Puget Sound Nutrient Forum

Connecting the Forum to the Implementation Strategy

May 30, 2018

Presented by: Dustin Bilhimer, Project Manager
ECY Water Quality Program
Presentation Overview

• What we are working towards:
  • Puget Sound Nutrient Management Plan
  • Relationship between the Forum and Marine WQ Implementation Strategy (MWQ IS)
• Questionnaire responses we received and turned into a Forum schedule
Regulatory Connections

Federal Clean Water Act

- National Estuary Program (Puget Sound Partnership)
- Watershed Planning/TMDLs Program (Ecology)
- NPDES Program (Ecology)
- Individual and General Discharge Permits

WA State Water Pollution Control Act (RCW 90.48)

- State Nonpoint Pollution Program (Ecology)

Puget Sound Nutrient Source Reduction Project

Public Involvement Processes

- Implementation Strategies
- Public Advisory Groups
Develop and implement a Puget Sound nutrient source reduction plan to guide regional investments in point and nonpoint source nutrient controls so that Puget Sound will meet DO water quality criteria and protect aquatic life designated uses by 2040.
3 Primary Activities

• Marine Water Quality Implementation Strategy (MWQ IS):
  • Process that is part of the Puget Sound recovery process
  • Prioritizes actions and informs investments in recovery including National Estuary Program funding of Action Agenda and other programs

• Puget Sound Nutrient Forum (Forum):
  • Public Advisory Workgroup to inform Ecology’s significant regulatory actions
  • Discuss issues and barriers to implementation

• Salish Sea Modeling:
  • Testing the water quality response to different scenarios of nutrient load reductions from human sources
**Relationship between Forum and MWQ IS**

**MWQ Implementation Strategy**
- State of Knowledge
- Monitoring Needs
- Research Needs
- Logic Models
- Adaptive Management

**Nutrient Forum**
- Identify and discuss:
  - permit strategy elements
  - nonpoint approaches
- Regulatory needs
- Stakeholder and tribal Communication

**Salish Sea Modeling**
- Bounding Scenario runs
- Create model inputs for optimization scenarios
- Run the model
- Analyze model outputs

**Develop shared understanding of the model approach**

**Shared Work**
- Programmatic Approaches
- Costs
- Regional Priorities

**Shared Work**
- Understanding the problem
- Inform nutrient reduction optimization scenarios
- Discuss analysis of outputs
- Identify elements of scenarios that work or need refinement
Information from these 3 activities will be synthesized by Ecology into a plan for Puget Sound Nutrient Management Plan.
Elements of a Puget Sound Nutrient Management Plan

- Describes the problem and response to improvements
- Nitrogen and Carbon load reduction targets
- Strategy to address nutrient sources
- Point and nonpoint sources
- Measuring progress and adapting plan
- Funding plan
Steps to Develop a Nutrient Management Plan

- Define the problem (synthesize and interpret available data)
- Establish water quality objectives and recovery targets
- Evaluate nutrient control strategies for point and nonpoint sources
- Consider alternative reduction scenarios
- Test alternatives with Salish Sea Model
- Identify funding to implement best alternative
Challenges

To find the best solutions for nutrient reductions that are:

- Implementable
- Effective
- Efficient

Achieved by:

- Conducting a transparent process
- Discussing issues and variety of perspectives
- Getting input from those who will be doing the work
Implementation Issues Questionnaire

1. What do you want to know more about?

2. What does healthy water quality in Puget Sound look like to you?

3. What are your significant issues regarding implementation?

4. Other concerns?

Themes we heard:

Science Involvement  Forum/MWQ IS Process  Costs/Affordability
WQ Standards  Certainty  Regulatory Fairness
WQ Trends  Implementation Challenges  Incentives
Model Scenarios  Implementation BMPs  Sequencing
Model Performance  Implementation Funding  Creative Solutions
Nutrient Forum Schedule

Addressing the Themes we heard
Building our knowledge base

April 25, 2018
Kickoff

May 30, 2018
WQ Standards
WQ Trends
Model Inputs
Forum/MWQ IS Process

Summer 2018
Science Involvement
WQ Trends
Indicators of eutrophication
Impacts of nutrient over-enrichment

July 16th & August 22nd
Salish Sea model
Model Performance
Model Scenarios and Outputs
Certainty

Sep-Oct 2018
Implementation: Challenges
BMPs
Sequencing
Creative Solutions

Nov-Dec 2018
Winter 2019
Regulatory Fairness
Cost/Affordability
Funding
Incentives

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Optimization Scenarios

• Help develop questions for the model to answer
• Inform model inputs
• 4 modeling iterations
• Analysis of each iteration will be shared and we’ll seek input to develop the next round
• Salish Sea modeling objective:
  • To test suites of nutrient load reductions to achieve our water quality goals
Sharing SSM Outputs Online
### General Timeline: Nutrient Management Plan

**2018**
- **J** - **F** - **M** - **A** - **M** - **J** - **J** - **A** - **S** - **O** - **N** - **D**
- Salish Sea Model Team – Bounding Scenario Model Runs

**2019**
- **E**val**u**ation **M**odeling **I**teration 1
- MWQ IS Process
- 1. Document Nutrient Forum output (elements of management plan)
- 2. Develop first suite of optimization scenario questions
- Check-in on first suite of model outputs
- Synthesize MWQ IS output into draft Implementation Strategy document, initial review
- Salish Sea Model Team – Nutrient Reduction Optimization Scenarios

**2020**
- Check-in on second suite of model outputs
- Check-in on third suite of model outputs
- Salish Sea Model Team – Nutrient Reduction Optimization Scenarios

**2021**
- Check-in on fourth suite of model outputs
- Ecology draft reports ready for review
- Ecology drafts the Puget Sound Nutrient Management Plan and SSM Modeling Report
- Evaluation Modeling Iteration 4
- Update Implementation Strategy
- MWQ IS Document Review/Finalizing

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**General Timeline: Nutrient Management Plan**

- **2018**: Salish Sea Model Team – Bounding Scenario Model Runs
- **2019**: Evaluation Modeling Iteration 1
  - MWQ IS Process
  - Synthesize MWQ IS output into draft Implementation Strategy document, initial review
- **2020**: Check-in on second suite of model outputs
  - Check-in on third suite of model outputs
- **2021**: Check-in on fourth suite of model outputs
  - Ecology draft reports ready for review
  - Ecology drafts the Puget Sound Nutrient Management Plan and SSM Modeling Report

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**Ecology drafts the Puget Sound Nutrient Management Plan and SSM Modeling Report**

**Update Implementation Strategy**

**MWQ IS Document Review/Finalizing**

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- **2021**: Check-in on fourth suite of model outputs
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**Update Implementation Strategy**

**MWQ IS Document Review/Finalizing**
Marine WQ IS Teams

Core Team (12-15 people)
- Guide the Marine WQ Implementation Strategy development
- Confirm team roles, responsibilities, work plan, communication, and timeline, draft and review written materials

Interdisciplinary Team (20-24 people)
- Actively participate in 5-6 technical workshops
- Participate in drafting and reviewing written materials and other products developed in the workshops

Will be seeking volunteers to apply beginning in June
- Need a range of perspectives, skills, technical background and experience
Questions?

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Nutrient Forum Next Steps
Susan Braley, ECY

Aerial photograph, by pilot Mike MacKay. For more information e-mail: starsailor@fidalgo.net
Questionnaire Responses covered today

✓ Understanding the science:
  ➢ Nutrient over-enrichment in Puget Sound
  ➢ A Primer on the Salish Sea Model
  ➢ Water Quality Trends

✓ Regulatory backstop: Applying DO criteria to nutrients

✓ The relationship between the Nutrient Forum and MWQ IS
Save the dates for the next two Forum Meetings (in person at Ecology in Olympia and by webinar)

- **July 16th**
- **August 22nd**

Meeting materials will be made available on the project webpage:

- [https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients](https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Helping-Puget-Sound/Reducing-Puget-Sound-nutrients)

- Please sign up for the Puget Sound DO listserv if you haven’t already

- Solicitation for the Marine WQ Implementation Strategy team will be posted in June