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Watershed Management Section  
Department of Ecology  
P.O. Box 47696  
Olympia, Washington 98504-7696

Re: Draft Tier II Analysis of Forest Practices Board's draft rule

My name is Bill Vogel and I am a fish and wildlife biologist with Larch Environmental. I have a Master's Degree from Montana State University and over 45 years of experience – over 39 years with the Federal government and much of this experience has been working with forest issues. I am commenting on the draft tier II analysis regarding type Np streams on behalf of the Washington Farm Forestry Association.

Because there is no information suggesting why 0.3 degrees Celsius was selected, your proposal is arbitrary. Because available information indicates that 0.3 degrees is not biologically relevant, your proposal is capricious. Such changes would provide essentially no biological benefit, but would have extreme social and economic impacts and therefore appear vindictive. I have seen Ecology present flawed information from an Oregon effort (Groom et al. 2018) as if it was an accurate and reliable relationship, such presentation has further eroded the public trust. The Groom et al. (2018) paper is based on previous studies that did not separate other features of the forest practices applications from the land-owner proposed buffers – features that would affect the ability of a stream to warm and to recover from warming. The 2018 publication predicts temperature increases that were not even observed in the actual data. There is a larger body of studies going back in time that address many of the dynamics of stream temperature and provide a better body of literature from which to assess if there is a problem as well as potential solutions. For instance, dramatically increasing buffers on the north side of streams is unlikely to provide any benefit to stream temperature.

The baseline for any comparison of impacts should be the Forest Practices rules themselves as Washington State Department of Ecology (DOE) and the U.S. Environmental Protection agency (EPA) agreed to years ago. Any changes were to originate from sound science and proceed through the adaptive-management process. This would necessitate a well-designed study with sufficient samples directed at stream temperatures and influence of buffers. Such a study would ideally indicate where and under which circumstances the current rules may not be sufficient – this has not been done.

However, if you feel the need to analyze the Forest Practices Np strategy again -- yet again – the baseline for comparison should not be the theoretical scenario DOE is using which does not exist anywhere. No where does the scenario exist where there is no management and no disturbance. The baseline should be a natural system. Although that begs the question as to whether you should use the pre-European settlement era or current time after over 100 years of fire suppression, dense forest ingrowth, and of course climate change. Regardless, I think we could all agree on some basics: Fire has been and is extremely variable in frequency, severity, and extent. But from a large landscape perspective, on average, fire would affect Np streams in a way not completely dissimilar to the Np strategy – given common rotations and using an assumption of somewhere around 30 percent of Np streams without the buffers. In fact, fire might be more severe at times. Also, we would need to consider episodic windthrow from large storms under both scenarios – Forest Practices and Natural System.

Your discussions failed to include the negative and positive effects of management in a connected way. You focused solely on solar radiation and peak daily temperatures. For instance, you fail to mention or consider that an unbuffered stream will experience round-the-clock increased heat loss from longwave radiation resulting in cooler nighttime temperatures. You fail to take a systems approach. For instance, as described in the Biological Opinion for the Forest Practices Habitat Conservation Plan (USFWS 2006, p. 290): *“Reduced shade in some headwater reaches may result in an increase in primary production having a mixture of negative and beneficial effects to nutrient and energy flow within the stream system.” “Increased sunlight for 1 or 2 years may increase primary production (algae and diatoms) within streams during that period of time. Recovery of shade would like occur between 2 and 5 years from harvest.”* You fail to discuss how primary production will benefit some macroinvertebrates and some stream-associated amphibians, and also result in increased downstream food for fish. Your proposal would further reduce primary production having negative effect to fish downstream.

In such analysis, you should consider what is biologically relevant - which aspect or life history stage of which species is a concern and how might it be affected. Within Np streams themselves, effected species may include stream associated amphibians or other biota. Columbia torrent salamander (*Rhyacotriton kerzeri*), Cascade torrent salamander (*Rhyacotriton cascadae*), Olympic torrent salamander (*Rhyacotriton olympicus*), Dunn’s salamander (*Plethodon dunni*), Van Dyke’s salamander (*Plethodon vandykei*), Pacific tailed frog (*Ascaphus truei*), and the Rocky Mountain tailed frog (*Ascaphus montanus*) were all considered as members of the Headwaters Guild in the Biological Opinion (USFWS 2006).

Downstream, within Type F streams, such temperature impacted species may include fish – likely the fish that use the farthest upstream segments of Type F and have requirements for cold water (such as cutthroat trout (*Oncorhynchus clarkii*), Dolly Varden trout (*Salvelinus malma*), or perhaps Riffle Sculpin (*Cottus gulosus*) would have the greatest potential for effect while fish using larger and “more-mainstream” segments would be less affected. Once we identify the target species and life form (which I did not see in your materials) – in the case of cutthroat and Dolly Varden, it may be egg and alevin stages in particular types of streams or elevations – we could proceed to the next step of identifying the proper metrics.

You state that a Tier II analysis is applied only to new or expanded sources of pollution from specific types of activities; yet, Forest Practices Rules are not new. The rules have been in effect for about 25 years with DOE approval. Nothing has changed. Also, you state that a Tier II analysis may “still result in lowering of water quality if Ecology determines that the action is necessary and in the overriding public interest.” Retaining a buffer system that is apparently working without imposing drastic and disproportional financial and social costs seems in the public interest. The same would be true for a scientific assessment of where additional protection has a demonstrated need and then developing additional measures to target those specific needs. Either of these actions would be in the public interest – your current proposal is not.

In your rules (WAC 173-201A-320 paragraph (3)), a measurable change is defined:  
“(3) Definition of measurable change. To determine that a lowering of water quality is necessary and in the overriding public interest, an analysis must be conducted for new or expanded actions when the resulting action has the potential to cause a measurable change in the physical, chemical, or biological quality of a water body. Measurable changes will be determined based on an estimated change in water quality at a point outside the source area, after allowing for mixing consistent with WAC 173-201A-400(7). In the context of this regulation, a measurable change includes a:  
(a) Temperature increase of 0.3°C or greater;”

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Please note that WAC 173-201A-320 (3) states that “In the context of this regulation, a measurable change includes a: (a) Temperature increase of 0.3°C or greater.” The WAC does not specify whether this 0.3°C trigger is the daily maximum peak or another metric such as daily mean temperature.

The WAC does not specify the metric, and it is important that you use the proper metrics. The spike of the instantaneous 7-day daily maximum is not the right metric to consider – it is only considered because it is easy to detect and provides researchers with statistically significant results and not because it is biologically relevant in anyway. These spikes in temperature are very short-lived (in some cases minutes) and have limited relevance to biota.

Other studies found the metric of degree days includes both a description of magnitude and duration of exposure and has greater relevance for fish (Neuheimer and Taggart 2007) and other biota (Everall et al. 2015). Ideally, this is based on average daily temperature averaged over several days to a week. Lack of buffers, however, has generally not shown increases in average daily temperatures, but may also decrease minimum temperatures. Perhaps with the right investigation, we could identify situations where the average daily temperature or another meaningful metric showed relevant increases resulting from forest management.

So, this proposal does not establish a biological effect that needs addressing, and this proposal is clearly using the wrong metrics. In addition, the solution suggested is not reasonable especially based on available studies.

Between 1998 and 2006, the U.S. Fish and Wildlife Service worked with small forest landowners in Lewis County to develop a general Habitat Conservation Plan. At first, this began as a ground roots effort by all parties working together including EPA, DOE, Tribes, and the environmental community – it was called the Family Forest HCP. It went through a stage where discussions were held with National Marine Fisheries Service, and little progress was made during that time. Then, Lewis County agreed to hold the permit and it became known as the Lewis County HCP.

In the later stages, buffering strategies were discussed with outside parties. The fish-bearing stream buffers and management were tailored by stream-width categories and were mainly low-elevation, low-gradient streams in the County. These buffers were designed to provide the same functions as Type F buffers under the Forest Practices Rules, but in a more-efficient manner.

The perennial streams would have received a continuous 50-foot buffer (25-foot no cut, and 25-foot managed dependent on density). Even seasonal streams with bed and bank would have received a continuous 15-foot buffer. The Lewis County HCP proposed continuous buffers not because of an in-depth review of stream temperature information that suggested it was needed, but to address a host of other species that use riparian areas including amphibians and birds among other taxa. But we did recognize at that time that the continuous buffers would have provided greater certainty regarding temperature in low-elevation, low-gradient systems. However, DOE did not recognize this and dismissed the need for additional temperature certainty.

In its entirety, DOE rejected this proposal. They requested the buffers on seasonal streams be removed – **yes, DOE requested seasonal streams be left unbuffered!** They also rejected the benefits that could have been derived on these specific landscapes from the Np strategy in that proposal. They were not concerned regarding those benefits! Instead, they rejected the whole effort because it was not exactly the Forest Practices Rules. The other aquatic benefits did not matter – it was not FFR! A long-standing CMER member and leader in the environmental community was very vocal about the fact that it was “not the same as FFR”. The multitude of other upland benefits were not even considered – and there were many. The science was challenged in many ways but the Lewis County HCP’s science withstood those challenges.

Eventually, under the leadership of DOE and NMFS, the HCP was rejected simply because it represented a change from FFR ... and for no other reason. Even continuous buffers on Np streams could not sway your DOE representatives.

Now, with no additional science (Groom et al. 2018 being severely flawed and hard rock and soft rock studies have inadequate sample size and conflicting results), you propose that continuous buffers are needed everywhere and must be substantially wider. This makes no sense.

Which species is DOE claiming need such additional protection? Which life stage needs this and for which essential functions? Please provide me with the studies you are using to determine this biological need. Also, which species will be added to the covered species list of the Forest Practices HCP as a result of this additional protection?

In closing, you are using the wrong perspective and baseline for analysis, and the proposed limit for temporary warming (short-term spikes) is not supported by the data. I would hope that a State agency working on behalf of a Federal agency (EPA) would reconsider any decision that would be arbitrary, capricious, and vindictive.

Instead, I propose that DOE drop this rulemaking / analysis and work with the Forest Practices Board and CMER. Identify the biological needs that are not being met (taxa, life form, functions and behaviors), the appropriate metric and measurement of such needs, and work to develop measures and prescriptions that would meet those needs in an efficient and effective manner. I spent 6 years in Washington D.C. responsible for administrative rulemaking for the migratory bird program – I cannot imagine embarking on a rule change without identifying a need and a reasonable connection between the rule change and that need to demonstrate why the change is needed and cannot be met with other less onerous rule changes.

Therefore, I request you suspend this rulemaking / draft Tier II Analysis and work with the Forest Practices Community to develop a fine-tuned statement of need, parameters regarding where and when such need occurs, and then logical and proportional measures to address that need. Please suspend your current effort and refocus your energy.

Thanks for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Wm Vogel", written in a cursive style.

William Vogel