ECO-RESTORATION AT COLD BROOK PRESERVE IN HARWICH PORT

Harwich Conservation Trust | January 2019

Project Summary:

The Harwich Conservation Trust (HCT) and its partners (Town of Harwich, Massachusetts Division of Ecological Restoration and U.S. Fish & Wildlife Service) seek to complete a comprehensive ecological restoration of Cold Brook and bordering wetlands at the Robert F. Smith Cold Brook Preserve in Harwich Port. Originating from its spring-fed headwaters at Grassy Pond, Cold Brook flows through HCT's 66-acre Preserve, and ultimately into Saquatucket Harbor on Nantucket Sound. The project will enhance nearly a mile of stream and over 44 acres of adjacent wetland habitat, resulting in improved fish passage, habitat diversity, wetland function, water quality, and ecological resiliency amidst climate change.
The preliminary designs include construction of a narrower and more sinuous channel, ponds of varying sizes, a salt marsh, large woody habitat installations throughout the channel and floodplain, and native tree and shrub planting. In addition, the project will provide enhanced visitor access to the Preserve's scenic walking trails, continuing the HCT tradition of connecting the local community with the natural world.

Anticipated Schedule:

2015-2021: Design and Permitting
2022: Restoration Implementation
2023 and Beyond: Post-Implementation Monitoring

"We hope to set a new trajectory toward self-sustaining high quality wetland and stream habitats. Our goals are to improve wildlife habitat, local water quality, and opportunities for public enjoyment of the site."

-Michael Lach, Executive Director, Harwich Conservation Trust

Tidmarsh restoration project in Plymouth: Cold Brook will have similar open-water features.

Project Goals:

- Enhance wildlife habitat
- Enhance water quality
- Enhance the visitor experience

More details on reverse

Restoration during & after in Plymouth:

The left side shows active restoration; the right shows 4 months after restoration.

Contact Us

For more information on this evolving project and many other land-saving initiatives, contact:

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Restoring wetlands

Before HCT owned the 66-acre Robert F. Smith Cold Brook Preserve, it was a commercial cranberry bog, but had essentially become fallow with deteriorating culverts, irrigation lines, and other agricultural infrastructure. What was it before that? Based on research conducted at the site, we believe that the approximately 66-acre site once hosted a large wetland complex, including multiple pristine upwelling springs, a diversity of habitats, plants, and animals, and, of course, Cold Brook. Starting in the late 1800's, these wetlands were managed for cranberry cultivation. Dams, flumes, ditching and other structures were created to control the flow of water. Sand was applied to the bogs annually to help thwart the growth of unwanted plants and pests as well as stimulate new roots and shoots on the cranberry plants. The meandering stream was straightened and partially filled to serve its new role as an agricultural channel. Later on, pesticides, herbicides, and fertilizers were used to eliminate pests and stimulate cranberry growth. These management practices served their farming purpose for over 100 years, but have resulted in significant stressors that have a profound effect on the ability of the complex area to function as a wetland. These stressors have reduced biodiversity, impaired fish passage and water quality, and, in some cases, altered the surface hydrology to the point where the ecological trajectory of the site has transitioned to that of a pitch pine stand.

The scientific ecological restoration approach that is proposed for the site focuses on restoring landscape scale, natural processes that can enhance habitat and ecological integrity. The goal is not to return the site to the way it was in 1890; but, rather, return the ecological trajectory of the site to that of a healthier wetland/stream ecosystem through reduction and/or elimination of the underlying stressors. Once that's done, Mother Nature will do the rest.

Although it is difficult to imagine one being able to restore a site that has been so significantly altered, there have already been several successful eco-restoration projects that have brought nature back to retired bogs in Southeastern Massachusetts. One example is at Tidmarsh Farms in Plymouth. The property owners of an old 600-acre commercial cranberry farm wanted to undertake an ambitious restoration of the property after retiring from the business. They raised funds and worked closely with the Massachusetts Division of Ecological Restoration to restore over 200 acres to a more natural condition. Their project finished in the fall of 2016 as the largest freshwater wetland restoration ever in Massachusetts.

As alluded to above, our smaller project at Cold Brook will consist of several actions to eliminate site stressors, including (but not limited to) ditch-filling, removing the sand over-burden to expose organic soils and liberate groundwater, removing deteriorating water control structures to provide fish passage for the beleaguered American eel (*Anguilla rostrata*) population, and changing the geometry and form of the brook to allow more natural flow. These actions will improve groundwater-surface interaction and water quality including nitrogen reduction, improve wetland functions, enhance habitats to increase biodiversity for terrestrial and aquatic organisms, and improve resiliency against climate change induced sea level rise.

HCT is currently striving to raise the significant funds needed to complete this restoration project. An updated trail system with a wheelchair-friendly loop is planned. Interpretive signage might highlight emerging habitats as part of the property's trajectory of healing and change. We also hope to collaborate with various groups and researchers to conduct long-term water quality and environmental monitoring of the site. Ultimately, the restoration of this landscape in the heart of Harwich Port will revive a dynamic Cold Brook, transform retired bogs into thriving wetlands, attract a variety of wildlife, offer scenic vistas enjoyed from enhanced walking trails, and inspire hope in a climate-changing world.