

Draft study identifies limits for Lake Whatcom phosphorus and bacteria

A draft Department of Ecology study lays the groundwork for improving water quality in Lake Whatcom. The study shows that phosphorus in the lake and bacteria in the streams that feed it must be greatly reduced. Currently, the lake does not meet state water quality standards or the requirements of the federal Clean Water Act.

Why it matters

Lake Whatcom is a priority because it is the main source of drinking water for 96,000 Bellingham-area residents. In 1998, the lake failed to meet state standards for dissolved oxygen, placing the lake on the state's list of polluted waters. The listing triggered a state water quality improvement project, also known as a Total Maximum Daily Load (TMDL) study. When final, this process determines how much pollution a water body can handle and also meet state water quality standards.

Phosphorus is the main cause of Lake Whatcom's low-oxygen problem. Phosphorus occurs naturally, but development increases phosphorus entering the lake in stormwater. Computer predictions show the lake would meet state standards for oxygen if there was 86 percent less development than existed in 2003. Since then, zoning laws have allowed more development in the watershed.

The study also establishes limits for fecal coliform bacteria in Lake Whatcom's tributaries.

The problem at Lake Whatcom

This water quality improvement project addresses two key pollutants:

Phosphorus

Sources addressed: Runoff from bare soil and developed areas. Phosphorus occurs naturally in soil and human and animal waste, and is added to some detergents.

PUBLIC REVIEW

AUG. 18 – SEPT. 17, 2008

You can comment on the *Draft Lake Whatcom Watershed Total Phosphorus and Bacteria Total Maximum Daily Loads —Water Quality Study Findings*.

Although public review is not required for this study, we're encouraging a close look at the findings before they are made final. The final findings will be the basis for decisions local governments make about the Lake Whatcom area's future. Addressing issues about the findings now will help the cleanup process move ahead.

- **View online**

www.ecy.wa.gov/programs/wq/tmdl/LkWhatcom/LkWhatcomTMDL.html

- **Hard copy**

View at Ecology's Bellingham office, 1440 10th St., or purchase copies - \$10.29 report only, additional \$23.04 color figures - at Copy Source, 1122 N. State St.

- **Comment by e-mail**

shoo461@ecy.wa.gov, subject line "Lake Whatcom TMDL Draft Study Comments"

- **Comment by mail**

Steve Hood, Washington Dept. of Ecology, 1440 10th St., Suite 102, Bellingham, WA 98225-7028

- **Questions?**

Steve Hood, 360-715-5200

Special accommodations:

If you need this publication in an alternate format, call the Water Quality Program at 360-407-6401. Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

Connection to algae and oxygen: Phosphorus feeds algae growth. Bacteria that consume dying algae deplete the oxygen that fish and other aquatic life need to survive.

When oxygen levels are low, phosphorus is released from lake sediment and re-enters the water, perpetuating the cycle. The dissolved oxygen levels in Lake Whatcom fail to meet state water quality standards now, and they have the potential to get much worse, making the problem much harder to fix.



Treatment of drinking water: Excess phosphorus creates larger algae blooms, which require more treatment to make the water safe for drinking. That process creates more trihalomethanes, a byproduct that some studies link to cancer.

Effect of development: Roofs, driveways and lawns interrupt the absorption and filtration provided by forests and soils, instead sending phosphorus-laden stormwater rushing to the lake. Communities must modify existing and future development to create the same effect as removing development.

Bacteria

Fecal coliform bacteria originate in human and animal waste. Runoff carries the bacteria from the ground and failing septic systems into the lake. Eleven tributaries feeding Lake Whatcom fail to meet state standards for fecal coliform bacteria. The bacteria create a health risk for people who work or play in and around the water.

Next steps – Water quality improvement process (dates approximate)

- **October 2008** - Findings of the Lake Whatcom water quality study are made final.
- **Early 2009** - Local jurisdictions propose how to meet the TMDL phosphorus and bacteria levels. They must shape the future of the Lake Whatcom area using local ordinances and zoning changes. They also must decide whether to allocate pollutants to new or existing development.
- **90 days later** - Ecology evaluates the local proposals for how they affect phosphorus and bacteria levels. Water quality specialists use computer models to see how existing and future development contribute to the problem and the effect of proposed solutions.
- **Late 2009** - Ecology and local jurisdictions work together to create a plan for meeting the TMDL requirements and the state water quality standards in Lake Whatcom. The plan for Lake Whatcom goes to the U.S. Environmental Protection Agency for review. If the EPA finds that the study limits and strategy to meet them are sound, EPA approves the TMDL for Lake Whatcom.