South Puget Sound Dissolved Oxygen Study

The Department of Ecology (Ecology) is conducting a water quality study on low dissolved oxygen levels in South Puget Sound. 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 low levels of dissolved oxygen.

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. This study is will help determine future actions that can improve water quality. 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 would need to occur.

The problem

In the 2008 Water Quality Assessment, Ecology found 24 locations in South Puget Sound to be impaired due to too little dissolved oxygen. Budd, Case, and Carr Inlets are the areas of greatest concern.

MORE INFORMATION

For more information, please contact:

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Website

The study's web page is:
www.ecy.wa.gov/puget_sound/dissolved_oxygen_study.html

On the web page you can find:

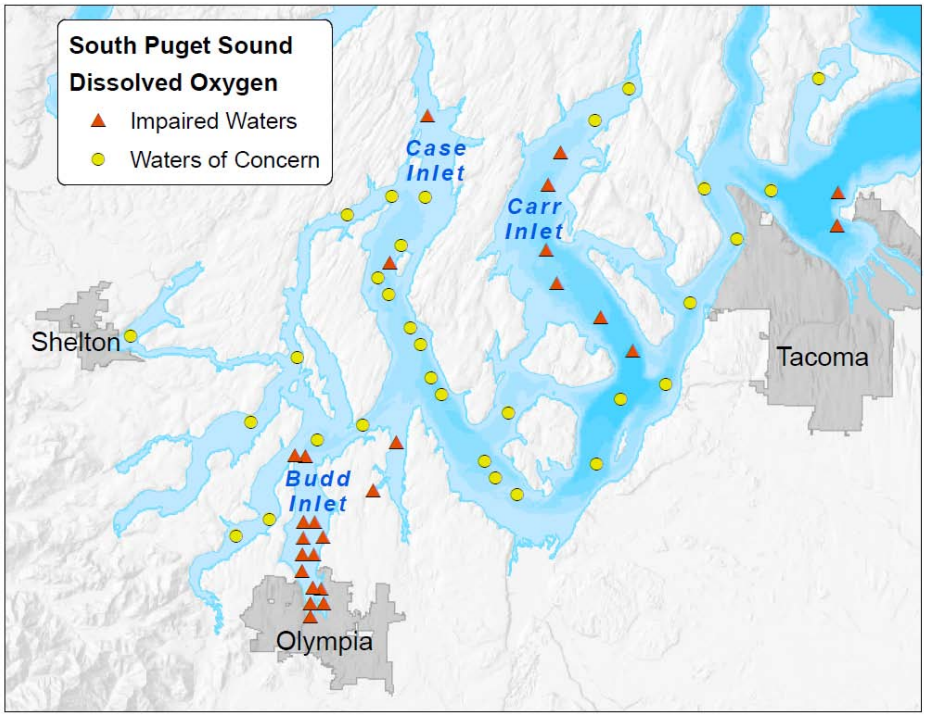
- A video on the South Puget Sound Dissolved Oxygen Study.
- The nutrient loading report summarizing results to-date.
- Advisory committee information.
- Data.
- How to sign up for the Listserv to receive e-mail updates about the study.
- Additional information about the study.

Special accommodations:

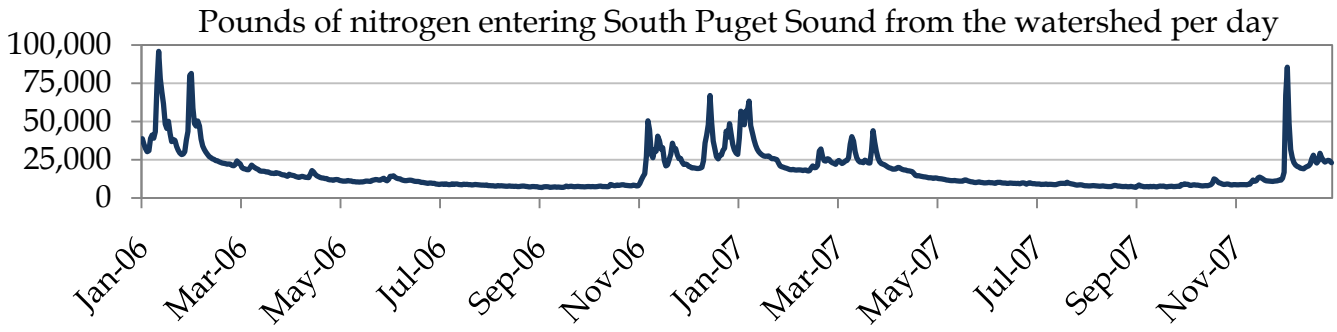
To ask about the availability of this document in a version for the visually impaired, call the Water Quality Program at 360-407-6404.

Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

Initial findings



The South Puget Sound Dissolved Oxygen Study's early findings say that, on an annual basis, wastewater treatment plants south of the Tacoma Narrows send an average of 6,000 pounds of nitrogen into South Puget Sound per day. Another 11,000 pounds of nitrogen came from all other human and natural sources in the watershed. During the critical summer period for dissolved oxygen when river flows are lower, the wastewater treatment plants are a larger percentage of the load. The area between the Tacoma Narrows and Edmonds has many more people and it contributes about four times more nitrogen than South Puget Sound. Future work will quantify the amount of nitrogen coming into South Puget Sound from the Pacific Ocean.



What are the next steps?

Ecology is using the data it collected to develop computer models to determine the effects of the nitrogen discharges on dissolved oxygen levels in South Puget Sound. If the study shows that nitrogen reductions are necessary, Ecology may convene local jurisdictions and interest groups in either a water cleanup planning process—known as a total maximum daily load or TMDL study—or some other plan of action to achieve clean water.