West Grand Marsh Resiliency Study

2025 Stakeholders Meeting

October 2025

Melanie Nash
Jaime Wallace, PE

EST. 1883 Old Orchard Beach MAINE

SMPDC
SOUTHERN MAINE PLANNING & DEVELOPMENT COMMISSION

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Presentation Overview

Why Marsh Health Matters
What is a Healthy Marsh?
Benefits of a Healthy Marsh
OOB's Local Marsh System

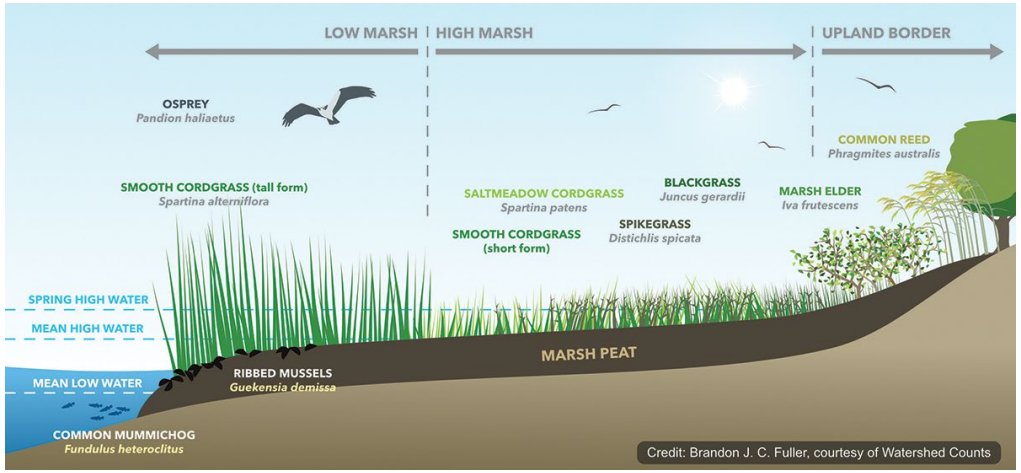
Why Marsh Health Matters in Southern Maine

- Healthy marshes are a foundation for coastal resilience.
- The marsh in Old Orchard Beach is part of the Scarborough Marsh, which covers over 3,000 acres in southern Maine.
- Healthy, functioning marshes protect homes, roads, and infrastructure from flooding and storm surge.
- Marsh health is directly connected to a community's overall resilience.

What is a Healthy Marsh?

OOB's Marsh

- Allows for wildlife productivity for rare species like harlequin ducks, arctic terns, and New England cottontails.
- Two 'exemplary' natural community types: dune grassland and pitch pine dune woodland.



Cross-Section of a Healthy Marsh

- Salt-tolerant marsh grass to stabilize soil and absorb waves.
- Channels and pools that move water in and out with tidal changes.
- Sediment that builds elevation naturally.
- Healthy vegetation.

Benefits of Salt Marshes

Protect Our Communities

Absorb storm surge and floodwater

Reduce erosion and damage to property

Act as natural floodplains

Keep Our Water Clean

Trap sediments and other pollutants

Improve water quality for shellfish, swimming, and recreation

Support fisheries by acting as a nursery for young fish and shellfish

Climate and Carbon Benefits

Buffer sea level rise by naturally building elevation

Provide cooling and oxygen production

Store 'blue carbon' in plants and soil

OOB's Marsh System

RARE SPECIES AND EXEMPLARY NATURAL COMMUNITIES OF THE FOCUS AREA

	Common Name	Scientific Name	State Status*	State Rarity Rank	Global Rarity Rank
Animals	Saltmarsh Sharp-tailed Sparrow	*Ammodramus caudacutus*	SC	S3	G4
	Common Moorhen	*Gallinula chloropus*	T	S2	G5
	Harlequin Duck	*Histrionicus histrionicus*	T	S2S3	G4
	Least Bittern	*Ixobrychus exilis*	E	S2	G5
	Arctic Tern	*Sterna paradisaea*	T	S2	G5
	New England Cottontail	*Sylvilagus transitionalis*	E	S2	G3
Plants	Saltmarsh False-foxglove	*Agalinis maritima*	SC	S3	G5
	Smooth Winterberry Holly	*Ilex laevigata*	SC	S3	G5
	Beach Plum	*Prunus maritima*	E	S1	G4
	Dwarf Glasswort	*Salicornia bigelovii*	SC	S1	G5
Natural Communities	Coastal Dune-marsh	Coastal Dune-marsh		S3	n/a
	Dune Grassland	Dune Grassland		S2	G4
	Pitch Pine Bog	Pitch Pine Bog		S2	G3G5
	Pitch Pine Dune Woodland	Pitch Pine Dune Woodland		S1	G2
	Salt-hay Saltmarsh	*Spartina* Saltmarsh		S3	G5

- **The OOB marsh supports flood protection, habitat, and recreation.**
- **The marsh protects high value habitat for species including river herring, winter flounder, and alewives.**
- **Tidal creeks in the marsh protect key waterfowl and wading bird prey species like mummichogs and silversides.**
- **The long-term integrity of the marsh is dependent on the maintenance of tidal flow.**

Discussion and Questions

- Which benefits feel the most important to protect for the future?
- Was there any information that was surprising or new in this discussion of marsh health and benefits?
- Do you have questions for us about the benefits of a healthy marsh?

Presentation Overview

Project Goals
Project Timeline
What is a Tide Gate and Why Does it Matter?
Work Completed to Date
Next Steps
Q&A

Project Goals

1. Evaluate the effects of the existing tide gate on health of marsh vegetation.

2. Assess the function and operation of the existing tide gate and develop recommendations for operational changes.

3. Identify capital improvement projects to increase marsh resiliency.

Project Timeline

Spring 2023

Town awarded grant through Community Resiliency Partnership

Apr 2024 – Dec 2025

Data collection phase (on-going)

Oct 2025

Stakeholders meeting and listening session

Dec 2025

Presentation of findings to Council

What is a Tide Gate and Why Does it Matter?

- Used to control flow of water between tidal and non-tidal areas.
  - Manages water levels upstream of tide gate during high tides.
  - Allows stormwater to drain out during low tides.
- Most commonly used to provide flood protection to low-lying developed areas.
- OOB's Tide Gate:
  - Self-regulating gate
    - Closes at 4.25' (NAVD88)
  - Two "flapper" gates
  - Manual "Storm Mode"

Data Collection

- Drone flight with LiDAR drone in April 2024
  - 110 acres surveyed
- Survey of finish floor elevations on structures surrounding marshes in May 2024
- Tidal and salinity monitoring June 2025
  - Re-deployed loggers in October 2025
- Salinity readings during October 2025 high tide event.

Drone Flight

FFE Survey

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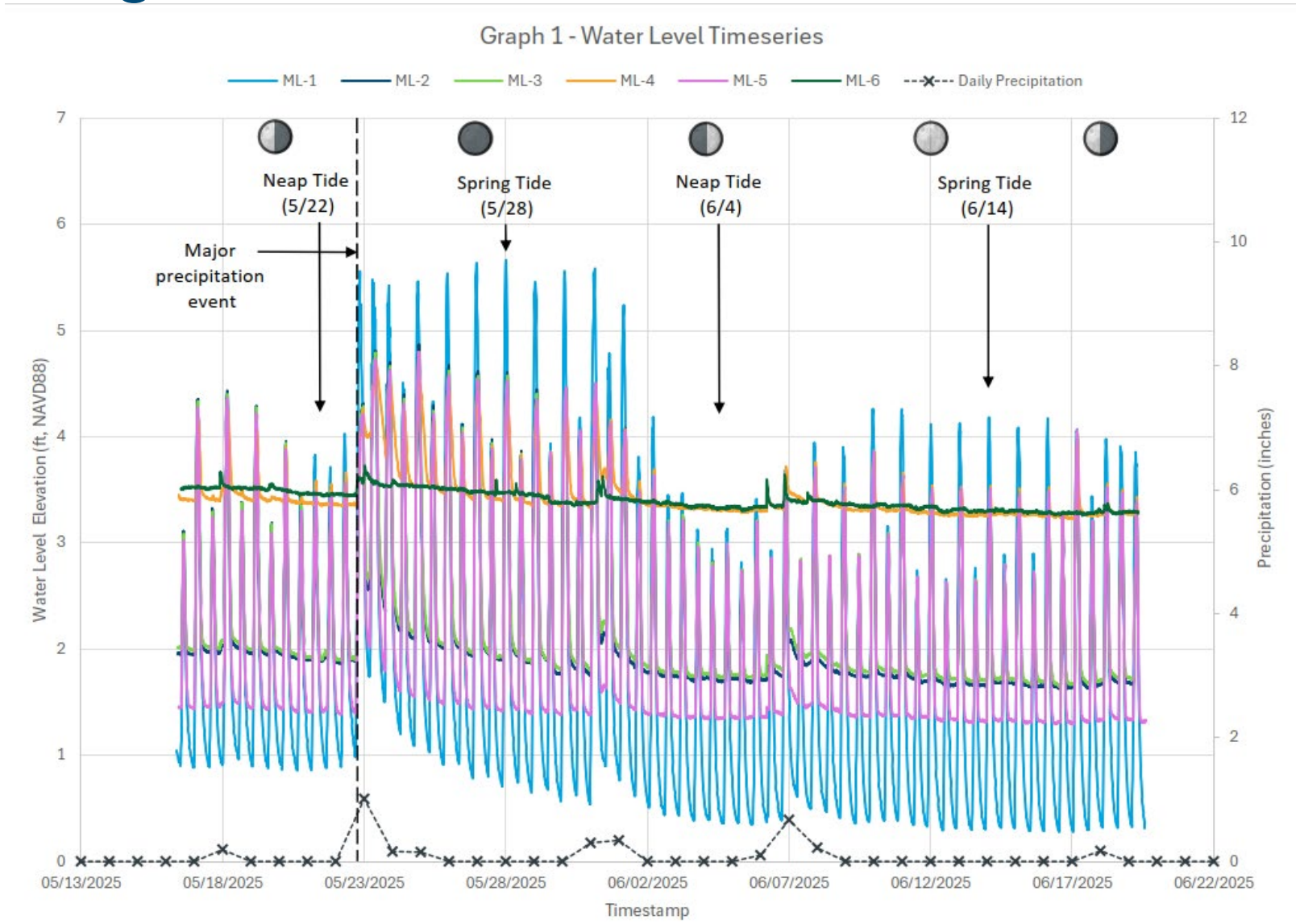
Tidal Monitoring

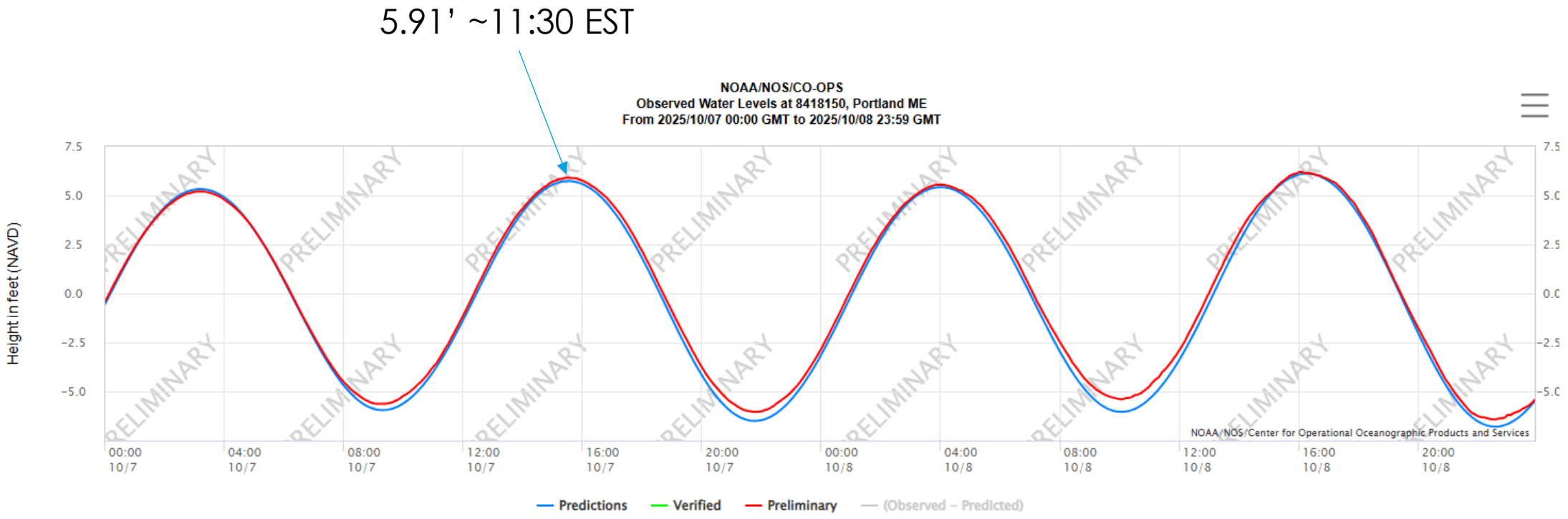
- Six data loggers deployed throughout study area
- Two data loggers monitoring salinity
- Plot data to look for trends over time and lags through the system.
- Can be something implemented long term

Tidal Monitoring



Salinity Readings – October 7, 2025 High Tide

- **High tide for October 7th ~ 11:30 A.M. (EST)**
- **Preliminary – 5.91' (NAVD88)**
  - **Portland, ME Tidal Datum (Sta. 8418150)**



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Next Steps

Public Input

- Feedback is important.
- Final study will take public feedback into account.

Final Study

- Small workshop with Town and Conservation Commission
- Incorporate any final public feedback comments

Final Presentation

- December 2025
- Presentation of study findings
- Study complete end of December

On-Going

- Tidal/Salinity monitoring
- On-going data collection
- Preliminary designs
- Additional studies?

Implementation Plan

- Consider CIP projects
- Funding opportunities?
- Phased approach?

Very complex system. Implementation plan will be very important

Contact Information

Jaime Wallace, PE

Jaime.wallace@wright-pierce.com
207.798.3744

THANK YOU

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