Focus on White River pH Water Cleanup Plan

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Water Quality Program, Southwest Regional Office

The Washington Department of Ecology, the U.S. Environmental Protection Agency, and the Muckleshoot Indian Tribe are developing a water cleanup plan which will reduce pH in the White River by controlling phosphorus pollution.

White River water quality problems

The White River, a tributary of the Puyallup River, has high pH values that exceed state water quality standards. The pH is a measure of the acidity or alkalinity of the water. A high pH means the water is alkaline and a low pH means it's acidic. High pH can cause problems for salmon, other fish, and other organisms that live in the water. If the pH is too high, fish are stressed and may die.

The White River is home to the last remaining run of spring Chinook salmon in southern Puget Sound. It also has runs of Coho and chum salmon, as well as bull trout and steelhead trout. Puget Sound Chinook salmon and bull trout are listed as "threatened" under the Endangered Species Act.

What causes high pH?

High pH in the lower White River is caused by algae that grow on the river bottom. Algae growth is related to excessive nutrient concentrations in the river. Nutrients enter the river from various sources of pollution. These range from wastewater discharged to the river from city sewer plants, to failing septic tanks, to stormwater run-off and dairy waste.

Phosphorous and nitrogen act as fertilizers for algae in the river. As algae grow during the day, they consume carbon dioxide and pH levels rise. Controlling phosphorus will limit algae growth, which will limit pH levels.

State water quality standards call for pH to be between 6.5 and 8.5. Readings above 9 have been measured in the White River. Fish are severely stressed and could die in water that has a pH of 9 or above.

Why the cleanup plan is being developed

Federal law requires states to identify sources of pollution in waters that fall short of water quality standards and to determine how much of each kind of pollution the waters can receive and still remain healthy. A set of pollutant allocations for that water body, based on sampling data and computer modeling, is called a Total Maximum Daily Load (TMDL), or water cleanup plan.

The objective of this water cleanup plan is to determine how much phosphorous can be added to the river through wastewater streams without causing pH problems. This will be the basis for determining allocations of pollution to the river.

Highlights of the cleanup plan

- Use "adaptive management" to limit phosphorus. Adaptive management means learning from what works and does not work and adapting the next steps to reflect this knowledge. The approach creates solutions that can be built upon.
- Reduce discharges of phosphorous from sewer wastewater and "non-point" pollution sources.

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What the cleanup plan means

The water cleanup plan will affect wastewater discharges to the river from the cities of Buckley and Enumclaw as well as from Rainier School and the White River Hatchery.

Various alternatives exist for reducing phosphorus in the Lower White River. One possibility is that the wastewater treatment plant discharges to the White River may need to be removed during parts of the year. Another option may be to route effluent downstream where there is more dilution or where conditions are less likely to cause algae growth and pH problems. Yet another option may be to look at wastewater treatment that includes removal of phosphorous, seasonal re-use of water, or land application of treated wastewater.

The Muckleshoot and Puyallup tribes and the U.S. Environmental Protection Agency (EPA) are working with Ecology on a draft water cleanup plan. Waters within Muckleshoot Reservation boundaries are subject to EPA and Muckleshoot Tribal authority.

EPA has been involved in the development of the cleanup plan because the agency has final authority, under the federal Clean Water Act, for pollutant control actions on both state-regulated and tribal land.

Lake Tapps connection

The White River study is related to water issues at Lake Tapps. Water from the river is diverted to Lake Tapps and then passes through the White River Hydroelectric Project. Puget Sound Energy (PSE), owner of the project, may abandon ownership due to lack of profitability.

Homeowners and lake users are concerned that should PSE abandon the project, the lake will be drained. They fear that home and property values could drop and that recreational opportunities could be lost. PSE is working with homeowners and other entities to preserve the project and the lake.

Water diverted from the White River affects its stream flow, the concentration of nutrients, and the amount of carbon dioxide available to algae. If less water is diverted to Lake Tapps, the higher stream flows in the White River will result in improved water quality.

What's next?

Copies of the December 1999 White River pH technical report, entitled "Review Draft: Assimilative Capacity Study for Nutrient Loading in the Lower White River," are available at the Enumclaw Public Library at 1700 First Ave., the Buckley Public Library at 123 South River Ave., and on the Internet at www.ecy.wa.gov/biblio/0003001.html . The draft water cleanup plan will be available in the same libraries and on Ecology's web site in 2003.

An advisory committee, which will include the cities of Enumclaw and Buckley as well as Rainier School, will be working with Ecology, the Muckleshoot and Puyallup Tribes, and EPA to develop a water cleanup plan for the river. The goal is to submit a cleanup plan to EPA in 2004. Following EPA approval of the cleanup plan, interested parties will work together to develop a more detailed implementation plan.

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