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This analysis was conducted as part of a United States Environmental Protection Agency, Region I, New England 2015 Healthy Communities Grant. The resulting maps were used to inform municipal officials in a series of workshops on climate change adaptation. These workshops were held in communities throughout the Taunton River watershed with partners from the Southeastern Regional Planning and Economic Development District, MassAudubon, and The Nature Conservancy (TNC).

The overarching goal of Manomet’s green infrastructure analysis was the identification of a network of protected and restored lands within the watershed that provide multiple benefits including:

- Minimizing biodiversity loss,
- Maximizing ecosystem resiliency to climate change,
- Limiting vulnerability of citizens and the built environment to enhanced storm surge and freshwater flooding associated with climate change,
- Minimizing nonpoint source water pollution,
- Minimizing water deficit issues associated with drinking water supply,
- Limiting tax burden associated with gray infrastructure solutions to flooding and nonpoint source pollution that will be required if intact natural systems currently providing these services are removed from the watershed.

The green infrastructure network includes lands around surface waters and wetlands that protect against nonpoint source water pollution and limit human vulnerability to freshwater and storm surge flooding, as well as areas that contribute to ecosystem integrity by providing important habitat or resilience in the face of climate change.
The green infrastructure network was developed by combining the following components in a Geographic Information System (ArcGIS 10.4):

- **Resilient Areas**
  - Areas of “above average” resilience (>= 0.5 standard deviation) according to The Nature Conservancy’s Resilient Landscapes dataset (specifically, a higher-resolution 90m version generated by TNC for MassAudubon)

- **Important Habitat**
  - BioMap2 Core & Critical Natural Landscape areas

- **Riparian Buffers**
  - Areas within 100ft of surface waters and wetlands (based on features in National Wetlands Inventory V2)
  - Areas within 100ft of 100-year flood areas and high risk coastal flood areas (as defined by the National Flood Hazard Layer)

- **Areas Vulnerable to Sea Level Rise**
  - Areas <= 4m elevation

There is also a companion version of the green infrastructure network that excludes lands that are already developed or permanently protected. The undeveloped and unprotected areas have important benefits for people and nature, and they are still “in play” in terms of the potential for restoration or conservation. In this case, the following criteria were used to define “developed” and “protected” lands:

- **Developed Land**
  - Areas categorized as “Commercial/Industrial/High Density Residential” or “Low Density Residential” in a 2013 MassAudubon land use/land cover layer

- **Protected Land**
  - Areas in the MassGIS Open Space layer where Protection Level = In Perpetuity
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Network Components

- **Areas of Above Average Resilience**
- **BioMap2 Core & Critical Natural Landscape**
- **Areas within 100ft of Surface Waters, Wetlands, and Flood Zones; Areas <= 4m elevation (vulnerable to sea level rise)**

Legend:
- Green Infrastructure Network
- 100 yr and High Risk Coastal Flood Areas
- Surface Waters & Wetlands:
  - Estuarine and Marine Deepwater
  - Estuarine and Marine Wetland
- Town Boundaries
- Tannery Watershed Boundary
- Major Streams

Map showing various geographical features and their relationships.
44% of the Taunton watershed is within the GI Network
64% of the GI Network is currently undeveloped and unprotected. This represents 30% of the entire watershed.
The results of this analysis, including a high-resolution map of the green infrastructure network and the spatial data (in both shapefile and kml format), are available for download at: