Public Notice

South Puget Sound Dissolved Oxygen Study

from Ecology's Water Quality Program

The Department of Ecology (Ecology) is starting a water quality study on low dissolved oxygen levels in South Puget Sound. Marine animals need oxygen to live. This study will help determine how human activities (along with natural factors) affect low dissolved oxygen levels in South Puget Sound.

Fish need oxygen

In areas with low levels of dissolved oxygen, fish and other marine life become stressed and die or are forced to flee their habitat. There are many areas in Puget Sound with very low levels of dissolved oxygen.

We must solve the problem before it gets worse

In Hood Canal, low levels of dissolved oxygen have caused major fish kills. The rest of Puget Sound (especially areas in South Puget Sound) faces the same fate unless we work to solve the problem.

Nitrogen is the main pollutant that causes low dissolved oxygen levels

Discharges from wastewater treatment plants, septic systems, and other sources add nitrogen to Puget Sound. Excess nitrogen causes excess algae growth. As the algae die and decay, they rob the water of dissolved oxygen. Once released into Puget Sound, nitrogen moves around. Nitrogen discharged at one spot may cause low dissolved oxygen levels many miles away.

We need to study the effects of nitrogen discharges

The purpose of this study is to determine how nitrogen from a variety of sources affects dissolved oxygen levels in South Puget Sound. Individual discharges of nitrogen at one spot may affect dissolved oxygen levels many miles away. This study is a critical first step in determining what might need to be done to improve water quality. We are asking for your help on this study. Specifically, we are asking for help on how the study is done and what factors should be considered. The best way to help is to volunteer to serve on the technical advisory committee (see back page).

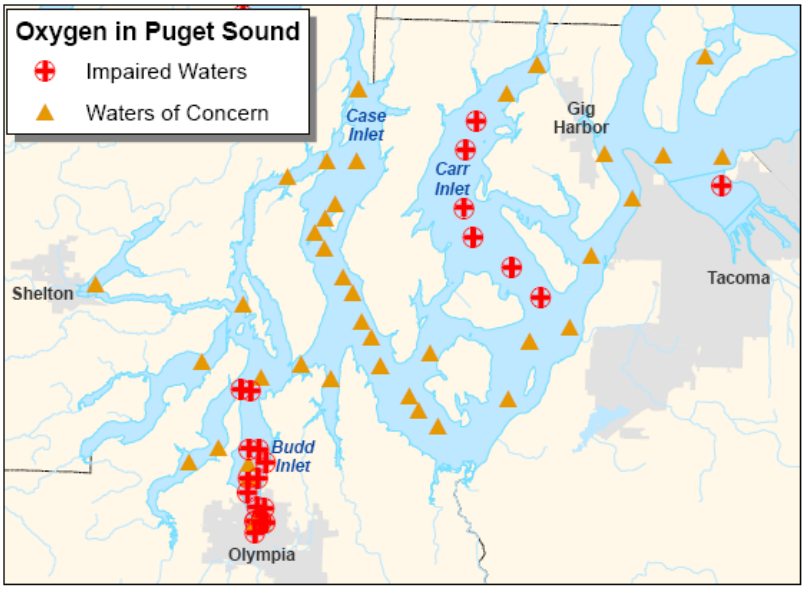
The results of the study may show that we need to reduce human-related sources of nitrogen to keep South Puget Sound healthy. If reductions are needed, the study will also help determine where the reductions might need to occur.

October 2006 **06-10-073**

Original printed on recycled paper

The problem

In the 2004 Water Quality Assessment, 22 locations in South Puget Sound were deemed impaired due to a lack of dissolved oxygen. Another 43 locations were identified as waters of concern. The locations of greatest concern are Carr, Case, and Budd Inlets. Excess nutrients (nitrogen specifically) are the main pollutants that cause low dissolved oxygen levels. Human-related sources of nitrogen come from both point sources (such as wastewater treatment plants) and nonpoint sources (such as fertilizer use and septic systems).



Why is this study starting now?

About $200 million worth of investments in wastewater treatment plants are being planned, designed, or constructed right now in South Puget Sound, including work by Tacoma, LOTT (Lacey, Olympia, Tumwater and Thurston County), Shelton, Buckley, Enumclaw, and Sumner. King County is investing heavily in the Brightwater plant. As the population in the Puget Sound region grows, the capacity of wastewater treatment plants will need to increase. The population in the Puget Sound area is expected to increase from 4.2 million in 2005 to 5.1 million in 2020. That is a 21 percent increase in the next 15 years and a 51 percent increase between 1991 and 2020.[1] Every additional person in the region produces about ten pounds of additional nitrogen every year, and much of that nitrogen makes its way to Puget Sound.[2] With this much ongoing work and future expansion, everyone should know how activities impact dissolved oxygen levels in Puget Sound before it is too late.

We need your input!

Ecology is looking for people to assist us on our technical advisory committee. If you are interested in joining, please contact Ecology at:

Andrew Kolosseus
Washington State Dept. of Ecology
PO Box 47600
Olympia, WA 98504-7600

Phone: 360-407-7543
E-mail: akol461@ecy.wa.gov

For more information:

Additional information is available on our Web page at www.ecy.wa.gov/puget_sound/.

Join the listserv

If you would like to receive e-mail updates on this study, please join our listserv. The listserv will provide periodic e-mail updates and news concerning the South Puget Sound Dissolved Oxygen Study. You can join the listserv through the Web page listed above or by contacting Andrew Kolosseus.

---

[1] Washington State Office of Financial Management
[2] *Wastewater Engineering, Treatment and Reuse*, Metcalf and Eddy, International Ed., McGraw-Hill, 2003