

LIVING OBSERVATORY

A Documentation & Interpretation Center
for Ecological Change

Tidmarsh Farms, Manomet, Massachusetts



Vision

Living Observatory is an initiative for documenting and interpreting ecological change that allows people, individually and collectively, to better understand the relationships between ecological processes, human lifestyle choices, and climate change adaptation.

Grounded in the collection of local observations, Living Observatory geo-codes a place over time with rich media (audio, video, text annotations, environmental sensors), providing both a physical and virtual venue for people of different ages, cultures and interests to come together to explore, share and learn about ecology.

Living Observatory is a collaborative venture between scientists, engineers, artists, agencies, foundations, the local community, visitors and supporters from around the world.



Learning in the Landscape

For almost everyone, the most profound connection with nature comes from direct experience. At a very young age, we begin building our catalog of observations: climbing a hill in the heat of summer, watching a bird build a nest, catching a frog, running through the rain, counting the petals of a summer flower. In time, by processing millions of observations, we begin to distill principles of the natural environment: time, scale, stability, hierarchy, design, resiliency and thermodynamics.

Living Observatory is building a long-term participatory case study of a natural environment in transition. Structured for exploration and hypothesis forming, such a case study can stimulate our appreciation of ecology, allow us to explore fundamental principles, and make

people of all ages better stewards of the land. The underlying infrastructure of the program is scalable, inviting both the addition of experiments over time and emulation at other preserves.

The Wetlands Restoration

Living Observatory is being developed in concert with the Tidmarsh Farms/Beaver Dam Brook restoration project. This restoration will result in a 250+ acre wildlife sanctuary and wetlands park.

Situated between Bartlett Road and Beaver Dam Road in Manomet Village, Plymouth, MA, the site includes: the headwaters of Beaver Dam Brook including a stream that flows through the former 33 acre Beaver Dam Pond; a pond known as “the Arm”; 130 acres of retired cranberry bogs with a highly modified stream network and wetland

floodplain; and 65 acres of Red Maple swamp. The adjacent uplands include pine forest, mixed wood forest and grassland. The restoration site represents approximately 10% of the entire Beaver Dam Brook Watershed and 50% of the brook itself.

Historically, the abundant water on this site served in the 1800’s to run a Mill Dam on 3A. In the 1900’s, the water was channeled and the flood plain areas were carved out, flattened, and covered with sand to support intensive cranberry production. In 2010, through the USDA Natural Resource Conservation Services (NRCS), 192 acres of cranberry bog and maple swamp were taken out of agriculture and placed under a permanent conservation and restoration easement.

The Tidmarsh Farms/Beaver Dam Brook restoration project gained significant momentum

in 2011 with the award of multiple grants for Engineering Design.

Granting entities include Massachusetts Department of Fish and Game's Division of Ecological Restoration, American Rivers, National Oceanic and Atmospheric Administration (NOAA) Habitat Restoration Grant Program, Gulf of Maine Council (GOMC), and US Fish and Wildlife Service. The project, which includes 2 dam removals on Beaver Dam Brook, will restore about 3.5 miles of stream and 250 acres of coastal wetlands to a more natural state, allowing fish to migrate from the ocean to their headwaters and stream-side forests to grow.

The project team has hired Inter-Fluve, Inc. to lead the restoration and engineering design process for the site. The Horsley Witten Group will perform project permitting and provide design input. The public will be invited to review designs and provide comment through several open and neighborhood meetings.

Building the Observatory

Living Observatory uses a variety of tools, technologies and activities to record the changing landscape over time and to make its history viewable in an on-line virtual space. The initial prototype of the website will be launched in the summer of 2012.

The body of information that exists about the property is expanding rapidly. Rainfall and temperature have been recorded for many years, a photographic and video archive has been maintained for over three decades and there are maps dating back to the early 19th century. Many small low power sensors across the landscape are being added to make localized observations, and a five-microphone configuration is being tested as a means of capturing the sounds of the land. The information archive will grow as visitors contribute their unique observations.

In the coming months, the technical team for the restoration design will probe the landscape to discover the original geo-morphology of the stream channel, and identify traces of the past through sampling and analysis. In our virtual realization, these clues may be the starting point of a treasure hunt.

Online, visitors will be able to listen, view and annotate all media observations. They will come upon the maps, deeds and documents appropriate to their inquiries or experiments. Increasingly, video of technical discussions will be published to highlight critical questions about the proposed design of the park.

By 2015, Living Observatory expects to reach out to AP science students in high schools across Massachusetts, inviting them to participate in a program that will match them to a scientist mentor and encourage them to design on-site experiments.



How to Participate

Become a partner or a supporter;
Volunteer on the physical site;
Help build the experience.

Living Observatory, Tidmarsh Farms, Manomet, MA.

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Follow the evolution of the project at:
<http://tidmarshfarms.com/>

Our Partners

Massachusetts Department of Fish and Game Division of Ecological Restoration (DER); American Rivers; USDA NRCS (National Resources Conservation Service); USFWS (U.S. Fish and Wildlife Service); American Rivers-NOAA Community-Based Restoration Program; GOMC-NOAA Habitat Restoration Partnership; Massachusetts Environmental Trust (MET); Inter-fluve, Inc.; Horsley Witten Group; Town of Plymouth, Manomet Center for Conservation Sciences; BU School of Communication; MIT Media Lab.

