

## Paul Pickett

My comments are based on over 30 years working on TMDLs and other Clean Water Act activities as an engineer at Department of Ecology.

Lake criteria seem like a low priority, given that there are already criteria in the standards. Lakes are so unique, they generally need a lake-specific model to determine if they are meeting standards. Some simple screening criteria would suffice to decide if they are 303d listed or not (or the existence of a lake study already done). The TMDL would be the definitive assessment.

From my experience the most important, highest priority activity with the standards would be to establish criteria for cold water refuges. Currently the standards actually appear to prohibit evaluating and protecting cold water refuges ("Temperature measurements should be taken to represent the dominant aquatic habitat of the monitoring site. This typically means samples should: (A) Be taken from well mixed portions of rivers and streams; and (B) Not be taken from shallow stagnant backwater areas, within isolated thermal refuges, at the surface, or at the water's edge.")

With climate change, protections of cold water refuges is of critical importance. This was a key finding of the South Fork Nooksack temperature TMDL, came up in the Pend Oreille River temperature TMDL, and is a key element of the Columbia/Snake River temperature TMDLs. The survival of salmon in our inevitably warming future will depend on those refuges. Please give this your top priority for standards revision.