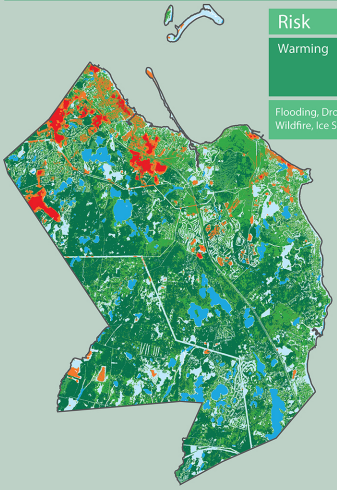
# Plymouth

## Natural Resources

Natural Resources lessen climate impacts by absorbing and storing carbon dioxide and by serving vital protective functions. Forests, open space, wetlands, rivers, and streams protect drinking water quality and quantity, provide flood control, and give relief from extreme heat. Healthy ecosystems are more resistant to stresses from a changing climate and better able to protect against heat and flooding.

## Trees

Trees are important in mitigating the impact of extreme heat. Tree shaded surfaces can be 25-40 degrees cooler than peak temperatures of unshaded surfaces. About 54% of Plymouth's land area is covered in tree canopy. The canopy captures 22,147 tons of carbon dioxide a year, removes 2.7 million pounds per year of air pollutants and avoids 198 million gallons of stormwater runoff a year.

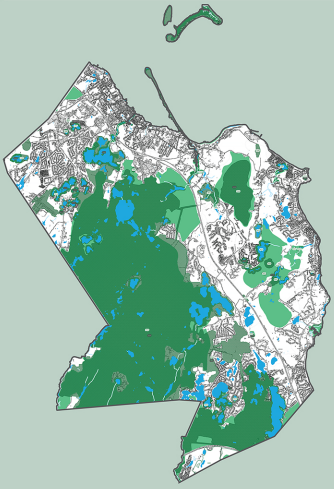


| Risk | Impact |
|---|---|
| Warming | Pine Barren Forest better able to adapt to warming and preciptiation changes. Higher vulnerability to wildlire. New pests and diseases |
| Flooding, Drought, Wildfire, Ice Storms | Impaired waters, toxic exposure, contaminant leaching, weakened and damaged trees |

- Water Bodies
- Deciduous Forest
- Evergreen Forest
- Forested Wetland
- Land Surface Temperature: 97° to 99° F
- Land Surface Temperature: Over 100° F

## Valuable Habitat

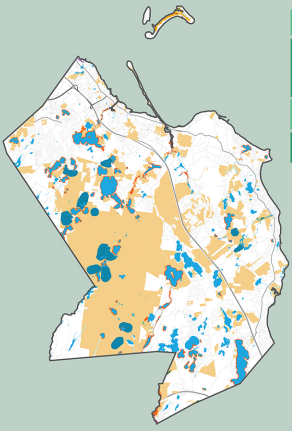
Core Habitat and Critical Natural Landscapes are state-identified intact landscapes, or exemplary natural communities, that are better able to withstand climate change strees and support ecosystem vaibility. Plymouth has 30,785 acres of BioMap Core Habitat and 30,839 acres of Critical Natural Landscape, each of which is 50% protected. Plymouth has 151 parks and 30% of its total land area as protected open space.



- Developed Land
- Water Bodies
- Critical Supporting Landscape
- BioMap Core

## Aquatic Systems

Freshwater wetland systems sustain critical ecosystem functions in climate change, such as restoring drinking water quantity and quality, providing flood control, and maintaining overall ecosystem health for climate resilience. Plymouth has 450 ponds totalling over 5,000 acres of fresh water. Many of these are the kettle ponds and coastal plain ponds where groundwater reaches the surface. Only four are regulated under the Clean Water Act for harmful algal blooms. The Town has worked collaboratively to restore and protect hundreds of acres of water ways and has 6,625 acres of State-designated BioMap Aquatic Core Habitat-intact river corridor where important physical and ecological processes occur.

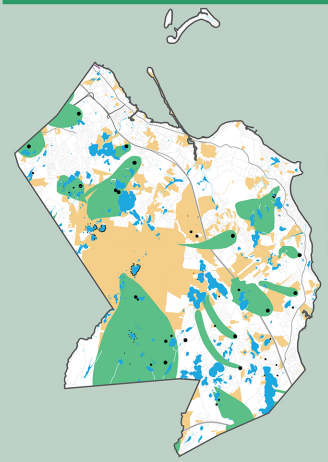


| Risk | Impact |
|---|---|
| Drought/ Warming | Seasonal no-flow/ low-flow, reduced absorption capacity, diminished fish habitat, algal blooms, low dissolved oxygen, reduced drinking water supply |
| Flooding | Impaired waters, toxic exposure, contaminant leaching |
| Extreme Precipitation | Scouring, impaired waters, sewer overflows |

- Water Bodies
- Vernal Pool Core
- Priority Wetlands
- Wetland Core
- Aquatic Core
- Open Space
- Priority Barrier Beach - Salt Marsh

## Drinking Water Systems

The Plymouth-Carver Sole Source Aquifer, the second largest in the State, provides drinking water to Plymouth residents and six surrounding towns. Climate Change and land use can deplete the water table, increase pollution of ponds and streams, require more wildfire suppression, and contaminate the aquifer. Changing precipitation patterns will cause drought or flooding, which can stress supply or increase contamination, particularly for Plymouth, whose aquifer does not have a hydrogeologic barrier like clay that can prevent contamination.



- Water Bodies
- Open Space
- DEP Wellhead Protection Area (Zone II)
- DEP Wellhead Protection Area (Zone I)

Sources
MassGIS (Bureau of Geographic Information); BioMap2: Conserving the Biodiversity of Massachusetts in a Changing World; Massachusetts Department of Fish and Game; Massachu
Protection; MassGIS (Bureau of Georgraphic Information); National Land Cover Database (NLCD)