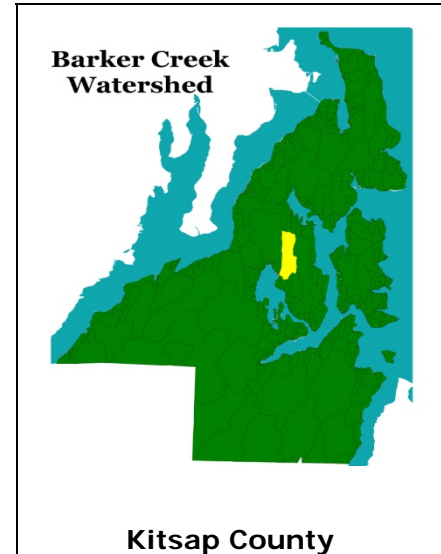


Barker Creek

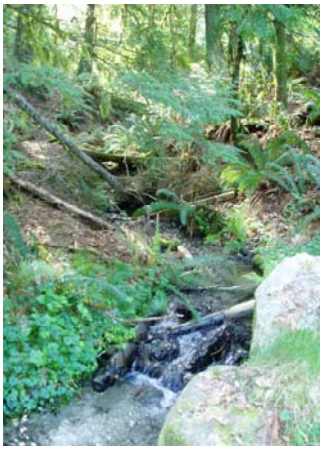
The Future of a Watershed

Problem

Barker Creek is a small but important stream in central Kitsap County which flows into Dyes Inlet. Stream monitoring by Kitsap Health District revealed persistently high fecal coliform levels, likely from failing on-site septic systems, stormwater, and inadequate agricultural practices. Levels of fecal coliform at the mouth of Barker Creek violated state primary contact fresh water standards, and potential marine shoreline sources were preventing the state Department of Health (DOH) from approving a proposed commercial shellfish growing area. Salmonid production was limited by high temperatures, low flow, scouring, poor inter-gravel dissolved oxygen, and sedimentation. The community faced the long-term challenge of accommodating growth while maintaining stream health, shellfish beds, and salmon habitat.



Barker Creek



Project goals

A multi-agency project proposed to improve water quality, salmon habitat, and groundwater supplies in the Barker Creek Watershed. The Kitsap County Health District (KCHD) and Kitsap Conservation District (KCD) teamed up to reduce fecal coliform in Barker Creek and along the shoreline through systematically identifying and correcting pollution sources. Meanwhile, Kitsap County and the Silverdale Water District (SWD) teamed up to address concerns about low stream flow and falling aquifers brought about, in part, by changes in land use. To do this they established a Watershed Advisory Committee made up of local watershed residents and stakeholders to create the Barker Creek Alternative Futures Plan.

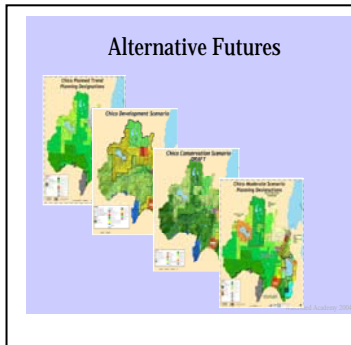
Milestones and outcomes

A Centennial Clean Water Fund grant project: the Barker Watershed and Windy Point Shoreline Pollution Identification and Correction Project (PIC) was led by the KCHD in partnership with the KCD. The health district did tests for fecal material from Island Lake, Barker Creek, and other fresh water drainages from Barker Creek and the Windy Point Shorelines. Fifteen pollution sources were identified, including nine failing on-site systems, one inadequate trailer dump station, and four livestock handling problems. All but three of these problem sources were corrected, and the health district conducted extensive public education on best management practices for on-site septic systems, pet waste, stormwater, and pond operation. KCD provided landowners with technical assistance and funding for installation of best management practices. The portion of Dyes Inlet at the mouth of Barker Creek continues to have a shellfish closure zone because the area exceeds state bacteria standards. However, the fecal source corrections and public outreach resulted in



reduced amounts at the stream mouth. So far, in 2009 standards are being met. If the stream meets standards for the full water year, KCHD will request that the closed shellfish growing area be re-opened. Additionally, KCHD's repair of two failing onsite sewage systems helped Windy Point maintain its "Conditionally Approved" status for shellfish harvest.

Kitsap Conservation District led the Barker Watershed Agricultural Limiting Factors Correction Program to improve poor agricultural practices that were potentially causing watershed nonpoint pollution. KCD and property owners worked together to develop eight farm management plans and install 20 agricultural best management practices, including exclusion fencing and riparian planting. KCD also generated six newsletters, eight technical assistance mailings, 17 public event activities, and 13 educational programs.



Kitsap County Department of Community Development led the Barker Watershed Alternative Futures Planning Project to support officials in their efforts to make land use decisions consistent with community values to protect resources. The Alternatives Futures project identified realistic future land use scenarios, showing how varying levels of population growth, imperviousness, and forest cover affect changes in streamflow, salmon habitat, and terrestrial habitat. This project included a water resources management component involving the Silverdale Water District and the Army Corps of Engineers. The District installed telemetry flow gages on Barker, Clear, and Strawberry Creeks. The Corps used this data to develop

an integrated groundwater-surface water model of Barker Creek watershed, which allowed assessment of groundwater withdrawals, lake levels, and enhanced stormwater infiltration. The model showed that more urbanization led to an increase of "flashy" stream flows, and that augmenting flows significantly increased fish habitat in streams. Community Development presented this information to officials and stakeholders and conducted two open houses and six evening Watershed Academy classes and workshops.

Project highlights

The successful culmination of the Barker Creek watershed project was in December 2006, when the Kitsap County Board of Commissioners voted on the County's Comprehensive Plan to adopt an Urban Growth Area (UGA) in Silverdale and Central Kitsap that was decreased from its previous configuration, the only area in Kitsap County where a UGA was pulled back. Another important finding of the alternative futures process was the degree to which streamflow augmentation can increase salmon habitat. Other significant accomplishments included improving water quality by finding and correcting sources of pollution, and implementing several key farm plans and agricultural best management practices.

Partners

Kitsap County Surface and Stormwater Management Program, their county agency partners (Kitsap County Department of Community Development, Kitsap County Health District, Kitsap Conservation District), and the Washington State Department of Ecology, Water Quality Program all worked together on this project.

Funding

The project cost a total of \$666,667. Kitsap County and partners provided 25 percent of the funding, and Ecology's Centennial Clean Water Fund provided the rest.

For more information

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