

Natural Resources

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The understanding of natural resources is helpful in determining which areas of the town are appropriate for protection and open space and which areas are more suitable for development. Natural features such as slope, soils, forest resources, beaches and dunes, wildlife and water and estuarine resources add to Seabrook's character, provide recreational opportunities and contribute to the quality of life for Seabrook residents.



Photo 1. Seabrook salt marsh, looking northeast.

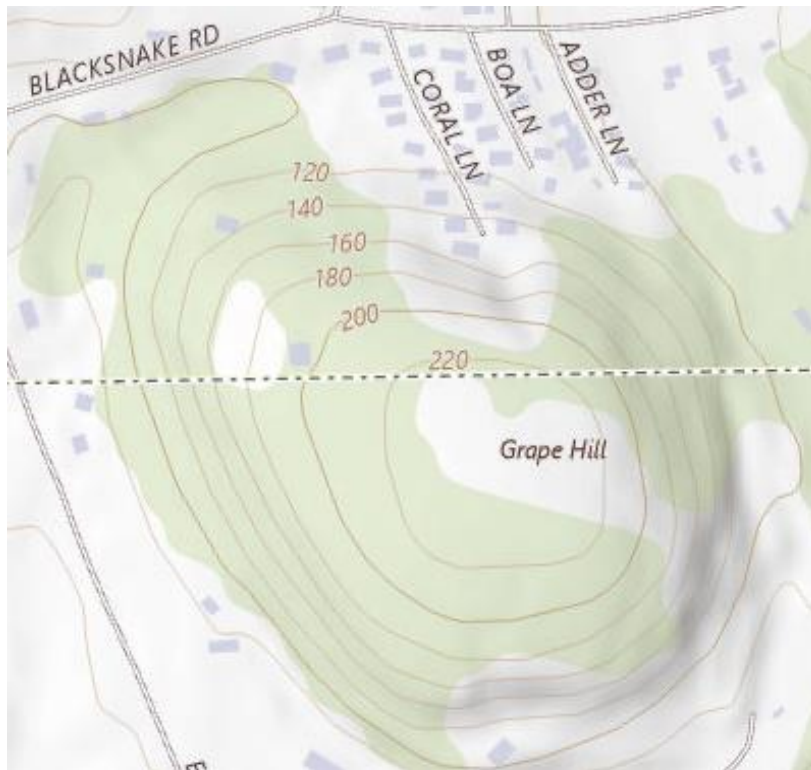
Natural Resources

Topography

Seabrook lies within the Seaboard Lowland Section of the New England physiographic region, one of the subdivisions of the Appalachian Highlands. The town's topography is gently sloping with elevations that range from sea level to approximately 60 feet above sea level west of I-95. Grape Hill on the southern border of the town with Salisbury, Massachusetts at Seabrook's

southern border reaches 234 feet, although its highest point in Seabrook is 220 feet. Slopes of less than 8% predominate throughout Seabrook with the only exception being Grape Hill and some stretches of various stream banks, which have slopes greater than 15%.

Development on steep slopes is likely to reduce soil stability, causing erosion and sedimentation into brooks, streams and surface water bodies. Slopes greater than 25%, typically found along some of Seabrook's water courses such as Cains Brook, are usually best left naturally vegetated.



Map 1. Topographical elevations, Grape Hill.

Geology

Seabrook's topography tends to reflect the underlying bedrock. Many areas align with deep surface deposits that formed during the period of glaciation between 10,000 and one million years ago during the Pleistocene Epoch. The glacier moved from the northwest to the southeast picking up soil, rock and other debris, which were later, deposited as glacial drift when the ice sheet melted. The Town's 2000 Master Plan provides a full explanation of both the bedrock and surficial geology of Seabrook. This update only highlights the surficial geology below.

There are four major geologic deposits that influence Seabrook's topography. They are listed below in reverse order of deposition, starting with the uppermost and therefore youngest of the deposits.

Marine Clays and Swamp Deposits occur in low, poorly drained areas and cover much of the eastern portion of the town. These deposits typically have a high-water table and may have water seasonally ponded at the surface. Much of the intertidal marsh area of Seabrook is made up of these deposits. The town's fresh-water resources are also associated with these deposits and are within the hydric soil group.

Stratified Drift is composed of fine to medium sands and gravel deposited in proximity to glacial ice. The most significant area of these deposits is in west Seabrook extending from Riley Road at the Massachusetts border to the intersection of NH Routes 150 and 84 in Kensington. This area represents high potential for groundwater yields. In fact, it is a substantial groundwater aquifer and major source of Seabrook's water supply. Less significant deposits are found along the town boundary with Hampton Falls west of US I-95 and straddling US Route 1 along the boundary with Salisbury. The Rockingham Planning Commission prepared [a map of Seabrook's stratified drift deposits](#).

Glacial Till is composed of an unsorted mix of sand, silt, clay, gravel and boulders that overlies much of the bedrock in Seabrook. These deposits generally do not hold sizable volume of groundwater. Such deposits are found at Seabrook's higher elevations west of I-95 including New Zealand Hill and Grape Hill.

Bedrock outcrops are composed of both igneous and metamorphic rocks that are exposed at the surface. These areas are generally limited to areas within glacial till deposits. There are several outcrops located within the tidal marsh in the northeast portion of the town .

Soils

Seabrook's soils have developed over time from the interaction of climate, vegetation, topography and surficial materials. Much of the surface materials of Seabrook are underlain by marine clays and many of the soils tend to be moist or stony with a high water table or shallow ledge or ledge outcroppings. Where there is stratified drift, the soils tend to be sandier, gravely and better drained. Hydric soils tend to be found in low spots near surface water or in areas underlain by silt and clay deposits such as river alluvium and are scattered throughout the town.¹ Seabrook's soils are grouped into four broad categories, as follows:

Wetland (Hydric) Soils

These include all poorly and very poorly drained soils often associated with silts and clays including muck, peat, swamps and marshes as defined by the NRCS. Hydric soils make up over 50% of Seabrook's land area. They include soil groups as Scarboro Muck, Ipswich Mucky Peat and Walpole Fine Sandy Loam. The water table is at or near the surface 5 to 9 months of the year. Wetland soils are associated with low lying areas in Seabrook, such as the tidal marshes and along Seabrook's water courses and ponds such as Cains and Cains Mill Ponds.

These areas are best suited as open space or limited development because wetland soils provide several natural functions that are beneficial to the community. These functions include absorbing excess floodwaters, preventing downstream flooding, valuable habitat for fish and wildlife, groundwater recharge, and trapping sediment and other pollutants, thus acting as a surface water filter.

Hydric soils are similar to, but may not be precisely the same as wetlands, as defined by the US Army Corps of Engineers. The Army wetlands are also referred to as "Federal Jurisdictional Wetlands". For regulatory purposes both the NH Wetlands Bureau and the Corps employ the Corps definition.

Seasonally Wet Soils

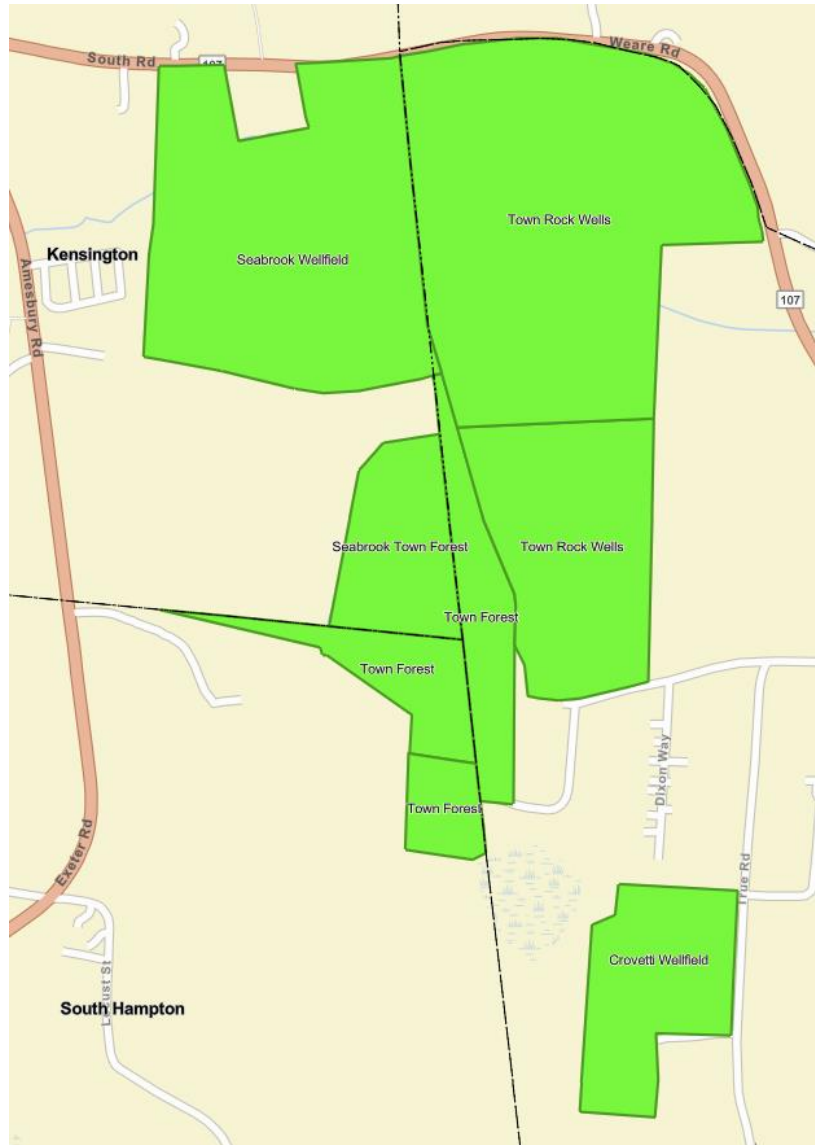
These soils are somewhat better drained than the wetland soils but typically have a seasonal water table within 2 1/2 to 3 feet of the surface, a perched water table or slowly permeable sub-layer during the wet season. These soils include Woodbridge and Deerfield fine sandy loam. They tend to be located in the central part of Seabrook often on the lower slopes of hills and on low knolls associated with streams such as Cains Brook, Mary's Brook and Gove Brook and their tributaries. Flooded basements and submerged leach fields may be expected.

Shallow to Bedrock Soils

This soil group tends to be located on low, knobby hills and ridges and typically have bedrock within 1-3 feet of the surface. They are found in scattered areas generally along a north-south line just west of I-95 and a north-south pattern just west of the marsh soils. This soil group is made up of the Chatfield-Hollis-Canton soil complex. While this group tends to have a shallow to bedrock characteristic, there will be some areas that do have deeper soils.

Sandy and Gravelly Soils

These soils are excessively well drained Hinckley and Canton fine sandy gravelly soils that are typically associated with the stratified drift deposits from glacial outwash. These are located west of I-95. These soils have good potential for development since there are few limitations for construction. However, these areas are also associated with significant groundwater supplies. Seabrook's municipal well field is located in such deposits.



Map 2. Seabrook Town Forest and nearby protected land.

Forests

There are few large tracts of woodland in Seabrook. Those that survive are characterized by secondary growth deciduous and coniferous species. The larger areas of forest occur in three locations: 1) west of I-95, 2) north of Cains Brook between I-95 and Route 1,

and 3) the areas of Seabrook that are transitional between the upland wooded areas along the tidal streams such as those areas bordering Mill Creek and lower Shepherd Brook.

Forest resources represent a response to a relatively wet and cold winters. Variation in soil and slope will result in a

and cold winters. Variation in soil and slope will result in a variation in vegetation. Where soils are wet there may be a preponderance of hardwoods such as red maple and yellow birch. A mixed forest including white pine and eastern hemlock will more likely occur on drier sandy/gravelly soils.

In the early part of the 19th century almost all of Seabrook was logged and, in some areas, up to 90 % of the land was open. Since then, the forested areas recovered until the middle of the 20th century. Seabrook's land area is now less than 30% forested and is less forested than adjacent communities.² In addition, there is no forested area greater than 500 acres.

At present, there are no Certified Tree Farms in Seabrook. (A Certified Tree Farm designation is based on a long-term forest management program that is certified by the University of New Hampshire (UNH) Cooperative Extension Program for Rockingham County.) Ensuring a long-term policy toward proper management of the town's forest resources is important for several reasons: scenic enhancement, recreation, wildlife habitat, and water quality.

Farmland

The USDA Natural Resource Conservation Service identifies three categories of farmland soils in New Hampshire: prime farmland, soils of statewide importance, and soils of local importance. This classification is based upon the productivity of the soils for food and fiber crops.

Prime farmland soils have the capacity to produce sustained high yields. Soils of statewide

significance are deemed to be important for farming in New Hampshire but are of less value than prime farmlands because the soils are not as fertile and require more erosion control practices. Similarly, soils of local importance may be important for farming in Seabrook but are not as valuable as either the prime farmland soils or those of statewide significance. The locally significant soils are not as fertile and are usually poorly drained.

Seabrook has 120 acres that qualify as prime farmland, 327 acres that are of statewide importance and 1,584 acres that are of local importance, for a total of 2,031 acres that are well suited for agriculture.

The greatest concentration of prime soils and soils of statewide importance are in the western portion of Seabrook near the border with South Hampton and Kensington. The development on agricultural soils that are currently in agricultural use is an issue of concern. Once converted to more intensive uses, these lands are usually irretrievably lost for agricultural purposes. More than half of Seabrook's farmland soils (1,088 acres) have been developed.

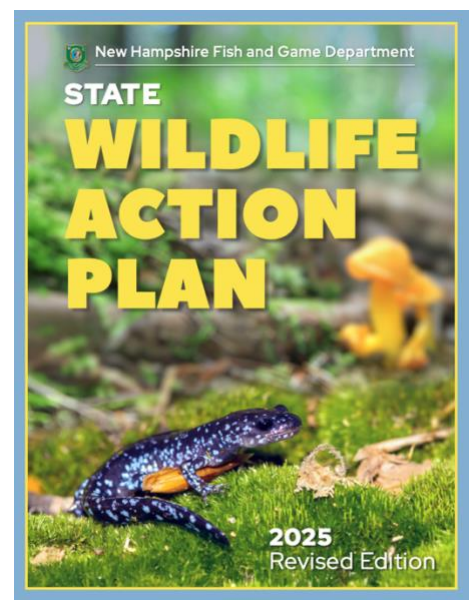
The Rockingham Planning Commission [prepared a map](#) that depicts Seabrook's prime farmland soils, farmland soils of statewide importance, and farmland soils of local importance.

In a 2021 analysis, The Nature Conservancy identified a tract of continuous farmland north of Route 107 and east of Weare Road to be of particular significance.

Habitats

Seabrook's mix of wildlife habitats include forests and woodlands, open fields, tidal marshes, the estuary, fresh water wetlands, surface waters and streams.

The New Hampshire Fish and Game Department published a *Wildlife Action Plan* for the entire state. The plan was updated in 2025.



The data incorporated in the plan can be used on a town-by-town basis for land use planning and resource management. The plan identified nineteen habitat types, eight of which are found within Seabrook. They include:

Coastal Beach and Sand Dunes

Seabrook Beach extends approximately 1.6 miles from Hampton in the north to Salisbury on the south. The coastal beach and sand dune system is a constantly changing area of sand, gravel and associated vegetation that are subject to wave and wind action. The dune area is one of the few remaining such areas in the state.

The beach and dune habitat is associated with a barrier beach system that extends from Plum Island Great

Boar's Head. The barrier beach is bounded by an extensive salt marsh system, the Blackwater River and the harbor.

The beach has been heavily developed on the landward side.

The dunes and beach are used by numerous birds such as the Piping Plover for breeding, migration or wintering. These fragile areas face ongoing impacts from recreational activities, residential building activity, oil spills and rising sea level.

The dunes cover 109 acres. Over 30 of these acres are situated to the west of US Route 1A and are referred to as the Back Dunes. The town acquired title to the dunes in order to afford long-term protection.

Seabrook's dunes are noteworthy for the good health of the dune grass and the Town's strict prohibition on development of the dunes. For these reasons, Seabrook's dunes are far more stable than those on the barrier beach to the north and south.



Photo 2. Seabrook dunes, looking north.

Rocky Ridge and Talus

This habitat type is typically associated with higher alpine elevations. However, Fish & Game has identified several small areas of rock outcrop in the tidal marsh just north of Farm Lane. In this type of habitat there is minimal wildlife value. There are 14 acres of this habitat in Seabrook.

Grasslands

There is small 62-acre area of grassland habitat north of NH Route 107 near the confluence of the Hampton Falls River and Gove Brook. These areas tend to be dominated by grasses, wildflowers and sedges with minimal tree or shrub cover. These are typically hayfields or pastures. To maintain this habitat, the fields need to be mowed.

Salt Marsh

The salt marsh is a grass-dominated, tidally influenced wetland area that exists in the transition zone between the estuary and the adjacent uplands. These intertidal marshes are characterized by a saline and brackish environment and contain bird species such as the

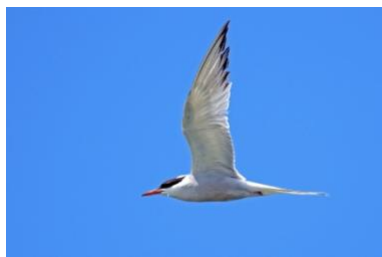


Photo 3. Common Tern (*Sterna hirundo*). Photo by Georg Wietschorke via Pixabay.

American black duck, common tern, great blue heron, Northern harrier, seaside sparrow, semi-palmated sandpiper,



Photo 4. Semi-palmated sandpiper (*Calidris pusilla*), via Pixabay.

willet and numerous migrating birds. This habitat is found in the eastern side of the watershed associated with Tide Mill Creek and the estuary. There are approximately 1,242 acres of salt marsh in Seabrook.

Marsh/Shrub Wetland Complex

This freshwater complex is associated primarily with the various ponds in the Cains Brook watershed as well as the lower part of Cains Brook east of the Noyes Pond Dam to Centennial Avenue. In total there are 86 acres of this habitat. There are also complexes west of I-95 just south of Route 107 as well as the headwaters of the Hampton Falls River in the northwest portion of Seabrook. These areas have a broad range of flood regimes, often controlled by man-made dams and the presence or departure of beavers. This habitat type hosts wet meadows, emergent marshes and scrub-shrub wetlands. The wildlife includes American bittern, band sunfish,

great blue heron, Northern harrier, smooth green snake, spotted turtle, Blandings turtle and New England cottontail.



Photo 5. New England Cottontail, (*Sylvilagus transitionalis*). Photo courtesy of the Natural Resources Council of Maine.

Such wetlands are also prime habitat for mammals such as beaver, otter, muskrat and mink as well as toads, frogs and salamanders.

Peatland Complex

There are several locations of peatland habitat in Seabrook: one south of Walton Road, another near Mary's Brook, and several sizable areas west of I-95. Typical species include Blanding's turtle, Eastern towhee, ribbon snake, spotted turtle and spruce grouse. There are 88 acres of this habitat in Seabrook.

Appalachian Oak-Pine Forest

This upland area is characterized by mixed forest with fields and meadows in varying stages of succession. Along with the tidal marsh, this forest

complex covers the most extensive area in Seabrook, some 2,175 acres. The forests include oak, hickory, mountain laurel and sugar maple that are typically associated with the relatively warmer drier climatic conditions of southern New Hampshire. This habitat hosts a variety of wildlife from songbirds to mammals including American woodcock, woodpeckers, bluebirds, thrushes, robins,



Photo 6. Eastern Bluebird (*Sialia sialis*) via Pixabay.

warblers, the common night-hawk, Cooper's hawk, Eastern box turtle, New England cottontail, ribbon snake, ruffed grouse, spotted turtle, wood thrush and wood turtle.

Hemlock-Hardwood- Pine Forest

This forest habitat is typically a transition forest between hardwood conifer and oak-pine forests. It is characterized by dry sandy soils supporting red oak and white pine. There are only 15 acres of this habitat in Seabrook, all located south of Ledge Road in the

southwestern corner of town near the primary sand and gravel aquifer of the town.



Photo 7. Pileated Woodpecker (*Dryocopus pileatus*). Photo by Veronika Andrews via Pixabay.

Priorities

Fish and Game ranks the habitats based on their value statewide and their value within a sub-region.

Seabrook is located in the Tidal Coastal Watershed sub-region. Within both the state and sub-regional category, saltmarsh is a Habitat of Highest Relative Rank.

In addition, Fish and Game then prepared Conservation Focus Area maps where there are clusters of habitats in the same geographic area, referred to as areas of co-occurrence. There are

three such Focus Areas in Seabrook. They are near the open estuary (mud flats), the tidal marsh or dune system. In each of these areas there is a variety of wildlife, rare species and exemplary natural communities.

Mammals

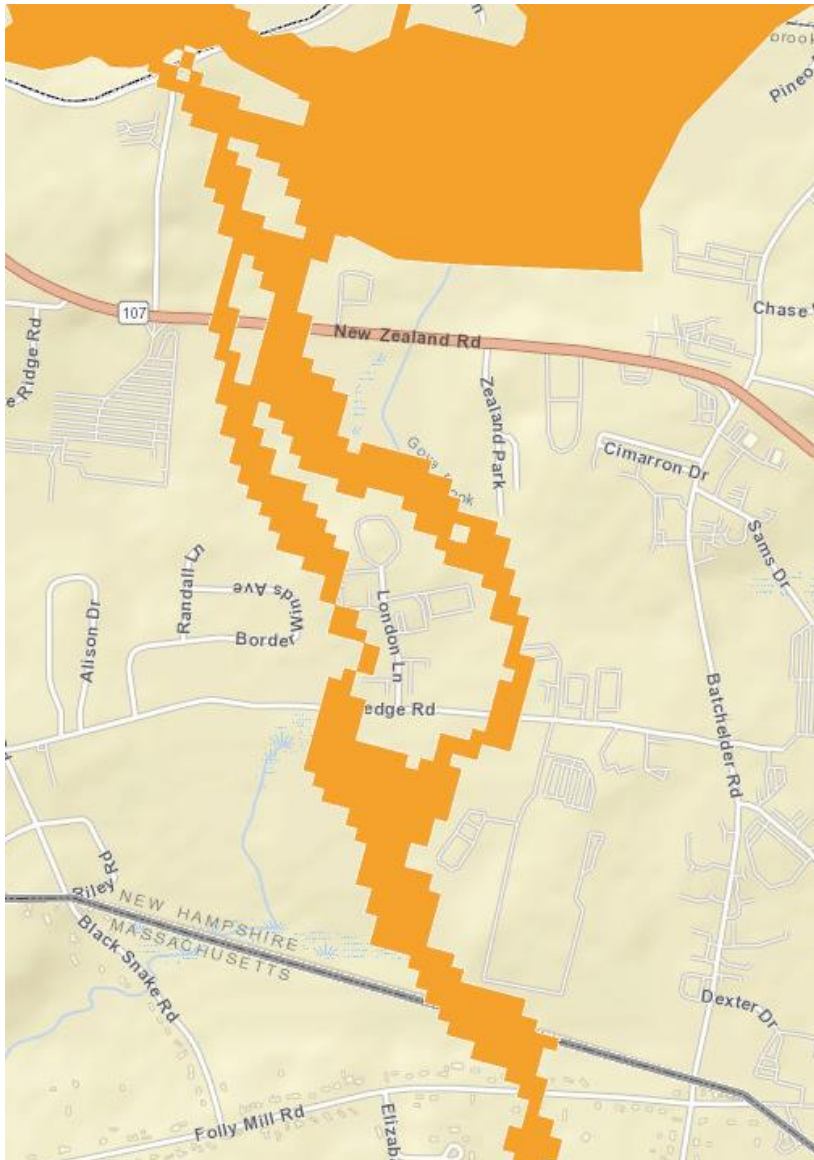
The NH Fish and Game Department compiles wildlife data. Some of the data is sourced from surveys of game species from hunting records. Compared to nearby communities, Seabrook has fewer bears, turkeys, and deer.

Fish & Game also tracks coyote, bobcat, fisher and gray fox. In general, the amount of game hunted or trapped in Seabrook has been on the decline for almost all species.

The Rockingham Planning Commission has mapped NH Fish & Game's [action plan](#) for Seabrook.

Continuous tracts of land known as "habitat blocks" are critical importance for wildlife to survive and thrive, as are wildlife corridors that connect the blocks.

Shown on the page that follows is Seabrook's most important wildlife corridor, one that runs from Salisbury to Hampton Falls just east of The Brook.



Map 3. Wildlife Corridor, Seabrook. The Nature Conservancy, 2019.

Inland Fish and Wildlife Resources

Water bodies in Seabrook and the surrounding area support both cold water and warm water species. The following have been observed: bull frog, green frog, Eastern painted turtle, wood duck, American black

duck, mallard, gray catbird, cedar wax wing and belted kingfisher. Examples of wildlife that are likely to be observed include the common snapping turtle, great blue heron, common yellowthroat, Eastern phoebe, and tufted titmouse. Local residents have also

reported sightings of spotted and painted turtles around the ponds of Seabrook.

Within Seabrook's ponds and brooks the following fish species have been observed or have been noted historically: American eel, bass, horn pout, kibbley, perch and sea-run brown trout. Pickerel and sun fish have been identified in Noyes Pond. There is also evidence of freshwater mussels in the Cains Brook watershed and in some locations along the brook, as well as Lamprey eels as far up as Cains Mill Pond. Silvery minnows and mummichogs have been identified in the upper reaches of Mill Creek. At present, many of these species do not inhabit the Cains Brook system, because of the deterioration of the pond's water quality, reduced depth and man-made barriers to free fish passage.

An area of the community that has relatively little documentation of habitat is within the tidal marsh and Hampton-Seabrook estuary. This is a significant resource area that is in large part dependent on the quality of the upstream water that discharges into the tidal creeks and its associated wetlands. This resource provides nutrients to a variety of fish and shellfish that inhabit the lower waters of Mill Creek, Brown's River and the Hampton-Seabrook Estuary.

Rare Species

The New Hampshire Natural Heritage Bureau tracks and protects the state's rare plants, animals, and exemplary natural communities. In Seabrook there are 52 rare species of special concern and exemplary natural communities that are listed by the NH Natural Heritage Inventory (NHI). Many of these were last reported over 100 years ago but are still assumed to be secure.

In Seabrook there are 13 listed natural communities, 35 listed plant species and 4 vertebrate species. Within the tidal marsh there are six distinct natural communities including Brackish Marsh, High Salt Marsh and low salt marsh. There are ten plant species also associated with the tidal marsh including Dwarf Glasswort, Netted Chain Fern, and Salt Marsh Gerardia.

While there are no federally listed endangered species, there is one federally listed threatened species (Piping Plover). Among state-listed species, Seabrook is believed to host 25 endangered plant species and ten threatened plant species as well as one endangered bird (Common Tern), one state threatened reptile (Blandings turtle).

The NHI does not identify precise locations. The agency will publish (upon request) a map of the

community illustrating general locations. The preponderance of locations are east of Route 1.

Surface Water Resources

Seabrook has a variety of surface water resources including streams, ponds, and wetlands.

Watersheds

Seabrook has seven (7) minor watersheds. All are part of the larger Coastal River Basin, which covers much of southeastern New Hampshire.

Ponds

There are fourteen ponds in Seabrook. They range in

size from 0.25 of an acre to five acres. The largest are Cains, Cains Mill, and Secord's Pond, all situated within the Cains Brook Watershed.³

Cains Mill Pond has lost a significant portion of its volume and surface as a result of the Noyes Pond dam breach during the Mother's Day storm of 2005.

All of these ponds are aesthetically pleasing, while those associated with the Cains Brook Watershed have high recreational value for boating and fishing. Table 1 below provides a summary of key data for each of these water bodies.

Pond	Location	Acres
Cains Pond	Lafayette Road	5
Cains Mill Pond	Lafayette Road	3
Secords	Folly Mill Road	3
Perkins (aka Benny's)	Perkins Avenue	2
Mary's	Lakeshore Drive	2
Noye's	Walton Road	1
Chase	Evergreen Drive	1
Knowles (aka Willy's)	Rocky Brook off Dow's Ln	1
Brook Pond (aka Partridge)	Wortherly Avenue	1
Beckman's	West of Causeway Street	1
Ellsworth	South Main Street	.5
Stard	Stard Road	.25
Small's Pond	Walton Road	.25
Small's (other) Pond	Walton Road	.5

Table 1. Ponds in Seabrook. Source: US Geological Survey.

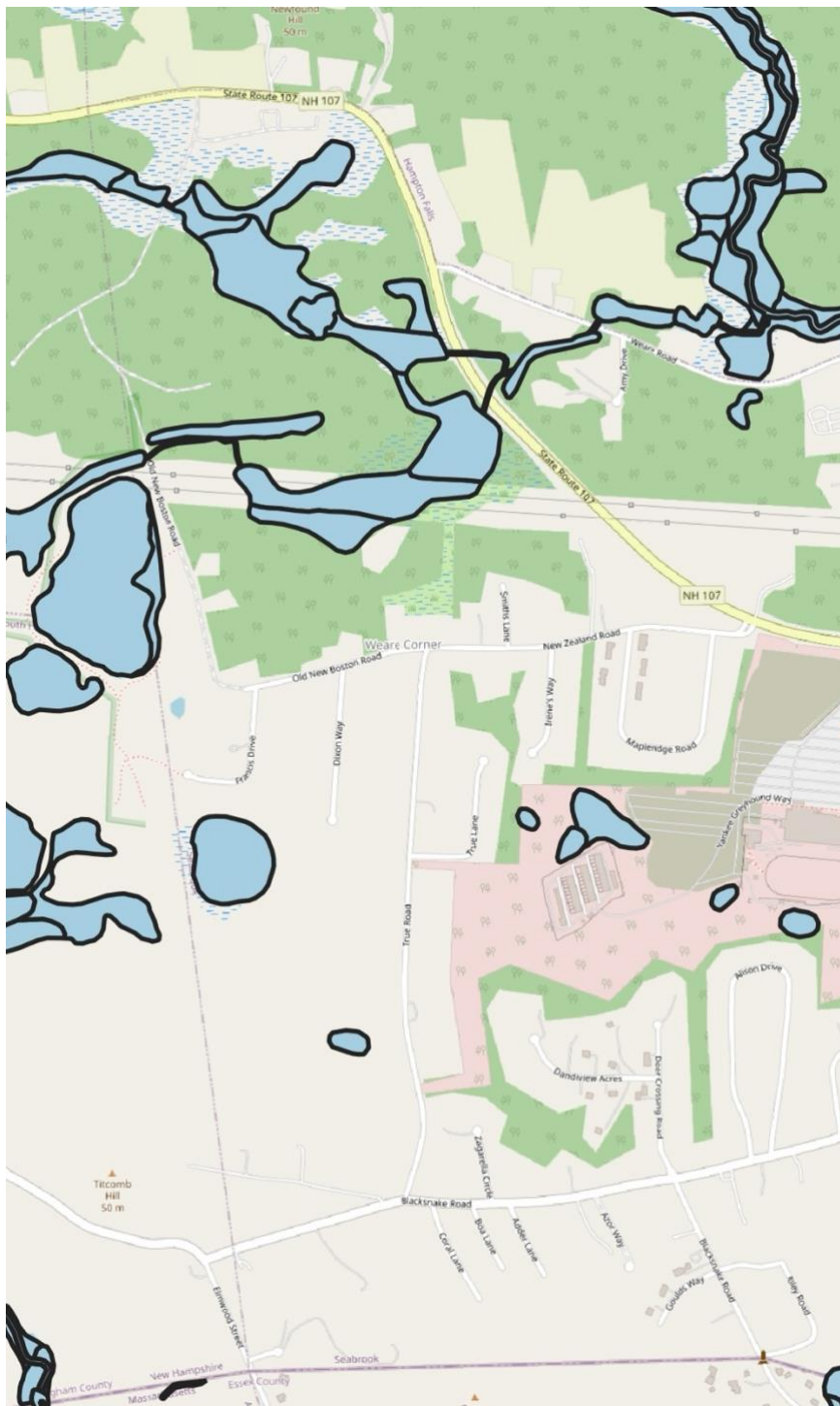
Wetlands

Wetlands form a substantial part of Seabrook's surface water resources. They generally are contiguous with wetland or hydric soils. However, for purposes of this discussion, wetlands also include vegetation and hydrologic characteristics that might not be incorporated into the definition for hydric soils. These areas include shallow tidal marshes, ponds, fresh-water marshes, swamps, bogs, and seasonally flooded lands.

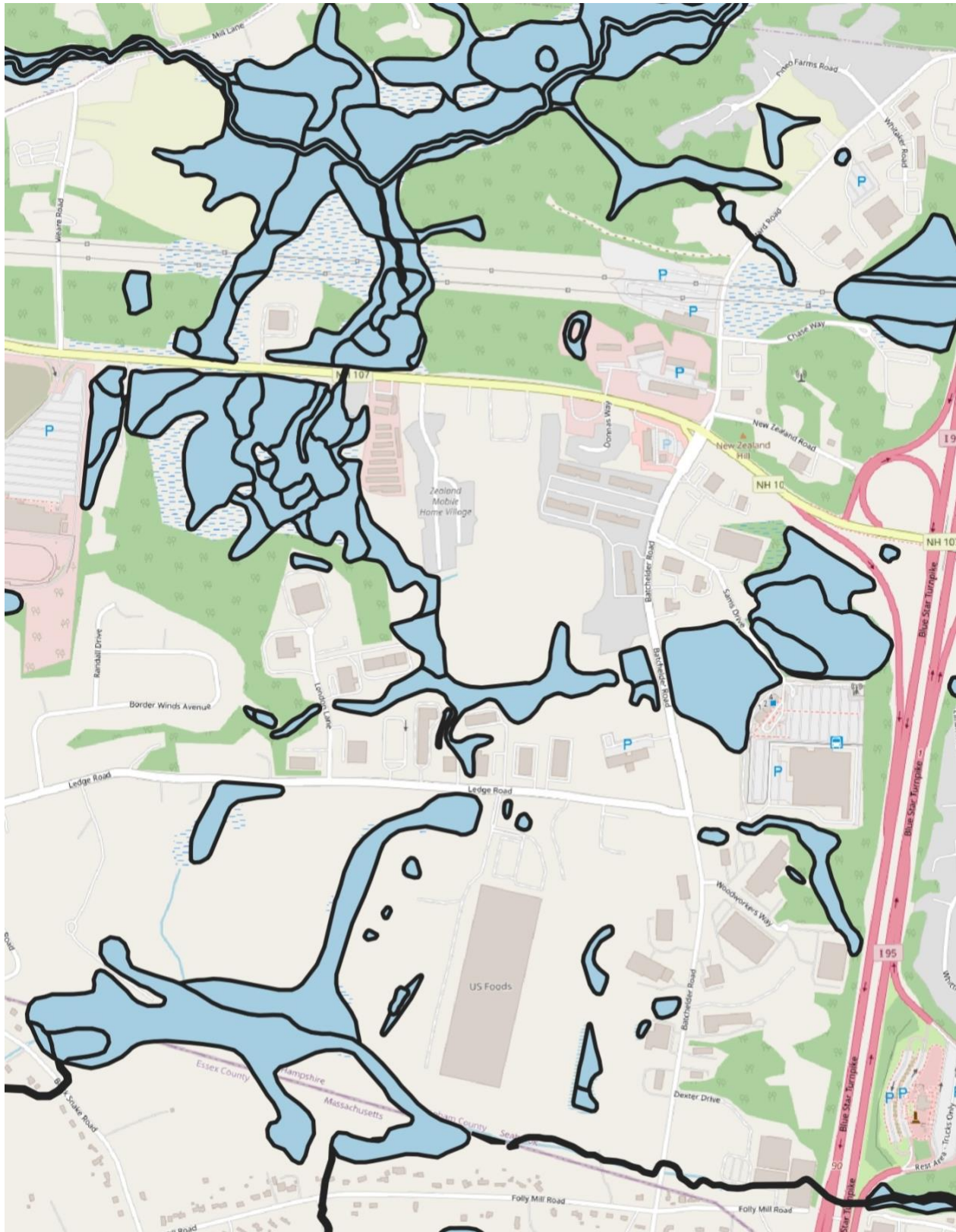
Wetlands are usually areas of low topography and poor drainage with standing water for all or part of the year. Wetlands possess a number of major resource values such as water quality, flood control, groundwater recharge, wildlife habitat and vegetative diversity.

The definition of wetlands varies from one agency to another within New Hampshire and the federal government.

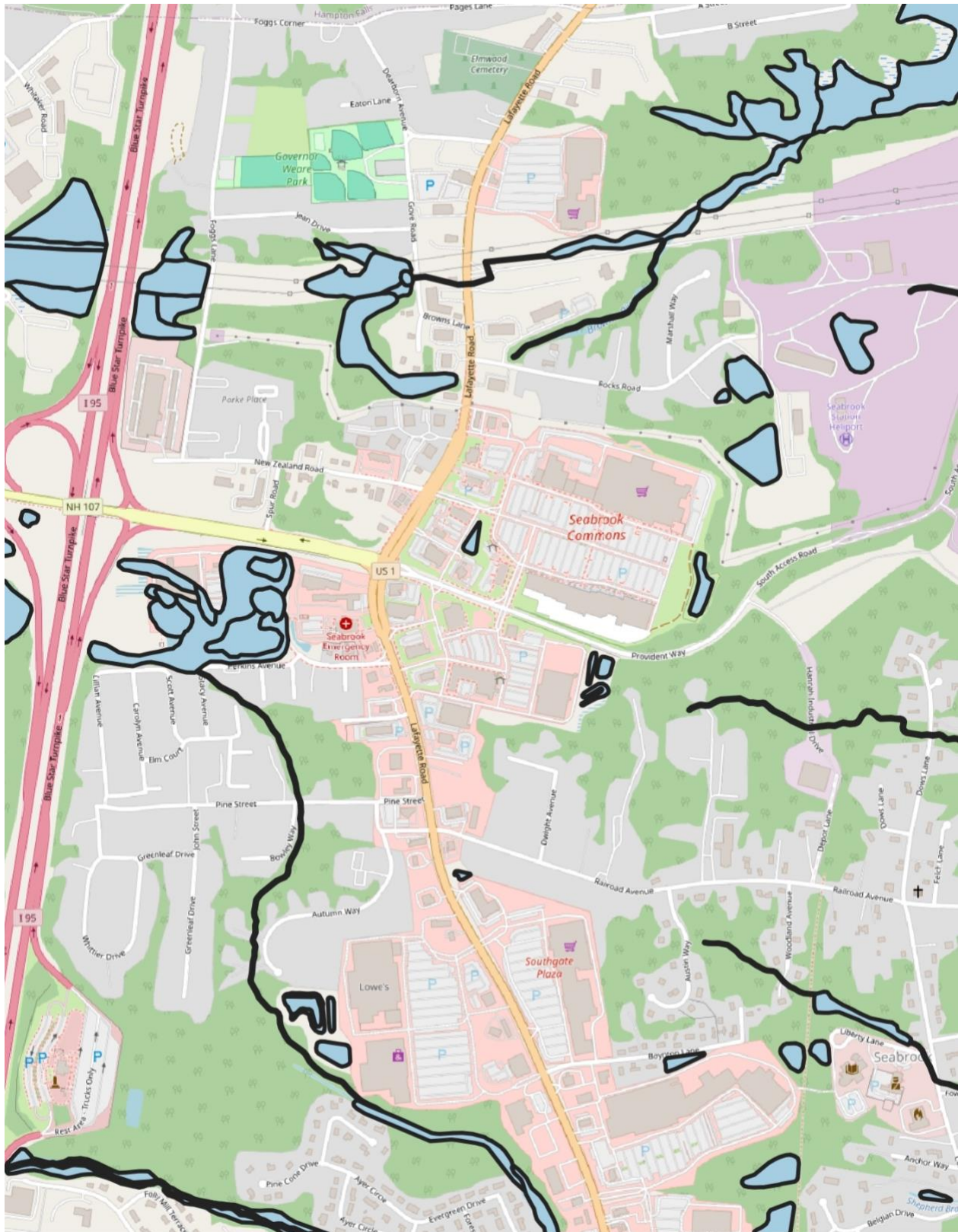
Wetlands have been mapped statewide using the criteria of the US Fish and Wildlife Service through the National Wetland Inventory Program. These wetlands include marine, emergent and palustrine wetland types. The marine wetlands are related to the subtidal and intertidal environment and in Seabrook are primarily tidal marsh.



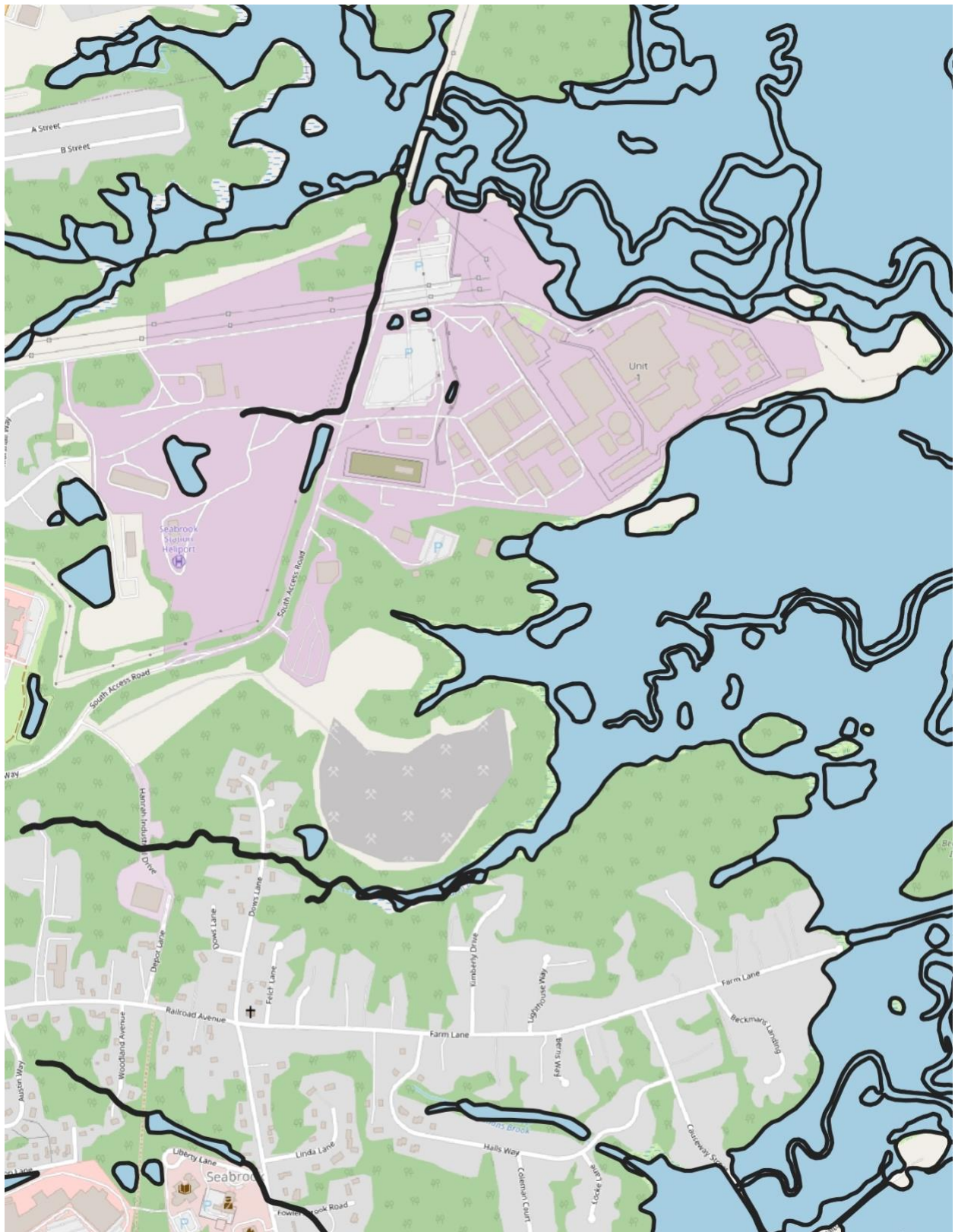
Map 4. Wetlands in western Seabrook. Source: National Wetlands Inventory, US Fish & Wildlife Service.



Map 5. Wetlands in west-central Seabrook. Source: National Wetlands Inventory, US Fish & Wildlife Service.



Map 6. Wetlands in vicinity of the Route 1 Corridor. Source: National Wetlands Inventory, US Fish & Wildlife Service.

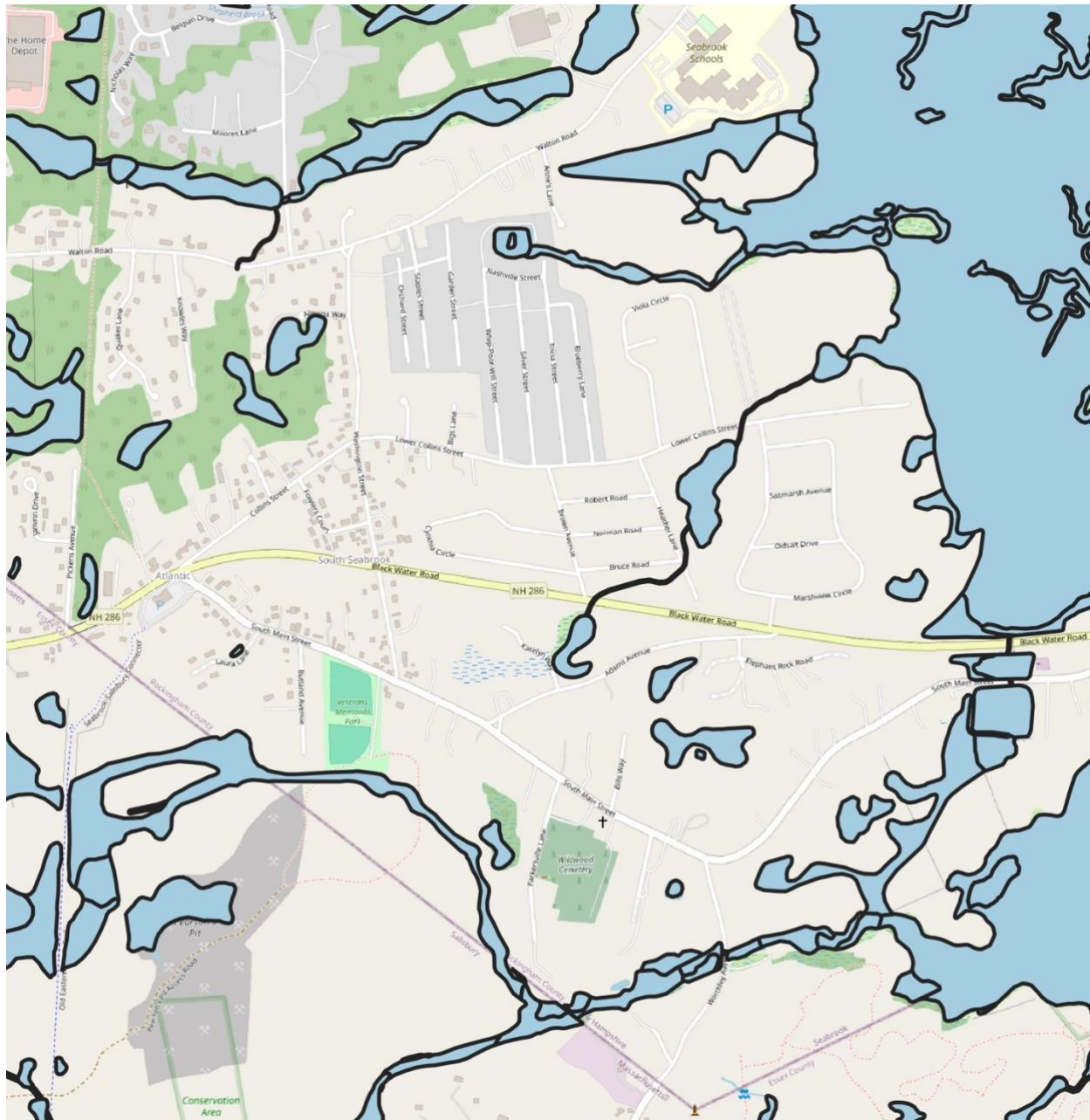


Map 7. Wetlands in the vicinity of Seabrook Station. Source: National Wetlands Inventory, US Fish & Wildlife Service.

Emergent wetlands are often transitional wetlands that include such vegetation as bulrushes or salt marsh cord grass between the estuarine and riverine wetlands and

may be submerged frequently during the year. Palustrine wetlands include all non-tidal wetlands dominated by trees and shrubs.

The Seabrook Zoning Ordinance addresses setbacks, vegetative cutting and setbacks to streams and ponds.



Map 8. Wetlands in South Seabrook. Source: National Wetlands Inventory, US Fish & Wildlife Service.

The Estuary

The Hampton-Seabrook Estuary includes the largest contiguous area of salt marsh and tidal flats in New Hampshire and sits at the northern edge of a salt marsh complex that extends as far south as Cape Ann.

The estuary is estimated to comprise over 5,000 acres with approximately ½ of that in Seabrook. The salt marsh is estimated to be approximately 3,500 acres of which there is about 1,730 acres in Seabrook. Seabrook's 2000 Master Plan has an extensive discussion of this resource and its value to the Seabrook and the state of New Hampshire. The salt marsh is rich in marine aquatic life including shellfish and a variety of finfish.

Shellfish

There is a variety of shellfish in the estuary, especially at the edge of the salt marshes and within the exposed mudflats. Softshell clams and blue mussels were historically taken on a commercial basis but more recently on a recreational basis. For a period during the 1980's and 1990's these beds were closed due to high coliform counts. The state has made a significant effort to address the coliform contamination and now the beds have been opened up on a periodic basis depending on the bacterial level and abundance of shellfish. Other shellfish

within the estuary include lobsters, rock crabs, hermit crabs, starfish and numerous snail species.

anecdotal evidence of the decline of some key indicator species such as winter flounder.

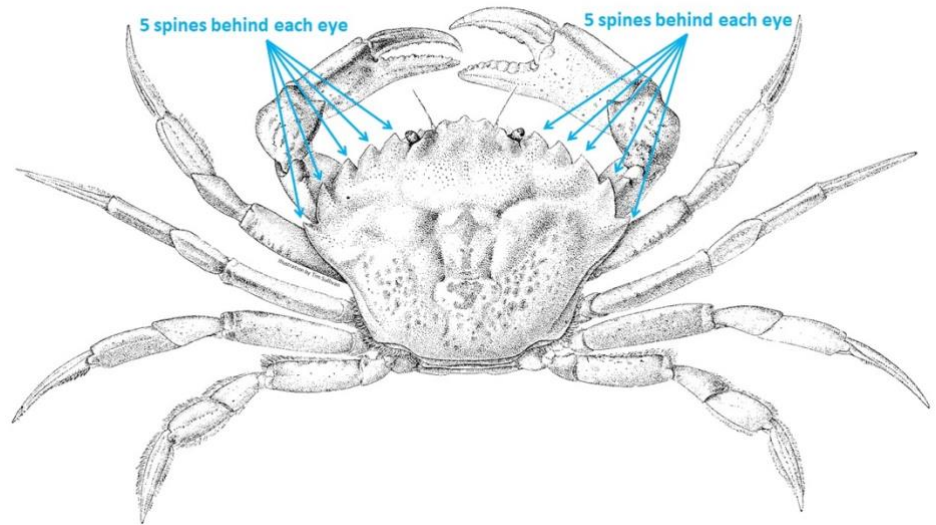


Illustration 1. Green Crab (*Carcinus maenas*), courtesy of Tim Sullivan, National Oceanic & Atmospheric Administration.

The Green Crab (above) is found in the estuary. This invasive species is harvested for consumption at local restaurants.

The Department of Biological Sciences at UNH undertook a limited research study from July through October of 2004 that

Finfish

The Seabrook Estuary including the tidal streams are an important breeding ground for many species of finfish. The NH Fish & Game Department and the former Public Service of New Hampshire (PSNH) documented forty different species. These include blueback herring, smooth flounder, white perch, rainbow smelt, winter flounder and hake.

Due to limited sampling of finfish, there tends to be only

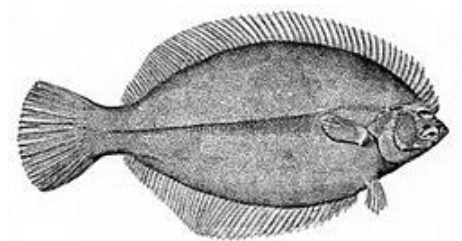


Illustration 2. Winter Flounder (*Pseudopleuronectes americanus*), courtesy of Wikipedia.

involved sampling and analysis of fish and macro-invertebrates in the Hampton Seabrook Estuary. The study concentrated on winter flounder. Since there were

no previous baseline studies of a similar type, the study did not address the relative size of the marine life and winter flounder populations. However, it did determine that the most populous grouping by age of this finfish species was the young juvenile group in their first two years. The study concluded that:

The estuary functions as a nursery. For that reason, it is imperative this essential fish habitat is recognized and protected

Birds

Several species of shorebirds use the marsh as a stopover habitat during migration. These include the Piping Plover (see below) and the Sandpiper.⁴



Photo 8. Piping Plover (*Charadrius melodus*), via Pixabay.

Two bird species that frequent the saltmarsh are the Saltmarsh Sparrow and Nelson's Sparrow.

Shorebirds prefer two areas of the estuary for foraging: 1) The extensive mudflats at the southern end of Hampton Harbor and at the mouths of Mill Creek and Brown's River, and 2) The freshwater or brackish pools along the northern end of the estuary.

The estuary is an extremely valuable and productive resource that supports a diversity of wildlife habitat. However, it remains vulnerable to human impact, both direct and indirect. The estuary is vulnerable to the indirect impacts of sediment and pollutants carried by streams that discharge into the marsh.

Floodplains

Floodplains are typically adjacent to rivers, streams and surface water bodies

that are susceptible to flooding during periods of excessive stormwater runoff. The Federal Emergency Management Agency (FEMA) prepared Special Flood Hazard Area maps for Seabrook for the purpose of identifying the extent of the 100-year flood zone.

Dams

There are fourteen (14) dams in Seabrook. Some of these are for stormwater detention associated with commercial development, e.g. Lowes and Home Depot. The New Hampshire Water Resources Board. The Board is responsible for regulating all structures in waterways that are four or more feet in height.

Each dam is rated by the Dam Bureau for potential hazards. A Non-Menace structure means that a dam failure would not result in probable loss of life or property. A Low Hazard structure means a dam with low hazard potential the failure of which would not result in possible loss of life and low economic loss to structures or property. A Significant Hazard structure means that a failure or improper operation would result in no probable loss of life, but major economic loss to structures or property. High Hazard means that a failure or improper operation would result in probable loss of human life and major economic loss to structures

or property. The board identified no high hazard dams in Seabrook.

The heights for active dams range from 10 feet for the Secord Pond Dam to 2.5 feet for the Cains Pond Dam at US Route 1. The Noyes Pond dam was seriously damaged along the emergency spillway during the Mother's Day storm of 2006 and has not yet been repaired. The Cains Brook Watershed Plan recommends that the town fund and install a nature-friendly spillway that retains the pond's integrity while allowing for fish passage upstream.

Groundwater

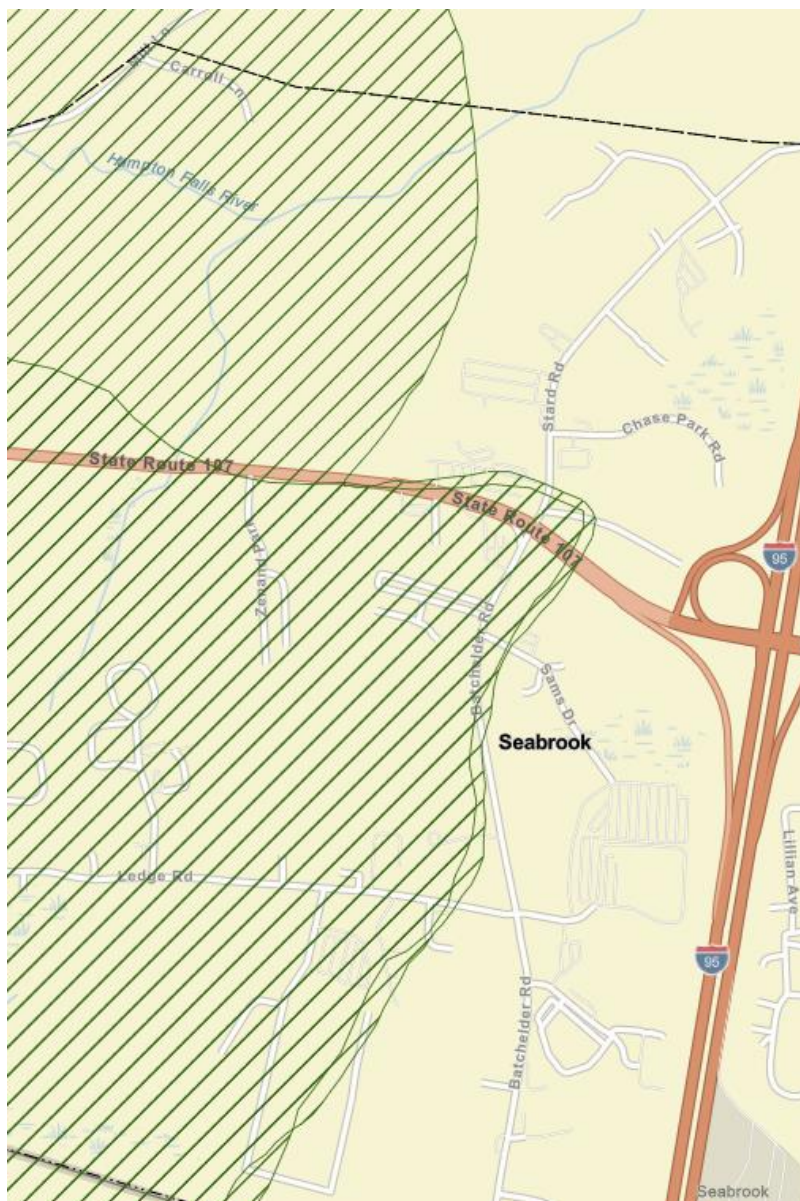
Groundwater occurs in openings in bedrock or pores in surficial materials. Although water can be withdrawn from bedrock, glacial till or stratified drift deposits, the most significant amounts of groundwater in New Hampshire and Seabrook are usually found in stratified drift. A 1992 report by the US Geological Survey (USGS) on hydrogeologic investigations identified one primary stratified drift aquifer located within Seabrook, in the western portion of town.

Groundwater yield is rated by the transmissivity of the stratified drift. Transmissivity is measured in feet squared per day and the USGS has classified yield

into four categories: less than 1,000, 1,000 to 2,000, and 2,000 to 4,000 and greater 4,000. There is a relatively large area west of I-95 that is rated at between 2,000 to 4,000 square feet per day with much of the aquifer rated at 1,000-2,000 square feet per day. There are several pockets of secondary groundwater

resources in southern Seabrook near the Massachusetts border that are rated at 1,000 to 2,000 square feet per day per day.

These groundwater resources are Seabrook's sole source of potable water. The long-term protection of this resource is critical to the Town's future.



Map 9. Depiction of 400-foot wellhead protection buffer.

The New Hampshire Department of Environmental Services (NH DES) requires a 400-foot (radius) wellhead protection area around the community's wells, as shown above.

Surface Water Quality

New Hampshire establishes water quality classification for all rivers and streams in the state, both freshwater and tidal. The classifications range from Class A, the highest to Class D, the lowest. Seabrook's streams are all rated Class B.

Class A streams are potentially acceptable for water supply use after disinfection. No discharge of sewage, wastes or other

polluting substance into waters of this classification. The quality is uniformly excellent.

Class B is considered acceptable for swimming and other recreation, fish habitat and, after adequate treatment, for use as water supplies. No disposal of sewage or wastes unless adequately treated. Class B has high aesthetic value.

Associated with each of these classifications are standards for chemical and biological constituents. The surface waters of Seabrook, and in particular Cains Brook, do not meet all of the standards of these two classifications.

In order to determine how well each water body

categories, such as fish compares to the standard, the NH DES has identified consumption, wildlife, recreation and drinking water. For each of these categories NHDES has specified a particular indicator to measure the adequacy of the water body to support the use. In the case of fish consumption for example the indicator is mercury, while for shellfish it is fecal coliform.

In general, the estuarine waters within Seabrook are impaired and do not support fishing and the harvesting of shellfish.⁵ Post-storm fecal concentrations were particularly high at Mill Creek, indicating a chronic source of bacteria within the Cains Brook/Mill Creek tributary.



Photo 9. Looking east from Farm Lane.

Potential Threats to Water Resources

Non-point source pollution is a threat to surface and groundwater resources particularly where storm water runoff is not properly managed. This runoff may contain sediment and other pollutants such as fertilizer and herbicides from lawns and gardens, as well as oils, greases and heavy metals from parking areas that enter the ponds, lakes, streams and aquifers of the town.

The NH Bureau of Hazardous Waste maintains a statewide inventory of sites that may have hazardous waste or petroleum products associated with them that may pose a threat to water resources. In Seabrook, the agency listed numerous such sites, although a number of these are closed and no longer pose a problem. As of 2026, there were 8 active underground tanks and 8 deactivated tanks in Seabrook.

Household hazardous substances are another threat to water quality. To address this challenge, Seabrook is a participant in twice-yearly household hazardous waste collections where every resident can gather up unused

chemical products and transport them to Exeter for safe disposal. If we are to protect water quality in the estuary, it is important to manage these waste materials in a responsible manner.

2025 Household Hazardous Waste Collection



When: Saturday October 4, 8:00AM-12:00PM

Where: Exeter Public Works Garage, 13 Newfields Rd.

Participating Towns: Exeter, Stratham, Newfields, East Kingston, Epping, Seabrook, South Hampton

Registration Required: <https://publicinput.com/exeterhhw2025>

ACCEPTED ITEMS: oil based paint, solvents & thinners, adhesive, household cleaners, pesticides, antifreeze, automotive products, used motor oil, aerosol, gas, diesel, kerosene, rechargeable batteries, automotive batteries, herbicide, fertilizer, sealant, mercury containing products, pool chemicals



Photo 10. Planning Board site walks such as the one depicted above in 2023 are provide town officials with important insights into water resource protection.

The Nature Trail

The Friends of Seabrook Community (FOSC) recently planned and constructed a nature trail on a 17-acre Town-owned parcel situated along the salt marsh between Lower Collins Street and Route 286. The property was formerly the Ol' Adams Campground.

Future plans include an expansion of the trail network, marsh observation platforms, exercise equipment, and plaques that identify local birds.

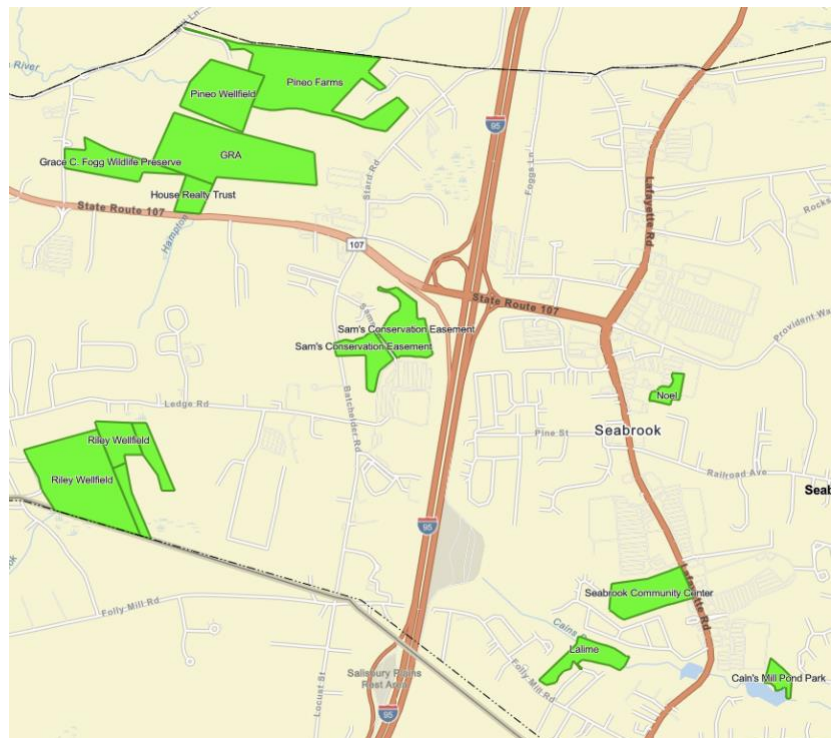
The Nature Trail is an exemplary and far-sighted example of a volunteer-led initiative that provides community residents with access to diverse natural resources that are situated close to home.



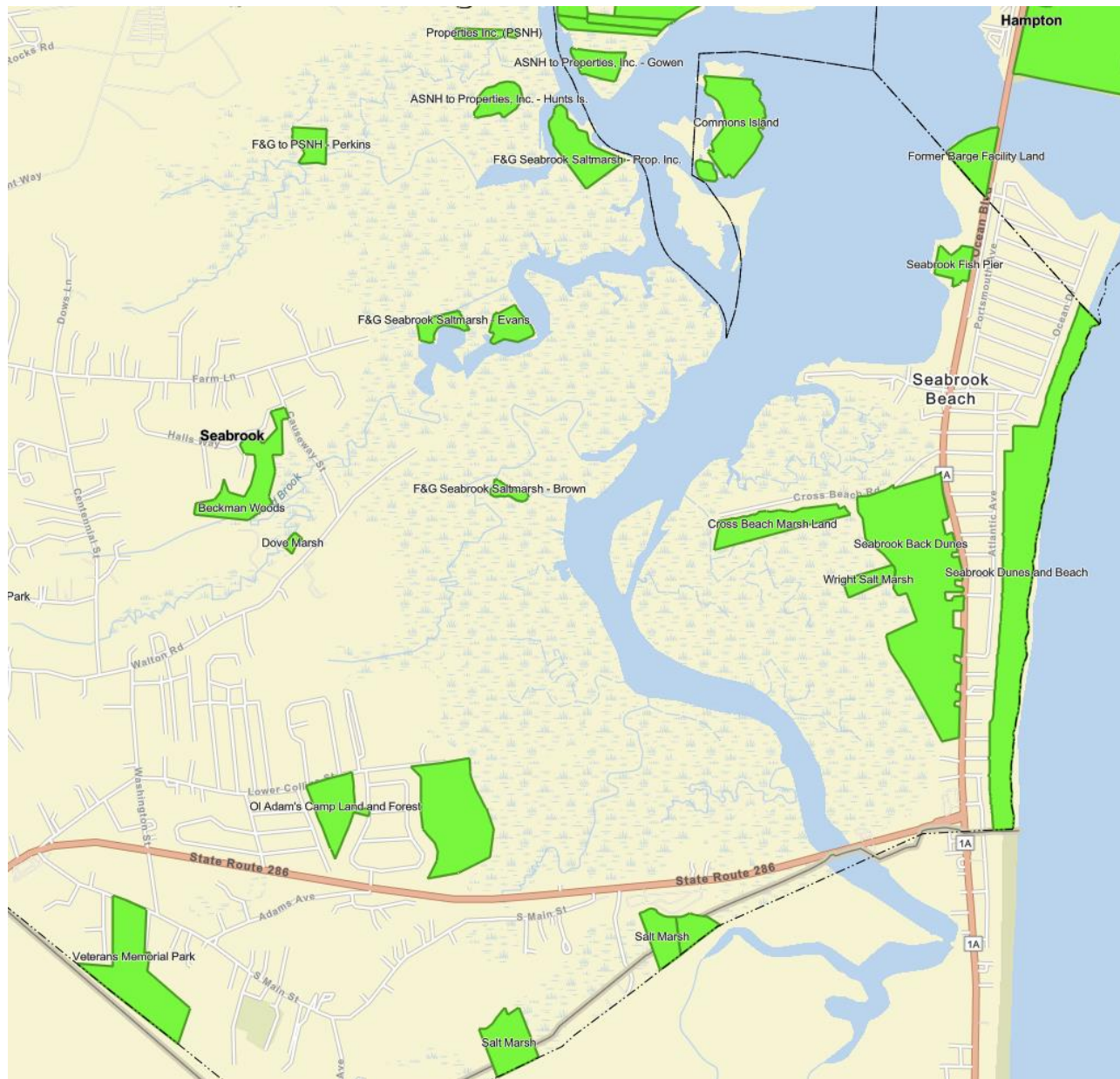
Photo 11. Friends of Seabrook Community building the nature trail off Lower Collins Street. Photo courtesy of John Carty.

Protected Lands

Protected land is that which is held in fee simple ownership or conservation easement by the town, state, federal agency or a non-profit conservation agency for the purpose of conservation. In Seabrook there are a total of 450.6 acres of protected lands of which 316 are in fee ownership, while 134.6 acres are protected by easement. Much of the protected land includes Seabrook Beach and the dunes as well as a parcel west of the turnpike for the protection of groundwater resources.



Map 10. Protected & public lands in central Seabrook.



Map 11. Protected & public lands in eastern Seabrook.

Useful Studies

Seabrook/Sun Valley Beach Management Plan

In 2004 the town completed a beach management plan to provide a “comprehensive long-term restoration and management plan for the

entire town-owned area of Seabrook Beach”. The plan undertook a comprehensive inventory and analysis of beach and dune resources and reviewed numerous strategies for the long-term

management and maintenance of this valuable resource. The Plan provides strategies and guidance for local planners in both Seabrook and Hampton and regulators with NH DES

Wetlands Bureau to manage the beach and dune environment in a responsible manner. These include:

- 1) Installing sand fencing during the winter season to minimize windblown sand onto shorefront homes.
- 2) Removal and regrading of dune sand that has encroached on certain properties.
- 3) Using harbor dredging material to replenish the beach and,
- 4) Continuing to implement the Piping Plover protection program.

With final local approval for the plan the DES Wetlands Bureau can issue a general permit that will allow for activities to occur that are consistent with the management plan.



Photo 13.

Cains Brook & Mill Creek Watershed Management

In 2006 the Conservation Commission adopted the *Cains Brook/Mill Creek*

Watershed Management Plan. The plan is intended to achieve a vision for the watershed that provides for:

- 1) Protecting land and water resources,



Photo 12. Welcome Sign, Seabrook Beach Precinct.

- 2) Managing growth and development, and
- 3) Ensuring opportunities for public use and recreation.

Since the adoption of the plan, the commission established a watershed planning process in concert with the NH DES consistent with EPA's nine criteria for watershed planning. This process has provided the opportunity for additional funding through the EPA 319 program to help restore the natural resource and recreational values of the watershed, including the dredging of Cains and Cains Mill Pond.

Watershed Action Plan

The Cains Brook Watershed action plan provides a

blueprint for managing the use of the watershed in manner that allows for development that is sensitive to the natural resources of the watershed while protecting and enhancing its

critical resource areas and recreational opportunities. The plan aims to achieve the following goals.

- 1) Improve the water quality of Cains Brook/Mill Creek to meet New Hampshire water quality standards including shellfish standards for E.coli bacteria.
- 2) Improve the management of stormwater runoff in an effort to protect water quality and reduce peak stormwater flows.
- 3) Provide suitable recreational opportunities that are directly related to the waters of Cains Brook.
- 4) Build community support for the protection and enhancement of the land and water resources of the Cains Brook Watershed.

5) Preserve, protect and restore critical anadromous and freshwater fisheries, wildlife habitat and migration corridors, and rare and endangered species.

6) Provide for long-term health and environmental quality of Cains Brook and Mill Creek by ensuring that the Watershed Plan's goals are continually met.



Photo 14. Inland marsh, Seabrook. Seen here is an invasive species, *Phragmites australis*.

The Conservation Commission has sponsored annual monitoring of Cains Brook, the placement of storm drain plates with a fish image discouraging dumping into the storm drain, the installation of

a stormwater treatment device near the pond to capture pollutants from US Route 1 and the dredging of Cains Pond in 2010.

Conservation of Salt Marsh and Transition Zones Program

The Rockingham Planning Commission (RPC) provided technical assistance to the town to develop a land conservation strategy for salt marsh and uplands abutting salt marsh (called transition



Photo 15. The Sarah Kelley (in foreground) at Seabrook Harbor.

zones). The areas selected for conservation provide critical habitat for wildlife and provide flood storage and hazard mitigation for landowners. Sixty-two parcels totaling approximately 993 acres were identified. The RPC is working with land conservation organizations to identify conservation opportunities.⁶

The parcels are also identified in several reports as important habitat areas, including the *Land Conservation Plan for NH's Coastal Watersheds* (2006).

Estuary Management Plan

The Seabrook-Hampton Estuary Alliance (SHEA) commissioned a management plan for the estuary that was FB Environmental and published in 2023. The plan examines existing conditions and regulations, assesses future threats, establishes a vision for the estuary's future, and concludes with several dozen recommendations and management strategies that are consistent with the protection of Seabrook's natural resources.

Other Useful Studies

The Nature Conservancy (TNC) Connect the Coast (2019).

TNC's NH Coastal Watershed Plan (2021).

NH Fish & Game (NHFG) NH Wildlife Action Plan (NHWAP).

NHFG's Habitat Profiles (2025).

Rockingham Planning Commission (RPC) Seabrook Public Dune Walkway Assessment (2025)

RPC's Advancing Resilience in the Hampton-Seabrook Estuary (2025).

Recommendations

Public Access

1) Support FOSC's efforts to expand and enhance the Lower Collins Street Nature Trail.

2) Explore opportunities to expand trail systems, access points, and scenic viewing locations elsewhere in town.

3) Maintain designated public access ways at the beach.

4) Provide sitting benches in strategic locations near the coast and barrels for litter disposal.

5) Improve, protect, and encourage public access to

Seabrook's surface waters and open space lands.

6) Assess the condition of all public access points in the watershed. Prioritize access points that need improvement.

7) Create and publish a public trail and access point watershed map to post at kiosks. Include types of seasonal trail use, including walking/jogging, horseback riding, and bicycling.

Collaboration

8) Coordinate with state agencies and local natural resource non-profits such as NH Audubon and SHEA to support fish and wildlife assessment and monitoring projects.



Photo 16. Farm Lane boat ramp.

9) Coordinate with the US Fish and Wildlife Service on the plover nesting protection program.

10) Work with the state to have dredge materials from periodic dredging of Hampton-Seabrook Harbor placed on Seabrook Beach.

11) Work with landholders in the upland buffer areas of tidal wetlands to preserve and protect these resource areas.

12) Monitor water quality at appropriate locations along streams and within the estuary in cooperation with personnel from NH DES.

13) Work with NH DES to identify sites can be used to fulfill the requirement for compensatory mitigation as part of wetland permits.

14) Coordinate with the Army Corps and the NH Dredge Management Task Force to better understand the beneficial use of dredged sediments. Continue to complete dredging projects from November to June of each year to avoid shorebird disturbance during critical breeding times.

Stewardship

15) Provide spring and fall beach clean-up and regrading programs.

16) Re-establish Cains Pond and Cains Mill Pond as high quality open space and recreation areas.

17) Restore ditched portions of the salt marsh.

18) Protect the salt marsh and adjacent upland to maintain habitat connectivity, minimize external man-made impacts and allow for adaption to sea level rise.

19) Preserve marsh pools used by roosting or foraging shorebirds.

20) Upgrade infrastructure that is negatively impacting water quality.

21) Control the expansion of phragmites populations.

22) Prioritize and implement bank stabilization through living shorelines.

23) Restore key migration areas to a natural condition.

24) Conserve existing natural buffer areas.

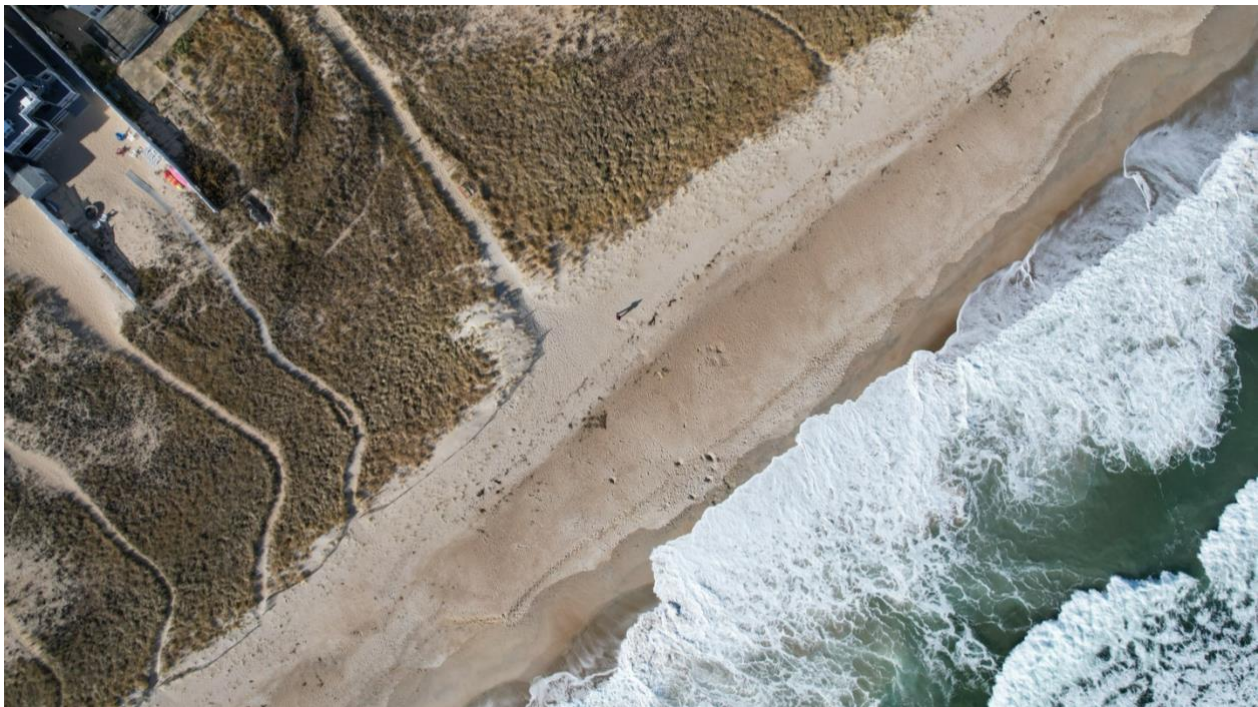


Photo 17. Seabrook Beach.

25) Continue dune management to identify vulnerable dune areas and best options for protecting and enhancing dunes. Options include renourishing sand from dredged sources, planting beach grass or shrubs, erecting fencing, and defining dune paths to corral foot traffic.

26) Improve designs for dams, culverts, and bridges to maintain existing function and reconnect fragmented surface waters and protect high quality habitat for aquatic organisms.

27) Commence stewardship of fee-owned conservation lands, by documenting and mapping the property's natural resource values and features, determining management goals through a management plan, secure funding or other resources for stewards, and institute a long-term monitoring program.

28) Vernal pools are a critically important habitat for several amphibian species, and for that reason, they should be protected.



Photo 18. Stormwater Outfall #2.

Examine Municipal Practices

29) Review road and drainage maintenance currently used and determine areas for improvement.

30) Review and update winter operations procedures to be consistent with Green SnowPro best management practices for winter road, parking lot, and sidewalk maintenance.



Photo 19. Seabrook salt marsh, 100 yards south of Cross Beach.

31) Review and optimize MS4 compliance for all towns including infrastructure mapping, erosion and sediment controls, illicit discharge programs, and good housekeeping practices. Sweep municipal roads and parking lots two times per year (spring and fall).

32) Adopt policies to either eliminate fertilizer applications on town properties or implement best practices for fertilizer management. Consider extending these regulations to private properties as well.

33) Enhance nitrogen removal capacity at the wastewater plant.

34) Address disturbance-related threats impacting shorebirds, dogs, harassment, beach raking, and coastal engineering.

35) Evaluate and apply sediment application techniques, where feasible, to maintain tidal marsh systems.

36) Increase funding for land conservation, land management programs, and land stewardship activities. Identify potential conservation buyers and property owners interested in easements within the watershed. Utilize available funding mechanisms, such as the Regional Conservation Partnership Program (RCPP) and the Land and Community Heritage Investment Program (LCHIP), to provide conservation assistance to property owners.

Regulatory

37) Amend the zoning ordinance to require a buffer area adjacent to tidal wetlands that limits allowable uses and activities to minimize impacts on tidal wetlands and salt marsh. For example, limit the use of fertilizers within 50 feet of surface waters.

38) Adopt a local Shoreland Protection Overlay District that is consistent with the NH Comprehensive Shoreland Protection Act (CSPA). This ordinance should include provisions requiring all structures to be set back a minimum of fifty (50) feet from all surface waters through the designation of a riparian buffer. The ordinance should also limit impervious cover, minimize vegetative disturbance and prohibit certain uses that may cause significant pollution to the town's ground and surface waters.

39) Strengthen the Aquifer Protection Overlay District provisions to include specific requirements and standards for activities within the district. Such standards could address impervious cover, infiltration, storm water treatment, and

40) Amend the earth excavation regulations to be consistent with NH's *Earth Materials Removal* law (RSA 155-E).

41) Establish a Density Transfer System that would encourage a developer to

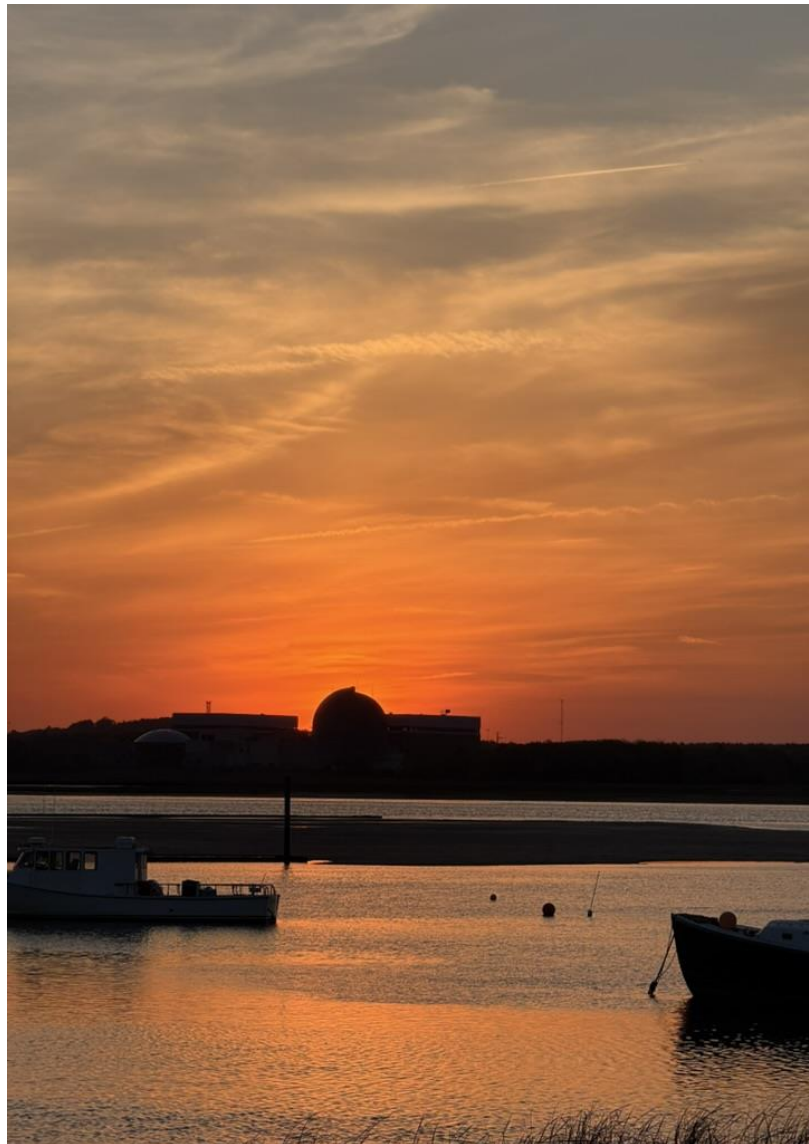


Photo 20. Sunset at Seabrook Harbor.

provisions for a Planning Board option to require a hydrogeologic study.

transfer development rights from a more rural portion of the town to an area that

would allow for higher density such as a village district or higher density residential area. The developer would place the rural land area in permanent open space.

42) Review the town's Wetland Regulations to determine if they are providing adequate protection for the town's wetlands.

43) Promote low impact development (LID) and green infrastructure.

44) Establish a marsh migration overlay zone to prohibit new development in areas of predicted marsh migration.

45) Increase buffers and structural setbacks to 100 ft for all waterbodies.

Implementation

46) Implement the recommendations of the *Cains Brook/Tide Mill Creek Watershed Management Plan*. Where appropriate apply similar actions to other small watersheds in Seabrook such as the Gove Brook/Hampton Falls River and the Browns River Watersheds.

47) Consider implementing the management strategies recommended by SHEA's Estuary Management Plan.

48) Remove barriers to fish passage and improve aquatic habitat where possible. Barriers include active or remnant dams and culvert constrictions.

50) Adopt The Land Conservation Plan for New Hampshire's Coastal Watersheds. Use it to establish a consistent framework for land conservation in the coastal watersheds area. Protect land through acquisition of conservation easements or fee simple ownership, especially the Core Areas identified within the Conservation Focus



Photo 21. Wetlands in front of the former Sam's Club off of Batchelder Road.

Areas. Regulate the location, density, and design of development within Conservation Focus Areas to minimize harmful impacts while allowing for a reasonable level of development.

Education

51) Encourage businesses and landowners to employ Best Management Practices to treat stormwater runoff.

52) Promote boater education related to proper waste disposal methods, spill prevention and clean up, environmentally sensitive maintenance activities (paint and hull scrapings), marine animal observation safety, and marine debris reduction.

53) Reduce pet waste entering tributaries and the estuary through town ordinance and education, signage at key dog walking areas, hand-outs at time of annual dog registrations, waste bags and receptacles.

54) Continue educational efforts to increase awareness of the negative effects of invasive species.

55) Employ best management practices (BMP) for new or existing shoreline

development such as bank stabilization techniques and vegetation restoration (i.e., living shorelines) as alternatives to shoreline hardening.

55) Minimize residential dumping in the saltmarsh through public outreach and programs including enhanced leaf and yard waste collection, spring clean-up, and hazardous waste collection.

56) Install information kiosks at highly trafficked access points. Post helpful information about the estuary and its value. Encourage people to be mindful of not disturbing wildlife, particularly shorebirds.

57) Provide information to property owners about living shorelines and the importance of retaining the functions of natural shorelines and implementing landscaping best practices.

58) Engage with residents living along or adjacent to the salt marsh to see the salt marsh as an ecosystem service for storm surge protection.

59) Distribute information on coastal resiliency and other important estuary protection activities or needs through a variety of formats including mailed or posted pamphlets, newsletters or postings online (social media, town websites), workshops or meetings.

60) Organize and publicize regular environmental clean-up events to increase awareness of environmental issues.

waste, marine debris, and human wastewater. Develop and implement a marine debris reduction plan for the estuary and harbor.



Photo 22. Boardwalk to Seabrook Beach.

61) Continue to work with students at Seabrook Middle School on a long-term water quality monitoring project in the Cains Brook-Mill Creek watershed.

Planning

62) Develop a Comprehensive Open Space Protection Plan that would reserve key natural features such as ponds, streams, rivers, quality views, fresh-water and tidal wetlands, and other valuable open space areas that contribute to Seabrook's character.

63) Establish a list of key properties and areas suitable for purchase or easement to protect shoreline areas.

64) Review and improve the environmental sustainability of harbor operations related to the handling of hazardous

65) Incorporate high priority tidal crossings into town planning documents to target funding for eventual replacement. Work with partners to advance moderate and high priority tidal crossings through feasibility, engineering, permitting, and construction.

66) Develop a shellfish management plan that details use of BMPs for restoring and maintaining sustainable shellfish populations for aquaculture, recreational, and commercial harvesting.

67) Conduct an evaluation of freshwater wetlands to identify potential mitigation opportunities that will enhance water quality and habitat and other wetland functions.

68) Prioritize land conservation initiatives in areas of predicted marsh migration. Initiatives include identifying and purchasing high risk land for preservation or restoration in support of retreat. Potential conservation land was identified by SHEA. Compare and update SHEA's work to the NH Plan for Resilient Salt Marshes.

69) Update rare plant and exemplary community surveys.

70) Development a management plan for the Town Forest.

Maps

The Rockingham Planning Commission has generated a series of maps that are useful in assessing Seabrook's natural resources.

The maps are as follows:

[Agricultural Resources](#)

[Conservation & Public Lands](#)

[Conservation Priority Areas](#)

[Elevation Contours](#)

[Impaired Water](#)

[Impervious Surfaces](#)

[Land Use 2015](#)

[Soil Potential for Development](#)

[Stratified Drift Aquifer](#)

[Surface Water Resources](#)

[Wildlife Action Plan 2015](#)

End Notes

¹ Soil types are derived from the *Soil Survey of Rockingham County, New Hampshire*, produced by the US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS).

² New Hampshire's Changing Landscape, The Society for Protection of New Hampshire Forests and the Nature Conservancy, 1999.

³ A more thorough discussion of these ponds and the other ponds on the Cains Brook Watershed can be found in the *Cains Brook/Mill Creek Watershed Plan*, updated 2006.

⁴ "Avian Use of the Hampton-Seabrook Estuary," NH Audubon, 2007.

⁵ *Cains Brook/Mill Creek Watershed Management Plan*, 2007.

⁶ The parcels were also identified in several reports as important habitat areas, including the *Land Conservation Plan for NH's Coastal Watersheds* (2006 TNC), the *NH Fish and Game Wildlife Action Plan* (2005), and the NH Audubon report *Avian Use of the Hampton Seabrook Estuary* (2008).