



Protecting clean water, native fish, and healthy communities in the Rogue watershed.

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July 16, 2020

RE: Comments on the “Influence of Harvesting on Riparian Stand Structure and Function in Western Oregon” Draft Report - June 9, 2020

Dear Mr. Coble:

Thank you for the opportunity to provide public comment on the “Influence of Harvesting on Riparian Stand Structure and Function in Western Oregon” Draft Report. Rogue Riverkeeper is a non-profit organization that works to protect and restore clean water and native fish populations in the Rogue River Basin through advocacy, accountability, and community engagement. We participated in the Siskiyou Advisory Committee established by Oregon Department of Forestry (“ODF”) and have participated in the Board of Forestry (“BOF”) and ODF processes regarding stream buffer standards and analysis of the RipStream data over the past four years.

I. General Comments

- **Solicit formal review and comments from federal agencies and scientific experts on large wood recruitment:** The usefulness and validity of this draft report would be significantly strengthened with review from federal agencies, specifically the Environmental Protection Agency (“EPA”) and NOAA Fisheries. Additionally, review from scientists with specific expertise on the intersection of large wood recruitment and timber harvesting practices would further strengthen this report. For example, Thomas Spies and Gordon Reeves with the Forest Sciences Laboratory in Corvallis, OR as well as Michael Pollock and Tim Beechie with the Northwest Fisheries Science Center in Seattle, WA were co-authors on a 2013 scientific synthesis of existing scientific literature of the impacts of riparian thinning on wood recruitment.¹

¹ Spies, Thomas et al. (2013). Effects of riparian thinning on wood recruitment: scientific synthesis. Science Review Team Wood Recruitment Subgroup. 28 January 2013.

- **Scope of draft report:** The draft report should more clearly discuss and assess the scope of review. For example, it would be helpful to have further discussion regarding the intended purpose of RipStream to assess stream temperature and not specifically to measure and understand large wood recruitment to streams or the effectiveness of current OFPA prescriptions in meeting “desired future conditions” (“DFC”). What would the study design look like if that had been the objective? What modeling might provide further information for this analysis?

Additionally, there are other processes, including but not limited to hydrology, soil disturbance, nutrient regimes, and stream channel integrity that may not only influence large woody debris (“LWD”), but may also be themselves impacted by current OFPA prescriptions. The draft report should more clearly address these processes and discuss the significant limitations of using the RipStream dataset, which was designed to study stream temperature, to analyze LWD.

- **Conduct a comprehensive literature review:** The draft report states that “a number of studies have evaluated the effects of harvesting on large wood recruitment” and that “a focused review of this type of literature will provide additional insight into the effectiveness of the FPA in achieving goals for large wood in streams” (P. 38, Lines 1141-1147). A review of the existing information cited in the draft report, as well as any new studies, would provide critical information to understanding this issue as well as the limitations of this analysis.

II. Comments Regarding Desired Future Conditions (“DFC”)

The Executive Summary of the draft report describes the purpose of the RipStream study to “examine the effectiveness of the Oregon Forest Practices Act (FPA) stream protection rules and State Forest’s stream management strategies in protecting stream temperature and achieving desired future conditions” (P. 3, Lines 68-70). However, the draft report does not adequately discuss the meaning of “desired future conditions” (“DFC”), nor does it address the term in the context of the limited scope of the RipStream analysis that included only small and medium fish-bearing streams on private and state forest lands.

- **Draft report does not adequately address the meaning of “desired future conditions” (“DFC”):**
The draft report should include the statutory and regulatory definitions of DFC and, further, acknowledge the lack of metrics for key elements of DFC. Under OAR 629-642-0000(2), the “desired future condition for streamside areas along fish use streams is to grow and retain vegetation so that, over time, *average conditions across the landscape* become similar to those of *mature streamside stands*.”² Further, “mature streamside stands” are:

“...often dominated by conifer trees. *For many conifer stands, mature stands occur between 80 and 200 years of stand age.* Hardwood stands and some conifer stands may become mature at an earlier age. Mature stands provide ample shade

² OAR 629-642-0000(2). *Emphasis added.*

over the channel, an abundance of large woody debris in the channel, channel-influencing root masses along the edge of the high water level, snags, and regular inputs of nutrients through litter fall.”³

The authors of the draft report fail to specifically address or acknowledge that there are no clear metrics or measurable goals for how the “average conditions across the landscape” become similar to those of “mature streamside stands.” Further, how are “landscape” and “average conditions” defined? The draft report states on P. 6 that “average mature conditions” are “based on fully-stocked, unmanaged Douglas-fir stand at age 120 with an assumed site index” and that Lorenson et al. (1994) assumed that these conditions could be achieved across the landscape if stands were on a 50-year rotation and stand basal area was reduced to the standard target at the end of each rotation (P. 6, Lines 194 – 208).

However, important questions remain unresolved. Have the assumptions made by Lorenson et al. (1994) been validated? What, if any, are the actual rule requirements to maintain those conditions? Are “average conditions” required to be maintained once they are achieved? The draft report should clearly state that there are no clearly defined metrics or specific targets for LWD recruitment. Therefore, there is no specific metrics against which to evaluate effectiveness.

- **Draft report does not adequately acknowledge that DFC applies to large streams as well as non-fish use streams:**

Additionally, OAR 629-642-0000(5) goes on to state that the DFC for streamside areas that do not have fish use:

“...is to have sufficient streamside vegetation to support the functions and processes that are important to downstream fish use waters and domestic water use and to supplement wildlife habitat across the landscape. Such functions and processes include: maintenance of cool water temperature and other water quality parameters; influences on sediment production and bank stability; additions of nutrients and large conifer organic debris; and provision of snags, cover, and trees for wildlife.”⁴

Of most relevance here is the fact that existing regulations regarding DFC refer to large, medium, and small streams that both do and do not have fish use. The RipStream data only assessed small and medium fish-bearing streams. Therefore, the draft report should clearly state that it addresses a sub-set of DFC and does not address or analyze DFC for large streams or streams that are not designated as fish use.

- **The report should ensure that DFC is not equated with instream or potential instream large woody debris (“LWD”):**

³ OAR 629-642-0000(2). *Emphasis added.*

⁴ OAR 629-642-0000(5).

The report should more clearly address the meaning of DFC to clarify that it is broader than existing or potential instream LWD. For example, DFC for non-fish use streams (which are not addressed in the draft report or in the RipStream study) include streamside areas that support functions and processes including but not limited to “maintenance of cool water temperature and other water quality parameters.”⁵ The authors should more clearly address the narrow scope of this report in the context of DFC.

III. Comments Regarding Assumptions of the Draft Report:

The draft report also relies upon a number of assumptions, which should be more clearly stated and addressed by the authors.

- **Assumes that DFC is achievable under current OFPA prescriptions:** Of most concern is the underlying assumption that under current Oregon Forest Practices Act (“OFPA”) requirements, streamside areas for small and medium fish-bearing streams can even meet DFC. The draft report states on P. 5 that “[a]n underlying assumption of these prescriptions is that managing riparian forests consistent with the prescriptive rules will result in the outcomes described above (e.g., shade and large wood).”⁶ However, the report does not critically assess this assumption or provide any discussion of the limitations that this assumption creates regarding analysis of the RipStream data in the report.

The draft report needs a robust discussion and analysis including a comprehensive review of the literature to assess this assumption that current prescriptions under the OFPA (for small and medium Type F streams: 20-ft no-cut buffer and 50-ft, 70-ft variable retention, respectively; for small and medium Type SSBT streams: 20-ft no-cut buffer and 60-ft, 80-ft variable retention, respectively) are even capable of providing levels of shade and LWD recruitment required for DFC in OAR 629-642-0000.

In other words, under current OFPA prescriptions that allow for harvesting up to the 20-ft no-cut buffer and variable retention between 50-ft and 80-ft (depending on stream size and classification), will streams ever have enough adequate large wood to meet DFC? Are current OFPA prescriptions resulting in stand conditions that are actually capable of providing “ample shade over the channel, an abundance of large woody debris in the channel, channel-influencing root masses along the edge of the high water level, snags, and regular inputs of nutrients through litter fall” that would be provided by the entire watershed under natural disturbance regimes?⁷

- **Assumes the conditions in the RipStream riparian areas are an acceptable baseline:** According to the draft report, the riparian stands studied in RipStream were an average of 38 years old at breast height at the time of pre-harvest data collection and likely were established in the late 1950s through the 1970s. P. 3, Lines 77-79. The draft report should

⁵ OAR 629-642-0000(5).

⁶ P. 5, Lines 171-172.

⁷ OAR 629-642-0000(2). *Emphasis added.*

more clearly discuss how and why these conditions were considered an acceptable baseline or “control” when evaluating DFC for riparian stands.

- **Assumptions regarding the size of the riparian area for the studied streams in relation to overall contributing area of large wood:** The report should more clearly address any assumptions related to the size of the riparian area for the streams in the RipStream study. Although the OFPA prescriptions for RMAs requires a 20-ft no-cut buffer and a 50-ft and 70-ft variable retention buffer for small and medium fish streams, respectively, the report does not adequately assess the size of the riparian area itself that may contribute large wood to streams.

In the scientific synthesis of the effects of riparian thinning on wood recruitment, Spies et al. (2013), found that:

“95% of the total instream wood inputs in these studies came from distances that ranged between about 25 and 45 m (about 82 to 148 feet) depending on the stand conditions. Given these relationships we can assume that (all other factors being equal), increasing distance of thinning from a stream (i.e. increasing the no cut buffer width) will reduce the degree to which thinning affects instream wood recruitment over time.”⁸(p. 18)

In other words, Spies et al. (2013) found in their review of the literature that increasing the no-cut buffer width reduces the impact of thinning on instream wood recruitment over time. Critically, the study also found that a large percentage (95%) of total instream wood inputs came from distances between 82 and 148 feet, which is far larger than the 20-foot no-cut buffer required under current OFPA prescriptions.

The draft report does not adequately address the assumptions it makes regarding the size of the riparian area for the studied streams when existing scientific reviews demonstrate that in-stream wood can be contributed from as far as 148 feet from the stream.

- **Assumptions regarding the current basal area targets from Lorenson (1994):** The draft report does not provide a comprehensive assessment of the assumptions that were used to develop current basal area targets. The draft report on P. 6 (Lines 203-208) states that “Lorenson et al. (1994) assumed that the average mature stand conditions could be achieved across the landscape if stands were on a 50 year rotation and the stand basal area was reduced to the standard target at the end of each rotation.” What are the underlying assumptions for this assessment and what implications do they have for the current report and analysis?

IV. Questions

In addition to the above comments, we respectfully request that the authors consider the following outstanding questions and identify how they could be addressed in the draft report:

⁸ Spies, Thomas et al. (2013). Effects of riparian thinning on wood recruitment: scientific synthesis. Science Review Team Wood Recruitment Subgroup. 28 January 2013.

- How frequently were stands harvested down to the minimum no-cut buffer?
- How frequently were stands harvested down to the minimum basal area?
- Are the studied stands in RipStream representative of harvested stands throughout the OFPA management area?
- What proportion of fish-bearing streams (“Type F”) are small and medium streams that flow through areas managed under the OFPA?
- What is the breakdown of fish-bearing (“Type F”) streams compared to streams not designated as fish or drinking water sources (“Type N”) that flow through areas managed under the OFPA?
- What proportion of perennial, intermittent, and/or ephemeral streams flow through areas managed under the OFPA?
- Does the draft report address potential wood? In other words, does the draft report assess how much potential wood makes its way to streams under current OFPA prescriptions?
- What proportion of wood is contributed from upslope or upstream sources compared to riparian sources? What proportion of wood is contributed from processes including, but not limited to, debris flows, stream bank erosion, and natural mortality?⁹

Thank you for the opportunity to provide these public comments on the draft report.

Sincerely,

Stacey Detwiler
Conservation Director
Rogue Riverkeeper

⁹ As stated by Spies et al. (2013), “[i]n stream networks, dead wood abundance and structure is a function of four major processes: stand mortality, bank erosion that recruits trees from streamside areas, debris flows and landslides that recruit trees and/or redistribute wood across stream networks, and wood depletion (loss) in streams.” P. 5.

