

# Tacoma DeMolay Sandspit Nature Preserve

## Shoreline Restoration Project

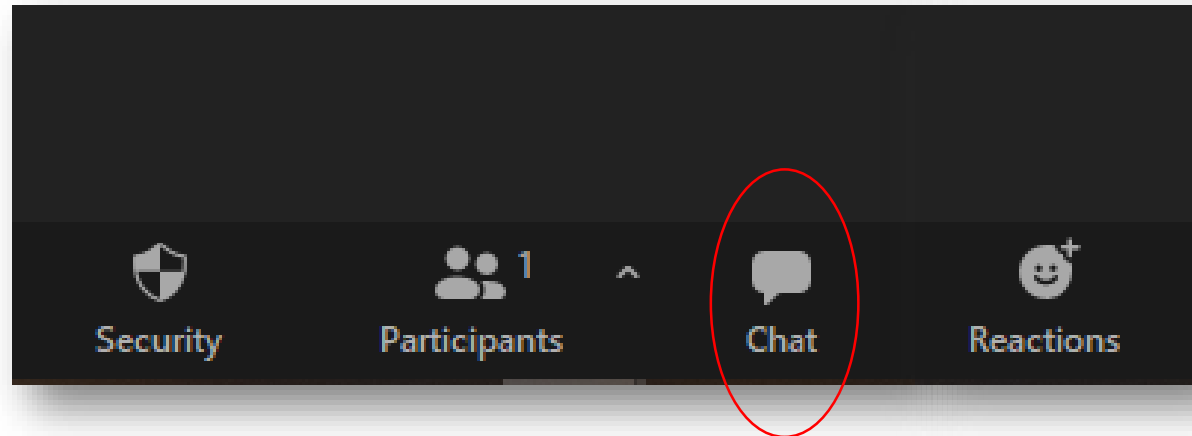
### Public Meeting #1 – April 21, 2021





# How to participate

- Post questions to the Chat feature
  - Questions will be answered between Agenda topics
- Answer Polls as they popup
- Opportunity for additional comments after tonight's meeting



# Agenda

1. Introductions to Speakers
2. Project Origins and Overview
3. Intro to Coastal Processes and Healthy Shorelines
4. Gathering Public Input
5. Next Steps



# Property purchased by PenMet Parks in 2011



“...to provide public shoreline access, habitat preservation, passive recreation” WWRP 2011



# Speakers



Eric Guenther

*Special Projects Manager*

PenMet Parks



Mary Krauszer

*Shorelines Program Manager*

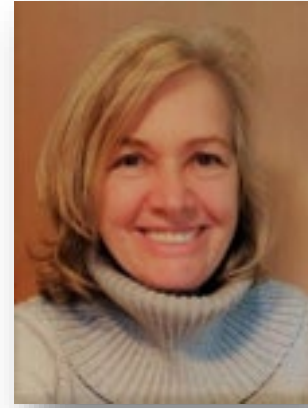
Pierce Conservation District



Jessica Coté, PE

*Principal Engineer*

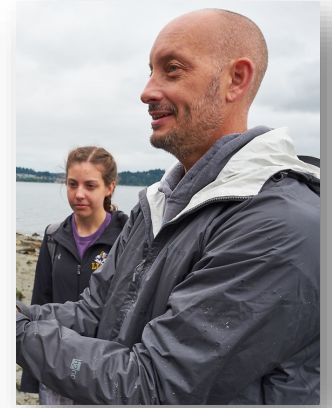
Blue Coast Engineering



Gisele Sassen, PLA, AICP

*Principal Landscape Architect*

Waterfront Environmental



Michael Behrens

*Professor of Marine Ecology*

Pacific Lutheran University



# Tell us about you

- Practice Polls
  - Who is in attendance?
  - How often do you visit the Preserve?





Water Quality  
Food Access  
Urban Agriculture  
Farm Planning  
Habitat Improvement







Bulkhead is failing





Impacting erosion





Disturbing habitat

Interrupting shoreline processes and access





OPPORTUNITY: Restore natural shoreline to benefit habitat and human use.



# Restoration Project

## Project Players



## Letters of Support



## Funders

Phase 1: Feasibility Study & Alternatives Analysis  
*Funding Secured (2021)*



Phase 2: Preliminary Design & Permitting  
*Funding Pending (2022)*



ESTUARY & SALMON  
RESTORATION PROGRAM

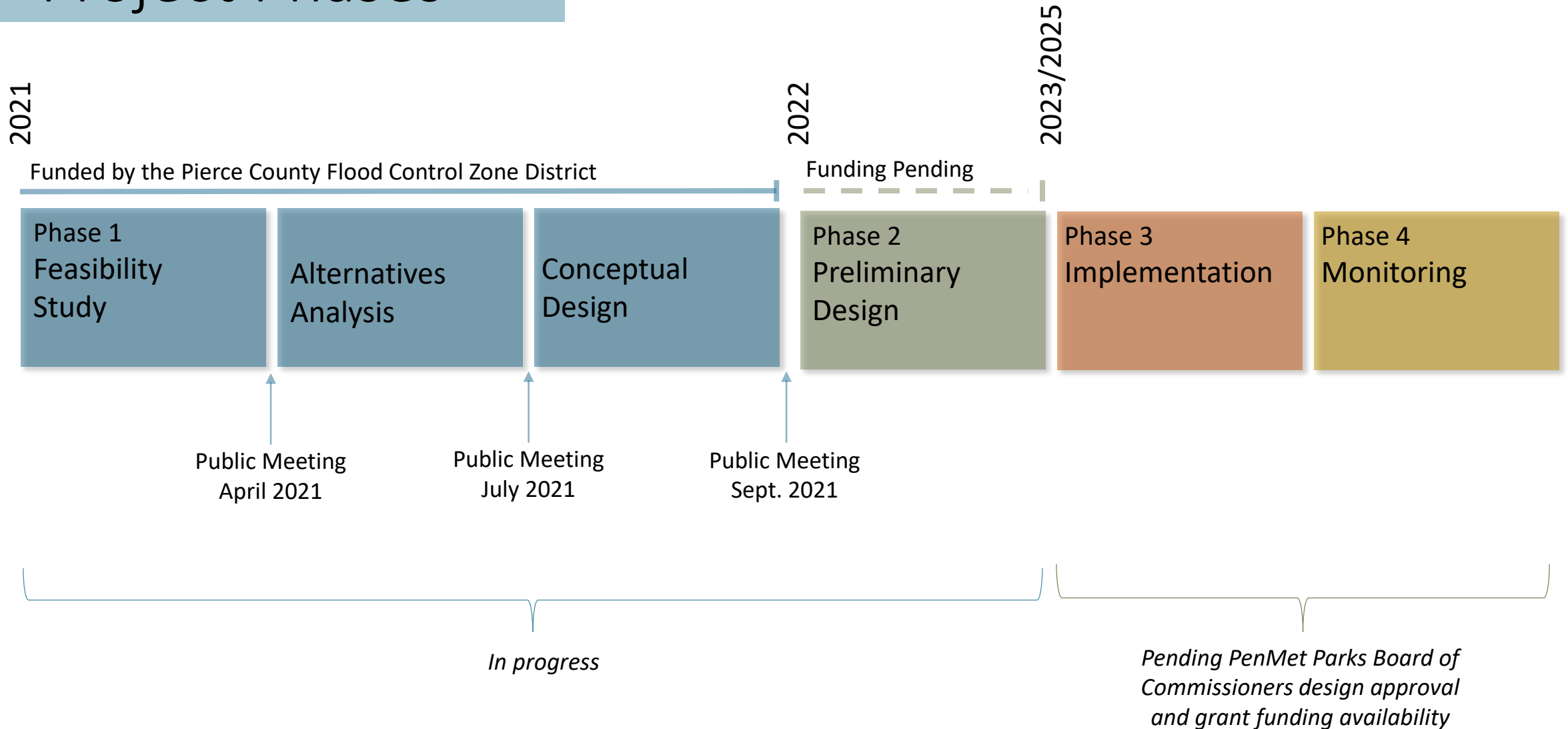


Washington  
Department of  
**FISH and  
WILDLIFE**



WASHINGTON STATE  
RECREATION AND CONSERVATION OFFICE  
**Salmon Recovery  
Funding Board**

# Project Phases



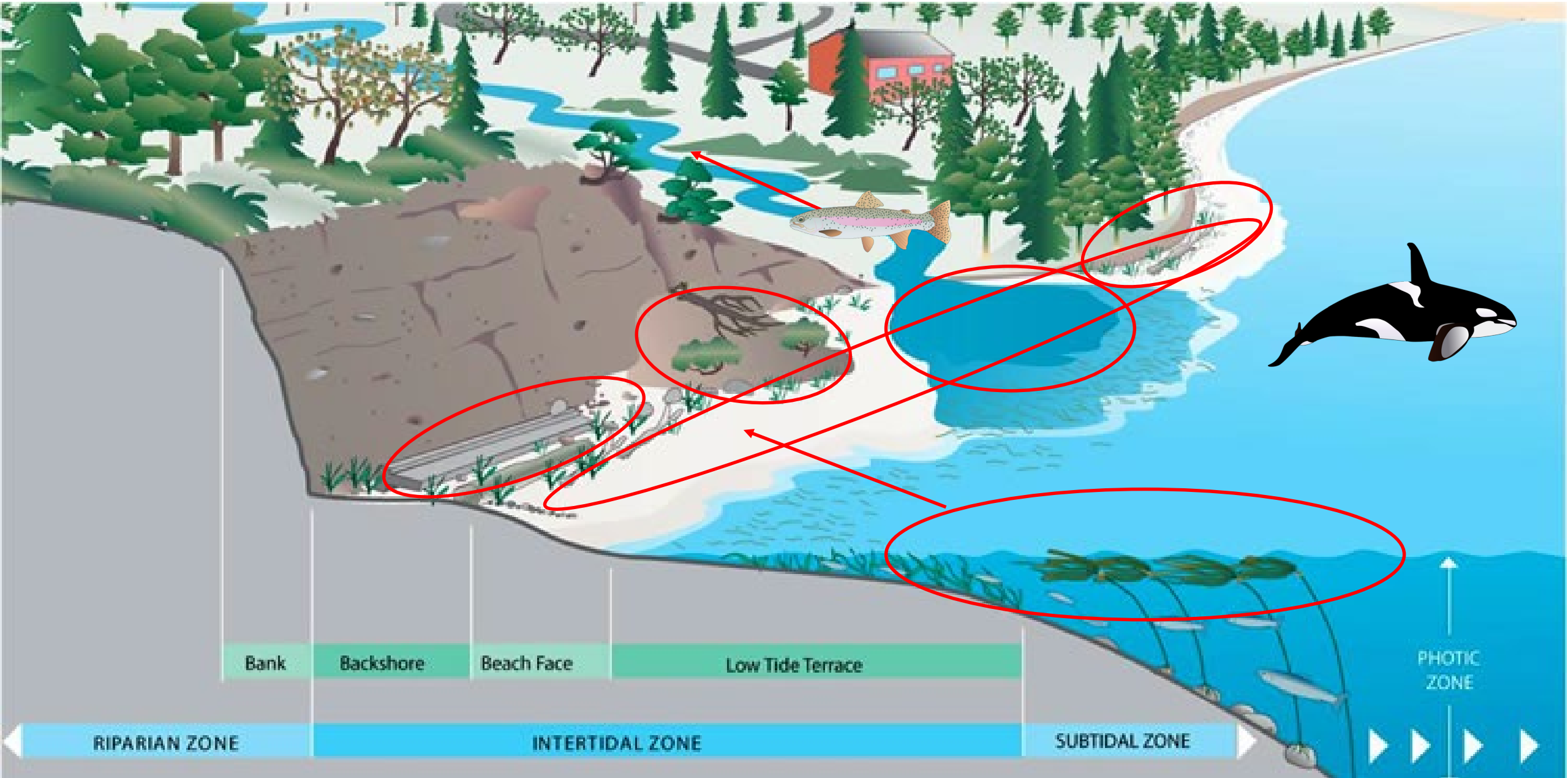




TACOMA DEMOLAY SANDSPIT NATURE PRESERVE  
Coastal Processes & Healthy Shorelines  
APRIL 2021



# Nearshore Terminology & Habitats





## HEALTHY SHORELINES



SUPPORT

## FORAGE FISH



SUPPORT

## SALMON

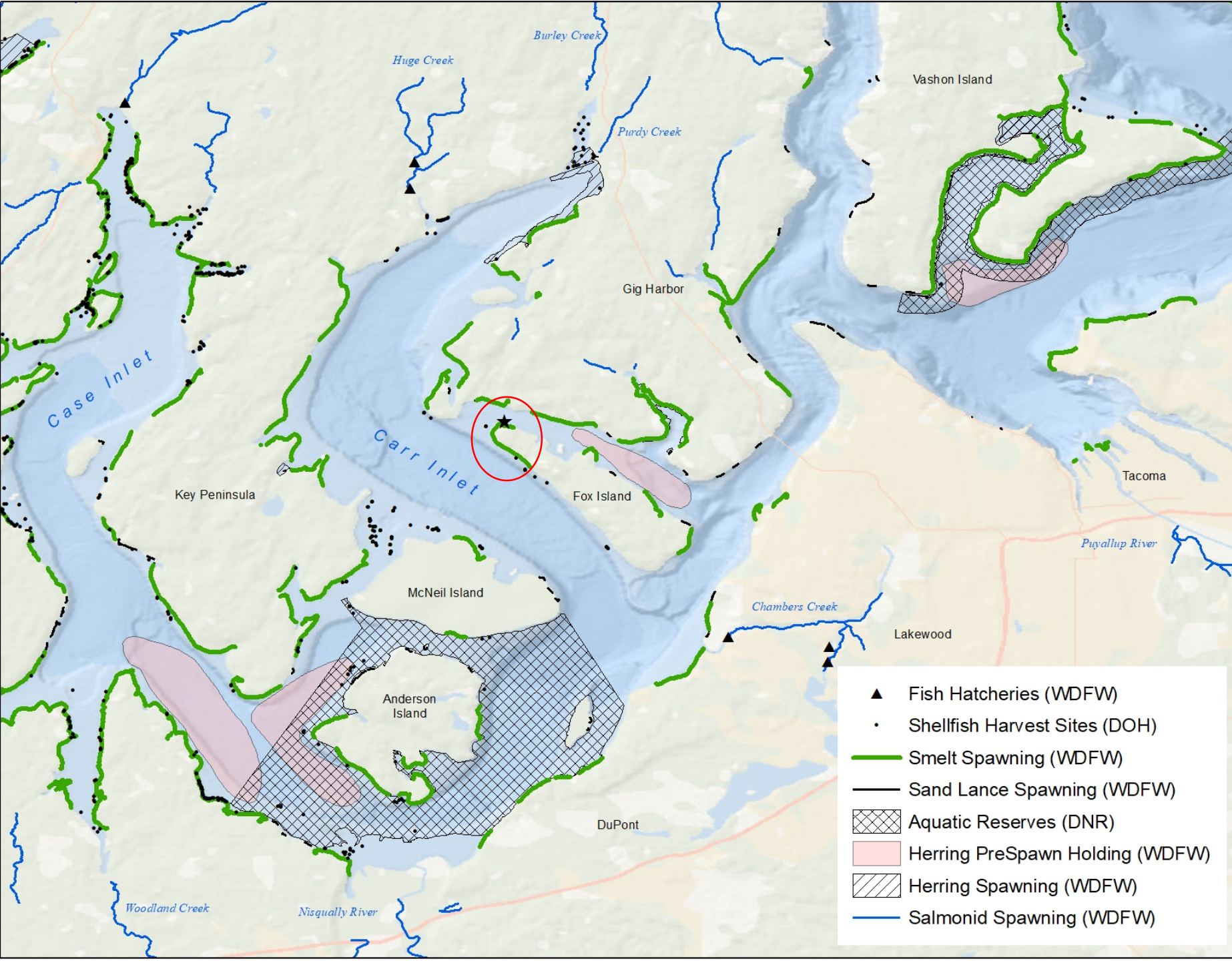


SUPPORT

## ORCAS

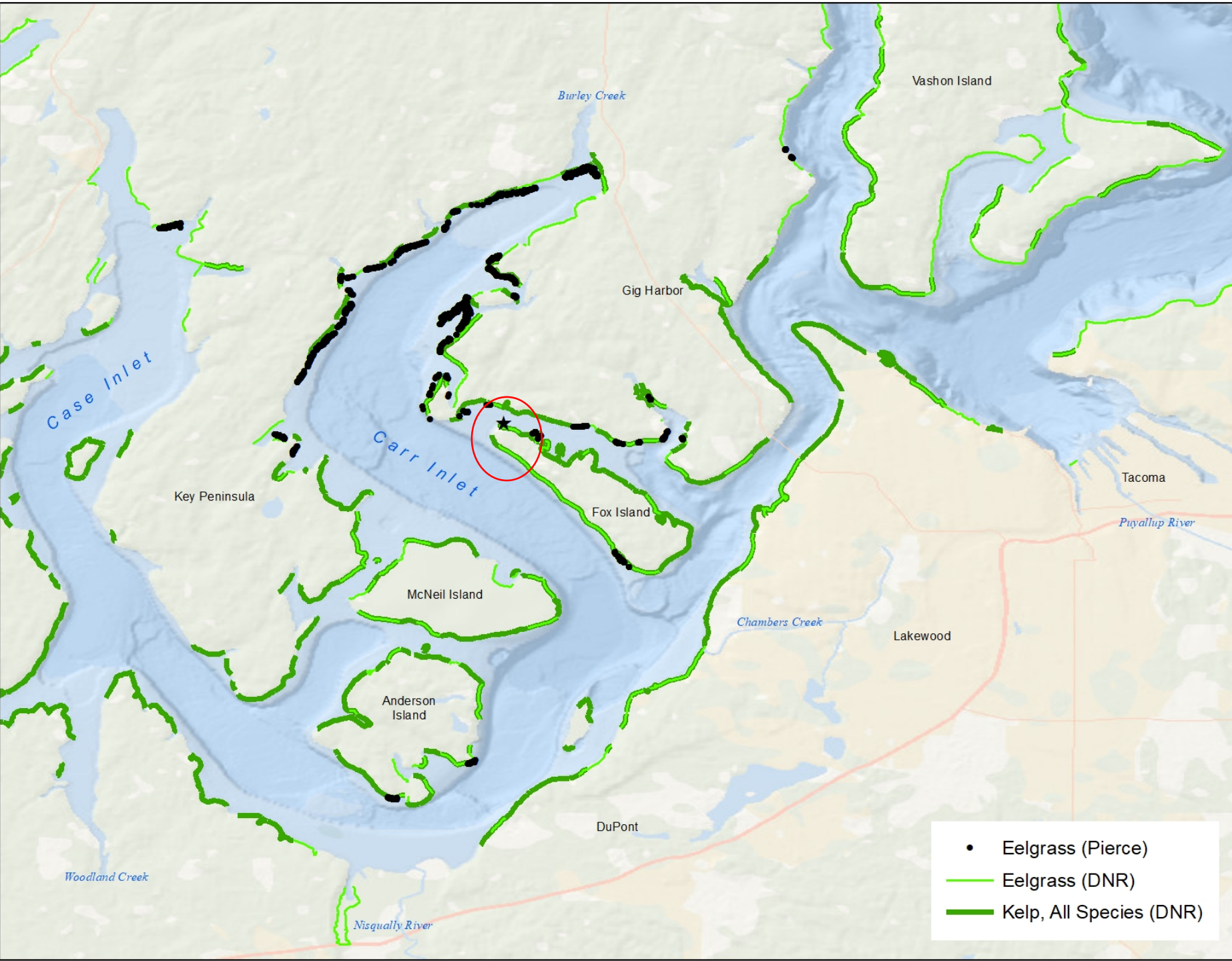


# Fish and Shellfish





# Kelp and Eelgrass





# Coastal Geomorphology

Interaction between Coastal Geology and Hydrodynamics







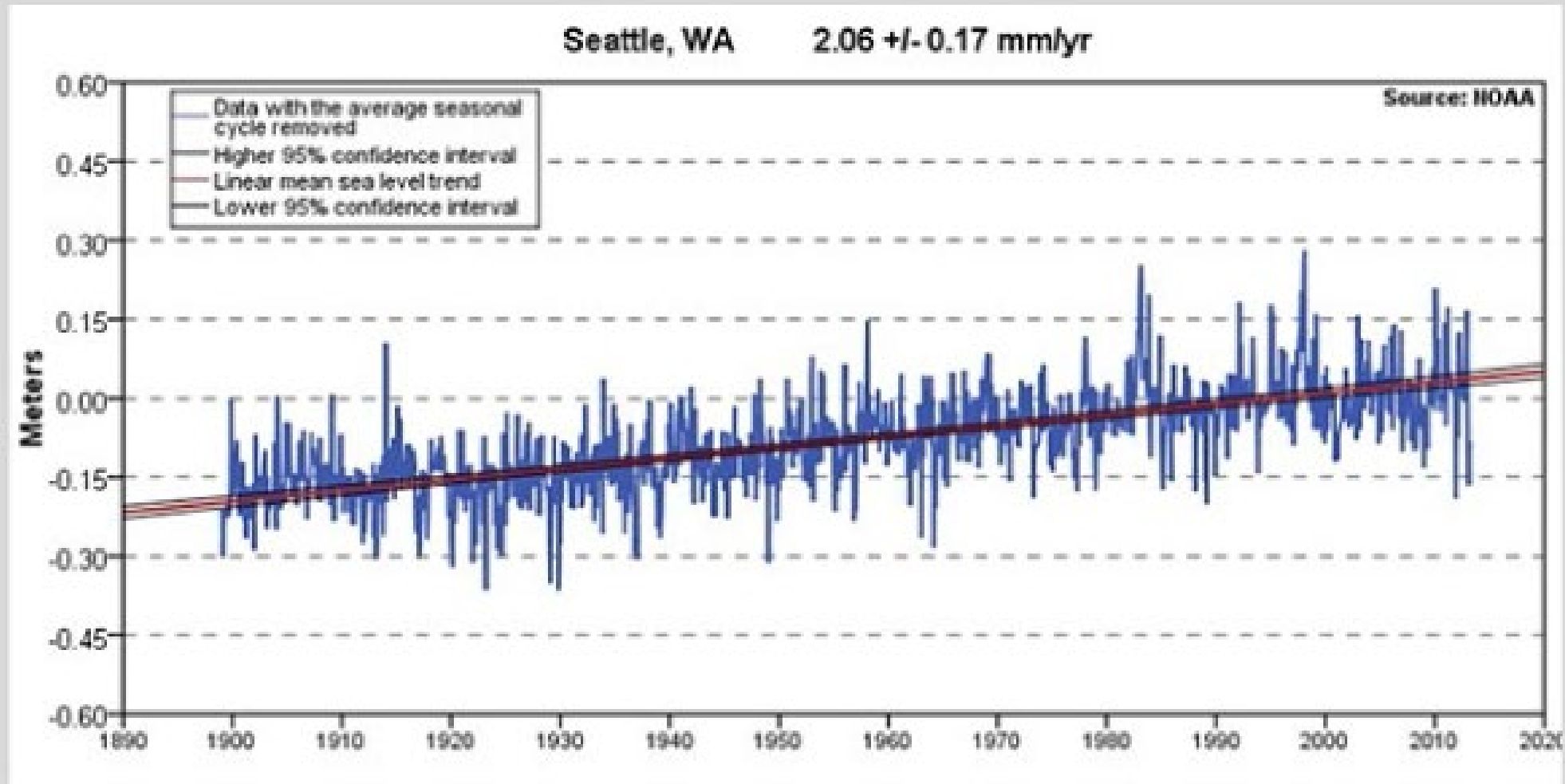
# Water Levels – Natural Beach





# Seattle Sea Level Trend

*since 1950 ~5 inches*





# Pierce County Sea Level Rise

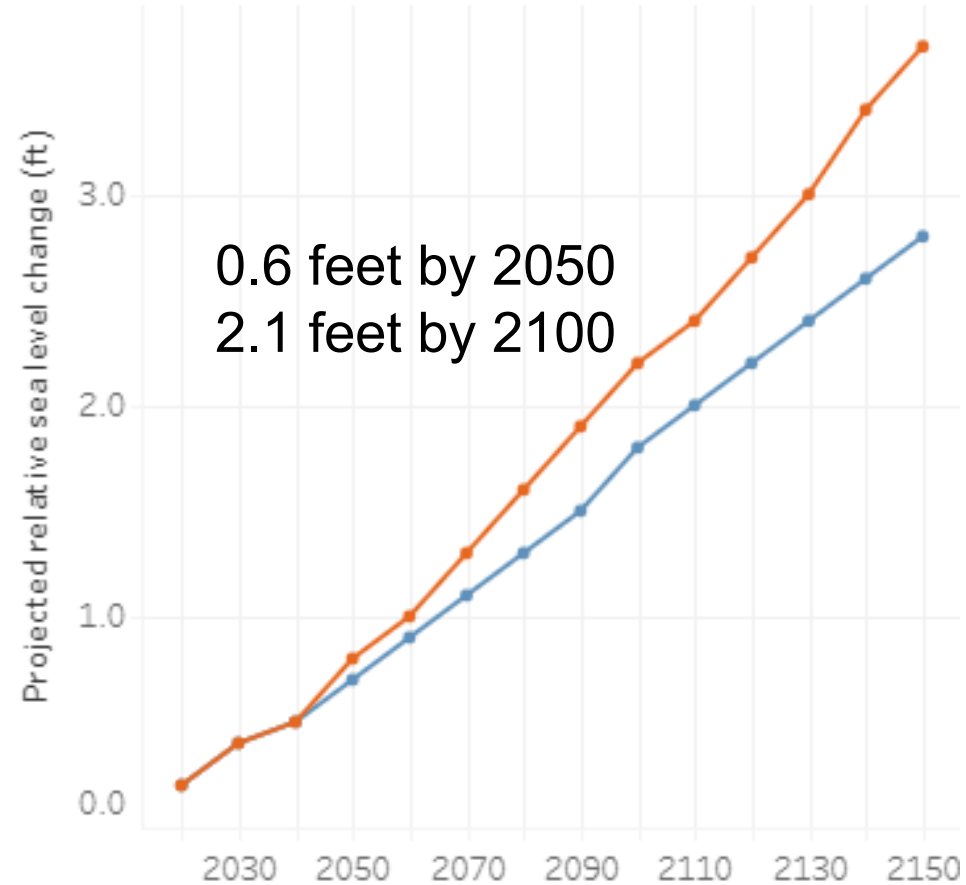


Data Estimated for 47.3°, -122.7°  
County: Pierce

## RSLR for Selected Location

Projected changes relative to the average sea level over 1991-2009.

*Hover for details.*



0.6 feet by 2050  
2.1 feet by 2100

RSLR Projections (in feet) Shown Above



# Wind-Waves



Photo: Hugh Shipman



# Puget Sound Wind Climate



Image: Cliff Mass,  
UW Climatologist








## Sediment Moves Along the Shoreline and Across the Shoreline



**Legend:**

☐ **Drift cells**

-  Left to right
-  No appreciable drift
-  Right to left



Basemap ▼

Hale Passage

Bella Bella Drive Fl

Island Boulevard Fl

Alki Drive Fl

Anchorage Road Fl

Fox Island

Bella Vista Drive Fl





Source: Hugh Shipman





**Natural Beach**



**Bulkheaded Beach**



Installing hard shoreline armor stops sediment deposition and can increase beach scour.



Source: Makers



# Restoring Natural Condition







Armor does  
NOT  
prevent  
landslides



Summer 2020

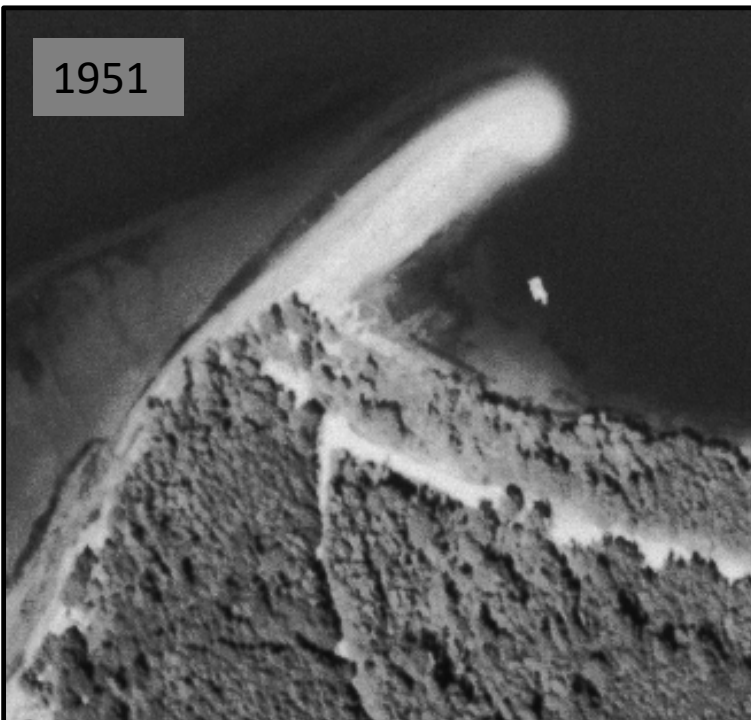


Spring 2021





1951



1957



1968

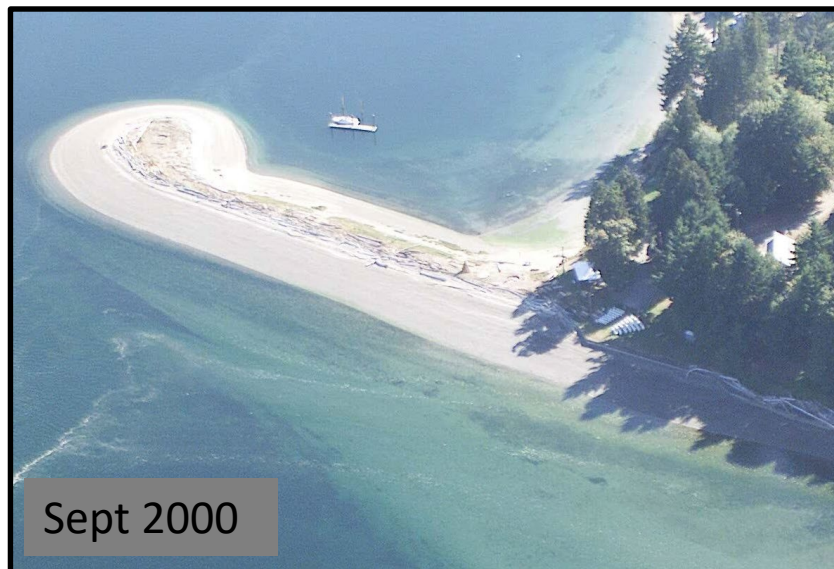


## Recent Site History

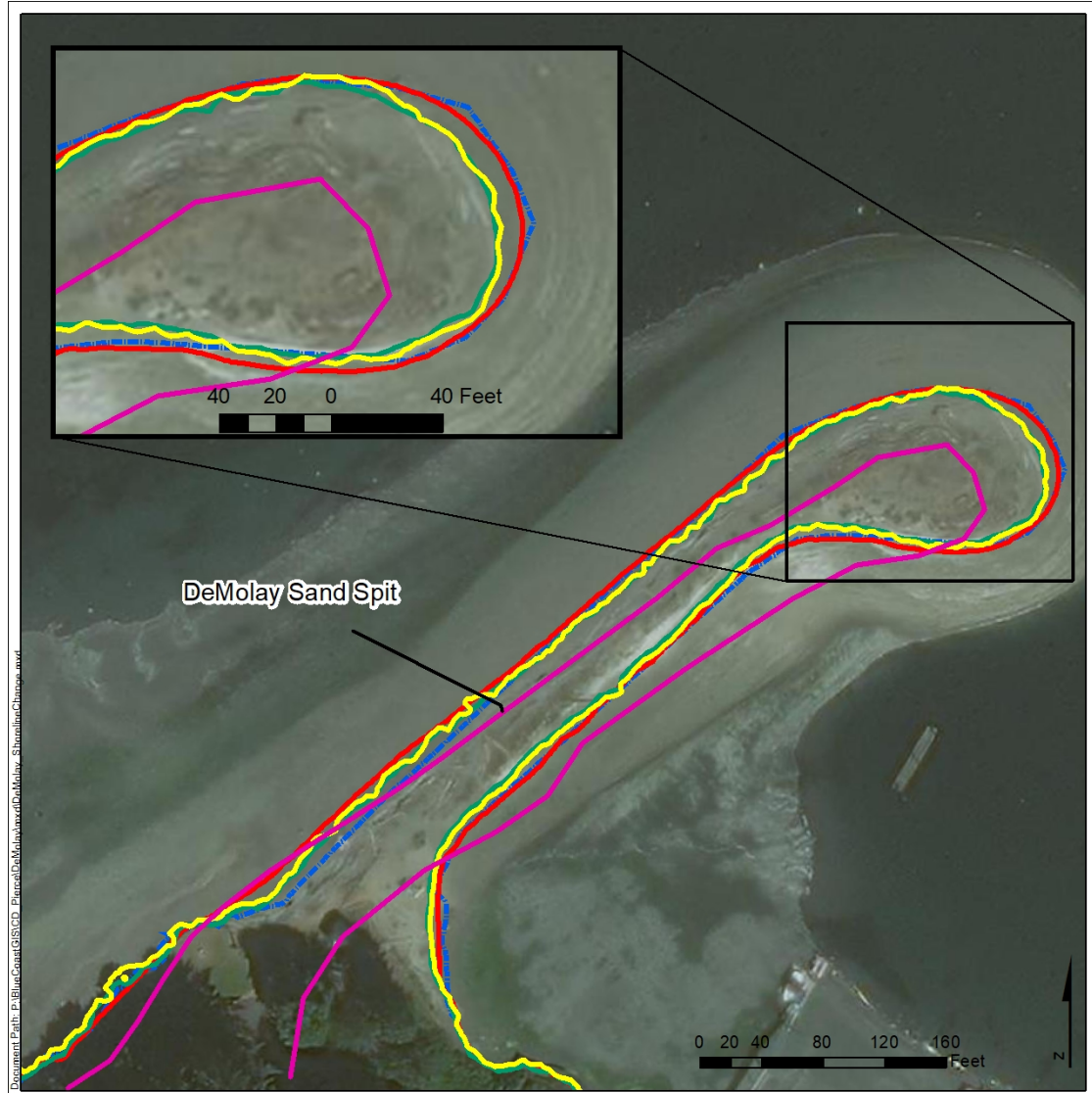


***THE DEMOLAY.*** In 1954, the Masonic youth organization, DeMolay, purchased the Sandspit property at the west end of Fox Island. A cinder block building was constructed, and the former potlatch and picnic place was closed to the public. (Courtesy of the FIHS.)









Document Path: P:\BingCoastGIS\CD\_Pierce\DeMolay\DeMolay\_ShrineChange.mxd

<p>T-sheet_1878_HTL</p> <p>LIDAR_2002_MHHW</p> <p>LIDAR_2005_MHHW</p> <p>LIDAR_2011_MHHW</p> <p>BCE_Survey_2021_MHHW</p>	<p>Notes:</p> <p>Coast &amp; Geodetic Survey Topographic Sheet T-1671</p> <p>2002 PSLC LIDAR, 2005 Puget Lowlands LIDAR,</p> <p>2011 USGS ARRA LIDAR, BCE March 2021 Survey</p> <p>2020 Bing Aerial Imagery</p>
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**DeMolay Shoreline Change Analysis**







# Feasibility Study Process

1. Physical and biological studies of the site
2. Cultural resource review
3. Document existing conditions and define site constraints
4. Conceptual design alternatives of restoration and public elements
5. Evaluate and select preferred alternative
6. Feasibility study report



# Gathering Your Input

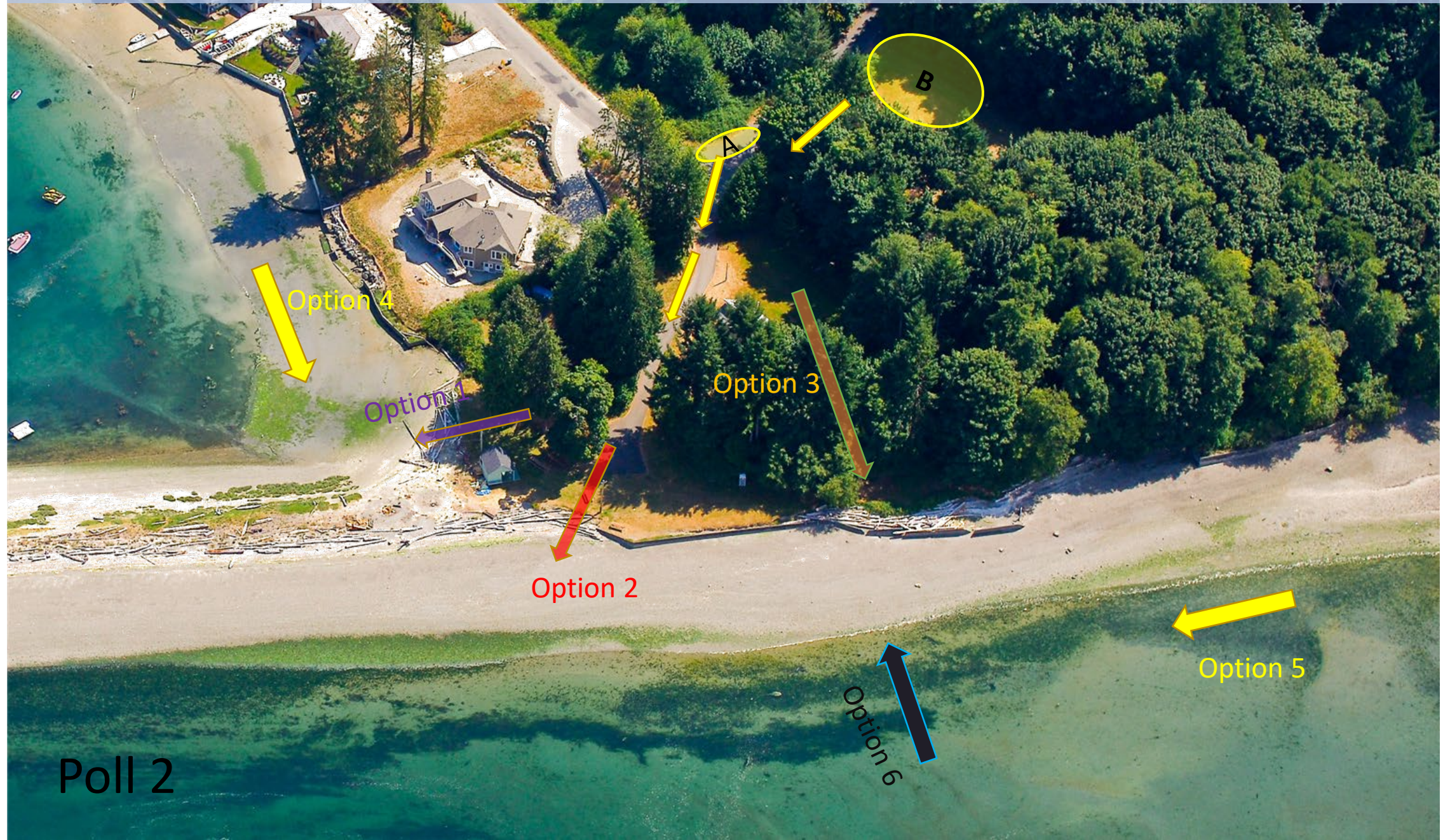




## Poll 1: Visitation of the preserve



What routes or trails do you take through the preserve?





Where in the preserve do you spend the most time?



Poll 3





## Poll 4: Preserve Activities





## Poll 5: Preserve Access and Amenities





Question: What do you think is lacking or what improvements would you like to see?







## Poll 6: Feasibility of Bulkhead Removal



Question: Have you observed changes on the beach over time when you have been visiting and can you describe in 3 to 5 words (enter into chat)?







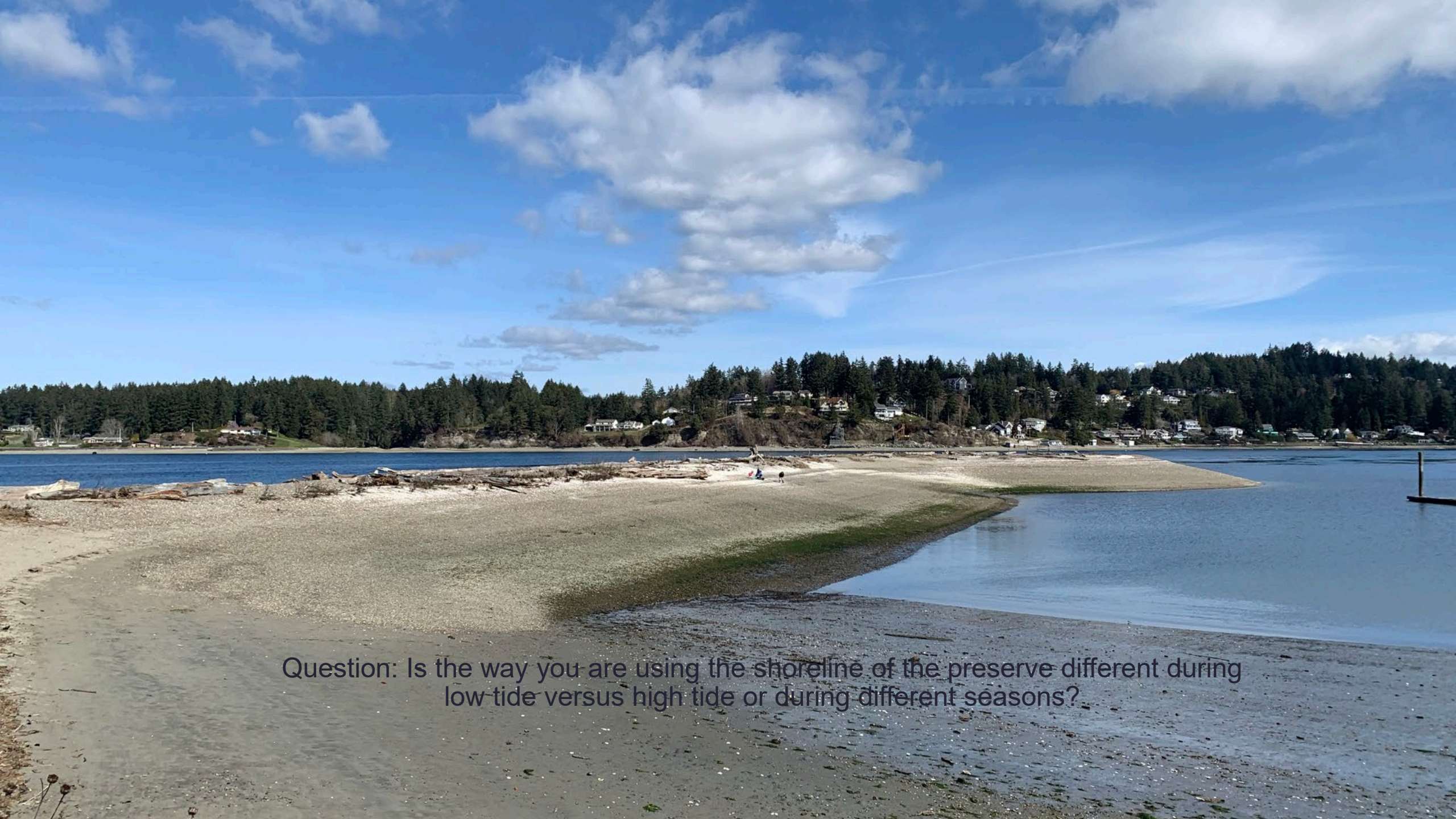
## Poll 7: Beach and Nearshore Habitat





Question: During which times of the year and the week are you mostly visiting the preserve and why?





Question: Is the way you are using the shoreline of the preserve different during low tide versus high tide or during different seasons?



# Harbor WildWatch Beach Monitoring

Established in 2013



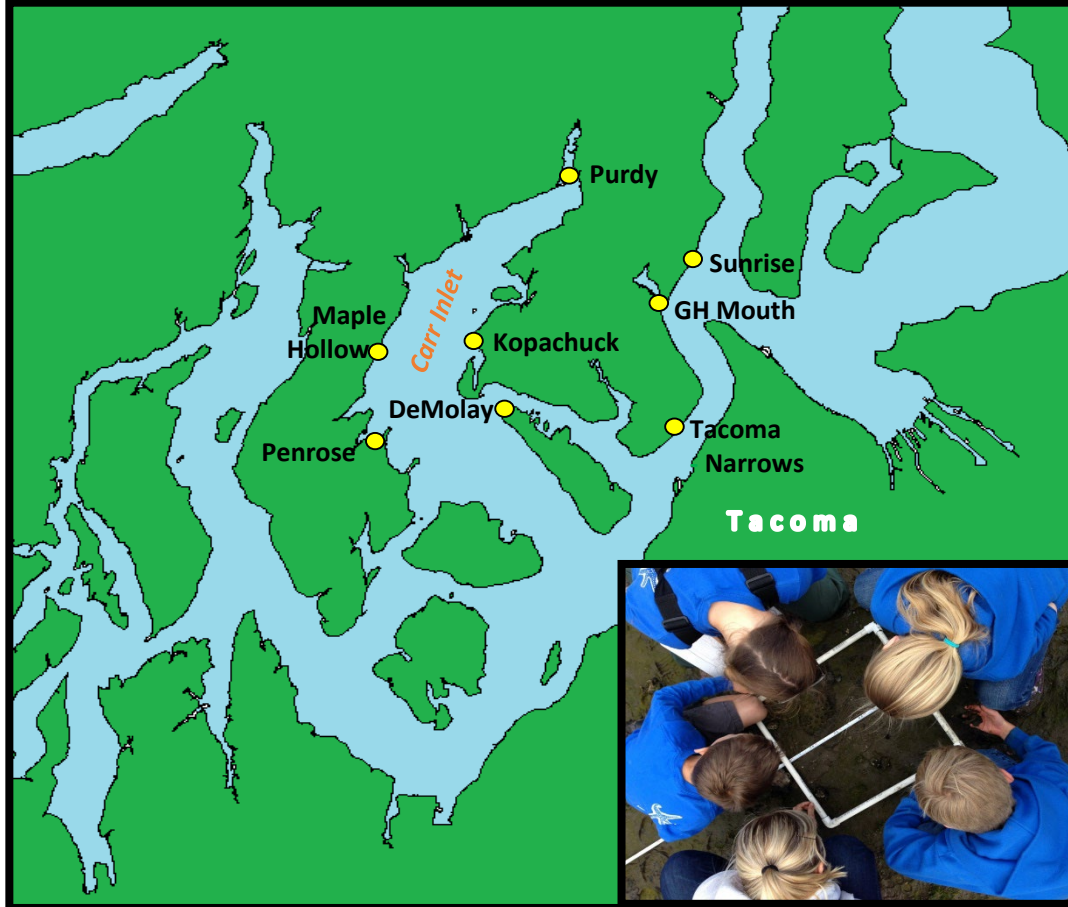
## Goals



- Develop baseline understanding of the patterns of diversity and abundance on local rocky/sandy beaches
- Serve as a mechanism to investigate local/regional changes
- Engage and educate the public



# Sampling Locations



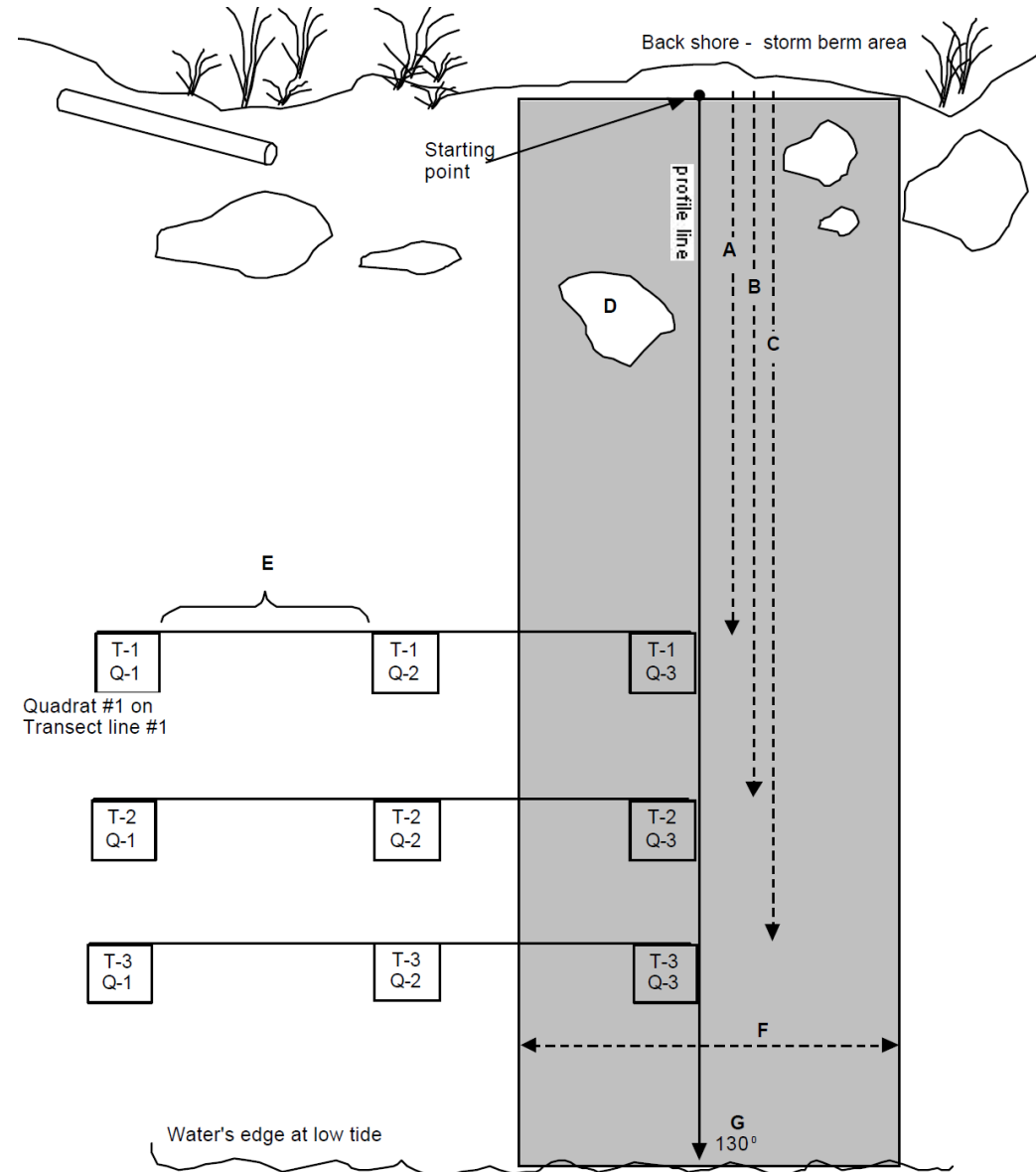
- Access
- Habitat
- Previous HWW experience





# Sampling Protocol

- Based on Island County/WSU Beach Watchers
- Profile line – top of beach to -1ft MLLW
  - Presence/Absence
  - Elevation/Gradient
- Transects (+5, +1, 0, -1ft MLLW)
  - % cover and counts (0.25m<sup>2</sup> quadrats)







[www.harborwildwatch.org](http://www.harborwildwatch.org)

@HarborWildWatch  
(facebook)





# Next Steps

- Attend upcoming Public Meetings:
  - Public Meeting #2 – Conceptual design alternatives, July 2021
  - Public Meeting #3 – Selected conceptual design, Sept. 2021
- Watch for project updates:
  - Signup to receive email updates in the Google Form (link in chat)
  - PenMet Parks “Current Projects” page





# Help us be good stewards and neighbors

## Follow posted signs

- Comply with PenMet Parks rules and State Regulations

## Respect Preserve boundaries

## Leash and scoop

## Leave no trace; take only photos

Please STOP and READ

Tacoma DeMolay Sandspit is a  
NATURE PRESERVE.

1. Removal or disturbing of vegetation, driftwood, clay babies, and other natural debris or features is strictly prohibited. Do not move or stack driftwood.
2. Dogs must be kept on leash unless in a designated off-leash area.
3. Dog handlers must be in possession of doggy cleanup bag at all times and pick up after dog. Dog handlers are encouraged to remove any dog waste found.
4. Stay on trails, beach, or designated grass areas. Do not walk on natural vegetation. No dogs or people above driftwood line on sandspit vegetation.
5. Digging of shellfish is allowed per state regulations.
6. Fishing is allowed per state regulations. All fishing-related items (tackle, entrails, carcasses) must be cleaned up.
7. Fires and Fireworks are prohibited.
8. All PenMet Parks are smoke-free facilities.
9. Do not trespass on neighboring property; obey signs.

253-858-3400 PenMetParks.org





# Questions

## Project Contacts

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Shorelines Program Manager  
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