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Jan. 3, 2019

RE: Siskiyou Streamside Protection Review Public Comment

The Applegate Neighborhood Network is a community and conservation-based organization focused on the Applegate River watershed and the Eastern Siskiyou Mountains. Many of the residents of the Applegate Valley appreciate clean, cold water in our rivers and streams, providing stream flow and stream temperatures that maintain our fisheries, aquatic habitats and water quality. Many of the local residents utilize the waters of southern Oregon on a daily basis during the summer months, either for irrigation or for recreation. In the spring and fall, steelhead fishing is popular along the Applegate River. Likewise, both steelhead and salmon fisheries are popular throughout the Siskiyou region each fall when stream flows are relatively low and water temperatures can impact habitat conditions.

Given the recreational, agricultural and real estate focus of our local rural economy in the Applegate Valley, maintaining water quality is far more economically important to residents of the Applegate Valley than private industrial logging.

We strongly support effective water quality control regulations, including adequate no cut stream buffers on lands administered by the Oregon Department of Forestry (ODF) throughout the Siskiyou Mountains. The quality of water flowing out of the Siskiyou Mountains is important to our quality of life. It is also extremely important for the aquatic life of the Applegate River and all the beautiful streams flowing through southern Oregon. The Siskiyou region is home to the largest concentration of wild and scenic rivers in the country (outside Alaska). Many of the southern Oregon's rivers and streams are also home to fisheries that are important for the preservation of threatened and endangered salmon and steelhead runs.

We believe that ODF and its currently ineffective stream buffer system is responsible for significant water quality degradation and fails to meet the current stream temperature standards under the Clean Water Act and approved by the EPA. A 0.5 degree Fahrenheit Protected Cold Water (PWC) benchmark is used to mitigate and minimize stream impacts associated with industrial logging. Under this regulation, proposed land management activities should be limited to a 0.5 degree increase in water temperature. Our organization supports a regulatory standard that would at least reduce the impacts on stream temperature to neutral or a 0 degree allowable temperature rise. Given the known impacts of climate change, the diminished water quantity and quality of many streams and the state of our threatened fisheries, a 0 degree standard would be more appropriate.

According to ODF's own RipStream Project a minimum 90' streamside buffer would be required to minimize impacts to within the PWC benchmark. Having a neutral impact on stream temperature would require a minimum streamside buffer of 120' and in contradiction of its own science, ODF approved ineffective stream buffers of 60' to 80' in NW Oregon. These buffers will increase stream temperatures beyond the allowable 0.5 degree increase.

At the same time, the Board of Forestry exempted the Siskiyou Region from rule making and maintained the grossly inadequate 20' stream buffers. Supposedly, this was done because the Board of Forestry felt they could not extrapolate the information gathered in NW Oregon in the Siskiyou Region.

In many respects ODF is offering the Siskiyou Region a death sentence, endangering fisheries in the region's many already uncharacteristically warm streams. Those streams already listed under the Clean Water Act for temperature will be further harmed, rather than restored, while many others will require listing associated with stream temperature if the inadequate 20', or even 60' or 80' stream buffers are applied.

The Clean Water Act requires that management activities work towards the restoration of listed streams, the current ODF streamside buffer regulations fail to meet these standards and violate the state's obligation to the Clean Water Act. ODF in particular, is currently and consistently approving timber sale harvest plans that disregard its public trust obligation to protect water quality and fisheries, while sustainably and responsibly allowing commercial harvest on private timber lands. The agency has failed to meet these requirements by allowing substantially more streamside harvest than is scientifically justified and therefore consistent with the agency's obligation to benefit the public and protect public resources.

ODF is claiming that the long term research they conducted in NW Oregon does not apply to the streams of southern Oregon, but has failed to provide any credible evidence to support the assertion that streams in southern Oregon would not require the same, or even more streamside protections than the cool, moist, habitats of the NW Oregon Coast. Clearly, the findings of ODF's RipStream Project demonstrate the ineffectiveness of 20' stream buffers in the Oregon Coast Range. These stream buffers are predicted to increase temperature by over 1.5%, more than twice the allowable increase. The RipStream Project demonstrates a need to expand the streamside buffers throughout Oregon to 120' or more to reduce temperature impacts to neutral.

It is also very clear that SW Oregon and Eastern Oregon are far drier environments, with less annual precipitation, less stream flow (measured in CFS) and warmer summertime temperatures. In these summer months when streams regularly reach critically low flows. During these annual low flow events, the streams are most susceptible to temperature impacts. This critical low flow stage and its elevated stream temperatures is particularly pronounced in SW Oregon and Eastern Oregon every summer and fall, when compared to NW Oregon. The timing of these flow deficits are important because they are known to strongly affect growth,

survival, year class strength and productivity of juvenile salmonid fisheries (Ebersole et al. 2006., Hicks 1991).

It is our position that due to the geographic location and prevailing climatic conditions both southern Oregon and Eastern Oregon would need wider, more restrictive stream buffers to protect water quality than NW Oregon. Wider riparian areas and more shaded riparian habitat will be required in SW Oregon and Eastern Oregon due to lower stream flows, increased solar radiation, and higher air temperatures.

The NW Oregon study was located in a very temperate climate, where ambient air temperatures remain fairly cool, rain and fog is abundant and stream flows are often significant and relatively consistent, even in relative small watersheds. Interior SW Oregon on the other hand is located within a Mediterranean climate with pronounced dry periods, hot summers, little rain fall for up to 2/3 of the year and often critically low summertime stream flows. In contrast, much of Eastern Oregon is more of a high desert/sagebrush and juniper steppe habitat with long dry seasons, relatively high summer temperatures, very low summer time stream flows and cold, relatively dry winters. The effects of climate in southern Oregon and Eastern Oregon will likely require larger stream buffers to protect against weather and climate extremes and the critically low stream flows in the summer months. These larger buffers would protect water quality and maintain responsible stream temperatures, while the current standard contributes significantly to watershed degradation .

Despite clear differences in climatic conditions and stream flows, the relationship of shade and stream warming is constant across the region. Christopher Frissel, PhD Fisheries Science, states, "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"

Given the "fundamental physical reality" that shade reduces both air and stream temperature, it would be fair to assume that hotter, drier regions, with lower seasonal stream flows may need a wider riparian buffer to serve the same function. We would recommend 120'-200' stream buffers in the SW Oregon, Siskiyou Region to compensate for the hotter, drier summertime conditions when compared to the NW Oregon study area.

To justify the approval of ineffective, scientifically unjustifiably narrow streamside buffer, the agency claims they only need to comply with regulatory standards "to the extent practicable." In practice, this means, economic rather than scientific factors are used to create stream conservation policy. Unfortunately, for ODF, this perceived economic impact is rather small and does not justify the pollution of our states waterways or the further endangerment of ecologically and economically important fisheries that is associated with the current stream buffer system. For example, timber harvest would be reduced by about 0.5% if the larger

stream buffers had been approved. This minimal impact to timber harvest is certainly worth the extensive benefits to the society and the region's ecology.

Apparently National Marine Fisheries Service (NMFS) agrees, stating that current ODF stream buffers are inadequate state wide, stating in their comments that *"If the proposal is not significantly strengthened, NMFS will still be concerned that it doesn't provide adequate protections, especially for shade ... Because the November 2015 proposed buffers are less than 90 feet and allow harvest within the RMA, the proposal is not likely to meet the water quality standard."*

NMFS has also pulled millions of dollars of restoration funding each year from Oregon because the state is not meeting its obligation to protect fish from logging impacts. This is having a negative impact on our regional rivers and streams, as well as our economy and the well-being of watershed councils and restoration based organizations. By creating scientifically sound and socially responsible streamside buffers ODF could avoid this unfortunate outcome.

NOAA West Coast Regional Administrator Barry Thom says the state's current standard do not protect our watersheds of water quality, stating, "Given the scope of the rule, in term of the streams it covers, it's hard to believe the rule moving forward is adequately protective of cold water," he said.

It has also been shown in a recent paper by Timothy Perry and Julia Jones that the regeneration of Douglas fir forest in western Oregon (as is commonly practiced in the Oregon Forest Practices Act) can reduce stream flows. According to this research in paired watersheds, *"reduced summer streamflow in headwater basins with forest plantations may limit aquatic habitat and exacerbate stream warming."* Thus, the effects of the Oregon Forest Practices Act is a double whammy, with extensive clearcut logging and inadequate stream buffers reducing stream flows and increasing stream temperatures, both of which heavily impact native fisheries. This study also found that regeneration harvest, *"may alter water yield and timing in much larger basins" and the impact of industrial forest management "confounded with effects of climate change on streamflow in larger river basins"* could be quite severe. (Perry & Jones. 2016). Stream buffers should be extended to compensate for the changing climate, allowing us to adapt to changing conditions while maintaining our water quality.

According to the Perry & Jones 2016 study, the effects of regeneration logging on stream flows and temperatures are still not recovering 40-50 years after the logging took place. It also showed that in any watershed where over 50% of the landscape has been logged in the last 50 years, any additional logging will prolong and perpetuate the condition of chronic flow deficit (Perry & Jones 2016). ODF approves this sort of logging regularly under the current Forest Practices Act and the minimal stream buffers likely compound the already severe effects. Any watershed where over 50% of the watershed has been logged in the last 50 years must be deferred from additional harvest until conditions improve.

Beschta and Taylor 1998, showed that streams in the Western Oregon Cascades sustained significant increases in daily maximum (6 degree Celsius) and minimum stream temperatures (2 degrees). In this study, forest harvest activities were found to be responsible for the rise in stream temperatures (Beschta & Taylor. 1998).

Johnson and Jones 2000, also demonstrates the clearcut logging can significantly alter stream temperatures and the primary factor controlling stream temperatures, shortwave radiation, was amplified following removal of riparian vegetation (Johnson & Jones. 2000).

A study conducted in the Siskiyou Mountains by Biek, Mills and Bury in 2002 also demonstrated that tailed frogs and pacific giant salamander larvae were “markedly lower” in clearcuts than in downstream mature forest stands. This was likely due to the “hotter and drier conditions during the summer” in the streams surveyed. (Mills, 2002). Thus, ineffective streamside buffer will effect watersheds, water quality, fisheries and native amphibians.

A 2017, paper by Dalton etal, showed that reductions in flow created by climate change will also significantly impact water qualities and fisheries throughout Oregon. The drier SW Oregon and Eastern Oregon portions of the state will be particularly vulnerable to low flows (Dalton etal. 2017). These areas and in fact, areas across the state should be provided with streamside buffers of at least 120’ to buffer the effects of climate change. Climate change and future climate conditions must be incorporated into ODF analysis in regard to stream side buffers. Likewise, given the uncertainty of the changing climate, the precautionary principle should be strickly applied to maintain water quality.

The combined and cumulative impact of wide spread regeneration logging, insufficient stream buffers and climate change will impact stream temperatures, fisheries, water flow and water quality and must be mitigated through effective forest management. The public entrusts ODF to manage our natural resources for public benefit, so that future generations may enjoy the abundant water and natural resources, we enjoy today. Currently, ODF is failing the public and future generations by approving regulations that are not scientifically justified and inherently unsustainable.

We do not believe the current regulations (state wide) regarding streamside logging buffers are sufficient to protect our waterways, our fisheries, our water quality or our economy. The impacts of stream degradation from excessive commercial logging and inadequate stream buffers are real, and science should be utilized to dictate land management policy. Only when science is informing our economic and environmental regulations, can we offer a potentially sustainable future.

In this case, economics and the desires of the timber industry have been used to justify ineffective stream buffer regulations. The agencies own science is being ignored. Masked by language such “to the extent practicable,” ODF has caved to the demands of the timber industry and chosen to pollute our water ways with run-off from logging and increased water temperatures. Why have other western states found it “practical” and economically prudent to

apply adequate streamside buffers, yet Oregon cannot? It seems to be a lack of political will and a lack of regulatory independence that influences our management policies, rather than the best available science. This must change.

Although science and ecology should influence management policy, we also feel the economic analysis is heavily biased towards the timber industry, that is currently a fraction of Oregon's economy. We believe that the economic well-being of many other Oregonians and Oregon businesses are threatened by irresponsible forest management and stream buffer policies.

What will be the impact of continued water quality degradation on sport and commercial fisheries? How will it affect recreation and tourism? What would be the actual economic impacts to industries outside the logging and timber manufacturing sectors. The beauty of our waters and the health of our fisheries are major attractions in the region. They are also important to our economy.

Did ODF consider the millions spent by the state of Oregon to restore fisheries and fish habitat through OWEB and other sources? Has ODF considered the millions spent by the cities of Medford and Ashland to reduce stream temperatures in the Rogue Basin through shade creation/production on denuded streams? Significant public funds are being spent to increase stream shade and reduce water temperatures in the Siskiyou region. The current rules for stream buffers and their documented effect on stream temperatures will reduce the success of such river and fishery restoration projects, limiting the benefits attained from the public expenditures. Compounding this problem is the lack of federal funds being spent in the state of Oregon due to the Board of Forestry's decision to approve ineffective, unscientific, industry friendly stream buffers, that fail to meet state and federal regulations.

The Oregon Forest Practices Act should be brought into the 21st century, with environmental safeguards and effective environmental regulations that acknowledge the multitude of benefits provided by clean water, healthy ecosystems and the sustainable utilization of our natural resources.

Please institute more stringent stream buffers in the Siskiyou region. We would support buffers no smaller than 120', based on the best available science and the habitat conditions in the Siskiyou region. Yet, due to the impacts of climate change, our recommendation is to institute buffers between 120' and 200' in the Siskiyou Region.

As a society, we must adapt and evolve with a changing climate and to ensure our natural resources are sustainably managed, a precautionary measure must be implemented, especially with stream and fisheries management. In the future, water itself may be a threatened resource, Oregonians demand that ODF start protecting that resource and working on behalf of the public, rather than the industry.

Sincerely

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