

What is the Puget Sound Nutrient Source Reduction Project?

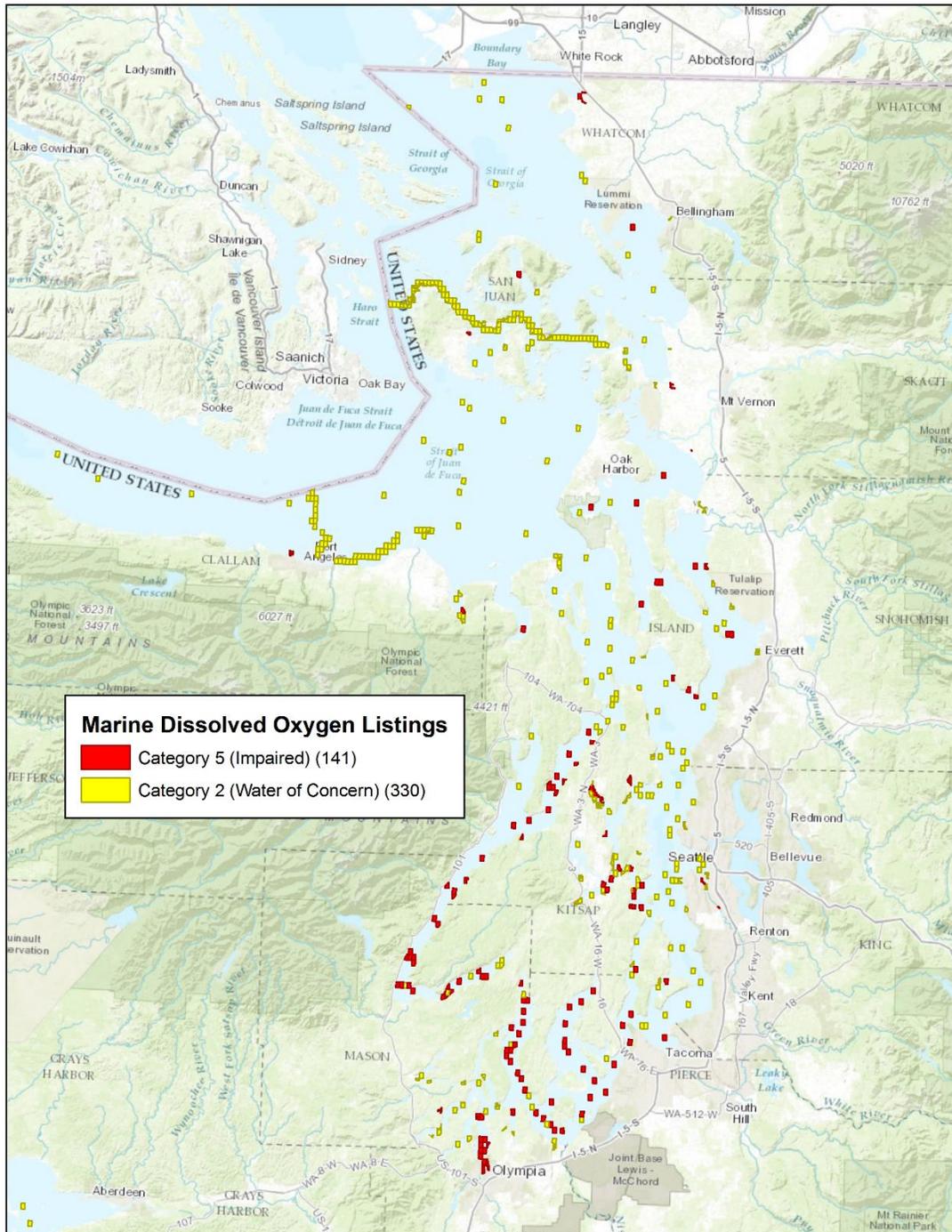
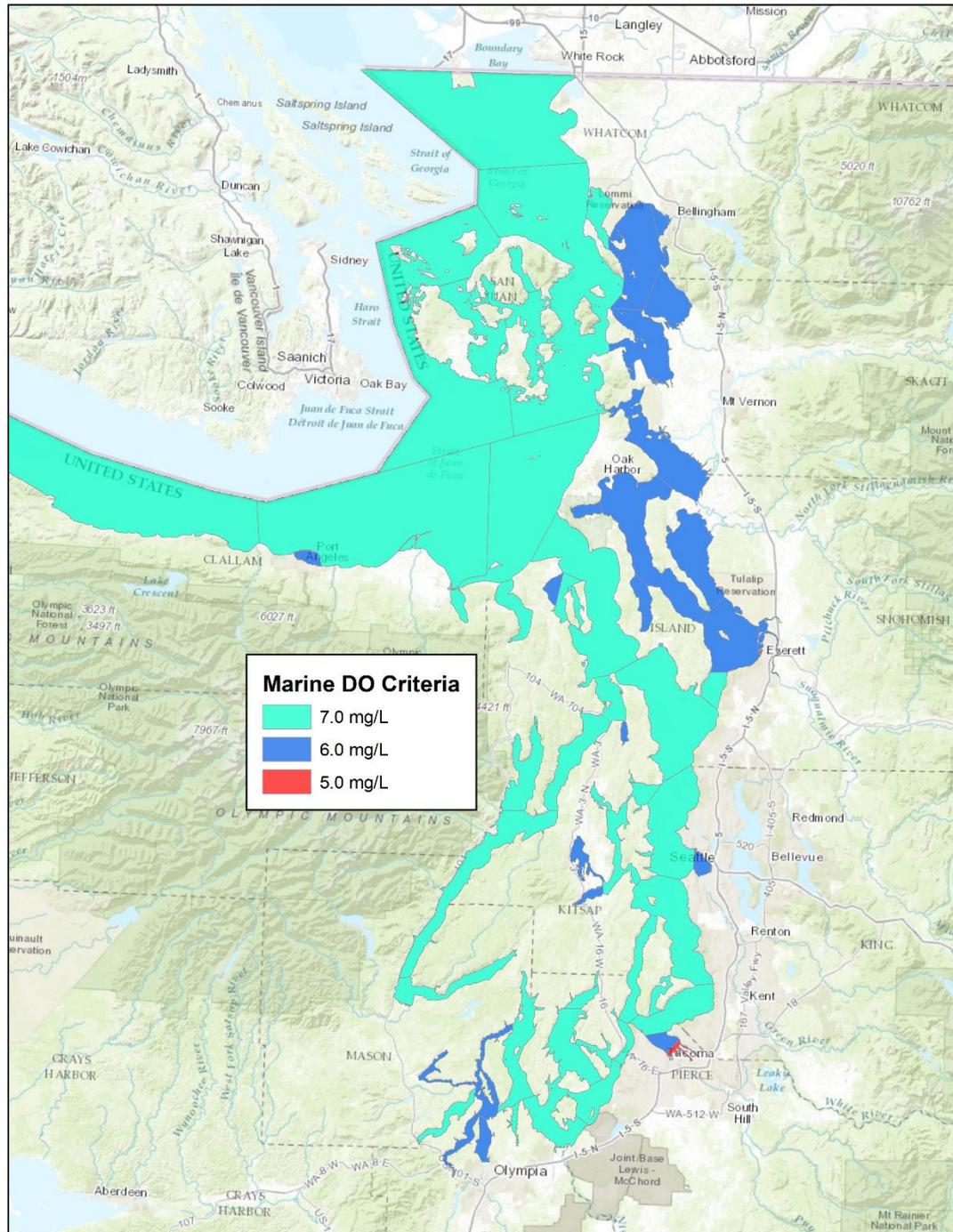
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Photo Credit: Dustin Bilhimer



What Prompted This?

- ◇ 303(d) listings for marine Dissolved Oxygen
- ◇ 2006 – 2014 South Puget Sound DO Study
 - ◇ Mohamedali et al, 2011; Ahmed et al, 2014; Roberts et al, 2014 (two reports)
- ◇ 2011-2017 Salish Sea Model Development
 - ◇ Pelletier et al, 2017 (two reports)
- ◇ Increasing recognition that over-enrichment of nutrients from human sources contributes to low dissolved oxygen problems

Project phases

Phase 1: Now – Spring 2018

Provide and communicate best available science so the public and stakeholders understand the problem

Phase 2: 2018 – 2021

Collaboratively develop a nutrient reduction plan for Puget Sound

Phase 3: 2022 – 2032+

Implement the nutrient reduction plan to improve water quality in Puget Sound



Photo Credit: Jude Apple

Finding Solutions Together

- ◆ Value partnerships to develop meaningful solutions
- ◆ Explore options for integrating this project Puget Sound Recovery strategic initiatives and implementation strategies
- ◆ Active stakeholder engagement



Water Quality Target

- ◆ Nitrogen and Organic Carbon are the two surrogates for Dissolved Oxygen that need reductions
- ◆ WAC 173-201A-210 (1)(d)(i):
 - ◆ Total human sources cannot lower DO more than 0.2mg/L from natural condition
- ◆ Must protect designated aquatic life and aesthetic uses
- ◆ Using the Salish Sea Model to determine the reference condition
 - ◆ Reference Condition \approx Natural Condition
 - ◆ No human sources, current ocean boundary condition



Defining What Healthy Looks Like

- ◆ The Reference Condition- no human sources
- ◆ Nutrient Levels that:
 - ◆ Brings impaired areas to within 0.2mg/L of the DO reference condition
 - ◆ Supports healthy nearshore and open water ecosystems
 - ◆ Provides resiliency for Puget Sound during extreme climate change events

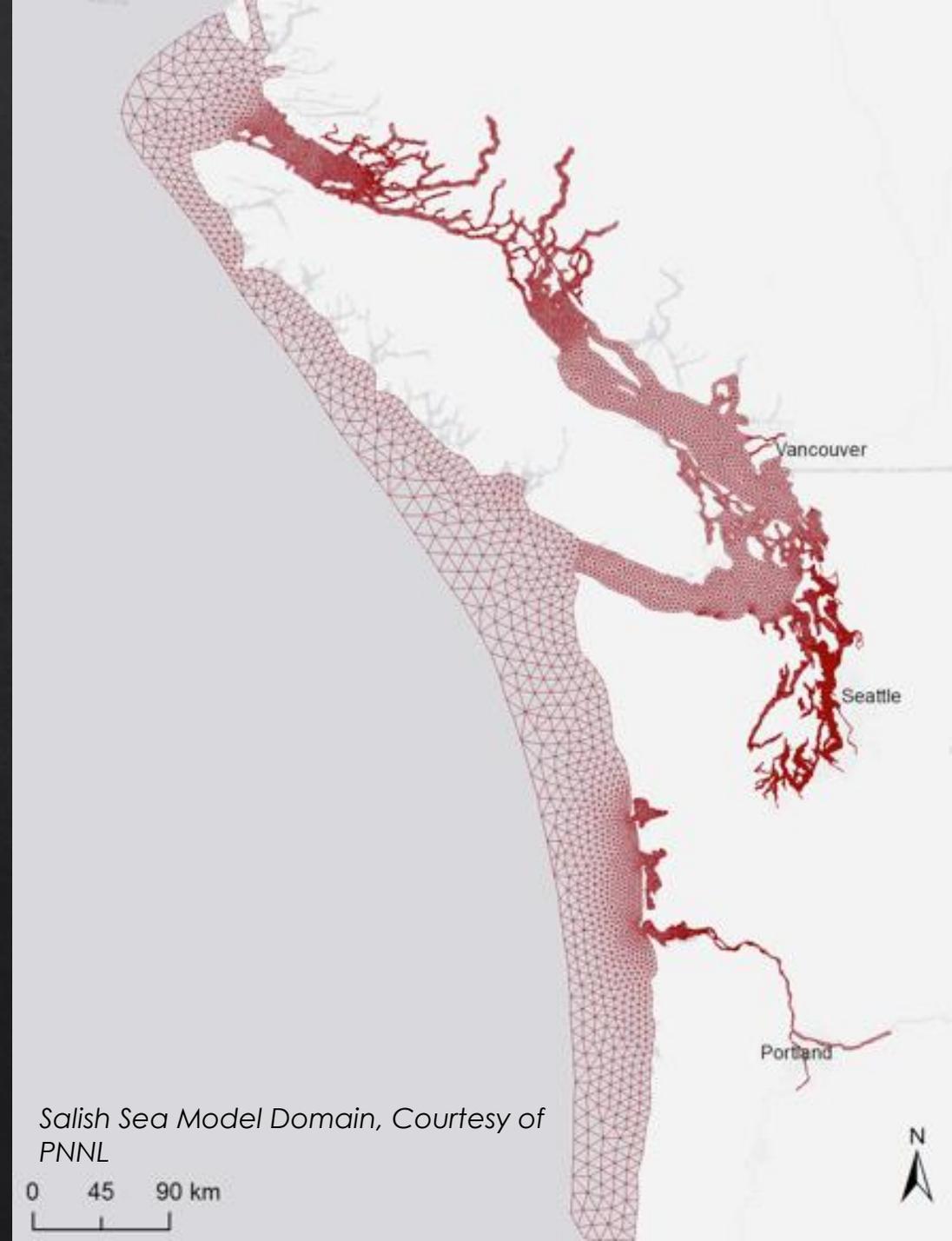


Phase 2: Identify Opportunities

- ◆ Identify opportunities to find creative solutions for nitrogen and carbon reductions
- ◆ Added ecological benefits/value from reducing nutrients
- ◆ Biggest bang for the buck
- ◆ Long-term protections
 - ◆ Planning for future growth and impacts from climate change
 - ◆ Increase Puget Sound's resiliency by providing room to grow sustainably

Evaluate Potential Solutions

- ◆ Quantify and evaluate key actions to determine their efficacy and value using the Salish Sea Model and other tools
- ◆ Does the suite of key actions meet our water quality goals?



Develop a Nutrient Implementation Strategy

- ◆ Create a prioritized schedule for the key actions needed to meet our water quality goals
- ◆ Develop a monitoring strategy to measure improvement towards goals
- ◆ Align Federal and State public funding assistance

Phase 3: Implement Key Actions

- ◆ Implement the schedule and key actions
- ◆ Measure our progress towards meeting our recovery goals.
- ◆ Course-correct along the way (Adaptive Management)





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Questions?



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