

5. NATURAL AND CULTURAL RESOURCES

Early settlement of Wayland occurred near the natural resources of the Sudbury River flood plain to take advantage of the good agricultural setting. During this time, the low-lying lands adjacent to the river were used to raise crops and hay while tree harvesting occurred in the hilly uplands. As agricultural uses declined, the flood plain reverted back to marshes that today are some of Wayland's greatest open space assets. Much of this area is part of the Great Meadows National Wildlife Refuge. Unlike the flood plain, the sand plains in the southern and eastern sections of Wayland were ideal sites for later residential and business development, and today only a few scattered fragments of agricultural uses remain in these areas. The lake-bottom deposits elsewhere in Wayland tend to have a high water table and therefore, only about half of this land has been developed. Much of the rest is occupied by the two golf courses or is under the care and control of the Conservation Commission.

This section describes Wayland's many natural and cultural resources. Major data sources for the natural resource information in this section include the Town's 2001 Draft Open Space and Recreation Plan, the state's Natural Heritage and Environmental Endangered Species Program (NHESP), and geographic data from state and local sources. Historical information is based on documents from the Massachusetts Historical Commission (MHC) and the Wayland Historical Commission, as well as interviews with local historic resources advocates.

Summary of Natural and Cultural Resources Themes in Wayland

Assets	Liabilities
<ul style="list-style-type: none">• The Sudbury River corridor is a critical and largely intact ecosystem providing extensive wetlands, migratory bird habitat, flood control and other benefits.• The Town has important habitat areas and wetlands, as well as active programs to protect these resources.• The quality of the Town's groundwater is excellent.• Public and private landowners protect significant amounts of land in the community.• The Town has inventoried hundreds of historic buildings and sites including resources spanning four centuries from the 17th to the 20th.• The Town has designated a local historic district in Wayland Center.• Rural roads, stone walls, vistas, and historic structures add to the Town's semi-rural character.• Through the Community Preservation Act, Wayland will raise funds for open space protection, historic preservation, and affordable housing.• The Town has 18 designated Scenic Roads, which include 21 miles of roadway.	<ul style="list-style-type: none">• Pollution from hazardous waste sites in the area continues to affect the water quality of Heard's Pond and the Sudbury River.• Nonpoint pollution threatens the quality and viability of surface water and groundwater resources.• New development could alter or destroy the historic fabric of the Town centers.• New development and redevelopment in Wayland and the surrounding Towns could diminish the rural appearance of the Town's roads and neighborhoods.• Existing historic buildings are being demolished to make way for new development or redevelopment.• Stone walls, street trees, and scenic landscapes are being altered or destroyed by new development, particularly due to clear cutting.• There is only one small local historic district in Town, leaving other eligible properties and areas unprotected.

5.1 Existing Water Resources

Wayland is fortunate to have several significant surface and ground water resources within the community (see **Figure 5-1**). Virtually the entire Town is located within the Sudbury-Assabet-Concord Rivers Watershed, although a small portion of extreme southeastern Wayland is within the Charles River Watershed. A watershed consists of the upland areas from which precipitation flows into any given water body and percolates into the ground, thereby replenishing the water lost through downstream migration, evaporation and human activities. Land use activities in a watershed can directly affect the quality and quantity of water being supplied to a Town's surface and groundwater resources. Wayland is further defined by five smaller sub-watersheds that replenish individual ponds and streams:

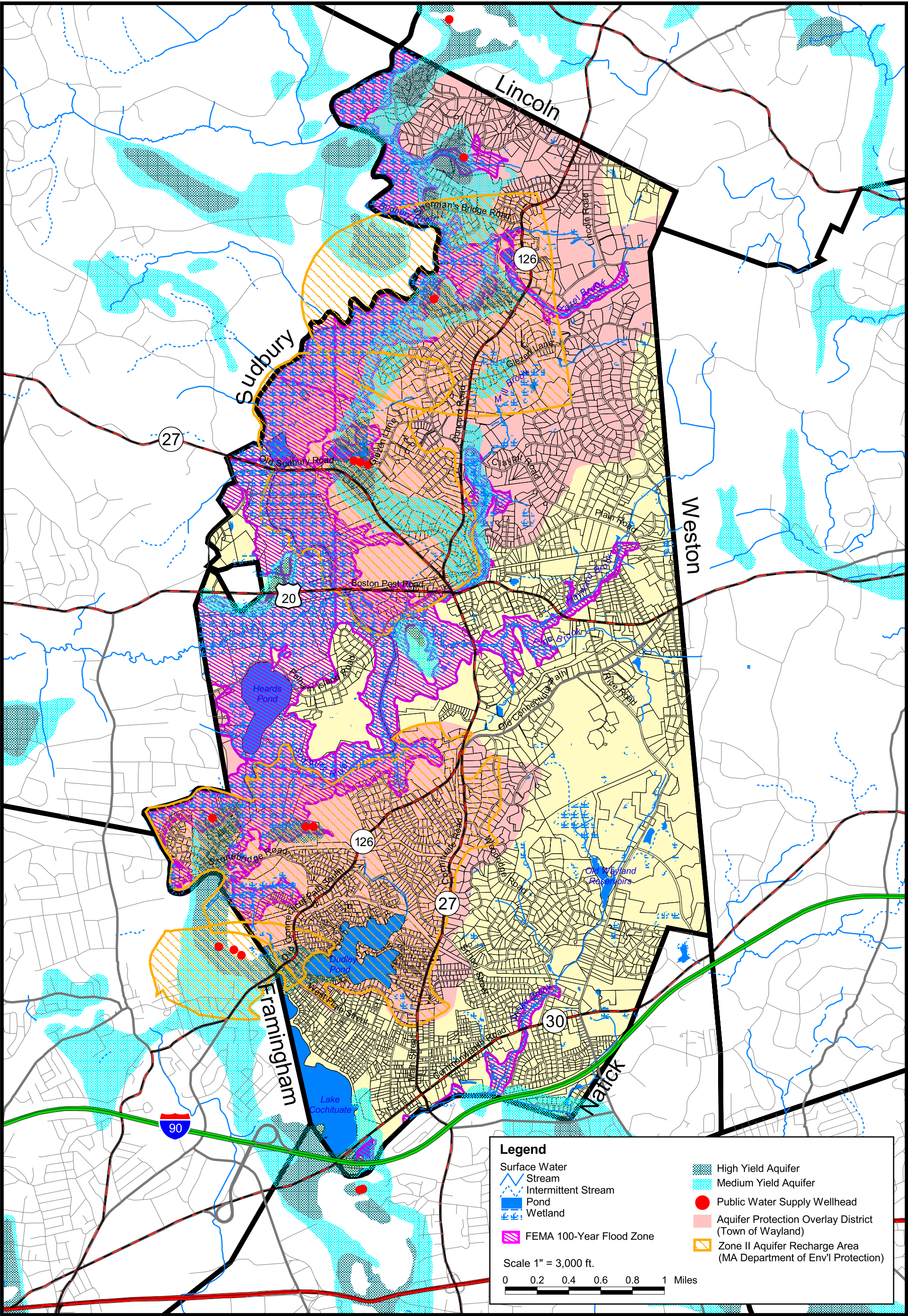
- The Sudbury River sub-watershed consisting of the western half of the Town extending from the Lincoln Town line to the Lake Cochituate sub-watershed in the southern section of Town;
- The Lake Cochituate sub-watershed located south of West Plain Street;
- The Mill Brook sub-watershed located along Mill Brook and Pine Brook in the central section of Town;
- The Hayward Brook sub-watershed located north of Boston Post Road and adjacent to the Weston Town line; and
- The Snake Brook sub-watershed located adjacent to Snake Brook in the southeastern section of Town.

5.1.1 Rivers, Brooks and Ponds

Wayland's water resources include the Sudbury River, Lake Cochituate, Dudley Pond, Heard Pond, Mill Pond, Old Wayland Reservoir, Hayward Brook, Pine Brook, Snake Brook, and Hazel Brook. The Town's dominant water resource is the Sudbury River and its bordering wetlands and marshes. The river corridor remains nearly unspoiled, and is the focal point of many of Wayland's open space protection efforts. It is also a key part of regional greenbelt systems including the Great Meadows National Wildlife Refuge, the Bay Circuit Trail, and the Sudbury, Assabet, and Concord Wild and Scenic River corridor. The Sudbury River is used for educational purposes by such groups as the Wayland Schools, Sudbury Valley Trustees, and the Massachusetts Audubon Society, and is a favorite birding area with a state-wide reputation.

Lake Cochituate and Dudley Pond provide recreational activities including boating, fishing and swimming. Both are surrounded by residential neighborhoods, but public access is limited. Cochituate State Park is located on Commonwealth Road (Route 30) and is operated by the Department of Environmental Management, now known as the Department of Conservation and Recreation (DCR). The park provides the primary public access point to Lake Cochituate via an entrance in Natick.

On April 9, 1999, President Clinton signed the Wild and Scenic Rivers bill to protect 29 miles of the Sudbury, Assabet, and Concord (SuAsCo) rivers. Of the 163 Wild and Scenic Rivers in the United States, this is the first to be designated for its role in shaping American Literature, among other reasons. The transcendentalist writers Ralph Waldo Emerson, Henry David Thoreau, and Nathaniel Hawthorne walked the banks of these three rivers. The Sudbury, Assabet and Concord Wild and Scenic River Study Committee and the River Awareness Committee formed by the U.S. Environmental Protection Agency (EPA) are working to ensure that the rivers continue to provide these important natural resources in the future.



Water Resources

Wayland Master Plan

Source: MassGIS, Town of Wayland



The corridor includes 16.6 miles of the Sudbury River, which flows through a low-gradient flood plain north to Concord, where it joins with the higher-gradient Assabet River, forming the Concord River. The Assabet River section is 4.4 miles long and is designated “recreational,” as is the 8-mile Concord section. The Sudbury River is designated “scenic,” except for 1.7 miles just upstream of the confluence, which is “recreational.” Designating the Sudbury, Assabet, and Concord Rivers under the Wild and Scenic Rivers Act will help protect them for the enjoyment of future generations.

A river stewardship council will recommend actions to address uses, improvements, and problems on the SuAsCo Rivers. One problem identified is a high level of phosphates, which causes degradation of water quality and affects fish and other aquatic life. The EPA is beginning an extensive TMDL (Total Maximum Daily Load) study to determine where the phosphates are coming from, and what measures can be taken to decrease the levels of phosphates in the rivers.

The EPA will issue more stringent National Pollution Discharge Elimination System (NPDES) permits for wastewater treatment plants discharging to the SuAsCo rivers. The stewardship group is also conducting educational programs to encourage the public, businesses, and treatment plants to reduce phosphate inputs into the rivers.

The Town’s smaller streams and brooks provide scenic views and limited active recreational opportunities for Wayland’s residents. Some of these brooks provide habitat for Eastern Brook Trout or Brown Trout. Some such as Snake Brook and Mill Brook are associated with expansive swamps, marshes and low-lying flood plains, while others, such as portions of Hazel and Hayward Brooks, are confined by steep slopes.

5.1.2 Wetlands and Floodplains

The Town contains 1,472 acres of wetlands (14.5% of the Town’s land area). Important wetland functions include groundwater recharge, floodwater retention, and wildlife habitat. Many of these wetlands are found adjacent to or near Wayland’s surface water resources. There are also slightly more than 2,300 acres of floodplains in the Town, which generally correspond to these wetland areas.

5.1.3 Groundwater Resources and Geology

Groundwater exists in aquifers as well as the pores within rock formations. An aquifer is a geologic formation capable of yielding significant quantities of water. Aquifers are generally found in sand and gravel deposits where pores in the soil allow water to collect. Groundwater enters the aquifer through sand and gravel soils, wetlands, and surface water bodies, and slowly percolates through the ground in a down-gradient direction.

The western side of Wayland contains deep deposits of sand and gravel, making it a prime location for aquifers, while the eastern side of the Town contains rocky hills mantled with till and dotted with wooded swamps. The Sudbury River occupies a wide pre-glacial valley with a very low gradient, such that the river meanders extensively and occupies a broad flood plain. Wayland’s municipal water supplies draw from the aquifers within the pre-glacial valley along the Sudbury River.

The remaining areas of Town contain extensive flat glacial-lake-bottom deposits and, at somewhat higher elevation, glacio-fluvial deposits. Glacio-fluvial deposits include areas with rugged topography (eskers or

collections of kettle holes) as well as flat sand plains (Plain Road and East Plain Street and West Plain Street bisect large sand plains).¹

5.1.4 Existing Protection for Water Resources

Existing protections for water resources include the Town's various floodplain districts as well as the Aquifer Protection District. See **Section 2.2.2** for additional discussion of these regulations.

5.2 Water Quality Analysis

The Wayland Surface Water Quality Committee was created by the Board of Selectmen and is responsible for monitoring, analyzing, maintaining and improving the quality of surface water (lakes and ponds) in the Town. The committee has focused its efforts on Dudley Pond, Heard Pond, and Mill Pond.

Dudley Pond

Over the past twenty years, the Town, through the Surface Water Quality Committee, has initiated several actions to improve the water quality of Dudley Pond. However, Eurasian Watermilfoil (*Myriophyllum spicatum*) infestations continue to be a problem in the pond. Eurasian Watermilfoil is an aquatic invasive plant that tends to rapidly colonize lakes and ponds to the exclusion of native species. The Town treats the pond with the herbicide fluridone to control this plant species. The Committee has also sponsored a small scale professional milfoil hand weeding effort.

Heard Pond and Mill Pond

High levels of phosphates and nitrogen in Heard Pond and Mill Pond encourage the growth of vegetation. Town Meeting has appropriated funds to treat the pond for invasive weeds. The Surface Water Quality Committee is also working with the Conservation Commission to identify runoff areas to these ponds that are contributing to the increased levels of phosphorus and nitrogen.

Mercury Contamination

Because of mercury contamination, fish from Heard Pond and the Sudbury River should not be eaten. The mercury is believed to have originated from the Nyanza hazardous waste site in Ashland. Due to a process known as biological magnification, even a small amount of mercury in the water can lead to hazardous concentrations in fish. Mercury enters the food chain through small organisms, algae and plants and becomes increasingly concentrated as these organisms, algae, and plants are consumed by animals, which in turn are consumed by even larger animals. Animals near the top of the food chain, such as large fish and birds of prey, can contain significant levels of mercury. In spite of this hazard, fishing still occurs in both water bodies.

Non-Point Source Pollution

As a result of national and state environmental laws implemented in the 1970s and 1980s, most of the point sources of pollution (i.e., pollution emanating from a pipe or a single identifiable point) have been identified and addressed. Nevertheless, the potential exists for groundwater contamination from up-stream sites (e.g., the Nyanza site).

¹ Source: Wayland's Draft 2001 Open Space and Recreation Plan.

In the long term, however, nonpoint source pollution, or polluted runoff, is one of the main threats to water quality in Wayland. Nonpoint source pollution derives from many small, individual sources, including roads, farms, lawns and gardens, golf courses, septic systems, parking lots, and other developed land uses. Nonpoint source pollution can adversely affect lakes, streams, and aquifers. Specific nonpoint source pollutants that are of concern in Wayland include the following:

- **Sediment:** Sedimentation occurs when particles of silt, soil and sand are washed from exposed areas at construction sites, gravel operations, farms, landscaped areas, roads, and other altered areas. Sedimentation tends to increase the turbidity of lakes and streams, thus reducing its habitat and recreational value. In addition, sedimentation clogs wetlands and riparian zones, and reduces their flood storage capacity.
- **Phosphorous and Nitrogen:** Phosphorus and nitrogen are major constituents of wastewater effluent (human wastes, detergents, etc.) as well as chemical fertilizers. Because phosphorous and nitrogen are both critical plant nutrients, increasing the amount of these chemicals in the environment can cause algae blooms, reduced levels of dissolved oxygen, and changes in aquatic and terrestrial species composition.
- **Metals:** Various metals are commonly found in urban runoff. Many metals are toxic to plants, wildlife and humans, and might also increase water treatment costs for public water supplies.
- **Pesticides and Herbicides:** Agricultural and horticultural chemicals derive not just from farms, but from lawns, gardens, and golf courses, which may use as much or more of these compounds per acre than farms. Most pesticides and herbicides are toxic to plants and animals other than those that they are specifically intended to kill, including humans. Many pesticides and herbicides are very persistent in the environment and tend to “biomagnify” in the food chain.
- **Pathogens – Bacteria and Viruses:** Biological contaminants derive from farms, urban runoff, septic systems, and improper waste disposal. These organisms can cause a host of public health problems, necessitate additional treatment for water supplies, and impair recreational resources such as swimming beaches. In addition, biological contaminants in runoff are a primary cause of closed fishing areas.
- **Salts:** Salts are used to de-ice roads and parking lots, but can have serious ecological consequences if used improperly or excessively. Often, the salt will kill certain plant species, while favoring other, salt-tolerant invasive species, such as the Phragmites reed. Salts can also reduce the quality of drinking water sources.

5.3 Habitats and Ecosystems

Wayland’s plant and animal habitats range from the Sudbury River wetland system to upland forests and from open farm fields to suburban backyards. The following section identifies the Town’s various habitat areas as well as rare and endangered species and habitats.

5.3.1 Vegetation

Because of Wayland’s varied terrain and long history of disturbance, the Town’s vegetation is quite diverse. In general, Wayland’s common native plants are species that are adapted to poor, acid soil. Vegetational communities found in Wayland are listed in **Table 5-1**.

**Table 5-1
Town of Wayland
Wayland Plant Habitats**

Vegetational Community	Location in Wayland
Beech-Maple Forest	Uncommon. Found around Dudley Pond and in Hamlen Woods and Pod Meadow Conservation Areas (mostly beech.)
Oak-Hickory Forest	Most common forest type in Wayland (mostly oak)
Northern Riverine Forest	Well represented throughout Town
Northern Swamp Forest	Well represented throughout Town
Northern Pine-Oak Forest	Scarce: most of the sand plains where this forest is found have been farmed or developed
Agricultural Fields	A few remain, formerly abundant
Old Fields	Many examples in Wayland, most infested with weedy non-native species
Inland Freshwater Marsh	Well represented: some of the state's largest and best-known examples occur in Wayland
Riparian Wetlands	Well represented throughout Town

Source: Wayland's Draft 2001 Open Space and Recreation Plan

5.3.2 Rare and Endangered Species and Habitats

The NHESP provides an inventory of rare and endangered species and their habitats throughout the Commonwealth. NHESP-designated habitat areas are shown on **Figure 5-2**. This inventory includes the following classifications:

- **Estimated Habitat for Rare Wildlife:** These areas consist of wetland and adjacent upland habitats used by state-listed rare animal species, and are regulated under the Massachusetts Wetlands Protection Act. Anyone proposing a project within an Estimated Habitat must undergo project review by NHESP. Wayland contains two Estimated Habitat areas: the northern portion of the Sudbury River corridor and an area in the Mill Brook watershed.
- **Priority Habitat for State-Listed Rare Species:** These areas indicate the most important habitats for *all* state-listed rare species, including both upland and wetland species, and both plant and animal species. These areas are intended for land use planning purposes, and their status does not confer any protection under state law. The Sudbury River corridor and the Mill Brook habitat site are included as Priority Habitat areas.
- **Certified Vernal Pools:** Among Wayland's important habitat features are vernal pools, an isolated wetland inhabited by many wildlife species, some of which are totally dependent on vernal pools for their survival. Vernal pools are small, seasonal water bodies occurring in isolated basins, which are usually wet during the spring and early summer and dry up during the later summer months. Vernal pools typically lack fish populations, making them excellent breeding habitat for many amphibian species and larval and adult habitat for many insect species, as well as other wildlife. The wood frog (*Rana sylvatica*) and all species of mole salamanders (genus *Ambystoma*) that occur in Massachusetts breed exclusively in vernal pools. Areas in the immediate vicinity of the pool also provide these species with important non-breeding habitat functions, such as feeding, shelter and over wintering sites.

Three vernal pools in Wayland have been inventoried by local volunteers and certified under NHESP's process, as shown on **Figure 5-2**. Certified vernal pools that are located within Areas Subject to Flooding (as defined by the Wetlands Protection Act) are protected under the Wetlands Protection Act for their wildlife habitat value. Neither state nor local law protects certified vernal pools outside of Areas Subject to Flooding or uncertified vernal pools. Because vernal pools are temporary and seasonal, they can easily be destroyed unless they have been certified with the NHESP and have protection under the Wetlands Protection Act. Continued identification of vernal pools is needed and proposed development projects should be located away from these critical habitat areas.

- **Potential Vernal Pools:** In addition to officially certified vernal pools, NHESP recently inventoried “potential vernal pools” based on aerial photographs. There is a level of error to be expected with this type of study. Some vernal pools may be missed due to unfavorable conditions in the landscape topography, pool physiography, photograph quality, and forest cover. Wayland has over 100 potential vernal pools. These areas are not protected by environmental laws until they have been verified and certified.

Table 5-2 identifies the State-Listed Rare Species that have been observed in Wayland.

Table 5-2
Town of Wayland
State-Listed Rare Species

Taxonomic Group	Scientific Name	Common Name	Status	Most Recent Observation
Invertebrates	Ligumia nasuta	Eastern Pond Mussel	SC	NA
Plants	Scirpus fluviatilis	River Bulrush	SC	2001
Vertebrates	Ambystoma laterale	Blue-spotted Salamander	SC	1983
	Botaurus lentiginosus	American Bittern	E	1990
	Gallinula chloropus	Common Moorhen	SC	1984
	Ixobrychus exilis	Least Bittern	E	1992
	Rallus elegans	King Rail	T	1980

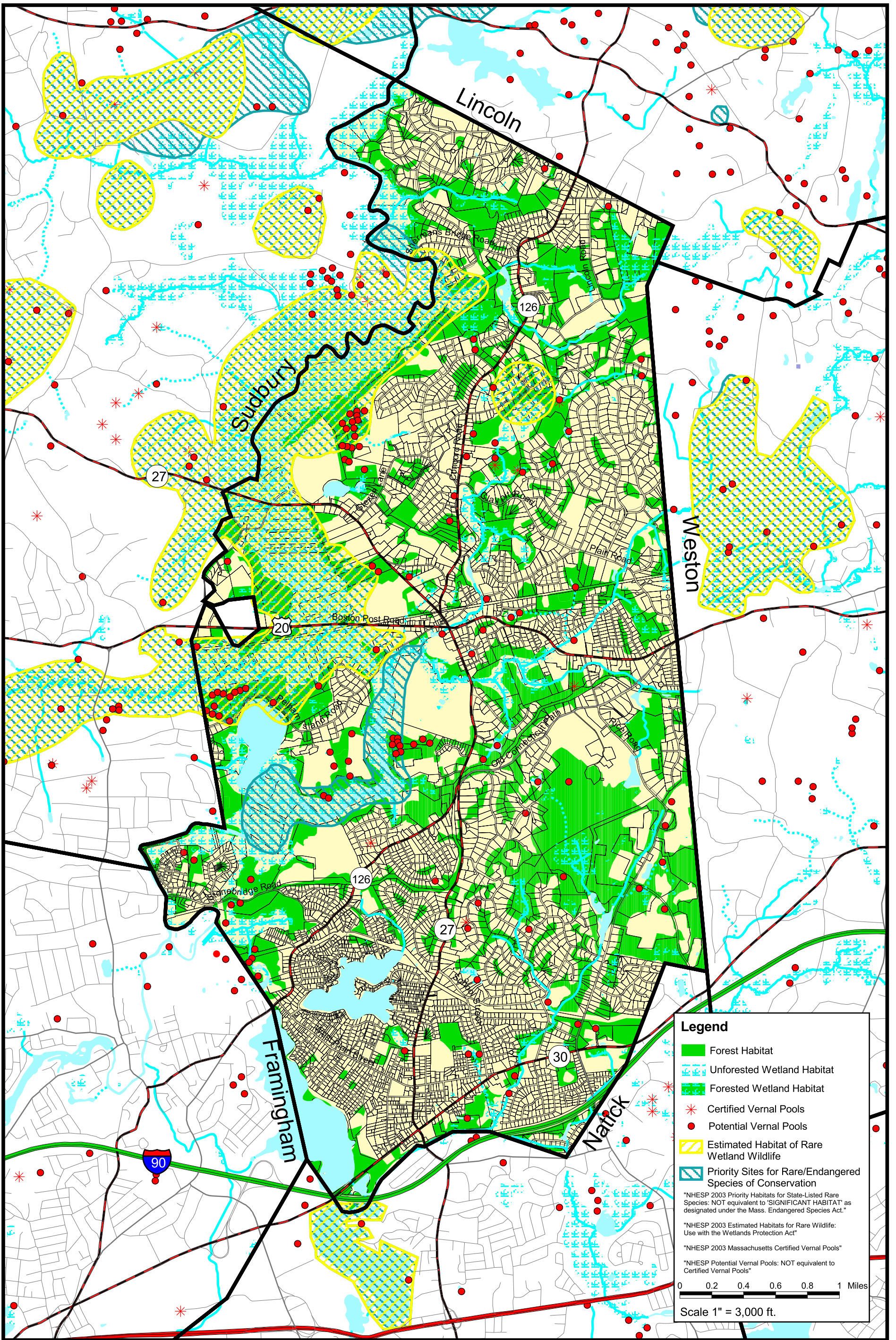
E = Endangered; T = Threatened; SC = Special Concern.

Source: Massachusetts Division of Fisheries and Wildlife, NHESP, 2003. Data provided includes species observed in the last twenty-five (25 years).

5.3.3 Native Fish and Wildlife Species

The types of wildlife found in a Town are closely linked to the available vegetational communities, such as those shown in **Table 5-1**. Wayland's upland grasslands are rapidly diminishing due to development and the natural succession of such open areas to forests. Grasslands are important because plants such as Goldenrods, Asters, Milkweeds, Dandelions, and Queen Anne's lace add beauty and provide habitat and food for birds, insects, and butterflies. Both large and small mammals also thrive in grassland habitats. In recent decades, this habitat type has been nearly eliminated in Wayland, which has affected populations of grassland bird species such as Bobolink, Sedge Wren, and a variety of sparrows, as well as other wildlife species.

It is the end user's responsibility to verify the accuracy and appropriateness of the data contained herein. Use of this map constitutes agreement with the terms of the Daylor GIS Data Disclaimer.



Bird life in the Sudbury River valley has long been an interest to environmentalists and wildlife enthusiasts, and the valley is one of the best known inland bird habitats in Massachusetts. The diversity of species has decreased with the decline of the fields and pastures that were once common in Town. However, the river corridor and wetlands adjacent to Heard Pond still attract many interesting bird species such as American and Least Bitterns, King Rails (occasional), Sora and Virginia Rails, Marsh Wren, Northern Harrier, Osprey, and American Kestrel. Migratory birds pass through this area in the spring and fall, including Rusty Blackbirds (in large numbers), wood warblers, various sparrows and numerous species of waterfowl.

Mammals found in Wayland include the Eastern Coyote, Beaver, River Otter, and Mink, in addition to typical suburban species such as foxes, squirrels, etc. Hunting is allowed on private property with the written permission of the landowner, and on portions of the Sudbury River not controlled by Great Meadows National Wildlife Refuge. The excessive numbers of some wildlife species in Wayland cause problems. These species include Canada Geese and White-tailed Deer. Cowbirds are also becoming more common, apparently due to the fragmentation of forested areas caused by development. Cowbirds invade the nests of other species that nest in open areas, thereby decreasing the populations of such species.

In the past, the majority of Wayland's conservation efforts have been focused on protecting habitat within the Sudbury River corridor. Fortunately, the same attitude has prevailed in adjacent communities that share this valuable common resource, contributing to a large conservation area of statewide importance.

5.4 Environmental Problems

5.4.1 Hazardous Waste Sites

Land-related hazardous material problems in Wayland typically involve business and home fuel leaks or small illegal waste deposit sites. No significant environmental problems or health threats associated with these sites have been identified.

As noted above, however, the Nyanza hazardous waste site in Ashland is believed to have affected the Sudbury River and Heard Pond in Wayland. The Nyanza Chemical Waste Dump is a 35-acre site located adjacent to an industrial complex that was active from 1965 until 1978. Large volumes of industrial wastewater containing high levels of acids and numerous organic and inorganic chemicals, including mercury, were generated at the site. Some of the wastes were partially treated and discharged into the Sudbury River through a small stream, referred to as Chemical Brook. Over 45,000 tons of chemical sludge generated by Nyanza's wastewater treatment processes, along with spent solvents and other chemical wastes, were buried on site, contaminating the groundwater and soil at the site. Health threats include direct contact with or accidental ingestion of contaminated groundwater or soil. Wetlands nearby and fish in the Sudbury River are contaminated with mercury, and sediments in the Sudbury River also have high mercury levels.²

The Town of Wayland has purchased the former Dow Chemical site for conservation and passive recreational purposes. Dow, a chemical company, recently completed the remediation of hazardous materials on this site.

The former Raytheon Site, which has also been classified as a hazardous waste site, is an approximately 83-acre facility located at 430 Boston Post Road. Raytheon operated the Site under a lease from 1955 to

² Source: Massachusetts Department of Environmental Protection.

1995. Operations included electronic testing and chemical process research to support Raytheon's in-house prototype manufacturing. Raytheon operations were terminated in 1995 and the facility was decommissioned and sold. Now known as the Wayland Business Center, the buildings are currently either under lease or are available for lease.

Potential impacts to sediment from polychlorinated biphenyls (PCB's), polynuclear aromatic hydrocarbons (PAH's), and metals were discovered near the storm water outfall in July 1989 by the US Fish & Wildlife Service (USFWS) as part of a study of the Great Meadows National Wildlife Refuge. As a result, a Phase I-Initial Site Investigation (Phase I) report for the Site was submitted to the Massachusetts Department of Environmental Protection (DEP) in July 1996 and a Tier Classification filing in January 1997. Phase II and Phase III (Remedial Action Plan) reports were submitted to the DEP. The Phase IV Remedy Implementation Plan (Phase IV) was submitted to the DEP on 30 December 2002.

An IRA Plan was submitted to the DEP on 26 June 2000 following the imminent hazard determination. The Imminent Hazard Evaluation determined that the Site did not pose an Imminent Hazard to human health or safety, but posed a potential Imminent Hazard to the environment. The objective of the IRA Plan was to assess the Site conditions in the wetlands according to the Phase II Scope of Work and addendum, to delineate the extent of impact to sediments and surface water, and to assess risk to human health and the environment.

Work began in the spring of 2004 to remove the contaminated area as defined by the IRA plan.

5.4.2 Landfill

Wayland's sanitary landfill is known for its excellent recycling program. Portions of the landfill have been capped. There are no known environmental problems associated with the landfill. In the late 1990s, the Town purchased property adjacent to the landfill and installed a methane gas wall to eliminate off-site migration of methane gas from decomposing organic wastes. Sudbury's landfill is located adjacent to Wayland's and is actually in an enclave of Sudbury surrounded by Wayland. Wayland's earlier landfill activities included burning waste and covering the remaining debris with soil. No problems resulting from these older landfill sites have been identified.³

5.4.3 Erosion and Sedimentation

Localized erosion can be a serious problem associated with construction activity. When reviewing projects subject to their jurisdictions, the Conservation Commission and Planning Board each impose conditions such as placement of siltation sacks in catch basins, hay bales, and sweeping the area after each day's activities, all of which are designed to minimize erosion problems during construction. New roads that were reviewed and approved by the Planning Board through the subdivision process have been designed and constructed with adequate drainage and sediment containment structures. Farmland erosion is minimal since only a limited amount of farmland, pasture, and hay fields exist in Town. From time to time, erosion does occur in several steeply sloping areas in Town.

Even with limited upland erosion, sedimentation of ponds and wetlands is still a concern. Sedimentation originating from development and transported via water runoff from paved areas continues to be an issue. The

³ Source Wayland's Draft 2001 Open Space and Recreation Plan.

Wayland Highway Department has reduced the amount of sand used during the winter to an environmentally acceptable level, while still maintaining public safety. Further reductions in sedimentation may come from improvements to road drainage systems, including diverting direct storm drain outlets away from wetland resources. For example, in 1992 the Town's Surface Water Quality Committee received a grant to implement drainage improvements around Dudley Pond, which have assisted in improving the water quality of Dudley Pond. Improving roadway drainage in areas where there is currently no sediment containment could result in further reductions in sedimentation into ponds and wetlands.

5.4.4 Chronic Flooding

A large portion of Wayland is located within the Sudbury River flood plain and is subject to periodic flooding. During major storms this flooding can be a source of aggravation by blocking streets and flooding basements. In some cases, floodwaters have caused Pelham Island Road to become inaccessible and the National Guard has provided emergency transportation to residents who became isolated by the rising level of the Sudbury River. The floodwaters also result in severe premature degradation of roadways in the area and catastrophic failure of the sub-base of the roadway causing it to crumble. Flooding by beaver dams in the Upper Millbrook and River Road/Water Row areas has occurred during the last five years, creating minor inconveniences. Despite these problems, flooding in Wayland is mitigated by the protection of local floodplains, which allows floodwaters to spread out and slow down, thus reducing the potential flood damage to property.

5.4.5 Point and Non-Point Source Pollution

Sedimentation, decaying organic matter, fertilizers and nutrients from lawn care, road runoff and other foreign debris can significantly impair water quality. The Wayland Highway Department is working with the Conservation Commission to develop new designs for drainage that may reduce the impact of road runoff, but permanent solutions to further reduce these impacts would require extensive and expensive changes to the Town's drainage systems. The progress made will be based in large part on the Town's ability to fund such work.

Wayland homes and businesses rely almost exclusively on on-site septic systems to dispose of wastewater. To date, Wayland's reliance on septic systems has not produced unacceptable nitrate levels in the municipal water supply. However, there are areas of Town where a high water table or surface bedrock make on-site septic systems extremely difficult and expensive to install and repair. There are also areas such as around Dudley Pond, Riverview Circle, River Road, Water Row, and in Cochituate Village where dense housing and/or excessively permeable soils have resulted in water quality problems from septic system leachate.

The Town has created a Wastewater Management District to collect and dispose of wastewater and sewage from homes and businesses located in the Wayland Center area along and in the vicinity of Route 20. Wastewater is conveyed via sewers to a wastewater treatment plant located on the former Raytheon Site. After treatment, the water is discharged to the Sudbury River in accordance with a Federal and State issued (NPDES) permit.

Nationwide, water pollution is an object of concern and increased efforts are underway to learn more about the causes, effects, and prevention of water pollution. As understanding grows and improved management practices are developed, Wayland may need to consider modifications to its bylaws, regulations, and operational procedures to capitalize on these developments.

5.5 Historic and Archaeological Resources

5.5.1 Town History

Wayland's settlement history began in 1638 when the Sudbury plantation or Town was established. In 1780, East Sudbury was set off from Sudbury and established as a separate town. However, it was not for another 55 years that the town's name was changed to Wayland in 1835. Although the early economy was based on agriculture, other industries, such as grist and saw milling, emerged and took advantage of the available waterpower sources. In the nineteenth century the shoe industry in Cochituate replaced agriculture in the southern part of town as the primary economy while farmers continued to prosper in the northern areas of Wayland well into the 20th century.

A compact mill center developed in Cochituate Village and in 1830, the Bent family started the Bent Shoe Factory at the corner of Routes 27 and 30. By the late 1850s, the Bent factory employed several hundred people, many of them immigrants. Beginning in 1881, the railroad finally was introduced to Wayland with a stop at Wayland Center. This rail service via the Central Massachusetts Railroad connected Wayland to Boston, thus providing a market for the expanding dairy and horticultural businesses in Wayland and Sudbury. With a freight house and depot, and service for passengers and freight alike, the railroad supported local businesses and allowed Boston workers to live in rural Wayland.

At the end of the 19th century, the success of the shoe industry in Cochituate accounted for two-thirds of the Town's total population (2000 residents) living in Cochituate. However, in the early 1900s the shoe industry was in decline and by 1910 most of the factories had closed. The Town witnessed other population changes after World War I, when Dudley Pond became a summer recreational area, and later during the Depression, when many of the cottages built on small lots around the Pond were converted to permanent residences.

With the ascendancy of the automobile after World War II, more and more industries began to locate in Boston's western suburbs and along Route 128 and later the Massachusetts Turnpike. With relatively easy access to these employment centers, Wayland became an attractive bedroom community, and subdivisions replaced much of Wayland's open land.

Much of Wayland's historic heritage is found in its landscape, which ties the past to the present in innumerable ways such as, through the stone walls and centuries-old trees that dot the landscape. Some of the Town's remaining farmlands have been in continuous use for over three hundred years. The Town also has twenty-one houses predating 1780 that are still occupied. An active Historical Society maintains records, photographs and artifacts that are available for viewing and research by the public at the Grout-Heard House. The Society also sponsors Town history-related educational programs for elementary school children, including reenactments of the lives of its residents in the 18th and 19th centuries.

5.5.2 Wayland Historical Commission

The Wayland Historical Commission consists of a seven members and meets regularly to plan the identification, evaluation, and protection of Wayland's historical, cultural, and archaeological resources and educate others about the resources. In that capacity, the group is involved in a variety of undertakings. Some of the activities completed during 2001 included:

- Evaluating the effect that a proposed cell tower construction would have on railroad artifacts;

- Conducting an archaeological evaluation of several areas at Greenways (former Paine Estates) in anticipation of future canoe access;
- Working on the recognition of a 1714 Training Field located at Training Field Road and Glezen Lane; and
- Conducting an onsite inspection of ancient grave stones at North Cemetery to advance the historic cemeteries preservation program.

In addition to these activities, the Historical Commission maintains an updated historic properties inventory of structures constructed prior to 1950. The inventory, which catalogues approximately 150 houses, was first developed about 20 years ago. Until recently little had been done to add to the inventory. However, in 2003 75 properties in Cochituate Village were documented. In addition all properties on Bow Road were surveyed. The Historical Commission continues to survey houses street by street to ensure that no house is overlooked. The Commission also plans to broaden its inventory to include structures constructed in the first half of the twentieth century. The goal of the inventory is to identify all historic structures within the Town, assess their condition, and determine if they are threatened by deterioration or are in danger of being otherwise compromised. A Preservation Plan was prepared in 2003 to guide the Historical Commission and other interested groups in preserving Wayland's architectural heritage.

The Historical Commission also administers a historic marker program. Through this program, property owners are encouraged to place Commission-sponsored signs on their buildings that identify the original owner and year/era of construction. The group also attempts to educate new property owners about the potential historical significance of their property, including historic burial sites and smallpox graves. The Historical Commission encourages the placement of historic markers on such sites so that future owners will be aware of their significance. Finally, the Historical Commission is responsible for preparing and publishing maps and promotional materials describing the Town's historic resources; working with other Town departments and agencies on matters involving historic sites and buildings; cooperating with state, federal, and non-governmental agencies involved in historic resource protection; and advising property owners on methods of historic preservation.

The Historical Commission is also moving forward with its historic cemeteries preservation program. In 2002, the town voted to allocate \$10,000 towards the preservation and maintenance of two of the Town's oldest cemeteries, the North Cemetery and the South Cemetery. This allocation was used to hire consultants to develop a plan for restoration of stones in the town's cemeteries. In 2003, Town Meeting voted \$65,000 to be used to begin the gravestone restoration itemized in the plan. The expenditure of that funding to repair stones will be completed in 2004.

The Historical Commission is currently involved in exploring and preserving artifacts at the Town's old railroad line, which at one time offered passenger service from Boston to western Massachusetts. Recent archaeological research on the site has determined that the artifacts in Wayland are unique, significant, and worthy of preservation. The five-year goal is to clean up the site and create an interpretive linear park, including a multi-use path for both pedestrians and cyclists. Attempts have been made to place cell towers within the right of way, but the Town's ZBA has denied permission since such a development would disturb the artifacts and encroach on wetlands. Funding from the Community Preservation Act is being used to hire a consultant to develop a railroad interpretive plan.

Wayland Archaeological Group

The Wayland Archaeological Group is a subcommittee of the Historical Commission, and is the only subcommittee of its type in Massachusetts. They conduct data recovery work and educational programs such as field workshops at archaeological sites. The group also conducted preservation work, donating both time and money, towards projects on the Old Stone Bridge over the Sudbury River as well as to the railroad linear park.

5.5.3 Historic District and Historic District Commission

Wayland's first Local Historic District is located in the vicinity of Boston Post Road and Cochituate Road at Wayland Center. The District was created in 1965 and has been expanded six times, the most recent expansion occurring in 2001. The District extends on Boston Post Road from the Mellon Law Office Green to Glen Road and on Cochituate Road from the First Parish Church north to the former Raytheon property. The District also extends Mill Brook east from Cochituate Road. Originally containing only 11 parcels, the District now comprises 23 parcels, with 32 historic resources, including a number of archaeological resources and historic barns. The 2000 and 2001 expansions of the District included adding nearly an acre of Town-owned land containing railroad artifacts and the 1881 Railroad Freight House.

A second district, known as the Bow Road Historic District was adopted in 2003. It consists of 20 properties, all of which are dwellings with one exception – a meadow on the south side of the road that once was pasture land of the Parmenter farm.

The Historic District Commission reviews proposed work in the districts that could affect the physical appearance and form of the districts. Within the district, no building or structure may be constructed or altered in any way that affects its exterior architectural features unless the Commission first issues a certificate of appropriateness, a certificate of non-applicability, or a certificate of hardship for the project. The bylaw applies to any demolition of structures or exterior features as well as any additions, new construction, or alterations that are visible from public ways or public parks.

5.5.4 National and State Register Historic Resources

The following properties, districts, and resource areas are listed on the National and State Register of Historic Places.

Wayland Center Historic District

The Wayland Center Historic District includes 16 properties located from 1 to 43 Cochituate Road and from 221-225 Boston Post Road. This district was listed in the National Register in 1976. All the properties located within this National Register district are also included in the Local Historic District.

Cochituate Aqueduct Linear District

This district covers the water supply system of metropolitan Boston and includes resources in Wayland, Natick, Wellesley, Newton, Boston, and Brookline. It was added to the National Register in 1990.

Weston Aqueduct Linear District

This district also covers the water supply system of metropolitan Boston and includes resources in Wayland, Southborough, Framingham, and Weston. It was added to the National Register in 1990.

First Period Buildings of Eastern Massachusetts Thematic Resource Area

First Period Buildings of Eastern Massachusetts Thematic Resource Area was added to the National Register in 1990. This area includes 113 properties located in 46 communities in Essex and Middlesex counties. Properties in Wayland that are part of the First Period nomination include the Hopestill Bent Tavern located at 252 Old Connecticut Path and the Noyes-Parris House located at 204 Old Connecticut Path.

Kirkside

Kirkside is located on Boston Post Road adjacent to the First Parish Church, and was constructed in 1815. The home was extensively rehabilitated and was the subject of PBS's "This Old House" television program and the Home and Garden network's "If These Walls Could Talk" series. It is listed as part of the Wayland Center Historic District.

First Parish Church, Carriage Shed, and Parish House

Located on Boston Post Road, this site was added to the National Register in 1974. It is also included in the Town's Local Historic District.

Grout-Heard House

The Grout-Heard House, located at 12 Cochituate Road, was added to the National Register in 1974. It is also part of the Town's Local Historic District. The house is home to the Wayland Historical Society and is the Town's only historical museum.

Milestone, 1767

A milestone at River and Water Row Road commemorates the Town's history. It has been listed on the National Register since 1971.

5.5.5 Other Historic and Archaeological Resources

Wayland's existing conservation areas contain several historically significant features, including farms, a portion of the seventeenth-century road to Concord, an abandoned waterworks constructed in 1877, and cellars of some colonial-era houses.

5.5.6 Demolition Delay

In addition to its current activities, the Historical Commission is looking to broaden its role in strengthening the Town's array of historic preservation tools. A Demolition Delay Bylaw was proposed for adoption at Town Meeting in 2003 and was not adopted. A Demolition Delay Bylaw would require those wishing to demolish a structure regarded as historically significant by the Town's Historical Commission to comply with a set waiting period (e.g., six months or one year) prior to demolishing the structure. The waiting period provides an opportunity for the Town to work with the property owner to explore other options for the historic resource. The Demolition Delay Bylaw failed at Town Meeting, although it did gain significant support.

5.6 Cultural Arts

Wayland's cultural resources are important to the Town's identity and quality of life. For this reason, the Cultural Council was established, a subsidiary of the Massachusetts Cultural Council with representation by Town residents. The Council's primary goal is to promote art and music programs in Wayland using funds from the Massachusetts Arts Lottery. The Council receives a small funding allocation from the Town that it distributes as grants to local cultural organizations. The Council provided grants to the following cultural organizations in 2001 for the specified activities and special events:

- Musicians of the Old Post Road – music performance
- Project Concern – dance performance
- Sudbury Valley Photographers – photography exhibition
- Wayland Diversity Network – music performance
- Wayland Golden Tones – music performance
- Wayland Historical Society – photography exhibition
- Wayland Middle School – visual arts residency
- Wayland Public Library – children's musical performance; literature lecture

Cultural Venues

The Town is fortunate to have several venues for musical and theatrical presentations located throughout the community including:

- Wayland High School Little Theater – (275 seats)
- Wayland Middle School Auditorium (575 seats)
- Cochituate Bandstand (small outdoor events)
- Vokes Theater (private facility – 150 seats)
- Traditions (private facility – 75 seat room)

In addition, various religious facilities conduct a number of musical events throughout the year. For example, the Musicians of the Boston Post Road regularly play at the First Parish Church.

Visual Arts Venues

Wayland does not have art galleries or arts related museums. However, a few visual arts venues do exist in the Town. The Wayland Library has two exhibition areas for rotating visual arts exhibitions. A small exhibition area also exists in the Town Building for rotating exhibitions. The Vokes Theater occasionally exhibits art work in the lobby area of the theater for viewing by theater patrons.

The Grout Heard House, owned by the Wayland Historical Society, is a house museum open to the public periodically. There are period furnished rooms and special collections such as clothing and children's toys on display.