Natural Resource Inventory
Town of North Hampton, New Hampshire

Section II

2021









Prepared by the North Hampton Conservation Commission
with support from the Rockingham Planning Commission

Town of North Hampton Natural Resource Inventory — 2021

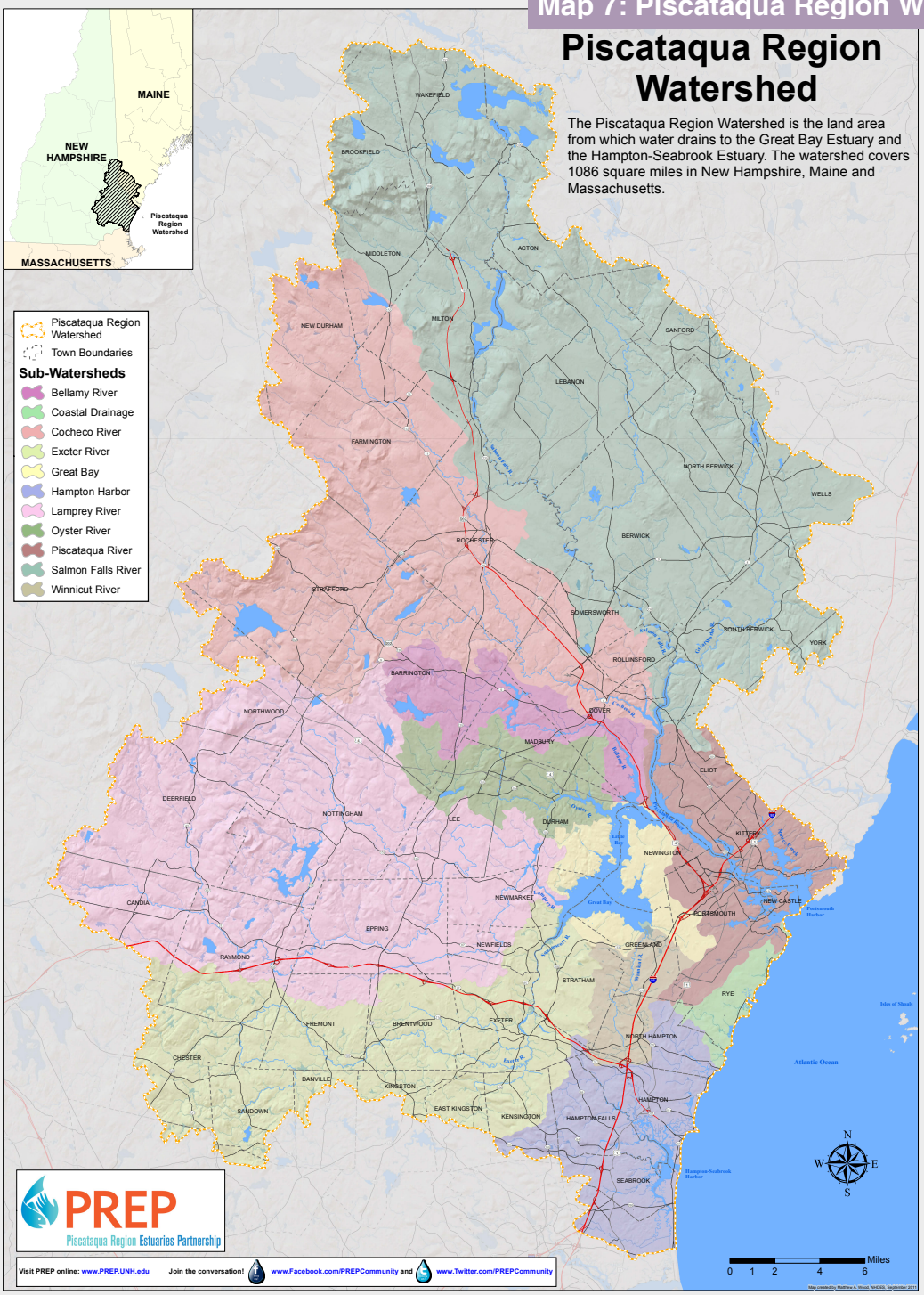
Section II

Section II Table of Contents — Town of North Hampton Natural Resource Inventory 2021

Natural Features in North Hampton

Watersheds — North Hampton is located within the Piscataqua Region Watershed. Healthy watersheds provide many ecosystem services including, but not limited to: nutrient cycling, carbon storage, erosion/sedimentation control, increased biodiversity, soil formation, wildlife movement corridors, water storage, water filtration, flood control, food, timber and recreation, as well as reduced vulnerability to invasive species, the effects of climate change and other natural disasters. These goods and services are essential to our social, environmental and economic well-being. *United States Environmental Protection Agency*

Map 7: Piscataqua Region Watershed



WATERSHEDS

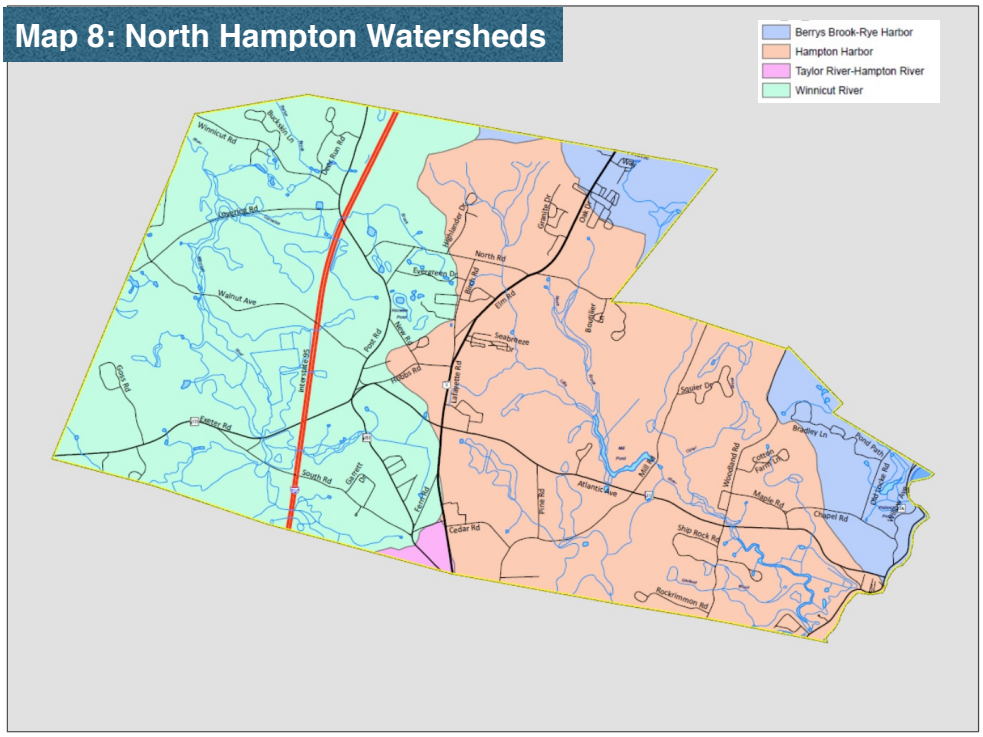
A watershed is the geographic area of land that drains surface waters to the lowest point, such as a river or lake. The network of rivers, streams, and other tributaries is collectively known as the drainage system of a watershed. The Town of North Hampton lies within the Salmon Falls Piscataqua River watershed, also referred to as the Great Bay watershed, as defined by the US Geologic Service.

North Hampton contains portions of four sub-watersheds (hydrologic unit level 12 or HUC 12) within the Great Bay Watershed as listed in Figure 6. The town is primarily drained by the Winnicut River and the Little River (part of the Hampton Harbor/ Coastal Drainage watershed). The Winnicut River meanders in the western portion of North Hampton, flowing in a northerly direction into Stratham and Greenland where it becomes a tidal river emptying into Great Bay. The Little River begins in the northern section of town and meanders in a southeastern direction towards the ocean. The Little River includes Mill Pond and flows through an extensive saltwater marsh before emptying into the Atlantic Ocean. The town serves as major headwater areas for both rivers. As such, land use in North Hampton has direct impacts on the water quality of both rivers.

Figure 7: North Hampton Watersheds

HUC 12 Name (HUC 12 Number)	Acres
Berrys Brook-Rye Harbor (10600031002)	755
Hampton Harbor (10600031004)	4,176
Taylor River-Hampton River (10600031003)	57
Winnicut River (1060003901)	3,926
Total	8,914

Map 8: North Hampton Watersheds



FRESHWATER RESOURCES - Coastal Drainage

Winnicut River and Coastal Drainage Watersheds –

"The Winnicut River is a significant tributary to the Great Bay Estuary."

NH Rivers Council

North Hampton's Coastal Watersheds are comprised of "diverse wildlife, habitat, abundant wetlands, clean water, productive forests, and outstanding recreational *opportunities into the future…To ensure a healthy environment into the future, it is essential that communities identify, retain, and protect the remaining undeveloped lands and waters that support the most important of these natural resources values and functions.*

The Land Conservation Plan for New Hampshire's Coastal Watersheds, 2006

North Hampton's fresh water resources consist of a hydrologically connected system of rivers, streams, brooks, ponds, wetlands, and groundwater. The Town's fresh waters and groundwaters are intricately interconnected. In some locations and under some conditions, the surface waters recharge the groundwater and in other locations and conditions, the groundwaters feed our rivers, ponds, wetlands and streams and keep surface waters flowing even during droughts. The quality and quantity of one can significantly affect the other.

Figure: 8 Waterbodies in the Town of North Hampton by Watershed

Winnicut River Watershed	Coastal Drainage Watershed
Winnicut River	Philbrick's Pond
Barton Brook	Little River
Knowles Pond	Mill Pond
Pine Hill Brook	Berry's Brook
Cornelius Brook	Oliver Brook
	Bailey Brook
	North Brook
	Garland Brook
	Chapel Brook

Blue-joint - goldenrod - virgin's bower riverbank/ floodplain *wetland. This temporarily flooded meadow community occurs on banks and adjacent floodplains of small rivers and major streams.* (Bill Nichols photo)

A State Endangered ***Blanding's turtle*** *swimming through a palustrine emergent marsh wetland.* (Joanne Glode photo).

Land Conservation Plan for New Hampshire's Coastal Watersheds, 2005

FRESHWATER RESOURCES

Buffers Protect Water Quality and Wildlife Habitat

Buffers, land alongside rivers, streams and ponds, should be left in a naturally vegetated state to protect water quality and wildlife habitat. Vegetation growing along the shore filters pollutants from runoff, promoting groundwater infiltrations, and stabilizing stream banks to control erosion. It is important to note that the buffer should be wider if the adjacent land is sloped, if the land use is intensive, if the soils are erodible, if the land is a floodplain and if the stream or river naturally meanders.

Figure 9: Riparian Buffer Requirements as recommended by the Center for Watershed Protection (2003).

Function	Minimum Buffer Width
Bank stabilization	50 feet
Sediment control	150 feet
Flood control	200 feet
Wildlife habitat	300 feet

The quality of water and habitat in rivers and streams depends upon surrounding land uses and management practices. Sediment from erosion destroys spawning habitat and fills stream beds. Removal of trees and other streamside vegetation raises water temperatures and can destroy habitat for trout and many other species upon which fish depend.

Stormwater - The various land uses in North Hampton have different impacts on freshwater and tidal resources, with more developed areas contributing more pollutants, primarily in the form of stormwater runoff. In Rockingham County, 90% of water pollution is attributable to stormwater runoff (NHDES 2014). North Hampton has sought to curb the impact of stormwater pollution and continues to do so through required and voluntary measures.

Requirements for North Hampton to curb stormwater pollution primarily come via the Environmental Protection Agency's 2017 MS4 Permit (Small Municipal Separate Storm Sewer System Permit), a requirement under the Clean Water Act. The MS4 Permit seeks to reduce stormwater pollution from municipal sources (municipal property, schools, and local roadways). To accomplish this, North Hampton is required to perform activities that include education, public participation, documentation of stormwater infrastructure, adoption of stricter local regulations to reduce and treat stormwater discharge, water quality monitoring, and implementation of best management practices (BMPs) for municipal facilities and roadways. The Permit is currently in Year 2 of the five year permit; requirements previously listed are due at different points in the five year permit term.

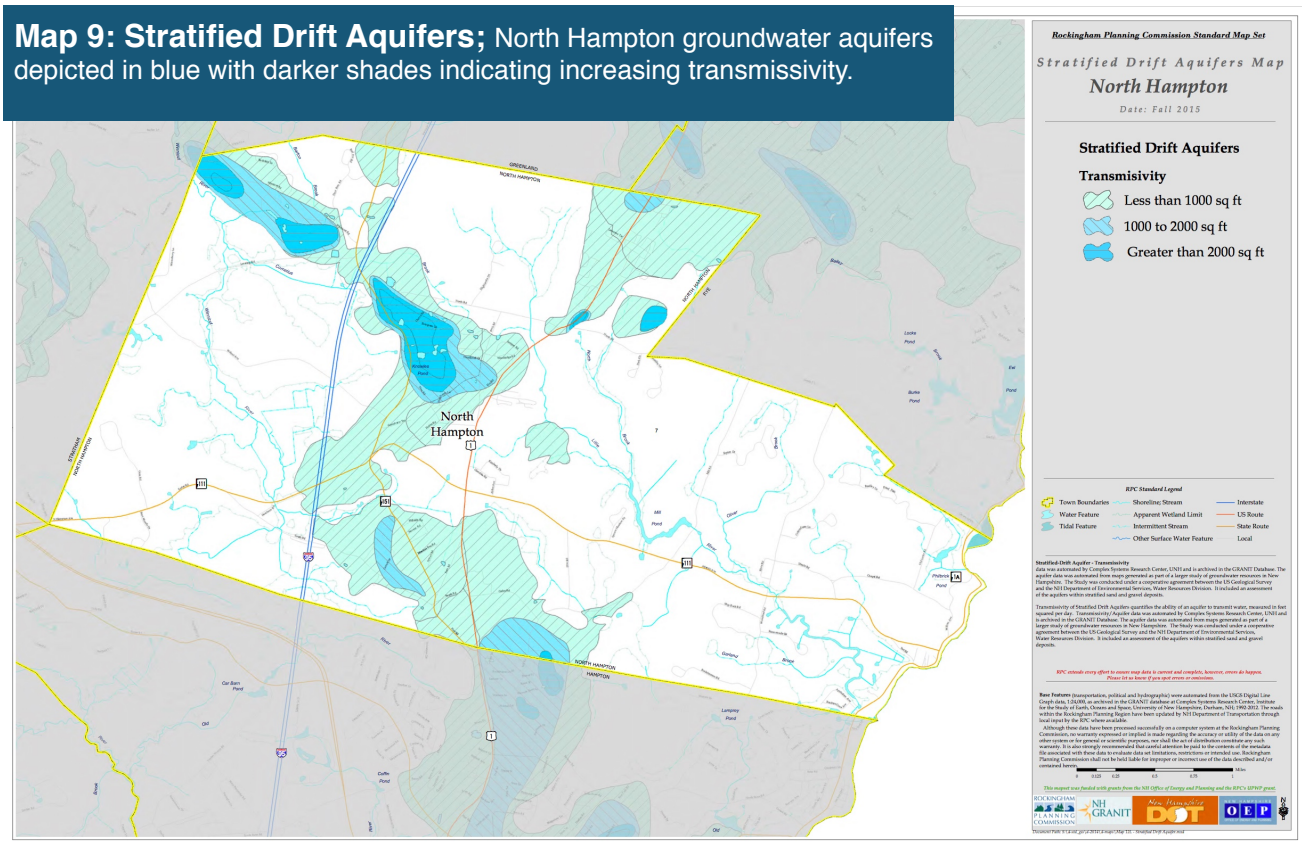
GROUNDWATER RESOURCES — Aquifers

North Hampton residents receive their drinking water entirely from groundwater resources.

Aquifers are concentrations of groundwater and those having medium to high potential to yield groundwater occur in the seacoast area as alluvial deposits of sand and gravel or in bedrock fractures. The sand and gravel deposits are called "stratified drift aquifers" and typically yield more groundwater than bedrock fractures. The major source of recharge to these aquifers is through precipitation filtering directly down into the aquifer. A 1992 study by the U.S. Geological Survey identified several small stratified drift aquifers within North Hampton. Aquarian Water Company has several wells in North Hampton that serve as public water supplies for sections of North Hampton and Hampton. All locations not serviced by Aquarian Water Company rely on on-site private groundwater wells for their water supply.

Groundwater quality can be impaired by a variety of materials. Sources of groundwater contamination include landfills, commercial and industrial wastes, agricultural fertilizer, municipal sewer systems, failing septic systems, and road salt. **Groundwater quantity can be reduced by contamination of groundwater supplies, over-pumping in the aquifer zone, and increasing impervious surfaces such as roof tops, roads, and parking lots. These surfaces prevent the infiltration of precipitation into the ground.**

Map 9: Stratified Drift Aquifers; North Hampton groundwater aquifers depicted in blue with darker shades indicating increasing transmissivity.



GROUNDWATER RESOURCES —
Aquifers: Recharge, Discharge, and Direction of Groundwater Flow *US Geological Survey Water-Resources Investigations Report 91-4025*

Recharge to the stratified-drift aquifers is by infiltration from precipitation, seepage losses from tributary streams, and lateral flow from adjacent till and bedrock. Discharge from the aquifers is by flow to the rivers and ponds in the basin, by evapotranspiration in areas where groundwater is near the land surface, and by groundwater withdrawals. The water table marks the top of the saturated zone in the unconsolidated deposits and fluctuates continuously in response to changes in recharge and discharge.

At present, maximum yield of all community water supply systems that withdraw water from the stratified drift is estimated to be six million gallons per day. Towns served by high yielding gravel-packed wells include Hampton, **North Hampton**, Portsmouth, Rye, and Seabrook. **Many of the shallow aquifers within these towns are developed at or near their full potential yields and, as a result, additional sources are sought from the bedrock aquifer or from aquifer areas outside of town boundaries.**

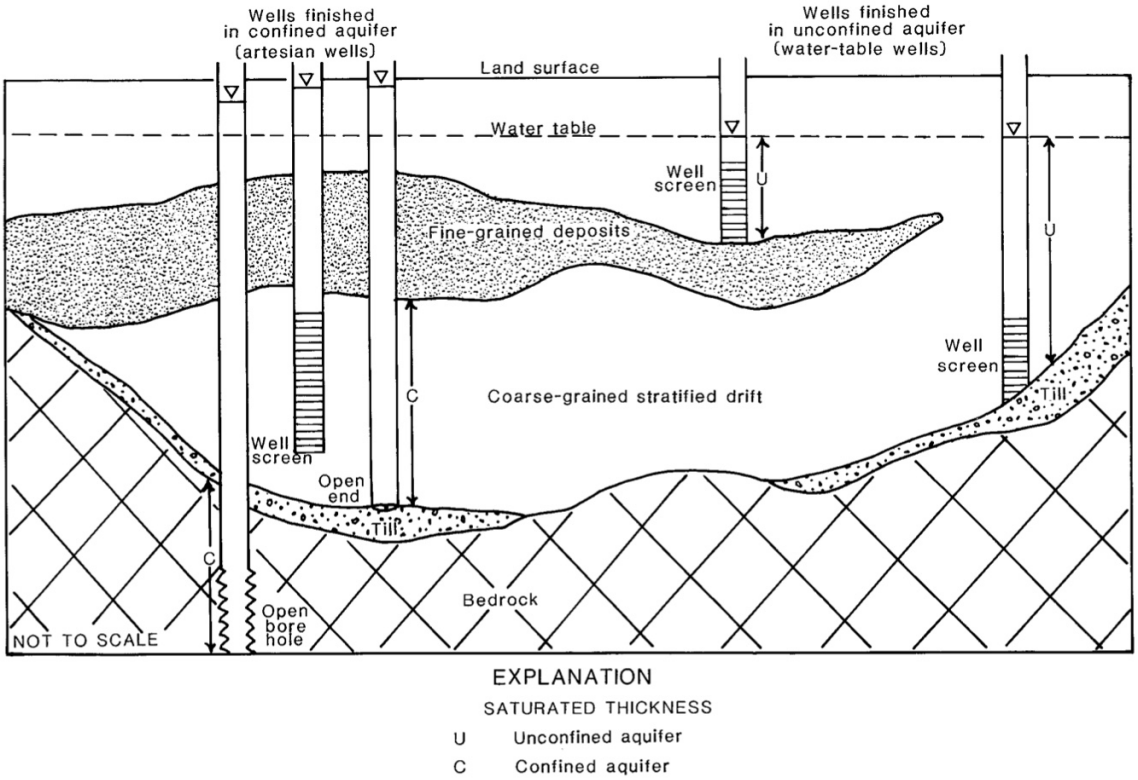


Figure: 10 **Idealized Geohydrologic Section Showing Unconfined and Confined Aquifers**

GROUNDWATER RESOURCES —
Aquifers: Recharge, Discharge, and Direction of Groundwater Flow *US Geological Survey Water-Resources Investigations Report 91-4025*

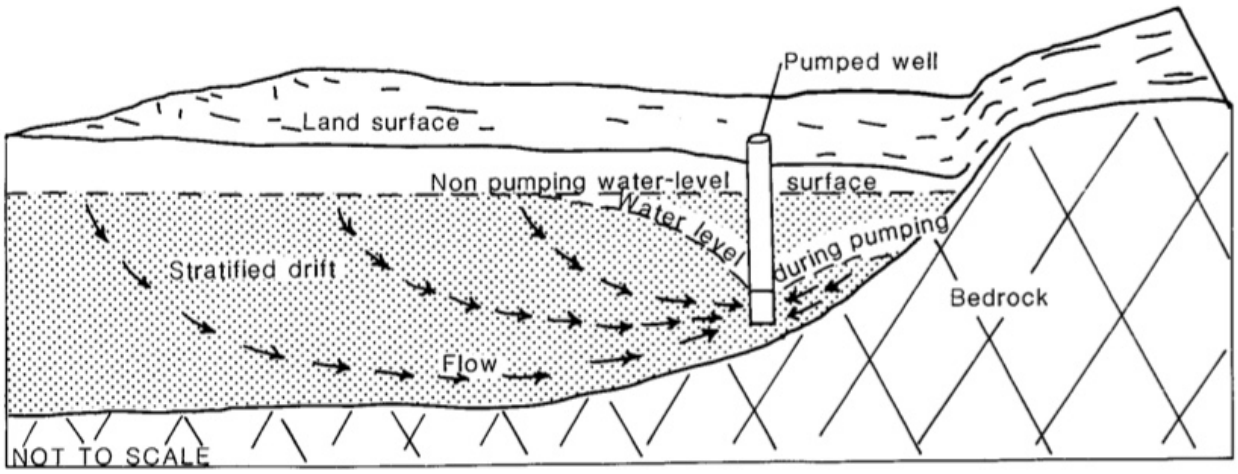


Figure 11: Groundwater flow and water drawdowns at a pumped well near an impermeable boundary.

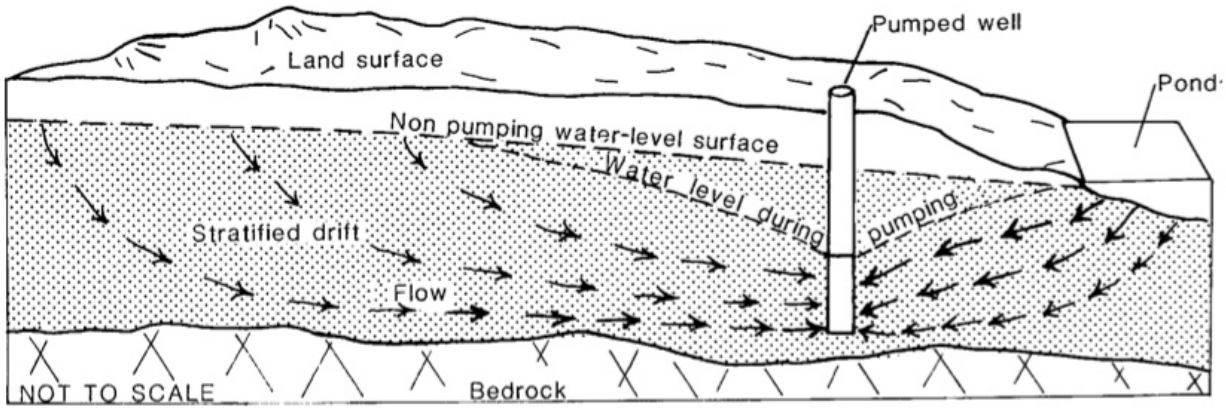


Figure 12: Groundwater flow and water drawdowns at a pumped well near a recharge boundary.

GROUNDWATER RESOURCES — Excerpts from Assessment of Groundwater Resources in the Seacoast Region of NH (2000) *Scientific Investigations Report 2000-5222; U.S. Department of the Interior U.S. Geological Survey*

Simulated effects to the Seacoast hydrologic system caused by increasing future water use include stream base flows declining by about 7 percent; fresh ground-water discharges to tidal bays, estuaries, and the ocean declining by about 2 percent; and lowered ground-water levels. **Changes in ground-water levels were subtle but were greatest near large ground-water withdrawals with increasing demands and in developing rural areas.**

Climate change in New England is forecast to include more frequent and intense precipitation events, with a slight decrease to little change in total precipitation, and increasing temperatures. **The effects of this potential future climate change on the Seacoast hydrologic system would likely include reduced base flows and fresh ground-water discharges to tidal areas and lowered ground-water levels.** The effects of these climate changes by 2025 were estimated to be greater than the potential effects of increased water demands. **The analyses indicated that there are potential issues of concern for future use of water resources in the Seacoast region.**

The Seacoast region encompasses an area of southeastern New Hampshire bordering the Atlantic Ocean from Maine to Massachusetts. In 2004, the twelve towns that make up the Seacoast region had a population of 80,000 that relied primarily on local ground-water resources for its water needs. The proximity of this region to the expanding area of metropolitan Boston has led to a 36-percent population increase over the past 20 years. This development has been accompanied by an increase in the use of ground water from both domestic and supply wells, nearly all of which are completed in the fractured-bedrock aquifer.

Historically, the fractured-bedrock aquifer had not been considered a principal aquifer, and water-resource investigations of the 1970s and 1980s focused on stratified-drift aquifers to meet the increasing water demand. In 2003-2004, the stratified-drift aquifers of the region were essentially fully utilized, and water levels have declined in some stratified-drift aquifers in southeastern New Hampshire over recent years. **Consequently, the fractured-bedrock aquifers in the Seacoast and elsewhere in New Hampshire have become increasingly important for providing future ground-water resources.**

In addition to use by a greater population in the region, individual usage has been increasing to meet the needs of modern appliances and landscaping. **In addition, water may be distributed outside the source area or removed through sewering. In the Seacoast region, sewers eventually discharge to tidal water bodies, including local bays and the ocean, and sewering, therefore, removes freshwater from local aquifer systems.**

GROUNDWATER RESOURCES – Excerpts from Assessment of Groundwater Resources in the Seacoast Region of NH (2000) *Scientific Investigations Report 2000-5222; U.S. Department of the Interior U.S. Geological Survey*

In 2001 and 2002 pressures on the Seacoast water resources became more apparent when an extensive drought affected the entire northeastern United States. In response to this drought, many Seacoast communities implemented water-use restrictions, and concern increased about the availability and sustainability of ground-water resources in the region. At the time of this drought, the potential effects of increasing demands, changes in water usages, and increased reliance on the fractured-bedrock aquifer on ground-water resources in the Seacoast region had not yet been quantified.

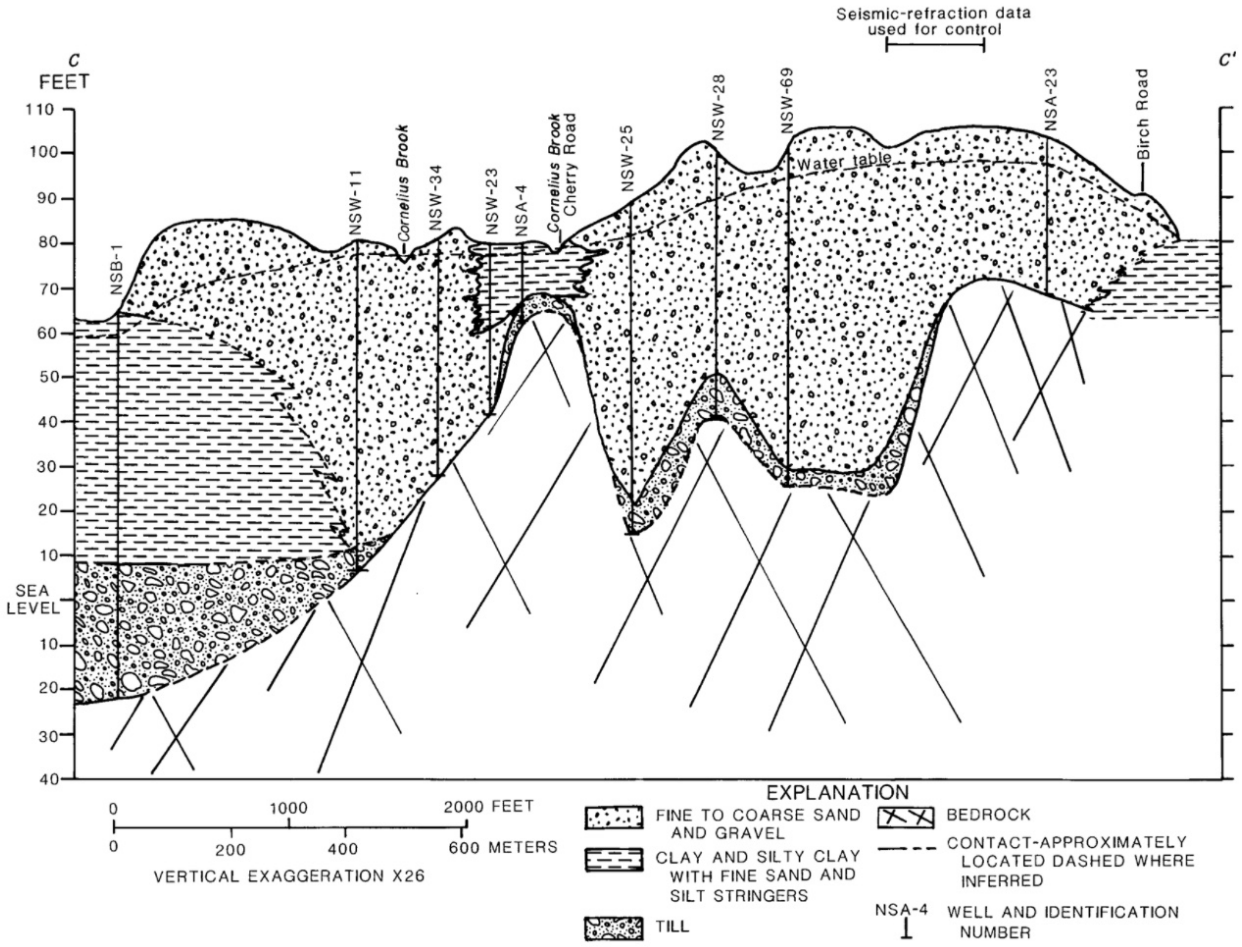


Figure 13: Geohydrologic Section C-C' showing the Kame Delta in North Hampton.
A kame delta is a glacial landform formed by a stream of melt water flowing through or around a glacier and depositing material, known as kame deposits. Upon entering a proglacial lake at the end of a glacier, the river/stream deposits these sediments.
US Geological Survey Water-Resources Investigations Report 91-4025

WETLANDS — *"If we protect our wetlands we protect our planet and ourselves."* *Two Oceans Aquarium*

Wetlands comprise approximately one-third of North Hampton and are an integral component of the natural resources in town. Wetlands are critical for removing excess nutrients and sediment from the water, slowing and storing floodwaters, promoting groundwater infiltration, and providing habitat for a variety of vegetation and animal life. In addition, wetlands provide recreational, educational and research opportunities. They add to the visual resources of the Town, especially in the fall when the red maples turn scarlet. Wetlands are most often found along streams and adjacent to ponds and lakes. They can be found in clustered complexes that are of great value. Vernal pools are a special type of wetland that are home to amphibians such as salamanders and frogs that dry out completely in the summer and have no fish population

There is a diversity of wetland types in North Hampton, including areas of salt and freshwater wetland types and open water with emergent vegetation such as cattails, forested wetlands, and scrub-shrub wetlands. The principal types of wetlands with standing water in the spring have been mapped from aerial photos by the National Wetlands Inventory (NWI) of the U.S. Fish and Wildlife Service. The NWI does not include all wetlands, particularly those that do not typically have standing water in the spring. Therefore, this is an underestimate of the amount of wetlands; however, the more signifiant wetlands are included in the NWI.

Wetlands, as defined by the Environmental Protection Agency, the NH Department of Environmental Services are those areas that are inundated or saturated by surface or groundwaters at a frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation adapted for life in saturated soil conditions. Thus a wetland is defined by the presence of all three "H's": hydrophytes or wetland vegetation, hydrology and hydric soils.

Figure 14: Wetland Types in North Hampton
(Chart Provided by RPC)

Wetland Type	Acres
Freshwater Emergent Wetland	68.3
Freshwater Forested/Shrub Wetland	2261.6
Freshwater Pond	43.8
Estuarine and Marine Deep Water	6.7
Estuarine and Marine Wetland	164.8
Total	2545

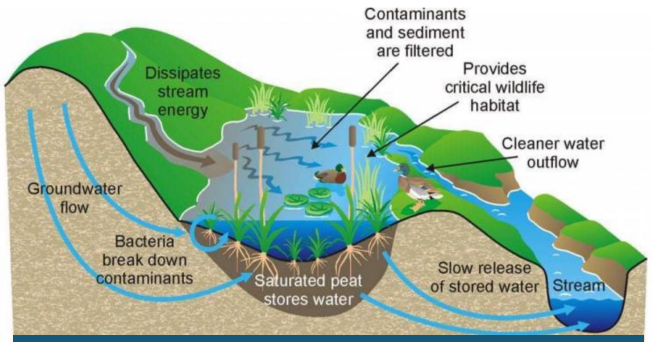


Figure 15: How Wetlands Work, *Two Oceans*

WETLANDS — Wetlands Buffers

Wetland Buffers - In addition to retaining the wetland itself, the undeveloped uplands surrounding the wetland are also essential for a healthy wetland. Maintaining a buffer of a naturally vegetated upland area adjacent to wetlands and surface waters is important to reduce the adverse effects of human activity on these water resources. Vegetation in buffers intercepts rainfall, slows meltwater and promotes infiltration. In addition, a vegetated buffer provides habitat for species dependent on the wetland system and travel corridors for larger mammals. A minimum upland buffer width around wetlands and other shorelines of 100 feet is recommended and 300 feet is desirable to maintain good habitat.

North Hampton zoning regulations currently have a building setback of between 50 to 100 feet from wetlands including exceptions for lots that were in existence prior to 2003. The New Hampshire Department of Environmental Services requires a minimum wetland setback of 75 feet for septic systems. In 1974 the North Hampton legislative body adopted a minimum lot size of 87,000 to help ensure adequate buffers for septic systems.

It is important to protect the land surrounding wetlands. *"Buffers for Wetlands and Surface Waters." A Guidebook for New Hampshire Municipalities* published in 1997 by the New Hampshire Department of Environmental Services states that "100 feet is recommended as a reasonable minimum buffer width under most circumstances." It explains that research has shown that 100 feet will generally provide a 60% or higher removal rate of pollutants. The first step to protecting wetlands and the functions they provide is protecting the land surrounding them.

Buffers of 100 feet protect wildlife species that are aquatic or that stay very close to the wetland edge, but would provide little or no life support for others. Water quality in wetlands and surface waters is important for aquatic species and wildlife.

As stated in the *2008 Citizens Guide to Protecting North Hampton's Wetlands and Water Resources,* "roots of plants create tiny spaces in the soil that look like the holes in a sponge. These spaces enable wetland buffers to absorb water very well. As rainwater flows toward a wetland, the porous soil grabs the water. Plant roots absorb some of it, but the rest seeps deeper and eventually enters the groundwater that North Hampton residents rely on for drinking water. And like any good sponge, a wetland buffer cleans the water it absorbs. Rainwater and stormwater runoff that is laden with pollutants is purified when it flows through a well-vegetated wetland buffer."

The State of New Hampshire's Shoreland Protection Act protects surface water resources by regulating buildings, docks, and septic systems along the shoreland, including Great Bay. All primary structures must be set back at least 50 feet from the high water or high tide mark. Natural vegetation must also be maintained along the shoreline. In North Hampton, the Winnicut River, Little River, and all tidal waterways are all regulated under the Shoreland Protection Act.

WETLANDS — Surface Waters & Wetland Buffers

Map 10: 2015 Surface Water Resources Map

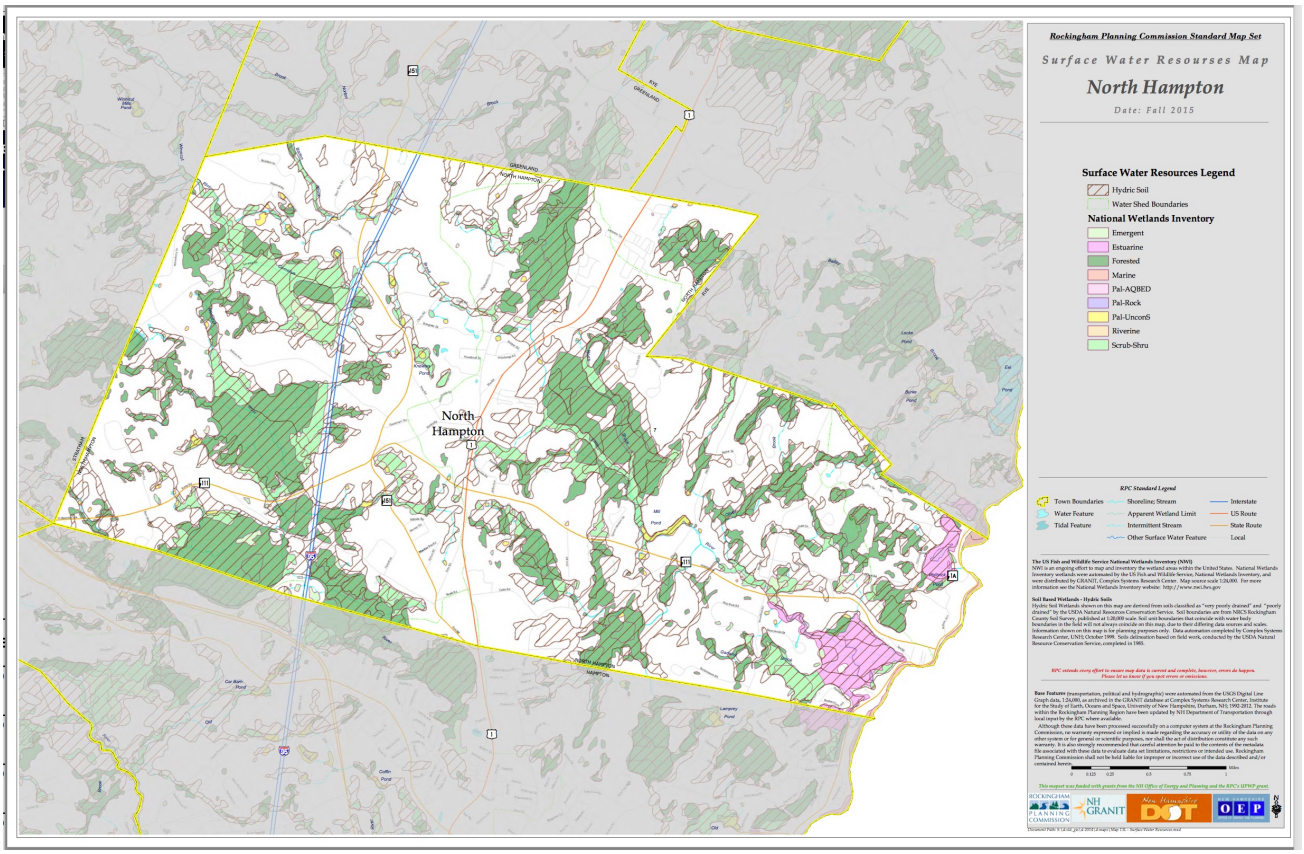


Figure 16: — Wetland Buffer Diagram

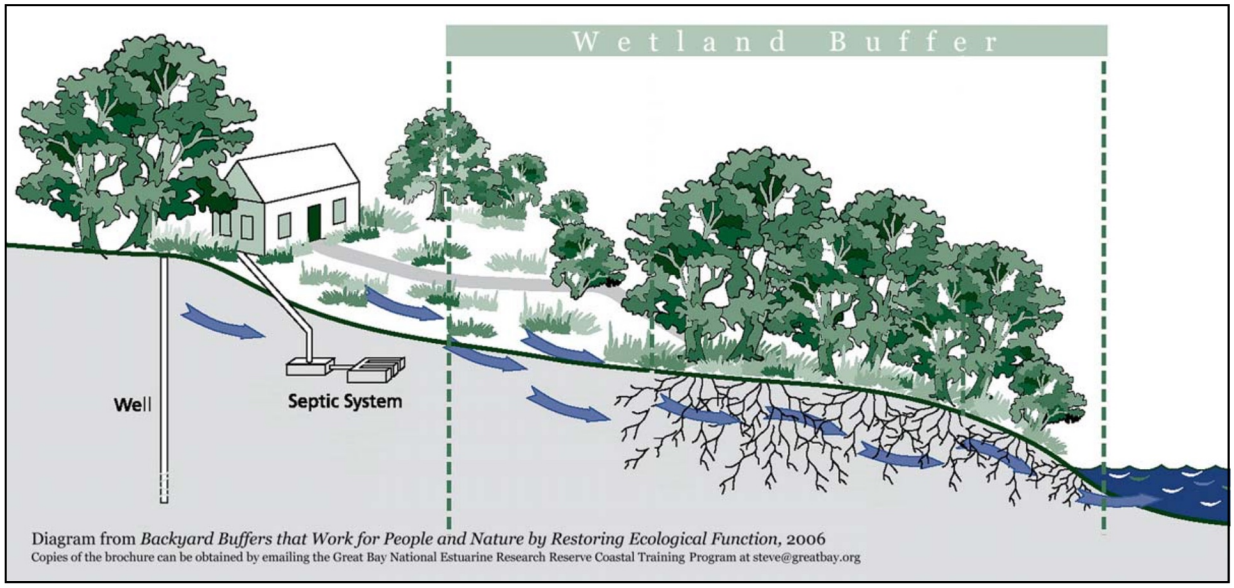
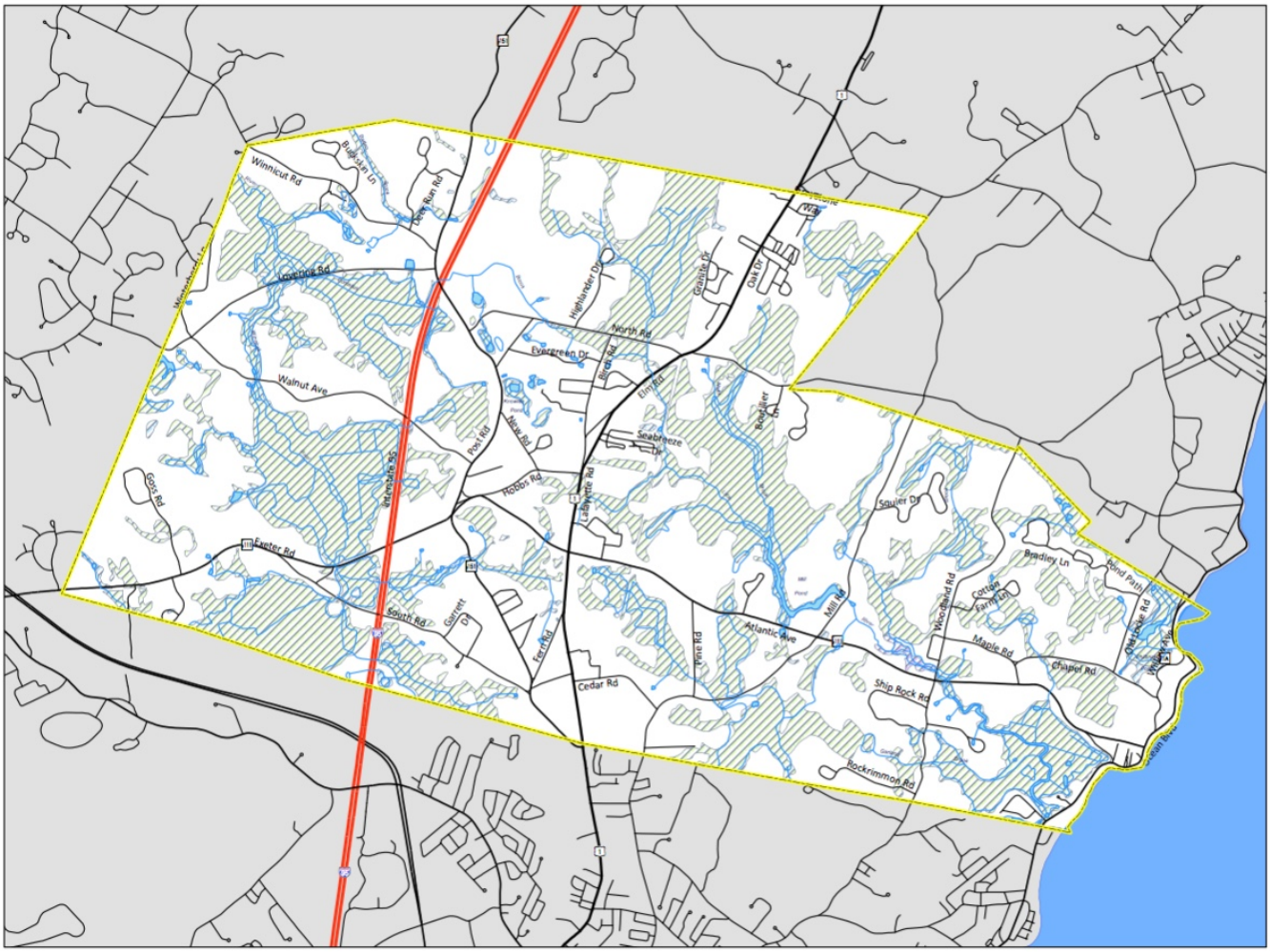


Diagram from *Backyard Buffers that Work for People and Nature by Restoring Ecological Function*, 2006
Copies of the brochure can be obtained by emailing the Great Bay National Estuarine Research Reserve Coastal Training Program at steve@greatbay.org

WETLANDS — Wetland Map

Map 11: 1998 Normandeau Coastal Wetlands



Coastal Wetlands (Normandeau 1998)

1 **Designated Wetlands**

2 **Undesignated Wetlands**

3 **Unknown Designation**

Little River — NH Estuaries Project

WETLANDS — Vernal Pools

Vernal pools are shallow depressions that usually contain water for only part of the year. The vernal pools serve as essential breeding grounds for amphibians such as salamanders and frogs. The juvenile and adult amphibians provide an important food source for wildlife. The loss of vernal pools and their critical terrestrial habitat leads to a loss of amphibian species, a decrease in biodiversity, and a decline in food available for many other animals that live in this areas as noted by the Environmental Protection Agency.

Vernal pools are frequently found in North Hampton and all property should be assessed for the presence of vernal pools prior to any development or other land altering activity such as forestry. Although vernal pools may vary in size from a few square feet in area to over a number of acres and may be located in a number of different sites woods, floodplains or gravel pits they do have certain features in common. Although they appear in the same place year after year, they are defined as a temporary bodies of water because most dry up in hot weather or times of drought. All of them are contained bodies of water without any permanent outflow. They do not support fish and are therefore excellent breeding grounds for species whose eggs would provide an excellent food source were fish present. There are species that are almost entirely dependent on vernal pools to survive; their presence by itself indicates that a particular basin of water is indeed a vernal pool.

An essential inhabitant of vernal pools is the fairy shrimp. These are tiny crustaceans that are found throughout the country. They are the earliest creatures to be seen in the spring, often appearing in March when their early mating leaves eggs on the floor of the pool. These are designed to survive drying out, intense heat, freezing, and even being eaten by birds and, despite everything, will hatch the following spring when the pool is once again filled with water. Should there be a dry spell that prevents this from occurring, the eggs are prepared to wait out the weather. Some amphibians are also indicator species of vernal pools. Indicator species in New Hampshire are the spotted salamander and the wood frog. Wood frogs are one of the earliest creatures to be seen in the spring, often appearing in March, when their early mating makes it possible for the eggs to develop before the pool dries up. The wood frog call sounds very much like the quacking of ducks and is an early sign of spring. This frog is brown with a black mask, and is often seen in the woods during the summer.

Spotted salamanders lay their eggs in vernal pools as well and migrations of salamanders to breeding areas usually take place after the first heavy rain in early spring. Although both the spotted salamander and the wood frog may be found mating in more permanent waters, eggs laid in vernal pools have the best chance of surviving. The spotted salamander will often lay her eggs in October and, if the pool is still dry, will stay with them keeping guard until fall rains arrive.

WETLANDS — Vernal Pools

Vernal Pools continued:

Many other species use vernal pools although they do not have the same dependency upon them. Among the amphibians the species are four-toed salamander, Eastern newt, spring peeper, American toad, the gray tree frog, and the green frog. Among the invertebrates, there are clam shrimp, fingernail clams, and amphibious snails, caddis flies and other aquatic insects. Although no reptile is among the indicator species, the spotted turtle, the earliest turtle to appear in the spring, sometimes moving about in March, often uses such pools as a source of food and a place for courtship and mating. Blanding's turtles have been known to overwinter in vernal pools. Both of these species are endangered in New Hampshire and their appearance is of special interest to the Non-Game and Endangered Species Division of New Hampshire Fish & Game.

Recommendations to protect vernal pool habitats include:

- Identify and map vernal pools on subdivision plans and site plans in order to provide an opportunity to mitigate the impacts to these sensitive areas;
- Educate North Hampton residents about land use regulations and policies;
- Keep log landings, roads and trails out of vernal pools and the area adjacent to them. Busy roads near a vernal pool can lead to massive annual mortality and local extinctions;
- Maintain shade around a vernal pool in order to keep it from drying up too quickly and to maintain water temperatures.
- Keep slash out of a vernal pool during forestry operations and during development;
- Maintain the upland buffers around vernal pools which are very important to the survival of the species.

Information on reporting reptiles and amphibians observed in the wild may be found at the following website: http://www.wildlife.state.nh.us/Wildlife/Nongame/reptiles_amphibians.htm

Vernal Pool: Late October 2020 following a dry summer. NHCC

Vernal Pool: Early November 2020 following a rainy period. NHCC

TOPOGRAPHY in North Hampton

Topography in North Hampton is that of coastal plain with the **highest elevations of just over 100 feet about sea level found at Pine Hill**, Cuse Hill, Drake Hill and Brumble Hill (all located west of Mill Road) and a general sloping to sea level as the town approaches the coast. This type of topography is common in southeastern New Hampshire, where the hills are low and their sides generally not steep and the valleys are flat and often wetland. **Like the rest of New England, North Hampton was shaped by the movement of glaciers more than 10,000 years ago.** The motion of the glacier moved large amounts of rock and soil materials and smoothed the surface giving a more rounded appearance to the surface. However, the glacier also left us with coarse, stony and often infertile soils. North Hampton's coastal boundary differs somewhat from much of New Hampshire's coastline as the town has prominent rock cliffs, most notably at Fox Head Point, with the remaining coast consisting of sand and rocky beaches.

The "Shiprock" in North Hampton, Shep Kroner

By combining knowledge of the physical environment with what is known of the distribution of plants and animals, the U.S. Forest Service has divided New Hampshire into the following three principal biophysical or ecological regions or sections:

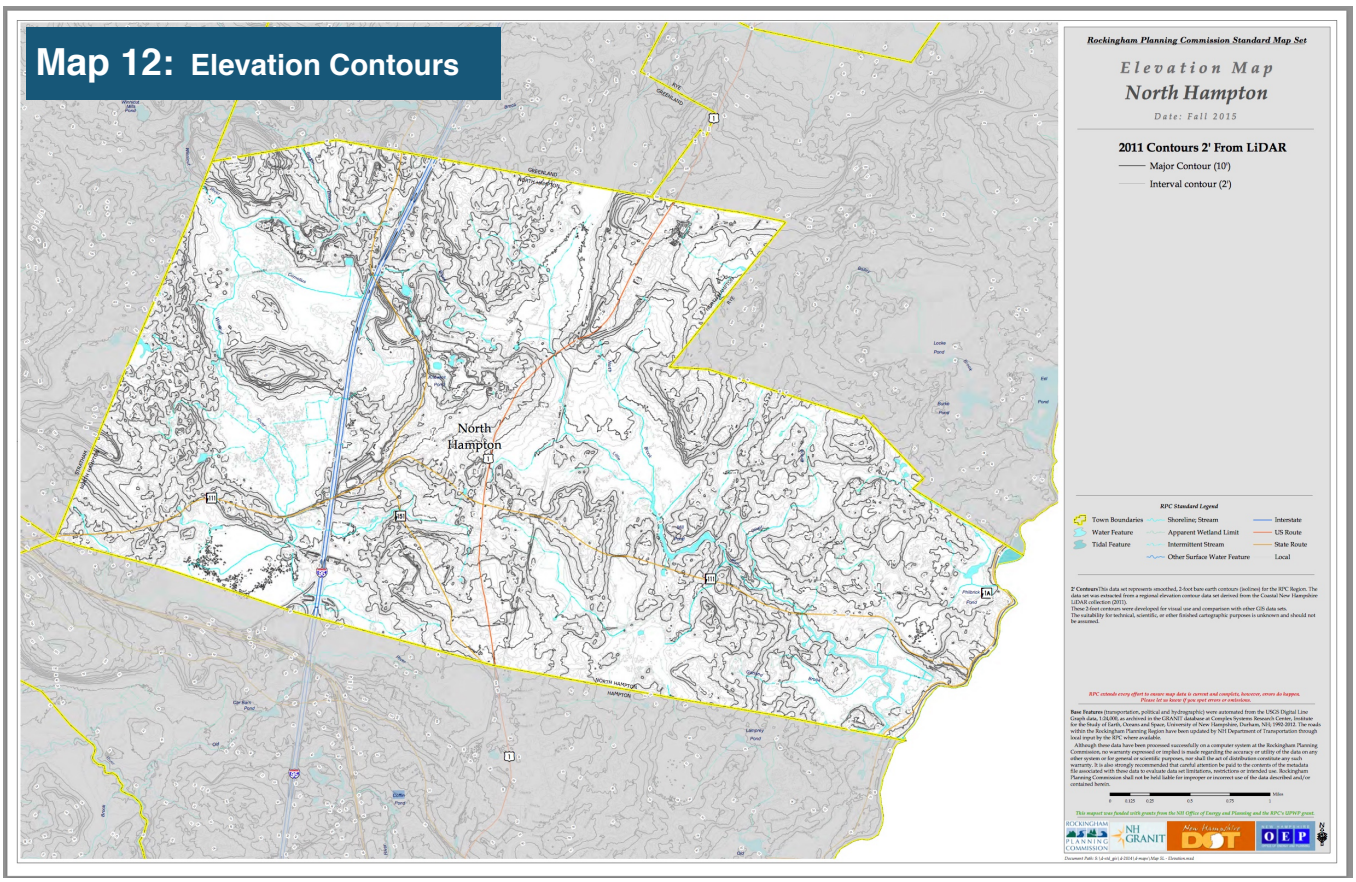
- Southern New England Coastal Plain and Hills Section (southeastern part of NH);
- Vermont-New Hampshire Upland Section (southwestern part of NH)
- White Mountain Section (Northern part of NH).

North Hampton is in the Southern New England Coastal Plain and Hills Section which can be further divided into three subsections:

- Gulf of Maine Coastal Lowland (immediate coastal region);
- Gulf of Maine Coastal Plain (southern portion);
- Sebago-Ossipee Hills and Plain (northern portion).

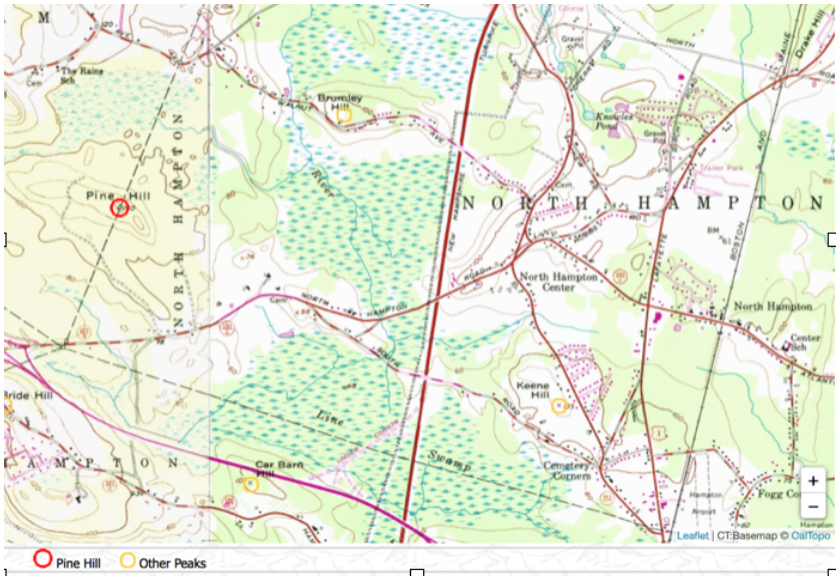
North Hampton is in the Gulf of Maine Coastal Lowland, a subsection characterized by broad, hilly plateaus and drumlins leading to the coastal zone.

Topography — Elevation Contours



Boulders near Shiprock, East of Mill Road, South of Atlantic Avenue. Shep Kroner.

Pine Hill: Highest Elevation in North Hampton at 100'



SOILS

Understanding the nature and properties of soils is critical to managing and conserving our natural resources. Through its Soil Survey Program, the Natural Resources Conservation Service (NRCS) studies and inventories soil resources across the country. Soil scientists make this study in order to determine what soils are present, where they are located and how they can be used. Soil surveys contain information in the form of detailed soils maps, data, figures and text narratives that can be used in order to determine appropriate uses for the land. Soil surveys also contain predictions of soil behavior for selected land uses and highlight limitations and hazards inherent in the soil and the impact of selected land uses on the environment. The latter is especially important in North Hampton because all development relies on on-site septic disposal and portions of the town rely on private wells.

It is important to note that these soil survey maps are designed for general planning purposes and are not at a scale appropriate for site specific use.

A site-specific soils map should be done by a licensed professional soil scientist wherever there are concerns about the capability of the land for development.

Figure 17: Soil Types

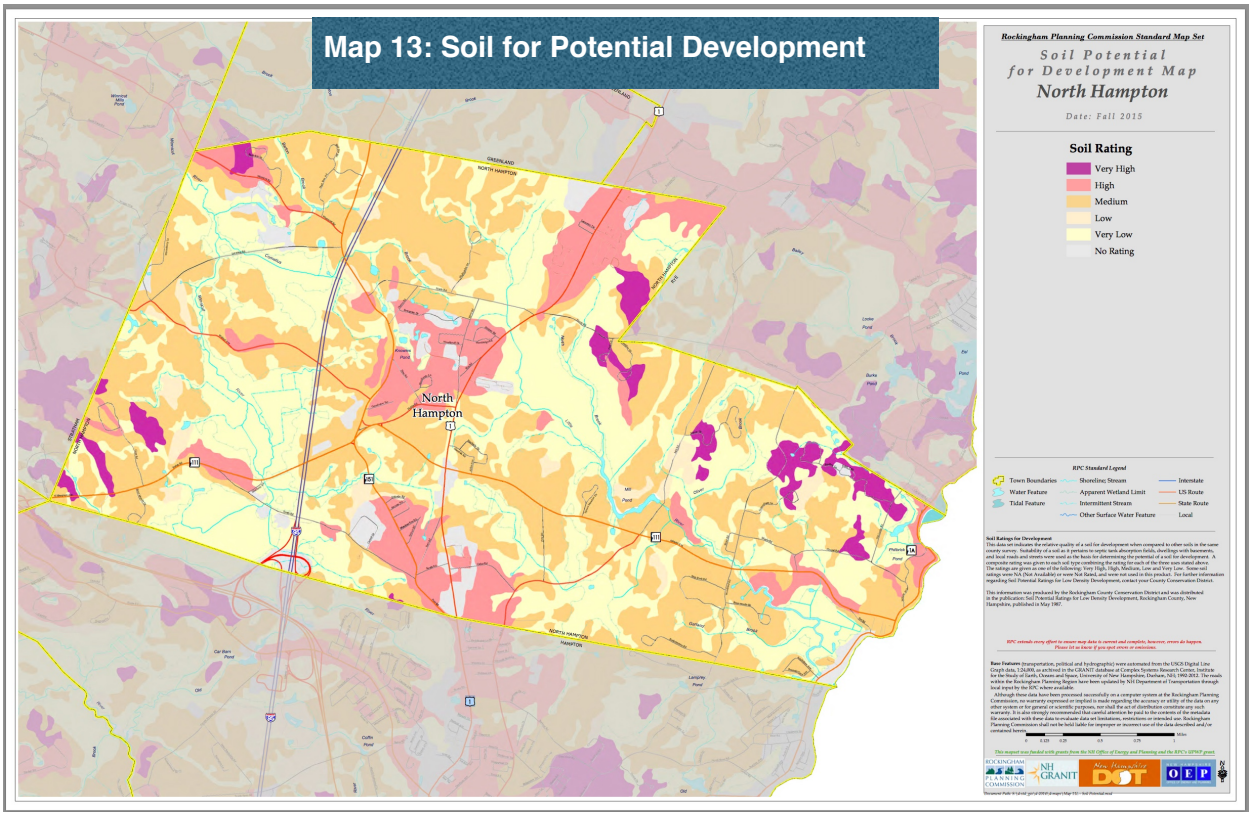
Soil Type	Acres
HOOSIC-CANTON-CHATFIELD (NH009)	5,819
HOLLIS-CANTON-CHATFIELD (NH010)	3,095

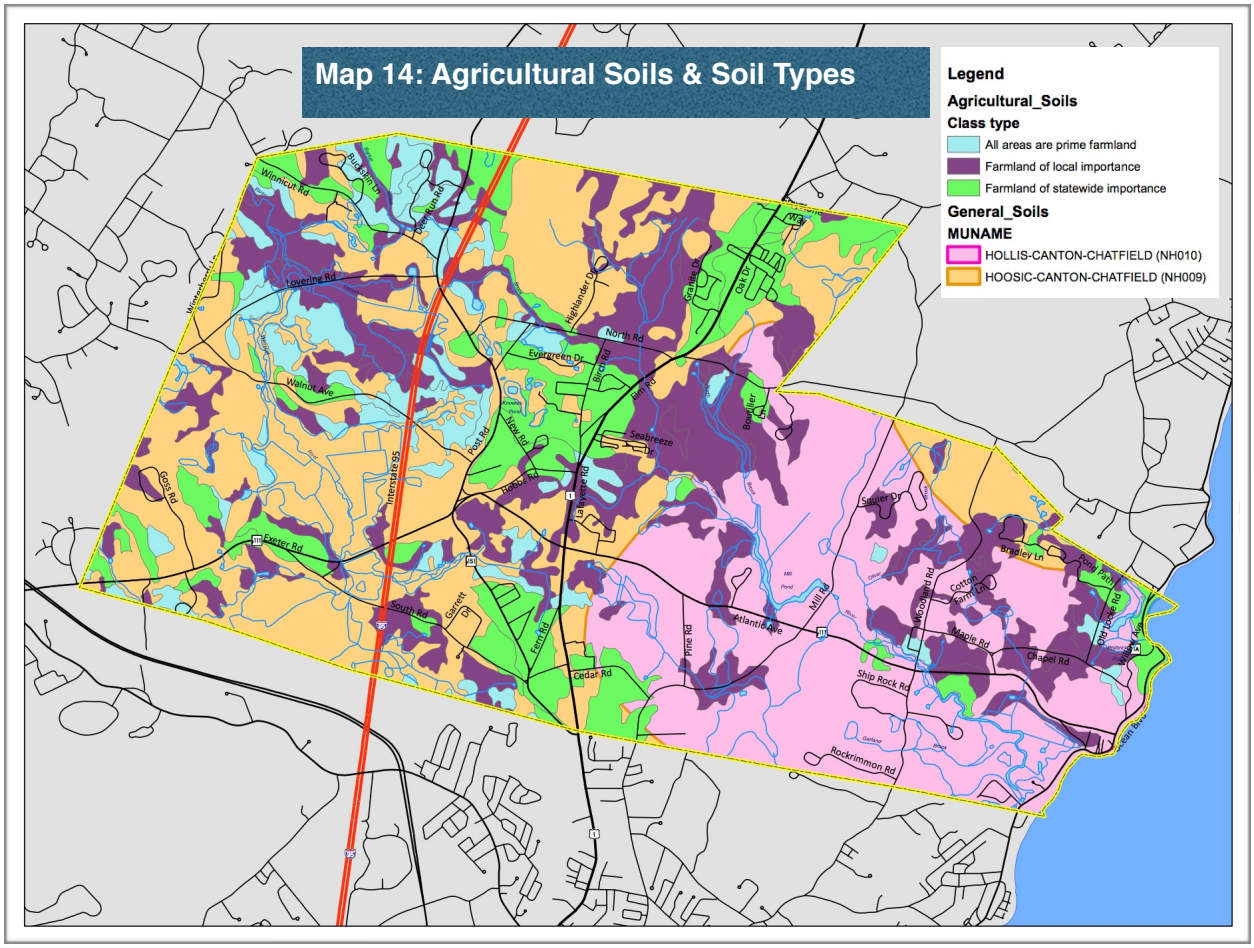
Prime Farmland Soils – These are soils are defined by the US Department of Agriculture as having the best combinations of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops, and are also available for these uses (the land could be cropland, pastureland, forest land, or other land, but not urban built up land or water). Prime farmland produces the highest yields with minimal expenditure of energy and economic resources, and farming it results in the least damage to the environment. **According to aerial photos analyzed by the University of New Hampshire Complex Systems Research Center, there are 663 acres of prime farmland in North Hampton.**

Soils of Statewide and Local Importance – This is land, in addition to prime farmland that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land are determined by the NH Department of Agriculture. Generally, these soils are nearly prime farmland that can economically produce high yields of crops when treated and managed according to Figure farming methods. **There are 1,209 acres of soils of statewide importance in North Hampton and 1,942 acres of soils of local *importance*.**

Wetlands Soils - These soils include Very Poorly (Hydric A) and Poorly Drained (Hydric B) soils. The areas are wet, since water moves through the soil so slowly that the water Figure remains at or near the surface of the ground for the greater part of the year. The reference to "very poorly" and "poorly" refers in part, but not exclusively to, the amount of time water remains at or near the surface. Very poorly drained soils generally occupy level or depressed sites, are frequently ponded, and commonly have soils with a thick dark colored surface layer and gray subsoil. Poorly drained soils occupy nearly-level to sloping sites, are ponded for short periods, have a dark colored surface layer with grayish, mottled subsoil. **There are 3,288 acres of very poorly drained soils (Hydric A) soil, and 5,579 acres of poorly drained (Hydric B) soils in North Hampton. Wetlands are discussed in greater detail in the Water Resources section of the NRI.**

SOILS


Map 13: Soil for Potential Development
Rockingham Planning Commission Standard Map Set
Soil Potential for Development Map
North Hampton
Date: Fall 2015
Soil Rating
Very High
High
Medium
Low
Very Low
No Rating
North Hampton


Map 14: Agricultural Soils & Soil Types
Legend
Agricultural_Soils
Class type
All areas are prime farmland
Farmland of local importance
Farmland of statewide importance
General_Soils
MUNAME
HOLLIS-CANTON-CHATFIELD (NH010)
HOOSIC-CANTON-CHATFIELD (NH009)
Winnicut Rd
Lovering Rd
Walnut Ave
Goss Rd
Exeter Rd
South Rd
Garrett Dr
Interstate 95
Rust Rd
Flow Rd
Fern Rd
Cedar Rd
Lafayette Rd
Highlander Dr
North Rd
Evergreen Dr
Birch Rd
Fern Rd
Seabreeze
Boulder Dr
Oak Dr
Atlantic Ave
Prime Rd
Mill Rd
Squier Dr
Woodland Rd
Cotton Farm Ln
Bradley Ln
Maple Rd
Chapel Rd
Old Locke Rd
Ship Rock Rd
Rockrimmon Rd
Jackson Bay

Agricultural and Farm Land Resources

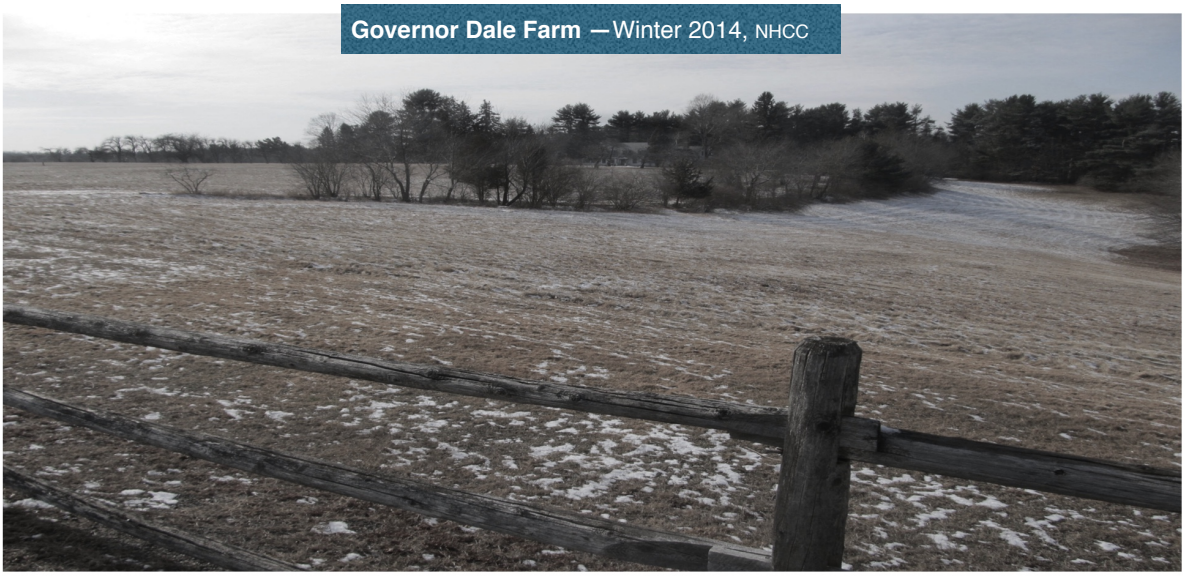
Agricultural Soils

New Hampshire is losing its most productive farmland. Between 1982 and 2000, nearly 18,000 acres of prime farmland became unavailable for production of crops, feed, forage or fiber. Most was lost to urban and rural development. Only 2% of New Hampshire soils classify as prime farmland. Prime Farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is also available for these uses. Cropland, usually the most productive agricultural land, has declined 30% statewide from 1974 to 2000.

An analysis of 2010 landcover data shows that 663 acres of land in North Hampton are classified as Prime Farmland, 1,942 acres are classified as farmland of local importance, and 1,209 acres are classified as farmland of statewide importance. The last two categories are defined as soils that may economically produce high yields of crops when treated and managed according to acceptable farming methods. See **Map 14: Agricultural Soils and Soil Types** for details on agricultural soils in North Hampton.

North Hampton is proud of its rich agricultural history and farming community. In North Hampton there are a number of privately owned properties that are comprised of more than four acres where agricultural activities and farming takes place in accordance with the **Agricultural Zoning Ordinance Section. 602.1**.

Commercial farms can contribute to the town economically, and the town's residents are fortunate to enjoy locally grown produce. North Hampton's Community Garden plots are available to residents and persons from other towns. Town residents pursue equestrian activities, have hayfields, and keep farm animals such as goats, sheep, cattle, chickens, and other small livestock. In addition, many people raise vegetables, fruit and herbs for their own consumption and to share with their neighbors. The open fields and farm structures comprise the rural and scenic character and heritage of town.



Governor Dale Farm —Winter 2014, NHCC

Agricultural and Farm Land Resources
Conserved Farms and Agricultural Land

Figure 18: Conserved Farms and Agricultural Land

Conserved Farms and Agricultural Land Acquired through the North Hampton forever Program (NHF), Town Initiatives, and Privately Owned
Dalton Town Forest — Map 9, Lot 23; Acres: 8.91; **NHF**
Jenkins Farm — Map 9, Lot 33; Acres: 24.80; **NHF**
Robie Acreage — Map 9, Lots 3, 53, 34; Map 15, Lots 14, 15; Acres 161.68; **NHF**
Corbett Farm — Map 15, Lot 17; Acres: 13.94; **NHF**
Palmer Farm — Map 19, Lot 24; Acres: 24.94; **NHF**
Seavey Farm — Map 8, Lot 92; Acres 4.35; Map 14, Lot 34-1; Acres 17.50; **NHF**
Dustin Booker Farm — Map 22, Lot 24; Acres: 51.74; **NHF**
Woods-Booker Farm — Map 22, Lot 22-21; Acres: 2.27; **NHF**
Forest Hills Farm — Map 21, Lot 45; Map 22, Lot 3; Acres: 83.96; **NHF**
Leavitt Farm — Map 14, Lot 159; Map 18, Lots 53.57; Acres 100.84; **NHF**
D'Urso/Marston Farm: Community Garden — Map 8, Lots, 121-1, 164, 165; Acres 14.68; **NHF**
Garland Farm — Map 20, Lot 2; Acres 4.20; Map 20 Lot 3 Acres 17.60; **NHF**
Lamprey Homestead Conservation Easement/Cahill — Map 6, Lot 44; Acres 50.80; **NHF**
Old Road Farm — Map 18, Lots 38; Acres 51.18
Governor Dale Farm — Map 7, Lots 2-4; Acres 14.65
Lamprey/Perkins Farm — Map 1; Lots 13, 65; Acres: 24.94
Runnymede Farm/Fuller Acres — Map 6, Lots 2-1, 2, 3, 4, 5; Acres 8.84
Eaton Farm —Map 9, Lot 51: Acres 10
Rand Memorial Forest — North Hampton/Rye; Map 16, Lot 4; Acres 70.59 (NH); Total Acres 95
Independence Farm — North Hampton/Rye — Map 16, Lot 11; Acres 43.90

Agricultural and Farm Land Resources
Recommendations for Protecting Agricultural Resources

"Privately owned crops, pasture, and rangeland account for nearly half of land in the US. Given the enormity of agriculture's footprint on our land – and the fact that these working lands intersect with shared natural resources like rivers and lakes – it makes sense that farmers and ranchers have a huge role to play in sustaining our nation's natural resources. From growing a cover crop to planting native plants along a field for pollinators to restoring wetlands, conservation on farmland is a win-win for farmers and for the rest of us."

National Sustainaable Agricultural Coalition

Recommendations to help sustain economically viable agriculture in North Hampton are:

- Educate the public that once important farmland soils are developed, they are usually lost forever.
- Support Eat Local campaigns and encourage residents to buy locally grown food.
- Protect Important Farmland soils that are necessary for economically viable agricultural activities by working with landowners and land conservation organizations on conservation easements.
- Identify and map prime farmland soils and soils of statewide importance.
- Continue to educate farmland owners about the benefits of conservation easements on their property.
- Work with the North Hampton Agricultural Commission to encourage farmers and members of the community to follow "Best Management Practices" to protect water quality.

Lamprey/Perkins Farm — Privately owned conservation easement.

Forest Resources

Forests provide North Hampton with a diverse range of benefits. North Hampton's forests provide valuable habitat for plant and animal populations. The forests absorb rainwater, increase groundwater infiltration, and buffer surface waters from sedimentation and contamination. Near roads and homes, trees cool summer temperatures by 10 degrees or more, break winter winds, and filter dust and pollutants from the air. Forests host scenic recreational trails and hunting grounds. Our tourist industry and seasonal residents are attracted by healthy forests. In addition, well-managed forests provide a sustainable supply of maple syrup, home firewood and commercial wood products and jobs needed by New Hampshire residents.

Forest Cover A forest is comprised of several forest types. Forest types are distinctive associations or communities of trees, shrubs, and herbaceous plants. They are named for the predominant tree species occurring in the type. Common forest types in North Hampton include White Pine; Northern Hardwood (sugar maple, beech, yellow birch, red maple, white ash and smaller amounts of other species); Spruce-Fir, Red Oak, Hemlock, and Aspen-Birch. A forest type may be dominated by a single tree species or it may dominated by several species growing together.

Oliver Brook Forest NHCC

North Hampton's forests provide us with wood and food products, wildlife, scenic beauty, a modified microclimate, stabilization of steep slopes and snowpacks, the control of water flows, the creation and maintenance of stream habitat for aquatic animals, and recreation. In addition, forests constitute a major storage of carbon not only in the trees themselves, but in the forest soils as well. New Hampshire is the second most forested state in the US trailing Maine. North Hampton is approximately 33% forested as of 2015; the state average is approximately 85%. . It is hard to know how much of the land that settlers converted to farm land was originally forested.

Forest Resources
Protection of Forest Resources

"The importance of forests cannot be underestimated. We depend on forests for our survival, from the air we breathe to the wood we use. Besides providing habitats for animals and livelihoods for humans, forests also offer watershed protection, prevent soil erosion and mitigate climate change." — *World Wildlife*

RECOMMENDATIONS FOR PROTECTING FOREST RESOURCES

- Identify forestland abutting rivers and streams for conservation as these forests play an important role in protecting water quality and quantity, and wildlife habitat:
- Encourage planting/transplanting native species.
- Adopt tree clearing regulations to minimize soil erosion, preserve wildlife habitat, and protect water resources.
- Partner with land conservation organizations and surrounding municipalities in the region to protect critical areas identified in the Land Conservation Plan for New Hampshire's Coastal Watersheds.
- Promote sustainable forestry and cooperation among adjacent forest landowners.

Garland Brook Forest NHCC