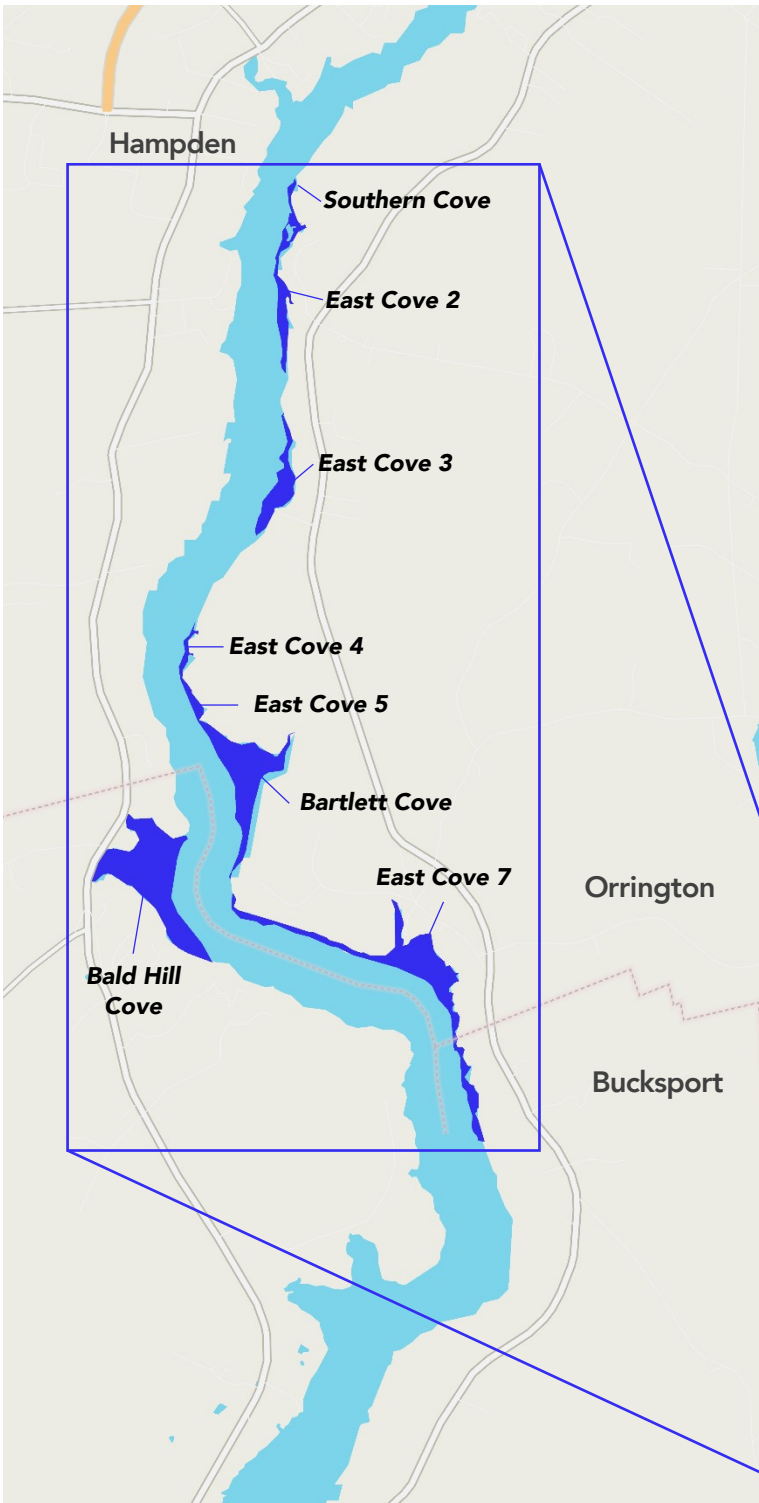


# CAPPING CONTAMINATED SEDIMENT IN ORRINGTON REACH

*This fact sheet was prepared by the Trustee of the Penobscot Estuary Mercury Remediation Trust*

The Penobscot Estuary Mercury Remediation Trust (Remediation Trust) has started work to remediate mercury contamination in Penobscot River Estuary (Estuary) sediments. Placing a cap on ±130 acres of intertidal flats between Orrington and North Bucksport (an area referred to as Orrington Reach) is one of the measures to be taken to speed up the natural recovery of the Estuary.



## Mercury in Estuary Sediment Poses a Potential Risk

When mercury is discharged to a river or estuary, it builds up in sediment and becomes a more toxic form of mercury (methylmercury) under certain conditions. Methylmercury can then accumulate in the tissue of fish and wildlife that eat worms, shellfish, and other organisms living in contaminated sediment. People will be exposed to methylmercury if they eat fish, shellfish, and birds that contain high levels of methylmercury.

## How Can Capping Enhance Recovery of the Estuary?

Placing clean material over contaminated sediment will reduce the potential for worms, fish, shellfish, and wildlife to contact methylmercury, gradually decreasing methylmercury concentrations throughout the Estuary and food chain over time. Capping also reduces the potential for contaminated sediment under the cap to be redistributed by River water to other parts of the Estuary.

## Areas Proposed for Capping

Areas currently being evaluated for capping are intertidal flats (also called mudflats) in coves and other areas between Orrington and North Bucksport, as shown in the figure to the left. Contaminated sediment has been deposited in these areas because River and tidal flows are slower than in the main channel. Cap design will prioritize areas with the highest mercury concentrations (to reduce average concentrations throughout Orrington Reach) and areas with lower River velocities (to improve cap stability and reduce potential erosion).

## What is a Thin Layer Cap and how is it Built?

The Remediation Trust is proposing a “thin layer cap” consisting of two to six inches of sand for Orrington Reach. The cap material would be placed on top of contaminated sediment when the intertidal flat surface is exposed during low tide in order to control the distribution of sand. Heavier material (like grape-sized stone) would be used for portions of the cap exposed to higher water/River velocity to prevent erosion. Over time, the River would be expected to deposit sediment on top of the cap.



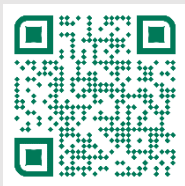
*This picture shows the exposed surface of an intertidal flat during low tide.*

## Preliminary Cap Design is Underway

As part of the cap design evaluation work, sediment samples will be collected in 2023 from intertidal flats and analyzed to measure the sediment’s mercury levels and physical properties. The information will help determine capping location, extent, material, and thickness, among other factors.

## Remediation Trustee

The Trustee of the Remediation Trust is Greenfield Penobscot Estuary Remediation Trust LLC, an affiliate of Greenfield Environmental Trust Group, Inc. (Greenfield). Appointed Trustee by the U.S. District Court as part of its approval of a consent decree and cleanup plan, Greenfield is the court-appointed trustee of other environmental response and custodial trusts directing complex cleanups of contaminated sites nationwide.



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### For more information

Email [penobscot@g-etg.com](mailto:penobscot@g-etg.com)

Call (414) 732-4514

Visit [www.penobscotriverremediation.com](http://www.penobscotriverremediation.com)



*Cap material is typically put in place using equipment on a barge positioned in a river.*

## Seeking Access Permission from Landowners

The Remediation Trust is seeking permission from landowners along the Estuary to collect sediment samples from intertidal flats and to survey the extent and quality of wetlands around the areas proposed for capping. Sampling data will be used to identify cap material and areas to be capped, and prepare required state and federal permit applications. Intertidal flats will be accessed from the River, not from landside properties. As capping locations are finalized, the Remediation Trust will request access agreements from landowners as needed to place capping material and to monitor cap performance over time.

## Permits Required for Capping

The Remediation Trust must obtain local, state, and federal permits and other regulatory approvals to implement the capping remedy. Federal, state, and local permit application and review processes allow for public participation and comment.

## Remediation Trust is Committed to Community Involvement

During the design and permitting process, the Remediation Trust will provide several opportunities for public participation and comment on proposed capping activities. Final cap design, investigation work plans, and other documents will be posted on the Remediation Trust’s website at: [www.penobscotriverremediation.com](http://www.penobscotriverremediation.com).

## Capping Orrington Reach is a Remedy Required by the Consent Decree

Capping of intertidal sediments in Orrington Reach is one of several mercury-remediation measures outlined in the Consent Decree approved by the U.S. District Court for the District of Maine.