



APC & Nemasket Watershed Management and Climate Action Plan

Existing Conditions and Anticipated Climate Change Impacts Overview

PUBLIC STEWARDSHIP and CULTURE OF WATERSHED PROTECTION

CURRENT CONDITIONS IN WATERSHED

Each of the communities surrounding the Assawompset Ponds (Lakeville, Middleborough, Freetown, Rochester), as well as the communities that get their drinking water from the Ponds (New Bedford and Taunton), play a role in stewarding the watershed. Representatives from each community participate in the Assawompset Ponds Complex Management Team, an inter-municipal and inter-agency committee that meets regularly to discuss challenges and collaborate on management actions related to the ponds.

Each of these municipalities also plays a significant role in managing the watershed lands within its jurisdiction, protecting water quality, and promoting environmental stewardship in its daily operations. The Ponds communities prioritize stewardship of natural resources in many of their local planning documents, including Master Plans, Open Space and Recreation Plans, and Municipal Vulnerability and Preparedness Plans.

Lakeville's and Middleborough's Open Space and Recreation Plans (OSRP) identify the Assawompset Ponds Complex and Nemasket River as significant shared resources the communities are responsible for managing and stewarding. Lakeville identifies protecting the watershed areas and water resources of the town and conserving unprotected lands bordering the APC as high priorities in their 2012 OSRP. Promoting responsible use of open space in the town, as well as expanding outreach to promote appreciation for and protection of open space were also priorities. Middleborough's 2008 OSRP identifies protecting water resources, managing the Nemasket River ecosystem, promoting recreational use, and educating the community about the values of open space protection as priorities. Rochester's 2008 OSRP identifies the APC as an important regional water resources, and takes responsibility for guarding this regional water supply.

Local community members, as land owners and users, also carry the responsibility to use natural resources sustainably and help to steward the watershed. Municipal leaders and local community organizations can play a major role in influencing a culture of stewardship within the community. State programs like the Community Preservation Act (CPA) give community members the option to prioritize natural resource protection locally. Middleborough and New Bedford have both adopted CPA, which

means their residents opted in to paying a surcharge on their taxes that goes into a local Community Preservation Fund for open space protection, historic preservation, affordable housing and outdoor recreation. Lakeville and Rochester chose not to adopt CPA when it was proposed in 2006, and Freetown voted it down more recently in 2012.

The steering committee has expressed a need for more public education to encourage public stewardship. In particular, there is a desire to increase awareness of Nemasket River as a public resource, and its responsible use. There seems to be a lack of public understanding of where and how the public can use the Nemasket River and Assawompset Ponds, and better advertisement and clear signage showing where is and is not publicly accessible (and why some areas are not public) are proposed solutions. Building a public connection to the river through recreational access can help improve public stewardship of it. More education around proper behaviors and practices to follow when recreating outdoors can help existing issues with public use, such as excessive litter, particularly discarded fishing line, along the river. Educational kiosks in public parks throughout the watershed are a favored action to highlight the ecology and history of the watershed and how the public can appropriately engage with these natural resources.

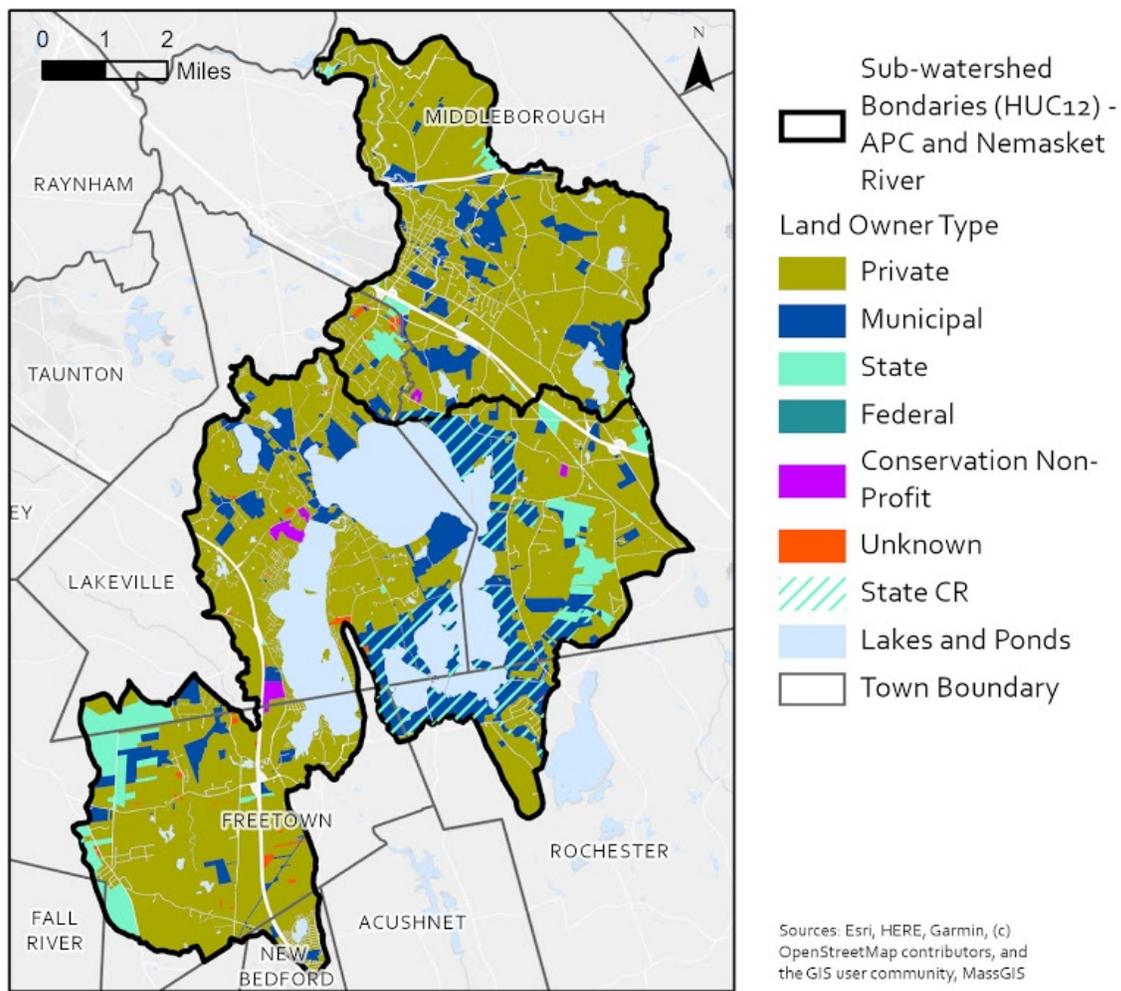


Figure 1 Watershed land ownership

Land Management

Land use, and how land owners develop and use their land, has a big impact on environmental resources and watershed health. With the majority of the watershed area being privately owned (Fig. 1) and a large portion of that in residential use, the largest stewardship responsibility falls upon individual landowners. This challenge can be addressed through strong local land use regulations and public education that encourages sustainable land development and property management practices¹.

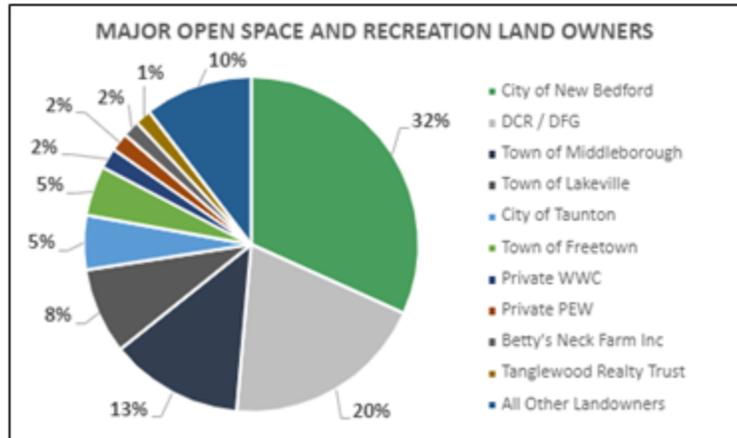


Figure 2 Ownership of open space in the watershed

Municipal and state agencies are the largest owners of open space and natural resources in the watershed (Fig. 2). Each municipality's Conservation Commission is responsible for managing municipally-owned lands. Middleborough has a special volunteer stewardship group that helps to oversee town conservation lands and implement management projects. Freetown's Conservation Commission appoints a three-member Town Forest Committee to help steward town conservation land. The Cities of New Bedford and Taunton own and manage large parcels of protected land surrounding the Assawompset Ponds (in Lakeville and Rochester) for drinking water supply protection.

Municipal and private landowners can access assistance to develop forest management plans for their property from [Natural Resources Conservation Service \(NRCS\)](#) and [MA Division of Conservation and Recreation \(DCR\)](#).

Existing stewardship and land management plans:

- [Stewardship Plan Proposal for Vigers Conservation Area, Pickens Street](#) (Lakeville Conservation Commission, 2013)
- [Forest Management Plan for Vigers Conservation Area](#) (Lakeville Conservation Commission, approved by DCR)
- [Pratt Farm Conservation Area Management Plan](#) (Middleborough Conservation Commission, 1987)
- [Pratt Farm Forestry Plan](#) (Middleborough Conservation Commission, approved by DCR, 2011)

Community Engagement

Community groups, including (but not limited to) environmental stewardship organizations, play a significant role in improving public awareness and knowledge around environmental issues. Community events and programming can go a long way in influencing local behaviors and promoting responsible recreational use throughout the watershed.

¹ More information in Land Development paper

Local and regional environmental stewardship organizations active in the watershed:

- **Middleborough High School C. G.** – students participate in community service projects, including helping to maintain a community garden (identified in preliminary Stew Map data for SNEP region)
- **MA Department of Environmental Protection, southeast regional office** – DEP oversees a statewide [water quality monitoring program](#), including volunteer programs
- **Middleborough-Lakeville Herring Fishery Commission** - monitors the Nemasket River herring run, maintaining fish ladders (Wareham St & Assawompset Dam, others?), and monitors stream
- **Mass Audubon** – Owns Little Cedar Swamp in Lakeville/Freetown, but note this property is not open to the public. Mass Audubon has partnered with library and local high schools on youth programming
- **Taunton River Stewardship Council** - Implements the Taunton River Stewardship Plan and provides a forum for all parties responsible for managing the Taunton River and its tributaries to discuss river interests and make recommendations
- **Taunton River Watershed Alliance** – manages a volunteer water quality monitoring program in the Taunton Watershed, with one monitoring site on the lower Nemasket River
- **Wildlands Trust** – works throughout Southeast Massachusetts to protect and conserve significant natural areas; they manage a couple properties in Rochester that are outside of the watershed
- **Sustainable Middleborough** - community organization working on clean energy and other sustainable policies in Middleborough and the state; have partnered on climate outreach events, such as a climate café with Mass Audubon and other partners
- Local land trust or friends of groups?

Regular stewardship programming and popular events in the watershed:

- Middleborough Tourism Board offers annual Herring Festival that attracts many visitors to come see the river herring run upstream during their spring migration (Oliver Mill Park each spring)
- Middleborough Parks Department hosts annual canoe/kayak race, fishing programs
- Taunton River Stewardship Council holds archeological and historic tours
- Samuel Fuller School in Middleborough annual trail race at Pratt Farm
- Cranberry Trifest held annually in Lakeville
- Downtown Middleborough River Walk from Rt 28 to 105/E Main St. - walking/bike path to tour river
- (Upper Nemasket) Steering committee expressed interest in more future events about history and Native American relationships with river (i.e. visitor days planned around Native American Heritage month in November)
- Ongoing invasive species removal volunteer events have been held (throughout the Nemasket River watershed in particular?) by the Lakeville-Middleborough Herring Fishery Commission, and Bridgewater State Professor Donald Padgett (?)

Historical and Cultural Resources

There is rich history to the watershed and region, which is identified to have played a significant role in the lives of Native Americans, and the Algonquin tribe in particular, from which Assawompset gets its name (“the place of the white rock”), for thousands of years until the mid-1800s. In 1675, Assawompset

Pond was the site of the murder of John Sassamon and subsequent hanging of the three Wampanoag people believed to have killed him, which elevated tensions between King Philip and Plymouth Colony that led to King Philip's War (1675-1676). Henry David Thoreau wrote about the beauty of the ponds in his journals in the 1850s (his journals reveal a lot about what flora and fauna used to exist and how much has changed). Ponds today are best known for Bald Eagles (resident since 1993), Plymouth gentian (plant), northern red-bellied cooters, eastern pondmussels, locally uncommon saffron-winged meadowhawk. The area draws many birders to see a variety of species throughout the seasons².

The Nemasket River was named for its historical fishing importance - "Nemasket" means "place of fish." Native Americans used the river for fishing, hunting, and gathering along its banks. The Nemasket River's spring herring migration is still one of the most significant in the region, with around 500,000 fish traveling to the Assawompset ponds annually to spawn³, and attracts visitors from near and far. The Nemasket River is also a part of the Wampanoag Canoe Passage, a water trail that Native Americans used to travel from Massachusetts Bay to Narraganset Bay and is still used recreationally today. In the 1870's, a steamboat carried passengers up the Nemasket River and into Assawompset Pond, offering private parties and tours, until the City of Taunton began using Assawompset Pond for water supply and built a gatehouse across the mouth of it in 1875.⁴

There are several areas of spiritual importance to tribal groups, particularly along the Nemasket River and a burial site on Long Pond. Expanding land protections in these areas of interest, enhancing access for all, and providing more opportunities to learn about the rich history of the region are priorities for the Steering Committee.⁵

The Middleborough Historic Conservation manages several historic sites throughout the watershed, outlined in a historic preservation strategy adopted in 1989⁶.

Areas of Significance⁷

Oliver Mill Park - Located at Muttock Hill, where Native Americans settled until they sold the land in 1734, is the site of a burial ground and a former fish weir that the Native Americans used to catch fish. A dam was constructed in place of the fish weir for a slitting mill (Oliver's Mill), which provided provisions for fish to travel past the dam to protect the fish run. Today, Oliver Mill Park is a public space where people can access the river, learn a bit about the local history, and observe the spring herring migration. (Taunton River Stewardship Plan)

Pratt Farm – Town of Middleborough [Conservation and Recreation Area](#) located on East Main Street (Rt. 105) and along two tributaries to the Nemasket River. The historical site of Pratt Farm, the site has a series of public hiking trails and historical structures. The site is recommended for environmental education with school groups in the Taunton River Stewardship Plan.

² "Birding the Lakeville Ponds of Plymouth County, Massachusetts" by Jim Sweeney in *Bird Observer*, 2011

³ Nemasket Steering Committee discussion

⁴ Taunton River Stewardship Plan

⁵ Upper Nemasket River Enhancement Steering Committee conversations

⁶ Middleborough OSRP, 2008

⁷ Areas of cultural and/or stewardship significance; list of recreational sites in Recreational Access paper

Wapanucket site – Historic site located along Assawompset Pond near Vaughn and Walnut Streets in Middleborough. Artifacts found on site show evidence of human settlement as long as 10,000 years ago. This site was prioritized for protection from development pressures in Middleborough’s 1989 Historic Preservation Plan due to its historical, as well as watershed protection, significance.

SUMMARY OF THREATS / CHALLENGES TO A HEALTHY / FUNCTIONING SYSTEM

- Lack of awareness could result in historical and cultural sites unintentionally being developed or otherwise lost
- Spiritual and historic sites along the Nemasket River and the APC shores are vulnerable to flooding/erosion (i.e. burial site on one of the Ponds banks?)
- Channel and water level alterations have impacted historical resources on the Nemasket River, such as fish populations and the ability to operate large boats
- Limited and disjointed access to waterways, and lack of clarity around which portions of Ponds are publicly accessible can hinder connection to and stewardship of the Assawompset Ponds and Nemasket River

IMPLICATIONS OF ANTICIPATED CLIMATE CHANGE IMPACTS

Climate change impacts that threaten environmental health can also impact the public’s ability to access environmental resources⁸. It also impairs the important values that the communities get from their natural resources, including flood storage and temperature regulation. This makes environmental stewardship even more important in the watershed. Public education that equips the community with the knowledge and tools to steward their environment with climate change in mind is imperative for protecting the watershed and its resources.

DATA GAP DOCUMENTATION

Additional information needed about public and private stewardship and land management plans and local programs that promote environmental stewardship.

TRADE-OFFS AND CO-BENEFITS WITH OTHER INTERESTS

Increased Public Stewardship and...

1. Water Quality: Co-Benefit.
2. Drinking Water Supply Levels: Co-Benefit.
3. Floodwater Management: Co-Benefit.
4. Stormwater Management: Co-Benefit.

⁸ See more details in the Ecology, Recreational Access, and Land Development white papers

5. Ecology, Unique Habitats and Natural Resources: Co-Benefit.
6. Increased Land Development: Trade-Off, traditionally, but potential to develop with stewardship in mind?
7. Increased Inter-Agency Cooperation: Neutral to Co-Benefit?
8. Recreational Access: Co-Benefit. Increased recreation can encourage users to become stewards of the sites they love to frequent, potentially building support for water quality improvement measures. Water crafts that move between watersheds and systems can bring invasives with them that would harm water quality. Recreation is not permitted on Assawompset Pond due to adverse water quality concerns.