

# Snohomish County Marine Resources Program



**Prioritization of Pilings  
for Removal from the Snohomish Estuary  
Phase 1 Status Report and Planning for Phase 2**

Elisa Dawson



**Snohomish County**  
Marine Resources  
Committee



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Marine Resources  
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# MRC Project Team



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# Consultant Project Team



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Verification

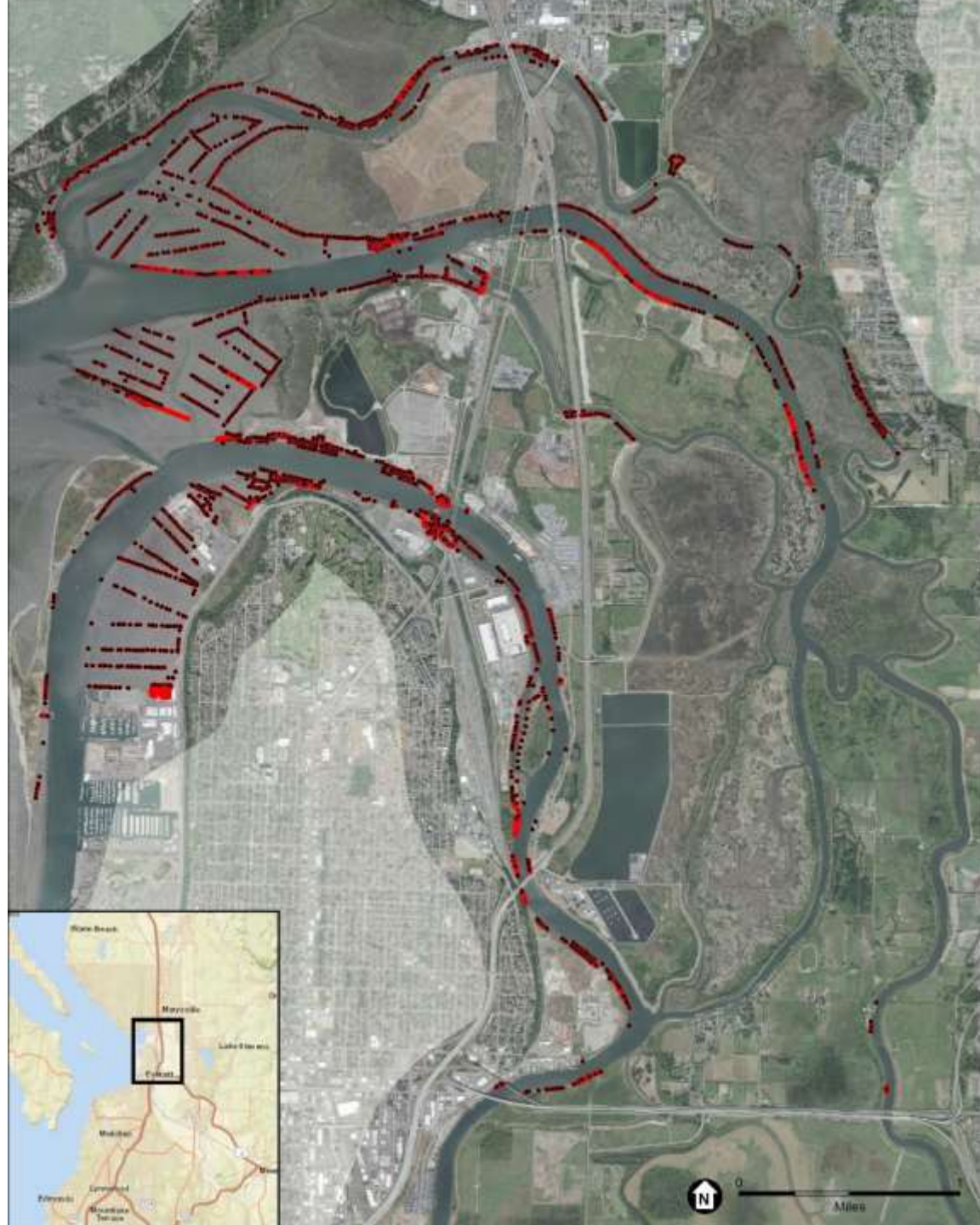


# Phase 1 has two parts

1. Map the location of the pilings on public land through a desktop GIS analysis and,
2. Develop a prioritization process, gather data, and prioritize pilings



Photo: Elisa Dawson



## Step 1: Desk Analysis

Use GIS and available information to map piling location.

2018 LiDAR data was used to do a slope analysis to make sure we had every pilings





We have identified 15,526 pilings in the Snohomish Estuary.



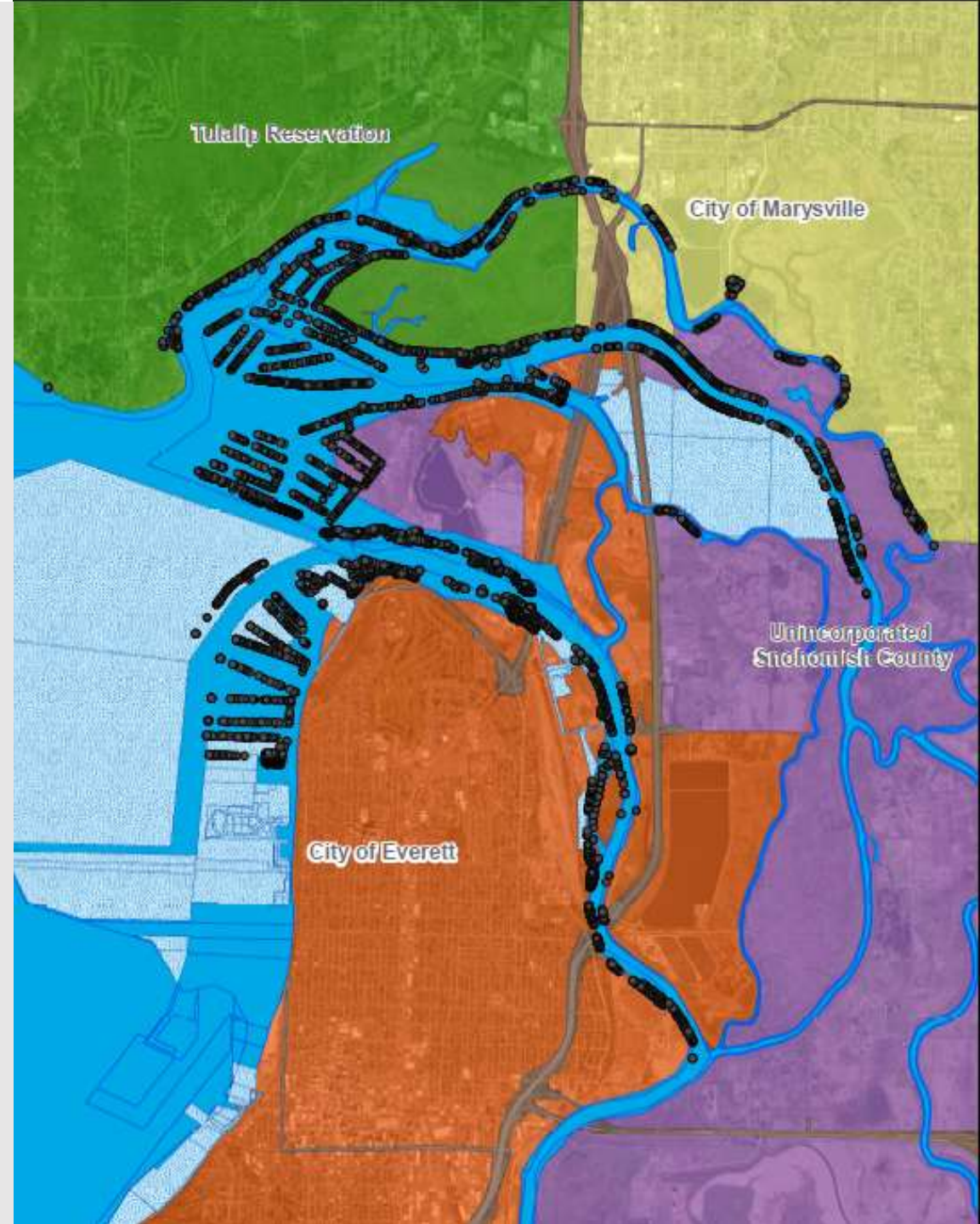
Photo: WA Dept. of Ecology



# Public Stakeholders Identified and Engaged

Washington DNR  
Snohomish County  
Port of Everett  
Tulalip Tribes  
City of Everett  
City of Marysville

Map by Snohomish County GIS



# Step 2: Create a prioritization framework

## **First we reviewed other prioritization frameworks:**

1. Port of Vancouver WA Derelict Pile and In-Water Structure Removal Strategy
2. Memorandum of Coastal Streams and Embayments Prioritization along Puget Sound Shores with a Railroad Prioritization Framework Technical Report
3. Salmon Overlay to the Snohomish Estuary Wetland Integration Plan
4. West Sound Nearshore Integration and Synthesis of Chinook Salmon Recovery
5. WRIA 1 Nearshore & Estuarine Assessment and Restoration Prioritization







# Prioritization Framework

- Ecological benefits of

Ecological Benefit	Scores
Creosote-treated	Yes = 10 No = 0
Habitat type (based on elevation)	> +13 ft MLLW = 2 MHHW to +13 ft = 3 MLLW to MHHW = 5 -10 ft to MLLW = 3 < -10 ft MLLW = 0
Salt marsh / eelgrass present	Continuous = 5 Patchy = 3 None = 0
Landscape connectivity (based on Beamer (2005))	Order 1 to 3 = 4 Order 4 to 5 = 2 Order 6 to 9 = 0
Habitat function (based on SEWIP*)	High = 3 Medium = 2 Low = 0
Single or clustered piling	>25 pilings = 3 6 to 25 = 2 2 to 5 = 1 1 piling = 0
Wildlife use	Yes = -5 No = 0

- Feasibility of removal

Feasibility	Scores
Ownership	State = 5 City/County/Port = 3 Tribe = 3 Private = 0
Risk of Contamination at Site	"Awaiting Cleanup" = -5 Other = 0
Pilings in Use	No = 5 Historically = 2 Currently in Use = 0

Rather than one collective score, decided to separately characterize for each piling the ecological benefits of removal and the feasibility of removal



**Step 3: Field Work**  
Ground truth piling  
location and gather  
data for prioritization



# Field Verification



**Snohomish County**  
Marine Resources  
Committee



*Ebey Slough*



*Ebey Slough*





*At the mouth*



*Quilceda estuary*





*Heron Rookery at 10<sup>th</sup> Street*



*Log rafting in Union Slough*





ish County  
ources

# Creosote-Treated Pilings



**Total 15,526 Pilings**

2,455 pilings or  
nearly 16% are  
creosote-treated

Red = Creosote

Green = Not  
Creosote



# Total Pilings

Ownership Type	Number of Pilings
State of Washington	6,230
Private	4,480
Port of Everett	3,708
City of Everett	356
Snohomish County	311
City of Marysville	267
Tulalip Tribes	174

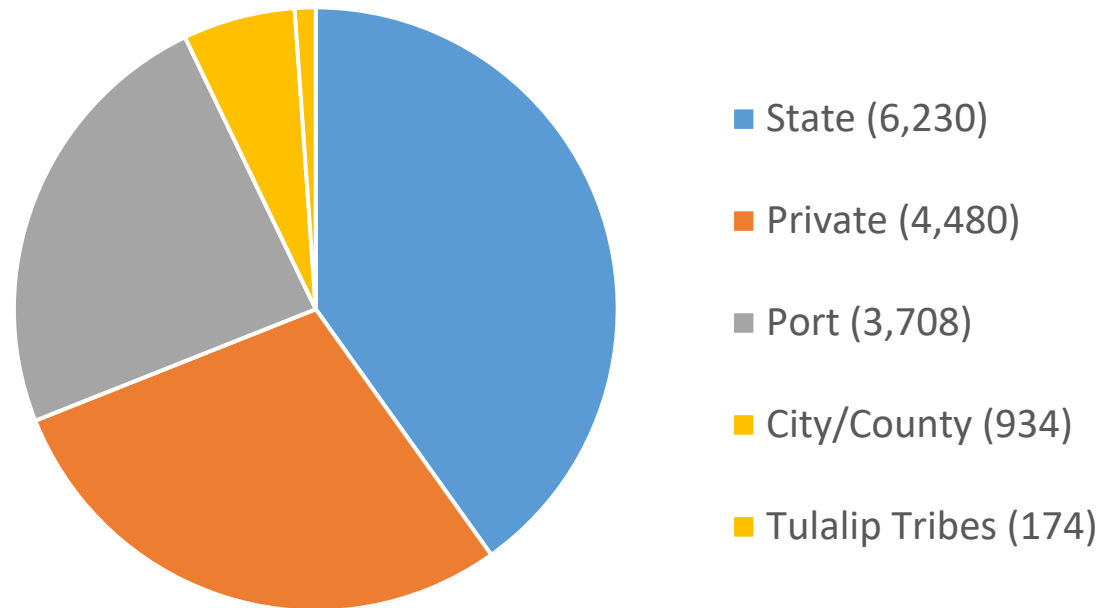
# Creosote Breakdown

Ownership Type	Number of Pilings
Port of Everett	976
State	962
Private	306
City of Everett	110
City of Marysville	68
Tulalip Tribes	33
Snohomish County	0

\*Ownership is based on SnoCo parcel data (best available info) and is not survey-grade

# Ownership Overview

Ownership by Count



\*Ownership is based on SnoCo parcel data (best available info) and is not survey-grade



# Private Ownership

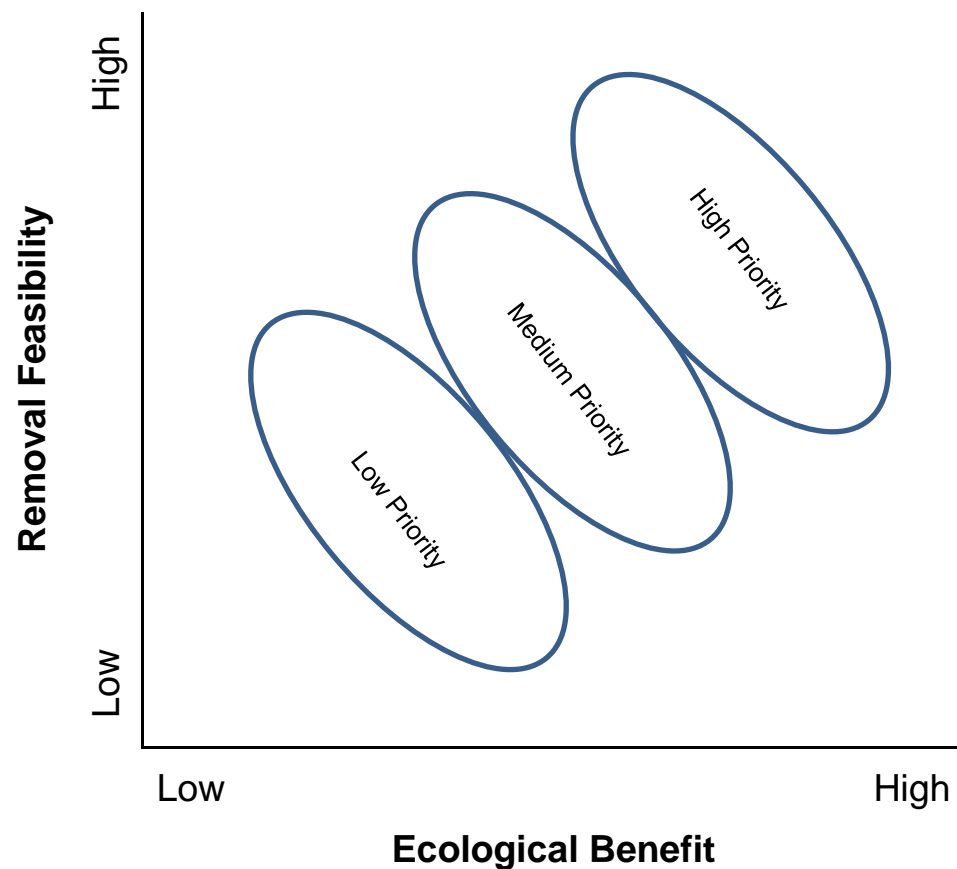
Top Ten Private	Number of Pilings
HOOK INVESTMENTS	933
KIMBERLY-CLARK WORLDWIDE INC	782
DUNLAP TOWING CO	666
B&B-SI-1 LLC	507
WILDLANDS OF WASHINGTON LLC	435
CEDAR GROVE COMPOSTING INC	158
BNSF RAILWAY COMPANY	156
DELTA TIDELANDS LLC	152
M A P #2 LLC	134
W&W EVERETT INVESTMENTS LLC	63

- The top ten private piling owners, own 89% of all privately-owned pilings.

\*Ownership is based on SnoCo parcel data (best available info) and is not survey-grade

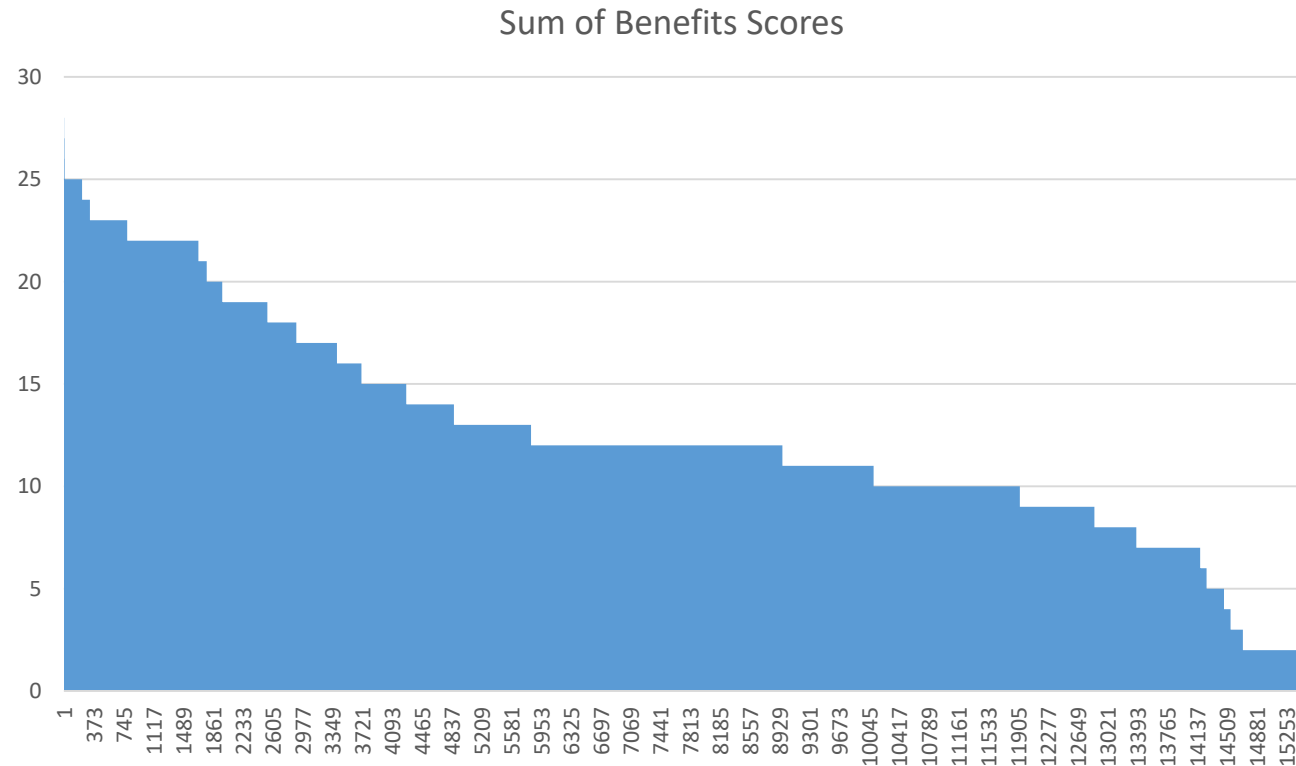


# Conceptual Depiction of Two-Axis Prioritization Approach



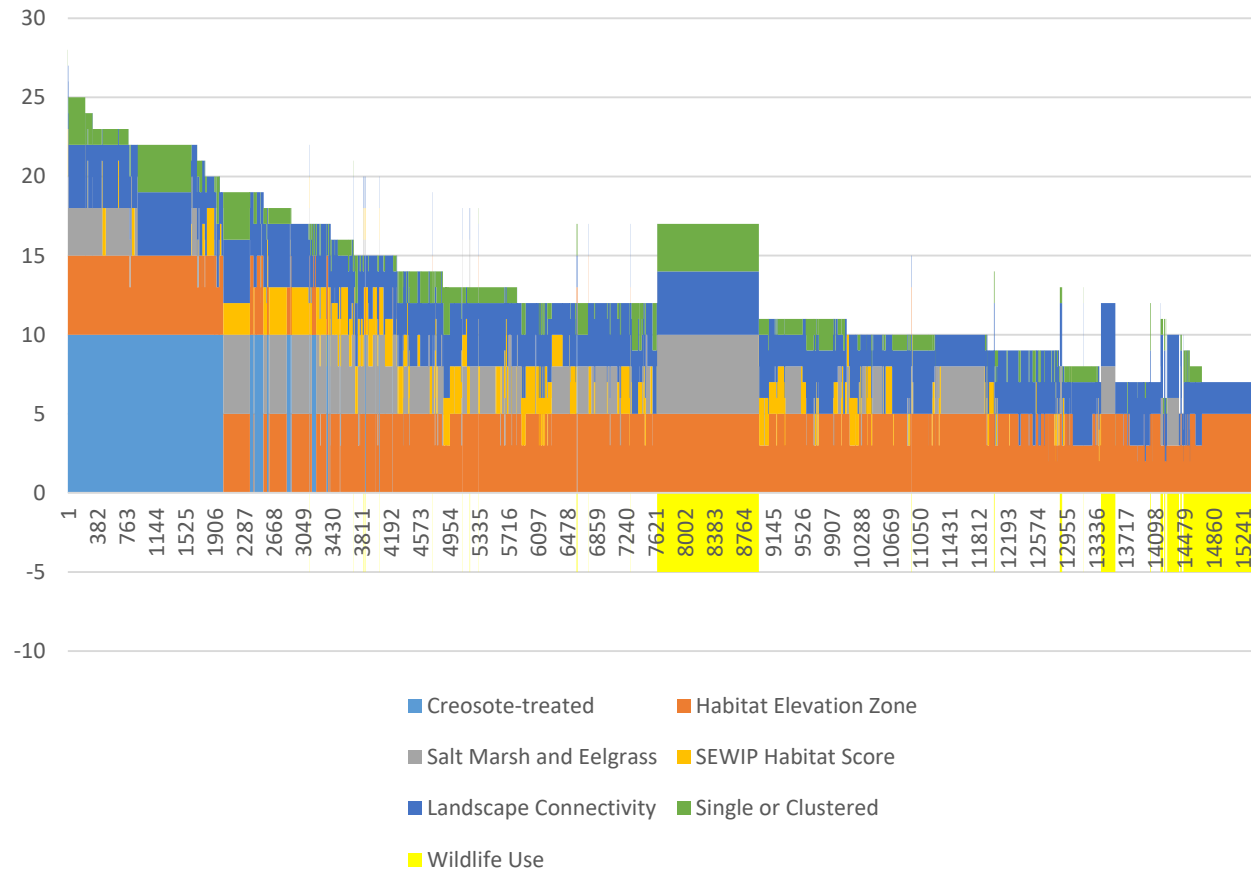


# Prioritization Results – Ecological Benefits



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Benefit Score by Parameter

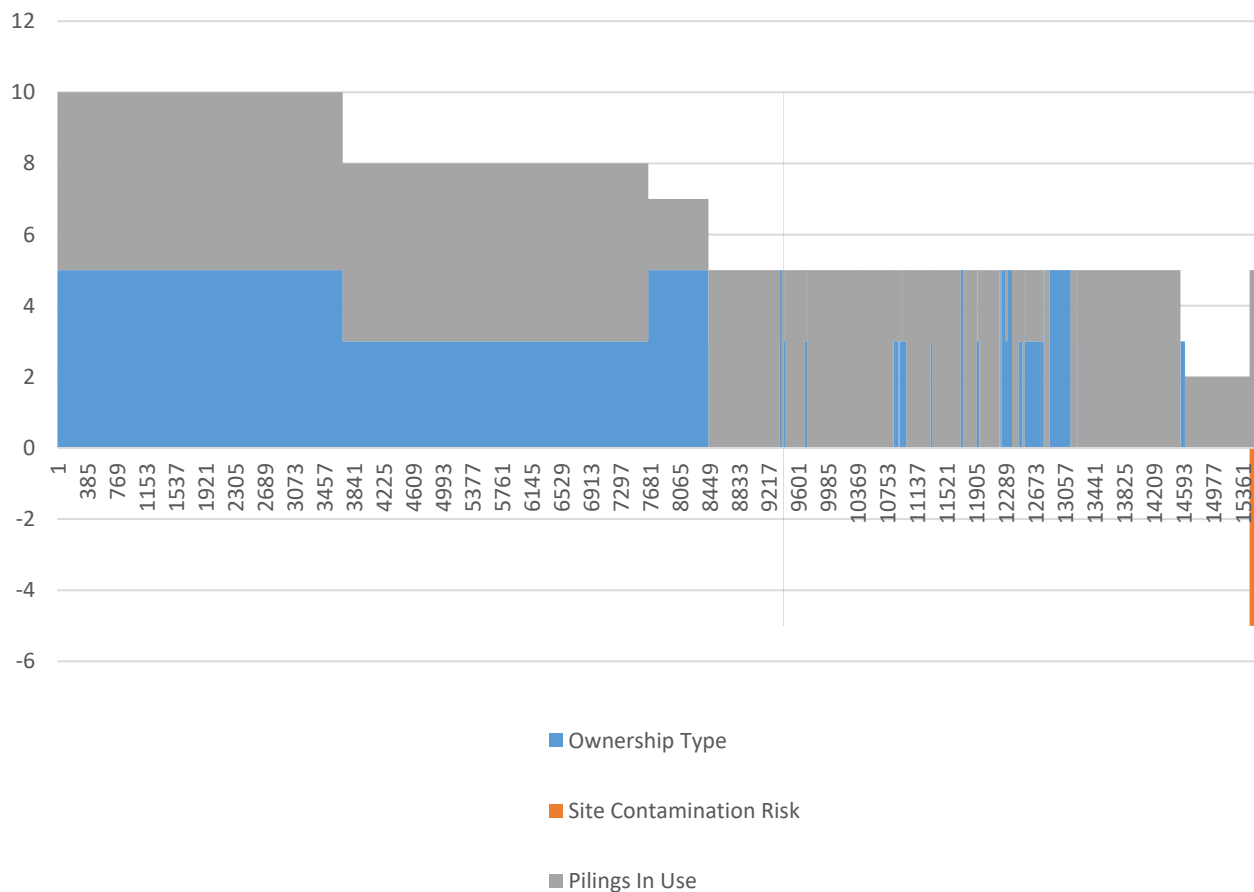






# Prioritization Results – Feasibility

Feasibility Score by Parameter





# Interpreting Benefit and Feasibility Scores

- Used Natural Breaks to Assign Four Tiers to Benefit Scores and Feasibility Scores
  - High
  - Medium-High
  - Medium
  - Low
- Assign Overall Prioritization Ranking based on Benefit and Feasibility Tiers





# Assigning Priority Rankings

Removal Feasibility	High				
	Med-High				
	Medium				
	Low				
		Low	Medium	Med-High	High
		Ecological Benefits			



# Assigning Priority Rankings

Removal Feasibility	High	Medium	Medium	High	High
	Med-High	Low	Medium	High	High
	Medium	Low	Low	Medium	Medium
	Low	Low	Low	Low	Medium
		Low	Medium	Med-High	High
Ecological Benefits					



# Priority Ranking of Pilings



Blue = High

Orange = Medium

Yellow = Low

26% High

38% Medium

36% Low



Step 4: Create final report which includes information gathered during the grant period.

**Will be complete  
September 2020**

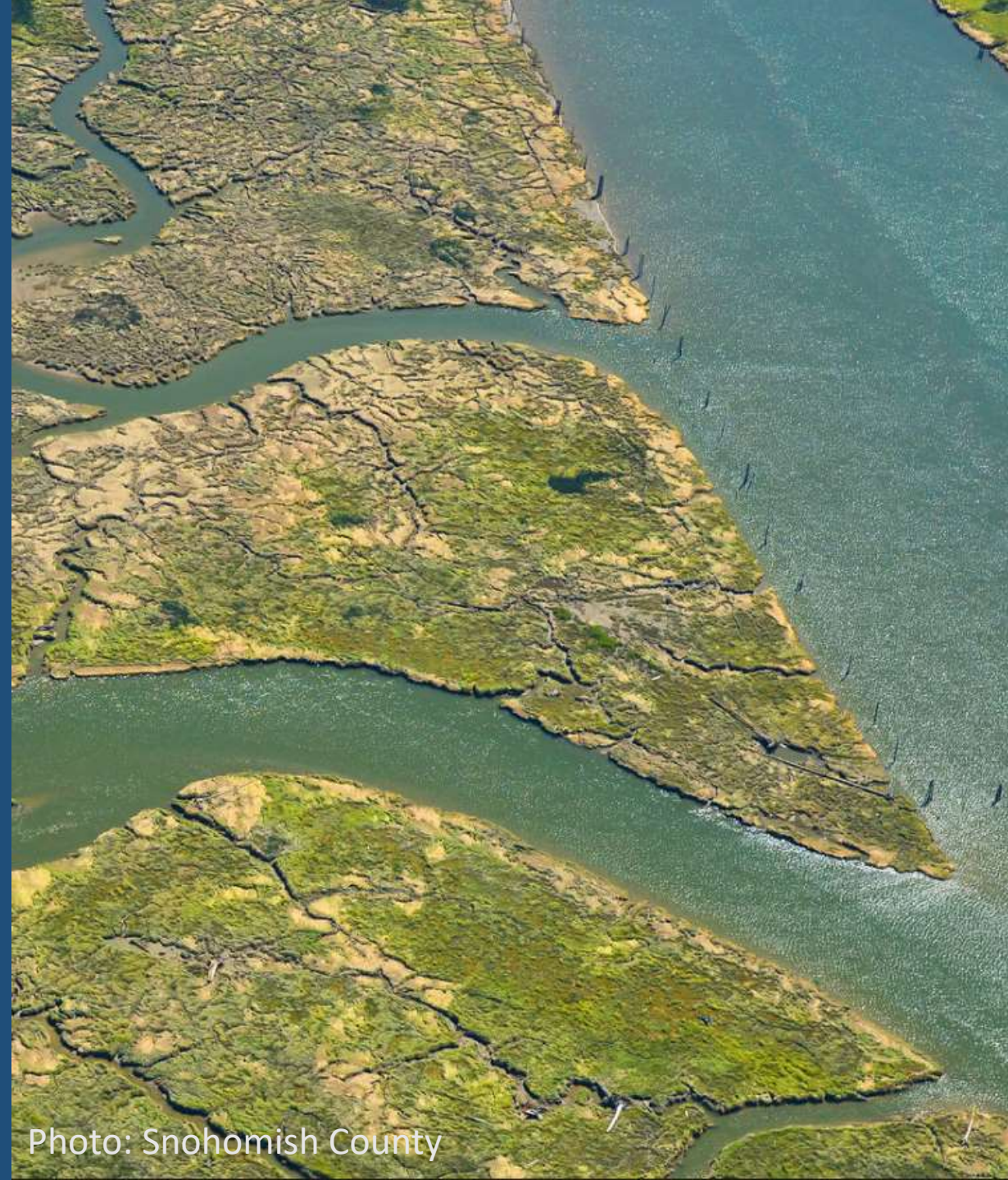


Photo: Snohomish County



# Phase 2

## What's next?



Photo: Elisa Dawson





Phase 2 will build upon information we gather in Phase 1 to further enable removal






## Phase 2

1. Identify 5-10 sites/group of pilings for “project areas”
2. Create Fact sheets on each area
3. Host 5-10 corresponding stakeholder meetings with relevant parties
4. Meeting summaries with lessons learned/ next steps
5. Compile into report as appendix to current report





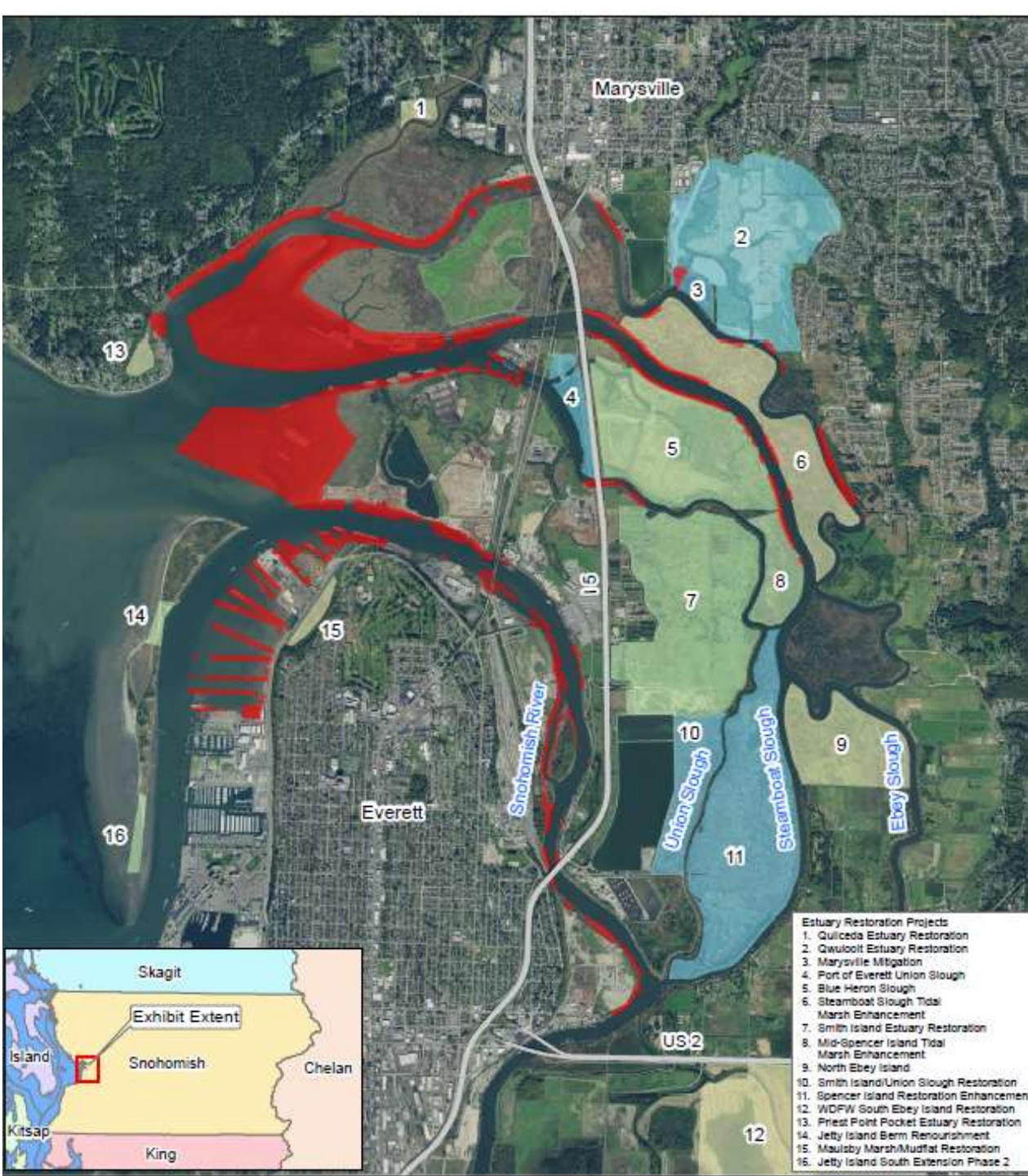
A photograph of a sunset over a body of water. The sun is low on the horizon, creating a bright orange and yellow glow that reflects on the water. In the foreground, several dark, silhouetted wooden posts or pilings are visible, some standing upright and others partially submerged. The sky is filled with soft, orange-hued clouds. A semi-transparent white banner is overlaid across the middle of the image, containing the text "Phase 2 will try to move this work towards implementation".

Phase 2 will try to move this work towards implementation

Photo: Lincoln Loehr



Results of Phase 2 will help direct pile removal, which complements restoration efforts in the Snohomish Estuary for maximum benefit



Our ultimate goal  
is to engage  
stakeholders and  
enable future  
removal of pilings





## Creosote Piling Report by **Elisa Dawson**



Recorded From: On the water directly next to the piling

Piling Diameter (approximated): 18 inches

Piling Height Above Water (approximated): 6ft

Number of pilings: 1

Piling in use: No

 01/12/2017 | 12:27 pm

*(2 hours 39 minutes before high tide)*



### Weather Overview



Wind Speed: 2.5 MPH

Wind Direction: 29°

Temperature: 35°F

Rainfall (Calendar Day): 0"

Rainfall (Past 24 Hours): 0"

*[\(Click here for full weather details\)](#)*

### Tidal Overview

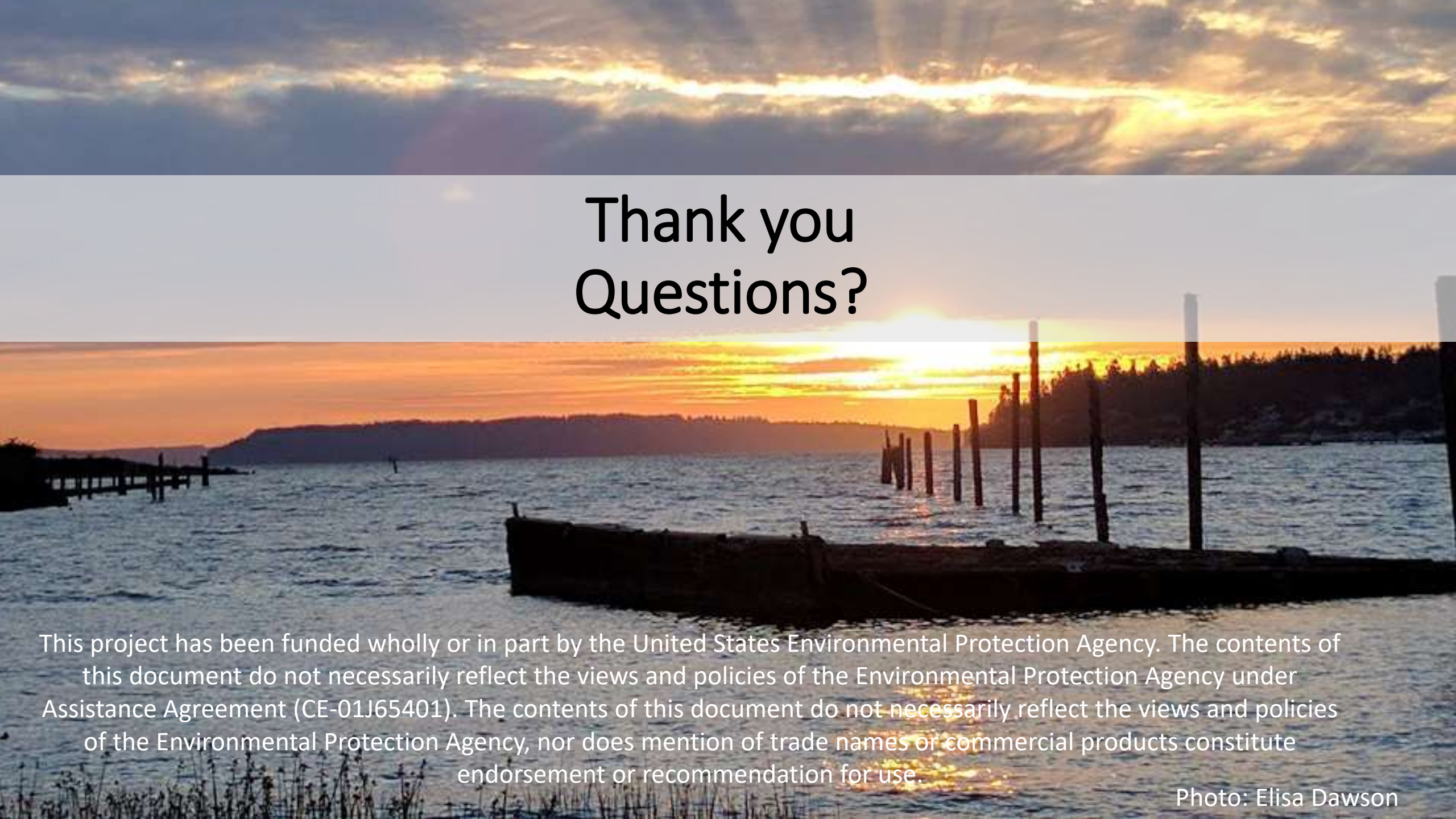
Data from **Port Townsend** (27.1 miles away)

Water Level: 7.9' (observed MLLW)

Observed tide: 3:06 pm, 9.1'

Predicted tide: 2:50 pm, 8.8'

Snohomish MRC  
will continue to  
highlight the  
MyCoast app for  
reporting creosote  
pilings

A scenic sunset over a body of water. The sky is filled with dramatic, orange and yellow clouds. In the foreground, a dark wooden pier or dock structure extends into the water. Several vertical wooden pilings are visible in the water. In the background, a distant shoreline with trees is visible under the sunset sky.

# Thank you Questions?

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Photo: Elisa Dawson