



Natural Resources

Natural resources pertain to Gloucester’s open spaces, natural ecosystems, habitat areas and water resources — all of the things that are vital for maintaining functional natural environments that support both wildlife and ecosystem services for the City.

In this changing climate, the City’s natural resources can both serve as a buffer and a refuge, by mitigating climate impacts (such as heat waves and urban heat island effects) and helping the City adapt through nature-based solutions. In aggregate, Gloucester’s existing dense forest contributes to the larger State sequestration resources — an invaluable tool that naturally filters emissions from being emitted. Therefore, the City must continue to protect, manage, and restore the it’s natural systems and waterways.

Goals

1. The City’s natural resources (i.e., natural systems and waterways) are protected, managed, and restored, particularly those that are vulnerable to climate change, as well as those that strengthen Gloucester’s resilience, public health, and biodiversity.
2. Gloucester’s trails, open space, and recreational areas are connected and accessible for all residents.
3. Gloucester’s harbor and waterfront areas are protected and enhanced in response to increased flooding and sea level rise.
4. Tree canopy/coverage is equitably planned for and distributed in all neighborhoods.



Aerial image of Gloucester

What's been done so far?

Gloucester Open Space and Recreation Plan 2022 Update. Currently the City is renewing its Open Space and Recreation Plan to provide a way forward for another 7 years of stewardship of the City's open spaces. The City's update to the Open Space and Recreation Plan represents a renewed commitment to protect and improve the open space and recreational resources that raise the quality of life in the City. The Open Space and Recreation Committee (OSRC) envisions a City where residents take great pride in the care of Gloucester's outstanding range of open space and recreation assets and ensure they are fully enjoyed and valued.

Using Nature Based Solutions. Including nature-based solutions in mitigating the future impacts of climate change is a high priority for the City of Gloucester. A key success in this area was the Little River Restoration and Flood Mitigation project, which involved day-lighting portions of buried waterway, replacing an aging concrete channel with a natural stream bed, and restoring sensitive coastal wetlands. The restoration effort has already dramatically improved ecological conditions, eliminated a public safety hazard, reduced flooding risks, and enhanced climate change resiliency in the small coastal stream that flows from Lily Pond to the Annisquam River.



The Trustees of Reservations



Newburyport Discounted Rain Barrel Program

Regional Highlight: Newburyport Discounted Rain Barrel Program

The City of Newburyport has a rain barrel program, where rain barrels can be purchased by residents at a discounted rate. Using these barrels to capture and store water can help households reduce their water bills and can decrease stormwater runoff while promoting water conservation. Captured rainwater is an excellent source for plants, gardens, lawns, and non-potable use. It is reportedly “one tenth of an inch of rain on a 1000 square foot roof— about 25 minutes of moderate rainfall — will fill a 60-gallon rain barrel.”

Visit www.cityofnewburyport.com/recycling-energy-resiliency-sustainability/pages/rain-barrels for more details.

NR1 Incentivize the incorporation of green infrastructure (i.e. permeable pavement, green roofs, bioswales, and tree planting) in new development or major renovation projects.



Sphere of Influence:
City Ordinances or Regulations



Implementation Partners:

- Gloucester development community
- Homeowners and landlords
- Backyard Growers
- **Climate Activist Organizations:** Cape Ann Climate Coalition, TownGreen2025, Seaside Sustainability
- **Government and Municipal Bodies:** City Council, Planning Board, Zoning Board, Conservation Commission, Open Space and Recreation Committee, Mayor's Office
- **City Departments:** Planning, Conservation, Building, Health



Funding Sources:

- MassDEP
- Green Communities
- EPA

Next Steps:

- Establish a multi-department/stakeholder working group to facilitate discussion around feasibility and best practices.
- Determine the potential need for incentives to support developer acceptance (i.e. expedited permitting).
- Host informational sessions and/or trainings for municipal staff and developers to increase understanding.
- Improve professional development opportunities for City inspectors.
- Create a green infrastructure design guideline for new development and major renovation projects.

Improving Equity:

- Ensure sustainable land use practices, access to green spaces, and improve infrastructure for bikes and pedestrians as part of new developments, in addition to green infrastructure.
- Provide training to building occupants on building technologies for long-term operations and maintenance.

Co-benefits:

Improved environmental quality of air, water, and green spaces.

Reduced stormwater run-offs.

Measure of Success:

Increased number of new projects with green infrastructure measures incorporated.

NR2 Develop additional tree planting requirements for any new development project. Promote the use of native species.



Sphere of Influence:
City Ordinances or Regulations



Implementation Partners:

- Greenbelt
- Generous Gardeners
- Cape Ann Trail Stewards
- Arbor Day Foundation
- Backyard Growers
- Project Elm
- **Climate Activist Organizations:** Cape Ann Climate Coalition, TownGreen2025, Seaside Sustainability
- **Government and Municipal Bodies:** City Council, Open Space and Recreation Committee, Conservation Commission, Planning Board
- **City Departments:** Planning, DPW, Conservation, Building



Funding Sources:

- DLTA
- Complete Streets
- Shared Streets
- Safe Routes to School

Next Steps:

- Map and/or review existing tree canopy, tree planting locations to identify gaps and opportunities.
- Review existing requirements and/or policies related to managing and protecting trees.
- Propose to formalize tree planting and replacement requirements.
- Create a City-wide tree planting program.
- Increase standards for tree planting as part of site plan approvals.
- Start a Tree Fund into which developers, residents, and businesses can contribute to fund tree plantings across the City.

Improving Equity:

- Prioritize tree planting locations in EJ areas, or known “hot spots” in the City.

Co-benefits:

Increased beautification and walkability in public spaces.

Improved air quality and reduced urban heat island effect.

Improved stormwater management and flood control.

Measure of Success:

Number and location of street trees planted annually.

Net number of residential trees planted annually as part of developments.

Increased percentage of tree canopy coverage in the City.

NR3 Regularly review and update Gloucester's climate vulnerabilities and the potential impacts to existing natural resources in the City, as more climate data becomes available.



Sphere of Influence:
City



Implementation Partners:

- Executive Office of Energy and Environmental Affairs (EEA)
- Municipal Vulnerability Preparedness (MVP) program
- Metropolitan Area Planning Council (MAPC)
- Massachusetts Association of Conservation Commissions (MACC)
- Greenbelt
- **Government and Municipal Bodies:** Open Space and Recreation Committee, Clean Energy Commission
- **City Departments:** Planning, DPW, Conservation, Engineering



Funding Sources:

- MVP
- MassCEC
- Green Communities

Next Steps:

- Participate in state's MVP program for guidance on updated climate data and nature-based solutions/best practices.
- Continue regular review and updates on goals and strategies of the City's Hazard Mitigation Plan, Open Space Recreation Plan and this CARP.

Improving Equity:

- Ensure robust engagement with residents in EJ communities, identified climate vulnerable populations, to stay updated on their priorities and needs, and modify prioritized implementation strategies accordingly.

Co-benefits:

Increased community resilience.

Measure of Success:

Decision making and implementation strategies are relevant and in accordance with latest available climate information.

Additional Strategies for Nature Resources

Strategy	Realm of Influence
NR4 Assess climate vulnerabilities and potential impacts to existing natural resources in the City. Identify strategies to preserve, protect, and restore the City's natural systems and waterways.	City
NR5 Increase the City's street tree coverage, especially in areas where communities are most vulnerable to the urban heat island effect, and review options for active forest management to prepare for climate change impacts.	City
NR6 Provide community wide education on sustainable landscaping practices, including reducing or eliminating the use of synthetic fertilizers, while promoting rain barrels, flood protection, etc.	Residents/Businesses
NR7 Conduct assessment of flood storage capacity and explore nature-based solutions in preparing for more frequent and intense extreme weather events.	City
NR8 Promote the use of rain barrels by homes and businesses.	Residents/Businesses
NR9 Ensure the use of native plant species in City owned spaces including neighborhood streets, rotaries, courtyards, and parks.	City
NR10 Implement the City's Open Space and Recreation Plan which identifies and advocates for the protection of important flood resilience, sequestration, and recreational resources.	City
NR11 Preserve salt marshes, clear the phragmites out of Good Harbor Marsh, and clear the culvert that feeds the pond.	City