CHAPTER 13 – WILDLIFE AND PLANT HABITAT

This section of the Local Comprehensive Plan outlines the Town of Yarmouth's goals and action plan to prevent loss or degradation of critical wildlife and plant habitat, to minimize the adverse impacts of new development and to maintain existing populations and species diversity.

Introduction: Although Yarmouth has areas of dense development, there is significant acreage of conservation land, woodlands, fresh water ponds, wetlands, and marsh lands spread throughout the Town. It is estimated that the Town of Yarmouth owns 22% of all property within its borders, the majority of which is designated for conservation use or well field protection. Refer to Map 13-1 for Open Space and Recreation Lands in Yarmouth.

These extensive areas provide for plentiful and diverse wildlife and plant populations in Yarmouth. Unique habitats, such as Atlantic White Cedar Forests, support distinctive wildlife including the endangered Parula Warbler. Wetlands, both fresh and salt water, are the food factory and habitat for most of Yarmouth's wild animals. Salt marsh's high biomass makes it excellent habitat for birds, shellfish and finfish nurseries. Deciduous forests provide both upland and wetland habitat for numerous birds, mammals, reptiles and amphibians. Many species of migratory waterfowl frequent Yarmouth's waters throughout the year.

The development patterns of Yarmouth have redefined our environment and prudent use and protection of our remaining resources is essential. This chapter of the LCP documents Yarmouth's plant and wildlife habitats and develops appropriate management policies and planning goals to protect these resource areas.

Town of Yarmouth Open Space and Recreation Plan: An Open Space and Recreation Plan was prepared in December 2007 on behalf of the Open Space Committee and Recreation Division. This plan outlines action items and recommendations to conserve the Town of Yarmouth's natural resources, preserve its open space, and provide ample opportunities for recreation for Yarmouth's citizens. This plan was utilized in the development of this section of the LCP and is included in the LCP by reference.

Vegetation: Despite its scarcity of rich and varied soils, Yarmouth supports some interesting plant communities in addition to the typical pitch pine and oak (red, black, scrub, scarlet oaks) found throughout Cape Cod. There are areas where white pine predominates and even some small plantations of red pine. Other tree species found scattered throughout Town include red maple, black cherry, sassafras, gray birch, tupelo, and American beech. The pine/oak forests, by themselves, are of limited value to wildlife due to their short height, crown density and the poor quality of the dominant soils. However, when plant communities from wetlands, cranberry bogs or power lines occur adjacent to the woodlands, the wildlife value of both the open and wooded areas is greatly enhanced.

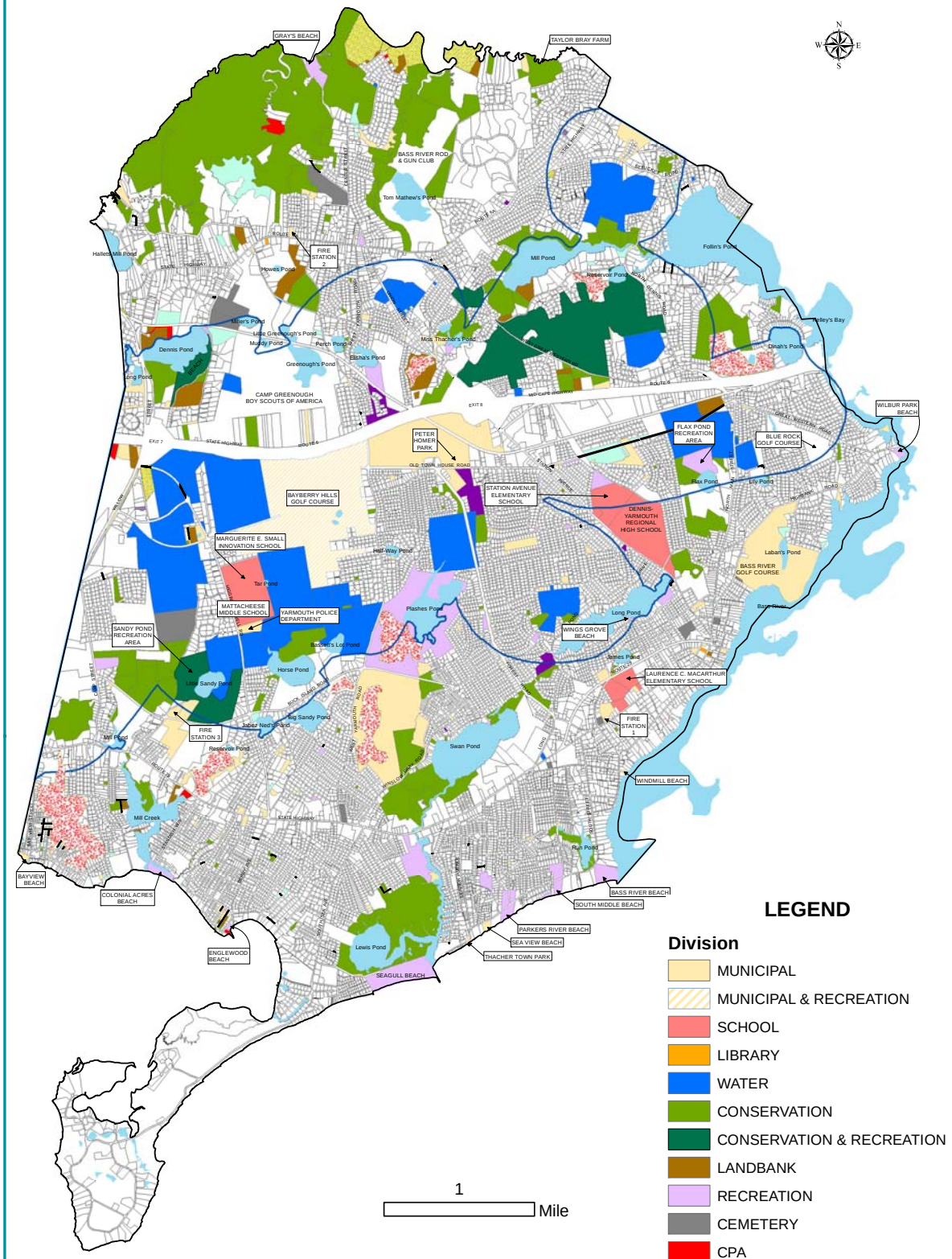
The habitat significance of the woodlands of Yarmouth primarily lies in its ability to provide migratory corridors and refuge for wildlife from the heat and openness of the beaches, marshes, and developed lands. The recreational value of these wooded areas for humans is remarkably similar. Woodlands offer important shelter and relief from the bitter winds off the Bay and Sound and the heat and sun in the summer.

Rare plants in Yarmouth protected under the 1991 Massachusetts Endangered Species Act include those listed as Endangered, Threatened, and Species of Special Concern. Refer to Table 13-1 for a list of rare species identified for the Town of Yarmouth and refer to Map 13-2 for significant natural resource areas including rare species. State regulations prohibit the taking or habitat alteration of these species without a State permit.

TABLE 13-1
NATURAL HERITAGE & ENDANGERED SPECIES FOR YARMOUTH
July 2013

Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
Bird	Accipiter striatus	Sharp-shinned Hawk	SC		2006
Dragonfly/Damselfly	Anax longipes	Comet Darner	SC		2009
Vascular Plant	Carex mitchelliana	Mitchell's Sedge	T		1907
Bird	Charadrius melodus	Piping Plover	T	T	2011
Vascular Plant	Crocanthemum dumosum	Bushy Rockrose	SC		1931
Vascular Plant	Dichanthelium dichotomum ssp. mattamuskeetense	Mattamuskeet Panic-grass	E		2010
Vascular Plant	Dichanthelium ovale ssp. pseudopubescens	Commons's Panic-grass	SC		1989
Vascular Plant	Dichanthelium wrightianum	Wright's Panic-grass	SC		2009
Dragonfly/Damselfly	Enallagma pictum	Scarlet Bluet	T		2009
Dragonfly/Damselfly	Enallagma recurvatum	Pine Barrens Bluet	T		2000
Mammal	Eubalaena glacialis	Northern Right Whale	E	E	2010
Butterfly/Moth	Hemileuca maia	Barrens Buckmoth	SC		1986
Vascular Plant	Hydrocotyle verticillata	Saltpond Pennywort	T		2009
Vascular Plant	Lachnanthes caroliana	Redroot	SC		1988
Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		2010
Vascular Plant	Lipocarpha micrantha	Dwarf Bulrush	T		1913
Vascular Plant	Listera cordata	Heartleaf Twayblade	E		2010
Reptile	Malaclemys terrapin	Diamond-backed Terrapin	T		1983
Fish	Notropis bifrenatus	Bridle Shiner	SC		1956
Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		1916
Butterfly/Moth	Papaipema sulphurata	Water-willow Borer Moth	T		1986
Bird	Parula americana	Northern Parula	T		1983
Vascular Plant	Persicaria puritanorum	Pondshore Knotweed	SC		1986
Vascular Plant	Rhynchospora inundata	Inundated Horned-sedge	T		2012
Vascular Plant	Rhynchospora scirpoides	Long-beaked Bald-sedge	SC		1988
Vascular Plant	Sabatia kennedyana	Plymouth Gentian	SC		2012
Vascular Plant	Sagittaria teres	Terete Arrowhead	SC		2010
Vascular Plant	Setaria parviflora	Bristly Foxtail	SC		1989
Vascular Plant	Sphenopholis pensylvanica	Swamp Oats	T		2001
Bird	Sterna dougallii	Roseate Tern	E	E	2008
Bird	Sterna hirundo	Common Tern	SC		2010
Bird	Sternula antillarum	Least Tern	SC		2010
Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC		1928
Reptile	Terrapene carolina	Eastern Box Turtle	SC		2010
Vascular Plant	Utricularia subulata	Subulate Bladderwort	SC		1925

E = Endangered species, T = Threatened species, SC = Special Concern species



LEGEND

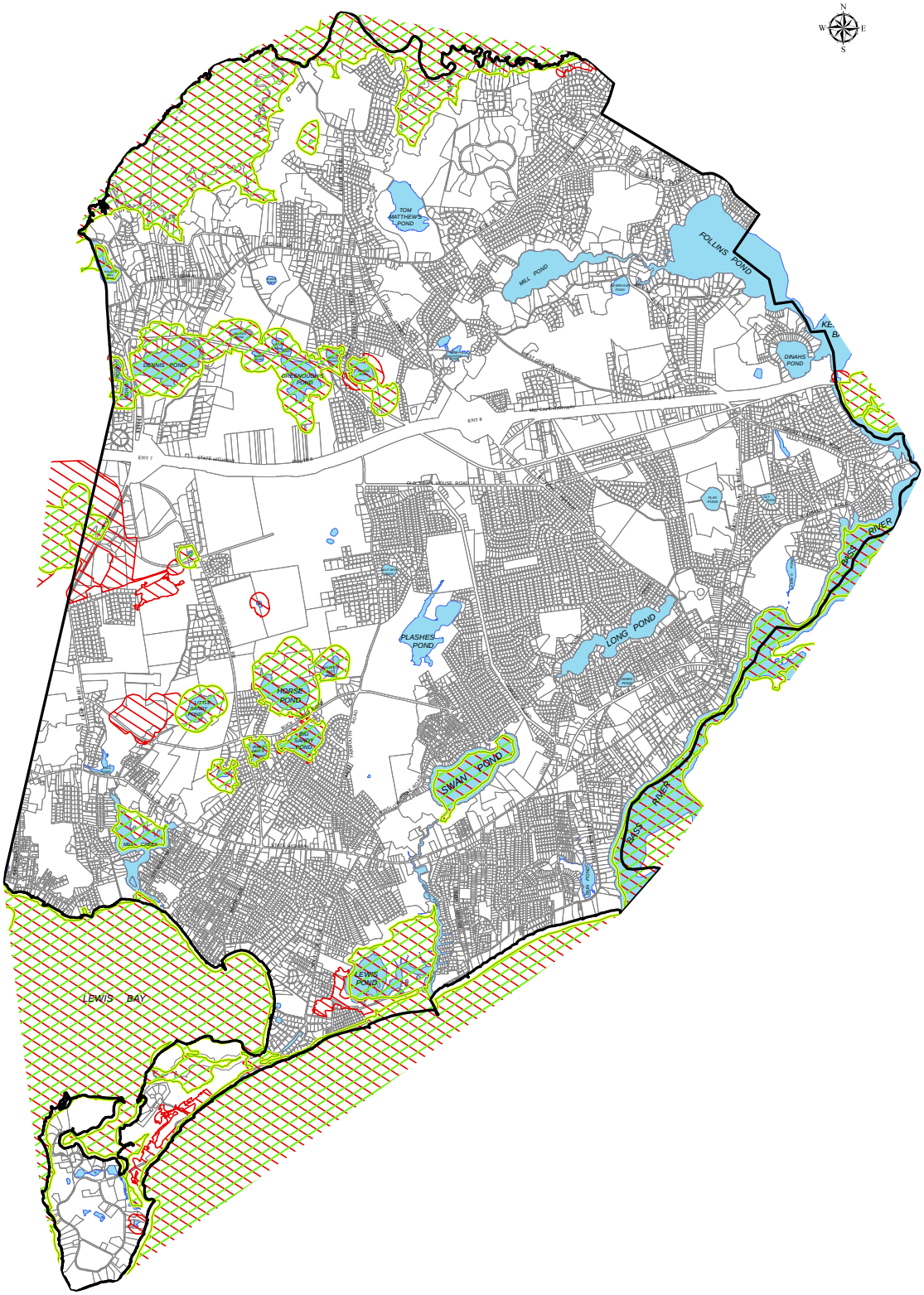
Division

- MUNICIPAL
- MUNICIPAL & RECREATION
- SCHOOL
- LIBRARY
- WATER
- CONSERVATION
- CONSERVATION & RECREATION
- LANDBANK
- RECREATION
- CEMETERY
- CPA
- YCT
- YHA

State & Federal

- FEDERAL
- STATE
- APD
- Cranberry Bog

MAP 13-1
OPEN SPACE AND RECREATION LANDS
YARMOUTH LOCAL COMPREHENSIVE PLAN



LEGEND

NHESP Estimated Habitats of Rare Wildlife

NHESP Priority Habitats of Rare Species

1 Mile

MAP 13-2

NATURAL HERITAGE & ENDANGERED SPECIES

YARMOUTH LOCAL COMPREHENSIVE PLAN

Wildlife: Yarmouth is located at the juncture of two major wildlife zones: the Virginian and the Acadian bio-geographic regions. Cape Cod separates the warm Gulf Stream waters of Nantucket Sound (northern edge of the Virginian zone) from the cold Labrador Current coursing down through the Gulf of Maine into Cape Cod Bay (southern edge of the Acadian zone.) Marine species composition, from seaweed to squid to marine mammals, is different between these two sides of Yarmouth. Yarmouth's Cape Cod Bay shoreline is the innermost area proposed by the National Marine Fisheries Service as critical habitat for the endangered North American right whale.

The waters of Yarmouth also support a wide array of pelagic birds, such as fulmars, gannets, shearwaters and alcids (guillemot, murre, razorbill) all attracted to the abundant baitfish. The north side marshes are one of only five Cape embayments identified as important wintering areas for black ducks, a National Species of Special Emphasis (US EPA, 1987). Shore birds include terns (common, least and an occasional roseate) and piping plovers, all listed as protected rare species in Massachusetts. The Massachusetts Audubon Society's (Audubon) Coastal Waterbird Program notes that the barrier beaches at the mouth of Bass Hole are a "very important nesting colony" for shorebirds, though predators, such as raccoons and gulls, have disrupted the colony in recent years. In addition, Seagull Beach and Great Island, on Yarmouth's south side, have recently been colonized by piping plovers.

While a complete inventory of birds is not available for Yarmouth, other important or interesting breeding birds include osprey, northern parula (warbler), pine warbler, orchard oriole, eastern bluebird, savannah sparrow, sharp-tailed sparrow, eastern meadowlark, red-tailed hawk, killdeer, woodcock, horned lark, ruby-throated hummingbird, eastern phoebe, great horned owl, willet, and mute swan (Veit & Petersen, 1993). The osprey in particular is a success story, as it has flourished on the Cape and in Yarmouth since its reintroduction in the 1980s. Throughout the years, the Town has erected and maintained several Osprey Nesting Poles, with almost every pole in town being occupied each year during the nesting season

Mammals in Yarmouth include the common assemblage: red and gray squirrel, white-tailed deer, raccoon, red fox, rabbit, skunk, otter, opossum, shrew, muskrat, bat, weasel, mice and voles. In recent years, a top-of-the-food-chain predator, the eastern coyote, has extended its range throughout all of Cape Cod and is seen throughout Yarmouth, particularly along salt marsh edges, where they stalk mice and voles.

Reptiles and amphibians (Herpetofauna) are commonly found within or near wetland resource areas, as wetlands play a critical role in the development and life cycle for these species. The following list provides a brief overview of herpetofauna found in Yarmouth. Reptiles include common snapping turtle, spotted turtle and eastern box turtle. Snakes include eastern garter snake, northern black racer and northern ringneck snake. Salamanders include redback salamander and spotted salamander. Toads include the American toad and frogs include wood frog, northern spring peepers and bull frogs.

Core Habitat and Critical Natural Land: In 2012, the Massachusetts Division of Fisheries and Wildlife identified BioMap2 Core Habitat and Critical Natural Land for Yarmouth. Refer to Map 13-3 for the BioMap2. Numerous core habitats were identified that promote long-term stability for Rare Species as identified by the Massachusetts Endangered Species Act (MESA); for Other Species of Conservation Concern as identified by the State Wildlife Action Plan; and for exemplary natural communities and intact ecosystems, such as vernal pools, forested areas, wetlands and water bodies. Refer to Table 13-1 for a complete list of Rare Species, as identified by the Natural Heritage and Endangered Species Program and Map 13-2 showing significant natural resource areas including rare species.

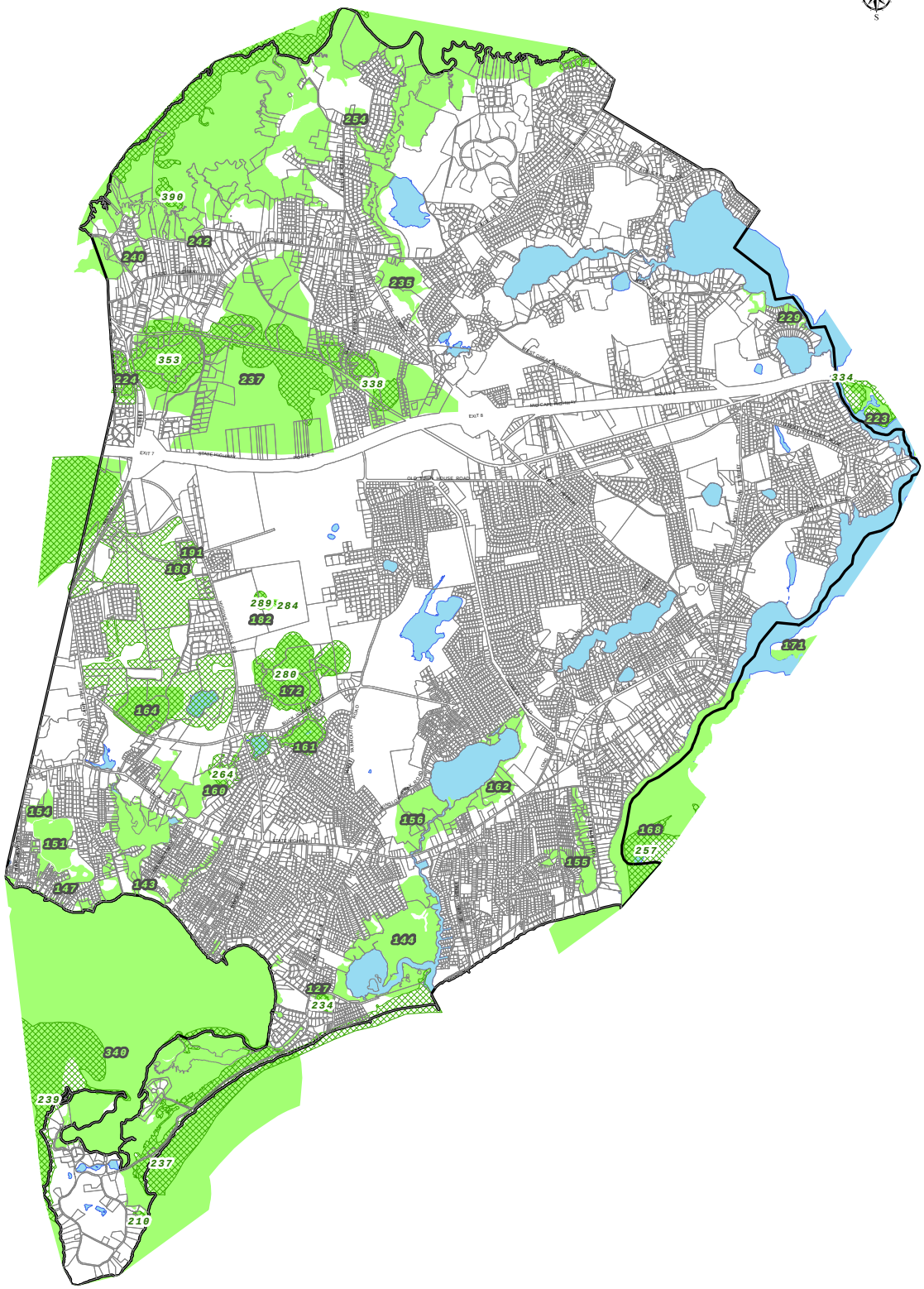
Major core habitats in Yarmouth include the marsh along the north coast; the Dennis Pond Complex in Yarmouth Port (composed of Dennis Pond, Miller Pond, Muddy Pond, Big and Little Greenough Ponds, Elishas Pond, and Perch Pond); the area northeast of Mill Pond in West Yarmouth which encompasses numerous ponds (Horse, Little and Big Sandy, Jabez Ned, and Bassetts Lot Ponds) along with large tracts of conservation land; and a stretch of shoreline along the southern coast, west of Parker's River. Of the estimated 1,341 acres of core habitat, approximately 510 acres, or 38% is currently protected.

The BioMap2 also identified critical natural landscapes that are capable of sustaining a wide array of species and habitats. These areas include large tracts of mainly naturally vegetated areas consisting of contiguous forests, wetlands, rivers, lakes, ponds and their buffers, as well as coastal habitats such as barrier beaches and salt marshes. Of the estimate 3,232 acres of critical natural landscape identified in Yarmouth, approximately 1,180 acres or 36.6% is currently protected.

Wildlife corridors through these natural landscapes enable animals, particularly upland mammals, to migrate to new territories in search of food or breeding grounds. Wildlife corridors also provide open space and cover so that animals can travel often undetected and uninhibited. Biologists estimate that undisturbed linear areas of a minimum of 300 feet in width are necessary for many species to feel comfortable moving through an area. Despite the presence of residential development throughout the Town, there are significant wildlife corridors in Yarmouth. These wildlife corridors are configured so as to allow travel in all directions. It is equally important to note that most wildlife in Yarmouth can and will readily tolerate human contact. It is entirely possible to observe deer, fox, and coyote in most residential yards. A white-tailed deer could travel from the boardwalk at Bass Hole to the lighthouse at the southern tip of Great Island. Similarly, a coyote could walk from Independence Park in Barnstable to the Dennis Conservation Area along Setucket Road without human detection.

To further biodiversity, the Town has established an enhancement area within the Ray Syrjala Conservation Area by creating plentiful edge habitat, protective cover, brood cover and high-protein food sources for wildlife to flourish in a natural habitat. This project was done in cooperation with the USDA Agricultural Services and the US Fish and Wildlife Service. More recently, the Conservation Commission requires applicants to plant native vegetation to help promote biodiversity within important Resource Areas.

Another habitat management technique used in Yarmouth is the prescribed burn. The Division of Natural Resources and Fire Department conducts prescribed burns in the woodlands associated with the town well fields and conservation properties which are bordered on the east by West Yarmouth



LEGEND

BioMap2 Core Habitat

BioMap2 Critical Natural Landscape

1 Mile

MAP 13-3

BIOMAP2 CORE HABITAT & CRITICAL NATURAL LAND

YARMOUTH LOCAL COMPREHENSIVE PLAN

Road, to the south by Buck Island Road, to the west by Higgins Crowell Road and to the north by Bayberry Hills Golf Course.

These controlled burns accomplish specific conservation and land management goals, as well as address dangerous fuel loads to reduce the threat of wildfires. Yarmouth's pitch pine, oak forest woodlands contain many species of plants and animals which would benefit from prescribed burns. Periodic disturbance, to which many of these species are adapted, prevents tall shrubs and trees from encroaching upon and out-competing these species.

Invasive Vegetative Species: In all Cape Towns, invasive vegetation is often successful in diminishing, and in some cases destroying, natural plant habitats. These species create economic and environmental damages to the natural landscape and alter the natural habitat of native flora and fauna species. Native and non-native species both compete for habitat superiority as a natural process. In many instances, invasive species get a foot hold and over time dominate large areas.

In Yarmouth, tall reed grasses known as Phragmites are problematic in many areas. They occur mostly in wetland areas but also grow in disturbed upland soils and can be extremely difficult to control. Other invasive species found in Yarmouth include Norway Maple, Burning Bush, Privet, Black Locust, Black Swallow-wart, Russian Olive, Purple Loosetrife, Japanese Knotweed, Multi-flora Rose, and Oriental Bittersweet. If left alone, these species will form large stands that eventually eliminate competition between other types of native vegetation. Occasionally, aggressive vines of Poison Ivy, Bittersweet and Bull Briar engulf and destroy large areas of mature trees. Poison Ivy vines sometimes display trunk diameters of several inches and may reach an age of 60 years old or more.

Increased algae blooms and aquatic nuisance vegetation are invading both fresh and salt surface water environments. This process is known as advanced or accelerated eutrophication. The major cause is non-point source pollution, such as nitrogen from septic systems. In certain areas, species such as Millfoil, Codium and Sea Lettuce are all propagating, and decreasing water quality. Codium competes directly with Eelgrass and discourages Bay Scallop propagation. Most embayments on the Cape are experiencing the advance of Codium.

Eradication of nuisance aquatic species is usually accomplished by mechanical harvesting and followed up by herbicide application. Problematic areas in Yarmouth include Run Pond, Miss Thachers Pond, Mill Pond and Swan Pond. To address the threat of aquatic invasive species (AIS), a variety of state and federal agencies and nonprofit organizations have formed the Massachusetts AIS Working Group. The Group published the Massachusetts AIS Management Plan in 2002 to focus on prevention and education, early detection, monitoring and species identification, data and information sharing, rapid response, and control when a species cannot be fully eradicated.

In addition, the Massachusetts Invasive Plant Advisory Group (MIPAG) was formed in 1995 and created criteria to evaluate and categorize plant species as invasive, likely invasive, or potentially invasive in Massachusetts and developed a list of species. In 2005, the Massachusetts Department of Agriculture Resources established new rules to ban or phase out the propagation or sales of invasive species. The Conservation Commission actively references this list when reviewing landscape plans.

13.1 GOAL WHP 1 – Prevent Loss, Minimize Adverse Impact, and Maintain Diversity:

To prevent loss or degradation of critical wildlife and plant habitat, to minimize the adverse impact of new development on wildlife and plant habitat, and to maintain existing populations and species diversity.

A. Action WPH 1.1 - Vernal Pools: *Yarmouth shall identify vernal pools on Town owned property for certification by the state Natural Heritage and Endangered Species Program.*

Rationale: Vernal pool mapping is an imperative first step toward protection of these valuable resources.

Work to Date: In previous years, Vernal Pool mapping has been done by the DY High School Science Department.

Implementation Plan for Action WPH 1.1: The Town of Yarmouth will consider the following strategies to map and protect vernal pools.

1. **Action Item WPH 1.1A –Vernal Pool Mapping and Certification (Also See Action Item WET 1.1A)**: The Conservation Commission and Conservation Administrator shall work towards mapping additional vernal pools on Town owned land. The vernal pools shall be shown on GIS mapping and sent to the Natural Heritage Endangered Species Program (NHESP) for Certification. This work shall be done in early spring of each year, as staffing limitations allow.

B. Action WPH 1.2 – Critical Habitat Areas: *Yarmouth shall develop a review and regulatory process as part of local permitting for activities that could adversely impact critical plant and wildlife habitat areas, including referring applicants to the Natural Heritage and Endangered Species Program.*

Rationale: Without adequate oversight through permitting, new construction and expansion projects could unintentionally have an adverse impact on critical plant and wildlife habitats.

Work to Date: All incoming applications to the Conservation Commission are checked to see if they fall within the State's Natural Heritage and Endangered Species Habitat for rare and endangered species.

In addition, the Town of Yarmouth has developed an electronic permitting system that is linked with Town GIS data. This system will be utilized to identify whether certain project parcels contain a wide variety of constraints including Zoning District, FEMA Flood Maps, Aquifer Protection Districts, Historic Resources, Wetlands, vernal pools, and Critical Plant and Wildlife Habitat areas. As the Town moves toward on-line permitting for all permits, linking permit applications with the Town GIS data will provide a single source of information for environmental and regulatory restrictions.

Implementation Plan for Action WPH 1.2: The Town of Yarmouth will consider the following strategies related to protecting critical plant and wildlife habitats and rare species through the local permitting process, monitoring, and land conservation.

1. **Action Item WPH 1.2A – On-Line Permitting Coordination**: On an on-going basis, the Yarmouth IT Department shall ensure that all on-line permit applications are tied to Town GIS database and will identify project parcels that include areas of critical plant and wildlife habitats and rare species. Boards, committees and departments shall coordinate with the Conservation Administrator for guidance on projects which may impact these areas. Applicants for projects that may affect rare species and critical habitats will be referred to the Natural Heritage and Endangered Species Program.

2. **Action Item WPH 1.2B – Critical and Rare Habitat Protection through Land Conservation (Also See Action Item WET 1.4A):** In the next 1-2 years, the Conservation Commission, with support from the Conservation Administrator, shall develop a list of parcels the Commission feels should be obtained for protection of critical plant and wildlife habitats and rare species habitat.

   In addition, in the next 1-2 years, the Conservation Commission, with support from the Conservation Administrator, shall develop a list of parcels the Commission feels should be maintained for invasive species removal or treatment. The properties shall be prioritized based on a specific list of criteria.

   On an ongoing basis, pursue acquisition of these parcels through donations, deeded gifts, Conservation Restrictions, tax delinquent properties, undesignated town-owned land or outright purchases through the use of CPA funds or Cape Cod Commission (CCC) open space mitigation funds.

3. **Action Item WPH 1.2C – Wildlife Corridor Protection through Land Conservation (Also See Action Item WET 1.4A):** In the next 1-2 years, the Division of Natural Resources, with support from the Conservation Administrator, shall develop a list of parcels that would enhance wildlife migration, minimize fragmentation of corridors and adjoin existing tracts of conservation land. On an ongoing basis, pursue acquisition through donations, deeded gifts, Conservation Restrictions, tax delinquent properties, undesignated town-owned land or outright purchases through the use of CPA funds or CCC open space mitigation funds.

4. **Action Item WPH 1.2D – Continue Piping Plover monitoring program:** On an ongoing basis, the Conservation Administrator, shall continue coordination with the State and Federal Agencies, along with Mass Audubon, for seasonal monitoring and protection of Piping Plovers, terns or other protected species.

C. Action WPH 1.3 - Land Clearing Bylaws: *Yarmouth shall consider expanding its existing bylaw that limits land clearing and alteration of natural topography prior to development review*.

Rationale: Without adequate oversight through permitting, clearing and earthwork on a site may cause irrevocable damage to critical wildlife and plant habitat.

Work to Date: The Yarmouth Zoning Bylaw Section 302 requires permits for filling and clearing. The bylaw stipulates that no person shall fill any area in the Town to a depth greater than five feet without a permit from the Building Commissioner. No lot containing commercial or industrial uses or located in the business districts may be cleared of more than 25% of trees without a clearing permit from the Building Commissioner. Prior to issuance of these permits, the Building Commissioner confers with the Conservation Administrator and Engineering Department.

Implementation Plan for Action WPH 1.3: The Town of Yarmouth will consider the following strategies related to expanding its existing land clearing and filling bylaw.

1. **Action Item WPH 1.3A – Amendments to Zoning Bylaw Section 302**: In the next 2-4 years, the Planning Board, with support from the Town Planner, the Building Commissioner and the Conservation Commission, shall consider amending the existing Yarmouth zoning bylaw requirements for land clearing and alteration of natural topography to expand the criteria for permit approval, consider applying the requirements to residential lots of a certain size, and consider including language that would eliminate a lot from being cleared and left vacant for an unknown, or extended period of time, which encourages the spread of invasive species and illegal dumping.

D. Action WPH 1.4 – Invasive Species Management: *Yarmouth shall develop an invasive species management plan that addresses prevention, monitoring, removal and control of invasive species as staffing levels and funding allows.*

Rationale: Preventing and managing the propagation of invasive species can help to keep these non-native species from destroying native plant habitats and dominating large areas.

Work to Date: Yarmouth does not have a formal program for inspection, management and eradication of invasive species. Invasive species are brought to the attention of the town in various ways, through project development, notification from the general public, and general overview of municipal conservation lands and wetland resources. When identified, the Town has sought grant funding and/or mitigation measures from project proponents to address the issue.

Yarmouth has been successful in receiving grants through the Cape Cod Cooperative Extension for the removal of phragmites at the Meadowbrook Conservation Area on Swan Pond, Bass Hole Boardwalk at Grays Beach, and along a coastal bank on Town owned land at 86 Alms House Road. The Town has also been approved for CPA funds for additional phragmite removal at Grays Beach. The Town has been successful in getting a local land owner to agree to remove phragmites in Mill Pond as part of their expansion project on the

property. AmeriCorps has removed invasive species at Taylor-Bray Farm, in addition to individual property owners who have obtained approval to remove invasive species in wetland resources on their properties.

The Town has been very proactive preventing the introduction or spread of invasive species. Town departments have worked together and have realized the need for invasive species management. The Town has been successful in pulling, removing, or mowing invasive species, hiring consultants for mechanical and chemical treatments, and attending workshops, classes and conferences on invasive species.

In addition, the Conservation Commission has a strict policy on allowing only native plantings within their jurisdiction. Each application is carefully reviewed to ensure no invasive plants are proposed. The Commission has also updated their website to include several links and literature on invasive vegetation, the importance of planting native vegetation and a list of native vegetation that was produced by the Cape Cod County Extension office.

To help prevent the transport of aquatic invasive species, signage is posted at boat ramps outlining best management practices for boaters.

Implementation Plan for Action WPH 1.4: The Town of Yarmouth will consider the following strategies related to invasive species management.

1. **Action Item WPH 1.4A – Public Education on Invasive Species**: The most effective strategy against invasive species is to prevent them from ever being introduced and established. A public education program can raise awareness of the invasive species problem and reduce the unintentional introduction of invasive species. In the next 3-5 years, the Division of Natural Resources, with support from the Conservation Commission and Conservation Administrator, shall prepare a public information pamphlet on invasive species prevention for distribution in public places, the Town website and on the local television station.

2. **Action Item WPH 1.4B – Invasive Species Monitoring**: On an on-going basis, as staff limitations allow, the Division of Natural Resources, with support from the Conservation Commission and Conservation Administrator, shall investigate and monitor areas of known invasive species activity, including areas brought to their attention by the general public. Consider training and utilizing volunteer groups, students and property abutters to monitor for invasive species.

3. **Action Item WPH 1.4C – Invasive Species Removal**: On an on-going basis, the Division of Natural Resources, with support from the Conservation Commission and Conservation Administrator, shall continue to pursue grant funding to remove identified invasive species in town-owned lands or waterbodies.

E. Action WPH 1.5 – Habitat Management: *Yarmouth shall continue with habitat management projects that enhance biodiversity, improve wildlife habitat and enhance native plant communities as staffing levels and funding allows.*

Rationale: Habitat management techniques can be used to promote diverse wildlife and plant habitats.

Work to Date: The Town has established an enhancement habitat area within the Ray Syrjala Conservation Area by creating plentiful edge habitat, protective cover, brood cover and high-protein food sources for wildlife to flourish in a natural habitat. This project was done in cooperation with the USDA Agricultural Services and the US Fish and Wildlife Service.

The DNR and Fire Department also conduct prescribe burns on some town owned lands to improve wildlife habitat and enhance native plant communities. Prescribed fire is a natural, effective means of managing these habitats, and has been used successfully in Massachusetts since the 1980's. This program has been funded for the last 5 years by multiple grants through the Barnstable County Cooperative Extension Wildfire Preparedness and Management Program. At this time unit 10 of the 13 designated units have been burned and a 100-200 foot buffer was cut by mechanical means to establish a buffer along residential areas.

The Town has been very active with local civic organizations, such as AmeriCorps, and local Boy Scout groups to help manage invasive species on Town-owned properties. AmeriCorps has been extremely productive in the Conservation Areas. Within one year, AmeriCorps has provided substantial maintenance with a monetary contribution valued at $12,958.

Implementation Plan for Action WPH 1.5: The Town of Yarmouth will consider the following strategies related to habitat management.

1. **Action Item WPH 1.5.A – Prescribed Burns**: On an on-going basis, the DNR and Yarmouth FD shall continue to apply for grants to continue with the prescribed burn program on Town lands.

Wildlife and Plant Habitat Implementation Plan: The action items outlined in the following Wildlife and Plant Habitat Implementation Table is intended to prevent loss or degradation of critical wildlife and plant habitat, to minimize the adverse impacts of new development and to maintain existing populations and species diversity.

Wildlife and Plant Habitat Implementation Table

Goal/ Actions	Description	Timeframe (Years)				Responsible Parties	Associated Action Item
		On-going	1-2	2-4	3-5		
GOAL WPH 1	**Prevent Loss, Minimize Adverse Impact, and Maintain Diversity** - *Prevent loss or degradation of critical wildlife and plant habitat, minimize adverse impacts of new development on wildlife and plant habitat, and maintain existing populations and species diversity.*						
Action WPH 1.1	**Vernal Pools** - *Identify vernal pools on Town land for certification by the state NHESP.*						
WPH 1.1 A	Vernal Pool Mapping and Certification	**X**				CC, CA	WET 1.1A
Action WPH 1.2	**Critical Habitat Areas** – *Develop a review and regulatory process for activities that could adversely impact critical plant and wildlife habitat areas, including referring applicants to the NHESP.*						
WPH 1.2A	On-Line Permitting Coordination	**X**				IT	
WPH 1.2B	Critical and Rare Habitat Protection through Land Conservation		**X**			CC, CA	WET 1.4A
WPH 1.2C	Wildlife Corridor Protection through Land Conservation		**X**			DNR, CA	WET 1.4A
WPH 1.2D	Continue Piping Plover Monitoring Program	**X**				CA	
Action WPH 1.3	**Land Clearing Bylaws:** - *Consider expanding the existing bylaw that limits land clearing and alteration of natural topography.*						
WPH 1.3A	Amendments to Zoning Bylaw Section 302			**X**		PB, TP, BC, CC	
Action WPH 1.4	**Invasive Species Management** - *Develop an invasive species management plan that addresses prevention, monitoring, removal and control of invasive species as staffing levels and funding allows.*						
WPH 1.4A	Public Education on Invasive Species				**X**	DNR, CC, CA	
WPH 1.4B	Invasive Species Monitoring	**X**				DNR, CC, CA	
WPH 1.4C	Invasive Species Removal	**X**				DNR, CC, CA	
Action WPH 1.5	**Habitat Management:** - *Continue habitat management projects that enhance biodiversity, improve wildlife habitat and enhance native plant communities as staffing levels and funding allows.*						
WPH 1.5.A	Prescribed Burns	**X**				DNR, FD	

WET = Wetlands Chapter

Responsible Parties	Abbreviation
Affordable Housing Trust	AHT
Board of Appeals	BOA
Board of Health	BOH
Board of Selectmen	BOS
Building Commissioner	BC
Building Department	BD
Cape Cod Commission	CCC
Capital Budget Committee	CBC
Chamber of Commerce	COC
Community and Economic Development Committee	CEDC
Community Housing Committee	CHC
Community Preservation Committee	CPC
Conservation Agent or Administrator	CA
Conservation Commission	CC
Council on Aging	COA
Department of Community Development	DCD
Department of Public Works	DPW
Division of Natural Resources	DNR
Finance Committee	FinCom
Fire Department	FD
Historic Commission	HC
Information Technology Division	IT
Massachusetts Department of Transportation	MassDOT
Old Kings Highway	OKH
Parks and Recreation Division	PR
Planning Board	PB
Police Department	PD
Town Planner	TP
Town Administrator	TA
Water Department	WD
Yarmouth Housing Authority	YHA