

Low dissolved oxygen in Puget Sound

What is low dissolved oxygen?

Like the air we breathe, oxygen that is dissolved in the water is critical for aquatic life. When dissolved oxygen is low (less than 2-3 mg/L), fish and other aquatic organisms may not be able to survive.

How does it happen?

In Puget Sound, areas of low oxygen can result from large algal blooms triggered by excess nitrogen in the presence of sunlight. When the algae die, bacteria consume available oxygen as they breakdown the decaying organisms.

Where & when does it occur?

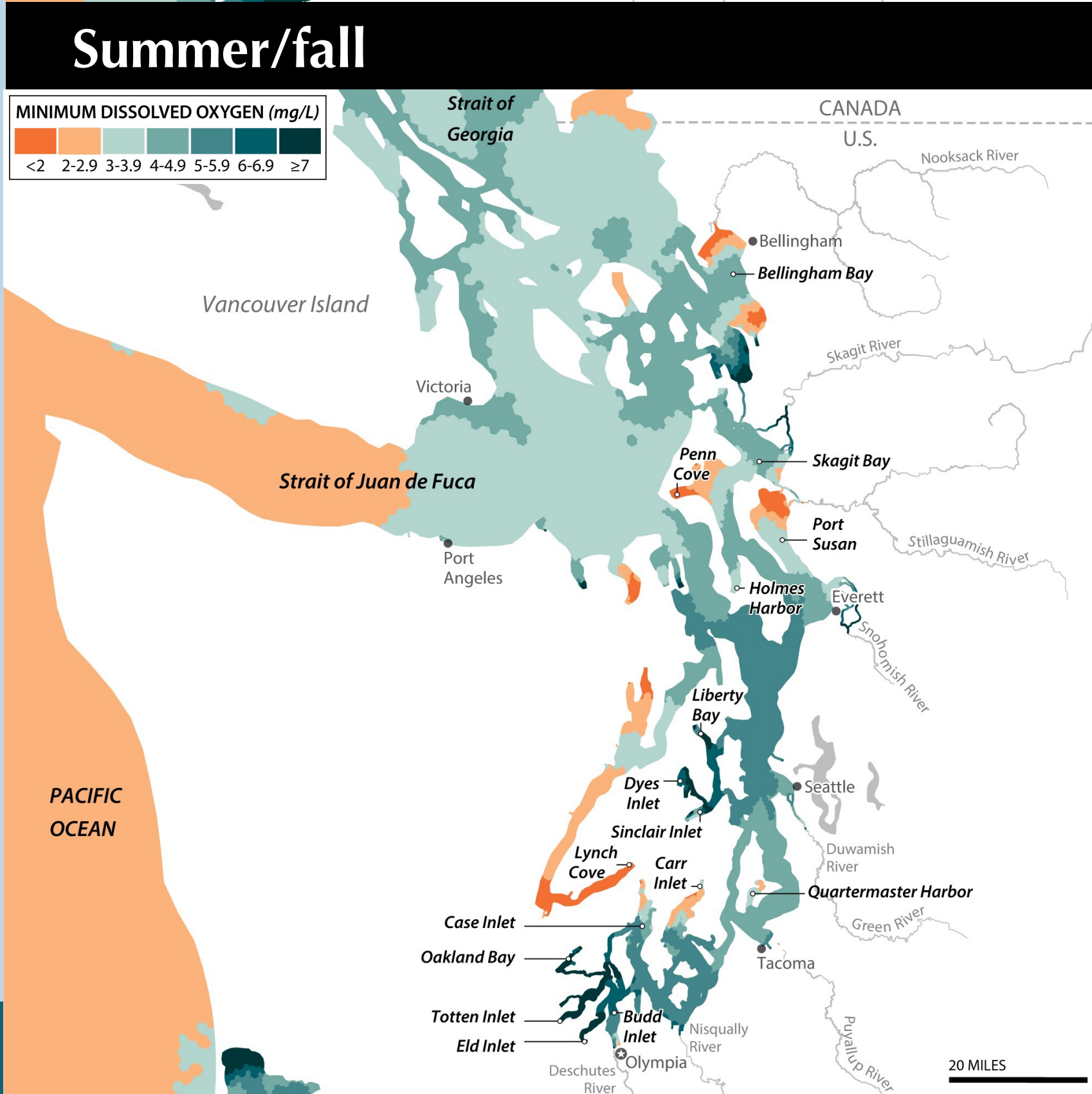
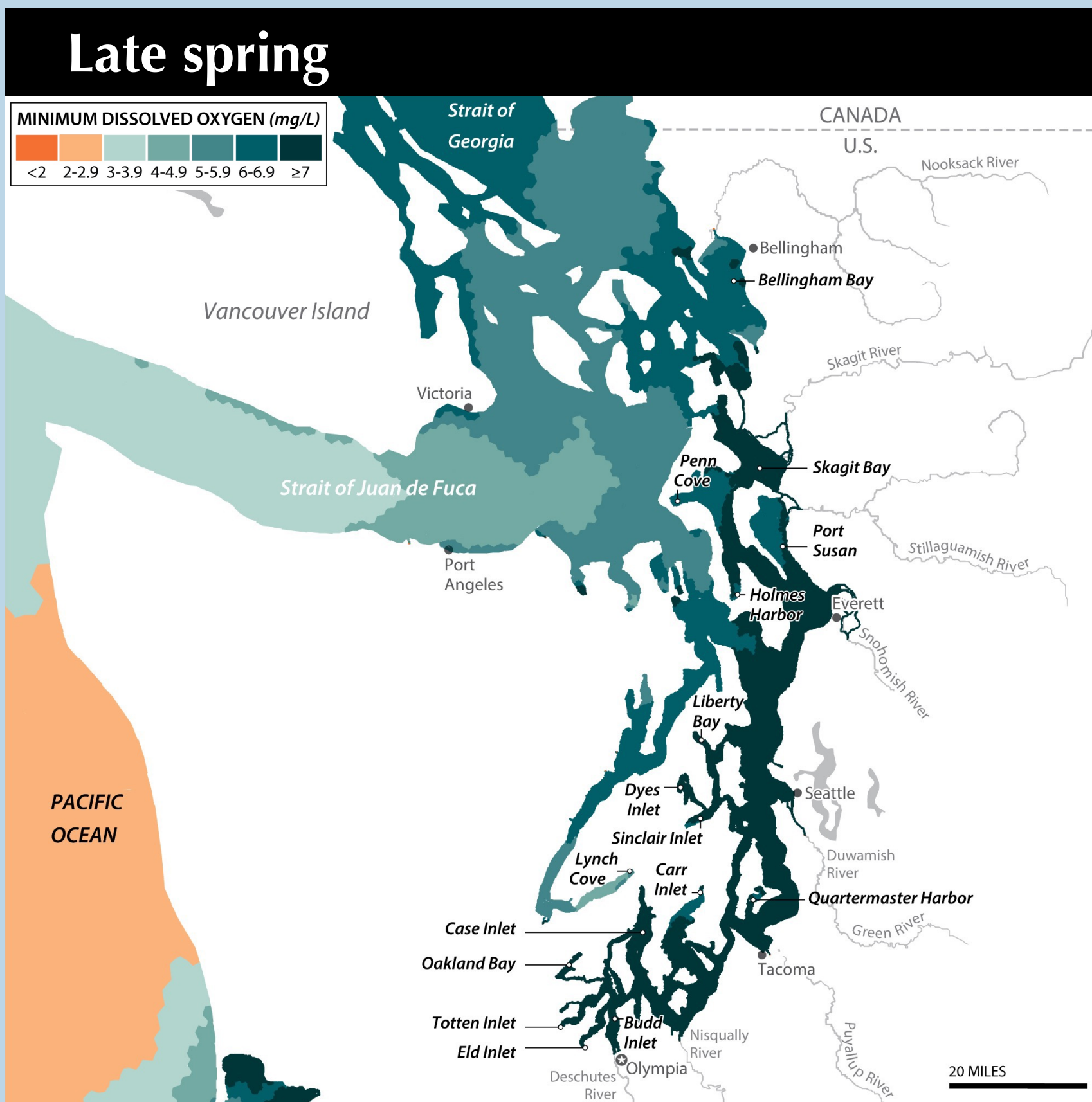
Low dissolved oxygen occurs naturally in the ocean and in Puget Sound, particularly where circulation is poor, including deep waters, and some bays and inlets. Dissolved oxygen is typically lowest in late summer or early fall, when there are enough nutrients and sunlight to drive the biological processes that cause it.

Natural or not?

While low dissolved oxygen occurs naturally, human activities such as wastewater treatment and agriculture also contribute, and climate change can make the effects worse. Where dissolved oxygen is naturally low, fish and other aquatic organisms will typically move away, acclimate, or adapt over time. Human activities that change when and how long organisms are exposed to low dissolved oxygen can increase their risk of dying.

Areas of concern

The 16 bays and inlets labeled with pointer lines are areas identified by state regulators where human activities may further decrease dissolved oxygen.



Watch!

How dissolved oxygen changed over one year in Puget Sound
<https://youtu.be/G5Qs00liXXo>

Sources

Ahmed et al. 2019

Mohamedali et al. 2011

Maps: Salish Sea Model using data from 2014

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