The water control structure/gates at the bridge at Chequessett Neck Road will allow incremental return of the tide and provide recreational access.



Image courtesy of Fuss & O'Neill



Numerous ecological benefits are anticipated with full tidal restoration:

## Improved:

- natural wetland carbon storage
- mosquito control

### Restored:

- 570 acres of native tidal wetlands
- natural coastal food web
- natural sediment deposition

### **Enhanced:**

- naturally vegetated buffers
- estuarine water quality
- harvestable shellfish resources

### **About Friends of Herring River (FHR)**

Incorporated in 2009 as a 501(c)(3) nonprofit, FHR serves as an essential partner for Herring River Restoration Project (HRRP) which aims to restore 890 acres of degraded intertidal habitat / salt marsh.

The FHR team and volunteers ensure the HRRP stays on track by securing grant funds and permits, managing non-construction contracts, monitoring rare species, and leading events/communications to keep people informed.

# Donations are needed & appreciated! www.herringriver.org



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2024



Wellfleet, MA

# Troubled Past & Hopeful Future of the Herring River Estuary

History and ecology of Wellfleet's Herring River

John Portnoy, PhD



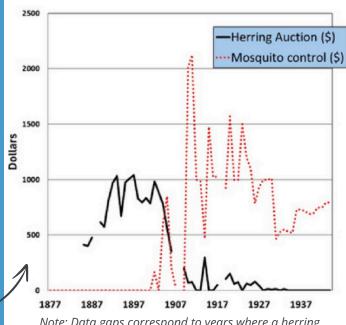
Image courtesy of Friends of Herring River Project, 2016

In the winter of 1908-1909, with the intent to reduce mosquitoes, a dike was built separating the Herring River estuary in Wellfleet, MA, from the harbor and the marine environment. Thus ended thousands of years of tidal exchange, sediment accumulation, plant and animal productivity, and coastal stormsurge protection. But not mosquitoes...

Besides failing to control biting insects, the dike blocked tides from the river and decimated its namesake herring run, already depressed by overfishing in the late 1800s. The value of Wellfleet's herring fishery plummeted, while the costs of mosquito control soared.

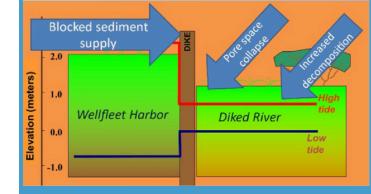
Other unintended consequences of diking and drainage included:

- loss of salt marsh plant production and greenhouse gas storage
- marsh subsidence and reduced resilience to rising sea level and storm surges
- poor water quality, including acidification, dissolved oxygen depletion, and accumulation of coliform bacteria, all of which limited shellfish harvesting both seaward and landward of the dike.
- loss of habitat for salt-marsh fish, shellfish, crustaceans, birds, and mammals.

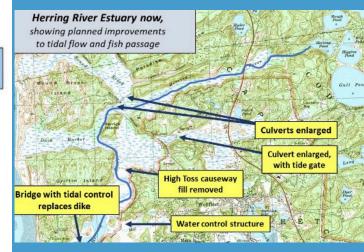


Note: Data gaps correspond to years where a herring auction was not mentioned in Annual Town Report.

Images courtesy of John Portnoy, unless noted otherwise



One of the most fundamental changes to the Herring River marshes since diking has been up to three feet of wetland subsidence. This is caused by the blockage of sediment normally imported by flood tides, and drainage, causing peat pore-spaces to collapse and introducing air, which accelerates peat decomposition.



The replacement of the dike with a wide-span bridge at Chequessett Neck, as well as the removal and replacement of undersized culverts farther upstream, will have a host of benefits, including restored tidal flushing and improved water quality for aquatic animals.