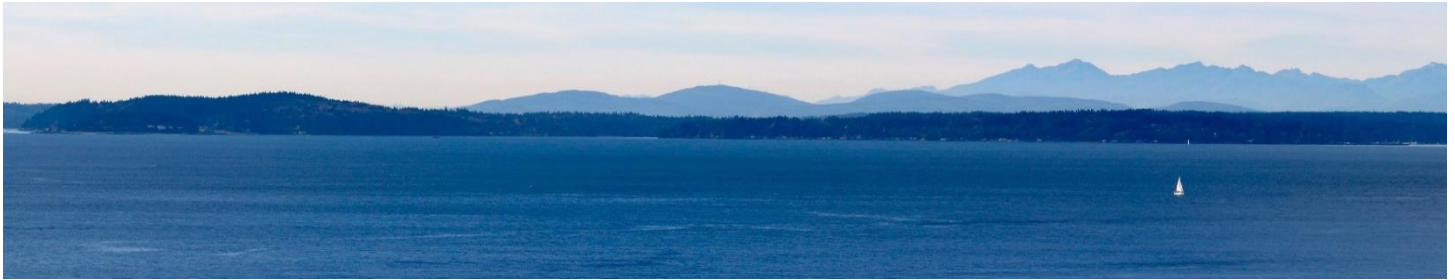


# Focus on: Reducing Nutrient Pollution in Puget Sound



## Why it matters

Puget Sound water quality is degraded by excess nutrient pollution from the impacts of people living in the region.

We use data and modeling to help us understand the impacts of nutrient pollution and develop a plan for reducing human sources of nutrients.

## Contact information

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## Special accommodations

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-6600 or visit <https://ecology.wa.gov/accessibility>.

People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

## Excess nutrients lead to an unhealthy Puget Sound

Science and modeling shows human sources of nutrients are leading to low dissolved oxygen (DO) levels and unhealthy water quality in Puget Sound. Excess nutrients act like a fertilizer, causing excessive algal and plant growth. More plants sound like a good thing, but when these algae and plants die, their decomposition uses up oxygen. Just like humans, aquatic organisms need oxygen to survive and thrive. Because of excess nutrients, many parts of Puget Sound may not have enough oxygen for marine life to survive.



Other signs of nutrient pollution and an unhealthy Puget Sound include:

- Intensified fish kill events in sensitive areas of Puget Sound
- Increased acidity of the water, which threatens shellfish
- Marine food web shifts that prevents salmon and orca recovery
- Increases in harmful algal blooms and nuisance species like jellyfish



Algal bloom viewed by boater in Puget Sound



Nuisance macroalgae washed up on Puget Sound beach

## Coordinated approach to reducing nutrients

The [Puget Sound Nutrient Source Reduction Project](#) is our collaborative effort to address human sources of nutrients. Building on nearly two decades of study, we convened the Puget Sound Nutrient Forum in 2018, to engage regularly with stakeholders and the public on the latest science to find solutions for nutrient reduction in Puget Sound.

Since convening, the Forum has hosted regional scientists to present their research on nutrient impacts. We have also worked with the Forum to develop modeling scenarios to help understand when, where, and how these impacts occur. The Forum and scientific community are integral in helping us develop solutions for reducing nutrients to Puget Sound.



## What we've learned from modeling

Our strategy for nutrient reduction is guided by the results of Ecology's Salish Sea modeling. We use the [Salish Sea Model](#) to test the outcomes of different scenarios to help us identify potential solutions for improving Puget Sound water quality. Our modeling results, peer-reviewed and published in our 2019 Bounding Scenarios Report, show that:

- Nutrients discharged from wastewater treatment plants (WWTP) significantly contribute to low dissolved oxygen levels throughout Puget Sound.
- Human sources of nutrients in watersheds also contribute to this problem and we need nutrient reductions from both WWTPs and watersheds, which include other permitted and unpermitted sources of excess nutrients.

Our second phase of modeling (2019-2021) will inform how we set nutrient load targets in the Puget Sound Nutrient Management Plan. This plan focuses on reducing human sources of nutrients, including WWTPs and watershed sources, and a draft will be released for public comment in 2022. We will continue to engage the Forum and solicit feedback on elements of this plan as we develop it.

## Using science to find solutions

### Wastewater treatment plants (WWTPs)

In January 2020, after receiving stakeholder support, we decided to start developing a general permit as the best regulatory mechanism to address WWTP discharges of excess nutrients. We formed a representative stakeholder advisory group and will continue to meet throughout 2020 to develop recommendations for this general permit. Visit the [Nutrients General Permit webpage](#) for more information.

### Watershed sources:

Our near-term strategy to address watershed sources of excess nutrients is to strengthen and focus our ongoing efforts to identify and control pollution sources, such as agricultural runoff, septic systems, and unmanaged stormwater. Over the long-term we will develop science and watershed models to help us prioritize and adaptively manage our efforts to reducing watershed sources of nutrients.

## For more information on the Puget Sound Nutrient Reduction Project:

Visit <https://ecology.wa.gov/PSNRP> to learn more about our plan for reducing nutrients.