

## State plans \$400,000 study of low oxygen levels in Puget Sound

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OLYMPIA, Wash. (AP) — Fearing more fish kills like those in Hood Canal, state officials have announced a \$400,000 study into potential low-oxygen dead zones in south Puget Sound inlets.

The danger appears to be especially high in Case and Carr inlets west of Tacoma and Budd Inlet near Olympia, said William H. Backous, who oversees scientific studies for the Ecology Department.

"At certain times of the year, dissolved oxygen levels in these areas have been alarmingly low," Backous wrote in a statement issued Tuesday. "We are especially concerned because once nitrogen is discharged to Puget Sound, it moves around within the sound. Nitrogen from one spot may cause low dissolved oxygen levels many miles away."

The study is designed to track the sources and spread of pollution, especially excess nitrogen, through sampling at 80 open water sites, river mouths and areas around sewage treatment plant outfalls, said Andrew Kolosseus, a state environmental specialist.

Nitrogen from sewage treatment plants, septic systems, fertilizer and animal droppings can lead to excessive growth of algae which then die, sink to the bottom and decompose, a process that can drastically lower the level of dissolved oxygen in the water, especially in shallow bays with slow flushing rates.

That sequence has been blamed for three major fish kills in five years in Hood Canal. In a stretch between Belfair and Twanoh state parks in the southern part of the fjord, scuba divers say the only living thing they can see is a type of fluffy bacteria that survives in the harshest of conditions.

Water is usually considered healthy for marine life when oxygen levels are about 5 to 7 milligrams per liter. In 2003, oxygen levels in Case Inlet declined to 2.6 milligrams per liter, considered stressful for many sea creatures, and to 3.1 milligrams in Budd Inlet and 4.3 milligrams in Carr Inlet.

In the Hood Canal dead zone, oxygen levels have dropped below 1 milligram per liter.

"We've been trying to say it's a problem in south sound for years," said Bill Dewey, spokesman for Taylor Shellfish in Shelton. "We're seeing far more algae in the water than we used to and complications on our shellfish beds."



Dewey said the mortality rate was especially high this summer for south Puget Sound oysters, apparently because of an excess in nutrients in the water that caused the bivalves to grow faster than their anatomy could handle.

"We're glad to see the study," agreed Naki Stevens, program director for the conservation group People for Puget Sound. "We need to get a handle on the dissolved oxygen levels in Budd Inlet before we have another Hood Canal." Bill Taylor of Taylor Shellfish Farms in Shelton.