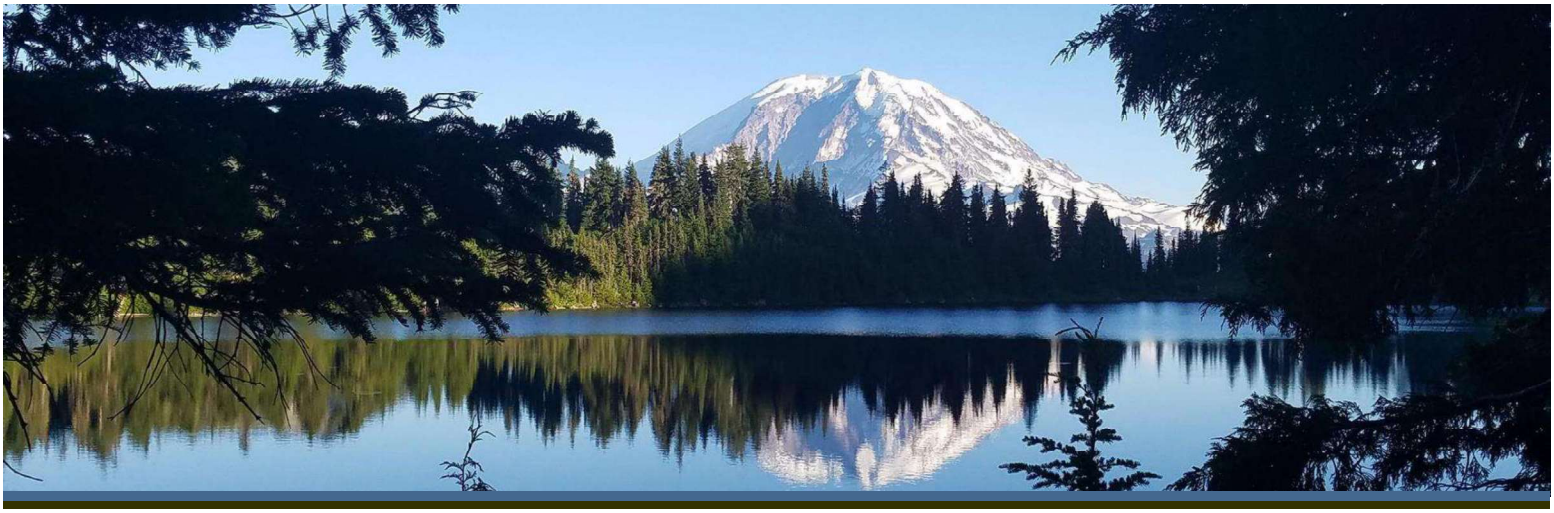


Introductory Model Development Webinar

JD Ross Leahy

Maritime Risk Modeling Specialist

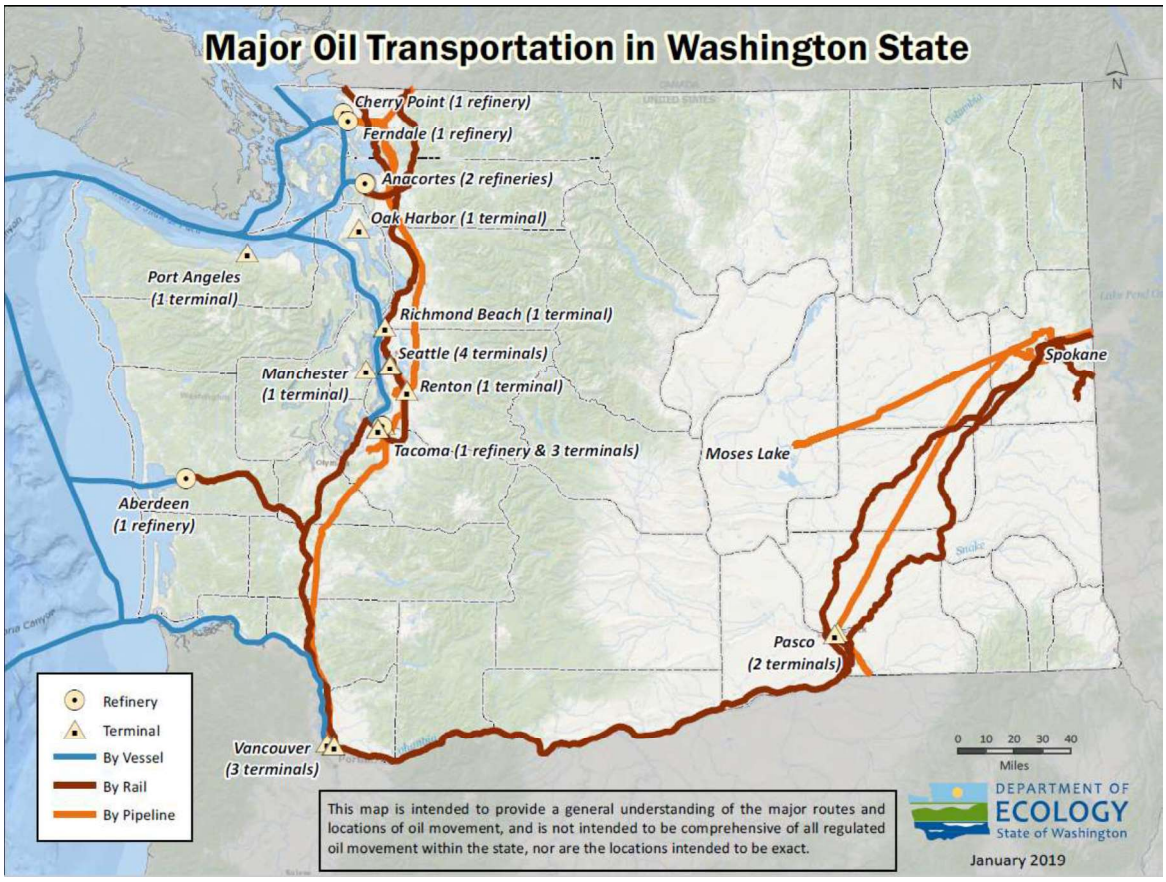
DEPARTMENT OF ECOLOGY
State of Washington

Today's agenda

1. Introduction
2. Status of Model Development
3. Outreach
4. Discussion and Feedback
5. Questions

Discussion topics

- What questions would you like the model to shed light on?
- What information should the model include?
- What concerns do you have with oil spill risk modeling?



Selected studies and risk assessments

- Vessel Traffic and Vessel Traffic Safety Report (2019)
- Clear Seas Availability of Tugs of Opportunity (2019)

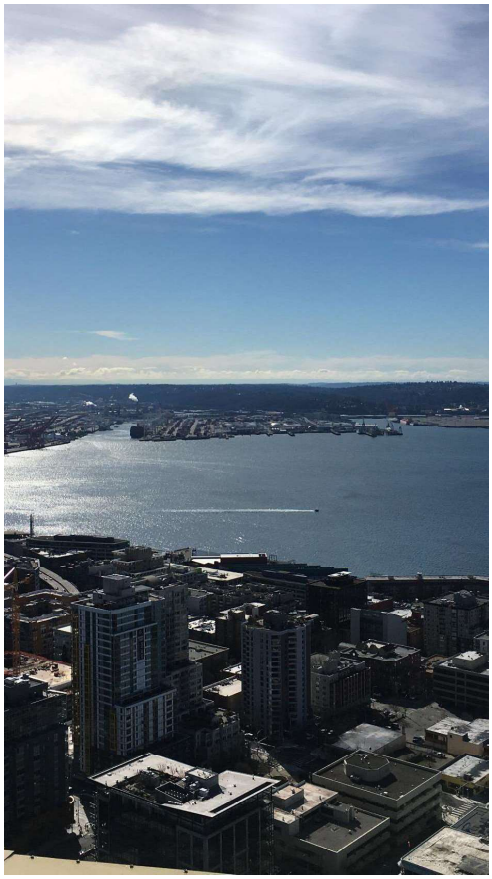
- Grays Harbor Vessel Traffic Risk Assessment (2018)

- Columbia River Vessel Traffic Safety Assessment (2017)

- Salish Sea Risk Workshop (2015)
- Vessel Traffic Risk Assessment (2015)

- Vessel Traffic Risk Assessment 2010 Update (2013)

- Volpe Scoping Risk Assessment (1997)



Legislative background

-- ESHB 1578 was passed in 2019 to reduce the risk of oil spills, and protect Southern Resident Killer Whales

-- Ecology's Spills Program tasked to undertake or assist with multiple policy initiatives in the bill, including the development of an oil spill risk model

What the law requires

"The department must develop and maintain a model to quantitatively assess current and potential future risks of oil spills from covered vessels in Washington waters, as it conducts ongoing oil spill risk assessments" – Section 4 (1)

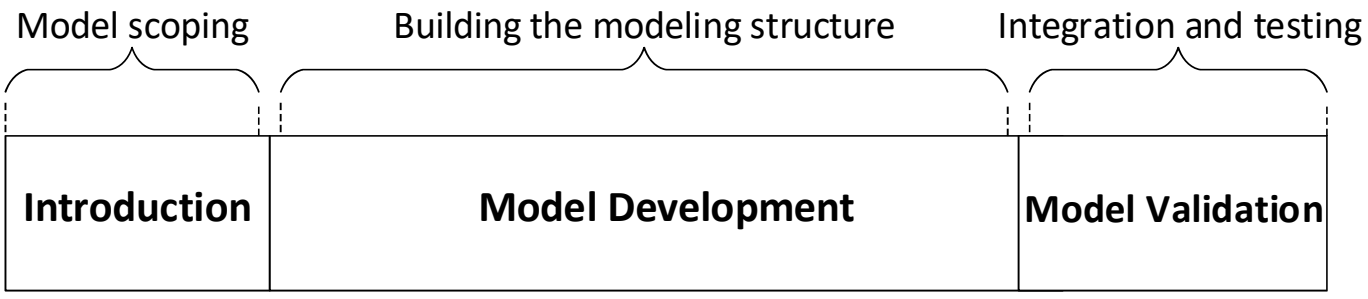
Our project team

- Adam Byrd, PhD
  Database administration, Geographic Information Systems
- Alex Suchar, PhD
  Statistical and mathematical modeling
- Melba Salazar-Gutierrez, PhD
  Statistical and mathematical modeling
- JD Ross Leahy, Licensed Master
  Maritime operations

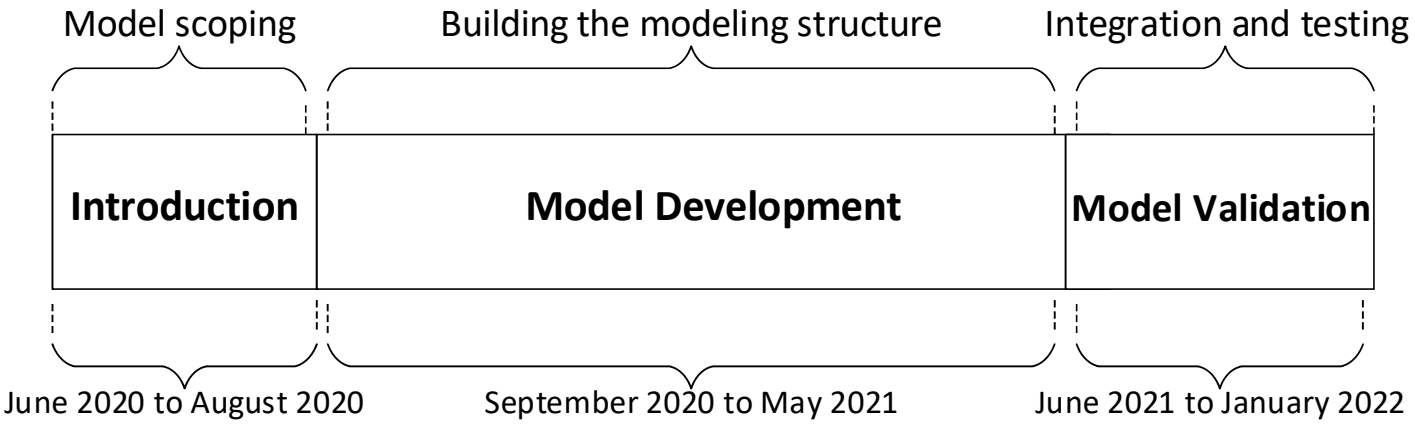
Research Philosophy

Transparent	• Open • Inclusive
Reproducible	• Well documented • Methodologically sound
Credible	• Peer reviewed • Validated

Model Development Timeline



Model Development Timeline



Requirements for the model

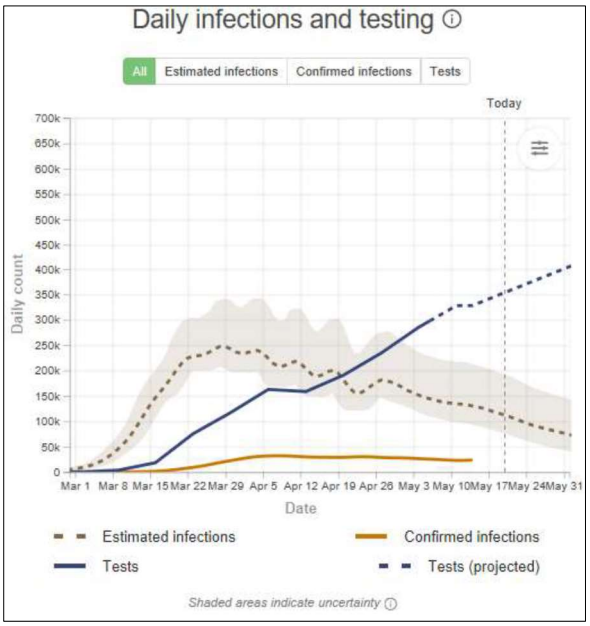
Quantitative	• Measurable and numerical results
Oil Spill Risks	• Probability of a spill • Size of a spill
From Covered Vessels in Washington Waters	• Over 300 tons & tank vessels • Salish Sea, coastal waters, Columbia/Snake rivers

What will we model?

- Likelihood of maritime incidents and accidents that could result in oil spills
- Spill volumes for spill-producing incidents and accidents
- Our initial model will not include the fate, transport, and effect of spilled oil

Why are models useful?

- Modeling can shed light on an uncertain future
- Allows comparison of different measures
- Can be a shared language for discussion



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Using the model: Response tug

- "Quantitatively assess whether an emergency response towing vessel serving Haro Strait, Boundary Pass, Rosario Strait, and connected navigable waterways will reduce oil spill risk" – Section 4(2) of ESHB 1578

Using the model: Tug escorts

- "To inform rule making, the Board of Pilotage Commissioners must conduct an analysis of tug escorts using the model developed by the Department of Ecology" -- Section 3(5) of ESHB 1578

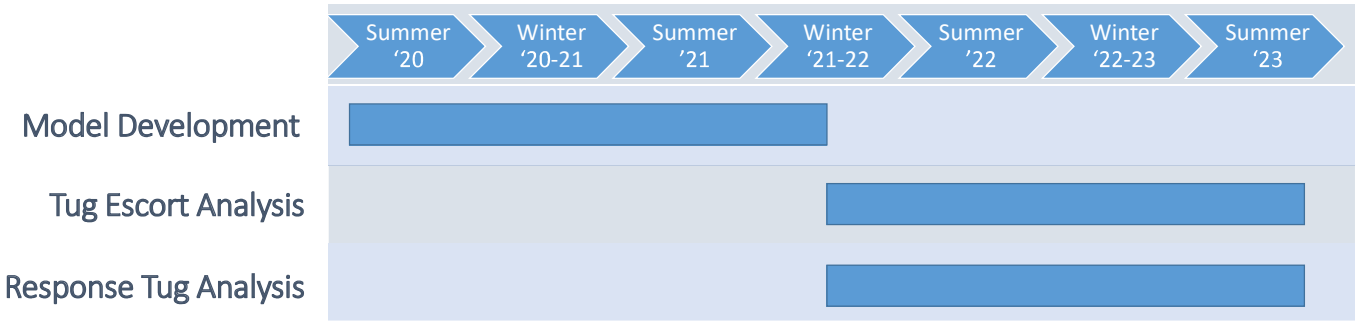
Ecology and BPC coordination on ESHB 1578

BPC Lead
- Rosario Tug Escort Implementation
- Geographic Zone Identification
- Changing Vessel Traffic Trends Synopsis
- Analysis of Tug Escorts Using Risk Model
- Conduct Tug Escort Rulemaking

Ecology Lead
- Develop Vessel Risk Model
- Report to the Legislature Regarding Emergency Response Towing Vessel
- Submission of the Results of the Tug Escort Analysis to the Legislature

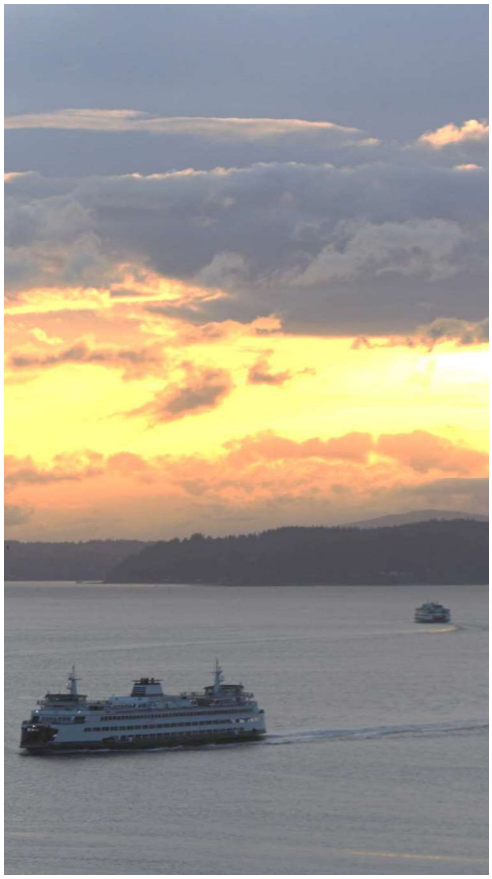
Schedule Overview

From Model Development to Completed Analysis



Goals for Outreach

- Shared understanding
- Communication of local knowledge
- To improve the model



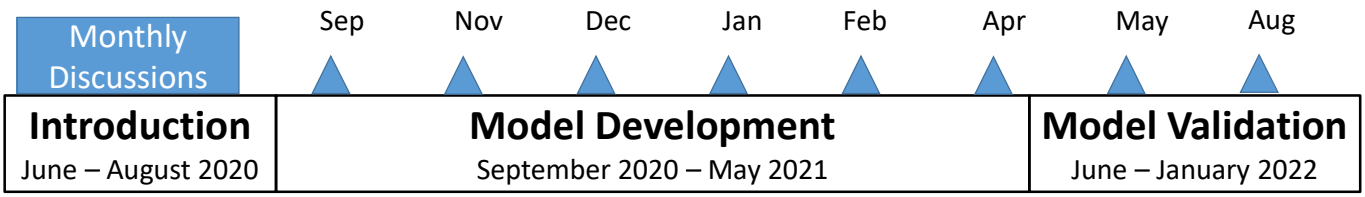
Opportunities for Input

June: Intro

July: Model Approach

Introduction	Model Development	Model Validation
June – August 2020	September 2020 – May 2021	June – January 2022

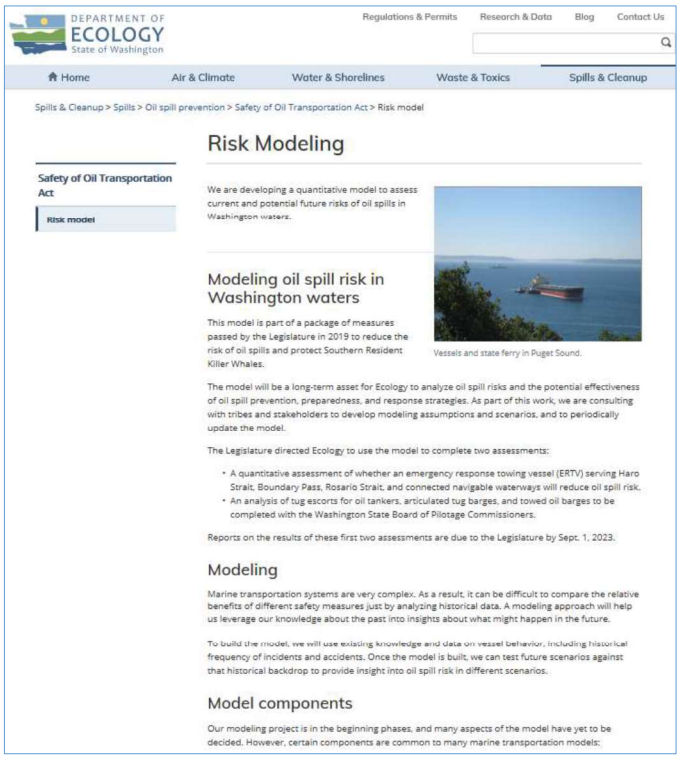
Opportunities for Input



Opportunities for Updates

Additional Resources

- Webpage
  - https://tinyurl.com/EcologyRiskModel
- Listserv
  - Sign up on Ecology's Spills Program website

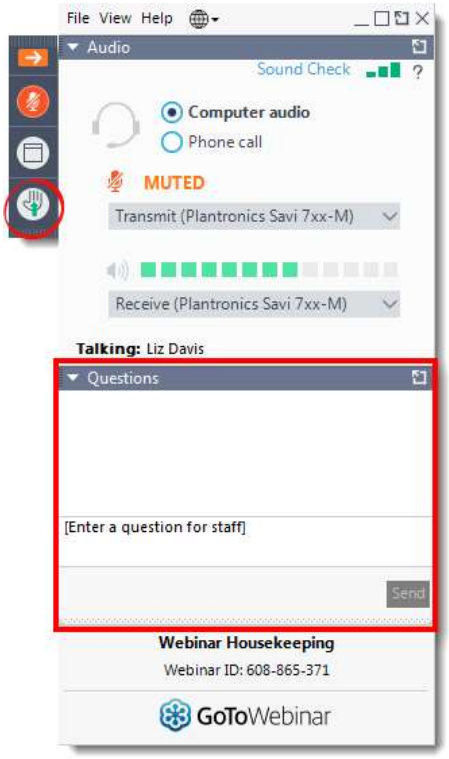


Upcoming event

July 14th 2020 -- 1 pm to 3 pm

- The science of risk modeling
- Ecology's planned modeling approach

Discussion Logistics



Discussion topics

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Additional questions or comments

Contact Info

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Prevention Section

Spill Prevention, Preparedness, and Response Program

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