

Restoring the Tidal Hydrology of Allens Pond

Goals

- Restore the tidal hydrology of the salt marsh platform impacted by legacy human impacts including agricultural embankments and ditch spoils
- Facilitate marsh migration by removing impediments to migration along the upper edge of the salt marsh to drain impounded water

Project Partners:



Impacts to Tidal Hydrology

The Allens Pond salt marshes have experienced marsh degradation due to both past anthropogenic activities such as agricultural berms, stone walls and ditch spoils and accelerated sea level rise. Evidence of marsh degradation includes stressed or stunted vegetation, vegetation die-off, expansion of shallow impounded water on the marsh platform, peat subsidence, and expansion of the invasive plant, *Phragmites australis*.



Vegetation die off in foreground and marsh subsidence and standing water on marsh platform in background



Impounded water behind stonewall causing vegetation die-off and creating mosquito breeding habitat

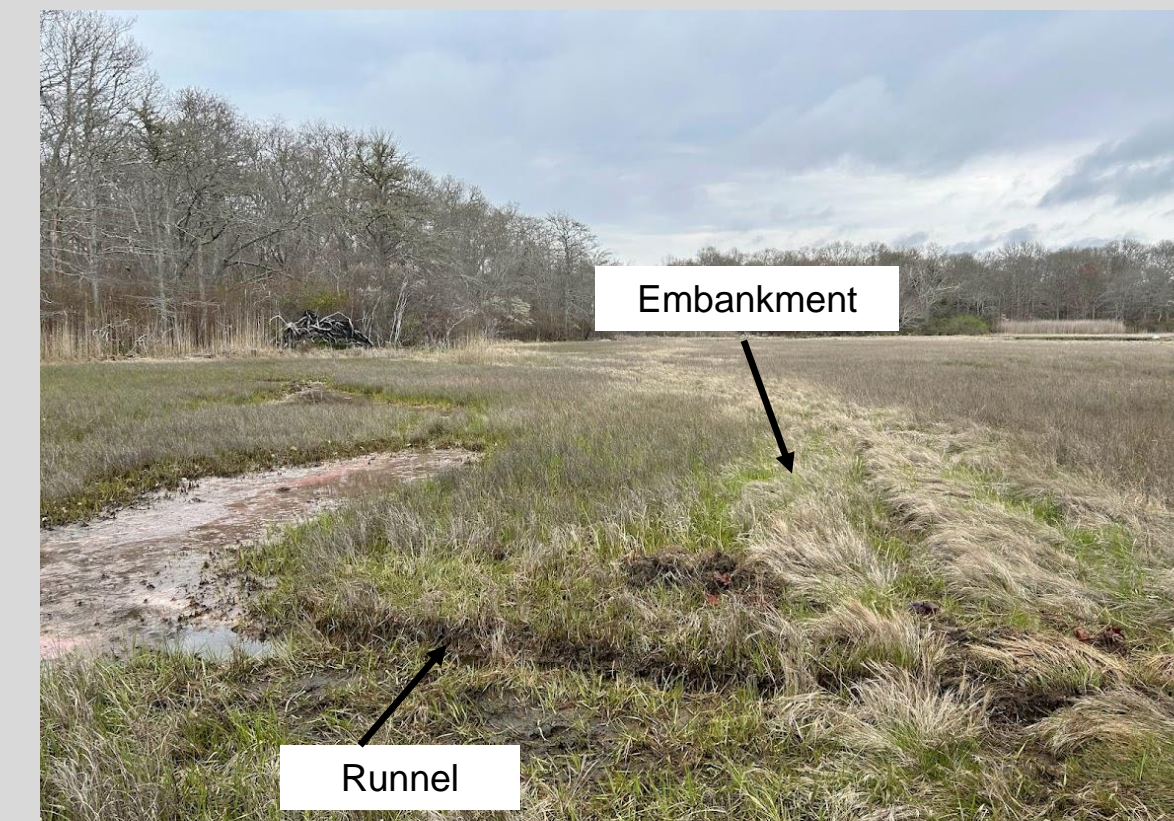


Impounded brackish water creating suitable conditions for *Phragmites* in upper marsh

Saltmarsh Restoration

May 2022 - Present

The salt marsh restoration plan includes digging runnels through existing agricultural berms, maintaining a select number of existing ditches, and controlling invasive species by cutting *Phragmites*. Bristol County Mosquito Control Project submitted permits to state and federal regulatory agencies. Save The Bay and Mass Audubon staff began hand digging runnels and maintaining ditches in the spring of 2022 and then again in the fall of 2022 and spring of 2023. Bristol County Mosquito Control Project removed stones from the migration corridor in the fall of 2022.



Runnel through agricultural embankment draining impounded water

Monitoring

Mass Audubon and Save The Bay staff established photo stations, water level monitoring wells and vegetation monitoring transects in the salt marsh and marsh migration corridor. Pre-restoration monitoring occurred in 2021 and post-restoration monitoring will occur from 2022 to 2024.

The monitoring data will be used to assess the effects of the tidal hydrology restoration on revegetation of the marsh platform.

Marsh Migration Facilitation

The low lying marsh migration corridor is bordered by stone walls and large boulders that impound brackish water along the upper edge of the marsh, creating ideal conditions for *Phragmites*. By removing impediments to migration and restoring hydrology, impounded water can drain, creating more suitable conditions for migration.



Bristol County Mosquito Control Project's low ground pressure excavator removing sections of stone wall to drain impounded water in marsh migration corridor



Removal of section of stone wall and installation of runnel

Saltmarsh Sparrow Initiative

Saltmarsh sparrow populations are decreasing due to loss of high marsh habitat where they nest. The USFWS' Atlantic Coast Joint Venture's Saltmarsh Sparrow Conservation Plan includes strategies to build the resiliency of marshes by restoring tidal hydrology and placing excavated peat on the marsh platform.



Peat placement area after one growing season