

Testimony of Ted Lorensen to Board of Forestry
Tuesday, June 03, 2015

Chair Imeson and Members of the Board of Forestry:

Thank you for the opportunity to testify to you today about shade and temperature protection. As you consider this problem, we have recommended in our paper that both the starting and ending points need to be the focus. With regard to the ending point, we recommend that this problem should be best addressed in the context of how the protected resources such as fish, invertebrates and amphibians respond, not simply upon a small increase of temperature. With regard to the starting point, we suggest the starting point for measuring change be the desired vegetative conditions, not the vegetative conditions that exist at the time of harvest.

This topic has been something I have been intimately engaged with since prior to the adoption of the current riparian rules in 1994. During the development of the 1994 rules one of the primary frustrations to the involved parties was that ODF had monitoring data that measured the physical changes due to timber harvest, but not the biological consequences of those changes. As a result of those frustrations, paired watershed studies were developed and implemented to link physical changes with biological impacts.

During the 1994 rule development, shade and temperature were particularly frustrating since there was even at that time abundant research indicating that reduced shade within headwater streams that retained relatively cool water resulted in increased growth and biomass of fish. The Beschta quote in our paper succinctly summarizes the state of the science in 1994:

“In fact, there is a general tendency for salmonid biomass to be higher in streams draining clearcuts (Burns 1972, Smith 1980, Martin et al. 1981, Murphy and Hall 1981, Holtby and Hartman 1982, Hawkins et al. 1983, Bisson and Sedell 1984, Scrivener and Anderson 1984). While such increases may have been due to many factors, the generality of the observation suggests that temperature increases resulting from clearcut logging do not, by themselves, have significant deleterious effects on salmonid abundance.”

Since 1994, the large preponderance of additional research has found disturbance that increases sunlight, whether from forest management or wildfire, results in more aquatic biomass and/or larger fish. Included in this research are the results of the Hinkle Creek paired watershed study

that found that for basin-wide timber harvest under the current rules that there were increases in abundance and growth for cutthroat trout. Thus, the ending point for shade and temperature under current rules is a positive one for fish, while increases to shade will clearly reduce fish abundance and growth.

Using the “artificially” high shade levels of closed-canopy second-growth stands as the starting point fails to consider the general patterns of disturbance and forest stand development across the wide range of forest types and locations. For private stands the average shade level pre-operation for RipStream sites was 85%. A meta-analysis of percent of canopy openness (Nelson et al. 2014) of mature and older forest stands found that these stands average somewhat less than 80% canopy closure with considerable variability down to minimums of less than 50% canopy closure. The average post-harvest shade in private RipStream stands was 78%. Given the target of emulating “mature forest conditions,” post-harvest shade on RipStream sites appears to meet the desired future condition, which makes for a more appropriate starting point for measuring compliance.

Respectfully Submitted:

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