

Water Quality Monitoring Program at the Watershed Level in the Upper Grande Ronde River Subbasin

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Abstract

In 1989 a collaborative effort began at the La Grande Ranger District to develop a monitoring plan to address the listing of fish species under the Endangered Species Act (ESA) and the listing of streams as “water quality limited” under the 303 (d) list of the Clean Water Act (CWA) on lands in the Upper Grande Ronde Subbasin. An interdisciplinary, multi-organizational working group designed a monitoring plan with four objectives; 1) document existing conditions for fish habitat and water quality parameters; 2) assess the baseline condition against the desired future condition (DFC) to determine needed protection, mitigation and conservation measures; 3) relate water quality and fish habitat parameters to the future recovery plans for all three listed fish species; and, 4) develop technology transfer opportunities for utilization of monitoring results. The following parameters were sampled using current accepted protocols for water quality and quantity 1) stream flow, 2) stream temperature, 3) climate variables, and 4) sediment/substrate. These parameters were collected for use at multiple scales: stream, subwatershed and watershed. Over ten years of data collection, equipment and protocol has changed and has been updated to meet the changes in expectation of the monitoring plan. The monitoring data has been utilized in the adaptive management scheme to direct activities for fish and water quality recovery. The successes of this program have been building a continuous data set over the years, stimulating research, and providing data for assessing the condition of the watersheds. Some of the shortfalls of the program have been equipment failures and lack of consistency in sampling protocols and data management.

Keywords: monitoring, water quality and quantity, fish habitat, collaboration