Puget Sound Nutrient Briefing

December 10, 2025

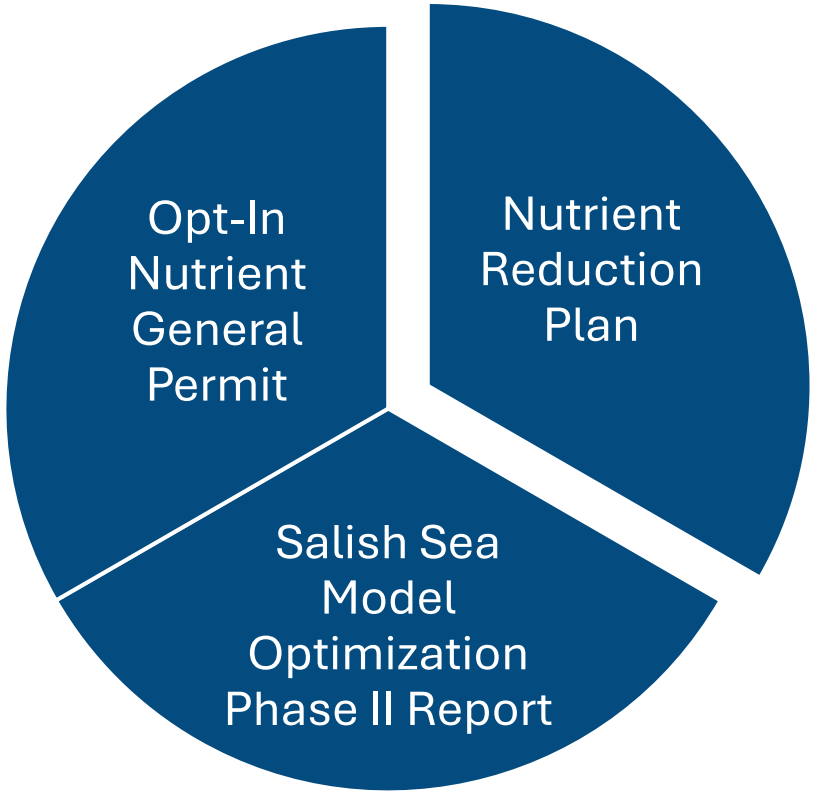
Jacque Klug

Nutrient Management Coordinator

Nutrient Update

- Regulatory Update
- Legal Update
- Marine Science Update

Puget Sound Nutrient Proposals (June 2025)



Puget Sound Nutrient General Permit

Puget Sound Nutrient General Permit (PSNGP) (*Effective 2022-2026)**
**Invalidated February 28, 2025*
Requirements: Action Levels, Optimization, Monitoring, Corrective Actions, and a Nutrient Reduction Evaluation

Draft Opt-In PSNGP Published for Public Comment (June – August 2025)
Requirements: same as original PSNGP; duration shortened to 2026-2027 Nutrient Reduction Evaluation plan due June 30th, 2026
Expected reissuance: ~~Q3 - Q4 2025~~ → Q1 2026?

Puget Sound Nutrient Reduction Plan

Draft ***nitrogen load targets for wastewater treatment facilities and watersheds***

- *Targets were based on more aggressive treatment levels than required to be studied under the PSNGP*

<u>Proposed Implementation Timelines</u>

- Plan finalized = ~~2025~~
- Effluent Limits Established = 2031
- Wastewater Upgrades = 2050

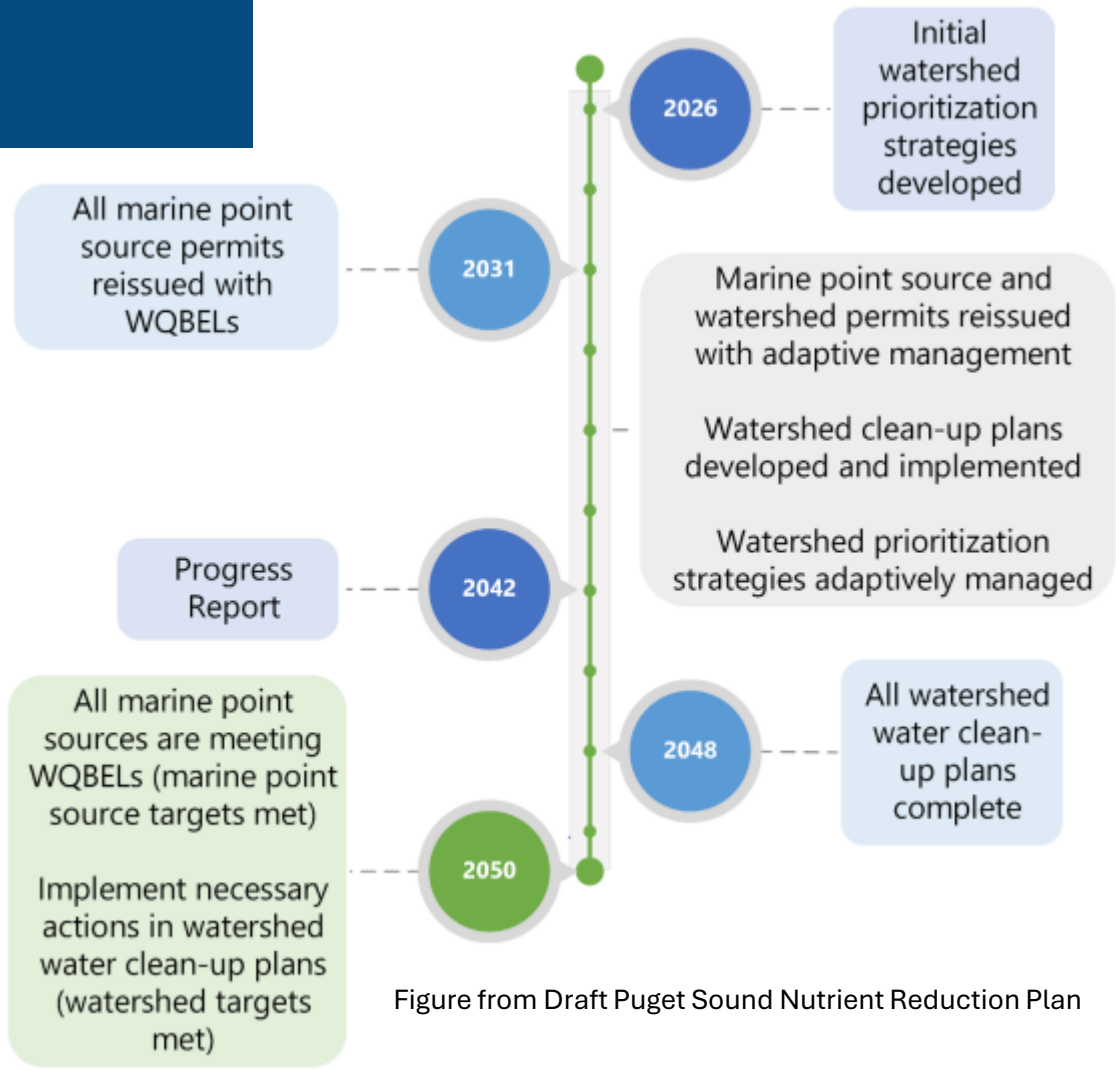
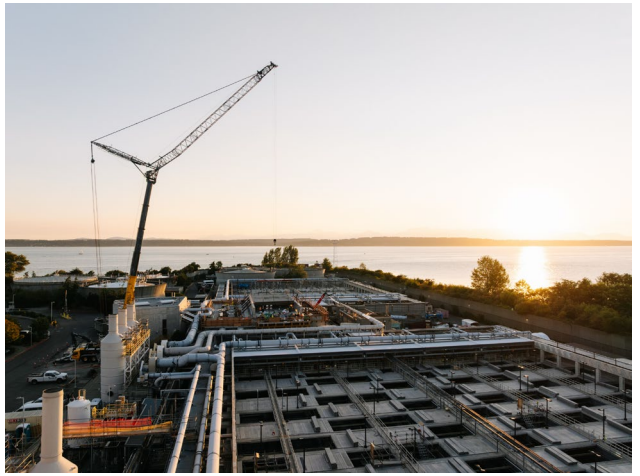


Figure from Draft Puget Sound Nutrient Reduction Plan

WTD's Nutrient Management Actions

- Optimizing current treatment technologies
- Wastewater monitoring and reporting
- Nutrient Reduction Evaluation planning
- Marine research and monitoring



Current nutrient path is expensive, slow and uncertain

Coordination and consensus is necessary to address nutrient pollution in Puget Sound.

Nutrient Collaborative Process

- King County, along with many MWPAAC members, supports the Association of Washington Cities (AWC) funding request to engage the Ruckelshaus Center on nutrients.
- Request is being considered in the Governor's budget development process

AWC ASSOCIATION OF WASHINGTON CITIES

1076 Franklin St. SE | Olympia, WA 98501-1346
360.753.4137 | 1.800.562.8981
wacities.org

November 24, 2025

Governor Bob Ferguson
Office of the Governor
PO Box 40002
Olympia, Washington 98504-0002

We, the undersigned mayors, chief executives, and utility leaders from across the Puget Sound region are writing to share our commitment to Puget Sound health and to convey our serious concerns about the state's current path toward nutrient regulation for municipal wastewater treatment plants as proposed by the Department of Ecology.

This regulatory approach will require wastewater plant upgrades that are projected to cost over $25 billion, before accounting for inevitable cost overruns. This will result in millions of Washingtonians seeing their utility bills double, triple or more – some by hundreds of dollars more per month. Cities and wastewater utilities have been engaged with Ecology on this topic for many years. We are committed to addressing excess nutrients and low dissolved oxygen; yet we are also aware of scientific uncertainty as to whether these investments will result in measurable positive benefits for the Sound.

In sum, the stakes are enormously high, and we must get this right.

Local governments are on the front lines of providing essential services, and our residents are struggling to absorb the cost of providing those services. We see, as you do, the rising affordability challenges that are compounding across our communities. Utility bills are now joining the increasing costs for housing, transportation, and food as major pressures on household budgets.

We ask for your leadership. We are committed to improving water quality and developing cost-effective strategies by working together. Washington can do better than a zero-sum approach. We want to find solutions that will provide tangible environmental benefits backed by solid scientific justification, and that can be achieved faster and at a manageable cost.

"With such high stakes, we must get this right."

Ruckelshaus Center, which has a proven track record of facilitating durable, consensus-based

ratepayers and residents. Such an approach could be coordinated with revisions to Ecology's general permit and advanced restoration plan.

strong cities | great state

Legal Update

- West Point NPDES Permit Appeal – Decided August 2025
  - *Puget Soundkeeper Alliance v Ecology, King County and City of Tacoma, waiting Ecology action on PSNGP*

- Northwest Environmental Advocates v EPA – Expected decision early 2026
  - *City of Tacoma and King County intervenors with EPA, response briefs due December 19th*

Marine Science Update

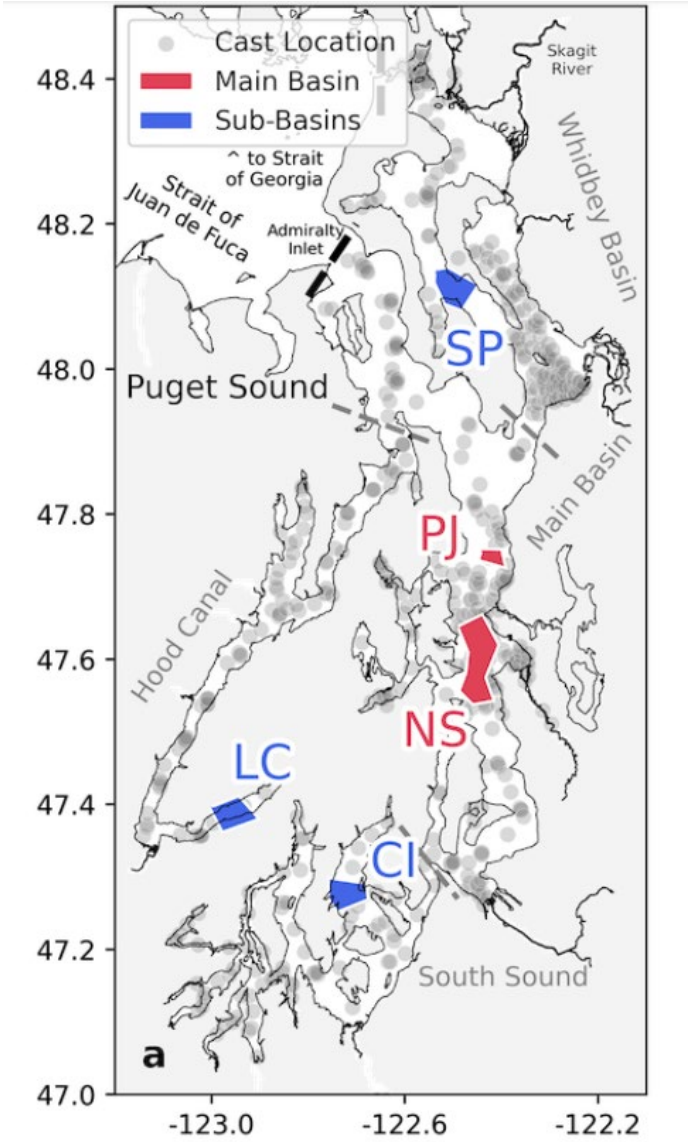
Marine Water Quality Monitoring

- Central Puget Sound Basin (18 sample sites)
- Whidbey Basin (10 sample sites)
- Data is publicly accessible online

University of Washington Research Explores Temperature/Oxygen Connection

- UW graduate student, Dakota Mascarenas, analyzed available data over 100 years to assess trends in salinity, temperature, and dissolved oxygen, and explore how climate-driven warming influences these critical parameters.

- <u>Key Findings</u>
  - Temperature increased 1-2 degrees C over 100 years
  - Temperature could explain **40-100% of decrease in DO in the sites examined**



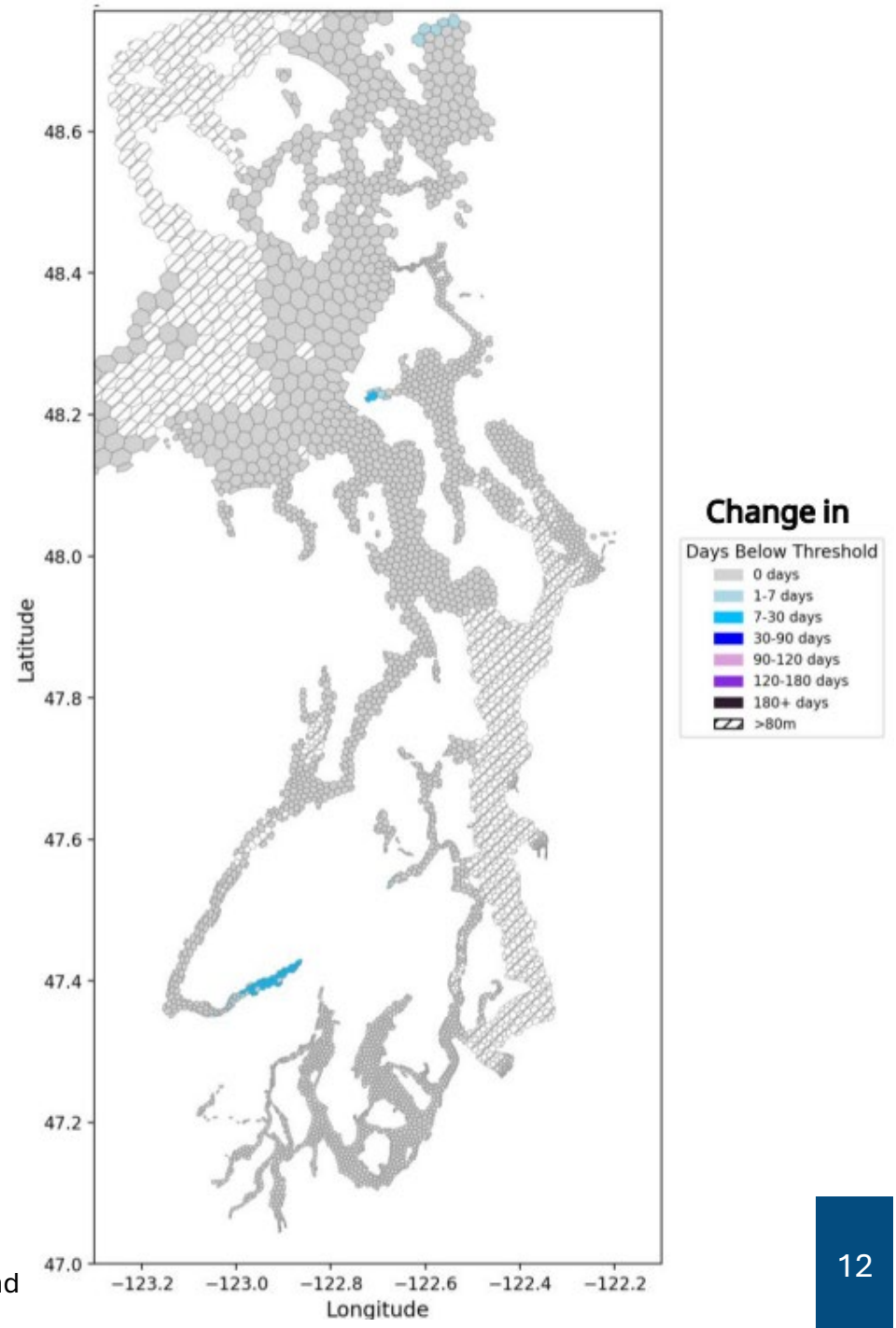
Source: Mascareneas et al. 2025 DOI: 10.22541/essoar.174461801.10035683/v1

Temperature/Oxygen Connection

University of Washington scientists are studying temperature and oxygen to identify when and where species in Puget Sound are most vulnerable.

- **Chinook salmon:** Chinook salmon can live normally throughout Puget Sound, even in areas that are considered to be DO impaired.

- **Dungeness crabs:** Oxygen levels naturally drop too low for Dungeness crab in some embayments (shown left). Modeling suggests this occurs due to naturally low DO conditions, but human nutrients could contribute to a few additional weeks each year.



Source: Essington, Mazzilli and Kanoiia 2025

Scientific uncertainties and gaps that must be addressed to develop regulations

- Reevaluate the marine dissolved oxygen standards to determine what standards are needed to protect aquatic life in the Sound and to what extent those standards are reasonably attainable.
- Acknowledge and consider scientific uncertainties, relating to the influence of climate change and modeling skill and precision, in the nutrient reduction actions and adaptative management framework.

Next Steps

- Evaluate final PSNGP (~ early 2026)
- Communicate and coordinate on nutrient policy and legislative activity
- Communicate on science work products and workshops

Thank you

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King County | Wastewater Treatment