

# Skokomish River TMDL Cleans Up Bacteria



## Introduction

When it comes to environmental issues, the people living in the Skokomish River valley have had more than their share of “fixes.” Historic land and water management practices have created a system where frequent intense floods damage property and destroy livestock. If the floods don’t wash out livestock fences, landowners can spend thousands of dollars a year to remove flood debris. There have been studies, plans, and diking districts to deal with the problem....but the flooding continues.

In 1999, when the Department of Ecology (Ecology) began a process to clean up bacteria (called a TMDL or total maximum daily load), the reaction from many valley residents was anger. Bacteria didn’t seem like a very important problem when they

were challenged just staying above water. As one landowner put it, “If I get my cows out of the creek, the creek just comes to my cows.”

## Problem

Water quality monitoring during the 1990s by the Skokomish Tribe found bacteria concentrations that violated water quality standards in several areas of the valley. In addition, monitoring by the Department of Health in Annas Bay, at the mouth of the Skokomish River, showed increasing bacteria concentrations that threatened the shellfish harvest.

## Project or event goals

Ecology, with help from the Skokomish Tribe, conducted a TMDL study during 1999-2000 to evaluate the bacteria issues. Concentrations in several areas were high enough to make fishing, swimming, or playing in the water unhealthy. High bacteria concentrations in the river also contributed to unhealthy conditions in the marine shellfish harvest areas.

The study found that bacteria had to be reduced in three tributaries and in the mainstem of the Skokomish River at the downstream edge of the study area in order to assure healthy recreation and shellfish consumption. Reduction goals ranged from 25 percent to 68 percent.

The study identified livestock and septic systems as the two biggest sources of bacteria. Recreational users also contributed bacteria. Representatives of local and state governments, the Skokomish Tribe, business, and valley residents worked together to develop a cleanup plan based on the results of the water quality study. They have worked together since 2002 to put the plan into action.

## Milestones and outcomes

A lot of work has been completed since 2002.

- Landowners worked with Mason Conservation District to:
  - ~ Install over 24,000 feet of fence to keep livestock out of creeks.
  - ~ Plant more than 32,000 trees to filter runoff and stabilize streambanks.

- ~ Enroll 62 acres in conservation programs, with 150 feet of stream buffers.
- ~ Improve manure handling and storage.
- ~ Buy 175 acres adjacent to prime fish habitat to provide stream buffers.
- Mason County purchased 19 properties in the frequently-flooded area and decommissioned the septic systems.
- Washington Department of Fish and Wildlife (WDFW) inspected and repaired (where needed) the septic systems at four hatcheries in the watershed.
- The Skokomish Tribe has been evaluating and repairing septic systems on the reservation and is working to move residences out of the flood plain.
- Green Diamond Resource Company, Taylor Shellfish, and the Puget Sound Action Team provided funds that paid for signs to reduce unauthorized recreation and camping along the river. The county installed fencing and native plants to restore one heavily used area.
- Hunter Stores and WDFW worked together to make more public restrooms available for fishermen during fishing season. Cleanup workers distributed information to fishermen to encourage proper sanitary practices.



During 2005-06, Ecology conducted a water quality study to evaluate cleanup progress. Results show that the mainstem and two of the tributaries meet TMDL reduction goals. The third tributary shows a lot of improvement, but needs about 20 percent less bacteria to meet goals.

A fifth site was also monitored. This site is upstream of most of the development so is considered to be “natural background.” This site showed about the same bacteria concentrations as were found during the original TMDL study in 1999-2000.

## Project highlights

The most important highlight of this project is that TMDL goals were met at three of the four sites within four years. Activities are underway to meet the reduction goals on the fourth site, Weaver Creek.

The bacteria reductions are significant considering the physical challenges in the valley and the fact that local partners have other major water quality concerns at the same time. This has been a remarkable, cooperative effort with valley residents, the Skokomish Tribe, upland and marine-based businesses, and local, state, and federal agencies all contributing to cleanup.

## Partners

A representative technical advisory group developed the cleanup plan:

Craig Chapman - watershed resident  
Wayne Clifford - Washington Department of Health  
Jorge Cortez-Monroy - Taylor Shellfish  
Moiyra Dehe - watershed resident  
Leslie Dolan - watershed resident  
Keith Dublanica - Skokomish Tribe  
Jeff Heinis - Skokomish Tribe  
Christine Hempleman - Washington Department of Ecology  
Jim Hunter - watershed resident  
Shannon Kirby - Mason Conservation District  
Steve Kutz - Mason County  
Denis Popochock - Washington Department of Fish and Wildlife  
Debbie Riley - Mason County  
Evan Tozier - watershed resident

Many members continue to work together on implementation. The landowners did most of the hard work of reducing sources of bacteria. Shannon Kirby from Mason Conservation District provided invaluable technical assistance and found multiple funding sources to help with the cost of improvements. Others contributed in a variety of ways, as noted in "Milestones and Outcomes". In addition, the Skokomish Tribe and Mason County did considerable work to deal with sources between the downstream boundary of the TMDL study area and the Annas Bay shellfish harvest areas.

## For more information

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