



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

Washington, Lummi Nation

Nooksack River Water Quality Improvements Benefit Portage Bay Shellfish

Waterbody Improved

Portage Bay and a portion of the lower Nooksack River are on the Lummi Indian Reservation in western Washington. High fecal coliform levels in the Nooksack River from dairy and livestock operations, municipal wastewater treatment plants, and malfunctioning septic systems contributed to high bacteria counts in Portage Bay, forcing the closure of shellfish harvests—an important cultural, subsistence, recreational, and commercial resource for members of the Lummi Nation. A new dairy inspection program and the requirement for dairy nutrient management plans resulted in a 63 percent reduction in fecal coliform bacteria and the reopening of some shellfish beds.

Problem

Monitoring in the Nooksack River Basin confirmed that the major sources of bacteria loading were dairy and livestock farms and municipal wastewater treatment plants, with agricultural sources accounting for the vast majority of the loadings. Malfunctioning septic systems also added to the problem. In December 1996, at the request of Washington's Department of Health (DOH), the Lummi Nation voluntarily closed a 60-acre portion of Portage Bay to commercial shellfish harvest because of sampling that indicated high fecal coliform. As a result, DOH formally downgraded this area from "approved" to "restricted" because it exceeded water quality standards set by the National Shellfish Sanitation Program (NSSP) for an "approved" classification for commercial shellfish beds. In August 1998 the Lummi Nation voluntarily closed an additional 120 acres when water quality data indicated NSSP standards were not being met. As a result of state bacteria standard violations, the Nooksack River was listed on Washington's 303(d) list as impaired by fecal coliform bacteria.



Harvesting oysters at a Lummi Bay oyster bed.

Project Highlights

In 1998 state and local partners in the Nooksack River Basin initiated a water cleanup plan to reduce fecal coliform levels. Actions included working with dairy farms and small farms with horses or beef cattle, analyzing onsite septic systems, and monitoring to measure the effectiveness of the actions. The lower Nooksack River Basin bacteria total

maximum daily load (TMDL) was an invaluable tool for reducing bacterial contamination. The TMDL identified clear targets for guiding pollutant cleanup activities.

The key initiative included implementing a new state program for regulating the dairy industry. The program included regular inspections and the development and implementation of dairy nutrient management plans. These steps resulted in over 50,000 acres being managed under farm plans, requiring 3,000 acres of vegetative practices, such as riparian plantings and buffer maintenance, to protect watercourses from surface runoff of sediment, nutrients, and bacteria.

Other contributors of fecal coliform were also addressed, such as failing septic systems and discharges from wastewater treatment plants, through activities including permit modifications and treatment plant upgrades.

Results

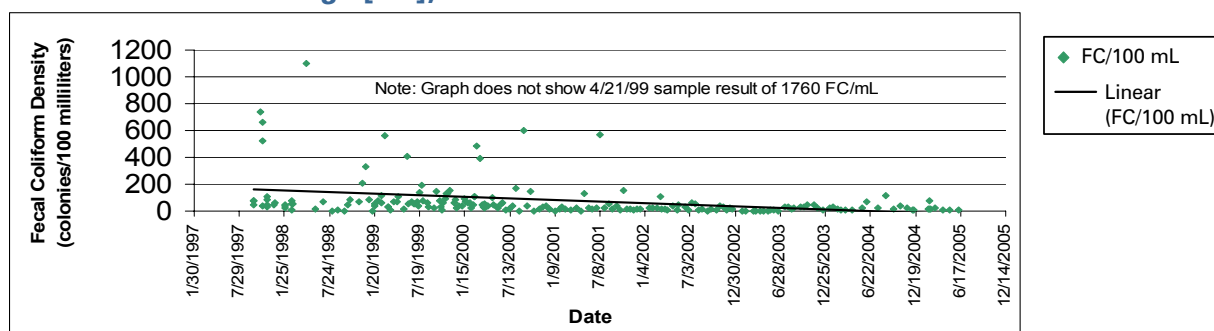
Since 1998 fecal coliform bacteria levels have been reduced by 63 percent in the Nooksack River and between 40 and 80 percent in all of its major tributaries. As a result of the work through 2003, shellfish beds in Portage Bay experienced improved water quality that resulted in almost 75 percent of the "restricted" shellfish growing areas being upgraded to "approved" status (based on NSSP standards) in November 2003.

Over the past 2 years, budget constraints and programmatic limitations have resulted in reduced technical and financial assistance for water quality monitoring, farm plan implementation, and compliance inspections—all of which are critical to achieving water quality improvements. These setbacks are threatening the attainment of water quality goals established by the TMDL, causing the reclosure of some of the shellfish beds that were recently reopened. The challenge for the future is to continue to work together to devote resources to protect this important Pacific Northwest shellfish resource and maintain the water quality successes achieved through 2003.

Partners and Funding

The success of this project would not have been possible without the cooperation of the Lummi Nation, Washington State Department of Ecology, Washington State Department of Health, Portage Bay Shellfish Protection District (Whatcom County), Whatcom Conservation District, U.S. Environmental Protection Agency, USDA's Natural Resources Conservation Service, and concerned citizens. Section 319 provided \$460,000 to the Whatcom Conservation District for water quality monitoring, riparian plantings, and buffer maintenance.

Fecal Coliform Densities in the Nooksack River at the Marine Drive Bridge (Sample Station Maritetta Bridge [M1])



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