

Herring River Tidal Restoration Project

Current View of Chequessett Neck Dike and Rendering of Final Bridge Design



The image on the left shows the current dike as built in 1909 and the right image shows the rendering of the final project design of the bridge when the tide gates are fully open.

NPS Photo/Kristin Vinduska and NPS Graphic

Project Background

After many years of research and study the Herring River Restoration Project (HRRP) is underway. Working in partnership with the Town of Wellfleet, the tidally-restrictive dike at the mouth of the river is being replaced with a bridge that will allow tidal water to flow freely between the river and Wellfleet Harbor. Increasing tidal flow will also bring saltwater back to the river and return it to the thriving and ecologically productive estuary it was for thousands of years before the dike was built. The vegetation will change to a mix of salt and brackish water loving plants typical of New England salt marshes. **River herring will return to once again spawn in Herring, Higgins, and Gull Ponds,** the kettle hole ponds that are the headwaters of the watershed. Other culverts and roadcrossings throughout the Herring River floodplain will be replaced to make it easier for herring and other fish to move throughout the river and improve habitat for other wildlife.

Tide gates built into the bridge will be opened gradually over several years so that conditions can be monitored closely. Scientists from Cape Cod National Seashore and other groups are studying tidal hydrology, water quality, vegetation, sediment transport, and a host of other variables to evaluate the effects of the project. As planning for the project was conducted, significant efforts were made to anticipate and clearly define the expected benefits of restoring tidal flow. If unexpected or undesirable conditions are documented, tide gates can be managed to address any problems and avoid harmful effects.

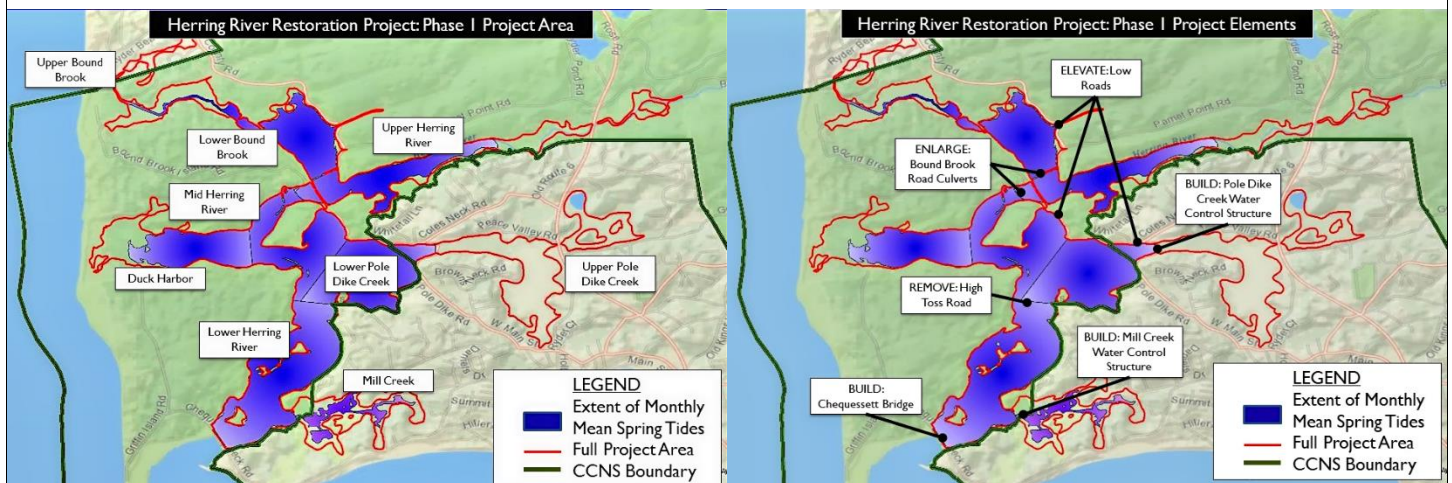
The HRRP is overseen the Herring River Executive Council, including representatives from CACO and the

Wellfleet Selectboard, with input from a stakeholder group representing local concerns and interests and financial and technical support provided by wetland restoration experts from the U.S Fish and Wildlife Service, Natural Resources Conservation Service, National Oceanic and Atmospheric Service, Massachusetts Division of Ecological Restoration, the National Park Foundation, and the Friends of Herring River.

Project Benefits

Water Quality Improvement
Marsh Vegetation Restoration and Habitat Change
Fish Passage
Sediment Dynamics
Blue Carbon
Recreation

Project Area and Elements



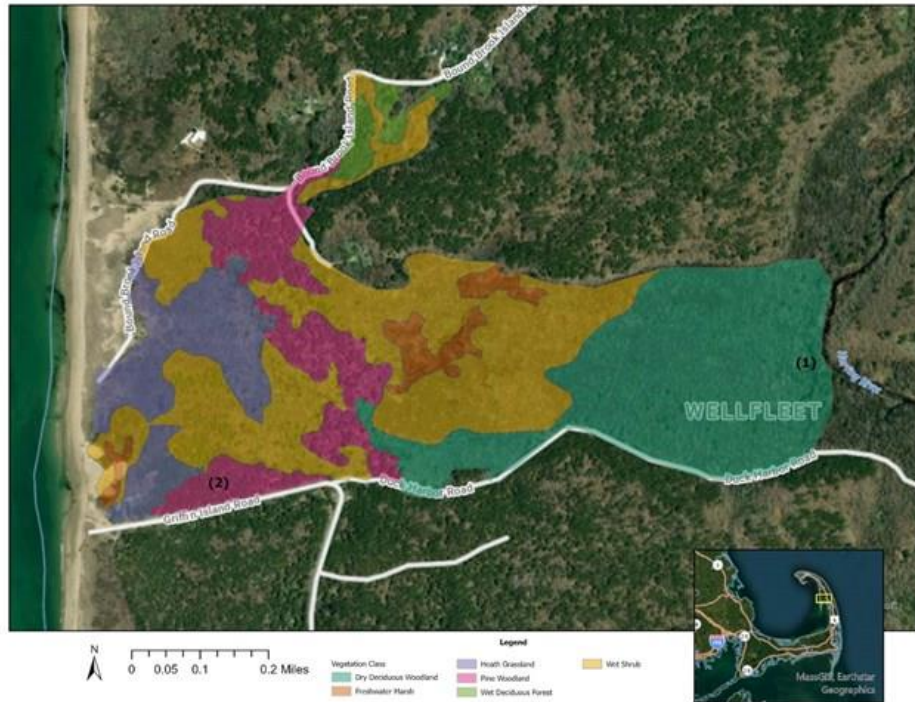
Two maps show the Herring River project area. The map on the left has labels for significant locations within the project area including Upper Bound Brook, Lower Bound Brook, Upper Herring River, Mid Herring River, Duck Harbor, Lower Pole Dike Creek, Lower Herring River, Mill Creek, and Upper Pole Dike Creek. An area highlighted in blue shows the extent of the monthly mean spring tides. A red outline shows the full project area and a green outline shows the Cape Cod National Seashore (CCNS) boundary. The map on the right shows the same area with same blue highlighted area and outlines. This map describes the project elements including elevating low roads, enlarging Bound Brook Road culverts, building Pole Dike Creek Water Control Structure, removing High Toss Road, building the Mill Creek Water Control Structure, and building the Chequessett Bridge.

Project Elements

The Herring River Restoration Project (HRRP) includes many complex elements to achieve the goals of this project. This consists of public infrastructure construction projects, vegetation management, and restoration of natural salt marsh elevation and hydrology. Reintroduction of tidal flow is a phased process that will occur over several years. The primary reasons to implement the project in this manner are to avoid unexpected or sudden irreversible changes to the river and Wellfleet Harbor and to allow monitoring of the system so that unexpected and/or undesirable responses can be detected, and appropriate remedial actions taken.

Computer simulations (i.e. modeling) of the current and future conditions of the river, form the basis of design requirements for the overall restoration program, including the need for infrastructure modifications and protection of existing infrastructure and structures from restored tidal flow. The hydrodynamic modeling is a computerized simulation of the flow direction, velocity, duration, and depth within the river driven by tides in Cape Cod Bay, wind, rain, and external conditions, and the configuration of water control structures (i.e. tide

gates). The primary design objective is to facilitate natural tidal hydrology within the river while protecting roads and structures from regular and storm-driven tidal impacts.



A map shows where vegetation clearing will be taking place in Duck Harbor. Different colors on the map represent different vegetation types including dry deciduous woodland, freshwater marsh, heath grassland, pine woodland, wet deciduous forest, and wet shrub.

Project Updates

During the spring and summer of 2023, Cape Cod National Seashore began removing dead trees and shrubbery in the Duck Harbor area of the Herring River in Wellfleet to promote the recovery of native salt marsh vegetation in the area.

Since January 2021, the 120-acre Duck Harbor floodplain has had periodic over wash of saltwater breaking over the dunes on Cape Cod Bay. Higher high tides occurring for 3-5 days during most months allowed saltwater to flow rapidly inland and slowly drain back out through the Herring River and into Wellfleet Harbor. The saltwater accumulation in Duck Harbor caused a massive die-off of upland and freshwater trees and plants that had colonized to the area following the diking of the Herring River in 1909.

Removing the dead vegetation at Duck Harbor will promote the natural recruitment of salt marsh plants and increase the ecological productivity of the area, while helping to minimize breeding habitat for mosquitoes by facilitating flow and drainage of water. Tree and shrub removal has been accomplished with heavy duty mulching equipment and has been accompanied by intensive scientific monitoring to document ecological changes. Park staff will be on-site regularly to monitor the work area. The dead vegetation will be mulched and spread amongst the area to promote growth and vitality for the native species.

Park scientists are optimistic about the revival of native salt marsh species, as saltwater tolerant plants have already been observed returning to the area. The near-term future of dune over washes is unknown, but in the long term, Duck Harbor will eventually experience routine saltwater flow from the Herring River after the dike at Chequessett Neck Road is replaced with a bridge.

CONTACT INFO

Mailing Address:

99 Marconi Site Road
Wellfleet, MA 02667

Phone: 508-255-3421

To speak to a park ranger, call 508-255-3421 for visitor information.