

Vegetation

General landscape

The Society of American Foresters has classified New England into six Natural Forest Vegetation Zones, all of which can be found in Massachusetts. Zone 4: Central Hardwoods/Hemlock/White Pine is the primary forest type found in Norton. Trees in this zone include black, red and white oaks, shagbark and butternut hickories. Red maple, chestnut oak, scarlet oak and black birch are also common. Hemlock is the most common softwood in this zone and white pine is abundant on sandy soils.

General types of vegetation found throughout Norton, not including the previously discussed wetland vegetation, include White Pine-Oak Forest, Successional White Pine Forest, Dry Rich Acidic Oak Forest, Mixed Oak Forest and Oak-Hickory Forest. Descriptions of these community types are also taken from the Classification of the Natural Communities of Massachusetts by Patricia C. Swain and Jennifer B. Kearsley, Natural Heritage and Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, Westboro, MA, DRAFT 2000.

White Pine-Oak forest is a forest of mixed oaks and pines found on moraines or areas of till. Such areas are dry and have acidic soils. Vegetation includes eastern white pines, red oak, white oak, scarlet oak, black oak, chestnut oak, pitch pine, red maple, black and white birches, pignut hickory, sassafras, American chestnut, low-bush blueberries, huckleberries, mountain and sheep laurels, maple-leaf viburnum, wild sarsaparilla, Canada mayflower, wintergreen, partridgeberry, pink lady's slipper, and cow-wheat. The Great Woods, comprising over six- hundred acres of forest and wetlands in Norton and Mansfield is probably the second largest tract of privately owned undeveloped woodland in southeastern Massachusetts. The Town of Norton Conservation Commission, the Land Preservation Society of Norton and the Norton Historical Society own a total of about 200 acres, for open space and historical purposes within the Great Woods. There are also public and private parcels in Great Woods in Mansfield, which are held for conservation purposes. Regional efforts to preserve land to connect open space parcels in both towns are ongoing.

Successional White Pine forests can be found in old agricultural fields, pastures and land that have been logged. It is similar to the white pine-oak forest but the forest floor is littered with needles and little other herbaceous vegetation. Vegetation typically found in these forests include eastern white pine, red oak, white oak red maple, elderberry, black cherry, maple-leaf viburnum, buckthorn, honeysuckle and multiflora rose, blackberry, poison ivy, low bush blueberry, black huckleberry, Canada mayflower, eastern starflower, partridgeberry, clubmosses, and bracken ferns. Any former agricultural area in Norton is an illustration of this community type.

A *Dry, Rich Acidic Oak forest* is predominantly oak with a rich species diversity of herbaceous plants and grasses. This forest type can be found on steep, southwest-facing slopes. The slightly acidic soil is enriched with the downslope movement of nutrients and overwash. The tree canopy is comprised of red oak, white oak, black oak, sugar maple, red maple, white ash, and shagbark hickory. The shrub layer is usually sparse but may include flowering dogwood, hop-hornbeam, and maple-leaf viburnum. The herbaceous layer includes plants like perfoliate bellwort, four-leaved milkweed, early meadow-rue, false foxgloves, wild coffee, bush clovers, tick-trefoils and sedges. Some of the forested areas in the Three-Mile River watershed exhibit this vegetation type.

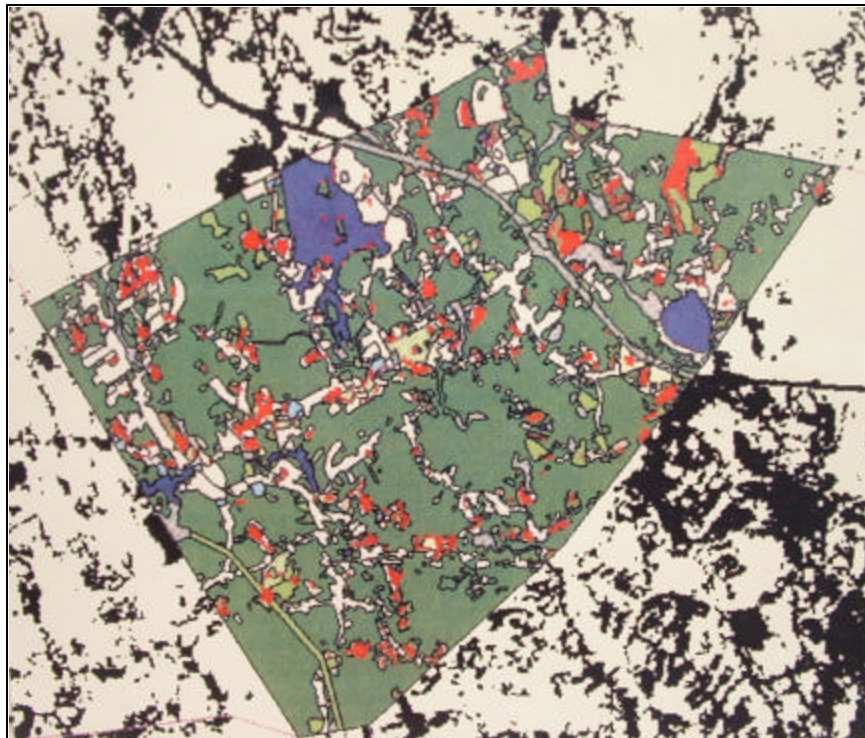
Mixed Oak forests are common on dry, acidic slopes with shallow well-drained soils throughout Norton. White oak, chestnut oak, red oak, black birch, black cherry, red maple, hemlock and white pine make up

the tree canopy. Beech and American chestnut are also common in smaller sections throughout the forest. The shrub layer contains witch-hazel, mountain laurel, lowbush blueberry, and maple-leaf viburnum. Groundcover includes Indian cucumber root, wintergreen, wild sarsaparilla, wild oats, eastern starflower and Canada mayflower. Portions of the Great Woods are made up of the mixed oak forest type.

The *Oak-Hickory forest* can be found on well drained, upper slopes with west or south-facing aspects. The canopy is dominated by several types of oaks including the red, white, scarlet and black oaks with a mix of pignut, shagbark and mockernut hickories, ash, black birch, sassafras and red maple, beaked and American hazelnut, hop-hornbeam, American chestnut, gray dogwood, tick-trefoil, goldenrod and wild sarsaparilla. The Woodward Woods, found between the Wading River and the Three-Mile River, off Taunton Ave or Gateway Lane contains examples of this type of community. The Land Preservation Society of Norton purchased this property and has preserved it for wildlife habitat.

Forest Land *updated 2010*

A large portion of the Town of Norton remains undeveloped, privately-owned forest. A surprising statistic is that over 368 private landowners each hold parcels of ten or more acres. Much of this land contains mixed hardwood and hardwood/coniferous forests. Clear-cutting of forested areas for residential or commercial development drastically alters wildlife habitat, increases air and water pollution and decreases the ability to harvest renewable wood products and provide recreational opportunities. The residents of Norton receive direct and indirect benefits from protecting forest lands. The American Farmland Trust completed a study in Massachusetts examining the economic impacts of land use. The study demonstrated that the cost of providing services to new residential developments



and commercial businesses is far greater than the benefits from the taxes that would be collected had the property been developed. Similarly, the study demonstrated that the agricultural and open space land cost the town less money in municipal services. Wheaton College professor Geoffrey Collins and students conducted a project to study the change in vegetation in Norton from 1984 to 1999. This map illustrates how the actions of many individual landowners can influence the overall vegetative and forest cover of a community. The red areas show loss of vegetation. The map was provided by Frances Shirley through the College.

The University of Massachusetts Cooperative Extension Program in Amherst also provides assistance to land owners through the Keystone Program (formerly the Coverts Cooperator Program). The Keystone Program was created to improve wildlife habitat through sound forestry management practices. Sponsored by the Ruffed Grouse Society, UMass Extension, Renewable Resource Extension Act, Massachusetts Forest Stewardship Program, Massachusetts Division of Fisheries and Wildlife, and the UMass Department of Forestry and Wildlife Management, the Keystone Program selects woodland owners and other citizens involved in their community's forests to attend a three-day educational training seminar in Petersham annually in the fall. Keystone Cooperators learn about forest management, improving wildlife habitat, stewardship, timber production and other methods of improving forested land for wildlife and recreational benefits.

The purpose of the training seminar is to empower individuals to become leaders in forestry and forestry issues in their respective communities. Participants learn to network with other Cooperators, resource professionals, and government entities and are encouraged to return from the seminar to their communities to share the knowledge they have received. At least two individuals have taken the seminar and are Keystone Cooperators in Norton. Jennifer Carlino, Norton Conservation Agent, and Frances Shirley, Land Preservation Society of Norton, have both completed the training and actively promote the ideals learned in the seminar.

Municipally protected forestland can be found on Plain Street adjacent to the Canoe River and is known as the Gertrude E. Cornish Town Forest. Residents of Plain Street researched the history of designated town forest lands within Norton. They found that extensive amounts of land were preserved at town meeting specifically as forest land. Some of that land has since been reclassified for schools or cemeteries. The Plain Street group found that several acres were even dedicated to Norton residents and that grants were obtained to plant trees on the property. A much more in-depth investigation should be done based upon the Plain Street group's initial findings to ensure that additional land is not reclassified. Town forest land is protected by Article 97 of the Amendments of the Constitution and should be properly designated to avoid any violation of that law. Also, the property that had been dedicated should be re-dedicated and proper signs should be posted identifying that forest land.

In 2009, the Open Space Committee received a \$4,500.00 grant to hire a licensed forester to prepare



Forest Stewardship Plans for Lincoln Woods Conservation Area (on King Philip Rd) and the Gertrude E. Cornish Town Forest (on Plain St). Gertrude Cornish is pictured on the left. The Lincoln Woods Conservation Area was hit hard by caterpillars in year's past. The intent of the forestry project is to salvage as much of the dead oak as possible, enhance wildlife habitat and begin to manage the forest. The Conservation Commission owns this land and has approved the project. The Gertrude Cornish Town Forest project will also enhance wildlife habitat but remove the potential hazards of pest or fire due to the same-age sized trees. This forest had been managed about 20 years ago but other management activities have not taken place since. The Selectmen manage this property and have designated the Tree Warden as their contact for this project. As part of the overall forestry project, Open Space Committee members prepared press releases and articles about forestry for the newspaper ranging from the items of a forestry management plan, wildlife habitat benefits

and Gertrude Cornish's unique proposal to designate land for forestry purposes years ago. A new revolving fund for all forestry projects was passed at town meeting so that revenue from forestry projects on town property will only be used for future forestry management or preparation of plans. The Open Space Committee received a second grant of approximately \$2,000.00 for the initial forest cutting project.

In the Summer of 2010, the Conservation Commission and Tree Warden put the forest cutting plans out to bid. Dan Reed won the bid for the cutting at the Town Forest and Warren Emerson won the bid for the project at the Lincoln Woods. As part of the public outreach project, posters were developed to explain why certain areas were cut and others left alone. They explain the types of forestry techniques used in the particular area where they are proposed. All posters are 8 ½ x 11 and laminated and hung along the main paths for residents to read as they hike the areas. Residents abutting the properties were notified for each cutting and the Board of Selectmen was updated at each stage of the project.



Damaged oak trees at Lincoln Woods.

Other forestry programs:

In addition to the programs described above, forest owners may participate in the Massachusetts Department of Conservation and Recreation's Forest Stewardship Program, which is funded by the US Forest Service. The program offers technical assistance and financial incentives to forest landowners to encourage good management practices and foster stewardship. Specific information on this program can be obtained from the Norton Conservation Commission office, any state forester, or the Mass. Department of Conservation and Recreation's Division of Forests and Parks.

Executive Order 193 (EO 193) was enacted to state that the disappearing agricultural practices of the State of Massachusetts are important enough to be protected. EO 193 requires that any agricultural land purchased or taken by eminent domain by a town or government agency for the purpose of any use other than an agricultural use must be replicated on a similar parcel of land. When the town purchased the Jackson Nursery, it was required to replace the agricultural land with another parcel under Executive Order 193. The Barrows Street land was then transferred from the Board of Selectmen to the Conservation Commission and an Agricultural Preservation Restriction (APR) was recorded on the deed. A Forestry Plan was completed by the State Forester to designate areas of the property for specific agricultural uses. The Farm Plan and the APR were approved by the Department of Food and Agriculture. The Conservation Commission tries to implement the plan through the volunteer efforts of scouts. Eagle Scout candidate Gordon Carr volunteered to implement one portion of that Forestry Plan. He and his fellow scouts cleared the apple orchard of weeds and poison ivy in the spring of 2004.

Public Shade Trees and Street Trees

Public Shade Tree Act (MGL Chapter 87)

Public shade trees include the trees within a public right of way or on the boundaries of the public way. Trees keep the road cool, making it more enjoyable to ride, walk or run. It also allows wildlife, like

turtles, frogs, toads and salamanders to cross from one side of the street to another without becoming dehydrated. An added benefit of a shaded road is protection of the road surface from scorching heat, cracking and cooling. A right of way may extend onto your property from the edge of the road or sidewalk and may contain public shade trees. Under this Act, a tree warden can be hired by a town to care and have control over all public shade trees, shrubs and other vegetation, except those within the state highway, as well as the public shade trees, shrubs and other vegetation within public parks and open space areas under jurisdiction of the park commissioners.

The Town of Norton does have a Tree Warden. The Norton Tree Warden is charged with the preservation of trees, shrubs and other vegetation. Public shade trees, shrubs and other vegetation cannot be cut, trimmed or removed without the obtaining the permission of the tree warden and a permit at a public hearing. The Norton Tree Warden shall also approve the proposed planting of all trees within the right of way. The tree warden may make regulations regarding the care and preservation of public shade trees and establish fines of not more than \$20.00 for violations. The Norton Tree Warden received a Grant from DCR to plant street trees along South Worcester Street.

Norton's street trees consist mostly of mixed oaks, red maple, eastern white pine, and some sycamore.



On which road would you rather walk?

Street Trees contributed by Paul Jahnige, Community Action Forester

Public road side trees, like other public utilities, provide significant benefits to the community. Our public trees provide shade, reduce summer temperatures, and can save on energy costs in nearby buildings. Trees and forests clean the air and water, and can reduce the costs of storm water management and flooding. A healthy "community forest" raises property values, attracts tourism dollars, and supports our local economy. Most importantly, public road side trees provide beauty, and contribute to our community's character.

Recognizing this value, public roadside trees are protected by Massachusetts General Law Chapter 87, which establishes the powers of the Tree Warden and insures that no public tree (other than an immediate hazard) can be removed without a duly posted public hearing. Chapter 40, section 15(c), also provides additional protections for trees on Scenic Roads. Like all public infrastructure, community

trees must be appropriately managed, cared-for and replaced in order for them to provide their full benefits.

Resources on forestry:

- The Forest Stewardship Source Book: Information and Services of Massachusetts Woodland Owners. S. Campbell, G. Cox, and H. Bowdoin. Massachusetts Forestry Association and Massachusetts Forest Stewardship Program. Revised January 1999.
- Forest Wildlife of Massachusetts: Cover Type, Size Class and Special Habitat Relationships. Richard M. DeGraff and David A. Richard. UMass Cooperative Extension.
- Massachusetts Forestry Best Management Practices Manual. David B. Kittredge Jr. and Michael Parker for the Massachusetts Department of Environmental Protection, Office of Watershed Management and the U.S. Environmental Protection Agency, Region 1, Water Division, Water Quality Section.
- Keystone Cooperators (formerly Coverts). David Kitteridge. Associate Professor/Extension Forester. Department of Natural Resources Conservation. Holdsworth Hall. UMass-Amherst. Amherst, MA 413-545-2943.
- National Arbor Day Foundation. www.arborday.org
- Tree City USA booklets are available by calling 402-474-5655
- Wheaton College professor Geoffrey Collins.
- Department of Food and Agriculture (APR Program)
- Paul Jahnige, Community Action Forester, Western and Central MA, MA Department of Conservation and Recreation, 40 Cold Storage Drive, Amherst, MA 01004, 413-577-2966. paul.jahnige@state.ma.us.
- Norton Assessor's Office

Agricultural land *contributed by Frances Shirley*

In the past Norton had numerous farms, some on rather poor soil, such as those in the Great Woods. The best farmland was along West Main Street and along Oak Street to the west, and along Newland Street near the Mansfield line and along East Main Street east of the Canoe River. At one time virtually all the land was farmed or divided into woodlots that could be worked when swampy land was frozen. Generally they were typical nineteenth-century mixed farms, with livestock pasture and crops, even in the center of town, where two bank barns still exist (Nos. 11 and 12 Mansfield Ave) and others have been moved or torn down. The ubiquitous stone fences in wooded areas mark the formerly cleared farmland. The most recent agricultural operations have been the Ulmer and Sousa market farms on West Main Street, now sold for development, and the livestock operations of Antonio Medieros on Richardson Avenue, now partially developed and mainly donated as preservation land. On East Main Street there is still the viable Houghton farm at Leonard Street and the Galloway operation has recently been started behind North Washington Street. The Daggat Crandall property on Newland Street is regularly hayed.

Wetland Vegetation

Types of wetland systems found in Norton include Alluvial Atlantic White Cedar Swamp, Red Maple Swamp, Alluvial Red Maple Swamp, Deep Emergent Marsh, Shallow Emergent Marsh, Coastal Plain Pondshore, Shrub Swamp, Kettlehole Level Bog, Woodland Vernal Pool, Hemlock-Hardwood Swamp and Forest Seep Community. Each wetland habitat community is identified by environmental and vegetation descriptions in the Classification of the Natural Communities of Massachusetts by Patricia C.

Swain and Jennifer B. Kearsley, Natural Heritage and Endangered Species Program, Massachusetts Division of Fisheries and Wildlife, Westboro, MA, DRAFT 2000. An excellent source of information on the types of wetlands and their interactions with wildlife is The Redington Field Guides to Biological Interactions: Plants in Wetlands, by Charles Redington, Kendall/Hunt Publishing Company, 1994. The following descriptions are taken directly from these two publications.

The *Alluvial Atlantic White Cedar Swamp* is a swamp dominated by Atlantic White Cedar and Red Maple located within the floodplain of rivers and streams. These areas are very rich in minerals due to the annual or semi-annual overtopping of the banks. Other vegetation found within this community type include high-bush blueberry, sweet pepperbush, silky dogwood, sensitive fern, royal fern, bugleweed, marsh fern and marsh St. John's-wort. The Natural Heritage and Endangered Species Program lists the alluvial Atlantic white cedar swamps along the Canoe River as an important community type to protect. The smaller Atlantic White Cedar swamps along the Goose Brook Branch should be investigated.

Red Maple Swamp and Alluvial Red Maple Swamp occur in a variety of physical settings. They may



occur at the foot of a hill, seasonally flooded depressions or natural drainage ways and sustain the wetland vegetation and soils with hydrology from surface waters, groundwater, or lake and stream overflows. The forest can only tolerate the flooded conditions for 3-4 months of the year. Often the trees grow on hummocks or raised mounds to protect the roots from being submerged or the trees have adapted to the flooded conditions by growing shallow fibrous roots to ensure adequate oxygen. The fibrous root system allows the trees to knit together and support

each other from falling with heavy winds. Typical vegetation in these areas consists of Red Maple, yellow birch, black gum, white ash, eastern white pine, American elm, swamp white oak, pin oak, swamp azalea, sweet pepperbush, winterberry, high-bush blueberry, northern arrowwood, nannyberry, speckled alder, poison sumac, sensitive fern, skunk cabbage, marsh marigold, swamp dewberry, and jewelweed. European buckthorn is an exotic, invasive plant that may invade a red maple swamp and outcompete the native vegetation. Buckthorn should be tracked and removed before it infests a swamp. Portions of the Great Woods contain vast red maple swamps and alluvial red maple swamps. A large portion of the Great Woods is permanently protected by the Norton Historical Society, the Conservation Commission (Leo Yelle Conservation Area), Land Preservation Society of Norton and the Mansfield Natural Resources Trust. Another example of this type of wetland community is the Hockomock Swamp, found at the northeastern corner of Norton abutting the City of Taunton line. It is the largest contiguous freshwater swamp in Massachusetts. The Hockomock Swamp was the first area in Norton to be officially designated an Area of Critical Environmental Concern by the Secretary of Environmental Affairs.

Deep Emergent Marshes form very broad, flat areas near low-energy rivers and streams and along pond and lake margins. Marshes consist of a well decomposed layer of organic muck with standing water averaging 6 inches to three feet deep and typically remain permanently flooded. There is usually an open water area with floating and completely submerged plants as well as emergent vegetation along the edge of the water. Typical plants found within the deep emergent marsh include broad and narrow-leaved cattails, arrow-leaf tearthumb, swamp candles, beggar's ticks, common arrowhead, slender leaved goldenrod, marsh fern, river horsetail, sweet flag, bristly sedge, giant bur-reed and marsh cinquefoil. These marshes are scattered throughout Norton. One example is the Crane farm pond located on the northerly side of Pine Street near the intersection of Pine Street and Crane Street. Another example is the Chartley Swamp on Union Road near the railroad tracks.



Shallow Emergent Marshes are found in broad, flat areas bordering low-energy rivers and streams, often in the backwaters. The marshes are composed of a very thick layer of organic muck, with standing or running water. Water depth does not usually exceed one foot during the growing season. Plants within the shallow emergent marsh usually have their roots and lower stems submerged in water while the upper portions of the plants extend above the water's surface. Tussock sedge, reed canary grass, rice cut-grass, water lilies, pondweeds, and duckweeds are commonly found within marshes. A very large shallow emergent marsh can be found behind the Rosewood Estates subdivision and in the Red Mill Pond on Red Mill Road.

Coastal Plain Pondshores are highly acidic ponds found in glacial outwash areas. Ponds are usually shallow and have a fluctuating water elevation directly related to the groundwater elevation. Type of vegetation is coincident with the flooding regime and is characterized with zones of vegetation. The outer perimeter of the pond is usually an upland oak forest. A shrub layer of high-bush blueberry, sweet pepperbush, winterberry and greenbriar would dominate the next zone. The exposed pondshore contains emergent vegetation such as flat topped goldenrod, pondshore rush, rose coreopsis, golden pert and dwarf St. John's-wort. The next zone contains semi-permanently inundated vegetation such as bayonet rush, spike-sedge and pipewort. Plants that prefer to be permanently inundated like the water lily and Robbins' spike-sedge characterize the final zone. It appears that any area in Norton that has been excavated for sands and gravels has evolved into a Coastal Plain Pond. Whether formed by the glacier or by man, the same hydrologic activity takes place and the same species of plants have populated the area. An excellent example of a coastal plain pondshore is found within Lincoln Woods. Some coastal plain ponds function as vernal pools. However, motorized vehicle use within the coastal plain pond at Lincoln Woods is severely disrupting the fragile ecosystem.

Shrub Swamps are reasonably widespread. The shrub swamp is found between the emergent marsh and the forested swamp. They can be found anywhere the water table is at or near the surface to one inch deep for most of the year. Shrubs and saplings can be found growing on hummocks or high spots where the roots will not be exposed to the low oxygen levels of prolonged flooding. The shrub swamp contains such shrub species as the smooth alder, buttonbush, high-bush blueberry, speckled alder, swamp azalea, northern arrowwood, spicebush, pussy willow, silky dogwood, poison sumac, winterberry, maleberry, swamp rose, jewelweed, swamp milkweed, cinnamon fern, sensitive fern, cardinal flower, jack in the pulpit, mint, marsh marigold, water hemlock, steeplebush, meadowsweet, shadbush, leatherleaf, sheep

laurel, wild raisin, swamp loosestrife, goldthread, blackberry, meadow-rue and sphagnum moss. Large portions of our major rivers like the Wading River and the Canoe River consist of shrub swamps. Portions of the Wading River behind Rose Farm and the Solmonese School consist of shrub swamps and within the Canoe River one can see shrub swamps to the north and south side of Plain Street.

Kettlehole Level Bogs occur in depressions left by the glaciers. When the ice melted the water did not have an outlet and years of decomposing vegetation have left the small bogs acidic and filled with peat. Nowadays, the bogs fill with precipitation, snowmelt and high groundwater. Since there is little to no surface flow of water there is no aeration. This lack of aeration yields low oxygen levels and slow decomposition leading to the buildup of plant matter. Since the water is low in nutrients, the plants have formed morphological adaptations in order to survive. Some bogs even contain carnivorous plants such as the pitcher plant and sundew. The low nutrient levels have led to low plant species diversity and consequently to low animal species diversity. Similar to the coastal plain pond, kettlehole level bogs have zoned vegetation. The outer ring of the pond is usually comprised of high-bush blueberry or swamp azalea bordered by rhodora. Leatherleaf, sheep laurel, bog laurel, bog rosemary, Labrador tea, and cranberry can be found within the center of the bog. Sphagnum moss may grow in hummocks and may provide a floating surface on which to walk. Only one natural bog can be found within Norton behind the Attleboro Landfill along the powerlines, but several man-made bogs can be found at any former gravel pit site.

The *Woodland Vernal Pool* is a common feature within the wetland community of Norton but typically contains little vegetation except for a ring of shrubs, overhanging tree branches and some grasses. One woodland vernal pool can be observed on the north side of Newland Street across from the White Street pits. Vernal pools are discussed in greater detail later in this section.

Hemlock-Hardwood Swamps occur in poorly drained basins in bedrock and till where groundwater and



small streams supply most of the water. The most abundant plants within this community type are hemlock, white pine, red maple, yellow birch, alders, winterberry, hollies, cinnamon fern, sensitive fern wood ferns and goldthread. While the canopy and shrub layers may not be rich in species abundance, the ground is layered with many different mosses and lichens. An excellent example of a hemlock swamp is the Hemlock-Cedar Swamp area located in the southwestern corner of the town, extending into Attleboro and Rehoboth. This area has been listed by NHESP as an “outstanding ecological community” for wildlife because of its size and swamp/islands mixture for a number of years as a very high quality example of this community type and a high priority for protection. Residents at the fall town meeting of October 2002 voted to transfer

over 174 acres of town land to the Conservation Commission for permanent preservation of the swamp and the islands. The 174 acres adds to the protected land held by the Land Preservation Society of Norton and the Attleboro Conservation Commission.

A *Forest Seep Community* can be found near a headwater stream or where the groundwater reaches the surface and water emerges. These areas may look like the surrounding canopy but shrubs and herbaceous layers are typical of wetlands. Vegetation types include white ash, red maple, yellow birch, white birch, hemlock, spruce, white pines, cinnamon fern, silvery spleenwort, Christmas fern, scouring

rush, false hellebore and water avens. Some of the headwater streams adjacent to eskers and moraines illustrate this community type. Some of the more adventurous residents may observe a forest seep along the Canoe River or Three-Mile River.

In the Spring of 2009 the Conservation Commission decided that a wetland bylaw would be appropriate for Norton. With technical assistance from the Horsely Witten Group, as part of the Taunton River Watershed Plan, the Conservation Commission began drafting the proposed wetland bylaw. A significant education campaign was held with at least three public meetings, in addition to the regularly held public Conservation Commission meetings. Commission members described the bylaw at public meetings of the Board of Selectmen, Planning Board, Board of Health, Zoning Board of Appeals and Finance Committee. Members appeared on two local cable shows and provided press releases in five local newspapers. The website contained the proposed bylaw as well as educational pamphlets and maps pertinent to the bylaw. The Fall Town Meeting of 2009 was met with significant resistance as developers spread misinformation about the purpose of the bylaw and the content within the proposal. Town Meeting members requested three items be addressed by the Commission. They wanted isolated land subject to flooding to have a size criteria. They requested that existing projects not require new permits under the bylaw and wanted a “grandfathering” type of clause. Thirdly they requested to see what the regulations would look like.

Immediately after the Fall Town Meeting, the Commission began drafting the Regulations, again with free technical assistance from Horsely Witten Group and Town Counsel. All discussions were held during the open public meetings of the Conservation Commission. Only four residents appeared at these meetings to provide comments on the bylaw proposal. This time, with full support of the Board of Selectmen and the Finance Committee, the article was brought before the Spring Town Meeting. As with the previous town meeting, opponents spread the same rumors and misinformation about the bylaw, spending significant funds to send notices to each residents’ house, and emails. The article again failed at Town Meeting.

It is unfortunate that town has been denied this valuable tool in land use policy and natural resource protection. The bylaw benefits the whole town of Norton not just a few select developers or landowners and is unfortunate that a few people will willfully deceive others. As land becomes more scarce, the balance between development and resource protection will be even more precarious. With changes in the local climate and imperviousness in the watershed, flooding issues will only become worse. A wetland bylaw would look out for the interests of all residents and ensure that the flooding doesn’t impact them. Hopefully with more education and outreach about the importance of wetlands and their functions, residents may change their minds about the usefulness of a wetland protection bylaw.

Resources on wetlands:

- Norton Conservation Commission 508-285-0275
- Massachusetts Wetland Protection Act (Chapter 131, Section 40) and Massachusetts Wetland Regulations (310CMR10.00)
- Massachusetts Association of Conservation Commissions. www.maccweb.org
- Massachusetts Association of Wetland Scientists. www.amws.org
- Wetland Fact Sheets. US EPA, EPA843-95-001, February 1995. 1-800-832-7828
- Society of Professional Wetland Scientists, New England Chapter.
- Massachusetts Department of Environmental Protection.
- Riverways Program

Rare, Threatened or Endangered Species (Plants)

The Commonwealth of Massachusetts Division of Fisheries, Wildlife and Environmental Law Enforcement's Natural Heritage and Endangered Species Program (NHESP) has documented the following occurrences in Norton of plant species, which are endangered, threatened, or of special concern. Every species on the endangered list is protected from a “taking” which is defined as harassing, harming; killing; disrupting nesting, breeding, feeding or migratory activities; transportation; or selling under the Massachusetts Endangered Species Act (MGL chapter 131A and the implementing regulations 321CMR10.00). “*Endangered*” is described as any reproductively viable native species that has been documented by biological research and inventory to be in danger of *extirpation* from the Commonwealth. “*Threatened*” is described as any reproductively viable native species which has been documented by biological research and inventory to be rare or declining with the Commonwealth and which is likely to become endangered in the Commonwealth in the foreseeable future. “*Special Concern*” is described any native species which has been documented by biological research and inventory to be suffering decline that could threaten the species in the Commonwealth if allowed to continue “unchecked, or which occurs in such small numbers or with such a restricted distribution or specialized habitat requirements that it could easily become threatened. The species description and habitat requirements can be found on the NHESP fact sheets at http://www.mass.gov/dfwele/dfw/nhesp/species_info/esa_list/esa_list.htm. Any rare species observed should be documented on a Rare Plant Observation Form and submitted to the NHESP.

Rare Plants

Common Name	Scientific Name	State Rank	Last Observed
Philadelphia Panic-grass (annual grass)	<i>Panicum philadelphicum</i>	Special Concern	1999
Plymouth Gentian (perennial herb)	<i>Sabatia kennedyana</i>	Special Concern	2000
Arethusa (perennial orchid)	<i>Arethusa bulbosa</i>	Threatened	1905
Toothcup (annual wetland herb)	<i>Rotala ramosior</i>	Endangered	1930

Species Descriptions

Philadelphia Panic-grass is an annual grass found within dry or sandy areas or in open, moist ground near lakes and streams. It is more often found within coastal plain ponds, kettlehole ponds, along the shores of reservoirs, or within floodplain areas. It can be found with other plants such as buttonbush, golden hedge-hyssop, lance-leaved violet, spike-rushes and yellow loosestrife. Philadelphia panic-grass is also named woodland witchgrass and has a stem that can reach 1/3 to 1-2/3 feet high. The stems rise from a cluster of fibrous roots and are usually erect, following a more or less zig-zag pattern at the base. The leaf blades are 3-8 mm wide, 5-15 cm long and sparsely covered with stiff hairs. The flowering part of this grass is called the *inflorescence* and has a *panicle* shape (inflorescence with a main axis and subdivided branches). Few flowers appear at the end of the branchlets in pairs and the plump fruit turn black as it ripens in August and September. Loss of habitat and ecological succession are the main reasons for the plant's decline. It is very important to notify the Conservation Commission or the NHESP if you find this plant. **DO NOT PICK THIS PLANT.**

Plymouth Gentian is a perennial herb that grows in linear patches along the edges of coastal plain ponds



and freshwater ponds as the water level drops. It can be found growing with sundews, golden-pert, pink tickseed, and spike-rushes. Plymouth gentian reaches 12-25 inches tall, has narrow leaves and has a few alternate branches that terminate in flowers with long stems. The pink flower is about two inches across with 9-11 petals. The center is yellow bordered with red and blooms from July to September. This plant is at the northern edge of its range. Other reasons for its decline are habitat destruction including the use of motorized vehicles within the dry coastal plain ponds, changes in hydrology due to development and contaminated runoff. It is very

important to notify the Conservation Commission or the NHESP if you find this plant. **DO NOT PICK THIS PLANT.**

Arethusa is a *perennial* orchid found within bogs, peaty wetlands, and boggy meadows with an open canopy but can survive with some shrubs. Some other species associated with *Arethusa*'s habitat include sundews, sphagnum moss, cranberries, sheep laurel and swamp azalea. The plant is only about four to eleven inches tall, growing from a bulbous stalk. It has one or two magenta to dark, pink flowers. The lower lip (petal) arches abruptly downward exposing its whitish surface mottled with magenta and yellow. *Arethusa* flowers from May to mid-June. Since 1978 the locations that provide suitable habitat have been declining. Historically 87 locations were known to contain *Arethusa*, but only 11 are currently known. Destruction of wetland habitat, *ecological succession*, storms and people collecting the species are the main reasons for its decline. It is very important to notify the Conservation Commission or the NHESP if you find this plant. **DO NOT PICK THIS PLANT.**

Toothcup is an annual herb that grows along the exposed shores of freshwater lakes and ponds. It prefers



sandy, gravelly or cobbly bottoms and a position along the shore that will experience seasonal flooding. Other species that could be found with Toothcup include rice cutgrass, false pimpernel, pondshore rush and ticklegrass. This tiny plant is diffusely branched reaching only about six inches tall. The leaves are closely spaced, oppositely paired, linear to lance-shaped and taper at the base. A single, stalkless flower only about 2mm wide appears in the leaf axils and blooms and turns red for only a brief period in Autumn. It is very important to notify the Conservation Commission or the NHESP if you find this plant. **DO NOT PICK THIS PLANT.**

NOTE: Natural Heritage Program records are exempt from the state Freedom of Information Act. The legislature recognizes the sensitivity of disclosing rare species locality information in Massachusetts. Misuse of information can contribute to the demise of rare and

endangered plants and animals when specific sites are disclosed and subsequently degraded through collecting, visitation or deliberate vandalism.

Priority Habitats

Priority habitat areas are those habitats where state listed plants, mussels and other species protected under the Massachusetts Endangered Species Act are found. Species in these locations may be further protected if a project is required to file for a permit under the Massachusetts Environmental Policy Act (MEPA). All areas are recommended for further study and protection by easement or ownership. The Natural Heritage and Endangered Species Program strongly urges that all efforts be made to preserve the areas shown on the rare habitat maps (priority habitats). There are a number of ways a town can accomplish this goal. These include acquiring *Conservation Restrictions* or easements, special zoning regulations and districts or land acquisition. Early planning and project review can also play a very positive role in protecting species habitats and ecologically significant natural communities. Commissions and boards may request the Natural Heritage and Endangered Species Program to review any project proposed in the areas shown on this map. Norton's Priority Habitat map is shown on the next page.

Unique Natural Resources

The NHESP has documentation for good examples of two types of natural communities. The examples in Norton are of Alluvial Red Maple Swamps and Forested Seeps. These areas should be targeted for protection and further study. Any additional locations found during scouting expeditions should be documented and submitted to NHESP.

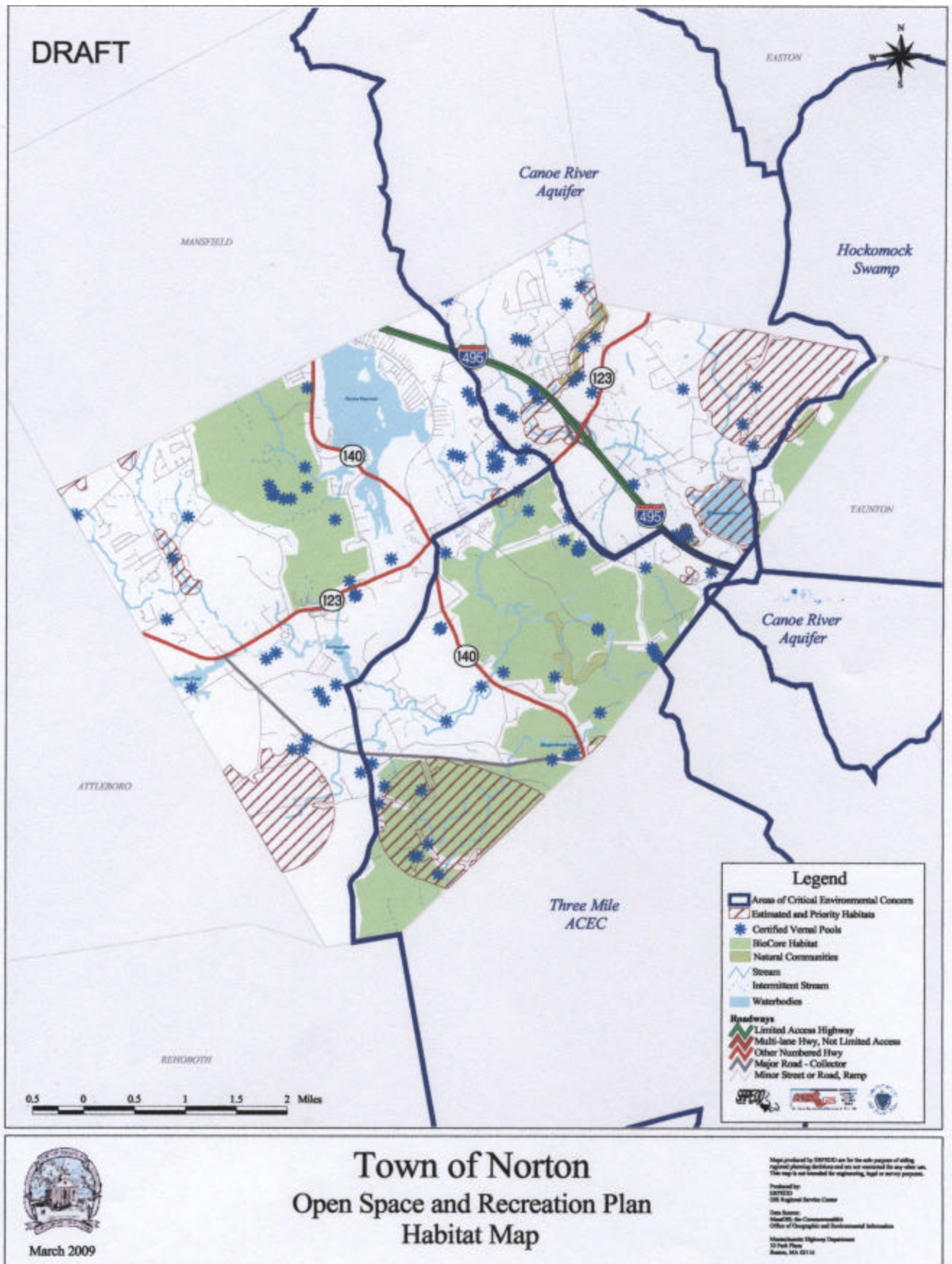
Excellent quality Alluvial Red Maple Swamps occur in patches all along the Three-Mile River. Alluvial Red Maple Swamps are given the *State Rank (SRANK)* of S3 in Classification of the Natural Communities of Massachusetts. The SRANK is a designation given to the community type regarding its rarity and potential threats. An SRANK of S3 means that the natural community type has a limited acreage or miles of stream in Massachusetts or that there are only between 21 and 100 occurrences of



Alluvial Red Maple Swamp along Three Mile River

that natural community type. These unique environments occur in low areas adjacent to rivers and streams and benefit from the annual flooding of the river's or stream's banks. The characteristic silt-loam soils are very poorly drained, even more so than true floodplain forests and contain a layer of organic material at the surface. These swamps usually contain a mixture of red maple, silver maple, green ash and swamp white oak in the tree canopy. There is a species rich shrub layer consisting of northern arrow-wood, silky dogwood and European buckthorn with an herbaceous layer dominated by sensitive fern, false nettle, royal fern, and bugleweeds. (True floodplain forests do not typically have a shrub layer.) Alluvial

Red Maple Swamps are very important for wildlife, particularly the Riverine *odonates* that find shelter in the nearby swamps and the amphibians that find breeding areas in old *oxbows* and *meander scars* (pages Introduction-v and P-20).



A good quality Forested Seep Community exists along the Canoe River. A Forested Seep Community is given the State Rank (SRANK) of S4 in Classification of the Natural Communities of Massachusetts. The SRANK is a designation given to the community type regarding its rarity and potential threats. A SRANK of S4 means that the natural community type is apparently secure in Massachusetts. (However, we should not have a false sense of security for this habitat type. Changes in upstream watershed land uses could affect this habitat type. It is important to preserve quality examples of this habitat type in case of future habitat alteration or fragmentation.) A Forested Seep Community has a hardwood forest on a slope with small springs and seeps with mucky soils. The seeps may occur because of groundwater reaching the surface or the natural community may be near a headwater stream. Usually the tree canopy consists of upland trees like sugar maple, white ash, yellow birch and paper birch. The herbaceous plant layer may contain cinnamon fern, silvery spleenwort, rattlesnake fern and Christmas fern. Also found within a forested seep community may be plants such as scouring rush, hellebore, water avens and other sedges. The import function as wildlife



habitat is that a seep could provide suitable areas for star-nosed moles, southern bog lemmings and four-toed salamanders and potential vernal pool locations (page T-88).

Resources on rare plant species:

- Rare Plant Fact Sheets. Massachusetts Natural Heritage and Endangered Species Program. www.state.ma.us/dfwele
- Plant Conservation Volunteers. New England Wildflower Society. John Burns. <http://www.newfs.org/protect/rare-plants-and-conservation/Volunteer>, Seeks volunteers.
- Threatened and Endangered Plant Species Field Guide in Southern New England. Southern New England Forest Consortium, Inc. 401-568-1610
- New England's Rare, Threatened, and Endangered Plants. Garrett E. Crow. June 1982.

Vegetation mapping projects

DEP has created a data layer to describe the different wetland vegetation within the Town of Norton. The project was done on a statewide basis and illustrates the deciduous and coniferous swamps, bogs, shrub-scrub swamps, and emergent wetlands. Refer to the Wetlands Section on Page 63 for a description of the different types of wetlands.

The Wetlands Conservancy Program also has detailed vegetation maps of towns. These maps create data layers similar to the DEP map based on whether the wetlands are palustrine or lacustrine in origin. Wetlands can also be described based on the Cowardin method in the field but have not been mapped.

Fisheries & Wildlife

General Inventory

Clark's History of Norton of 1859 lists 59 different species of plants and animals. That list included pickerel, perch, hornpouts, suckers, white oak, red oak, yellow oak, white birch, black birch, yellow birch, cedar, elm, hornbeam, pignut hickory, white pine, pitch pine, white maple, sassafras, holly, hemlock, beech, savin, chestnut, high blackberry, vining blackberry, thimbleberry, low blueberry, swamp blueberry, black whortleberry, dangleberry, strawberry, checkerberry, cranberry, grape, bears, wolves, wild-cats, deer, fox, raccoon, beaver, muskrats, minks, woodchucks, squirrels, weasels, wild geese, ducks, partridges, quails, woodcocks, crows, blue jays, woodpeckers, blackbird, worm, insect, bug and grub (Pages 42-47). Clearly, the early identification of species was primarily based upon nuisance pests and economic value of plant and animals or for sustenance. With the acknowledgement of the importance of wildlife in maintaining a healthy ecosystem and recent decades of ecological studies, this short list has been greatly elaborated upon. And while some species have survived Norton's growth, others have been eliminated. An example of this would be the alewife. An archaeological report from the Maple Commons Subdivision lists historic records of alewife traveling to Winnecunnet Pond. With the damming of several rivers from the ocean to Lake Winnecunnet, it is not expected or documented that alewife still reach Lake Winnecunnet. Several other species of both plants and animals have not been verified at their previous locations for decades. Natural changes in habitats and human alteration of habitats may be explanations of this. Also, these species cannot be verified if someone does not go out looking for them.

Biodiversity Inventory

With the advent of the statewide Biodiversity Days initiative in 2000, a new master list of Norton's wildlife was created. Biodiversity Days is a challenge by then Secretary of Environmental Affairs, Robert Durand, to all residents to identify at least 200 species of plants and animals and document them. *Biodiversity* is described as the variety of plants and animals within an *ecosystem* and the processes that support and sustain life within that ecosystem. The Conservation Commission and Land Preservation Society of Norton have annually hosted events and nature walks on protected land in an effort to identify



Norton's wildlife and raise awareness of the importance of open space. The initial Biodiversity Days of 2000 yielded over 550 species, making Norton 2nd in Bristol County, 6th in Southeastern Massachusetts and 9th in the entire state for identifying the most species. Since that time, residents and conservation staff have identified over 700 species of plants and animals living in Norton. An annotated list is shown below with all 758 species of flora and fauna. The complete master list of species and a photo book are located in the Conservation office and available for review by residents.

The table on the next few pages lists the known species of plants and animals in Norton as of July 14, 2010 in alphabetical order.

Alderfly
 Aliske Clover
 Amber Winged Spreadwing
 American Beaver
 American Beech
 American Black Duck
 American Chestnut
 American Cockroach
 American copper
 American Crow
 American Eel
 American Elm
 American Filbert (hazelnut)
 American Goldfinch
 American Holly
 American Kestrel
 American Lady
 American Mink
 American Robin
 American Toad
 Amphibious Snail
 Aphids
 Arrow Arum
 Artist's Polypore
 Ashy Clubtail
 Aster ssp.
 Atlantic White Cedar
 Aurora damsel
 Autumn Olive
 Azure bluet
 Balk Eagle
 Baltimore Checkerspot
 Baltimore Oriole
 Band winged meadowhawk
 Banded Sunfish
 Bank Swallow
 Barn Swallow
 Barred Owl
 Basswood
 Bayberry
 Beaked Hazelnut
 Bearberry
 Bees
 Belted Kingfisher
 Big Blue Stem
 Big Leaf Pondweed
 Birch Polypore
 Bird's Foot Violet
 Birdsfoot Trefoil
 Bittersweet Nightshade
 Black and White Warbler

Black and yellow garden spider
 Black Billed Cuckoo
 Black Birch
 Black Capped Chickadee
 Black Carpenter Ant
 Black Cherry
 Black Chokeberry
 Black Crappie
 Black Crowned Night Heron
 Black Fly
 Black Huckleberry
 Black Knot of Cherry Flask
 Black Locust
 Black Nightshade
 Black Oak
 Black Raspberry
 Black shouldered Spinyleg
 Black Swallowtail
 Black Swallowwort
 Black Willow
 Black-eyed Susan
 Bladder Campion
 Bladderwort
 Bladderwort
 Blue Alfalfa
 Blue Curls
 Blue Dasher
 Blue Jay
 Blue Toadflax
 Blue Vervain
 Blue Winged Teal
 Blue Winged Warbler
 Bluegill
 Bluet ssp.
 Bluets
 Boletes
 Bomolocha
 Boneset
 Bouncing Bet
 Box Elder
 Bracted Plantain
 Bristly Greenbriar
 British Soldiers
 Broad Leaved Arrowhead
 Broad Leaved Cattail
 Broad Winged Hawk
 Brook Trout
 Broom Sedge
 Brown Bullhead
 Brown Creeper
 Brown Dog (Wood) Tick

Brown Headed Cowbird
 Brown Snake
 Brown Thrasher
 Brown Trout
 Bulbous Buttercup
 Bullfrog
 Bumble Bees
 Bunchberry
 Bush Honeysuckle
 Bushy Pondweed
 Butter and eggs
 Butternut (White Walnut)
 Buttonbush
 Buttonweed
 Cabbage White
 Caddisflies
 Calico Pennant
 Campaea
 Canada Darner
 Canada Goose
 Canada Lily
 Canada Mayflower
 Canada St. Johnswort
 Canada Thistle
 Carolina Wren
 Carpenter Ants
 Catnip
 Cedar Waxwing
 Celandine
 Centipedes
 Chain Pickerel
 Chestnut Oak
 Chicory
 Chimney Swift
 Chipping Sparrow
 Choke-cherry
 Christmas Fern
 Cicadas
 Cinnamon Fern
 Climbing Hempweed
 Clouded sulphur
 Clubmoss
 Coltsfoot
 Common Backswimmer
 Common Basket Tail
 Common Blackberry
 Common Bladderwort
 Common Blue Eyed Grass
 Common Blue Violet
 Common Burdock
 Common Chickweed

Common Elderberry
 Common Evening Primrose
 Common Flax
 Common Grackle
 Common Gray Fox
 Common Gray Treefrog
 Common Green Darner
 Common Greenbrier
 Common Juniper
 Common Lilac
 Common Mallow
 Common Merganser
 Common Milkweed
 Common Mullein
 Common Plantain
 Common Privet
 Common Purslane
 Common Ragweed
 Common Shiner
 Common Speedwell
 common spreadwing
 Common St. Johnswort
 Common Thistle
 Common Whitetail
 Common Yellow Wood Sorrel
 Common Yellowthroat
 Coontail
 Cooper's Hawk
 Cow-vetch
 Cowsheat
 Coyote
 Crab Apple
 Crayfish
 Creek Chubsucker
 Creeping Bellflower
 Creeping Buttercup
 Curly Dock
 Cyrano darner
 Daddy Long Legs
 Daisy Fleabane
 Dandelion
 Daring Jumping Spider
 Dark Eyed Junco
 Day Lily
 Deer Fly
 Deer Tongue Grass
 Deptford Pink
 Destroying Angel
 Dodder
 Dot Tailed Whiteface
 Double Crested Cormorant

Downy Rattlesnake Plantain
Downy Woodpecker
Duckweed
Dwarf Cinquefoil
Dwarf Dandelion
Dwarf St. Johnswort
Dwarf Wedgemussel
Earthworms
Earwigs
Easter Tiger Swallowtail
Eastern Amberwing
Eastern Bluebird
Eastern Chipmunk
Eastern comma
Eastern Cottontail Rabbit
Eastern Deer Tick
Eastern Dobsonfly
Eastern Elliptio Mussel
Eastern Forktail
Eastern Garter Snake
Eastern Gray Squirrel
Eastern Hemlock
Eastern Hog-nose Snake
Eastern Joe Pye Weed
Eastern Kingbird
Eastern Lamp Mussel
Eastern Mole
Eastern Phoebe
Eastern Pond Mussel
Eastern Pondhawk
Eastern Red Cedar
Eastern Red Spotted Newt
Eastern Ribbon Snake
Eastern Screech Owl
Eastern Spiny Softshell
Eastern Starflower
Eastern Tent Catepillar Moth
Eastern Towhee
Eastern White Pine
Eastern Wood Peewee
Eastern Yellowjacket
Ebony Jewelwing
Eel (American?)
Elegant Spreadwing
Emerald spreadwing
Englemann's Arrowhead
Eurasian Water Milfoil
European Mountain Ash
European Starling
Fairy Shrimp
Falcon (Peregrine?)

Fall Dandelion
Fall Webworm Moth
Fallfish
False Nettle
False Pimpernel
False Solomon's Seal
Fanwort
Featherfoil
Fern Moss
Field Garlic, Scallions
Field Horsetail
Field Sow Thistle
Field Thistle
Fingernail Clam
Fire Ant
Flax
Fleas
Floating Leaf Pondweed
Flowering Dogwood
Flying Squirrel ssp.
Forest Tent Catepillar Moth
Forktail ssp.
Four toed salamander
Four-Spotted Skimmer
Fowler's Toad
Fox Grape
Fragile Forktail
Freshwater Isopod
Fringed Loosestrife
Fruit Flies
Garden Columbine
Garlic Mustard
Giant Hornet
Giant Water Bug
Gill-over-the-ground
Golden Crowned Kinglet
Golden Hedge Hyssop
Golden Saxifrage
Golden Shiner
Goldenrod Crab Spider
Goldenrod spider
Goldenrod ssp.
Goldilocks Haircap Moss
Goldthread
Grapevine epimenis
Grasshoppers
Gray Birch
Gray Catbird
Gray Dogwood
Great Blue Heron
Great Crested Flycatcher

Great Horned Owl
 Green Ash
 Green backed heron
 Green Frog
 Green Heron
 Green Stinkbug
 Green Striped Darner
 Ground pine
 Groundnut
 Ground-pine, Princess Pine
 Gypsy Moth
 Hairy Boneseet
 Hairy Solomon's Seal
 Hairy Woodpecker
 Halberdleaf Tearthumb
 Halloween Pennant
 Hawthorn
 Hay-scented Fern
 Heal-All
 Hedge Bindweed
 Hemlock Woolly Adelgid
 Hermit Thrush
 Herring Gull
 Highbush Blackberry
 Highbush Blueberry
 Honey Bee
 Hooded Merganser
 Hop-Hornbeam
 Horned Pondweed
 Horse Chestnut
 Horsetweed
 House Cricket
 House Finch
 House Fly
 House Mouse
 House Sparrow
 House Wren
 Hummingbird Moth
 Ichneumon Wasps
 Indian Cucumber Root
 Indian Pipe
 Indian Tobacco
 Indigo Bunting
 Inkberry
 Interrupted Fern
 Ironweed (Musclemwood, Hornbeam)
 Jack in the Pulpit
 Japanese Barberry
 Japanese Beetle
 Japanese Honeysuckle
 Japanese Knotweed

June Beetle
 Kentucky Bluegrass
 Killdeer
 King-devil (yellow) Hawkweed
 Labrador Tea
 Lady Beetles
 Lady's Thumb Smartweed
 Lance Leaved Coreopsis
 Lancet clubtail
 Large Cranberry
 Large leaved White Violet
 Large Mouthed Bass
 Large Pussy Willow
 Least shrew
 Leatherleaf
 Leech
 Lesser Burreed
 Lesser Water Plantain
 Lightning Bugs
 lilipad forktail
 Lily of the Valley
 Little Black Ant
 Little Blue Stem
 Little Brown Bat
 Little Wood Satyr
 Long Tailed Weasel
 Lowbush Blueberry
 Luna Moth
 Mad Dog Skullcap
 Maleberry
 Mallard
 Map Lichen
 Maple-leaf Viburnum
 Marsh Bellflower
 Marsh Blue Violet
 Marsh Fern
 Marsh Hawk
 Marsh Marigold
 Marsh Skullcap
 Marsh St. Johnswort
 Masked Shrew
 Mayflies
 Mayflower
 Meadow Jumping Mouse
 Meadow Spittle Bug
 Meadow Vole
 Meadowhawk ssp.
 Meadowsweet
 Mermaid weed
 Milk Snake
 Monarch Butterfly

Mosquitoes
Moss-phlox
moth
Mountain Laurel
Mourning Cloak
Mourning Dove
Mouse-ear Chickweed
Multiflora Rose
Musk Mallow
Musk Turtle
Muskrat
Mute Swan
Nannyberry
Narrow Leaved Cattail
Narrow Leaved Plantain
Nashville Warbler
Net Veined Chain Fern
New York Fern
Nodding Lady's Tresses
Northern Arrowwood
Northern Black Racer
Northern Blue Flag
Northern Bobwhite (Quail)
Northern Flicker
Northern Kadydid
Northern Mockingbird
Northern Red Oak
Northern Redbelly Snake
Northern River Otter
Northern Rough Winged Swallow
Northern Walking Stick
Northern Water Snake
Northern Waterthrush
Northern White Violet
Norway Maple
Oak Apple Gall Wasp
Old Field Cinquefoil
orange bluet
Orange Day Lily
Orange Hawkweed
Orange Jewelweed
Orchid Grass
Oriental Bittersweet
Ovenbird
Oxeye Daisy
Painted Turtle
Panic Grass
Paper Birch
Partridgeberry
Pasture Thistle
Path Rush

Pearl Crescent
Pearly Everlasting
Periwinkle, Myrtle
Phantom Crane Fly
Philadelphia Panic-Grass
Phragmites, Common Reed
Pickerel Frog
Pickerelweed
Pigweed (Lamb's-quarters)
Pin Cherry
Pin Oak
Pine Barrens Bracken Fern
Pine Warbler
Pinesap
Pink Lady's Slipper
Pipe Organ Wasp
Pipsissewa, Prince's Pine
Pitch Pine
Plant Bugs
Plymouth Gentian
Pointed Broom Sedge
Poison Ivy
Poison Sumac
Pokeweed
Polyphemus Moth
Pond Snail
Pondweed
Poor-man's Peppergrass
Poverty Grass
Praying Mantis
Predaceous Diving Beetles
Pumpkinseed Sunfish
Purple Finch
Purple leaved Willow Herb
Purple Loosestrife
Purple Martin
Purslane
Pyxie Cup
Quaking Aspen
Queen Anne's Lace
Rabbit-foot Clover
Raccoon
Rattlesnake Weed
Red (Purple) Trillium
Red Admiral
Red Backed Salamander
Red Bellied Woodpecker
Red Breasted Nuthatch
Red Cardinal
Red Clover
Red Fox

Red Maple
 Red Mound Ant
 Red Osier Dogwood
 Red Pine
 Red Raspberry
 Red Shouldered Hawk
 Red Spider Mite
 Red spotted newt
 Red spotted purple
 Red Squirrel
 Red Tailed Hawk
 Red Winged Blackbird
 Redfin Pickerel
 Reindeer Lichen
 Ring Lichen
 Ring Necked Pheasant
 ringed boghaunter
 Ringneck Snake
 River Bank Grape
 Rock Dove
 Rose Breasted Grosbeak
 Rosy Maple Moth
 Rough-fruited Cinquefoil
 Rough-winged Swallow
 Round-leaved Sundew
 Royal Fern
 Ruby Throated Hummingbird
 Ruffed Grouse
 Rufous Sided Towhee
 Running Dewberry (Swamp Dewberry)
 Sassafras
 Sawfly
 Scarlet Oak
 Scarlet Tanager
 Scouring Rush
 Scrub (Bear) Oak
 Scrub Oak
 Scuds
 Sedge
 sedge sprite
 Seedbox
 Sensitive Fern
 Shadbush (Serviceberry)
 Shagbark Hickory
 Sheep Laurel
 Sheep Sorrel
 Shining Clubmoss
 Short Tailed Shrew
 Short tailed weasel
 Showy tick trefoil
 Silky Dogwood

Silky Willow
 Silver Maple
 Six Spotted Green Tiger Beetle
 skimming bluet
 Skunk Cabbage
 Slaty Skimmer
 Slender Blue Eyed Grass
 Slender bluet
 Slender Ground-cedar
 Slender Leaved Flat-topped Goldenrod
 Slender Spreadwing
 Slender Stinging Nettle
 Slender Yellow Eyed Grass
 Slugs
 Small Mouth Bass
 Small Pussy Willow
 Smaller Forget-me-not
 Smaller Purple Fringed Orchis
 Smoky Rubyspot
 Smooth Alder
 Smooth Aster
 Smooth Swamp Milkweed
 Snapping Turtle
 Snowshoe Hare
 Snowy Egret
 Soft Rush
 Solitary Sandpiper
 Solomon's Seal
 Song Sparrow
 Southern Red Backed Vole
 Sowbugs
 Spangled Skimmer
 Sparkling jewelwing
 Spatulate-leaved Sundew
 Speckled Alder
 Sphagnum Moss (Peat)
 Spicebush
 Spicebush Swallowtail
 Spiderwort
 Spike Rush
 Spiked Lobelia
 Spotted Joe Pye Weed
 Spotted Salamander
 Spotted Sandpiper
 Spotted Turtle
 Spotted Wintergreen, Striped
 Pipsissewa
 Spreadwing ssp.
 Spring Azure
 Spring Peeper
 Squawfoot Mussel

Squawroot
 Stag Beetle
 Staghorn (Running) Clubmoss
 Staghorn Sumac
 Star Nosed Mole
 Star of Bethlehem
 Steeplebush
 Stoneflies
 stream bluet
 Striped Skunk
 Sugar Maple
 Sundrops
 Swamp Azalea
 Swamp Beggars Ticks
 Swamp Candles
 Swamp Darner
 Swamp Darter
 Swamp Fetterbush
 Swamp Loosestrife
 Swamp Mallow
 Swamp Rose
 Swamp Smartweed
 Swamp spreadwing
 Swamp White Oak
 Sweet Fern
 Sweet Gale
 Sweet Pepperbush
 Sweet Scented Joe Pye Weed
 Sweet Vernalgrass
 Sweet White Violet
 Sycamore
 Tall Deerberry
 Tall Meadow-rue
 Termites
 Tessellated Darter
 Tidewater Mucket
 Tiger Lily
 Tiger Muskie
 Timothy
 Torrey's Bullrush
 Tree Swallow
 Triangle Floater
 Trout Lily
 Trumpet Creeper
 Trumpet Vine
 Tufted Loosetife
 Tufted Titmouse
 Tupelo
 Turbulent phosphila
 Turkey Vulture
 Turk's Cap Lily

Tussock Sedge
 Twelve Spotted Skimmer
 Twin spotted spiketail
 Unicorn Clubtail
 Variable Dancer
 Variable Water Milfoil
 Variable Water Starwort
 Veery
 Viceroy
 Virginia Bugleweed
 Virginia Creeper
 Virginia Opposum
 Warbling Vireo
 Water Boatmen
 Water Hemlock
 Water Horehound
 Water Horsetail
 Water Lilly Beetle
 Water Parsnip
 Water Scorpion
 Water Shield
 Water Smartweed
 Water Stargrass
 Water Striders
 Watercress
 Water-cress
 Watershield
 Weeping Willow
 Whip Poor Will
 Whirligig Beetle
 White Breasted Nuthatch
 White Champion
 White Clover
 White Corporal
 White Footed Mouse
 White Oak
 White Perch
 White Poplar
 White Snakeroot
 White Sucker
 White Sweet Clover
 White Tailed Deer
 White Throated Sparrow
 White Water Lily
 whitespotted sawyer beetle
 Whorled Loosestrife
 Widow Skimmer
 Wild Balsam-apple (prickly cucumber)
 Wild Celery
 Wild Columbine
 Wild Cucumber

Wild Garlic
Wild Geranium
Wild Morning Glory
Wild Oats
Wild Rice
Wild Sarsaparilla
Wild Strawberry
Wild Thyme
Wild Turkey
Winter Cress
Winterberry
Wintergreen
Wire Worm
Witch Hazel
Wolf Spider
Wood Anemone
Wood Duck
Wood Frog
Wood Lily
Wood Thrush
Wood Turtle
Woodchuck

Woodland Vole
Wooley Beech Aphids
Woolly Bear Caterpillar Moth
Worm Eating Warbler
Xanthotype
Yarrow
Yellow Billed Cuckoo
Yellow Birch
Yellow Dung Fly
Yellow Iris
Yellow Legged Meadowhawk
Yellow Perch
Yellow Star Grass
Yellow Sweet Clover
Yellow Warbler
Yellow Water Lily
Yellow Water-Buttercup
Yellow Waxy Cap
Yellow Wild Indigo
Yellow-necked caterpillar
Yellowthroat