

Watershed Approach to Project Implementation and Effectiveness Monitoring

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Biographical Sketches of Authors

Kathy Thornburgh has 19 years of experience in monitoring and directing habitat and water quality programs. Kathy currently works for the Surface Water Management Division of Snohomish County, Washington, and directs programs in ambient monitoring, water quality complaint response, technical assistance to businesses in reducing pollution, project evaluation, and habitat restoration. Past experience includes work with the Tulalip Tribes, Alaska Department of Fish and Game, University of Washington Friday Harbor Laboratories, and The Nature Conservancy. Kathy is a member of the Pacific Northwest Native Freshwater Mussel Workgroup, the Northwest Biological Assessment Workgroup, and is a Certified Fisheries Professional through the American Fisheries Society.

Karen Wood-McGuinness has 10 years of experience in natural resource planning and management. Presently, Karen works for the Surface Water Management Division of Snohomish County, Washington as a watershed steward implementing water quality monitoring programs and developing and implementing stream restoration projects within watersheds. Previous experience includes work with the Snohomish County Planning and Development Services, Alaska Department of Natural Resources, and the Massachusetts Department of Environmental Quality Engineering.

Abstract

Snohomish County, Washington, approaches project implementation by focusing work in watersheds of 15 square miles or less to effectively produce measurable changes in water quality and aquatic habitat. We choose relatively small watersheds to focus intensive project implementation in an effort to produce improvements in water quality more quickly than in larger watersheds. We monitor at the watershed, sub-watershed, and reach scales to identify problems and to assess the effectiveness of our projects.

We use various assessment techniques to evaluate conditions, to identify water quality and resource problems, and to prioritize restoration efforts. We use water quality monitoring to assess pollutant loading. Surveys of benthic invertebrates and freshwater mussel populations indicate watershed health and determine baseline conditions. Stream habitat surveys and temperature monitoring identify physical limitations to fish production that could be moderated or removed by habitat rehabilitation.

We monitor projects for effectiveness at the project reach scale of several hundred feet. Effectiveness monitoring is a key to determine if projects produce measurable changes in water quality and aquatic habitat. We develop individual three- to five-year effectiveness monitoring plans for each project based on the specific goals and objectives for that project. While most of our watershed efforts target reductions in bacteria levels and increases in dissolved oxygen, we include improvements in fish habitat and increases in community education and involvement as goals in our watershed restoration efforts.