



A Brief Word About Roles

The Oregon Legislature has distributed responsibility for natural resource management among many agencies.

Forestry has the lead role in management of private and state forest lands.

Environmental Quality has the lead role in restoring and protecting water quality

Fish and Wildlife has the lead role in restoring and protecting fisheries.

The Governor's Natural Resources Office works to coordinate the agencies as they carry out these roles to avoid or minimize conflicts, but the ultimate policy decisions are up to each Board and Commission as authorized by the Legislature.

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Coordinated Technical Review

- **Work on the rules involved significant review of science and technical information related to meeting Oregon's water quality standards, including riparian shade, stream extent, fish use of streams, buffers, and prescriptions.**
- **ODF, DEQ and ODFW worked together to develop a base of science and technical information and confidence levels for the range of no-cut buffers, variable retention and other prescriptions that will meet water quality standards.**
- **The agencies agree that the Ripstream study is consistent with the paired watershed studies in indicating the need to update Forest Practices Act regulations to ensure that forest operations meet water quality standards.**

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Why Are We Here?

Oregon has done a great job of sustaining working forests, and we all want that to continue. Oregon has kept almost all of its private forest lands, while Washington has lost an area almost seven times the size of Portland to development.

Land Use Change in Oregon and Washington Coastal Zones 1974-2006

Land Use	Washington Change 1974-2006		Oregon Change 1974-2006	
	Acres	Percent	Acres	Percent
Wildland Forest	-424,028	-7%	-40,325	-1%
Mixed Forest/Ag	-72,040	-29%	-4,172	-4%
Intensive Ag	-132,206	-21%	-2,781	-2%
Low-Density Residential	415,168	53%	43,106	33%
Urban	212,624	63%	4,635	11%
Other	482	1%	-464	-2%
Total Resource Lands	-628,274	-9%	-47,277	-1%

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Why Are We Here?

But, to be truly sustainable, Oregon's private forests need to do their part to meet water quality standards and protect our environment. There are three reasons for proceeding:

1. The **effects of individual operations on stream temperature** in small and medium fish bearing streams, particularly those containing salmon, steelhead and bull trout. **PCW.**
2. The **overall status of stream temperatures** in Western Oregon, now, and as projected in the future as our climate warms, **and the cumulative effects of forest operations** at a watershed scale over time. **Biologically-based criteria.**
3. The **trend in stream complexity** on the Oregon coast continues to decline. **Coho status.**

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Protecting Cold Water Criterion

- **“[W]aters of the State that have summer seven-day-average maximum ambient temperatures that are colder than the biologically based criteria in section (4) of this rule, may not be warmed by more than 0.3 degrees Celsius (0.5 degrees Fahrenheit) above the colder water ambient temperature. This provision applies to all sources taken together at the point of maximum impact where salmon, steelhead or bull trout are present.” OAR 340-41-0028.**
- **Purpose is to maintain natural thermal regimes in streams to protect native aquatic cold water species such as salmon, steelhead, bull trout.**
- **Anti-degradation requirement of federal Clean Water Act.**
- **Adopted by EQC, approved by EPA**

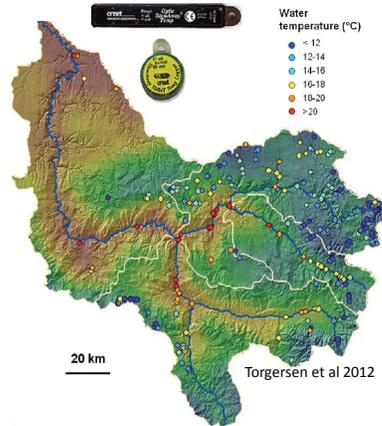
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Protecting Cold Water Criterion

Protects existing cold water habitats from being warmed by human activity in order to:

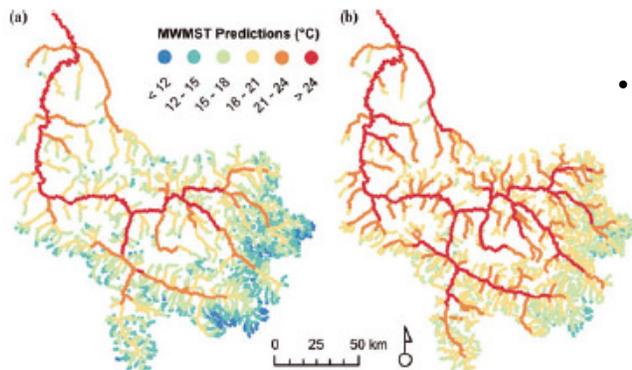
- Provides cold water to downstream reaches.
- Provides sufficient cold-water habitats & refugia on the landscape for cold water species & recovery of T&E salmon, steelhead, & bull trout.

Cold-water aquatic communities include: salmon, trout, amphibians, macroinvertebrates, & more.



Temporal & Spatial Refuges

- A network of thermal refuges allows greater use of the overall stream network.
- Species with colder thermal requirements (e.g. bull trout) are confined to cold-water refuges.



- With climate change, current cold waters will be the future thermal refuges.



The Relationship Between the PCW and Biologically-Based Criteria

The discussion of the PCW is focused on the effects of *individual* actions/operations, but another, perhaps larger concern is the *collective* effect of forest operations on stream temperature at a watershed scale.

The extent of watershed area disturbed by harvest within a five year period in western Oregon averages around 8 percent on private industrial forests and 6 percent on private non-industrial forests.

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Ripstream, Hinkle and Alsea

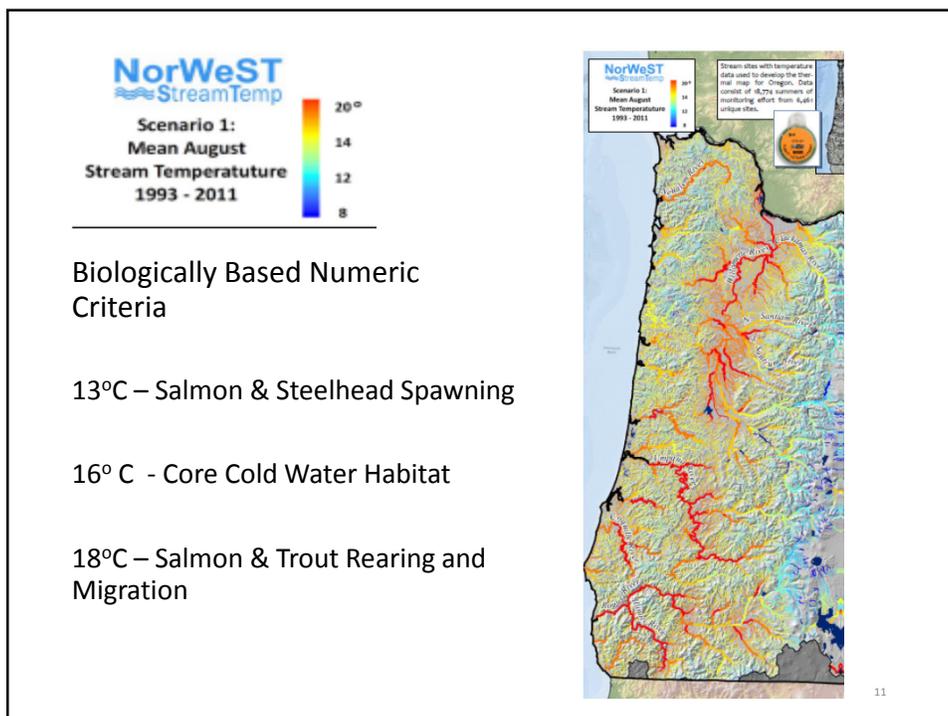
The main objective of the Alsea and Hinkle Creek studies was to look at cumulative effects.

The Hinkle study harvested 13 percent of the watershed on non-fish streams in 2005 and an additional 13 percent involving small and medium fish streams in 2008. The daily maximum temperature increases on the four non-fish streams ranged from -1.45 to 1.52° C. There was no detectable change at the bottom of the watershed. However, one year after the 2008 harvest on small and medium streams, the study found an average of 0.5 C increase in daily maximum temperatures (range of -1.8 to 2.5° C, n=7).

The results from the Alsea study showed a 0.5° C post-harvest increase at the bottom of non-fish streams (n=1). The increase was marginally statistically significant. The gage near the bottom of the harvest unit on the fish stream showed a significant average post-harvest temperature increase of 0.7° C.

The Ripstream value for private forests was 0.7° C, at or nearly identical to the values found in the Alsea and Hinkle Creek studies (0.7° C and 0.5° C, respectively).

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Biologically Based Numeric Criteria

13°C – Salmon & Steelhead Spawning

16° C - Core Cold Water Habitat

18°C – Salmon & Trout Rearing and Migration

**Monthly Averages
 7-day Average Daily Maximum Temps
 Private Forestland, Oregon Coast**

Month	Average 7-Day Average Daily Maximum Stream Temperature (Celsius)	Predominant Biologically-based Numeric Standard
May	13.9	
June	14.1	
July	15.4	
August	16.5	16.0
Sept.	14.8	13.0
October	12.6	

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Loss of Salmon Habitat under Climate Change

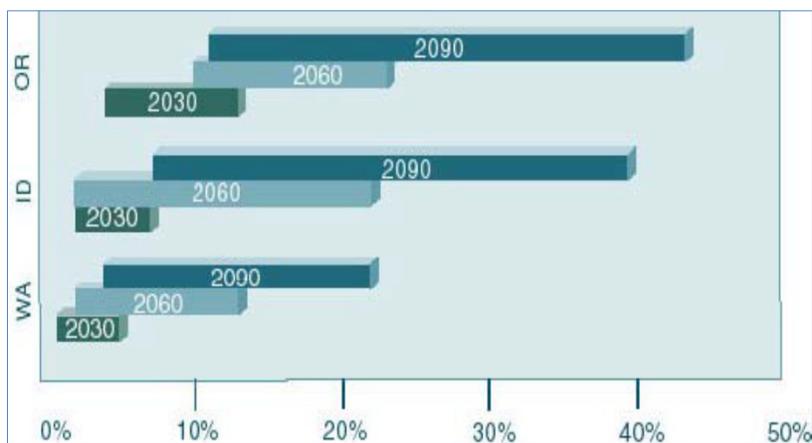


Figure 3. The projected future loss of salmon habitat under three time intervals due to climate change warming. From ISAB 2007, based on O’Neal (2002).

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Key Limiting Factors for Oregon Coast Coho

Stratum	Primary Limiting Factors	Secondary Limiting Factors
North Coast	Stream Habitat Complexity	Water Quality
Mid-Coast	Stream Habitat Complexity, Spawning Gravel	Water Quality, Stream Habitat Complexity
Lakes	Nonindigenous Species	Stream Habitat Complexity, Water Quality
Umpqua	Stream Habitat Complexity, Water Quality	Water Quality, Stream Habitat Complexity
Mid-South Coast	Stream Habitat Complexity	Water Quality

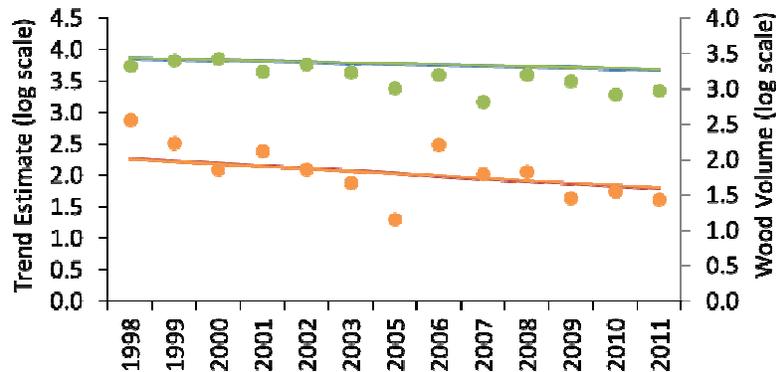
Stream Habitat Complexity – Conditions that support overwinter survival sufficient to sustain populations through periods of low ocean survival. Typical features include LWD, pools, alcoves, beaver ponds, and other connected wetlands.

Water Quality – NOAA’s 2010 status review considered temperature to be the primary source of water quality degradation in Oregon Coast coho habitat.

Riparian buffers help to lessen these limiting factors by:

- Increasing LWD recruitment and creating habitat complexity
- Reducing discrete but recurrent increases in temperatures
- Reducing chronic exposures to increases in basin-wide stream temperatures

Trends in Stream Complexity/LWD – Oregon Coast



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Board Considerations

When developing BMPs, the Board must consider five factors, among others:

- **Beneficial uses of waters potentially impacted;**
- **The effects of past forest practices on beneficial uses of water;**
- **Appropriate practices employed by other forest managers;**
- **Technical, economic and institutional feasibility; and**
- **Natural variations in geomorphology and hydrology.**

ORS 527.765(1)

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Relevant Context for the Board's Considerations

- **CZARA**
- **Oregon's Temperature Standard/EPA-NOAA Section 7 Consultation**
- **Oregon Coast Coho Recovery Plan**
- **Oregon Coast Coho Status Review**
- **BLM Western Oregon Plan Revision**

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CZARA

- **EPA and NOAA have determined that Oregon's Coastal Nonpoint Water Quality Program does not meet their standards for approval under CZARA.**
- **EPA and NOAA are withholding funding to DEQ and DLCDC for coastal nonpoint source programs, including grants.**
- **Oregon will continue to work with EPA and NOAA on the CZARA issues, *but the Board should not consider this as the driving factor in its current rulemaking.***
- **EPA and NOAA are looking to address other concerns that go beyond the Board's current rulemaking.**

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Oregon's Temperature Standard and the EPA/NOAA ESA Consultation

EPA must consult with NOAA on its approval of Oregon's biologically-based temperature standard.

NOAA may issue "reasonable and prudent alternatives" (RPAs) that require EPA to condition its approval in order to avoid jeopardy to listed salmonids.

The RPAs may (effectively) require additional measures by Oregon to protect salmonids.

The RPAs may become available later this year.

The Board *may* wish to consider how protective any proposed rule change is of listed salmonids.

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Oregon Coast Coho Recovery Plan

Recovery plans must incorporate, at a minimum:

- 1. A description of site-specific management actions necessary to achieve recovery of the species,**
- 2. *Objective, measurable* criteria which, when met, would result in a determination that the species be removed from the list; and**
- 3. Estimates of the time and costs required to achieve the plan's goal.**

Timing:

- Draft Recovery Plan -- Target is Fall 2015**
- Final Recovery Plan – Target is in 2016**

The Board *may* wish to consider the role of any proposed rule changes as site-specific management actions that help achieve recovery of listed salmonids.

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Oregon Coast Coho Status Review

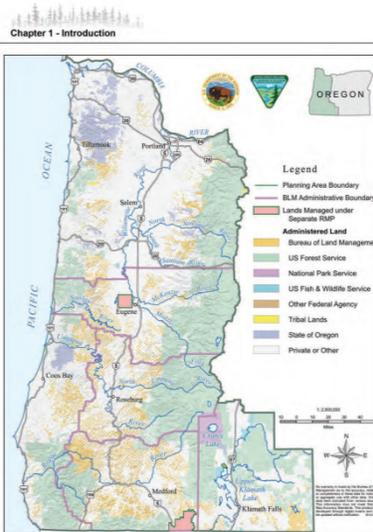
- **NMFS 2015 Status Review - In Progress**
- **Information Request (Published 2/6/15; Closed 5/7/15)**
- **Draft Report – Target is Fall 2015**
- **Final recommendations – Target is by end of 2015**
- **Publication of findings – Target is January 2016**

any proposed rule changes on the key limiting factorThe Board *may* wish to consider the role of s identified in NOAA's last status review.

Stratum	Primary Limiting Factors	Secondary Limiting Factors
North Coast	Stream Habitat Complexity	Water Quality
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Umpqua	Stream Habitat Complexity, Water Quality	Water Quality, Stream Habitat Complexity
Mid-South Coast	Stream Habitat Complexity	Water Quality

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BLM Western Oregon Plan Revision



Map 1-1: Major Ownership within the Planning Area

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BLM Western Oregon Plan Revision

Summary of Alternatives presented in BLM Draft EIS

	No Action	Alt A	Alt B	Alt C	Alt D
Riparian Full					
Fish	2 SPT	1 SPT	1 SPT	150'	1 SPT
Debris prone NF		1 SPT	100'	n/a	1 SPT
Non-fish	1 SPT	1 SPT	50'	50'	1 SPT
Inner Zone					
Fish	n/a	120'	60'	60'	120'
Non-fish	n/a	50'	50'	50'	120'
Harvest	Thin, commercial	No commercial removal	May remove in outer	May remove in outer	May remove in outer

Oregon expects to submit comments on the BLM Draft EIS. The Board *may* wish to consider how any proposed rule changes compare to the riparian prescriptions that may be adopted by the BLM in its WOPR.

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Board Decision Space

ORS 527.765(1)

The State Board of Forestry shall establish best management practices and other rules applying to forest practices as necessary to **insure that to the maximum extent practicable nonpoint source discharges** of pollutants resulting from forest operations on forestlands **do not impair the achievement and maintenance of water quality standards** established by the Environmental Quality Commission for the waters of the state. **Such best management practices shall consist of forest practices rules adopted to prevent *or* reduce pollution** of waters of the state.

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Maximum Extent Practicable

- Practicable means: “capable of being put into [practice](#) or of being done or accomplished : [feasible](#) <a *practicable* plan”
- There is more than one possible set of rules that meets MEP (even though the statute calls on the Board to establish rules to the “maximum extent” [to meet water quality standards].
- MEP likely means the Board does not have to assure strict or full compliance with water quality standards, but to the extent it requires something less, it must be because doing more is not feasible.
- In considering feasibility, the Board likely can consider the five factors listed in the same statute.

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The Five Factors in ORS 527.765

- *Beneficial uses of waters potentially impacted;*
- *The effects of past forest practices on beneficial uses of water;*
- *Appropriate practices employed by other forest managers;*
- *Technical, economic and institutional feasibility; and*
- *Natural variations in geomorphology and hydrology.*

ORS 527.765(1)

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ORS 527.714

- Board must consider alternatives.
- Board must consider non-regulatory alternatives.
 - Board could consider “over-compliance,” particularly if coupled with monitoring to document it on an ongoing basis.
- Least burdensome;
- Substantially advance the purpose;
- Benefits are in proportion to the impacts.

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Other Aspects the Board May Want to Consider

- Relief for disproportionate impacts (small ownerships).
- Board might provide incentives (less restrictive prescriptions) for operations with written plans.
- Similarly, the Board might consider less restrictive prescriptions for operations with written plans that also meet certification standards.
- Board could consider scaling prescriptions to whether or what extent streams are currently meeting criteria.
- Board could provide for a robust monitoring and adaptive management component that allows modification of prescriptions, particularly upstream extent, if certain resource outcomes are shown to be met.

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Conclusions

- **This is not easy.**
- **There is no single “right” answer.**
- **You have the information to begin forming a decision.**
- **Most of all, thank you!**

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