

Protecting Watersheds

Teanaway River Basin - Kittitas County



Introduction

Originating at the edge of the Alpine Lakes Wilderness Area in central Washington, the beautiful Teanaway River watershed represents some of the highest quality streams and cold-water fish spawning and rearing areas in the Yakima River Basin. The name "Teanaway" comes from a Native American word meaning "place of fish and berries."

After learning that summer water temperatures were too warm for some types of fish in the river, Teanaway residents and several groups collaborated to protect this unique valley and restore the river water to cooler, more fish-friendly temperatures.

Problem

The Teanaway River was placed on the Washington State list of impaired water bodies because of high summer water temperatures. Water temperature has a marked effect on organisms that live or reproduce in the water. When water temperatures become too warm, certain fish (including salmon, steelhead and bull trout), stream insects, and amphibians can become unhealthy and even die. Studies show that lack of streamside (riparian) shade, excessive sediment load, and low stream flow can increase stream temperature.

Project Goals

In 2000, several dedicated Teanaway landowners and other local residents formed a citizen workgroup. They helped the Washington Department of Ecology (Ecology) develop a water quality improvement plan for temperature in the Teanaway. The U.S. Environmental Protection Agency (EPA) accepted the general plan in 2001. Ecology completed a detailed implementation plan in 2003. The Teanaway citizen workgroup and Ecology are main drivers of all implementation strategies for this project.

The citizens' workgroup and Ecology successfully developed and implemented strategies to address the main causes of warm water temperatures.

Milestones and Outcomes

INCREASED STREAM FLOWS. Higher summer flow levels help the streams and river stay cooler because a greater volume of water heats more slowly in the summer sun. By improving the efficiency of irrigation systems that withdraw water from the Teanaway River, irrigators need less river water. Leaving more water in the river keeps the river cooler. Most Teanaway landowners replaced their open irrigation ditches with pressurized delivery pipes, and they replaced flood or rill irrigation systems with sprinkler systems. Changes like these increase irrigation efficiency and leave more water in the river.



The Yakima River Basin Water Enhancement Project (YRBWEP) bought Teanaway River property and its accompanying water rights. This water will stay in the river to increase summer river flow.

RIPARIAN REVEGETATION. Restoration of riparian vegetation is another approach to reducing river temperatures. Additional vegetation increases shade over the river and tributaries and reduces bank erosion by holding soil in place with plant roots.



Many Teanaway property owners annually plant trees and shrubs along the banks of the Teanaway River, and they increased their efforts in recent years. In spring 2001, Washington Conservation Corps crews planted thousands of trees in the Teanaway Basin. The Kittitas Conservation District (KCCD) planted trees throughout the Teanaway watershed in 2003, and they planted more in 2004.



SEDIMENT REDUCTION. By limiting how much sediment enters streams and rivers, the Teanaway River system should return to a deeper, narrower stream shape that collects less heat.

To reduce sediment that washes into the river, the Washington Department of Natural Resources and private timber companies actively apply the Forests and Fish Rules. The USDA Forest Service (USFS) is implementing road and trail improvements, along with water quality restoration planning, to address temperature issues on their lands. As of mid-2006, all timber landowners in the Teanaway watershed were on schedule for required improvements.

The USFS/Cle Elum Ranger District continues its Teanaway watershed restoration program. The “Respect the River” program educates recreational users about riparian protection, manages and restores riparian vegetation, reduces streambank erosion, and improves floodplain water storage.

Local landowners have fenced all livestock away from the main stem Teanaway River, helping to prevent damage to stream banks and riparian areas. Private timber companies developed grazing and recreational use policies that further protect riparian areas and prevent bank erosion in the upper Teanaway Basin. The Kittitas Conservation Trust (KCT) also has plans to buy riparian easements along the North Fork and will work with livestock owners to reduce livestock impacts on these riparian areas.

Project Highlights

As of mid 2006, all scheduled implementation activities identified in the revised Teanaway water quality implementation plan were ahead of schedule. These activities include a public education program (informational road signs, mailings, and newsletters); road improvements by public and private timber managers; funding of irrigation improvements; and riparian revegetation. Further, the KCCD monitored water and air temperatures, as well as sediment and turbidity levels and water flow, at several locations in the Teanaway watershed from 2002 through 2006. The KCCD also collected stream insects (macroinvertebrates) for analysis because these are good indicators of stream health. This monitoring data will provide a baseline of information to assess successful decrease in water temperatures in future years.



Partners

Ecology has many partners in this project, from individuals to large organizations. Partner organizations include the USFS; KCCD; Natural Resources Conservation Service (NRCS); Kittitas County Water Purveyors; American Forest Resources LLC; Kittitas County; KCT; Yakama Nation; the Bonneville Power Administration (BPA); and the USEPA. Several individual local landowners are also faithful and enthusiastic partners in this project, including Violet Burke, Bill Randall, Jul Nickerson, and many others.

Funding

Grants from the Bonneville Power Administration (BPA), the NRCS Environmental Quality Incentives Program, and Washington State’s Irrigation Efficiencies program funded many of the irrigation upgrades. Some Teanaway landowners also paid for these improvements out of their own pockets. Ecology and BPA funded water quality monitoring efforts. Individual landowners, who donated both the trees and their time, also paid for much of the riparian restoration. Grants from BPA and Ecology funded larger planting projects. YRBWEP, BPA, and Washington State’s State Salmon Recovery Funds are being used to conserve critical riparian lands. YRBWEP funds and Irrigation Efficiencies funds were used to place water rights into trust accounts.

Submitted by:

Jane Creech
TMDL Lead
Central Regional Office
509-454-7860
jton461@ecy.wa.gov