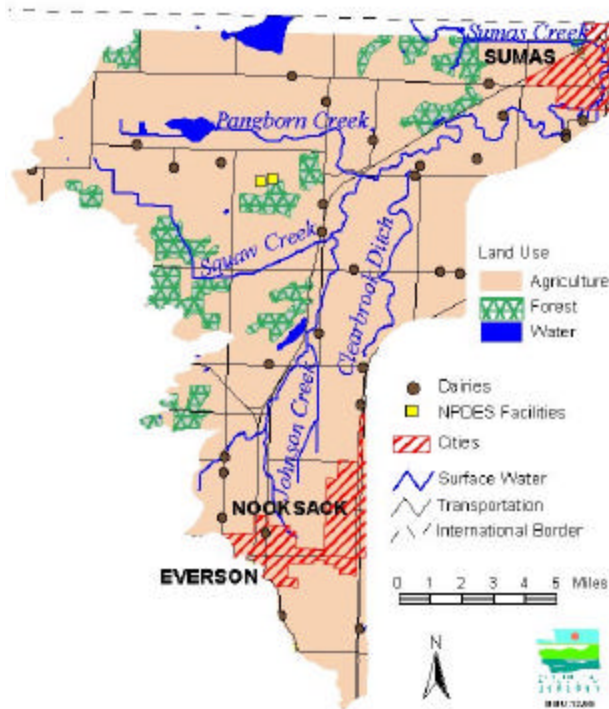




Johnson Creek Watershed

Cleaning up water pollution

Background



Johnson Creek Watershed

Located in north central Whatcom County, Washington, the 21-square-mile Johnson Creek watershed includes lands drained by Clearbrook Ditch and Squaw, Pangborn and Sumas creeks. Johnson Creek originates from springs north of Everson and flows northeast, eventually to the Fraser River in British Columbia.

Of 13,500 acres in the watershed, about 80 percent are in pasture and haylands for dairies. The remaining land use is split among sweet pea and corn crops, urban development, woodlands and wetlands.

The population is about 5,000, with half of the people in three cities and the rest in rural, unincorporated areas.

The cities of Everson, Nooksack and Sumas provide residential sewage treatment. Most homes in unincorporated areas use septic systems.

Thirty dairy farms represent about 10,000 cows in the Johnson Creek watershed. According to agricultural experts, a dairy cow produces about 20 gallons of waste each day – nearly five times the amount of waste produced by one human.

Developing a water cleanup plan

The Clean Water Act requires states to identify waters that do not meet state standards, and to develop a cleanup plan targeted at pollution sources. Water cleanup plans – also called total maximum daily load studies (TMDL) – include an analysis of water quality sampling data and a strategy to limit pollution in order to meet state water quality standards.

Water samples collected between December 1995 and September 1996 at 15 sites along Johnson Creek helped identify and quantify the extent and causes of two key pollutants that are the basis of the Johnson Creek TMDL – high fecal coliform and low dissolved oxygen.

What did the Johnson Creek TMDL study find?

- High *fecal coliform* – caused by animal and human waste – with violations at all sampling sites at several times throughout the year; and
- Chronically *low dissolved oxygen* (DO) – from too many “nutrients” such as manure and fertilizer – at a majority of sampling sites.

The following additional pollutants were also monitored and are expected to be addressed by implementing the Johnson Creek TMDL for fecal coliform and DO:

- High water temperatures in the summer due to lack of stream shading and low water flows;
- Low pH (elevated water acidity) due to excess ammonia and other nutrients;
- High turbidity, often caused by stream bank erosion or surface run-off; and
- Excess nutrients – ammonia, nitrate and phosphorus.

Strategy for cleaning up Johnson Creek

Dairy Waste Management: Ecology’s top priority is environmental compliance by dairies in the watershed. All dairies will be inspected by April 2000, with those in violation of clean water laws ordered to institute appropriate environmental controls. Effective manure management at all dairies is expected to significantly decrease levels of fecal coliform, nutrients and acidity, while increasing dissolved oxygen.

Rural Residential Septic Waste: Whatcom County Health & Human Services Dept. is working with the Whatcom Conservation District to develop a low-interest loan program for residential septic system replacement and repair. Funds for this program have been provided by Ecology.

Commercial and Residential Pollution Prevention: The Whatcom Watersheds Pledge program – a collaborative effort of Ecology, RE Sources and the cities of Everson, Nooksack and Sumas – recently expanded its efforts to help businesses and residents of the Johnson Creek watershed change practices that can harm water quality. In 1997, the Pledge program (begun in Bellingham) received a \$250,000 Toxic Substances Control Act grant from U.S. Environmental Protection Agency (EPA).

Riparian Re-vegetation: Whatcom County Public Works Dept. is developing a plan with Consolidated Drainage Improvement District #31 to establish and maintain riparian re-vegetation. This effort is expected to help lower water temperatures and increase dissolved oxygen. In addition, Ecology will complete a wetlands characterization model in mid-2000 for the Nooksack River Basin (which includes Johnson Creek). The characterization system will help identify high priority wetlands and wetlands potential for mitigating a variety of water quality pollutants, including fecal coliform and excess nutrients.

Tracking cleanup results

Using the data collected through September 1996 as “baseline,” additional sampling and analysis will occur during 2001. Ecology’s dairy waste enforcement effort in the watershed includes extensive water quality sampling for fecal coliform when violations are found. In addition, the Pledge program includes water quality monitoring and public attitude/behavior change surveying.

For more information

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