

# Preliminary Ecological Assessment

76-acre Bates Lane Property  
Scituate, Massachusetts



J. Andrew Walsh, Southeast Regional Ecologist  
The Trustees of Reservations  
November 26, 2002



## **Preliminary Ecological Assessment**

Property Name: 76-acre Bates Lane Property  
Parcel ID: 10-1-6, 18-1-21, 11-1-1A, 11-1-1B, 11-1-1C  
Location: Scituate, Massachusetts  
Size: 76 acres  
Date of Site Visits: September 8, 2002, October 1, 2002

### Source of information for assessment:

An Atlas of Massachusetts River Systems, Environmental Designs for the Future;  
Univ. of Massachusetts Press, 1990  
BioMap, Massachusetts Natural Heritage and Endangered Species Program  
(2001)  
Classification of the Natural Communities of Massachusetts, Swain & Kearsley  
(draft), 2000  
Harper, Lynn (NHESP); per. comm. regarding rare species (Oct. 8, 2002)  
Massachusetts GIS (NHESP BioMap data, vernal pools, open space data, etc.)  
New England Wildlife, Habitat, Natural History, and Distribution; Richard M.  
DeGraaf and Mariko Yamasaki; University of New England Press, 2001.  
Soil Survey of Plymouth County, Massachusetts, 1969  
Survey Plan of Land in Scituate (Moncy Property), Ernest H. Fagerstrom, Reg.  
Land Surveyor, revised January 25, 1997  
USGS topographic map (1:25,000), Weymouth, MA – 1984

### Limitations for assessment:

Field survey of property was brief (5-6 hrs.)  
Property boundaries not defined

### Assessment surveyors included:

J. Andrew Walsh – The Trustees of Reservations (TTOR), Southeast Regional  
Ecologist

### Attachments:

Fig. A - USGS map with approximate location of parcels  
Attachment 1 - List of plant species recorded on property.  
Attachment 2 - List of wildlife species recorded on property.

## **Summary of Ecological Survey 76-acre Bates Lane Property, Scituate**

The 76-acre Bates Lane property consists of five parcels located in the largest forested upland area (~1 sq. mi.) remaining in Scituate. White pine and oak forest is the most common community type, with forested wetland comprising much of the remaining part of the property. A stand of hemlock, early successional woodland, intermittent streams, and an unusual boulder-filled swale add ecological and scenic diversity to the property. The property, in combination with the surrounding forested lands, provides habitat for interior forest nesting birds, vernal pool wildlife, and many common forest mammals. No rare species have been documented on the property to date. However, a northern leopard frog (watch-list species) was observed on the property. Eastern box turtle and four-toed salamander (both listed as species of special concern by the Natural Heritage Program) have been observed on land adjacent to the property.

Although the 76-acre Bates Lane property contains outstanding ecological values (e.g., native species diversity, interior forest habitat, connectivity with nearby large forested habitats, etc.), its ecological function over the long-term hinges on the protection of as much adjoining forestland as possible. The significant amount of town-owned conservation land in the immediate vicinity of the property creates the potential for this goal. Continued development along the margins of the property's forest surroundings will result in the incremental loss of its ecological values through habitat loss, road mortality, and the increased abundance of nest predators and invasive species.

The 76-acre Bates Lane property also contains exceptional scenic resources (e.g., hemlock ravine and stream, rocky knoll, unbroken mature forest, etc.) and offers passive recreation opportunities that do not presently exist in Scituate (i.e., two mile walking trail through unbroken forest). Acquisition of the 76-acre Bates Lane property will significantly contribute toward the protection of an outstanding natural and scenic resource for Scituate's current and future residents.

## Property Description

The 76-acre Bates Lane property consists of five parcels of forested land located in the “West End” of Scituate, Massachusetts (Fig. A). Two contiguous parcels are located adjacent to Bates Lane (10-1-6, 18-1-21) and are identified in Fig. 1 as “parcel A”. Parcel 11-1-1C is identified in Fig. 1 as “parcel B”, and the remaining two parcels (11-1-1A and 11-1-1B) are identified as parcel C. All five parcels are located within approximately 1000 ft. of one another. The Scituate/Cohasset town line demarcates the northwesterly margin of parcel B.

The property is located within a large, mostly forested area (approximately one square mile in area) that is bounded by Beechwood St. to the northwest, Route 3A to the northeast, Clapp Road to the south, and Summer St. to the west. Residential development occurs along the periphery of this forest ecosystem, with the heaviest development in the Beechwood community and along Beechwood Street. Evidence of previous land uses (i.e., field and pasture) is common everywhere on the property and its surroundings and includes numerous stonewalls, early successional species (e.g., red cedar), wolf trees, and multi-trunked trees (Fig. 1).



Fig. 1 – Large white pines and stonewalls on and adjacent to the property recall an agricultural past when much of the area was in pasture.

The topography in and around the property ranges from gently to steeply sloping due to the presence of low upland ridges and knolls interspersed with wetlands in low-lying areas (Fig. 2). Topographic elevations on the property range from 49 ft. to 144 ft. (NGVD 1929). The prevailing slope direction on the property is northerly, a factor which probably influences plant species composition. Wetlands exist on each parcel, with the largest area of wetlands located on parcel B. The property is situated entirely within the Bound Brook watershed. Bound Brook, which drains wetlands and ponds across much of Wompatuck State Park and Whitney-Thayer Woods, discharges into The Gulf (a tidal inlet) that, in turn, flows into Cohasset Harbor. Although streams exist on the property (parcels B and C), none of the streams are identified as having perennial flow<sup>1</sup>.

---

<sup>1</sup> Based on USGS topographic quadrangle – Weymouth, MA 1984.



Fig. 2 – Looking southwest along the western slope of “teepee rock”, a ledge outcrop located on Parcels B and C. Moderately to steeply sloping terrain is relatively common on the property.

The soils on upland sections of the property are mapped as Essex very stony coarse sandy loam (3-8% slope) and Gloucester extremely stony loamy sand (15-35% slope). Essex and Gloucester soils are classified as well-drained and somewhat excessively drained, respectively. Soils within low-lying areas include Scituate extremely stony sandy loam (3-8% slope) and Norwell extremely stony sandy loam (0-3% slope). Scituate soils are classified as moderately well-drained, while Norwell soils are poorly-drained (or wetland) soils. All of these soil types were formed on glacial till, an unsorted, unstratified mixture of sediment types (clay, sand, boulders, etc.) deposited by glacial ice. The presence of glacial till on the property and its surroundings has resulted in an abundance of boulders on the landscape.

### **Conservation Overlays and Surrounding Open Space**

The 76-acre Bates Lane property is located in the Southern New England Coastal Plains and Hills ecoregion. The Natural Heritage and Endangered Species Program’s (NHESP) BioMap identifies discrete areas (termed "core habitat" and "supporting natural landscape") that are crucial to the long-term conservation of Massachusetts’ biodiversity. Core habitat is defined as the sum total of viable rare plant and animal habitat and exemplary natural communities. Supporting natural landscape is defined as the combination of core habitat buffers, large vegetation patches, large roadless areas, and undeveloped watersheds that together help maintain ecological integrity and enhance core habitat areas.

The BioMap identifies the one square mile forested area (including the property) as supporting natural landscape. Several nearby areas, including South Swamp, the complex of hills and wetlands located west of Summer St. and south of Clapp Rd., and the undeveloped uplands east of Booth Hill Rd. and east of South Swamp, are also identified as supporting natural landscape. Wompatuck State Park (~3500 acres) and the Whitney-Thayer Woods/Turkey Hill/Weir River Farm complex (~900 acres) are

identified as core habitat for two “special concern” species<sup>2</sup>, eastern box turtle (*Terrapene carolina*) and spotted turtle (*Clemmys guttata*). A small area of core habitat and priority rare species habitat is also identified on the section of Bound Brook located west of Rte. 3A due to an occurrence of swamp dock [*Rumex verticillatus* (threatened)]. Collectively, these mostly forested lands form the largest undeveloped tract of open space on the South Shore.

Although no vernal pools have been confirmed on the 76-acre Bates Lane property, one potential vernal pool was observed on parcel B during the survey. Fifteen vernal pools have been certified<sup>3</sup> by NHESP within the larger forest area surrounding the property. Vernal pools are ranked “S3” on the NHESP community state ranking system. NHESP considers any community type with a state rank of S1-S3 or any exemplary example of a S4 or S5 community type as a “natural community type for priority protection”.

The Town of Scituate owns eight parcels of forested land (totaling 90 acres), either abutting the property or in the immediate vicinity of the property, for conservation purposes. The remaining forested lands abutting the property are privately-owned and unprotected. With the exception of residential housing on Wheelwright Farm Road located just west of parcel B, the property is buffered from development by a minimum of approximately 500 ft. of forested land.

### **Rare Species**

No rare species have been identified to date on the 76-acre Bates Lane property. However, a northern leopard frog (watch-listed<sup>4</sup>) was observed on Parcel B. Eastern box turtles, listed by the Mass. Division of Fisheries & Wildlife as a “species of special concern”, have been found on land adjoining the property. Four-toed salamander (*Hemidactylium scutatum*), also a special concern species, has been observed in wetlands located adjacent to the property. As previously mentioned, “priority rare species habitat” occurs along the section of Bound Brook located west of Rte. 3A for an occurrence of swamp dock (threatened).

### **Plant Communities**

Four plant communities were identified on the 76-acre Bates Lane property including

---

<sup>2</sup> A “species of special concern” is defined as any species that has suffered a decline that could threaten the species if allowed to continue unchecked, or that occurs in such small numbers or with such a restricted distribution or specialized habitat requirements that it could easily become threatened within Massachusetts.

<sup>3</sup> Vernal pool certification in Massachusetts is administered by the Natural Heritage Program. Only vernal pools that meet certain biological and physical criteria can be certified, and only vernal pools that are both certified and located in a Wetland Resource Area (e.g., bordering vegetated wetland) are afforded legal protection.

<sup>4</sup> This unofficial list of species maintained by the Natural Heritage Program includes species suspected to be rare or declining but for which information is lacking regarding their current status. It also includes species that have been removed from the official regulatory list but are still monitored to ensure that their status is secure.

1) mixed white pine and hardwoods, 2) forested wetland and other wetland communities, 3) hemlock ravine, and 4) early successional woodland. Forested upland habitats cover approximately three-quarters of the property, with the remaining one-quarter classified as forested wetland. All plant species observed on the property during the survey are listed in Attachment 1.

### Mixed White Pine and Hardwoods

The uplands on the property are vegetated by a mixed conifer/deciduous community of white pine interspersed with a varying abundance of tree oaks (northern red oak, white oak, and scarlet oak), red maple, and black birch (Fig. 3). Although its abundance varies, white pine typically comprises about 50% of the canopy. Stands of successional white pine (i.e., forest stands consisting of nearly 100% white pine) are rare on the property itself, but occur adjacent to the property. Red maple increases in abundance where uplands transition toward wetland communities. Other tree species found in this community type include black cherry, American beech and eastern hemlock, the latter two species being more common on cooler, north-facing slopes on the property. Mature trees characterize much of the mixed white pine and hardwoods community, and some specimens reach impressive proportions. White pine trees in the vicinity of the stream on parcel C range in diameter at breast height (dbh) from 2.5 ft. to 3 ft. White pine and northern red oak elsewhere on the property typically range from 20 in. to 30 in. dbh. Snags (i.e., standing dead trees) and downed timber are typically not common structural components of the forest on the property.



Fig. 3 - Mixed white pine and oak forest on parcel A. Plant species composition in the mixed forest community varies widely depending on several variables including soil moisture and slope direction.

Understory species in the mixed white pine-hardwood community vary with soil moisture conditions and canopy composition. Arrow-wood, highbush blueberry, common greenbrier, and white pine saplings are common in the forested upland. Canada mayflower, tree clubmoss, partridgeberry, and wild sarsaparilla are common herbaceous and ground cover species. Hayscented fern, a common oak forest fern that spreads by underground rootstocks to form large colonies, is quite common in some upland forest

areas. Mosses, lichens, and common polypody occur where bedrock is exposed and/or soils are shallow (e.g., rocky knoll). As is the case in much of southern New England, the mixed white pine and hardwoods community on the property has evolved from a former agricultural landscape. Eastern red cedar, a common old-field colonizer, persists in the understory across much of the property's uplands.

### Red Maple Swamp and Other Wetland Communities

Wetlands on the property include forested wetlands, intermittent (or seasonal) streams, and a potential vernal pool. The most extensive wetlands on the property are located on parcel B. Most other wetlands on or adjacent to the property are confined to narrow swales between low upland ridges and knolls. Some of these wetlands may be classified as groundwater slope wetlands<sup>5</sup>. Intermittent streams draining wetlands on and adjacent to the property flow into Bound Brook.

Although red maple is the dominant tree species in the forested swamp (Fig. 4), other species are common in the overstory including sour gum, yellow birch, and white pine. A stand of young red maple trees within the forested swamp on parcel B suggests that part of this community evolved from a more open wetland setting. Highbush blueberry, sweet pepperbush, and arrow-wood are the most common shrub species in the forested swamp. Northern spicebush (along with yellow birch) is typical on rocky, more sloping wetland terrain. Sensitive fern, marsh fern, mad-dog skullcap, tussock sedge, golden saxifrage, and beds of sphagnum moss occur within wetter sections of the swamp, with cinnamon fern and goldthread increasingly common further upslope. Invasive plants, including common buckthorn, garlic mustard, multiflora rose, and Japanese barberry, have spread onto the property's wetlands from an abandoned piggery located immediately northwest of parcel B. (The distribution of invasive plants on this section of the property is relatively limited and well-defined.)



Fig. 4 - Forested swamp dominated by red maple on Parcel B.

---

<sup>5</sup> Groundwater slope wetlands occur where groundwater discharges as springs or seeps at the land surface and drains away as streamflow. They typically occur on hillsides over till deposits (Golet et al., 1993).

The intermittent stream draining the forested swamp on parcel B (there may be more than one) is generally characterized by a moss-covered, bouldery streambed with poorly defined banks. As the stream flows from parcel B onto parcel C, it is briefly confined within a small, but scenic ravine characterized by a dense stand of eastern hemlock and bedrock outcroppings. A boulder-filled swale and subterranean stream (Fig. 5), located nearby (parcel C), supports a somewhat unique plant community that includes white ash, northern spicebush, hog peanut, poison ivy, and herb robert. Boulders within the swale are on the order of 3-5 ft. in diameter. The boulder deposit appears to have been created by natural forces, and may represent a lag deposit formed by meltwater scour during the deglacial period. (A similar feature was observed east of parcel C.)



Fig. 5 - Boulder-filled swale located on parcel C. A subterranean stream flows beneath the boulders.

A potential vernal pool was identified within the forested wetland on parcel B. (Several wood frogs, obligate vernal pool breeders, were observed on the property suggesting that vernal pool habitat exists nearby.) The abundance of sphagnum moss in parcel B's wetlands may provide suitable habitat for four-toed salamanders if sufficient surface water (e.g., seasonal pools) is available.

### Hemlock Ravine Community

The hemlock ravine community (0.5-0.75 acres in area) is located on the moderately-steep, north-facing slope of the small ravine located on parcel C (Fig.6). The relatively cool microclimate within the ravine creates ideal conditions for this shade-tolerant species. The largest hemlocks (~2-2.5 ft. dbh) occur next to the stream, with most trees further upslope around 5-10 in. dbh. Although foliage on the hemlocks is relatively sparse, hemlock woolly adelgid<sup>6</sup> was not observed. Tree oaks are the most common associates of hemlock in this community (~15% canopy) and, in fact, surpass the

---

<sup>6</sup> The hemlock woolly adelgid is a non-native, aphid-like insect introduced to the eastern U.S from Asia in the early 1950's. It feeds exclusively on species of hemlock by sucking sap from the tree's needles and injecting a toxic saliva. Trees often die within four years. No resistance has been observed in the eastern hemlock, thus the species' future status in Massachusetts is bleak.

hemlock in height except along the stream. Little understory vegetation occurs as a result of the deep shade and northerly aspect of the hemlock stand.



Fig. 6 - A small patch of eastern hemlock, including several large specimens, is located within a ravine on parcels B and C.

### Early Successional Woodland

Several acres of early successional woodland are located along Bates Lane on the southern end of parcel A (Fig.7). Most of this community consists of a dense or coppiced stand of young white pine, red maple, oak, gray birch, black cherry, and common greenbrier. Goldenrod, broad-leaved meadowsweet, winged sumac, fox grape and other early successional plant species occur within the few small openings. The ground surface within this community is disturbed in many places (pits, old fill piles, etc.). Early successional woodlands provide excellent habitat for cottontail rabbit, ruffed grouse, white-tailed deer, and certain bird species (e.g., song sparrow).



Fig. 7 - Early successional habitat along Bates Lane (Parcel A).

## Wildlife

Several common wildlife species (or their sign) were observed on the property including chipmunk, gray squirrel, fox, and raccoon, as well as many common resident and migratory forest bird species. Amphibians observed (or heard) on the property included spring peeper, red-backed salamander, and northern leopard frog (watch-listed). Wood frogs (obligate vernal pool breeders) were encountered in upland forest settings during the survey indicating the existence of vernal pools in the area.

In addition to the many common bird species, the property supports several interior forest breeding birds, some of which are declining regionally, that require large, unfragmented forest areas for successful reproduction. Area sensitive birds observed on the property include ovenbird, great crested flycatcher, black and white warbler, red-eyed vireo, veery, wood thrush, and scarlet tanager. The wood thrush has undergone a noticeable decline in abundance in eastern Massachusetts since about 1980<sup>7</sup>, and is currently listed as “moderately high priority” on the Partners in Flight Watch List. Thirty species of resident and migratory birds were observed during a brief survey of the property and its immediate surroundings in June 2002. Refer to Attachment 2 for a list of wildlife species observed (directly or indirectly) on the property.

## Significant Ecological Features

- The 76-acre Bates Lane property is situated within a larger forest system that is approximately one square mile in area. The property contributes to the overall ecological integrity of this larger, unfragmented forest ecosystem and, thus, is critical toward maintaining its ecological function over the long-term. Unbroken blocks of forested habitat that provide interior forest habitat and its associated wildlife community are becoming increasingly uncommon in the rapidly developing South Shore region. The size and relatively low amount of edge habitat associated with the property and its forested surroundings help preserve native plant and wildlife populations by minimizing encroachment of invasive plant and animal species that are associated with developed areas. Therefore, the property contributes significantly to preserving biodiversity on local, regional, and even, continental scales (i.e., by providing breeding territory for Neotropical migratory birds).
- The property contains several plant communities including mixed white pine and oak forest, forested wetland, hemlock ravine, and early successional woodland communities. Intermittent streams, exposed bedrock ledge, and a rocky knoll add to the ecological and scenic diversity of the property. The property also contains an unusual boulder-filled swale that supports plant species not found elsewhere on the property (e.g., herb robert).

---

<sup>7</sup> From Veit and Petersen (1993), Birds of Massachusetts.

- No rare species have been identified to date on the 76-acre Bates Lane property. However, a northern leopard frog (watch-listed) was observed on the property and eastern box turtles and four-toed salamanders, both listed as “species of special concern”, have been found on land adjoining the property. Box turtles utilize a variety of habitat types and the resident population may inhabit (at least seasonally) some part of the property. The wetlands on parcel B may provide the habitat conditions required by the four-toed salamander (i.e., forested wetlands with beds of sphagnum moss).
- The relatively large tract of forested land that includes the property attracts several species of area-sensitive migratory birds including ovenbird, veery, wood thrush, and scarlet tanager. The reproductive success of these forest interior breeding birds, particularly ground nesters such as the veery and ovenbird, is maximized in large forest patches where fewer nest predators and nest parasites exist. A total of 30 species of birds were recorded during a brief, informal survey of the property, including one species (wood thrush) on the Partners In Flight Watch List.
- Although no vernal pools have been confirmed on the property, at least one potential vernal pool was observed on parcel B. Fifteen vernal pools have been identified and certified by the Natural Heritage Program within the one square mile forest area that includes the property. Several wood frogs were observed during the preliminary survey indicating the existence of vernal pools in the area and confirming that the property provides essential non-breeding, upland habitat for these (and probably other) obligate vernal pool breeders. The Massachusetts Natural Heritage Program classifies vernal pools as priority communities because of the important habitat they provide for amphibians and invertebrates.



Fig. 8 – The 76-acre property borders Bates Lane, which provides access to trails on the property.

## Ecological Threats and Concerns

The primary threat to the ecological integrity of the 76-acre Bates Lane property and its forested surroundings is residential development, particularly that associated with Summer and Beechwood Streets. However, development anywhere around the perimeter

of the larger forest system surrounding the property will contribute, over the long-term, to its (and the property's) diminished ecological value. With additional development comes increased forest fragmentation and forest edge, which provides invasive plants and animals an opportunity to access a forest community otherwise populated by native species. Reduction in the area of forest surrounding the property will compromise interior forest habitat and its critical role in providing breeding habitat for migratory birds. Rare and declining species, such as the eastern box turtle, would likely experience greater mortality from additional roads and traffic. The function and viability of vernal pools on and adjacent to the property may decline for similar reasons and/or from the loss or alteration of surrounding upland habitat that is essential for most vernal pool wildlife during the non-breeding period. On a broader level, increased development around the perimeter of the larger forest system will continue to eliminate much needed linkages with other large forest and wetland ecosystems, such as Wompatuck State Park and South Swamp. Existing development already threatens to isolate the property and its surrounding from the Wompatuck State Park and Whitney-Thayer Woods complex.

Invasive, non-native plants appear to be mostly limited to a small area of parcel B near an abandoned piggery that is located just offsite. Common buckthorn, multiflora rose, and garlic mustard are the most common species. Japanese barberry occurs along some sections of the intermittent stream located on parcels B and C. Control of these invasive plants should be considered as part of a management plan for the property to prevent them from spreading further and displacing native plants.

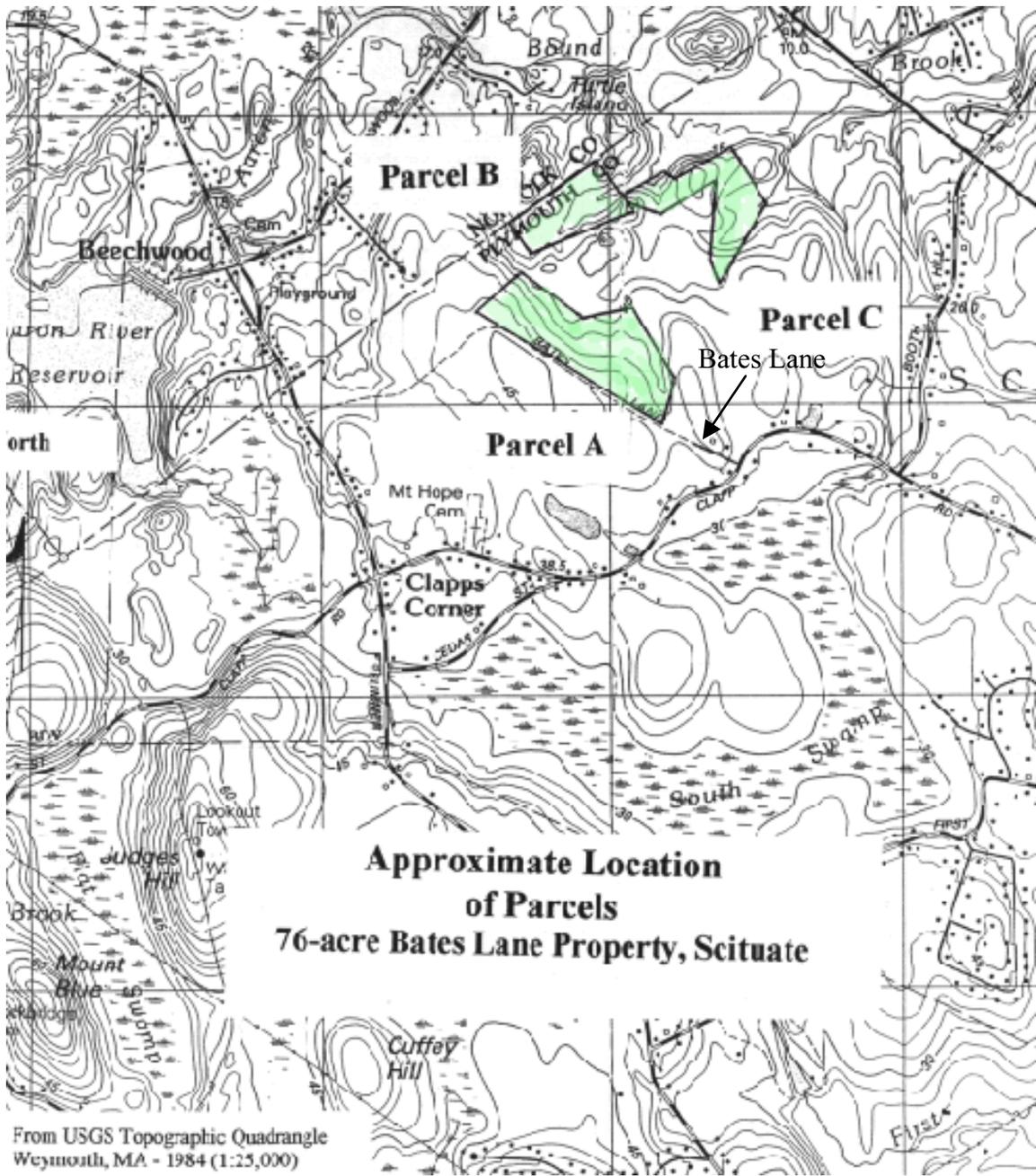


Figure A.  
 N.B. Shaded area is property under agreement with the Maxwell Conservation Trust

## Plant Species Recorded on the 76-acre Bates Lane Property

Scientific Name	Common Name	Scientific Name	Common Name
<i>Abies</i> sp.	Fir	<i>Maianthemum canadense</i>	Canada mayflower
<i>Acer saccharum</i>	Sugar maple**	<i>Medeola virginiana</i>	Indian cucumber root
<i>Acer rubrum</i>	Red maple	<i>Mitchella repens</i>	Partridgeberry
<i>Alliaria officinalis</i> *	Garlic mustard	<i>Monotropa uniflora</i>	Indian pipe
<i>Anemone quinquefolia</i>	Wood anemone	<i>Nasturtium officinale</i>	Watercress
<i>Amphicarpa bracteata</i>	Hog peanut	<i>Nemopanthus mucronata</i>	Mountain holly
<i>Aralia nudicaulis</i>	Wild sarsaparilla	<i>Nyssa sylvatica</i>	Sour gum
<i>Arctium minus</i> *	Common burdock	<i>Onoclea sensibilis</i>	Sensitive fern
<i>Arisaema</i> sp.	Jack-in-the-pulpit	<i>Osmunda cinnamomea</i>	Cinnamon fern
<i>Aster acuminatus</i>	Whorled aster	<i>Osmunda regalis</i>	Royal fern
<i>Aster cordifolius</i>	Heart leaved aster	<i>Ostrya virginiana</i>	Hop hornbeam
<i>Aster divaricatus</i>	White wood aster	<i>Partheno. quinquefolia</i>	Virginia creeper
<i>Aster puniceus</i>	Purple-stemmed aster	<i>Pinus strobus</i>	White pine
<i>Athyrium Filix femina</i>	Lady fern	<i>Polygonatum pubescens</i>	Hairy solomon's seal
<i>Berberis thunbergii</i> *	Japanese barberry	<i>Polygonum arifolium</i>	Halberd-lv. Tearthumb
<i>Betula allegheniensis</i>	Yellow birch	<i>Potentilla canadensis</i>	Dwarf cinquefoil
<i>Arisaema</i> sp.	Jack-in-the-pulpit	<i>Polypodium vulgare</i>	Common polypody
<i>Betula lenta</i>	Black birch	<i>Prenanthes trifoliata</i>	Tall rattlesnake root
<i>Betula populifolia</i>	Gray birch	<i>Prunus serotina</i>	Black cherry
<i>Carex folliculata</i>	sedge	<i>Pteridium aquilinum</i>	Bracken fern
<i>Carex stricta</i>	Tussock sedge	<i>Rhus copallinum</i>	Winged sumac
<i>Carpinus caroliniana</i>	Ironwood	<i>Rhus hirta</i>	Staghorn sumac
<i>Carya ovata</i>	Shagbark hickory	<i>Rosa multiflora</i> *	Multiflora rose
<i>Celastrus orbiculata</i> *	Asiatic bittersweet	<i>Rubus hispidus</i>	Bristly dewberry
<i>Cinna</i> sp.	Wood reed grass	<i>Quercus alba</i>	White oak
<i>Chimaphila maculata</i>	Spotted wintergreen	<i>Quercus coccinea</i>	Scarlet oak
<i>Clethra alnifolia</i>	Sweet pepperbush	<i>Quercus rubra</i>	Northern red oak
<i>Coptis groenlandica</i>	Goldthread	<i>Rhamnus cathartica</i> *	Common buckthorn
<i>Cypripedium acaule</i>	Pink lady's slipper	<i>Rhododendron viscosum</i>	Swamp azalea
<i>Dennstaedtia punctilobula</i>	Hay-scented fern	<i>Sambucus canadensis</i>	Common elderberry
<i>Diphasiastrum digitatum</i>	Southern ground cedar	<i>Sassafras albidum</i>	Sassafras
<i>Dryopteris spinulosa</i>	Spinulose woodfern	<i>Scutellaria lateriflora</i>	Mad-dog skullcap
<i>Euthamia graminifolia</i>	Lance-leaved goldenrod	<i>Smilax rotundifolia</i>	Common greenbrier
<i>Fagus grandifolia</i>	American beech	<i>Solidago rugosa</i>	Rough goldenrod
<i>Fraxinus americana</i>	White ash	<i>Sphagnum</i> spp.	Sphagnum moss
<i>Gaultheria procumbens</i>	teaberry	<i>Spiraea latifolia</i>	meadowsweet
<i>Kalmia angustifolia</i>	Sheep laurel	<i>Symplocarpus foetidus</i>	Skunk cabbage
<i>Gaylussacia baccata</i>	Black huckleberry	<i>Thelypteris noveboracensis</i>	New york fern
<i>Geranium robertianum</i>	Herb robert	<i>Thelypteris thelypteroides</i>	Marsh fern
<i>Impatiens capensis</i>	jewelweed	<i>Thelypteris simulata</i>	Massachusetts fern
<i>Iris</i> sp.	Iris	<i>Toxicodendron radicans</i>	Poison ivy
<i>Ilex opaca</i>	American holly	<i>Trientalis borealis</i>	Starflower
<i>Ilex verticillata</i>	Common winterberry	<i>Tsuga canadensis</i>	Eastern hemlock
<i>Juncus effusus</i>	Soft rush	<i>Ulmus americana</i>	American elm
<i>Juniperus virginiana</i>	Eastern red cedar	<i>Uvularia sessilifolia</i>	Sessile-leaved bellwort
<i>Ligustrum vulgare</i> *	privet	<i>Vaccinium corymbosum</i>	Highbush blueberry
<i>Lindera benzoin</i>	Northern spicebush	<i>Viburnum acerifolium</i>	Maple-leaved viburnum
<i>Lycopodium clavatum</i>	Staghorn clubmoss	<i>Viburnum cassinoides</i>	Northern wild raisan
<i>Lycopodium complanatum</i>	Running pine	<i>Viburnum dentatum</i>	Arrow-wood
<i>Lycopodium lucidulum</i>	Shining clubmoss	<i>Viburnum trilobum</i>	Highbush cranberry
<i>Lycopodium obscurum</i>	Tree clubmoss	<i>Viola</i> sp.	Violet

Notes:

\* = non-native plant species  
 \*\* = located just off the property

## Wildlife Species (or sign) Recorded on the 76-acre Bates Lane Property

<b>Birds:</b>	
American crow	Northern cardinal
American goldfinch	Ovenbird
American robin	Pine warbler
American woodcock	Red-bellied woodpecker
Black and white warbler	Red-eyed vireo
Black-capped chickadee	Red-tailed hawk
Blue jay	Ruffed grouse
Brown-headed cowbird	Rufous-sided towhee
Carolina wren	Scarlet tanager
Common grackle	Tufted titmouse
Downy woodpecker	Veery
Eastern wood peewee	White-breasted nuthatch
Gray catbird	Wood thrush
Great-crested flycatcher	Yellow-billed cuckoo
Hairy woodpecker (?)	
Northern flicker	
Northern oriole	
<b>Mammals:</b>	
Chipmunk	Raccoon (tracks)
Coyote (scat)	Short-tailed shrew
Fox (red or gray?)	Striped skunk
Gray squirrel	White-tailed deer
<b>Herps:</b>	
Eastern box turtle (S. Morrissey obs.)	Spring peeper
Four-toed salamander (S. Morrissey obs.)	Wood frog
Northern leopard frog	
Red-backed salamander	

