Oregon Stream Protection Coalition

BEFORE THE OREGON BOARD OF FORESTRY
Statement of Mary Scurlock
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Agenda Item 7: State Forest Management Plan

I am Mary Scurlock for the Oregon Stream Protection Coalition, a federation of twenty-five conservation and fishing organizations supporting my advocacy to protect freshwater ecosystems on Oregon's nonfederal forest landscape.

I appreciate the Board's thoughtful conversation around state forests today, and especially your commitment to consideration of best available science to develop a durable management plan that integrates the state's goals for management of state forests' valuable natural resources and merits federal assurances under the Endangered Species Act.

Today I'd like to highlight significant recent findings about the relationship between forest management and water flows that were the subject of an April 4 conference at the Pacific Northwest Research Station in Corvallis entitled "Summer Low Flows in Western Oregon: Processes, Trends, Uncertainties, and Forest Management." The meeting was organized by the Research Station, BLM, Weyerhaeuser Company and NCASI.

Tim Perry and Julia Jones of OSU published a study in 2016 that analyzed long-term paired watershed data from experimental forests in Oregon. (Enclosed). The results extend and sharpen previous analyses of post-logging effects on instream flow, concluding that after an initial 10-15 year period of increased baseflows (late spring, summer and early fall), stream flows are reduced by about 50% for a period lasting from 15 to at least 50 years. These persistent low flows resulted where more than half the catchment area was logged – that is, where less than half the watershed area remained in mature and old growth forest. The ultimate timeframe for return to the higher base flow conditions observed before logging remains unknown. It could be 60 years, or it could be 120, or more.

The hydrologic explanation for low flow depletion appears to be increased evapotranspiration in second-growth forests due to greatly reduced water use efficiency and also, possibly, increased physical evaporation (from soil, or from condensation on the outside of foliage, etc.) in second-growth compared to mature and old growth conifer forests. The relatively consistent and sustained low flow deficits among the study basins supports the applicability of the results to logged watersheds across the Pacific Northwest, particularly where Douglas fir is the dominant tree species.

A key take home message from the conference is that not only are the findings of the Perry and Jones (2017) study broadly relevant to forest managers, but not one of the paper's findings or speculative discussion points were scientifically challenged at the meeting. Given the credibility of this new science, this Board will have to grapple with its implications in a

variety of policy forums, including in state forest planning in basins where ODF is majority owner such as the Trask, Kilchis, and Wilson rivers.

Other important take-aways from the conference are:

- It's not just small headwater streams that are affected by persistent low flows; in most cases streamflow decreases will aggregate to reduce flows downstream;
- We can't prevent or even mitigate for flow depletion with riparian buffers
- Modified harvest practices like thinning or staggered short-rotation clearcuts are also likely to be ineffective at reducing or mitigating depletion of streamflows;
- Past widely-cited textbook claims and assumptions in agency plans and assessments of a 10-15 year "hydrologic recovery" after clearcut logging are fundamentally wrong and do not represent current science.

We strongly support more research to better predict, understand and prevent the low flow effect, but available science is indisputable that the effect real. The management implications seem clear: if we truly want to conserve water and the species and human communities that depend on it for life in an era of climate change, more short-rotation logging is not in the cards. More older forests and longer-rotation forestry will be needed to protect and stabilize water flows.

References

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