

A Web-Based Tool for Evaluating Surface-Water Nutrient Conditions across the Pacific Northwest

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The SPATIally Referenced Regressions On Watershed attributes (SPARROW) model was used to evaluate surface-water nutrient conditions and to identify important nutrient sources in watersheds across the Pacific Northwest. Our models included variables representing nutrient sources as well as landscape characteristics that affect nutrient transport through watersheds. On average, natural sources of nitrogen and phosphorus (runoff from forest land and geologic material, respectively) were the largest local sources of in-stream nutrient load. However, the accumulation of anthropogenic sources (wastewater effluent, urban runoff and agricultural activities) contributed most of the nutrient load ultimately discharged from many of the largest watersheds. Our results have been incorporated into an interactive, web-based decision support system that will allow managers, researchers, and the general public to map water-quality conditions, track nutrient transport to downstream receiving waters, and evaluate nutrient reduction scenarios.