

2.3 WETLANDS

Introduction

Wetland resources are important environmentally and for historical reasons. They provide important natural functions such as flood control, groundwater recharge, filtering of pollutants and nutrients, and providing wildlife and fisheries habitat. Wetlands offer recreational opportunities, such as birdwatching, fishing, and boating, as well as economic opportunities such as cranberry production. The buffer zones to these areas are not only the most likely to have archaeological significance but also the most likely to be developed.

Wetlands, both fresh and salt-water types, are the food factory and habitat for most of Dennis' wild animals. Fortunately, Dennis is blessed with a diversity of wetlands, in type, size and distribution, scattered evenly throughout the Town.

Inventory

A 1990 University of Massachusetts study found that Dennis had 402 acres of freshwater wetlands, 42 acres of cranberry bogs and 976 acres of saltwater wetlands. A 1985 Coastal Zone Management report identified 1,139 acres of salt marsh in Dennis, located primarily along the Northside, but also along Swan Pond River, fringing Bass River, and elsewhere. (This difference in salt marsh acreage figures is due to differences in methodology, not loss of habitat.) A salt marsh's high biomass makes it excellent habitat for birds, shellfish, and finfish nurseries. About two-thirds of commercially-important finfish spend some of their life cycle feeding or spawning in or near salt marshes.

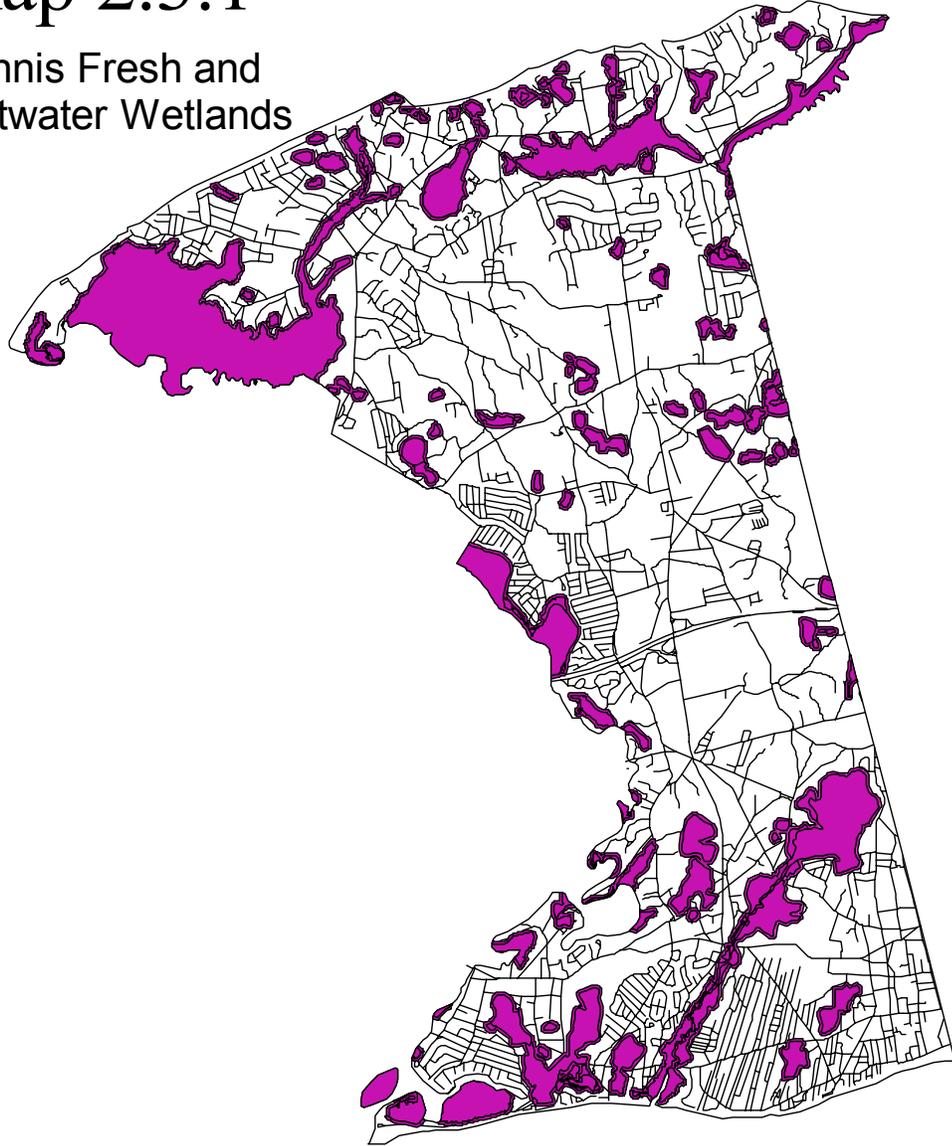
Two of the largest vegetated wetland areas are the 140 acres along Swan River and 80 acres along Weir Creek, which ironically, are set amongst the most densely developed parts of town in Dennisport and West Dennis, respectively. Town Meeting is said to have authorized the purchase of Weir Creek in 1967, but the acquisition was never consummated.

As with Dennis' ponds, most freshwater wetlands are dependent on water table fluctuations, rather than surface runoff, to ensure the soil saturation necessary for wetland plants. Most wetlands are at low elevations, close to the water table and the sand and gravel soils readily transmit groundwater through wetlands. Wetlands play an important role in filtering out contaminants from freshwater and reducing flooding during major storms.

In addition to town administration of the Massachusetts Wetlands Protection Act, the Town simultaneously administers a local wetlands protection bylaw (adopted 1975; amended in 1989) that strengthens minimum state performance standards, such as tightening regulations for building on dunes and asserting town jurisdiction over small

Map 2.3.1

Dennis Fresh and
Saltwater Wetlands



wetlands. In addition, wetlands replication as a mitigative strategy is discouraged under the town bylaw, as it is not under state law. Septic system leaching fields must be located over 100 feet from wetlands, rather than the 50-foot state Title 5-standard. Established in 1964, the Conservation Commission is one of the oldest in Massachusetts.

Much progress has been made in protecting wetlands, but threats remain. The town has taken steps to protect wetlands from human alteration. Degraded water quality in wetlands, and its impact on rare or endangered species remain concerns. The threat of invasive species replacing native species is also a concern.

Habitat for rare and endangered species should be protected in hope of providing enough habitat for the population of the threatened flora or fauna to restore itself. In order to permanently protect rare species, it is recommended that lands known to contain such creatures and plants be a priority for open space acquisition. The Commonwealth's Natural Heritage Maps should be used for such determinations.

Vernal pools support many rare species, and should be targeted for protection. The first step would be to inventory all potential vernal pools and seek Commonwealth certification. This will allow the Conservation Commission to exercise regulatory authority to protect vernal pools.

Invasive species, especially in wetland areas, are becoming a problem in coastal and fresh water bodies. When a new species is introduced to a habitat in which it can dominate other species of plants and animals suffer, upsetting the natural balance of the ecosystem. Examples of invasive species are abundant and diverse, such as phragmites replacing cattails in swamps. While the task of removing invasive species from the wild and restoring native populations is an enormous undertaking, the town can take action to require that only native plants are permitted in sensitive resource areas. It is recommended that the Town adopt a regulation that will require waterfront property owners to plant only native species within 50 feet of the resource area. It is also suggested that the Town explore and evaluate methods and the cost of programs to eradicate non-native species.

Freshwater Wetlands

The 1990 Critical Habitat Atlas for Cape Cod identifies two wetland areas that are dominated by Atlantic White Cedar (*Chamaecyparis thyoides*) in Dennis. These forested wetlands, around the eastern perimeter of Fresh Pond and the headwaters of Otter Creek draining to Swan Pond River, are highly acidic and are uncommon throughout the Cape. (There is also a fringe of white cedar around The Plashes ponds in Dennisport.) The Dennis Conservation Commission now owns much of the cedar swamp acreage along with the Dennis Conservation Trust. Regionally, cedar swamps were once much more extensive before the trees were harvested for shingles and fence posts in earlier centuries or converted to cranberrying. Of the 6,000 acres of cedar swamp thought to exist at the time of the Pilgrim's landing on Cape Cod, only 135 persist today.

A 1991 study found that Dennis had five acres in which white cedar composed more than 75 percent of the canopy cover, indicating almost “pure stands.” The significance of the Dennis cedar swamps argues for continued efforts to protect them by acquisition or conservation easement in cooperation from landowners. While all of the Fresh Pond and Plashes cedar swamps are town owned, town ownership protects only half of the larger Otter Creek site.

Vernal pools were officially recognized as critical habitat in 1987 when the Massachusetts General Court amended the Wetlands Protection Act to include their protection. These small temporary ponds are crucial breeding grounds for woodland amphibians, such as Eastern spadefoot toads and salamanders. To date no vernal pool has been certified in Dennis, however one potential vernal pool is under investigation near Scargo Lake. These small isolated wetlands can be expected to be found throughout the town owing to its steep hill-and-kettle topography, particularly on the Northside where the soil is denser and perched water wetlands are more likely to be found.

A sphagnum bog at Run Pond off Setucket Road is one of only two identified on Cape Cod. The other is located off Shankpainter Road in Provincetown. The bog, a living mat of sphagnum over a saturated bed of peat, is growing over the surface of Run Pond. It is also known as a quaking bog.

Saltwater Wetlands

Another significant, though often overlooked, wetland resource in Dennis are tidal flats. Dennis has 122 acres of estuarine flats, which are portions of the bed of salt ponds (Swan Pond) or estuaries (Bass River) exposed at low tide. They are particularly productive for shellfish populations. There are also 880 acres of marine flats of the type found in open coastal areas, primarily along Cape Cod Bay. Both of these types of flats are an important recreational resource in the town. The firm, hard footing of the flats is popular for activities ranging from shellfishing to walking to kite flying. Unlike Yarmouth, where the Bayside flats are isolated from public use by broad salt marshes, Dennis has ready access to its Northside flats from public beaches at Chapin, Corporation, Cold Storage and Crowes Pasture.

Goals and Policies

2.3.1 Goal: to preserve and restore the quality and quantity of inland and coastal wetlands on Cape Cod.

Minimum Performance Standards

- 2.3.1.1 The Dennis Conservation Commission shall not permit wetland alteration except as provided herein. As an exception, where there is no feasible alternative, water-dependent projects involving wetland alteration with appropriate mitigation may be permitted subject to the approval of all permitting authorities. Such permission may be granted subject to a finding that there is no feasible alternative location for the project and that any necessary alteration is the minimum necessary to accomplish the goals of the project. Appropriate mitigation shall not include wetland creation or replication.
- 2.3.1.2 Vegetated, undisturbed buffer areas of at least 100' width shall be maintained and/or provided from the edge of coastal and inland wetlands including isolated wetlands, to protect their natural functions. This policy shall not be construed to preclude pedestrian access paths, vista pruning, or construction and maintenance of water-dependent structures within the buffer area, any of which may be permitted at the discretion of permitting authorities where there is no feasible alternative to their location. The Conservation Commission shall require a larger buffer area where necessary to protect sensitive areas or where site conditions such as slopes or soils suggest that a larger buffer area is necessary to prevent any adverse impact to wetlands and associated wildlife habitat. Where a buffer area is already altered such that the required buffer cannot be provided without removal of structures and/or pavement, this requirement may be modified, provided it makes the following findings: 1) that the proposed alteration will not increase adverse impacts on the specific portion of the buffer area or associated wetland and, 2) that there is no technically demonstrated feasible construction alternative.
- 2.3.1.3 **Disturbance of wetlands and buffer areas for operation and maintenance of underground and overhead utility lines (electrical, communication, sewer, water, and gas lines) may occur. Installation of new utility lines through these areas may occur where the permitting authority finds that the proposed route is the best environmental alternative for locating such facilities. In all instances, disturbance of wetland and buffer areas shall be minimized and surface vegetation, topography and water flow shall be restored substantially to the original condition..**
- 2.3.1.4 Stormwater management plans for development shall preclude direct discharge of untreated stormwater into natural wetlands and waterbodies. New stormwater discharges shall be located a minimum of 100' from wetlands and waterbodies.

Other Development Review Policies

- 2.3.1.5 Measures to restore altered or degraded inland and coastal wetlands, including nonstructural bank stabilization, revegetation, and restoration of tidal flushing should be encouraged. However, such areas should not be used as mitigation for wetland alteration projects (mitigation banking).
- 2.3.1.6 Construction of artificial wetlands for stormwater and wastewater management may be permitted in appropriate areas where there will be no adverse impact on natural wetlands, waterways and ground water.
- 2.3.1.7 For agricultural areas in wetlands and buffer areas, management practices that would improve water quality and conserve water as recommended by the Soil Conservation Service should be encouraged.

Implementation

1. Dennis shall develop and modify it's bylaws to protect the town's unique resources.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: 2003
2. Dennis shall aid County Agencies in the development and implementation of a site-specific buffer area methodology to assess additional buffer area requirements for sensitive wetlands and water bodies.
Responsible Parties: PB, CC, BH
Priority: M
Time Frame: on-going
3. Dennis shall support passage of state legislation to allow local Conservation Commissions to use revolving funds to pay consultants engaged in project review.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: on-going
4. Dennis shall consider mapping wetlands at a scale appropriate to local regulatory programs and should identify and protect wetlands so as to maintain their ability to provide natural functions.
Responsible Parties: PB, CC, BH
Priority: M
Time Frame: ongoing
5. Dennis shall adopt local wetlands bylaws or ordinances that provide for the following: protection of vernal pools outside other resource areas as well as isolated wetlands, a policy of no alteration/replication of wetlands for both public and private applicants, expansion of jurisdiction beyond 100 feet where appropriate, improved enforcement authority, and the ability to hire consultants to review applications at the applicant's expense.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: On-going

6. Dennis' Conservation Commissions shall work closely with the Board of Health and other relevant town boards to develop mutually acceptable policies for wetland boundary delineation. The Dennis Conservation Commission shall review the siting of new subsurface disposal systems within designated wetland resource areas and their buffers consistent with the Dennis Wetlands By-law. The Board of Health will approve new subsurface disposal systems in relation to these areas, as well as improving and retrofitting areas with failing systems.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: On-going
7. Dennis shall develop and implement plans to address existing stormwater management problems where runoff and drainage systems are adversely affecting water quality in wetlands and water bodies.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: 2003
8. Dennis shall identify, certify and protect vernal pools.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: On-going
9. Dennis shall consider a bylaw that would minimize the clearing of vegetation and alteration of natural topography, with native vegetation planted as needed to enhance or restore wildlife habitat.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: On-going
10. Dennis shall consider regulations that would minimize the fragmentation of wildlife and plant habitats by the establishment of greenways and wildlife corridors, as well as by the protection of large unfragmented areas, and the use of open space planning.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: On-going
11. Dennis shall consider the prohibition of development within a minimum 200 feet radius around vernal pools.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: 2005
12. Dennis shall establish the necessary policies and/or bylaw/regulations to prohibit untreated stormwater from being discharged directly into natural wetlands and waterbodies. New stormwater discharges should be located a minimum of 100 feet from wetlands and waterbodies.
Responsible Parties: PB, CC, BH
Priority: H
Time Frame: On-going