



Ecological Restoration of Cape Ann's Coastlines, Forests, and Downtowns



PUBLIC FORUM

June 1, 2023

5 PM - 8 PM

**Gloucester Unitarian Universalist Church
10 Church Street, Gloucester, MA**

About This Initiative



Cape Ann's interconnected marshes, eelgrass beds, wetlands, rivers, upland forests, vernal ponds, farms, and urban green infrastructure will be assessed and innovative management approaches will be recommended to maximize the benefits these ecosystems can provide. Goals will include not only restoring the health of degraded landscapes and habitat, but also enhancing the values that properly-functioning natural systems yield, including carbon sequestration, biodiversity, storm and flooding protection, job creation, cooling in dense neighborhoods, local food supplies, recreational spaces, psychological and spiritual well-being, and other values that properly-functioning natural systems can provide.

Cape Ann: Confronting the Challenges of Climate initiative is a collaboration of the four municipalities of Gloucester, Manchester-by-the-Sea, Rockport, and Essex, the non-profits TownGreen and the Water Alliance, and Harvard University's Graduate School of Design's Office for Urbanization. An earlier phase of research has identified the varied natural landscapes of Cape and the threats from a potential Great Storm of 2038 hurricane have been assessed.

This second phase of collaborative design work will focus on three types of Cape Ann habitat: coastal and aquatic ecosystems; upland forests; and urban green infrastructure. Several pilot areas have been selected for in-depth study, including: the Annisquam River tidal marshes and shellfish beds and Good Harbor Beach; forested areas in Dogtown and the North Gloucester Woods; and residential neighborhoods with potential for tree-planting, pocket parks, and native plants. Several bio-engineered designs that mimic nature will also be considered for offshore Living Shorelines or innovative seawalls. And, illustrative designs for selectively incorporating farming, affordable housing, or renewable energy into undeveloped lots without compromising ecosystem health will be explored.

Public Input - About the June 1 Public Forum and Survey



Project partners are looking forward to hearing from all of Cape Ann - what are your relationships to our coastal, forested, and downtown ecosystems? What concerns do you have about their health? What suggestions would you make for municipal action? Do you think our natural environments and history of work on the land and the ocean define us as unique communities and cultures?

This Public Forum will provide you the opportunity to talk briefly about your own thoughts and suggestions and you will get to hear from your fellow residents, as well. Please fill out and leave us your survey answers to the questions in the insert or email to a member of the local Steering Committee:

Greg Federspiel, *Manchester-by-the-Sea*, Federspielg@manchester.ma.us

Valerie Nelson, *Water Alliance*, Valerie.i.nelson@gmail.com

Dick Prouty, *Town Green*, dickprouty@gmail.com

During the Public Forum you will also have the opportunity to hear briefly from the academic team assembled by the Harvard Graduate School of Design:

Charles Waldheim, *John E. Irving Professor of Landscape Architecture and Director, Office for Urbanization, Harvard University Graduate School of Design*, www.gsd.harvard.edu/person/charles-waldheim/

Kira Clingen, *Lecturer in Landscape Architecture and Research Associate, Office for Urbanization, Harvard University Graduate School of Design*, www.gsd.harvard.edu/person/kira-clingen/

Public Engagement: Dr. Colleen Hitchcock, *Brandeis University*, www.brandeis.edu/biology/faculty/hitchcock-colleen.html | **Ecological Planning: Dr. Nina-Marie Lister**, *Harvard GSD/Toronto Metropolitan University* www.gsd.harvard.edu/person/nina-marie-lister/ | **Coastal Ecosystems: Dr. Catherine Matassa**, *University of Connecticut* marinesciences.uconn.edu/person/catherine-matassa/ | **Wetland Ecosystems: Dr. David Moreno-Mateos**, *Harvard GSD/Harvard OEB* www.gsd.harvard.edu/person/david-moreno-mateos/ | **Forest Ecosystems: Dr. Jonathan Thompson**, *Harvard Forest*, pbi.oeb.harvard.edu/people/jonathan-thompson

Illustrative Case Studies – From Near and Afar



San Francisco Bay Living Shorelines Project

San Francisco, CA (2019 ongoing)

Restoration design and monitoring to explore best methods for subtidal restoration, species use of restored reefs, and types of treatments that can provide physical benefits in addressing climate changes in San Francisco Bay. Projects include establishing native oyster and eelgrass beds in multiple locations and tracking the enhanced habitats for invertebrates, fish, and birds; while also fortifying the shoreline against sea level rise and storm surges.



Cape Cod Water Resources Protection Project

(2006 ongoing)

Formed by the Cape Cod Conservation District, the US Department of Agriculture, and other state and local partners, the Project has solicited substantial funding for multiple restoration projects across Cape Cod, including fish passage restoration, salt marsh recovery, and stormwater management. The largest of these efforts is the Herring River Restoration Project, a comprehensive effort including culvert replacement, replacement of a dike with a bridge, removal of dead trees and other vegetation, and promotion of native salt marsh plants, such as cordgrass.



Great Marsh Hazard Atlas & Project Compendium

Great Marsh, Massachusetts (2018 ongoing)

The Atlas includes information on the history of the Great Marsh for local decision makers, including scientific data and reports on the physical, biological and built environments in the region. It also includes other remnant marsh ecosystems that may be used as reference ecosystems to measure the success of ongoing restoration and resilience projects, which have included culvert replacement and rebuilding salt marsh peat through remediating ditches and restoring natural drainage.



South Bay Salt Pond Restoration

San Francisco Bay, CA (2003 ongoing)

The project will restore industrial salt ponds to a rich mosaic of tidal wetlands and other habitats with multiple goals of: restoration of a mix of wetland habitats; recreation with wildlife-oriented public access; and protection for flood management in the South Bay. New habitat are being provided for fish, birds, and other wildlife by restoring salt marsh and mudflats and creating new bird ponds.



GreenCrab.org

Boston, MA (2020 ongoing)


Greencrab.org is a nonprofit organization whose mission is to develop culinary markets for the invasive green crab and educate communities on the resource. The group reaches out to harvesters and builds supplier relationships to bring more people into the green crab fishery, works directly with chefs and manages across the Eastern seaboard to promote green crab on menus, provides the public with menus and cooking classes to spread awareness and build at-home markets.





Acadia National Park Sweetgrass Restoration


Mount Desert Island, Maine (2020 ongoing)


The Wabanaki people are the original stewards of the Acadia region. The National Park Service has partnered with Wabanaki ecologists and archeologists to carry out this project, based on the work of Potawatomi biologist Robin Wall Kimmerer, who recognizes that traditional Western scientific methods privilege certain types of knowledge over other ways of knowing. The sweetgrass project use various harvesting techniques to create an alternative, integrated methodology to enhance marshlands for health and sustainability, while acknowledging the cultural importance of gathering sweetgrass for high-quality basket-weaving.

 **Menominee Tribal Forest**
Wisconsin, (150 years-ongoing)
A collective resource that allows the Tribe to maintain their cultural connection to the land while providing for plants and animals for generations to come. A quarter of the forest is unharvested with old burial grounds and ancestral villages, buffers around raptor nests and wolf dens, swamplands and near waterways. Logging targets are trees that are sick and dying or that have naturally fallen. Clearcutting benefits trees that need open spaces and sprout from roots, along with birds that thrive on forest edges. Left alone, the forest will grow dense, stunting the growth of some trees and inviting invasive diseases and pests, which are already an increasing menace because of climate change.

 **Neo-Eocene**
Cortes, British Columbia, Canada (2008 ongoing)
Artist Oliver Kelhammer has created a living laboratory of innovative forestry projects on Cortes Island by planting historic species of trees that grew in the area millions of years ago when conditions were hotter. Fossil records were used to determine which trees grew on the island. Plants were sourced from southern latitudes in North America. Kelhammer calls the trees “formerly native” and has engaged academic partners in the area to study the results of his experiments which are designed to increase the island forest’s resilience to climate change.

 **Miyawaki Microforest at Danehy Park**
Cambridge, MA (2022 ongoing)
The Miyawaki technique quickly establishes forests in deforested or degraded areas. The method uses a site survey to research existing nearby vegetation, germinates species in a nursery, and transplants seedlings with developed root systems into dense planting schemes. The compact spacing forces plants to compete for light vertically, quickly establishing a forest with multiple species. Forty native plant species were included at Danehy Park. Similar projects around the world support biodiversity, buffer against flooding and erosion, help balance water cycles to fight drought conditions, and sequester carbon.

 **Edgewater Food Forest**
Mattapan, MA (2023)
A perennial-heavy garden that mirrors nature and is typically created on a vacant lot. Food Forests around the country produce a wide range of vegetables, fruits and herbs, including in Mattapan Roxbury Russet apples, blueberries and pawpaws, a native fruit. The Forests also serve as gathering spaces for gardening classes and cultural events that connect neighbors across urban divides of class, race, language, and culture, and they shade and cool the land, protect soil from erosion, and provide habitat for insects, animals, birds, and bees.

 **Urban Jungles**
Worldwide
Ben Wilson in his new book “Urban Jungle: The History and Future of Nature in the City” describes the growing recognition that urban areas are semi-wild, with nature insinuating itself into the unused and underutilized spaces, such as vacant building sites, along roads and railroad tracks, and in idle spaces between buildings. Biological complexity can emerge in parks, but also cemeteries, golf courses, flat roofs and networks of marginal land, at first uninvited but eventually stewarded. Extended greenery can make cities more beautiful, but access to nature also improves mental and physical health and improves cognitive development in children.

