Oregon Stream Protection Coalition

BEFORE THE OREGON BOARD OF FORESTRY

Statement of Mary Scurlock, Oregon Stream Protection Coalition
Regarding Agenda Item 2: Methods for Riparian Rule Analysis
Sunriver, Oregon
22 April 2015

My name is Mary Scurlock, and I represent the Oregon Stream Protection Coalition's 21 fishing industry and conservation member groups united in support of stronger, science-based riparian protection for streams on Oregon's over 10.6 million acres of private forestland. We stand united around the common belief that a stronger regulatory baseline is needed to ensure the long-term health of freshwater ecosystems and the multitude of economic benefits they support, including but not limited to saw timber and wood fiber.

- **The Decision Analysis Package coming to the Board, as outlined by the Department in the pre-meeting materials, promises to provide an adequate basis for the Board to select proposed rule prescriptions on June 3**

The information now being prepared by the Department for delivery to the Board ahead of the June 3 meeting falls into main four categories

1. Predictive model-generated information about how proposed prescriptions perform to prevent stream warming, and other information relevant to prescription evaluation where the predictive model is informative. *This is the **threshold information** that the Board will use to determine whether a prescription is effective enough to be considered capable of "meeting" the Board's objective for this rule process and its legal duty to promulgate rules that meet the water quality criteria.*

2. Regulatory and Economic Impacts on Landowners assessed using both GIS generated information about how the various prescriptions affect the acreage available to landowners for harvest and estimates about the expected change in land and timber values. This information is relevant to how the Board will determine which of the alternatives deemed effective are "least burdensome" to the regulated community.

3. Ecological Benefit information other than protection from shade-based stream warming, which should include how prescriptions contribute to large wood recruitment objectives, sediment and nutrient retention, expected fish response, and other benefits. This information is relevant to how the chosen rule alternative meets the Board's natural resource objectives other than those directly related to water quality criteria for stream temperature based on streamside shade.

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4. Geographic Extent Information. This information simply illustrates how the various prescriptions would change the status quo in the different ODF geographic regions depending on whether they apply to all small and medium fish streams, or just to salmon, steelhead and bull trout reaches. This relates to how the Board chooses to geographically constrain the reach of the resource degradation finding it made without reference to geography in January of 2012.

Although we have a few comments to make about each of these categories of information, our overall evaluation is that the Board will have an adequate informational basis upon which to make a decision on prescriptions that should go forward to proposed rule language on June 3.

We make this finding on our belief that the predictive model is a robust and credible tool for evaluating prescription effectiveness to prevent harvest that allows undesirable shade reductions and consequent solar warming as required by applicable EQC- and EPA-approved water quality criteria limiting such warming. This is the key piece of information that the Board needs to consider because it goes to the **threshold determination** of whether a particular prescription is adequate to meet the Board's objective of preventing harvest related stream warming as required by DEQ water quality criteria. ***All of the other information is subordinate to the Board's determination of prescription effectiveness.***

For example, the relevance of economic impact information at this point is to allow the Board to select the "least burdensome" alternative or alternatives from among those determined to be adequate to meet the water quality goal according to the predictive model and other evaluative information. The information prepared by the ODF is more than adequate to do this job. It will not, however, be adequate to serve as the sole source of scientific input to comprehensive economic analysis required prior to adoption of a final administrative rule. Improved availability of certain information about how streamside prescriptions contribute to other ecological benefits besides those related to preventing shade loss and stream warming is very important because prescriptions designed to meet temperature criteria will also directly and indirectly improve non-shade related riparian functions.

❖ ADDITIONAL COMMENTS ON RULE ANAYSIS INFORMATION

• The Model and other information about prescription effectiveness

It is our assessment that the scientific modeling developed by ODF to allow the Board to evaluate the relationship between streamside logging, stream shade, and stream temperature response represents state-of-the art science. To our knowledge the Board has never before been presented with such a rigorous scientific analysis to inform a rulemaking provision for resource protection. This body of work has been carefully developed over many years, grounded and calibrated in an extensive base of field data and tailored to

address very specific questions and prescriptive scenarios, and subject to peer review at several junctures. While our experts might quibble with certain interpretations of data near the margins of the analytic findings, we fully support the crux of this analysis and its findings.

- **Ecological Benefits Assessment**

We have three comments on the ecological benefits analysis.

First, it is important to acknowledge that the prevention of stream warming is itself an "ecological benefit" that was evaluated using the predictive model and other scientific information in a separate exercise, and that the large wood, fish response and other functions analysis adds to that important benefit.

Second, although we reserve judgment on this specific analysis of large wood, fish response and other functions until we see the details, the proposed methods seem likely to be informative on their face, and should provide valuable context for the June decision. Even without seeing the results of a quantitative analysis, we are certain that a proposed rule change that expands streamside leave areas and reduced logging and equipment operations within them will confer substantial and measurable benefit to other important water protection functions. For example, these benefits include improved sediment retention, nutrient retention, large wood recruitment, flood abatement, protection of wetlands and near-surface groundwater conditions and processes , and riparian wildlife habitat.

Third, while acknowledgement of and some attempt to quantify the multitude of ecological benefits from increased riparian protection is important to an informed decision process this should not be the end of the benefits analysis. *We emphatically note that it will be very important for ODF to include estimates of the economic value of these manifold environmental benefits as part of its comprehensive economic analysis.*

- **Geographic Extent of Prescriptions**

We have two comments here.

<u>First, we urge the Board not to conflate its decisions about prescription effectiveness with decisions about either geographic or stream extent</u>. The <u>effectiveness of</u> prescriptions should be the primary determinant of which prescriptions are chosen. Whether a region or set of stream reaches are included should be based on the Board's findings about which regions and stream reaches are not currently receiving prescriptions that are adequately likely to meet the applicable water quality criteria.

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Second, as we have previously indicated to the Board we are not satisfied that this rule process has adequately acknowledged the clear implications of the RipStream study for streams subject to warming limitations as part of watershed-wide temperature TMDLs. While we recognize that including all stream reaches to which Temperature TMDLs apply would exceed the "outer limit" of the potential footprint for this rule (all small and medium fish streams) we believe that this information is nonetheless relevant for the following reasons:

- *In addition to reaches subject to the Protecting Coldwater Criterion, there is an existing legal duty to prevent stream warming on most if not all other streams by virtue of valid existing TMDLs*. Under Oregon's water quality standards, once a TMDL is completed, its provisions override the PCW criterion. The Board's failure to acknowledge its duty to ensure that the forest practices rules meet TMDLs as well as the PCW ignores the plain language of the water quality standards, and is not an acceptable basis for restricting the scope of new rules. We think it is important that the Board -- and EQC -- both recognize that:

    - the same temperature standards apply to all perennial streams, at a minimum, and do not distinguish between SSBT, fish-bearing, and non-fish bearing streams;
    - the same temperature standards apply to all streams, regardless of whether they are impaired or not impaired; and
    - the allowable warming under TMDLs is no longer just the PCW's 0.3° C, but becomes between zero and 0.1° which reflects the applicable human use allowance.

- *RipStream clearly demonstrates we are not meeting our obligations under these TMDLs* (and any that are likely to be developed in the future for that matter). The study results demonstrate significant stream warming under current rules on small and medium streams -- not just to salmon, steelhead and bull trout-bearing streams.

- *The Board is considering applying increased buffers only to "Salmon Steelhead and Bull Trout" bearing reaches, which would protect very few of the stream miles where warming limitations equivalent to or less than the PCW actually apply.* We urge the Board to consider all information that illustrates the actual scope of the various rule options relative to **all the streams in need of protection.** Please work to ensure that a fully informed decision is made by the Board in June ,and that you have a full understanding of the stream warming limitations set by temperature TMDLs as well as the Protecting Coldwater Criterion.

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- **PUTTING THIS RULEMAKING IN CONTEXT: Freshwater habitat is not recovered and drought conditions and climate change heighten stream-dwelling species vulnerability to land use impacts. There is a pressing need for immediate policy change on Oregon forest practices.**

- *Just because Oregon Coast Coho Salmon populations have increased in recent years (on average, in aggregate) doesn't prove that freshwater habitat is doing fine and changes in land use practices aren't needed*

In the public discourse over the last few months, we have run across several misconceptions about the need for new rules. One of them is evident in the letter sent to the Board by the Committee for Family Forestlands: that recent increases in coastal coho spawner abundance demonstrate that all is well with salmon habitat and forest land use practices. *This conclusion is not supported.*

First, I am advised by NOAA Fisheries and the record of the coho listing that the initial ESA listing was primarily driven by trends in production of salmon, i.e. by declines in recruits (the number of juveniles that survive to maturity), not spawners. *See e.g.* Lawson, 1993. So a more relevant graph to consult would be one based on ODFW's combined spawner & harvest numbers, below.

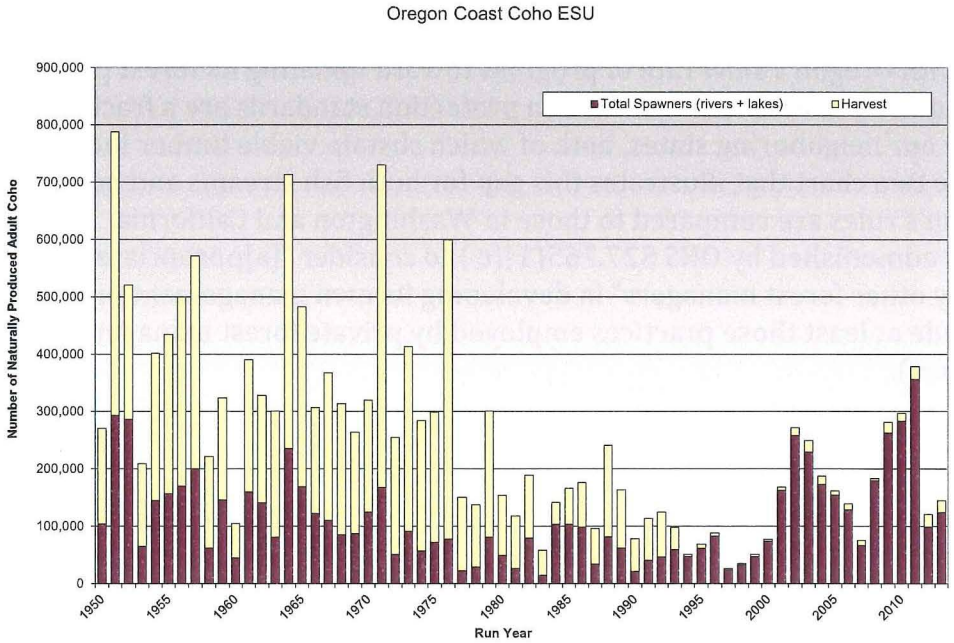

Figure 1. Estimated numbers of naturally produced adult coho in the Oregon Coast Coho ESU (run years 1950 to 2013). Number of adult coho spawning in the wild, and harvest impacts (both landed and non-landed).

Oregon Department of Fish and Wildlife, Oregon Adult Salmonid Inventory and Sampling Project

Second, while both spawners and recruits have increased since the 1990s when coho were originally listed, *this is still too short of a time period to reflect the result of changes in forest practices.* It will take decades more for streams and the fish inhabiting them to respond to the changes in riparian management from the 1994 rules. It is not appropriate to rely on the self-serving speculation of a special interest group in these matters. Instead, we need to rely on our extensive scientific knowledge of how ongoing forest practices impact habitat characteristics known to limit fish survival.

Third, the prevailing opinion of experts on this fishery is that the most likely causes for the recent upticks are: reduced harvest, short-term variation in marine and freshwater climate, greatly reduced hatchery coho releases, and — in some local streams only — directed habitat restoration efforts. This uptick seems unlikely to continue given the low snowpack and general drought conditions now facing much of the west, coupled with the expectation of poor ocean conditions. (See attached article in Science by R. Service, 2015). Fish biologists are now predicting at least a 25% smaller return rate by 2016. (Pers. Comm. B. Rees, Association of NW Steelheaders). This convergence of highly adverse circumstances is likely reduce coho salmon survival for at least the next 3 years, and well beyond that should the adverse conditions prevail.

- *Time for A Change: status quo is not acceptable*

The conservation community and the interested public it represents are understandably frustrated with Oregon's slow rate of progress toward updating its forest practices rules to meet water quality standards. Our stream protection standards are a fraction of those provided by our neighboring states, both of which sustain viable timber industries. I provide here two chart that illustrates this gap for both fish streams and nonfish streams when Oregon's rules are compared to those in Washington and California. (We note that the Board is admonished by ORS 527.765(1)(c) to consider "[a]ppropriate practices employed by other forest managers" in developing its own management practices. These clearly include at least those practices employed by private forest managers in other western states).

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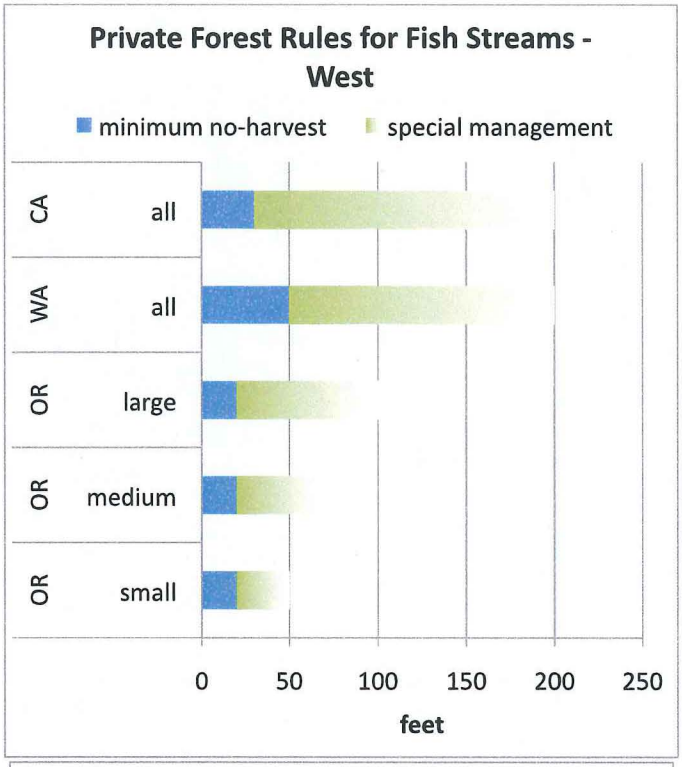

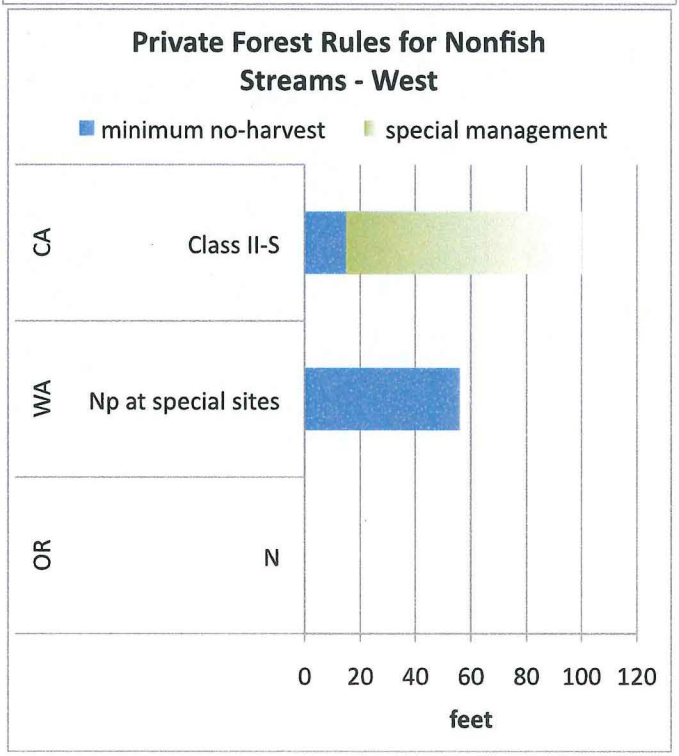

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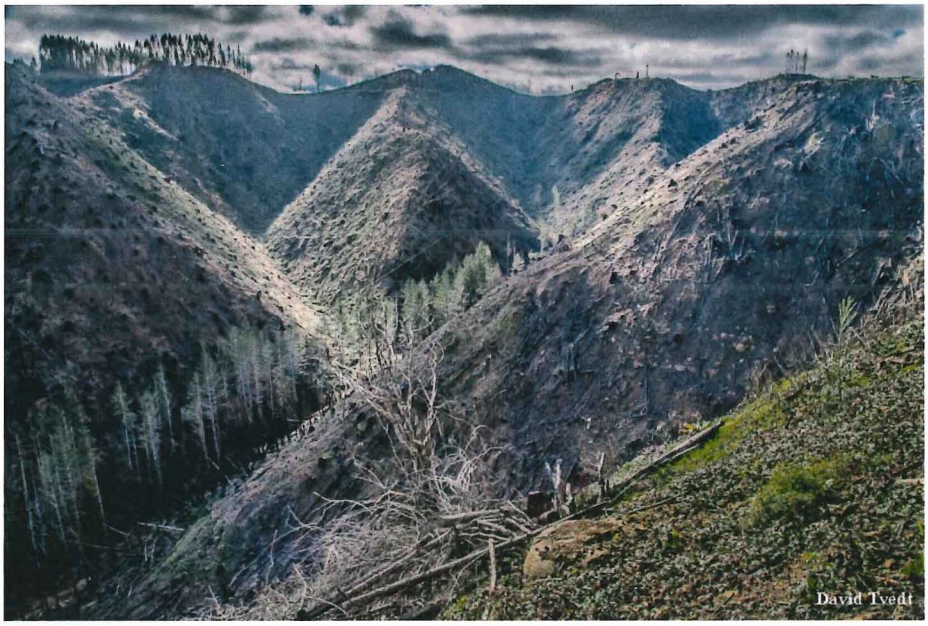

Stream buffers on industrial forestlands, Douglas County, Oregon. Oxbow Creek, Section 8, T.20S, R.7W along BLM road 19-7-25.1 These appear to be large post fire salvage units. "Watershed conditions are highly sensitive after wildfire (Beschta et al. 2004) and present stream and soil protection rules are grossly inadequate to prevent logging-related harm to adjacent and downstream waters." Beschta, R.L., J. J. Rhodes, J.B. Kauffman, R.E. Gresswell, G.W. Minshall, J. R. Karr, D.A. Perry, F.R. Hauer, C. A. Frissell. 2004. Postfire Management on Forested Public Lands of the Western United States. *Conservation Biology* 18: 957–967.

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Our smallest streams receive virtually no protection under current logging rules.

Chinook salmon spawning in Idaho's Snake River.

CONSERVATION

Meager snows spell trouble ahead for salmon

Without snowmelt, streams in the western U.S. could reach lethal temperatures

By Robert F. Service

Although record snowfall in the northeastern United States grabbed the headlines this winter, the mountains throughout much of the western United States remained unusually bare. Early to mid-April in the West typically marks the high point of the snowpack, which serves as a critically important water bank that doles out reserves as the snow melts over the dry summer months. But this year the bank is nearly empty, and drought-stricken farms and cities in California can expect little relief. And for endangered salmon migrations, a calamity is looming. "It's going to be a Katrina for fish," says Dan Isaak, a fisheries scientist at the U.S. Forest Service's Rocky Mountain Research Station in Boise.

He and others predict that when salmon swim up western rivers to spawn this summer, their eggs and young will perish in shallow, warm water. That could threaten already meager endangered stocks, particularly in California's Central Valley, which faced similar disastrous conditions last summer.

A map of snowpack totals in the Pacific Northwest shows mostly light and dark red dots, indicating snow levels 50% of normal and below. A smattering of white dots indicates no measured snow at all. California's Sierra Nevada is in even worse shape, as those mountains now hold only 5% of their normal snowpack. The state's reservoirs are also only about half full. Faced with this combination, earlier this month California Governor Jerry Brown mandated an across-the-board 25% cutback in water deliveries to urban water users.

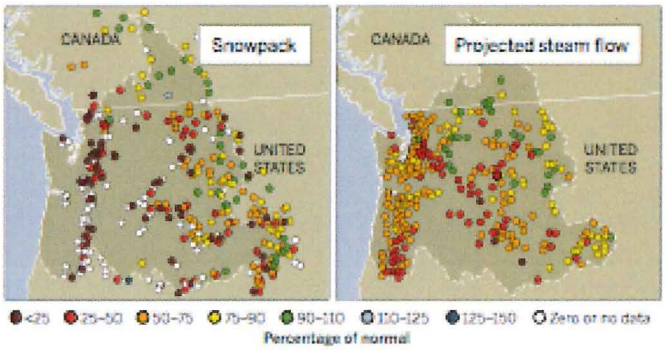
Ironically, river and stream flows are still robust, at least outside California. According to interactive stream flow maps maintained by the National Oceanic and Atmospheric Administration (NOAA), water levels in rivers that are prime salmon habitat across the Pacific Northwest are surging. The maps are peppered with pale blue and deep blue dots, indicating flow levels 125% to 175% of normal. But that's because for most of the winter, temperatures across the region were 3°C to 6°C above normal, says Kevin Berghoff, a senior hydrologist with NOAA's Northwest River Forecast Center (NRFC) in Portland, Oregon. As a result, most of the precipitation in the Northwest fell as rain rather than snow, swelling spring runoff volumes.

Flows are likely to drop dramatically in the summer, according to NRFC. With the exception of a few river basins in central and eastern Washington, Idaho, and British Columbia, virtually all the rivers in the Northwest are expected to have flow levels far below normal.

When summertime heat sets in, water temperatures in those rivers are likely to spike. In many inland streams in California's Central Valley, as well as central Oregon and Washington, river temperatures are expected to crest

Mapping the threats to endangered stocks

Mild winter temperatures in the Pacific Northwest caused most precipitation to fall as rain instead of snow. That has left a snowpack far below normal (left) and is expected to cause low stream levels this summer (right).



CHARTS: PHOTO COURTESY OF NOAA; DATA COURTESY OF NOAA

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above 20°C, the upper limit for migrating salmon. Above that, salmon eggs, fry, and juveniles typically perish, says Chris Caudill, a fisheries ecologist at the University of Idaho, Moscow. Adult fish sometimes survive those temperatures by halting their migrations and holing up in any colder water tributaries they can find. Yet doing so can bring other problems. For starters, the fish don't eat during spawning, so extended layovers can sap the energy reserves they need to complete their trip. And as the fish wait, they face increased predation and disease. "When water temperatures rise, none of the options is good," Caudill says.

Water managers can combat high summer stream temperatures by slowly releasing cold water from summertime snowmelt captured in reservoirs. But without a significant snowpack, that strategy can only work for so long. Last year, for example, water managers in northern California tried that approach at Shasta Dam in an effort to keep water temperatures below 20°C in the Sacramento River, home to endangered winter-run Chinook salmon that migrate upriver during the summer. But the supply of cold water behind the dam ran out in early September, and river temperatures soared. As a result, an estimated 95% of the eggs, fry, and juvenile winter-run Chinook died, says Peter Moyle, a fisheries biologist at the University of California, Davis. Right now, Shasta Lake holds roughly the same volume of cold water as it did at this time last year, Moyle says. "Chances are good we'll see a repeat of last year."

Even if the skies open up and water fills reservoirs throughout the West, young salmon that do make it out to sea face a potentially even larger problem. That's because river travel represents only the first of their challenges. Equally important to the health of the fish is the availability of food in the ocean. That food depends on the upwelling of cold, nutrient-rich waters off the West coast. Yet this year there has been less upwelling than usual because of a layer of unusually warm surface water (*Science*, 3 April, p. 17), which has already led to a crash in sardine and seabird populations. So if and when young salmon manage to escape the warm, low river levels, "they will face an ocean with not a lot of food," Moyle says. That's likely to further jeopardize the more than one dozen fish runs already listed as either threatened or endangered.

Adding to these troubles, long-term climate change, which is expected to produce more hot and dry years like this one, is likely to wipe out all the remaining California salmon stocks by the end of the century, Moyle says. At this point, Moyle says, "it looks inevitable." ■