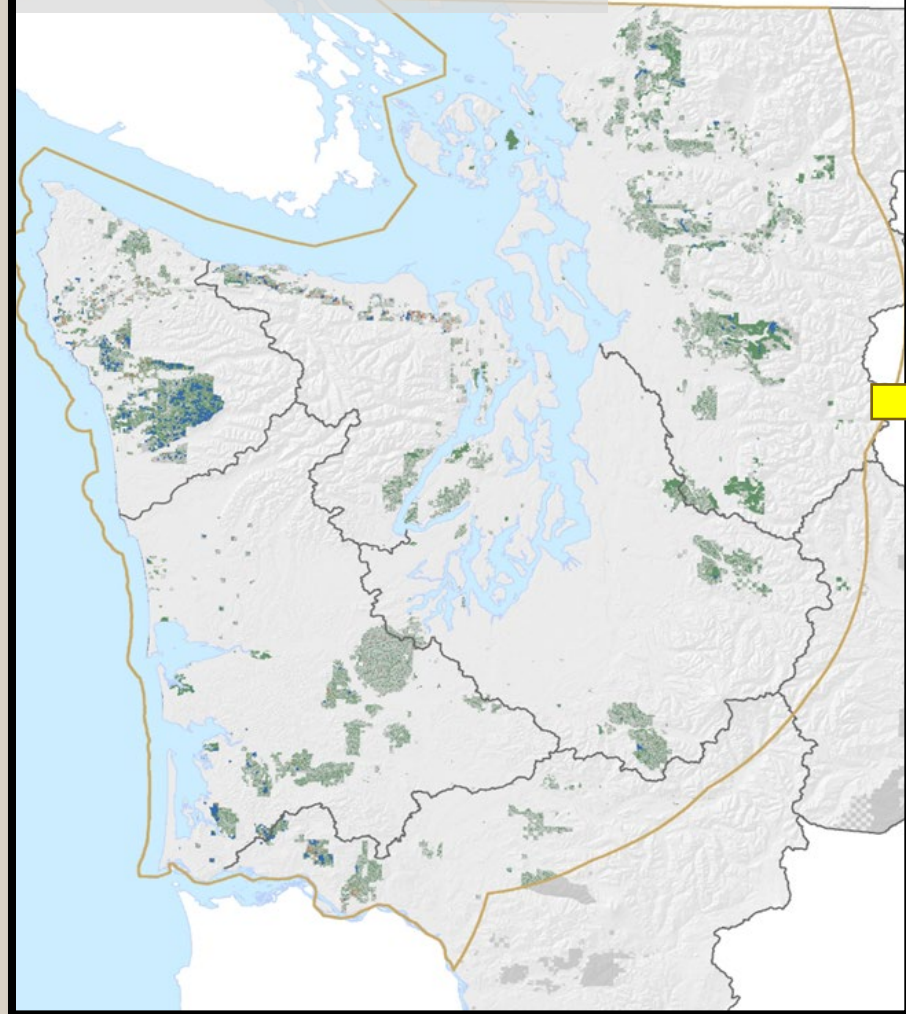
HCP Northern Spotted Owl Conservation Strategy
NRF Habitat



2019 HCP Amendment - By the Numbers

Marbled Murrelet Long-Term Conservation Strategy

No Action – Interim Strategy



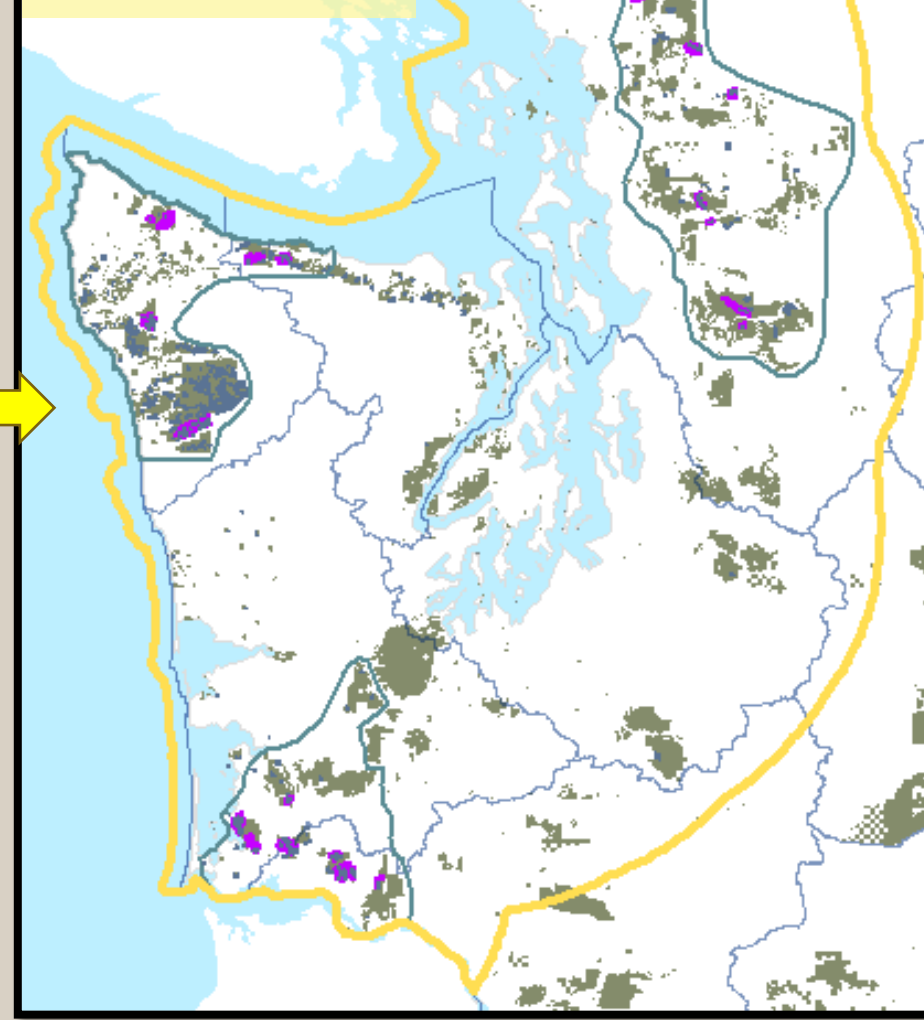
Interim Strategy

- **Site specific conservation:** occupied sites and existing higher quality habitats (33,000 acres)¹
- Marginal habitats available for harvest (35,000 acres)²

HCP Amendment

- **Site specific conservation:** occupied site and buffers (21,000 acres)¹
- **Special habitat area** (47,000 acres)¹
- **Habitat released** (38,000 acres)²
- **Metering**

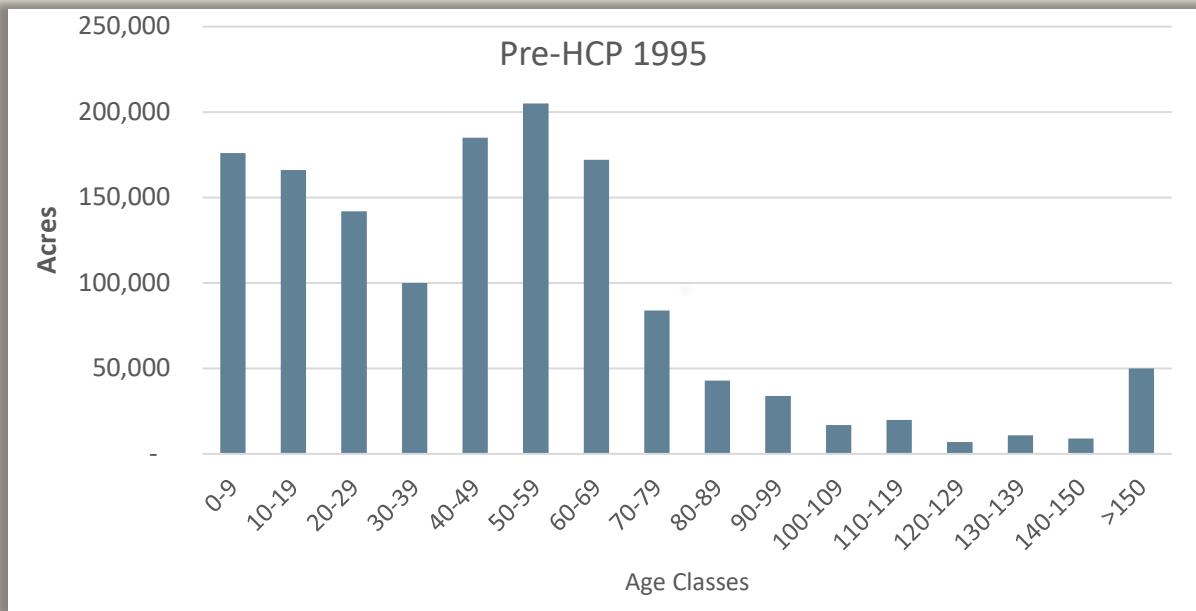
HCP Amendment



Notes:

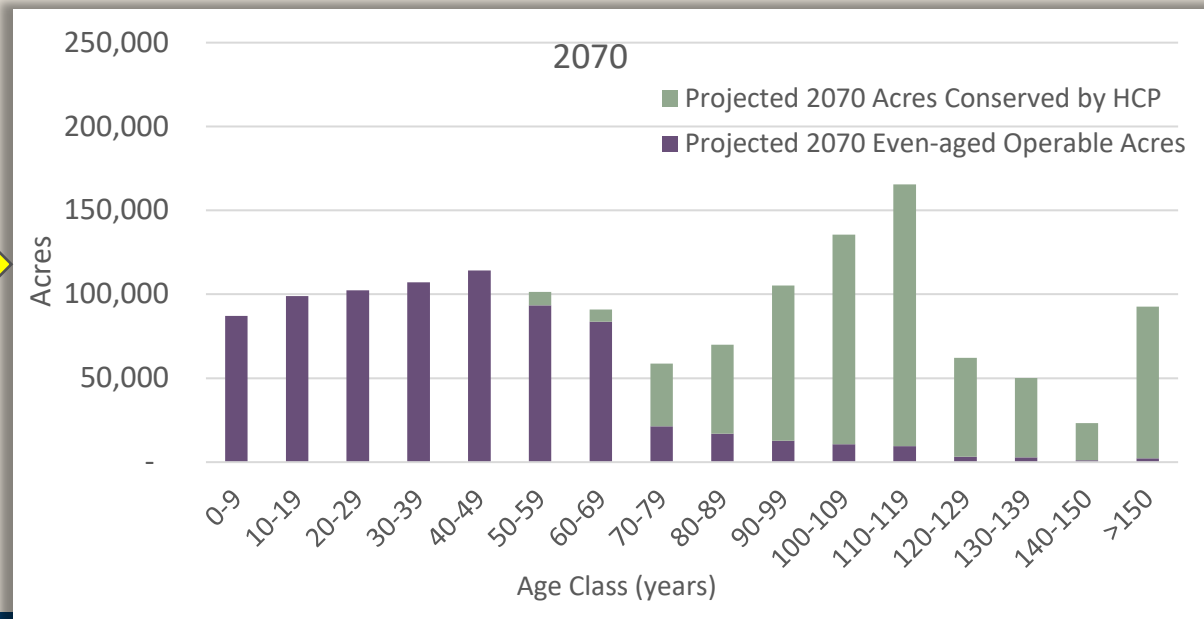
1. [Table 2.2.3. FEIS](#)
2. [Table 4.6.2. FEIS](#)





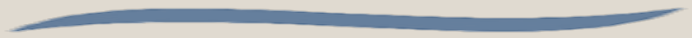
Age Class Distributions of DNR-Managed Forested Lands in Western Washington under the HCP

Retrospective – Now – Prospective
1995 through 2070



Authorizing Framework & Policy Summary

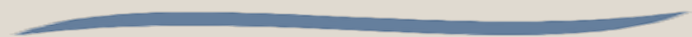
Trust Lands are managed to generate sustainable long-term revenue for the beneficiaries



The Policy Framework is Sustainability



The Habitat Conservation Plan is a landscape approach to protecting species, habitat, and biodiversity



The strategies laid out in the Policy for Sustainable Forests and our HCP assume active harvest in some areas and conservation in others.



Photo: Peter Harrison

2024 Landscape Assessment

Assessment was limited to variable retention harvest deferred acres across the landscape.



Combination of remote sensed inventory (RS-FRIS) and plot inventory utilized.

Older forest attributes were queried and quantified

Growth was modelled and older forests quantified over 100 years.

May 7, 2024

Landscape Assessment to Identify and Manage Structurally Complex Stands to Meet Older-Forest Targets in Western Washington

Washington State Department of Natural Resources | May 7, 2024

Summary

The Washington Department of Natural Resources (DNR) actively manages suitable forest stands to achieve, over time, older-forest structures across 10 to 15 percent of each 1997 *State Trust Lands Habitat Conservation Plan* (HCP) planning unit in western Washington. These “older-forest targets” are described in DNR’s *Policy for Sustainable Forests* (PSF).

This document (2024 Landscape Assessment) provides updated projections on the amount of older-forest stands, as defined by the PSF and discussed in this document, that will develop in western Washington by 2100 as a result of implementing landscape-level management strategies. It describes how DNR has implemented these landscape-level management strategies at the HCP planning unit scale, and how DNR has identified and prioritized suitable stands to be managed to meet older-forest targets.

This document is an update to a landscape assessment titled “Identifying Stands to Meet Older-Forest Targets in Western Washington” dated May 11, 2021 (2021 Landscape Assessment). This 2024 Landscape Assessment:

- Utilizes the same methodologies and data sources as the 2021 Landscape Assessment, which are discussed in Part 2 of this document.
- Refines and updates conservation areas from the 2021 Landscape Assessment, including the addition of newly designated areas, to better identify areas deferred from stand replacement harvest. Conservation areas include areas being conserved under the HCP; Natural Areas such as Natural Resource Conservation Areas and Natural Area Preserves; areas deferred by the PSF; and areas conserved under the Forest Practices Act.
- Updates the results tables from the 2021 Landscape Assessment that detail DNR’s projected timeline for reaching the PSF’s older-forest targets to reflect the refined and updated conservation areas.

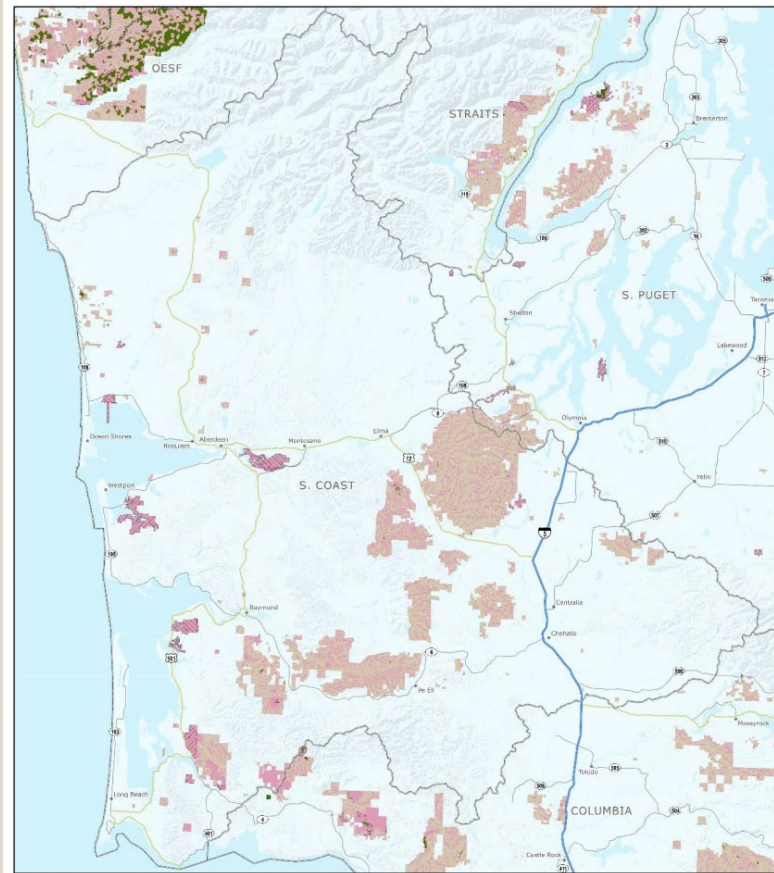
As with the 2021 Assessment, DNR identified and designated the forest stands that will contribute to older-forest targets within its GIS spatial database. The identified stands are also illustrated on the maps in Appendix 2. The identified stands comprise some existing, suitable structurally complex stands, and additional stands suitable to be managed for older-forest targets over time. The identified stands are all located within conservation areas.


DNR 2024 Landscape Assessment

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Identification of Stands

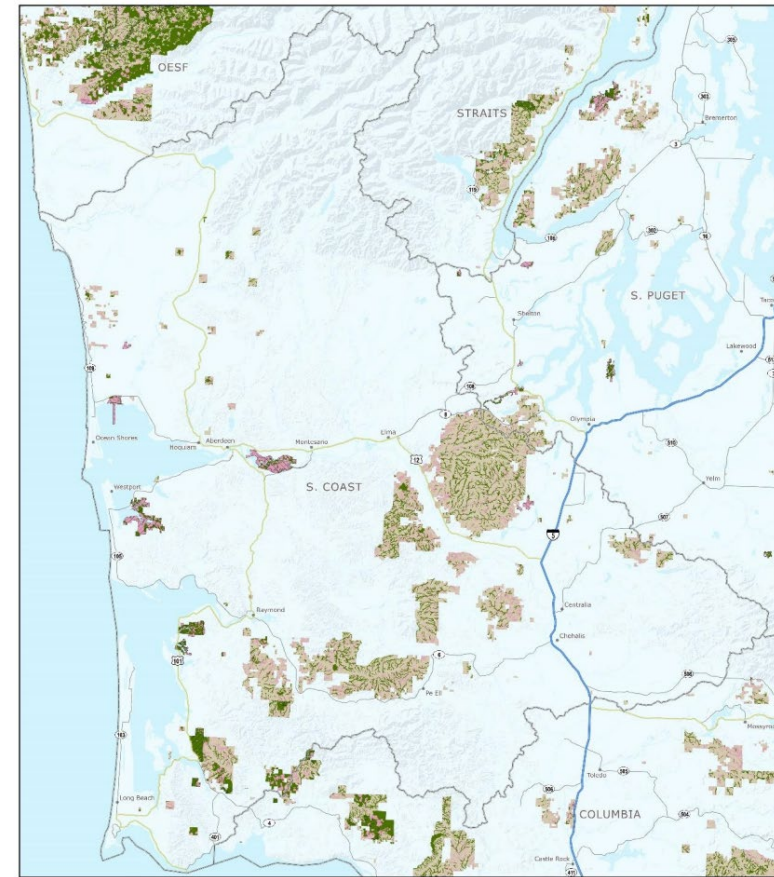





<ul style="list-style-type: none"> Older Forest in 2021 Westside Forest Cover HCP Planning Units 	<ul style="list-style-type: none"> Natural Area Preserve Natural Resource Conservation Area Other DNR-Managed Lands
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2021 Older Forest Within Conservation S. COAST

Map created on 4/18/2024 of older forests and westside forest cover identified from the analysis documented within the memo titled "Identifying Stands to Meet Older Forest Targets in Western Washington, May 11, 2021." All data are draft and subject to change.



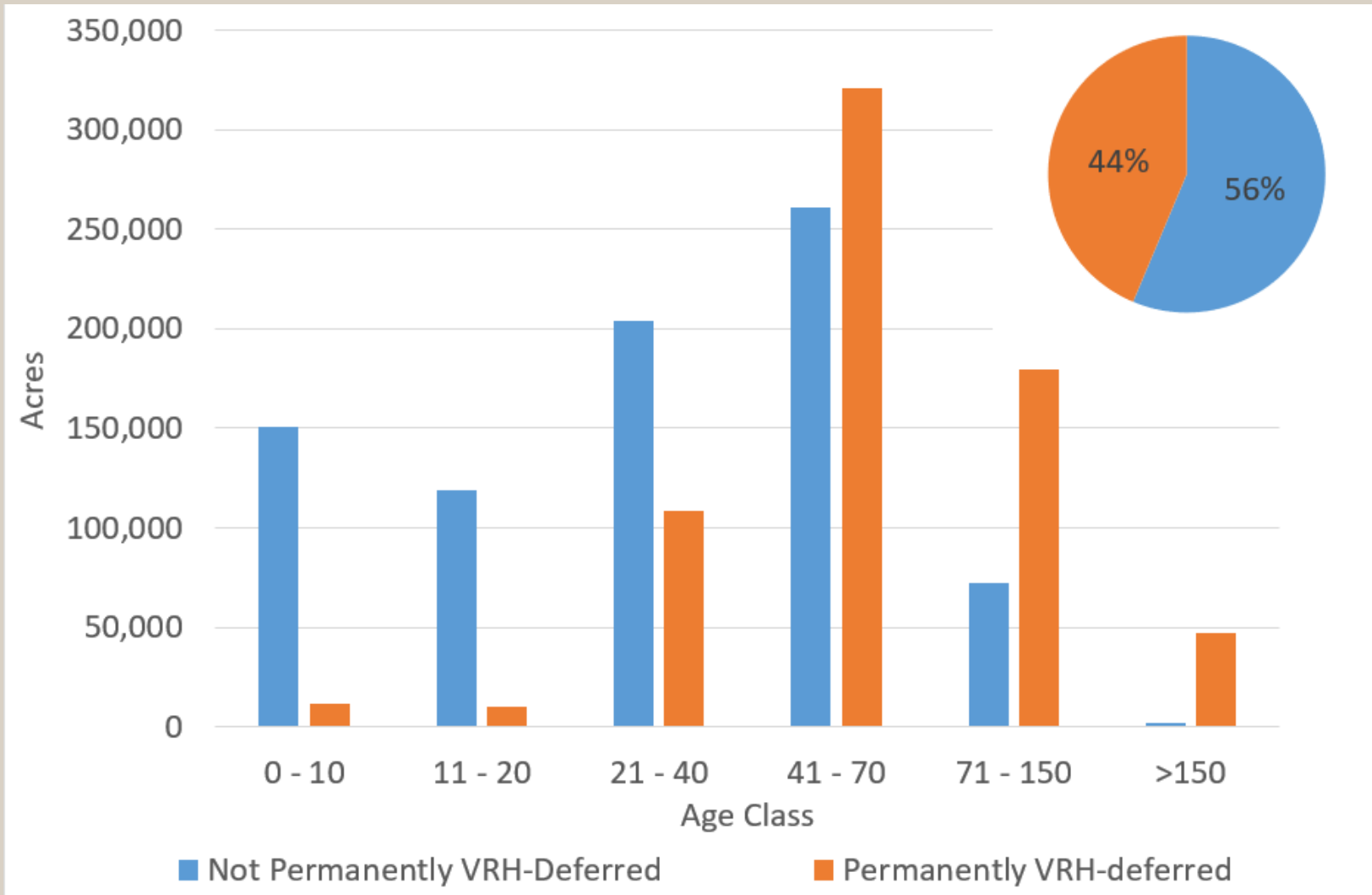


<ul style="list-style-type: none"> Projected Older Forest in 2100 Westside Forest Cover HCP Planning Units 	<ul style="list-style-type: none"> Natural Area Preserve Natural Resource Conservation Area Other DNR-Managed Lands
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Projected 2100 Older Forest Within Conservation S. COAST

Map created on 4/18/2024 of older forests and westside forest cover identified from the analysis documented within the memo titled "Identifying Stands to Meet Older Forest Targets in Western Washington, May 11, 2021." All data are draft and subject to change.

Westside VRH- Deferred & Harvestable Land Area



(2021 data) Western Washington Forested Lands

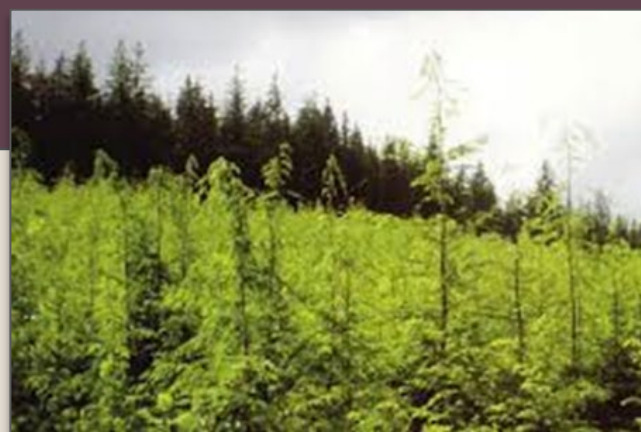


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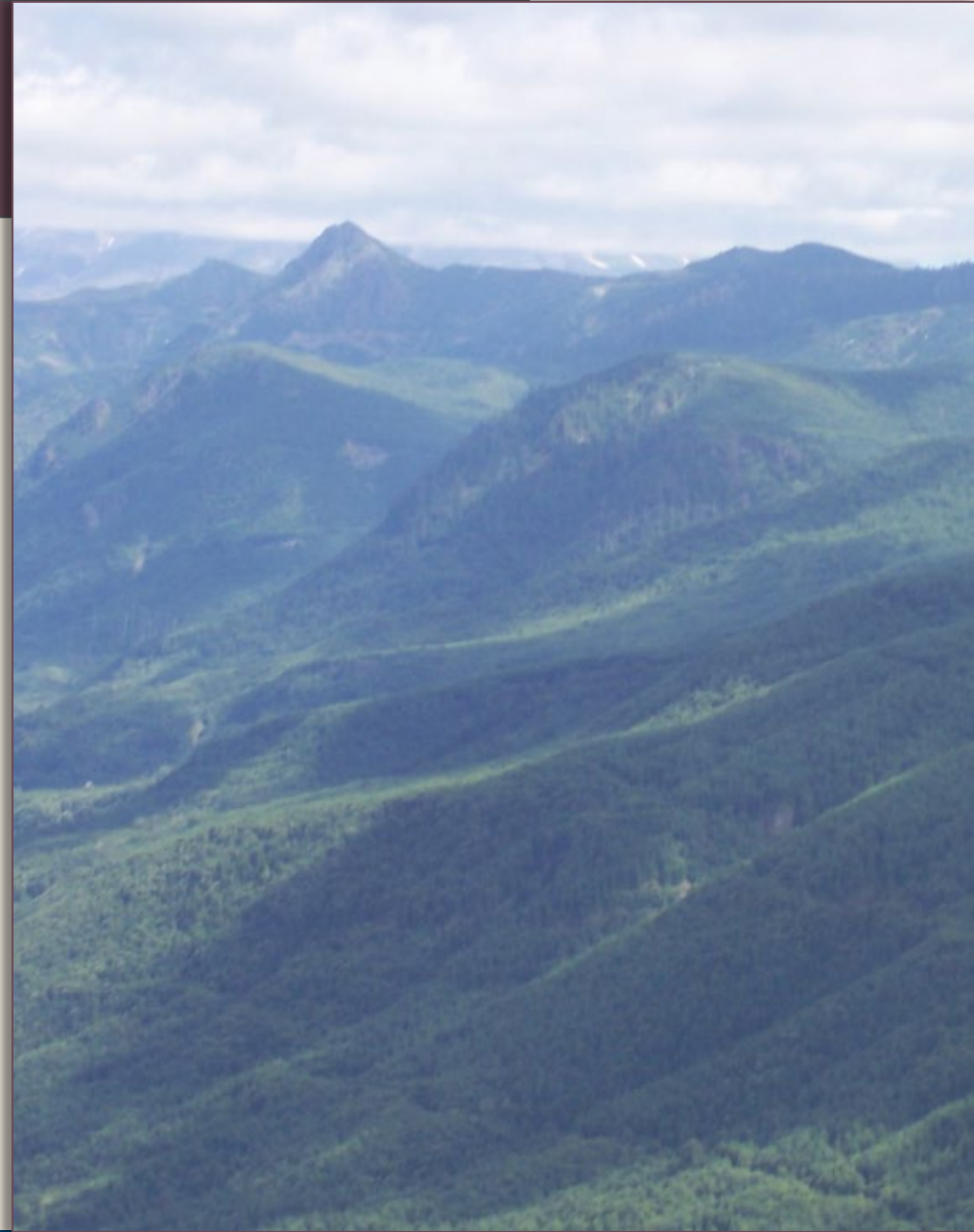
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Older Forests



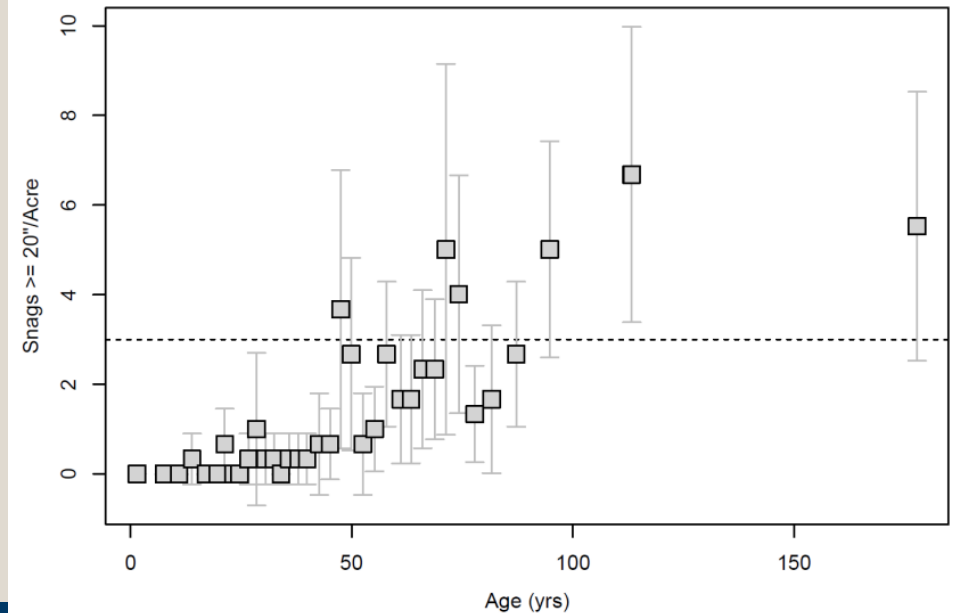
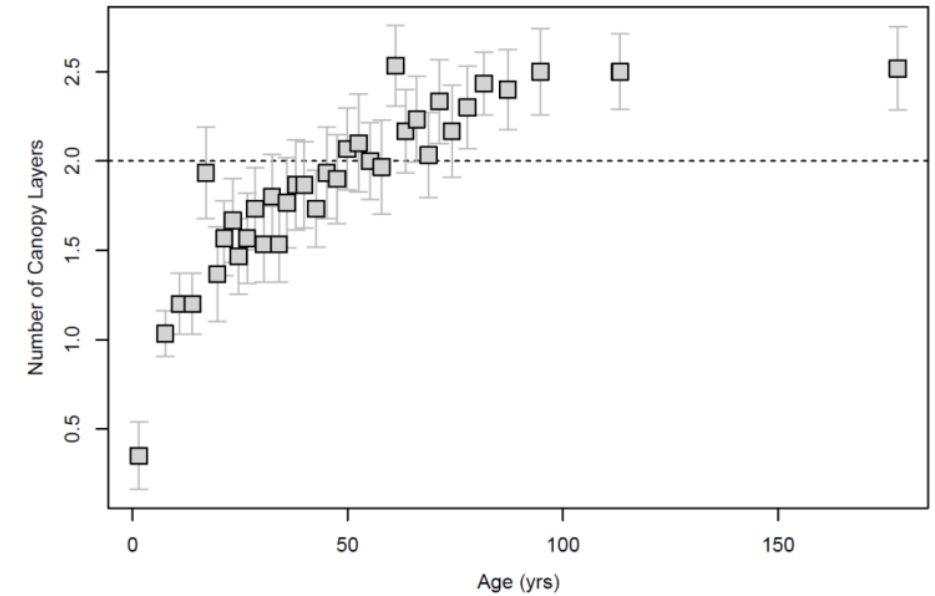
Methodology

- 2004 Sustainable Harvest Calculation
 - Defined and queried
 - Plot-based inventory
- 2021 Landscape Assessment
 - Updated queries for Remote-sensing and plot-based inventory
 - Updated data/GIS delineations
- 2024 Updated Landscape Assessment Utilizing 2021 Methods
 - Updated queries for Remote-sensing and plot-based inventory
 - Updated data/GIS delineations
 - Updated conservation areas – constrained the analysis to Variable Retention Harvest deferred areas only (approximately 681,000 acres on the westside)



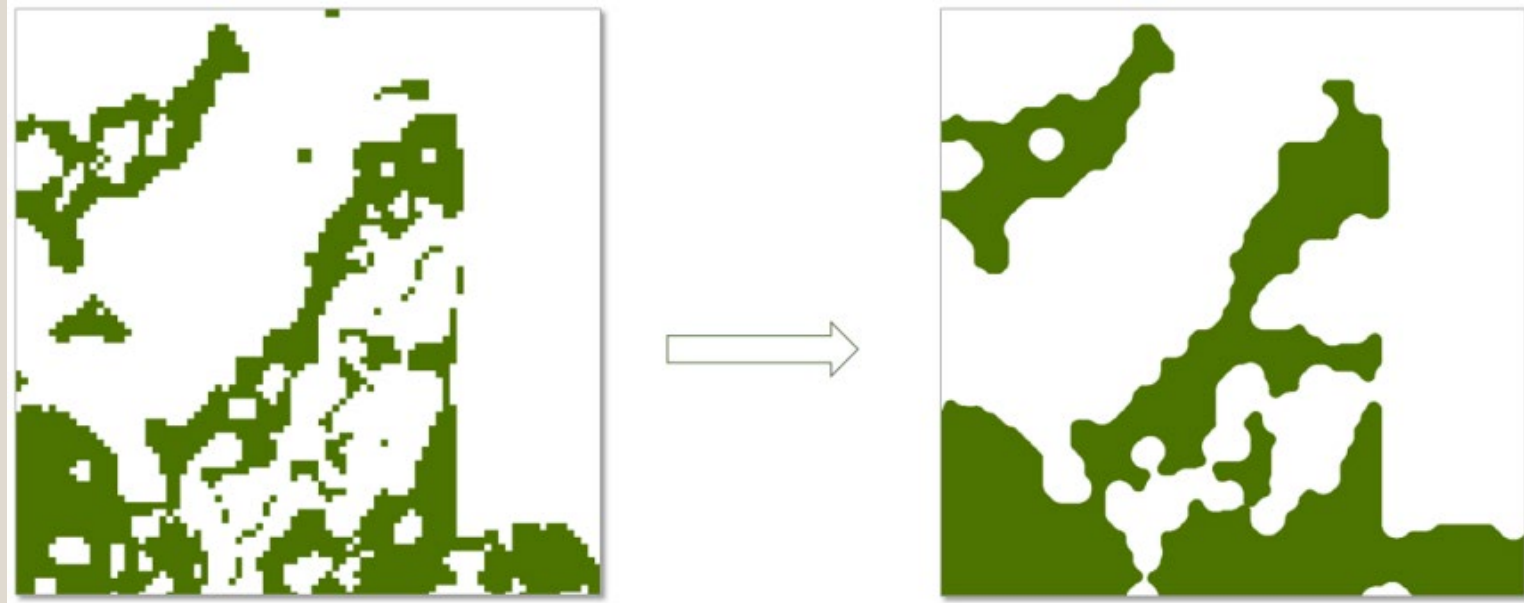
Key Metrics

- Maximum Relative Density Age
- Number of Canopy Layers
- Quantity of Legacy Structures
 - Snags
 - Dead and Down Wood Material



Correction Factors

- Plot Discount
- Disturbance Factor
- Minimum Stand Size
- Active Management



Current and Projected Area of Older Forest Conditions

HCP Planning Unit	Year										
	2021	2030	2040	2050	2060	2070	2080	2090	2100	2110	2120
Columbia	1.1%	1.2%	1.4%	1.8%	2.6%	4.3%	6.8%	10.1%	14.0%	17.3%	18.9%
North Puget	3.2%	3.9%	4.9%	6.2%	7.9%	10.2%	13.2%	16.7%	20.6%	23.9%	25.0%
OESF	10.2%	10.7%	11.0%	11.7%	12.6%	13.9%	16.0%	20.1%	25.0%	28.4%	29.6%
South Coast	0.2%	0.3%	0.6%	1.2%	2.2%	3.6%	6.0%	8.8%	12.3%	16.0%	18.7%
South Puget	1.7%	2.1%	2.7%	3.6%	4.6%	6.1%	8.4%	11.3%	14.4%	17.2%	18.7%
Straits	1.8%	2.5%	3.2%	4.3%	5.6%	7.4%	9.9%	12.6%	15.0%	17.9%	19.3%
TOTAL (Western Washington)	3.2%	3.7%	4.2%	5.1%	6.2%	8.0%	10.5%	13.8%	17.6%	20.9%	22.5%

Percent area western Washington HCP planning units with older forest conditions in conservation areas by decade through 2120. Values over 10% in bold

