

A community commitment to restoration

The Herring River Restoration Project represents one of the largest opportunities to restore the environment of Cape Cod and revive the ecological and economic benefits provided by a healthy natural coastal river and tidal wetland system.

The Project is the result of more than a decade of scientific study, extensive stakeholder involvement and public discussions with local leadership. The Project design has been strengthened by the input of community and regional stakeholders. The Project team includes national experts in estuarine science, civil engineering and environmental resource management.

Soon the Towns of Wellfleet and Truro and the Cape Cod National Seashore, as Project proponents, will submit environmental permit applications necessary to implement Phase 1 of the Project and restore approximately 570 acres of native tidal wetlands.

This newsletter and others to follow is part of our effort to keep you informed of the Project and progress throughout its implementation.

Degraded condition of the Herring River confirmed by recent data

Tidal restriction caused by the existing Chequessett Neck Road dike is responsible for significant ongoing environmental damage. Water quality and other ecological problems will continue until the Project reconnects the river and wetlands with the marine environment:

- ❖ Massachusetts DEP has designated Herring River as an Impaired Water under the Clean Water Act for high aluminum, low pH, high fecal coliform bacteria and a fish passage barrier.
- ❖ Water quality in the river is impaired year-round. Data measured by the US Geological Survey over multiple years show that dissolved oxygen in river water regularly falls below established thresholds for causing stress and mortality for fish and other aquatic life.
- ❖ The Massachusetts Division of Marine Fisheries has designated the CNR dike as a point source of bacterial contamination, resulting in the closure of shellfish beds upstream and downstream of the dike due to poor water quality.
- ❖ Tidal restriction, along with stream channelization and ditch drainage, has lowered wetland water levels above the dike causing the marsh plain to sink 2-3 feet. Prolonged exposure of drained salt marsh peat to air causes it to decompose and release sulfuric acid into surrounding soils and receiving water. Acid sulfate soils are a major problem covering hundreds of acres of original Herring River marshes. These soils leach toxic acidity and aluminum into remaining surface water, killing aquatic animals.
- ❖ Elimination of tidal flooding and salinity has also allowed non-native *Phragmites* to invade the salt marsh immediately above the dike, and upland shrubs and trees to invade above High Toss Road, where "high tides" never reach the original marsh surface.

Return of tidal flow to the Herring River system will:

- ❖ Vastly improve water quality and habitat for fish, shellfish, and coastal wildlife;
- ❖ Protect and enhance harvestable shellfish resources in the river and Wellfleet Harbor;
- ❖ Restore the river's functions as one of the largest estuarine nurseries and food sources for marine life in Cape Cod Bay and the Gulf of Maine;
- ❖ Remove physical impediments to fish migration for river herring and American eel;
- ❖ Re-establish natural tidal marsh habitats in place of the invasive non-native and upland plants that have colonized throughout the system;
- ❖ Restore normal sediment deposition needed to allow marshes to gain elevation in response to sea-level rise;
- ❖ Combat climate change by restoring lost carbon storage volume and reducing methane emissions from altered salt marsh; and
- ❖ Re-establish the natural control of nuisance mosquitoes by restoring tidal range and flushing, water quality, and access for fish that prey on mosquito larvae.



Phase 1 of the Project will restore approximately 570 acres of native tidal wetlands

Phase 1 of the Project will involve construction of all major Project infrastructure and allow tidal restoration to nearly two-thirds of the full Project area, while minimizing effects on private land.

Phase 1 consists of the following proposed construction elements:

- ❖ Replacing the existing Chequessett Neck Road dike with a new bridge and tide gates;
- ❖ Installing a Mill Creek dike and tide gates;
- ❖ Elevating low-lying sections of Pole Dike Road and installing a tide gate;
- ❖ Elevating low-lying sections of Old County and Bound Brook Roads, and installing upgraded culverts;
- ❖ Removing the portion of High Toss Road that crosses the estuary and blocks tidal flow, and elevating an upland portion of that same road to maintain access to all private properties; and
- ❖ Completing flood protection measures at Chequessett Yacht and Country Club and specified private properties.

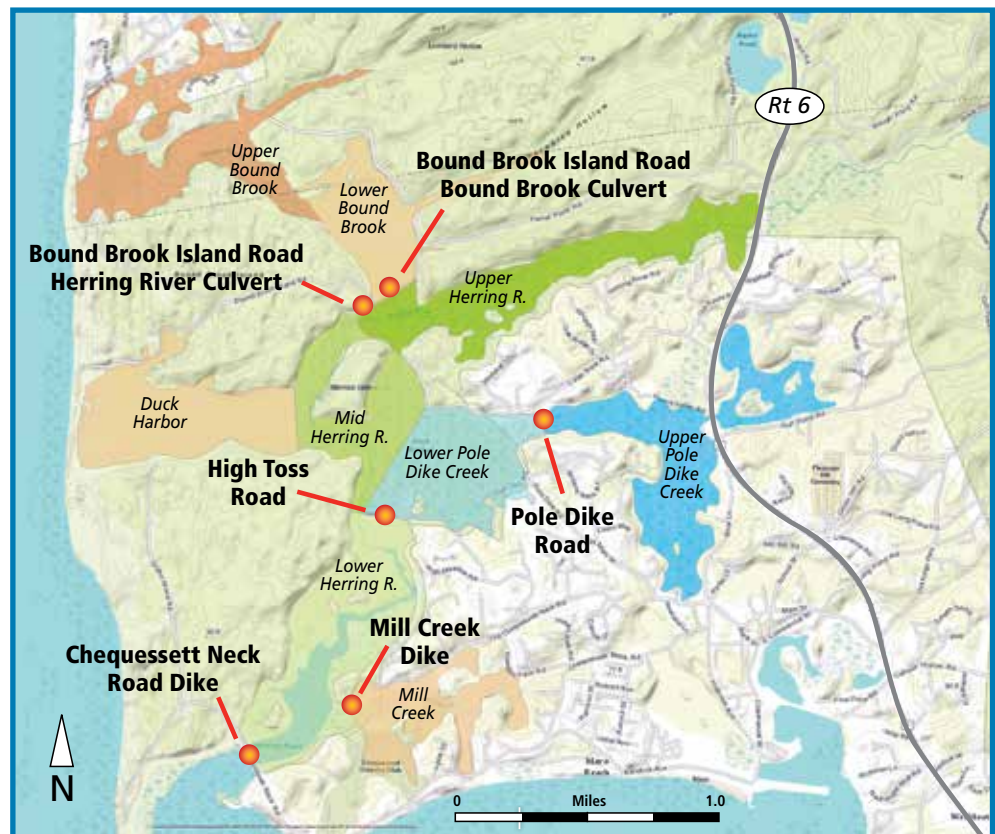
During Phase 1, the new tide gates at Chequessett Neck Road dike and Mill Creek dike will be configured to allow partial tidal flow into Herring River and Mill Creek up to a maximum water level specified for each respective basin. The Pole Dike Road river crossing will be equipped with tide gates that allow (outgoing) drainage while preventing any tidal flow from entering Upper Pole Dike Creek as a result of Phase 1 restoration. Maximum water levels in all areas of the estuary affected by Phase 1 tidal restoration will be kept below elevations that could impact any private structures that are not protected by Phase 1 flood protection measures.

Tidal flow will be restored in increments over a number of years through the new Chequessett Neck Road and Mill Creek tide gates while the system responses are carefully monitored. The tide gate openings can be reduced at any time if system conditions warrant.

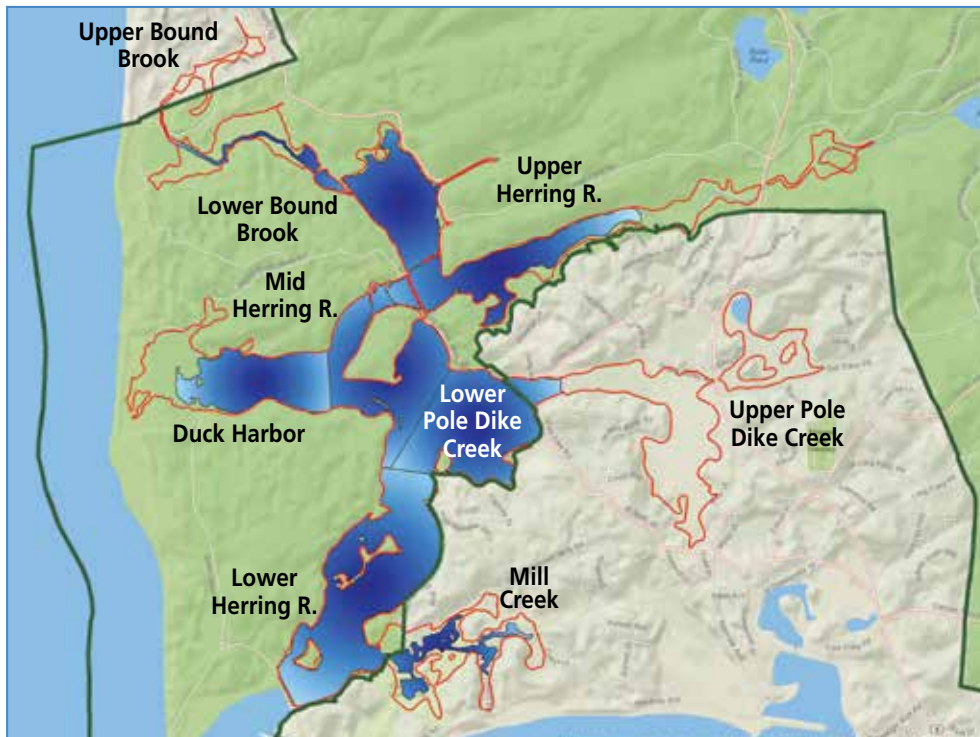
Any proposed future increases in water levels beyond those approved in permits for Phase 1 would require permit amendments or new permits—with full regulatory review and opportunities for public input—as well as agreements with property owners for any necessary flood protection measures.

Permit-ready design plans for the proposed tide control infrastructure at Chequessett Neck Road, Mill Creek and Pole Dike Road are nearing completion. The first permit application submitted will be to the Cape Cod Commission. That application will be followed by other applications to the Massachusetts Department of Environmental Protection (MassDEP), and the U.S. Army Corps of Engineers. Once the Cape Cod Commission review process is completed, applications will be filed with the Wellfleet and Truro Conservation Commissions.

Applications to the Towns' conservation commissions will be submitted in accordance with Ecological Restoration Limited Project provisions under the MA Wetlands Protection Act (WPA) and local wetland bylaws. In the case of the Herring River, where tidelands have become so severely degraded over the past century, the Ecological Restoration Limited Project allows regulators to approve the return of tidal flow to revive the damaged river and its wetlands, so long as structures are protected and other applicable provisions of the WPA are met.



Herring River Restoration Project: Phase 1



For more information about the Project visit us at www.herringriver.org or contact us at 508-214-0656 or info@herringriver.org.

- Maximum extent of Phase 1 restoration (mean high water spring tides)
- Project Area/Extent of Full Restoration pending future permits and landowner agreements
- CCNS Boundary

Project protects all low-lying structures in the Herring River floodplain

All public and private property proposed for Phase 1 restoration is currently regulated wetlands. Approximately 535 acres (95%) are owned by the National Park Service. The remaining 31 acres (5%) consists of private land that would experience monthly tidal influence (i.e., existing freshwater wetland would become subject to monthly tidal influence). Of the 31 acres of private property:

- ❖ 10 acres are owned by the Chequessett Yacht and Country Club;
- ❖ 8.7 acres are owned by the Wellfleet Conservation Trust;
- ❖ 12.3 acres are on portions of 17 residential parcels.

The Project has identified a small number of private properties as having structures that require on-site flood protection measures under Phase 1 restoration. The Project team is working with these owners to develop flood protection plans for their structures. The measures will be in place prior to a change in water levels that could affect these structures.

Baker-Polito administration awards \$700,000 to Herring River Restoration Project

The Baker-Polito Administration announced on September 8, 2017 a \$700,000 state grant to advance the Herring River Estuary restoration in Wellfleet and Truro, one of the largest ecological restoration projects in the Northeast. This grant leverages a total of \$985,034 in funding for the project in fiscal years 2017 and 2018 from the National Oceanic and Atmospheric Administration (NOAA) Restoration Center.

"Our administration is committed to continuing our support for restoring and protecting Cape Cod's natural environment, a critical factor for the region's economy and quality of life," said Governor Charlie Baker. "Restoration projects like the Herring River Estuary are an important component of our strategy to increase Massachusetts' resilience to the effects of climate change."

Existing 40-year old CNR tide gates are nearing the end of their useful life

The potential for an uncontrolled gate failure poses risks to upstream private property and the environment, as well as town finances. The dike and tide gates will eventually require significant repairs or replacement that, without restoration, would be a major cost for the Town.

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What others are saying

Restoration of the Herring River basin will be our gift to future generations, and it will surely be a model, as well as an inspiration, for other coastal towns.

Gail Ferguson, Project abutter

I am a strong supporter of the project as I feel it takes necessary steps to restore the health of the area by improving not only water quality, but also protecting and improving the native wildlife that depends on these resources.

State Representative Sarah Peake

We have been impressed with the efforts for transparency, for public awareness, and, especially for the degree of scientific research that has gone into the development of restoration plans. Also, we are impressed by the opportunities to improve the environmental conditions and water quality of the estuary and of the Harbor. We have great confidence in the leadership structure that has evolved. We believe that the leadership team will continue its practice of understanding all aspects of the project and will do what is best for the citizens of the Towns of Wellfleet and Truro, taking into consideration all those who are impacted by the project.

R Dennis O'Connell, Wellfleet Conservation Trust

We believe the science is in, and the ecological, economic, and social benefits of restoring tidal flow (as proposed in phase one of the current plan) make proceeding ahead with this ambitious project the proper choice at this time.

Wellfleet Shellfish Advisory Board

The Herring River Salt Marsh was once one of the most vibrant ecosystems in the southeastern corner of the Commonwealth. Completion of this restoration project will significantly reverse the harm caused to the estuary over the past 100 years and support the revitalization of the river's natural tidal flows.

State Senator Julian Cyr

We continue to be strongly supportive of this project because of the important local benefits it will generate, and because it serves as a model for restoring other estuaries along Massachusetts' and America's coast.

John J. Clarke, Massachusetts Audubon

Today, while being sensitive to the commercial and individual needs of the community, we have the opportunity to restore significant parts of the Herring River and its original ecosystem, creating a more productive, healthier and safer environment for all to enjoy and from which to benefit.

Bill Biewenga and Laurie Warner, Project abutters