

ABSTRACT

**NARROWING THE FOCUS: BIOLOGICAL MONITORING
AND TMDL IMPLEMENTATION**

Michael LeMoine, Environmental Specialist, Washington State Department of Ecology, PO Box 47710, Olympia, Washington 98504, (360) 407-6395, mlem461@ecy.wa.gov; Chad Wiseman, Washington State Department of Ecology, Olympia, Washington

The Washington State Department of Ecology currently practices “single entry” Total Maximum Daily Load (TMDL) studies. Single entry TMDLs address multiple water quality impairments during one sampling season, which reduces sampling costs, organizes sampling group efforts, and reduces the concern over a regulatory process on the local community. Since multiple water quality impairments often exist in the watershed, it is difficult to identify individual impacts on beneficial uses. These cumulative impacts are detectable through examination of resident biotic communities like benthic macroinvertebrates. Impacts stressing the biotic communities can then be identified and prioritized, using an objective-defendable approach.

Six sites were sampled along the Touchet River, Washington, where a single entry TMDL occurred. Nearly every expression of biological condition (e.g., tolerance, composition, and richness) declined from upstream sites to downstream sites. Chemical, physical, and geomorphologic parameters measured in the single entry TMDL effort were related to biological condition. Biological results indicated that in-stream physical stressors had a stronger relationship with biological degradation than potential chemical and geomorphologic stressors. These results indicate that managers should focus resources primarily on restoring physical habitat quality in order to restore aquatic life use.

Biological sampling before TMDL implementation can provide baseline information useful for effectiveness monitoring. The current biological survey on the Touchet River serves as a baseline for this type of work. After the recommended implementation has occurred, another sampling effort of biological characterization in the Touchet River can be used to measure increasing biological diversity. This may provide inexpensive and useful information in evaluating overall restoration effects and specific pollutant reductions.