

Community Meeting

Greenfield Penobscot Estuary Remediation Trust
Trustee of the Penobscot Estuary Mercury Remediation Trust



Bucksport, Maine – The Alamo Theatre
October 21, 2026



Greenfield Penobscot Estuary Remediation Trust LLC
Trustee of the Penobscot Estuary Mercury Remediation Trust

Welcome!

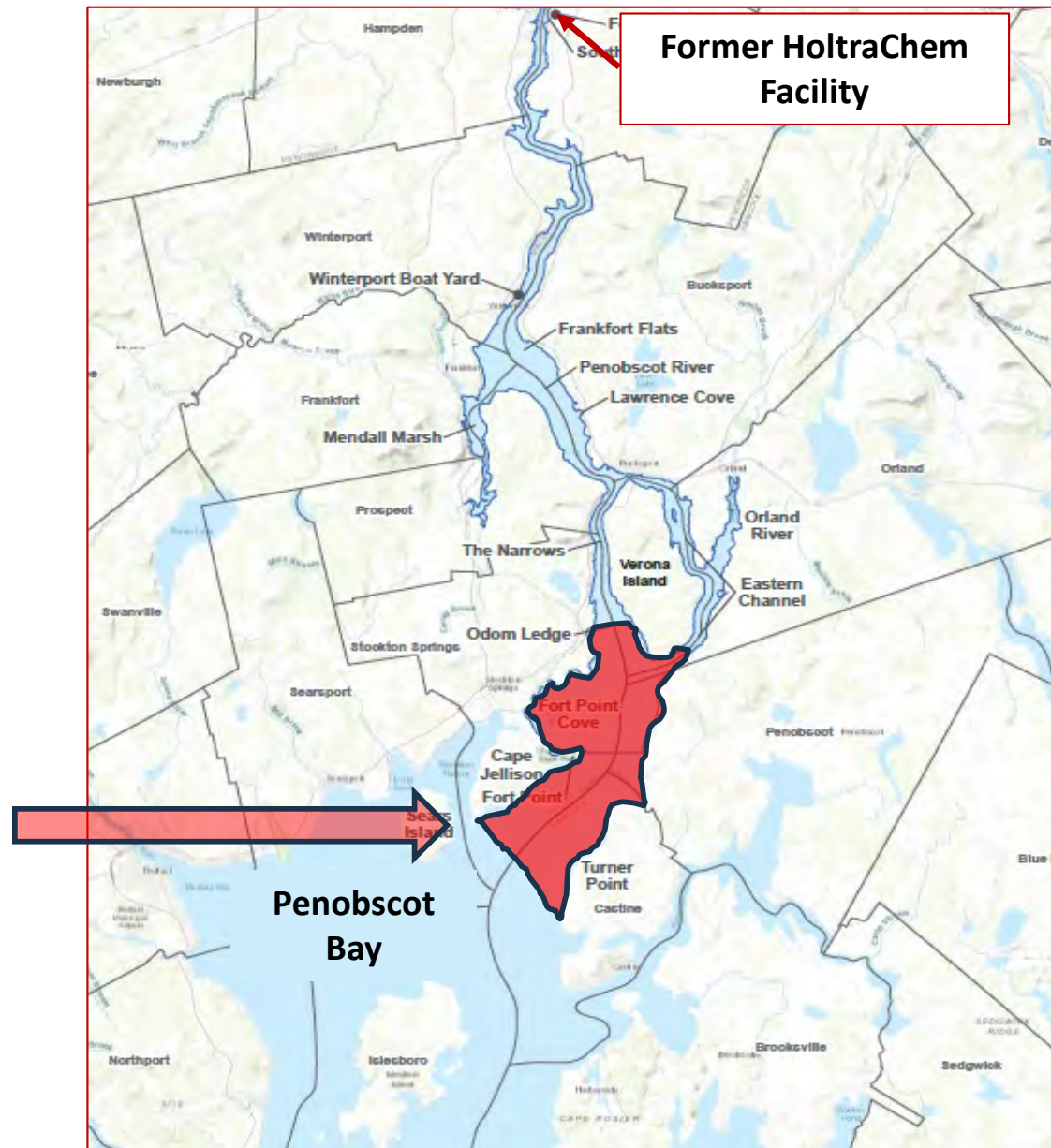
- ✓ Introductions
- ✓ Brief Background
- ✓ Overview of Consent Decree
- ✓ Remediation Plans and Progress
- ✓ Questions and Discussion



Mercury in Maine

- ✓ Present and persistent in environment
- ✓ Breaks down to highly toxic methylmercury
- ✓ Mercury levels in Maine fish, loons, and eagles among highest in North America
- ✓ Consumption advisory for fish caught in Maine
- ✓ Estuary lobster and crab fishing closures

<https://www.maine.gov/dep/mercury/>
for more information

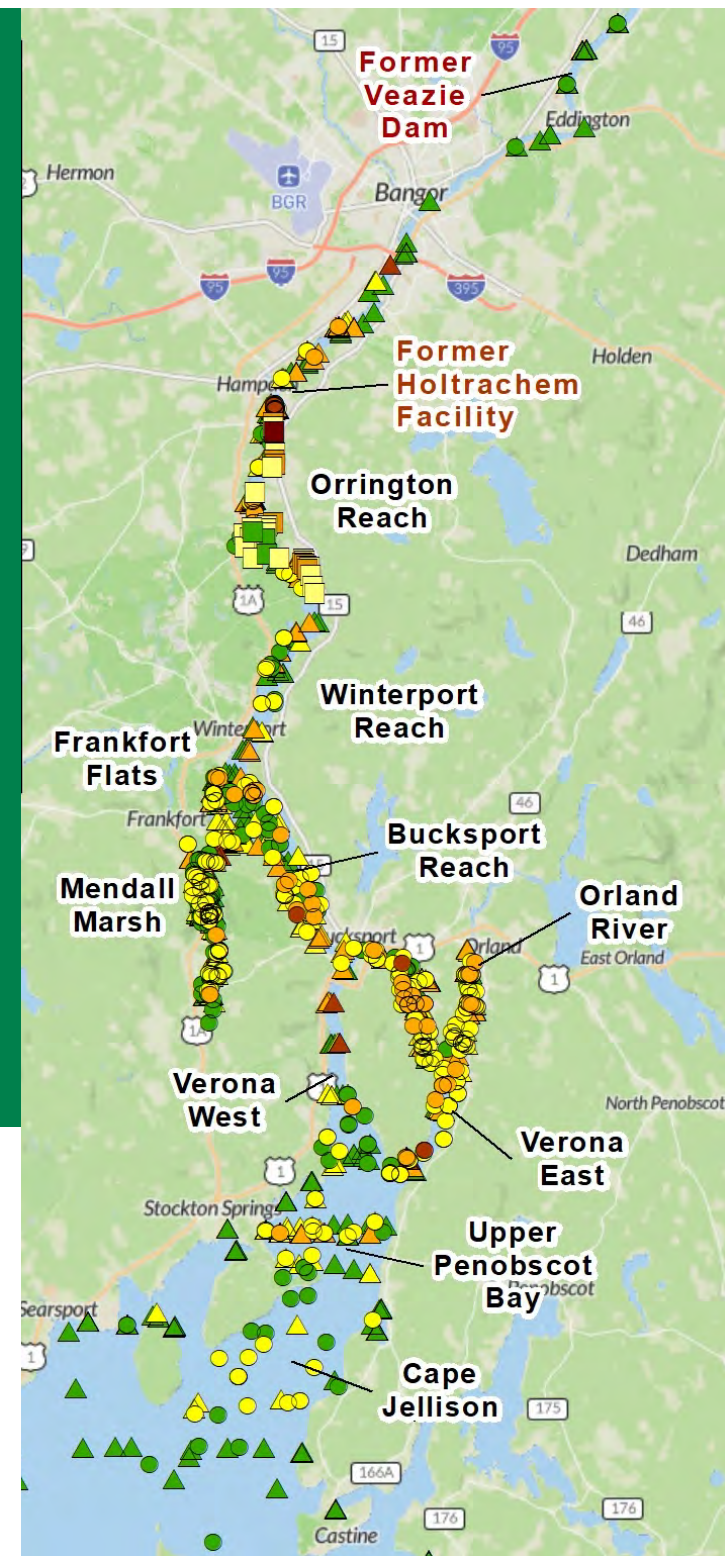


Mercury discharged from
HoltraChem in late 1960s
and early 1970s has
contaminated sediment
throughout
Penobscot River Estuary

Surface Sediment Maximum Mercury Result (ng/g)

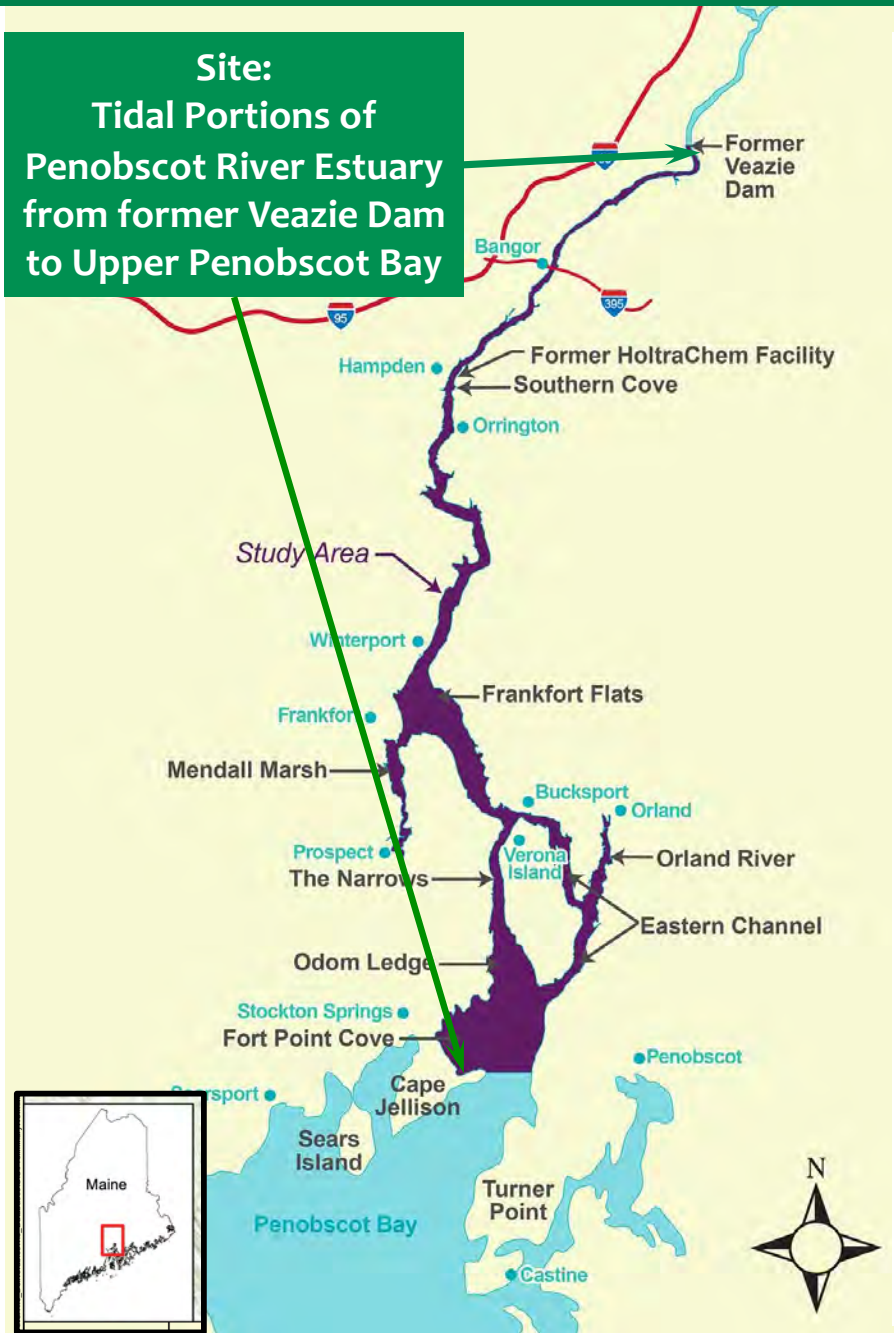
- < 500
- 500 - 1,000
- 1,000 - 2,000
- > 2,000

1,000 nanograms/gram (ng/g)
equals
1 part per million (ppm)



Overview of Consent Decree

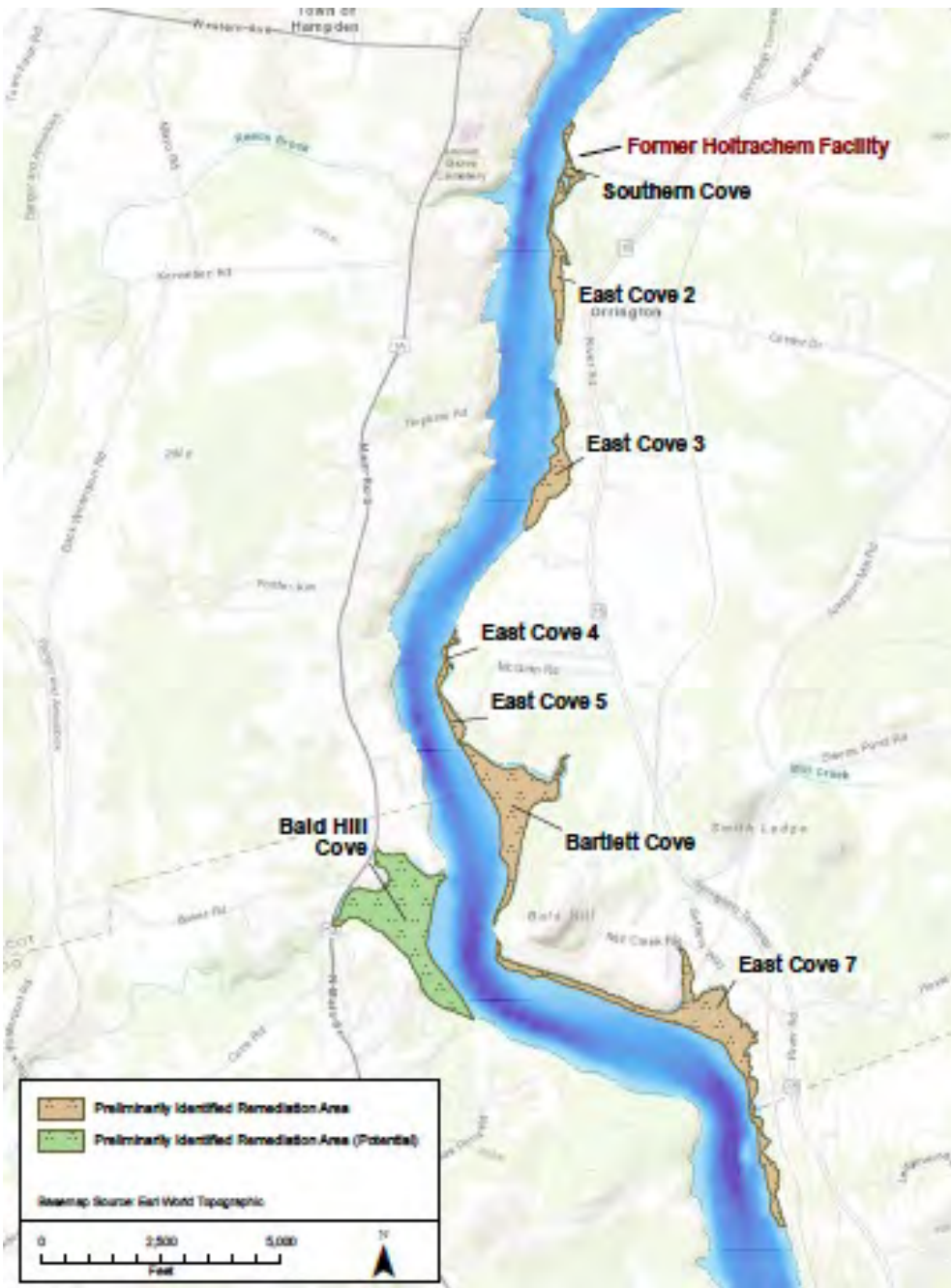
Site:
Tidal Portions of
Penobscot River Estuary
from former Veazie Dam
to Upper Penobscot Bay



- ✓ Mallinckrodt to provide:
 - \$187 million for remedies, monitoring, and beneficial projects
 - Additional \$80 million in potential, contingent funds
 - Total funding: \$267 million
- ✓ Specifies remedies to:
 - Reduce mercury exposure
 - Accelerate recovery
- ✓ Creates two independent trusts
 - Mercury Remediation Trust
 - Beneficial Environmental Projects Trust
- ✓ Named Beneficiaries of Trusts:
NRDC/MPA and Mallinckrodt
- ✓ Larger Beneficiaries: Public, Citizens of Maine, and Penobscot River Estuary

Orrington Reach Remedy Update

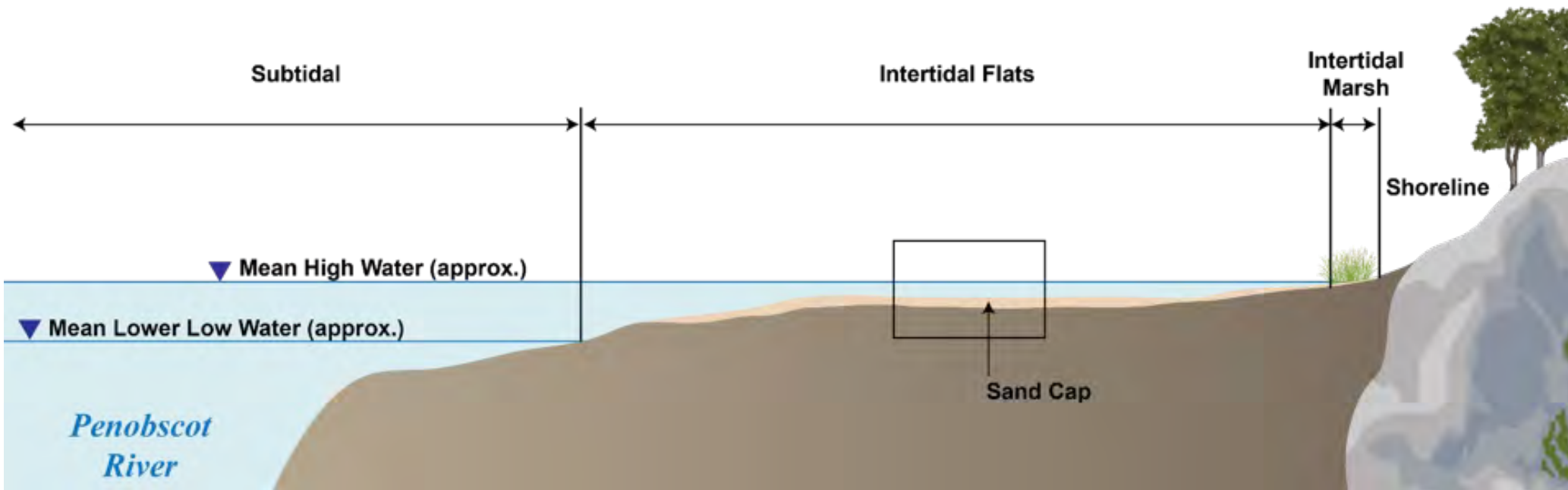
Thin Layer Cap Pilot Construction Completed in September 2026



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Thin Layer Cap (TLC) Pilot Objectives

- ✓ Evaluate stability and effectiveness in Penobscot River Estuary
- ✓ Demonstrate TLC is protective of natural resources



Thin Layer Cap (TLC) Pilot Small-Scale Demonstration Project



- ✓ Cap stability
- ✓ Effects on natural resources
- ✓ Sediment accumulation
- ✓ Feasibility of full-scale capping

TLC Pilot Construction Overview



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Construction Controls and Monitoring Protected Natural Resources

- ✓ Environmental awareness training for contractors
- ✓ Water quality monitoring
 - Hourly readings from 2 locations
 - Turbidity readings stayed within allowable range
- ✓ Endangered species monitoring
 - Sturgeon observed outside work area
- ✓ Pre-construction wetlands and vegetation surveys



TLC Pilot Construction Overview



TLC Pilot Construction Overview



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Pilot Will Inform Evaluations of TLC Performance

- **Cap Stability** - Potential for erosion or migration due to river flow, tidal action, or ice scour.
- **Effects on Natural Resources**
 - Benthic community recovery
 - Essential fish habitat and critical habitat health
 - Marsh vegetation
- **Sediment Accumulation**
 - rate
 - mercury concentration
- **Feasibility of Full-scale Capping**



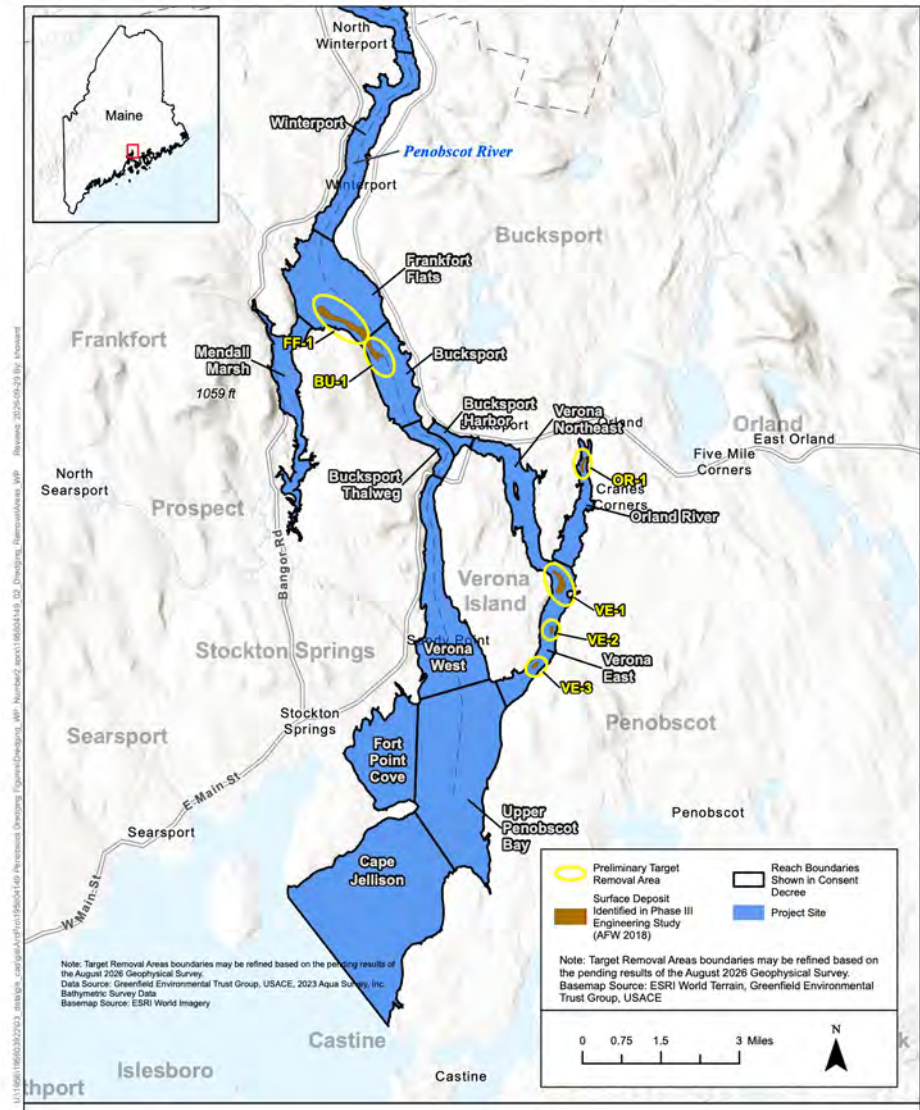
Evaluation of TLC Performance and Protectiveness

- ✓ Post-construction monitoring for 3–5 years
 - Mercury concentrations in TLC
 - Benthic population and mercury concentrations
 - TLC thickness
- ✓ Evidence of ice scour and cap erosion
- ✓ Benthic recovery and evidence of foraging
- ✓ Shoreline stability
- ✓ Annual reports submitted to DEP and USACE



Mobile Sediments and Surface Deposits Removal Remedy

- ✓ Intention - Accelerate recovery
- ✓ Approach – Remove portion of contaminated sediment moving within Estuary
 - Surface deposits identified in 2016–2017
 - Elevated mercury
- ✓ Preliminary removal targets
 - Removal
 - Landside dewatering, processing & treatment
 - Beneficial use and/or disposal



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Information Needed to Evaluate Removal of Surface Deposits

- ✓ Location and size
- ✓ Material
 - Wood waste or mineral sediment?
 - Chemical contaminants
 - Physical properties
- ✓ Treatment and processing requirements
- ✓ Beneficial use and/or disposal options
- ✓ Community interests
- ✓ Ability to obtain permits

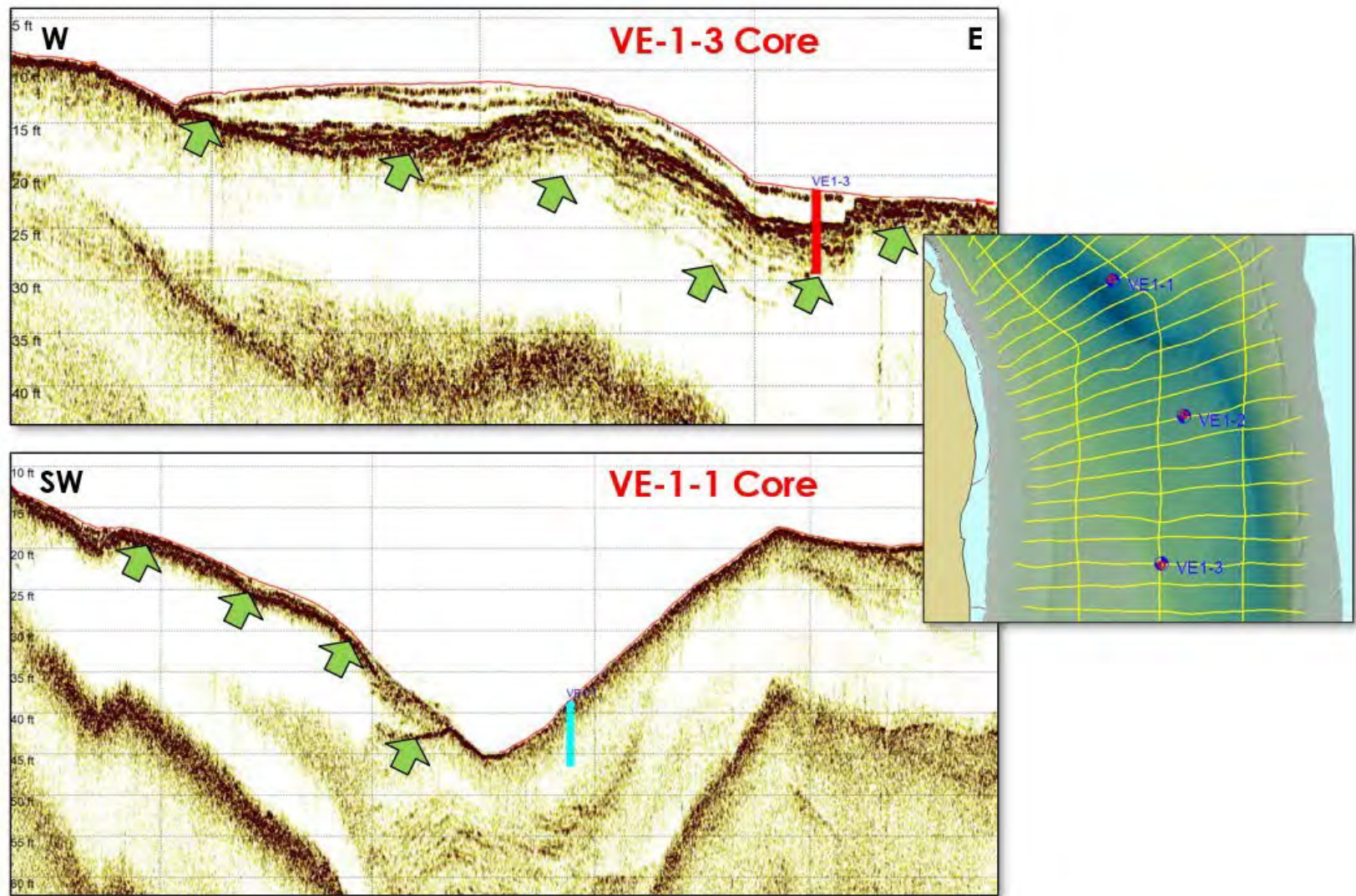


2026 Investigations

- ✓ August - Geophysical and Preliminary Sediment Investigation
 - Bathymetric mapping and images of river bottom
 - Core samples to confirm images
- ✓ October/November -Target Removal Area Characterization
 - Surface deposit sampling
 - Analyses for mercury and other contaminants
 - Additional bathymetry



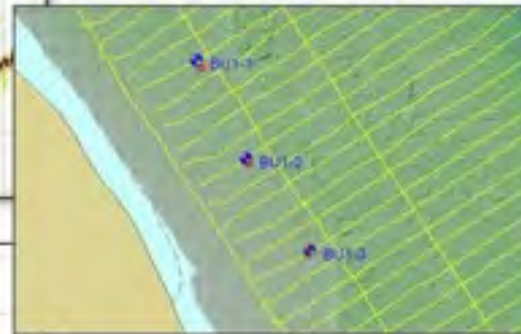
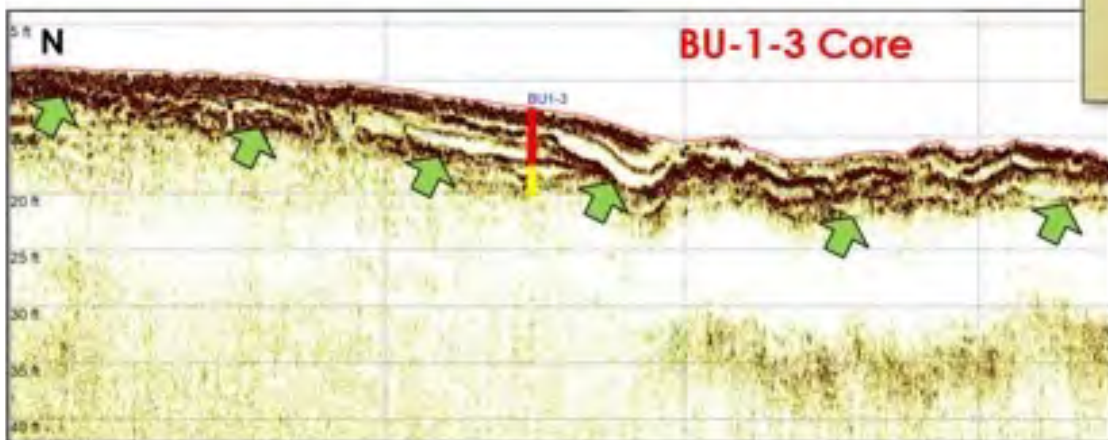
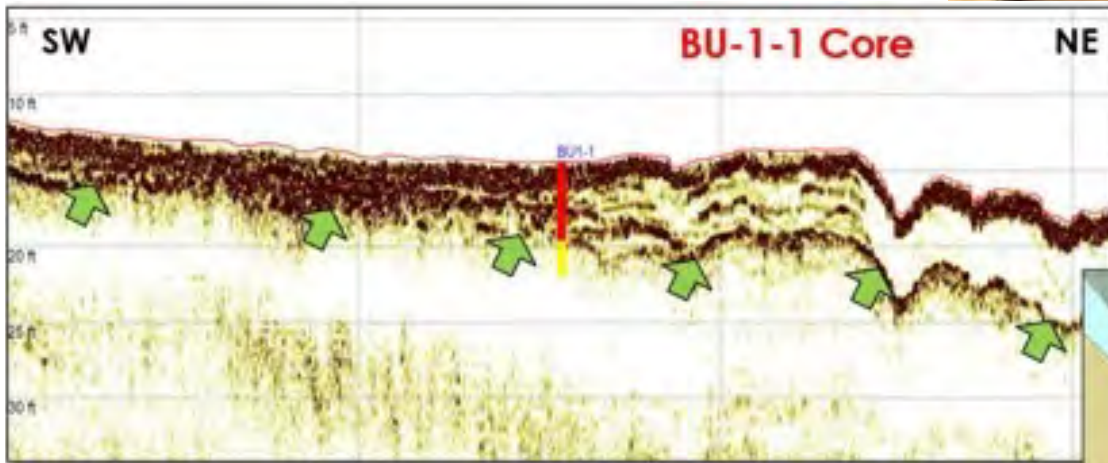
August Sub-bottom Profile Images Show Surface Deposit Layers



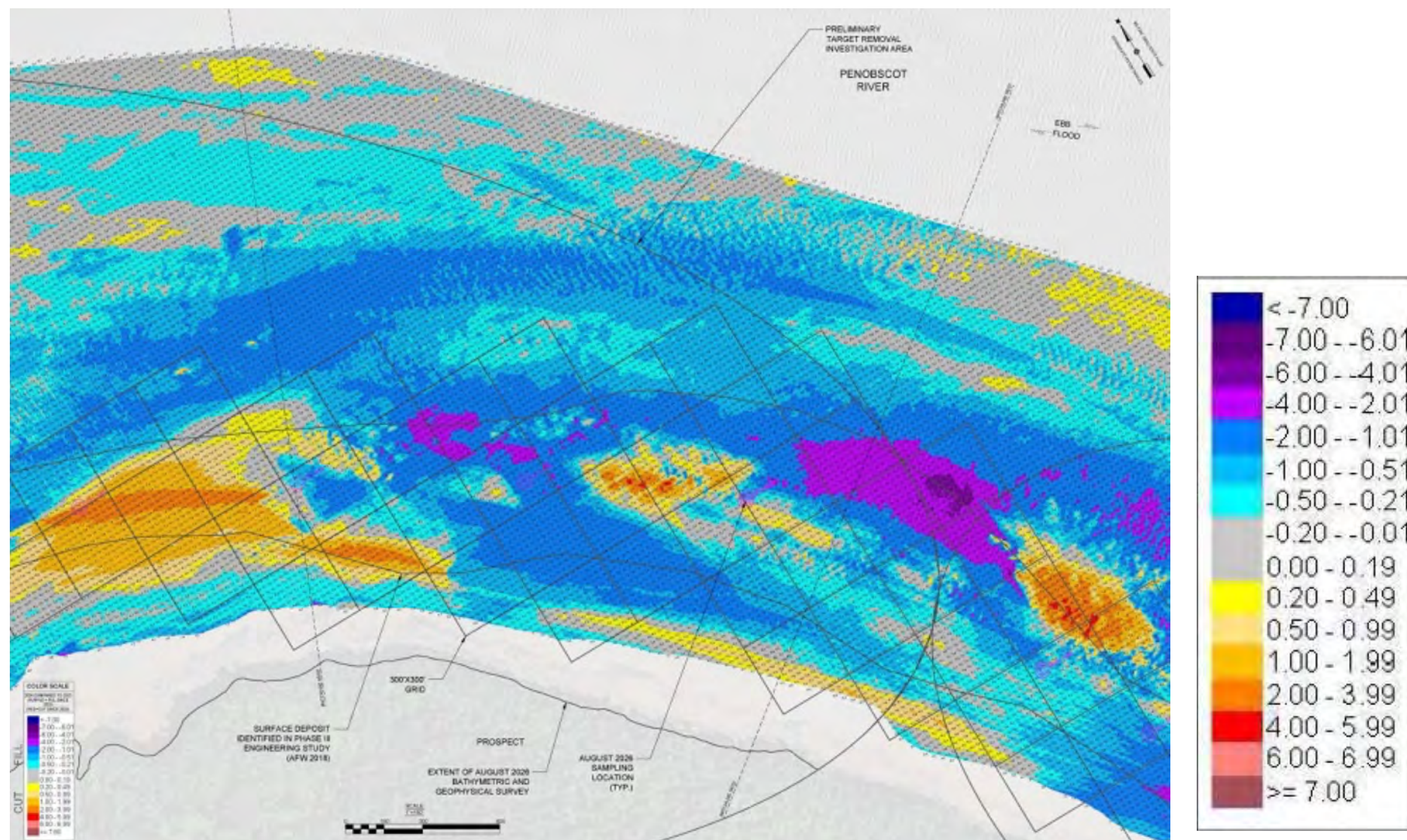
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Mobile Sediment and Surface Deposit Removal Remedy

Sediment cores confirm sub-bottom imagery



Bathymetric Surveys Map the River Bottom



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Initial Surface Deposit Observations

- Surface deposits confirmed at 5 of 6 preliminary target areas
- Elevated mercury concentrations
- Primarily wood waste (50–100%)



In 1872, 225 million feet of Bangor's lumber crop
was floated down the Penobscot



Photograph courtesy of Maine Boomhouses



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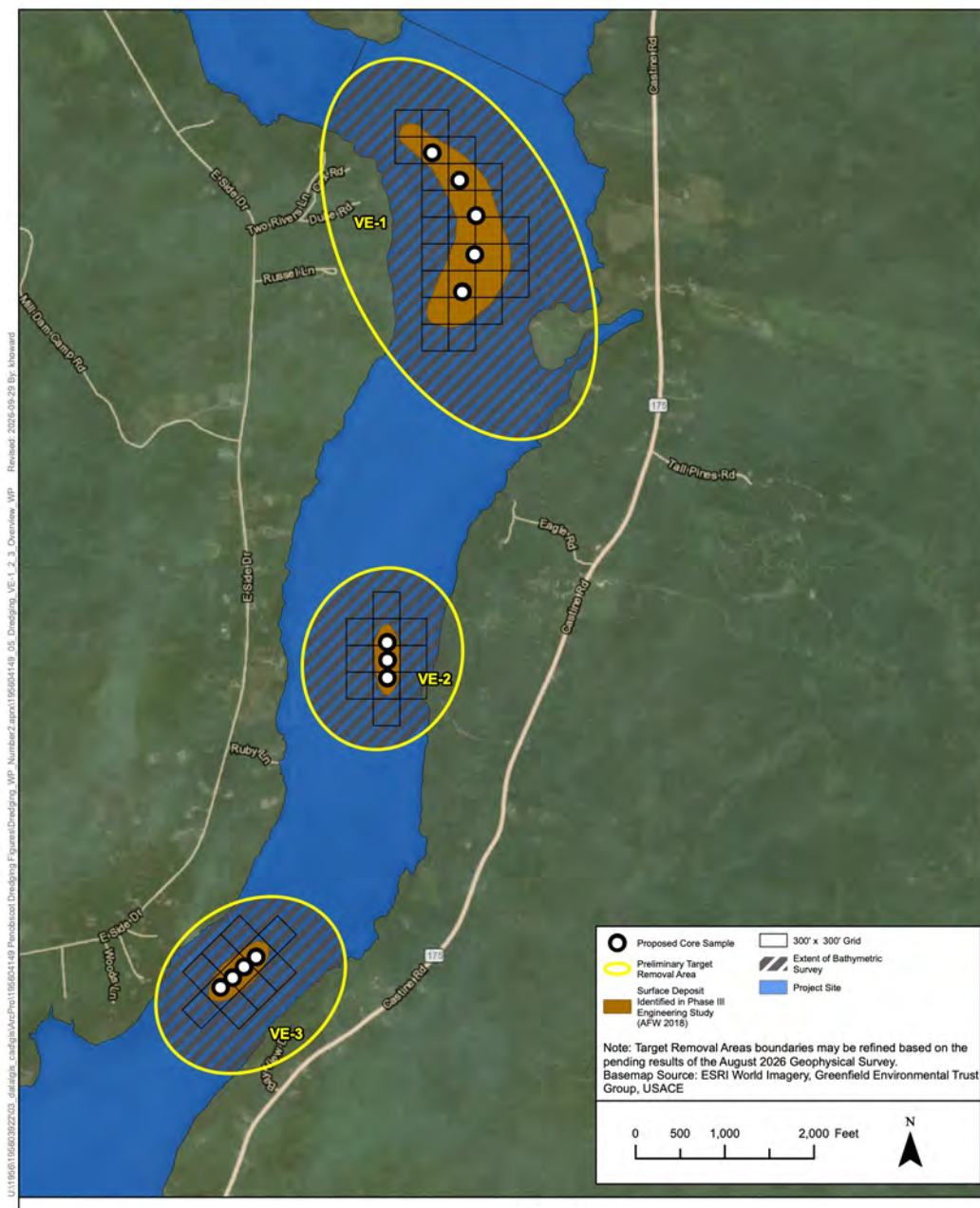
Wood Waste Presents Challenges

- ✓ Predominant material in surface deposits
- ✓ Elevated mercury concentrations
- ✓ Material is mobile
- ✓ Beneficial use and disposal considerations different than mineral sediment (e.g., silt, sand, gravel, etc.)



October–November Investigations

- ✓ Additional geophysical work
- ✓ Sediment core sampling and analyses
 - Confirm thickness and material composition
 - Analyze for mercury and other contaminants

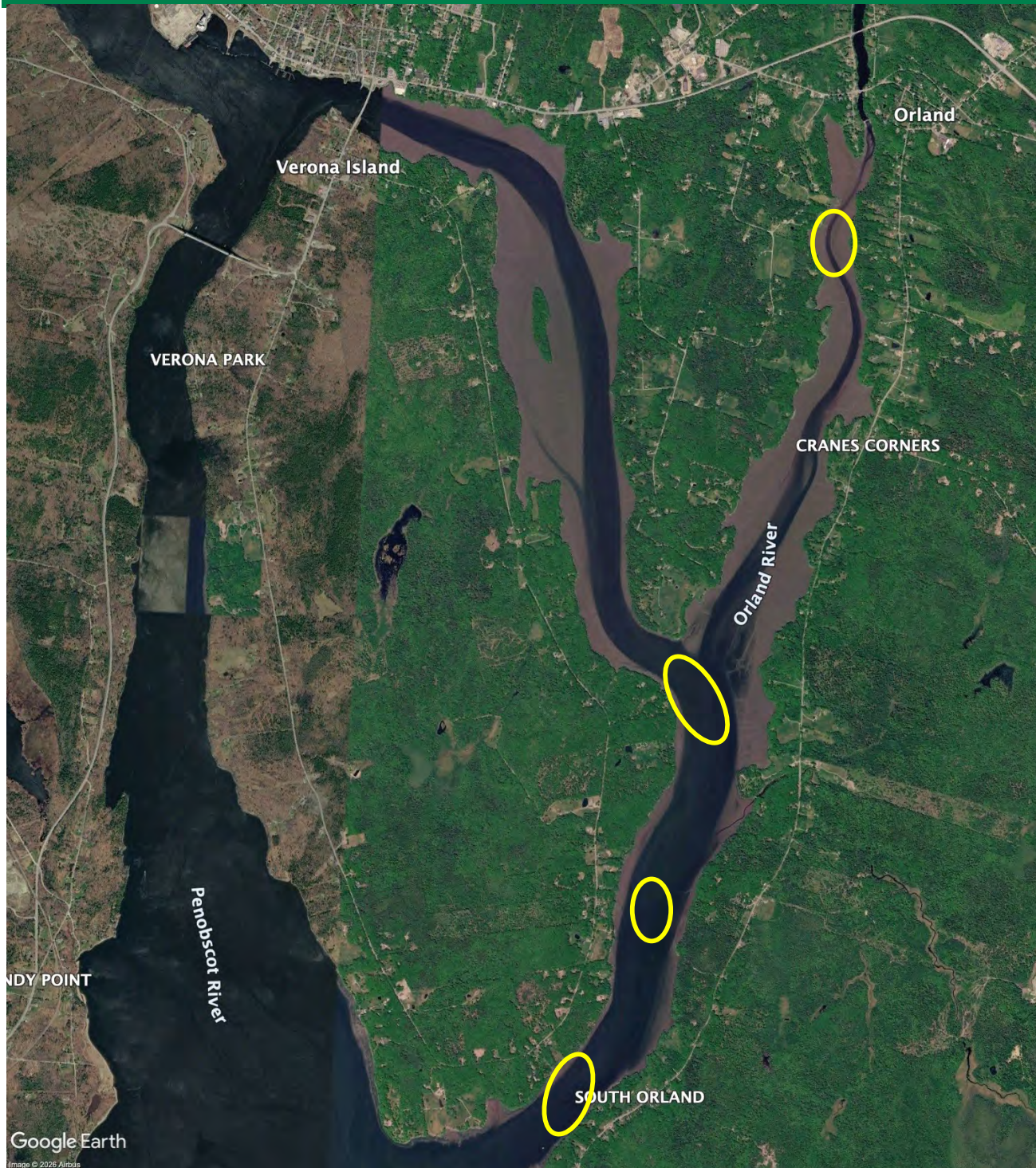


Work Planned for 2027

- ✓ Treatability Studies
 - Identify dewatering methods
 - Identify additional treatment needs
- ✓ Selection of target removal areas
- ✓ Preliminary planning and design
 - Removal plans and specifications
 - Landside dewatering and treatment area
 - Beneficial use and/or disposal
- ✓ Permit application development
 - Investigations
 - Natural resource surveys
 - Landside facility location and layout
 - Beneficial use and/or disposal plan

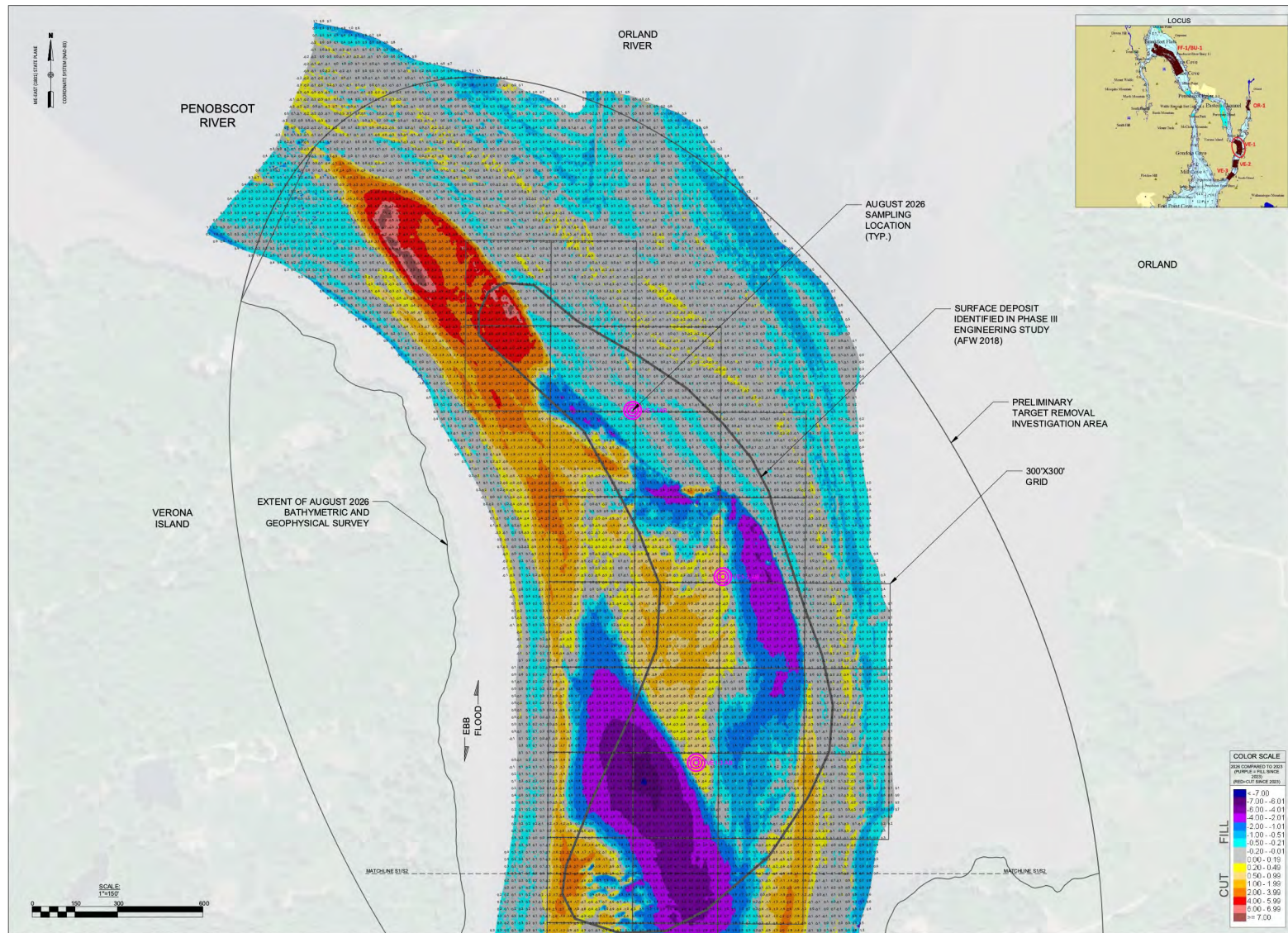


Orland River & East Channel Around Verona Island



- ✓ Remedy not specified
- ✓ TLC Pilot will inform capping feasibility
- ✓ Four target removal areas being investigated and evaluated for removal

East Channel Bathymetry Shows Deposition Areas



Deposits are
purple & blue

Scour areas are
yellow & orange

MULTI BEAM
BATHYMETRIC SURVEY
DIFFERENCE ISOPACH

VE-1 AREA
VERONA EAST
PENOBSCOT RIVER

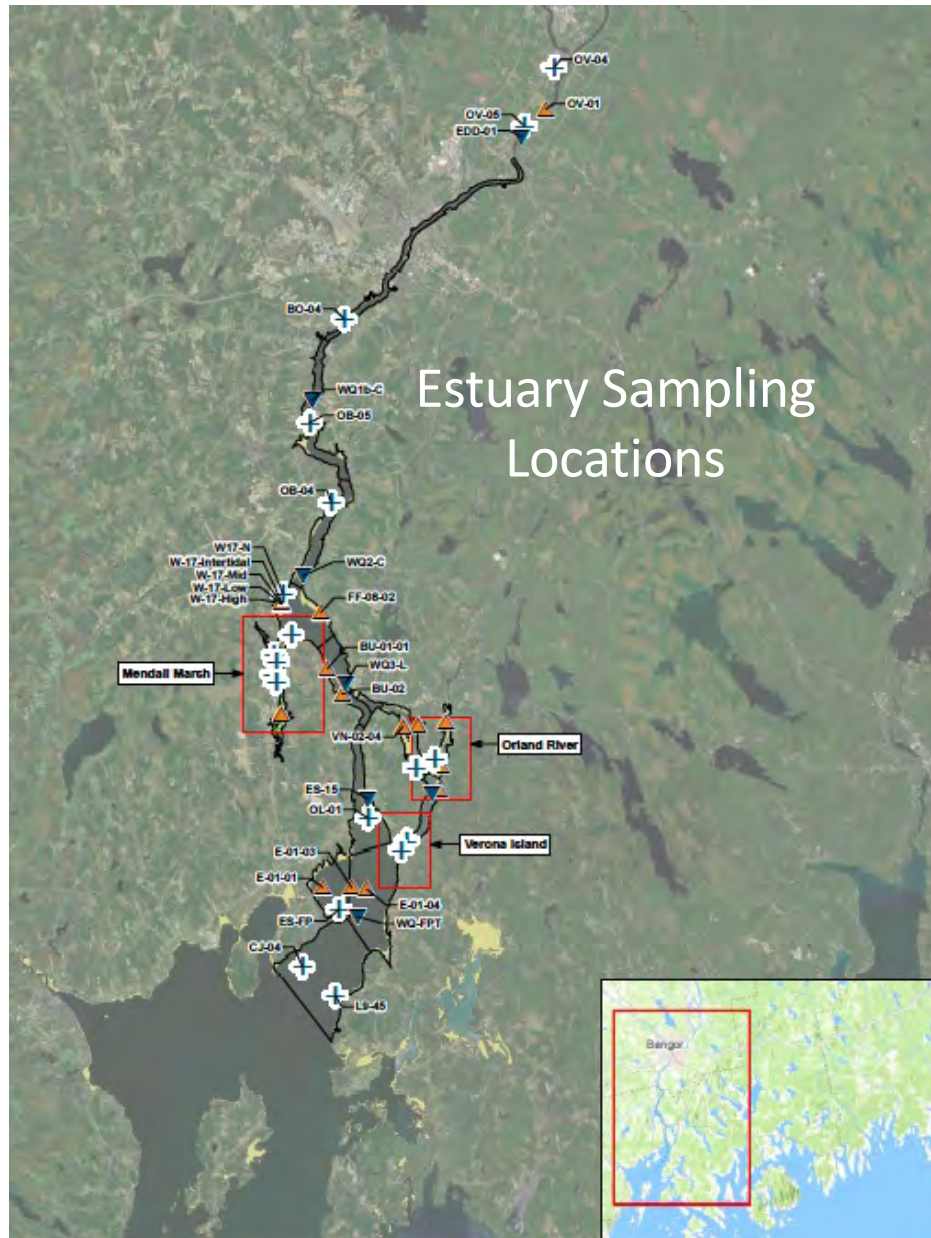


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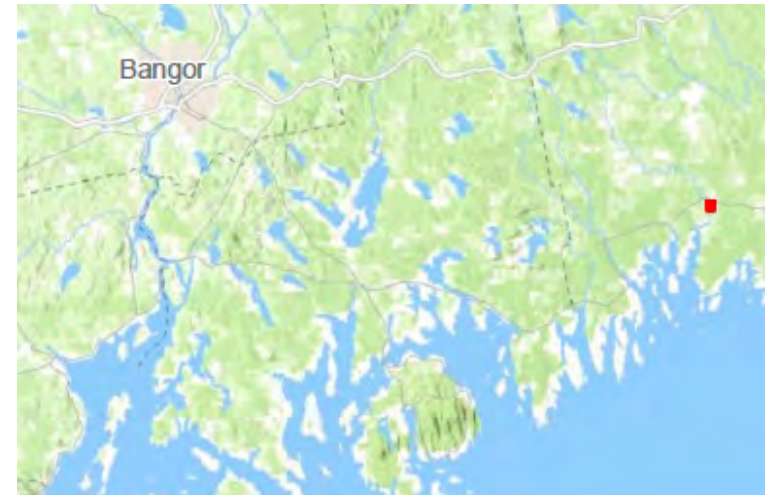
Long-Term Monitoring 2026 Updates



Long-Term Monitoring Sampling Locations



Addison Reference Location

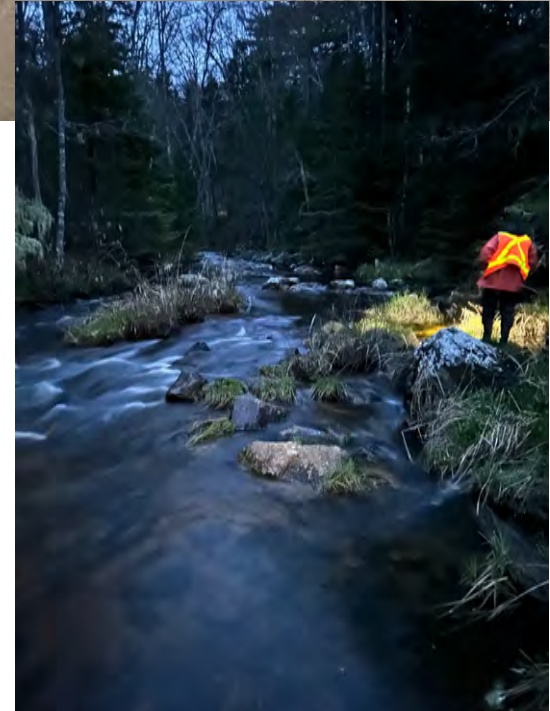


Frenchman's Bay Reference Location



2026–2027 Long-Term Monitoring

- ✓ Monitoring mercury concentrations in Estuary and reference locations
- ✓ 2026 Sampling Events
 - Organisms living in sediment
 - Mummichog, smelt, tomcod & lobster
 - Nelson's Sparrow & Redwing Blackbird
- ✓ 2027 Sampling and Reporting
 - Black Duck sampling in January
 - Final report preparation



Beneficial Environmental Projects

\$20 Million to Offset Harm
Caused By Mercury



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Contact Maine CDC for Health Questions

✓ **Thomas Simones, PhD**

- Acting State Toxicologist
- Environmental Health Program
- Division of Environmental and Community Health
- 286 Water Street, 9th Floor
- 11 State House Station
- Augusta, ME 04333-0011
- Tel: 207-287-3365
- Fax: 207-287-3981

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For More Information

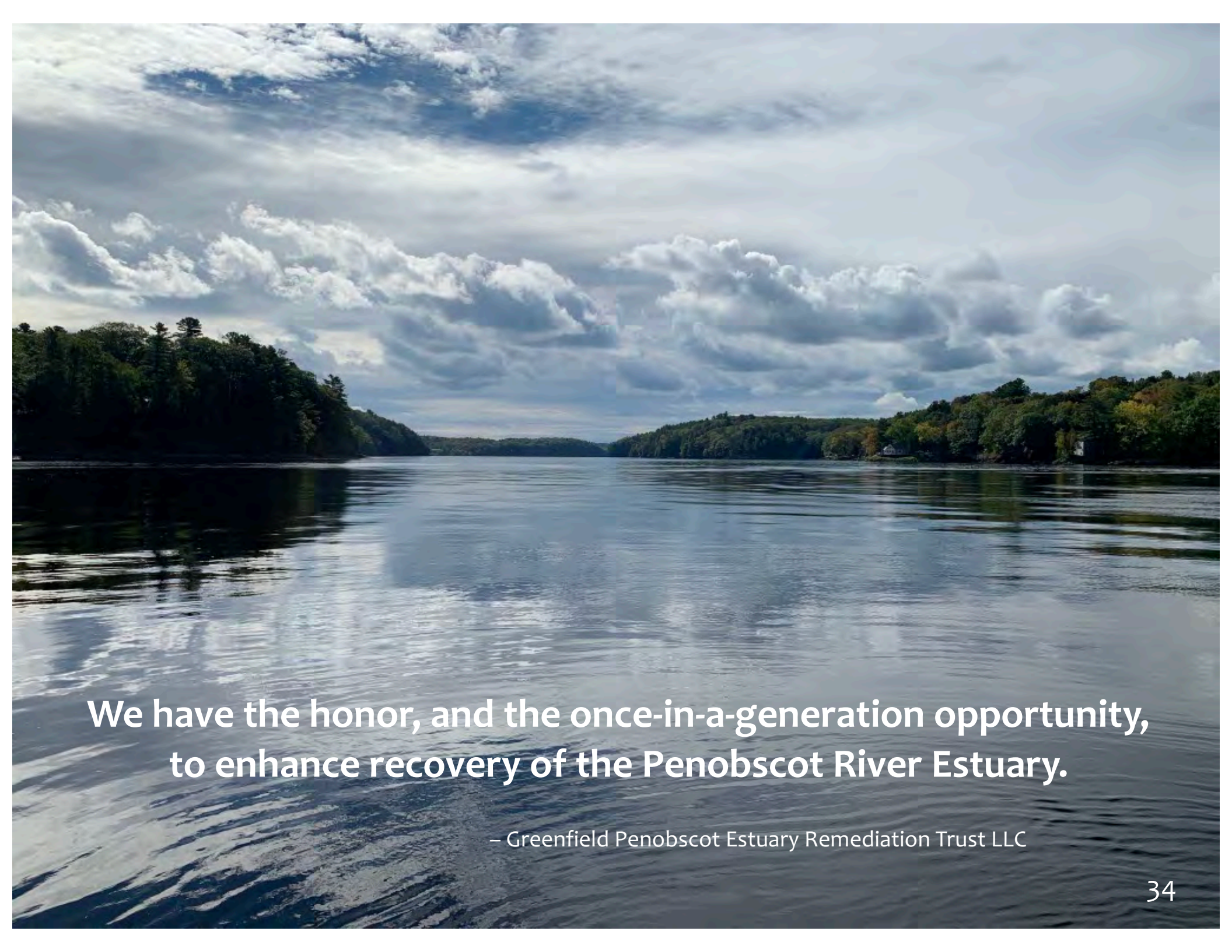
- ✓ Lauri Gorton,
Remediation Trust
Program Manager
414-732-4514
lg@g-etg.com
- ✓ Peter Cornais,
Remediation Trust
Deputy Program Manager
850-545-7457
pc@g-etg.com
- ✓ Christine Amrhine,
Community Involvement
Coordinator
540-846-3163
ca@g-etg.com
- ✓ Cindy Brooks,
Managing Principal
617-448-9762
cb@g-etg.com



<https://www.penobscotriverremediation.com>



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A wide river flows through a lush, forested landscape. The sky is filled with large, white, puffy clouds, and the water reflects the sky and the surrounding greenery. The river is calm, with gentle ripples on its surface. The banks are covered in dense trees, and a small white house is visible on the right bank.

**We have the honor, and the once-in-a-generation opportunity,
to enhance recovery of the Penobscot River Estuary.**

– Greenfield Penobscot Estuary Remediation Trust LLC

Questions and Discussion

