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USDA NRCS  
WETLANDS RESERVE  
PROGRAM

**Tidmarsh Farms, Inc.**

TIDMARSH FARMS, INC.

# Tidmarsh Restoration Project & Living Observatory

Located in the Village of Manomet (Town of Plymouth), Massachusetts, the Tidmarsh Restoration Project is designed to permanently protect and enhance a significant portion of the Beaver Dam Brook Watershed for the benefit of wildlife and people. Encompassing over 250-acres of the local watershed, the project aims to restore natural wetlands and streams, improve water quality, enhance biological diversity and create a mosaic of habitat types within this former commercial cranberry bog complex.

In parallel to the restoration project, The Living Observatory (LO) invites scientists and designers to help tell the story of complex ecological change as it occurs on site over time. LO founders envision the use the property as a field station to explore, interpret and invent novel ways to share observations, illuminate and communicate complex interactions between ecological function and structure over time. Initial studies have informed the design; on-going work will enable long-term scientific monitoring and serve as the foundation for the public to witness processes that are beyond our everyday sensory experience.

## BY THE APPROXIMATE NUMBERS

- Years from start to completion: 6
- Total project area: 250 acres
- Total project cost (projected): \$2,600,000
- Design: \$300,000
- Implementation: \$2,300,000
- The NRCS conservation and restoration easement: 192 acres
- Length of restored channel: 3.5 miles
- Amount of earthwork: 70,000 cubic yards
- Planting of rare species includes 7,000 Atlantic White cedar trees
- Large wood added for habitat: 3,000 pieces

## RESTORATION TIMELINE

- 2010 USDA NRCS WRP conservation easement
- 2011 Designation as state priority restoration project
- 2011 Successful fundraising for design (state/federal sources); private funding for LO
- 2011-13 Assessment, design, and engineering (partners and Inter-Fluve Inc.)
- 2013 NRCS funds awarded for implementation
- 2014 Permitting and continued fundraising
- 2014 Start of implementation
- 2015 Majority of earthwork completed
- 2016 Planting and monitoring

## PROJECT PARTNERS AND SUPPORTERS

TIDMARSH FARMS, LIVING OBSERVATORY, TOWN OF PLYMOUTH, MANOMET VILLAGE, USDA NRCS, NOAA RESTORATION CENTER, USFWS PARTNERS FOR FISH AND WILDLIFE PROGRAM, MA DFG DIVISION OF ECOLOGICAL RESTORATION (PROJECT MANGER) AND DIVISION OF FISHERIES AND WILDLIFE, MASS AUDUBON SOCIETY, AMERICAN RIVERS, SALICICOLA, MANOMET CENTER OF CONSERVATION SCIENCE, M.I.T., BOSTON UNIVERSITY, UMASS AMHERST AND BOSTON, RISING TIDE CHARTER SCHOOL, MASSACHUSETTS ENVIRONMENTAL TRUST, GULF OF MAINE COUNCIL ON THE MARINE ENVIRONMENT, MASS BAYS PROGRAM, LOCAL VOLUNTEERS, AND MORE.

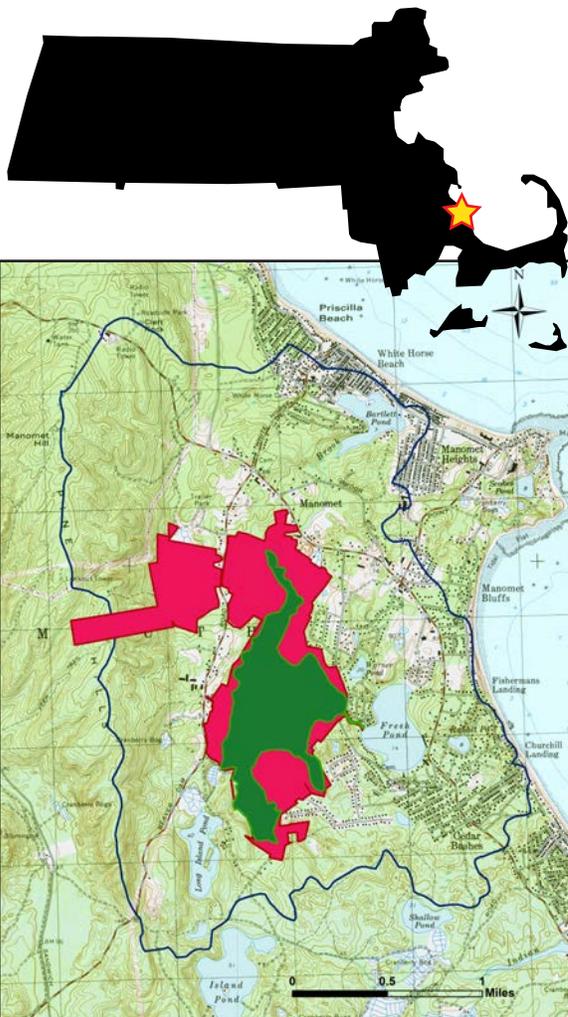


Figure 1. Tidmarsh in context. (Legend: Blue: Watershed; Pink: Tidmarsh Farms; Green: Restoration Area.)



Figure 2. Area of Disturbance.

## LESSONS FROM EEL RIVER

Many of the techniques proposed for the Tidmarsh Restoration project were effectively used in the Eel River Headwaters Restoration Project (Plymouth; winner of the 2011 Coastal America Partnership Award) including the use of large wood to create diverse habitat across the former cranberry bog surface, and planting 17,000 young Atlantic white cedar trees (an increasingly rare species).

## ENVIRONMENTAL AND COMMUNITY BENEFITS

The Tidmarsh Restoration Project and related land protection will create a permanent nature sanctuary and site for passive recreation in the Village of Manomet.

Living Observatory provides diverse learning and educational opportunities for people of all ages and interests.

Retirement from farming means the health of the land is recovering, fertilizers and pesticides are no longer used on site, and native plants and animals are returning. Upcoming restoration actions are expected to increase the diversity and quality of wetland communities, expand the presence of birds, amphibians and other wildlife across the site, provide new spawning and rearing grounds for resident and migratory (ocean) fish, and improve resilience in the face of an uncertain future climate.

## RESTORATION GOALS

- Encourage the development of a self-sustaining, complex, productive, and dynamic system of high-quality streams and native wetlands.
- Establish a refuge for diverse native plant and animal communities.
- Increase the connection between people in the land by providing a beautiful, protected area that engages people in enjoyment and discovery of natural systems.

The 'process-based' restoration approach focuses on landscape - and reach - scale processes that form and maintain habitat and ecological integrity. The design identifies limiting factors (or 'stressors') that were introduced in farming practice such as application of sand, straightening and simplifying the stream channels, and the construction of barriers that hinder free passage of water and wildlife, and introduces actions that will relieve the resulting stress and promote a natural healing process over time.

## RESTORATION PROJECT MANAGER

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## TECHNOLOGY MEETS THE LANDSCAPE

Water, temperature, and chemical composition of the environment drive life: given the right balance, nature thrives; too little or too much may produce stress. Living Observatory will employ innovative low powered sensors to:

- Capture short and long-term variations in moisture, temperature and chemistry, as well as sound from the land.
- Stream data over the Internet and store these signals for historical comparison.
- Re-image or sonify this data for the public to explore and enjoy.

In the future scientists, and those of us who are just curious, will be able to easily, and on demand, appreciate the current state of the landscape by witnessing response of plants and wildlife to changing environmental conditions, normally invisible to us, and compare the current moment with times past.

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## HOW YOU CAN PARTICIPATE

LO is an exciting project for those in the Plymouth area interested in nature. Opportunities to be associated with and participate in the project include potting and planting trees, marking/pulling invasive species, deploying/checking sensors, evaluating data displays, database and project management activities, etc. Would you like to learn more about sponsoring, partnering or becoming a member and volunteering with LO? If so, send us an email! Please include information about what you like to do, what you know how to do and your time availability. This will help us direct you to appropriate activities.

Our contact email: [tidmarshfarms@gmail.com](mailto:tidmarshfarms@gmail.com)