

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

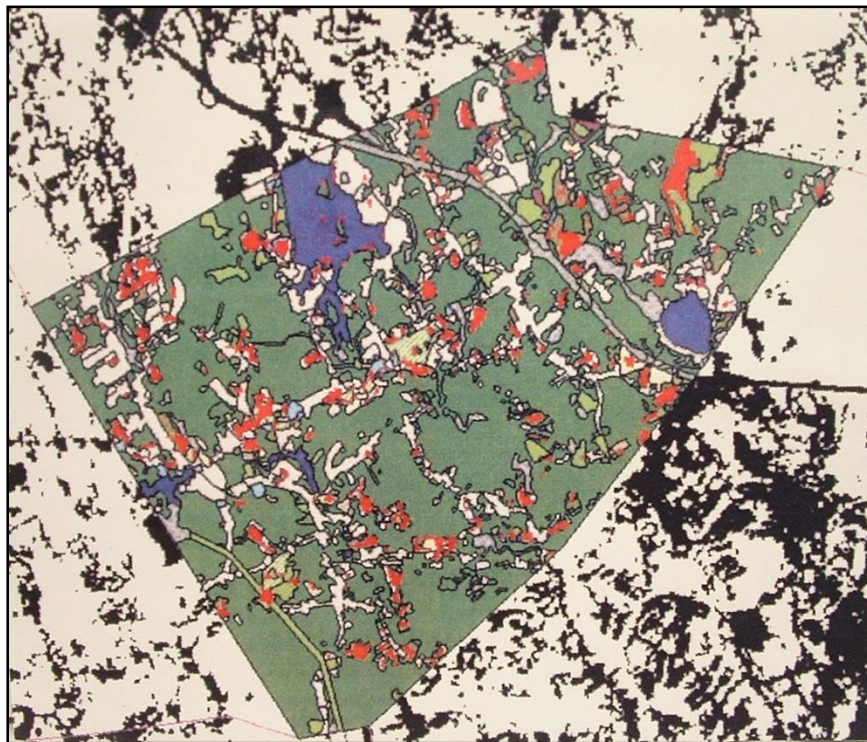
the tree canopy. Beech and American chestnut are also common in smaller sections throughout the forest. The shrub layer contains witch-hazel, mountain laurel, lowbush blueberry, and maple-leaf viburnum. Groundcover includes Indian cucumber root, wintergreen, wild sarsaparilla, wild oats, eastern starflower 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.

Acidic graminoid Fen are acidic peatlands dominated by mixed sedges and other graminoids with herbaceous species. Shrubs occur in clumps but are not dominant. Peat mats may be quaking and unstable and often have pools of standing water. Sphagnum usually covers the surface below the sedges and forms the peat. Typical graminoids include cotton-grasses, beaked sedge, threeway sedge and buckbean are characteristic in wet nutrient rich edges. Cranberries can also be dominant and attract a variety of wildlife.

Forest Land

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 a



mixture of 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. Agricultural operations on East Main Street known as Houghton's farm has closed and is being purchase by Condyne Development for industrial uses. Similarly, the Daggat Crandall property on Newland Street has been subdivided in the last five years and was sold for homes. There is some good news despite the recent conversion of farmland to housing and businesses. A CSA has leased land on Crane Street and is producing local vegetables. And the perennial farm on Burt Street is still quite active.

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 Horsley 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 Horsley 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.
- MA Division of Ecological Restoration

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/mesa_list/mesa_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.

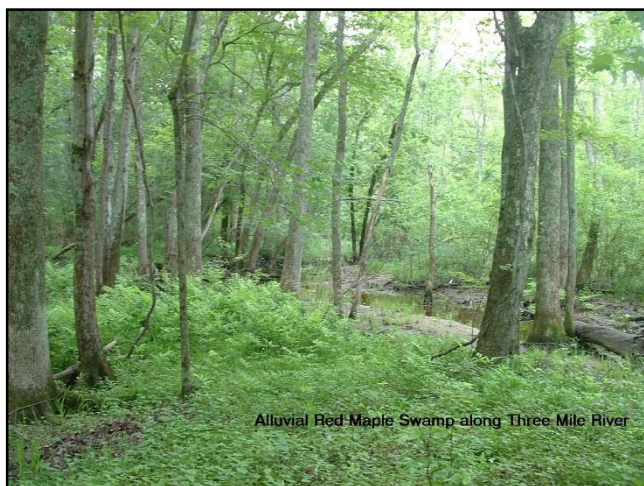
Priority Habitats

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

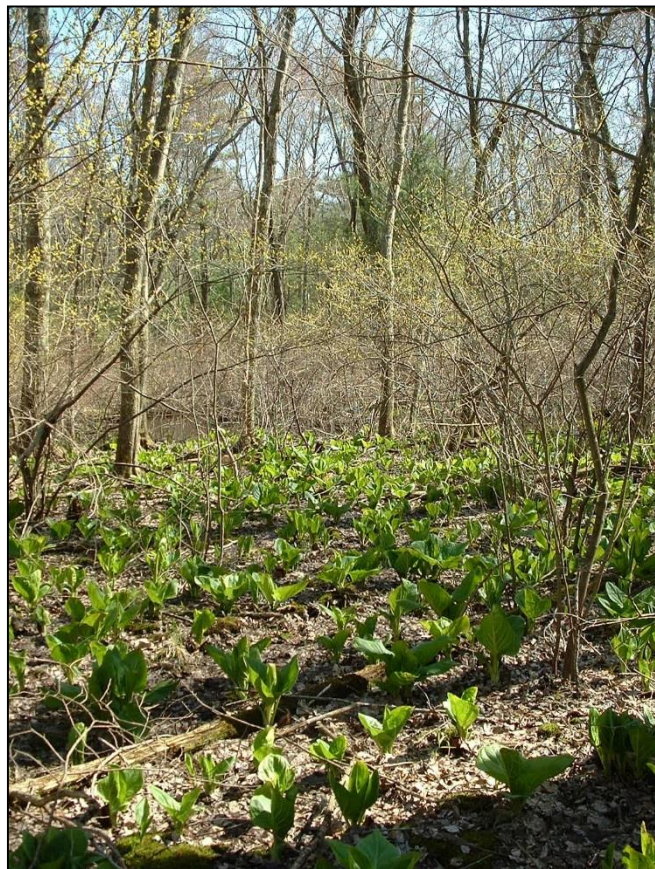


Alluvial Red-Maple Swamp along Three Mile River

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 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 important 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
Cowwheat
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 Caterpillar 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 Caterpillar 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 Boneset
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
Horseweed
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 Loosestrife
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 Campion
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

