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Lake Whatcom water quality still slipping, data shows

JOHN STARK / THE BELLINGHAM HERALD

BELLINGHAM - Lake Whatcom water quality took a turn for the worse in 2010, adding new urgency to the ongoing effort to head off new sources of pollution while taking steps to cut back on existing ones.

The bad news came in the latest Lake Whatcom Monitoring Program annual report that lists data compiled by Robin Matthews and her team. Matthews is director of the Institute for Watershed Studies at Huxley College of the Environment, Western Washington University

"I don't think that we're stable yet," said Matthews, lead author of the 2009-2010 water quality monitoring report released earlier this month. "I was hoping that we might have been."

That's because water data for 2008 and 2009 had shown little significant increase in key measures of lake water pollution, such as dissolved oxygen concentrations, algae growth and phosphorus content.

But for 2010, those measures showed dissolved oxygen levels at or near the lowest levels measured, while phosphorus levels are at or near the highest levels, especially in the densely developed northern portions of the lake.

As Matthews explained it, phosphorus-laden runoff is made worse by human activities in the watershed. The phosphorus nourishes algae growth, and the dead algae become food for bacteria. The bacteria, in turn, deplete dissolved oxygen and make the lake less hospitable to fish.

But the lake's problems already affect people as well as fish.

The city of Bellingham and many surrounding areas get their drinking water from the lake. In summer 2009, algae concentrations became high enough to obstruct the city's water filtration systems, requiring mandatory water use restrictions.

Significant deterioration of the lake's water quality was first noted in 1998, when a reduction in dissolved oxygen in the lake's depths caused the Washington Department of Ecology to put the lake on its list of impaired water bodies. Research since then has made it clear that the oxygen problem is related to phosphorus pollution. Local governments are now under a state mandate to develop plans for major reductions in phosphorus runoff into the lake.

Matthews is always cautious about interpreting the lake data, but she is near-certain that human activities around the lake are causing the deterioration. She sees no other explanation for the marked changes in the lake that have been documented over the past 20 years.

"Lakes don't usually change very fast," Matthews said. "Lakes are on a geologic (meaning very slow) time scale. ... If I can see things happen over a 20-year period, it means things are happening much more rapidly than normal."

Clare Fogelsong, environmental resources manager in Bellingham's Department of Public Works, said he thinks the five-year Lake Whatcom Management Plan, extending through 2014, will gradually reduce the phosphorus-laden runoff from existing developments in and outside the city.

The plan is a combined effort of the city, Whatcom County, and the Lake Whatcom Water and Sewer District.

But Fogelsong and Matthews both observed that recovery of the lake will be far from complete in 2014. Phosphorus continues to run into the lake from natural sources, and phosphorus from past pollution has accumulated in lake sediments and will take years to dissipate.

Officials in the local office of the Washington Department of Ecology said the most recent data indicate the importance of moving as quickly as possible to do two things: Stop any further increase in phosphorus runoff from new development, and take steps to reduce the runoff from existing development.

"This report raises the sense of urgency in stopping the problem from getting worse while we're fixing it," said Steve Hood, Ecology water quality engineer. "We really haven't done anything to reverse the trends yet ... We need to get to work on cleaning it up."

Richard Grout, manager of Ecology's Bellingham field office, said the joint state and local effort to stop the deterioration and reverse the damage should eventually bear fruit.

"We just have to keep doing what we're doing, and we have to do it faster and harder," Grout said.

On March 11, Whatcom County officials announced they would speed up their timetable for adopting tougher standards for new development in the watershed. Those standards are designed to eliminate any increase in runoff from that development. Earlier, Mayor Dan Pike had petitioned Ecology to use its regulatory authority to stop the drilling of new wells to serve watershed development, until county regulations could be toughened.

Ecology accepted the county's approach instead.

Jon Hutchings, the county's assistant director of Public Works, plays a lead role in the county's lake protection efforts. Hutchings said speeding up the county's watershed regulation is necessary and reasonable, but it won't make a big dent in the problem.

"The elephant in the room is how we address the already-built areas," Hutchings said.

Some efforts to do that are already in place. Last year, Whatcom County Public Works spent $210,000 to install an elaborate stormwater system at Lahti Drive and Britton Road, just outside city limits. The system is meant to help purify the water running out of a nearby 40-acre subdivision into Silver Beach Creek, which feeds into the lake.

Matthews, Hutchings, and the Ecology staffers agreed that restoring the lake to near-natural conditions will take many years.

"While it sometimes appears to be an overwhelming challenge, I find it personally inspiring that there are so many people engaged in a common solution to the problem," Hutchings said.

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