

December, 19, 2018

**SUBJECT:** Request for Comments and Systematic Literature for ODF Systematic Review on Streamside Forest Management Effects on Stream Temperature and Shade

Dear Siskiyou Region Stakeholder,

As most of you already know, in September of 2015 the Oregon Department of Forestry finally made a long overdue revision of its rules increasing the size of the protected riparian buffers. This rule change was applicable from the ridgeline of the Cascade Mountain Range to the Pacific Ocean yet excluded the entire Siskiyou Region (essentially Josephine, Jackson, and parts of Klamath Counties). The stated reason for this exclusion was that the Siskiyou Region was just too different from the rest of the state to extrapolate the relevant data. Considering that the western portion of the state includes a large number of different micro-climates, geology and environmental realities, as does the Siskiyou Region, this conclusion is difficult for us to rationalize. In the words of Christopher Frissel, PhD Fisheries Science, “the relationship between shade and stream warming is a fundamental physical reality. Within temperate forests in the latitudinal range of Oregon, this relationship has never been shown to vary in any consistent way between regions. Hence the premise that the Siskiyou region is inexplicably “different” is at worst a convenient fiction, at best an unexamined hypothesis that should not govern policy making.”

On November 13, 2018 the OSU extension hosted a presentation from the Oregon Department of Forestry (ODF) staff on the Siskiyou streamside protection review process. One of the objectives of this meeting was to encourage stakeholders to forward papers, reports, memos, or presentations with **analyzed results of the impacts of streamside forestry treatments on stream temperatures**. The information from these analyses will be used in ODF’s systematic literature review, which will provide the basis for ODF staff’s recommendation to the Board of Directors. Just today, 12/19/18, ODF provided a list of literature they have reviewed. We are including this list and the email as a pdf attachment to this letter. If you would like a copy of this email please contact Janelle Dunlevy (see contact info below).

We know there are numerous state and local agencies, municipalities and other local government and quasi-government organizations, special districts, special districts, and non-profit organizations that are or have been looking at the relationship between streamside forests and water temperature **This letter is an attempt to continue to gather relevant information (analyzed results for streamside forest treatments on stream temperature) to help better inform ODF staff’s systematic literature review, the ODF Board of Directors, and ourselves.**

In the Spring of 2019, the ODF Board of Directors will decide if:

- 1) The Forest Practices Act (FPA) or rules are working as designed
- 2) FPA or rules may not meet stated objectives
- 3) Additional studies are warranted
- 4) No action is needed

With respect to the foregoing, our thoughts are:

- Number 1 is clearly not the case, as the 0.5° F standard is not being met.
- Number 3 seems impractical. The last time the Board decided that “additional studies were warranted” it took 14 years to complete those studies and enact a change.
- Number 4 is neither viable nor acceptable. There is little debate that the current 20’ setback does not and will not satisfy the 0.5° F PWC.

- Number 2 is the only realistic option.

Some of the stakeholders receiving this email have rules in place regarding riparian setbacks far exceeding the current 20' mandated by ODF. These rules were undoubtedly based on available scientific information. Other entities such as the Medford Water Commission, The Freshwater Trust and City of Ashland have developed alternative strategies based on shade and solar heating. Still others have access to a body of accepted science on this issue that provides the basis of their statutes, policies, or guidance.

The main objective of this letter is to gather input, encourage comments and solicit literature from as many stakeholders as possible and present it to the ODF. We would like to impress upon ODF staff and Board of Directors that the Siskiyou Region is united in its position that the region's streams deserve at least the same protections as the rest of western Oregon.

We have included background information on this issue and the ODF email/list of literature in an attachment to this letter. ODF has a comment period through January 7<sup>th</sup>, 2 days prior to their next board meeting. Geoff Becker (APWC Board Member) will be attending the January 9<sup>th</sup>, 2019 ODF board meeting and will gladly compile and hand deliver comments regarding this issue to the ODF Board of Directors.

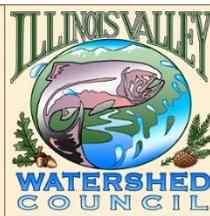
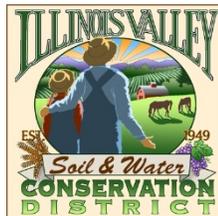
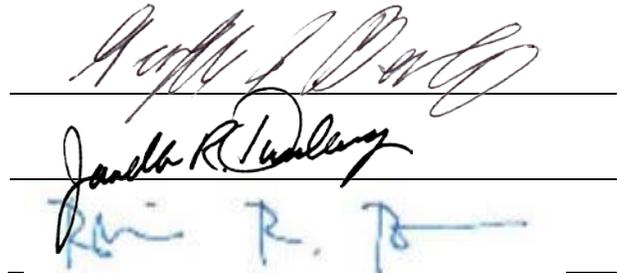
We would very much like to hear from all of you to gain your perspective on this time-sensitive issue, and we thank you in advance for your prompt responses. Please send information and comments that you would allow us to hand deliver to ODF by January 5<sup>th</sup>, 2019 to Janelle Dunlevy. The APWC is helping organize and deliver the materials to the ODF board meeting on January 9<sup>th</sup>, but all of the listed organizations have helped support this effort.

We sincerely appreciate the time that you can give to this important issue in the Siskiyou Region.

The Applegate Partnership & Watershed Council  
(APWC) Board of Directors Geoff Becker, Secretary and  
Board member in charge of this forestry issue

Janelle Dunlevy, APWC Executive Director  
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# Send us studies to consider for the Siskiyou Review!

Criteria we use for including studies in systematic literature review:

- In Siskiyou or nearby part of N. California
- Setting: forests next to small, medium streams
- Methods are written up
- Data on streamside forest conditions, shade, or stream temperature

Can be unpublished as long as it meets criteria.



## Questions?

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## **BACKGROUND INFO ON ODF RIPARIAN BUFFER SETBACKS, as of Nov. 2018:**

We would like to provide you with a little background regarding the ODF process to improved riparian shade buffer rules to help inform you of the type of material needed as documentation.

In 2002, the ODF and Oregon Department of Environmental Quality (DEQ) revised shade buffer rules to require that human activity should not raise stream temperatures more than 0.5° F in waterways where salmon, steelhead or bull trout are present. The 0.5° F became the Protecting Cold Water (PCW) benchmark criterion. The PCW is a component of the stream temperature standard approved by the EPA under the Clean Water Act, so the federal agencies are officially involved.

In 2002, the ODF initiated the RipStream (riparian and stream function) project to quantify the effects of timber harvesting on stream temperature. These studies included 15 state forest sites and 18 private sites. Data was collected for two years pre-harvest and five years post-harvest. Each site included an upstream control site. All 32 of the 33 sites were in the mid to northern coast range, the final was on the east side of the coast range in the vicinity of Elkton.

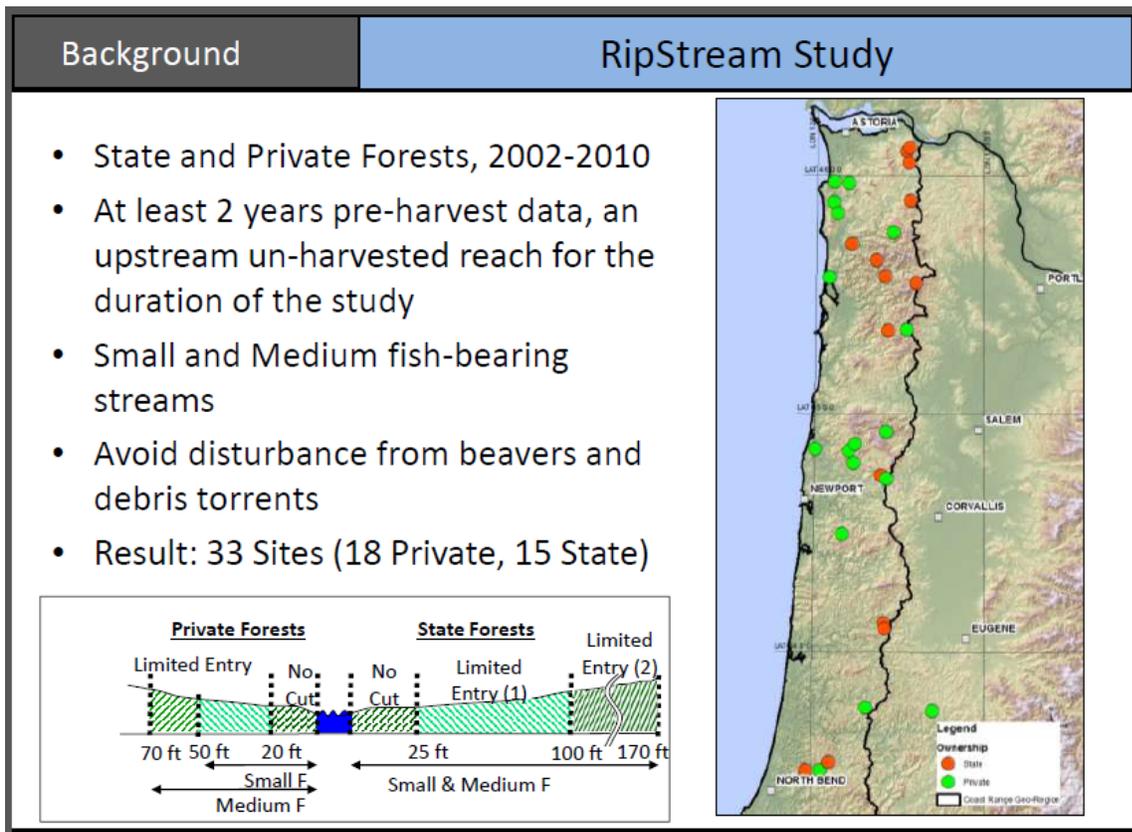
2012 – Fast forward 10 years. The data were collected, correlated, analyzed and presented to the Oregon Board of Forestry (Board) in a 2009 presentation that indicated current rules don't consistently protect waterways such that they meet the PCW. It wasn't until 3 years later in January 2012 that a rule change process actually began. The rule change process was projected to take about a year, but it actually took about 4 years. In order to help the Board determine the appropriate width of the proposed buffers, ODF created a predictive model of the relationship between buffer width and stream warming based on RipStream data. This is not an exact science largely because available input information is not perfect. The RipStream studies did not have, for example, controls for a continuum of buffer sizes (actual state and private practices were tested) and thinning scenarios (most sites were clearcut). Despite its limitations, the ODF model is widely considered to be a credible estimation of the relationship between buffer size and maintenance of stream temperature.

The predictive model developed by ODF based on the RipStream data (see charts below, Oregon Small Woodlands Association 2014 Annual Meeting, summary of RipStream Findings 9.25.14 and presentation by Maryanne Reiter) seem to indicate that a 90' buffer is warranted. This result is responsible for much of the delay in getting a Board decision because many stakeholders were caught by surprise at the size of the buffers needed to prevent warming. Unsuccessful attacks on the model were followed by attacks on the PCW standard itself, but the Board declined to formally challenge the standard. The model results moved forward as part of the rule analysis.

At the November 5, 2015 ODF Board meeting, the Board decided to increase the 20' buffer to 80' for medium streams and 60' for small streams. The Board exempted the Siskiyou region from rulemaking, however, because the Board believed that data from other state regions with different environmental realities could not be extrapolated to Southwest Oregon.

Alternatively, the Board decided to do nothing and simply retain the current 20' buffer zone for the Siskiyou region. This 20' zone is arbitrary and is not supported by available scientific studies.

A couple of other background points; the current statute implementing Measure 49 requires compensation if new regulations reduce the value of one's land UNLESS the regulations are passed to meet mandatory federal criteria. Since elevated temperatures are considered a "pollutant" under the Clean Water Act, a federal mandate, these new regulations do not trigger Measure 49. Also, partly because of this decision, other important functions of riparian buffers that haven't been as clearly reflected in water quality standards, such as large wood, nutrient loadings, wildlife, trees, etc. have taken a back seat to the temperature issue. Additionally, NOAA/NMFS and EPA weighed in on this issue directly with the Board and with the State of Oregon under federal coastal zone management statutes, strongly suggesting that there would be repercussions if the Board continued to delay. Subsequently, EPA, NOAA and DEQ decided to withhold \$1.2 million for riparian restoration grant funding (Section 319 funds) from Oregon annually due to the state's failure to meet federal standards relating to forest practices. This suspension is ongoing and the fiscal withholding is increasing. Lastly, the amount of timber that will be encumbered by the increased size of the buffer is well under 1% of the total.



Because Ripstream found a 0.7 deg C increase, ODF indicated a change to the Forest Practice Rules was needed. One approach ODF is using is a statistical model to determine buffer width or basal area based on plot data collected at each study location.

Their current model

$$\Delta\hat{T}_{3-2ij} = \alpha_0 + \alpha_j + (\beta_1\Delta TControl_{2-1} + \beta_i\Delta TControl_{2-1j}) + \beta_2TreatmentReachLength + \beta_3(\text{inverse logit of: } \alpha_{shade} + \beta_{1shade}PctDifferenceBA + \beta_{2shade}PctHwd_{100} + \beta_{3shade}TreeHeightPre_{100}) + \beta_4GradientQuartile$$

