

**The Edmund Hill Woods Natural and Cultural  
History Trail, Northborough, Massachusetts**

*Prepared by Forest P. Lyford for the  
Northborough Trails Committee, January 2006*

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## Station 47



This **circular pond** is man-made. The surrounding mounds of dirt were left by earth-moving equipment during construction of nearby homes in the 1950's and 60's. The pond was reportedly constructed for skating. It holds water year round because the bottom is below a shallow water table.

## Station 51



This manmade **wetland**, holds water year round and supports a healthy population of frogs, spring peepers, and mosquitoes. Ducks are commonly present. The pond was constructed in the 1980's to catch storm runoff from the housing development on Overlock Drive.

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## Introduction

The Edmund Hill Woods Conservation area in Northborough, Massachusetts, includes a 75-acre parcel donated to the town by Edwin Proctor in 1967, and an 18-acre parcel near Colburn Street and Bearfoot Road, the former Northborough Fish and Game Club that was purchased by the town in 2002. Edwin Proctor, a Harvard graduate and teacher by profession, was born in Northborough and was very active in numerous civic organizations after his retirement from teaching in 1948 until his death in 1978. He donated the land to be preserved in a wild state for the enjoyment of all and emphasized that the land be used.

The conservation area includes a system of trails that passes through forested uplands and wetlands. The trails are maintained by the Northborough Trails Committee. Much of the area was open farmland in 1800's and early 1900's. A diverse hardwood forest, which is characteristic of central New England, covers former pastures and woodlots in hilly terrain, and a white pine and pitch pine forest covers flat, formerly cultivated fields. Stone walls mark edges of former fields and pastures.

Edmund Hill is a drumlin formed when a continental glacier covered the region from about 15,000 to 25,000 years ago. Hummocky terrain at the south end of the conservation area marks a temporary glacial terminus where water discharging from beneath the ice left a thick deposit of sand and gravel. Glacial Lake Assabet covered the area to an elevation of about 330 feet and lapped onto the slopes of Edmund Hill until ice melted from the Sudbury, Assabet, and Concord River drainage basins and lowered the drainage outlet. A flat delta surface and lakebed that were formed in Glacial Lake Assabet underlie the

southwestern part of the Edmund Woods area. The glacial deposits are readily recharged by precipitation, and ground water in glacial and wetland sediments sustains flow in a perennial stream. One depression holds water much of the time and supports animal species that are characteristic of vernal pools. Numerous stonewalls, a wagon path, drainage ditches, and excavations mark fairly recent activities by man.

The cultural and natural history trail is an approximately one-mile loop including part of the Edmund Hill Trail and all of the Proctor Trail named for Edwin Proctor. Interpretive stations described below are keyed to numbers on posts. The station number is the approximate distance, in hundredths of a mile, from the Rice Avenue trail head.



#### Station 42



The abrupt change in slope marks the **edge of a delta** deposited into Glacial lake Assabet. The **stone wall** at this location marks the edge of a formerly cultivated field. Large stones typically are absent in deltaic deposits, so these had to be hauled uphill to build the wall at this location.

#### Station 46



**Wetland vegetation** contrasts with upland vegetation. Here red maple is the dominant tree type. **Red maple** tolerates a wide variety of environmental conditions, including periodically saturated soils. White pine trees and white oak that are also present in the area are less tolerant of wet conditions and typically grow on slightly higher areas with their “feet” out of water.



### Station 36



A **railroad** from Northborough to Clinton was constructed in the 1860's mainly to provide transportation of agricultural products to city markets. The original Agricultural Branch Railroad eventually extended to Fitchburg and later became the Old Colony Line. Later still, it became part of the New Haven Railroad system. The railroad, now CSX, still transports freight to Leominster nearly every day.

### Station 41



This **excavation** indicates a former source of sand and gravel, sometimes called a **barrow pit**. The excavated materials may have been used for construction of nearby farm paths. Excavation probably predated the use of power machinery.

### Station 00



The **Wachusett Aqueduct** was constructed during the late 1800's and early 1900's to transport water from the newly formed Wachusett Reservoir to the Boston metropolitan area. The masonry-lined aqueduct was recently relined with concrete and will continue to serve as a backup for the nearby Cosgrove tunnel that was constructed in the 1960's. Northborough typically obtains about 30 percent of its water from this water-supply system operated and maintained by Massachusetts Water Resources Authority (MWRA).

### Station 04



**Glacial End Moraine** consists mainly of sand and gravel deposited on or very near melting ice. The many hills and depressions are characteristic of deposits formed on ice that later melted. Terrain like this is often mined for its gravel resource. An extensive body of sand and gravel once extended across the Assabet River valley to a similar area just north of Algonquin Regional High School. The Oak/Hickory Forest in this area is typical of the New England Central Forest Region. A wide variety of trees includes Red and White Oak, White Ash, Shagbark Hickory, Poplar, Beech, and Gray Birch. This is considered by foresters as a maturing forest in the "understory reinitiation stage". Here, saplings quickly become established where old trees die or fall from storm damage ►

### Station 05



**Rocks in this pile** were probably placed here by a farmer or gardener as rocky land was cleared for a garden.

► and part of the forest floor is opened to sunlight. White pine that are scattered throughout this hardwood forest commonly populate open areas. The dominant hardwoods are about 80 to 100 feet tall in this area and will not grow much taller.

### Station 06



**The linear ridge** that the trail follows may mark a feeder tunnel under the ice that carried sediment-laden water under pressure to a nearby discharge point. Sediments in ice-contact features such as this consist largely of coarse sand and gravel.

### Station 29



This **white pine forest** claimed abandoned cultivated fields at least 80 years ago. The fertile, stone-free soils that formed on lake-bottom sediments support a dense stand of 100-foot-tall trees. Drought-tolerant pitch pines (characterized by gray bark) are also present and were early seedlings after farming on these sandy soils. They are gradually being shaded out by the taller white pines.

### Station 32



The **"dog-hair" grove** of white pines indicates an opening in the canopy. Close inspection reveals that several trees were cut in the area. The number of limb whorls on pine saplings indicate that the larger trees were cut more than 20 years ago. Openings and new growth like this add diversity and ecological health to the forest.

### Station 23



Here the interpretive trail turns left onto the Proctor Trail. Ahead are several white oak trees killed by a **lightning strike** in 2002. These dead trees will serve as food sources and homes for woodpeckers and other birds.

### Station 27



The depth and width of this **channel** indicates that much more water was carried at some time in the past; it does not appear to be man-made. A large wetland to the northwest may have drained through this channel until **headward erosion** in Barefoot Brook diverted drainage to the north. Alternatively, farmers or railroad construction may have diverted water through dug channels into Barefoot Brook. A trickle of water indicates that ground water discharges slowly into the channel.

### Station 07



This pool occupies a **glacial kettle** where sediments covered glacial ice that later melted. The pool holds water much of the time and is a breeding habitat for amphibians, including frogs and salamanders that are characteristic of **vernal pools**. It is isolated from other water bodies.

### Station 08



The **multiple trunks** on this tree and others in the area indicate that the area was once logged for lumber or firewood. A few stump sprouts survived to form mature tree clusters. On the opposite side of the trail are sprouts of **American Chestnut**. Chestnut was the dominant hardwood in New England forests until the early 1900's when the chestnut blight spread from the New York City area. Trees continue to sprout from existing roots and commonly reach diameters of several inches before the blight fungus infects the bark and sapwood. The presence of American Chestnut here indicates that this forest has existed since the early 1900's, at least. An 1835 map of Northborough shows a woodland in this location. The area may have served as a woodlot for firewood ►

## Station 12



This structure was built as a **farm access road** for pastures on Edmund Hill. A rock-lined culvert spans the stream. The **perennial stream** (a stream that flows year round) receives water from ground-water sources in glacially-derived sediments upstream. The flow is fairly uniform throughout the year, even after storms and extended dry periods.

► because of limited alternative uses of the rugged, stony, terrain.

## Station 13



The interpretive trail turns left here onto the lower loop of the Edmund Hill trail. The trail ahead (the upper loop) rises up the south-facing slope of a drumlin, which is a rounded hill formed under slowly moving glacial ice. The age of the small white pine ahead can be approximately determined by counting limb whorls. This tree appears to be about 60 years old and about the same age as the much larger pine to the left. This contrast in size demonstrates that a tree's diameter and height are not good indicators of age.

## Station 19



**Stone walls** were built by farmers as a means of disposing of stones in fields and to contain livestock. Wooden rails supported by crossed posts were needed to keep livestock in the pastures. A man and team of oxen reportedly could build about 16 feet of wall in a day. Stone wall building was a late autumn or early spring activity between growing seasons. This stone wall marks a break between the former wetland meadow and upland pasture.

## Station 20



The trail crosses about 200 feet of a **boulder field** of unknown origin. It may have formed when a wave-cut slope collapsed into Glacial Lake Assabet, and fine-grained sediments were washed away by wave action.

## Station 16



A **spring** at the base of Edmund Hill causes this wet spot in the trail. Springs are commonly found at the base of long hill slopes. Here the flow typically declines after the trees leaf out and eventually ceases during dry summer months. The small logs placed across the trail form a **corduroy road**.

## Station 18



The **straight channel** was an attempt by farmers to drain the swamp, probably to facilitate harvesting of meadowland hay. The meadow hay was nutritionally superior to hay grown on unfertilized upland soils.

## Station 14



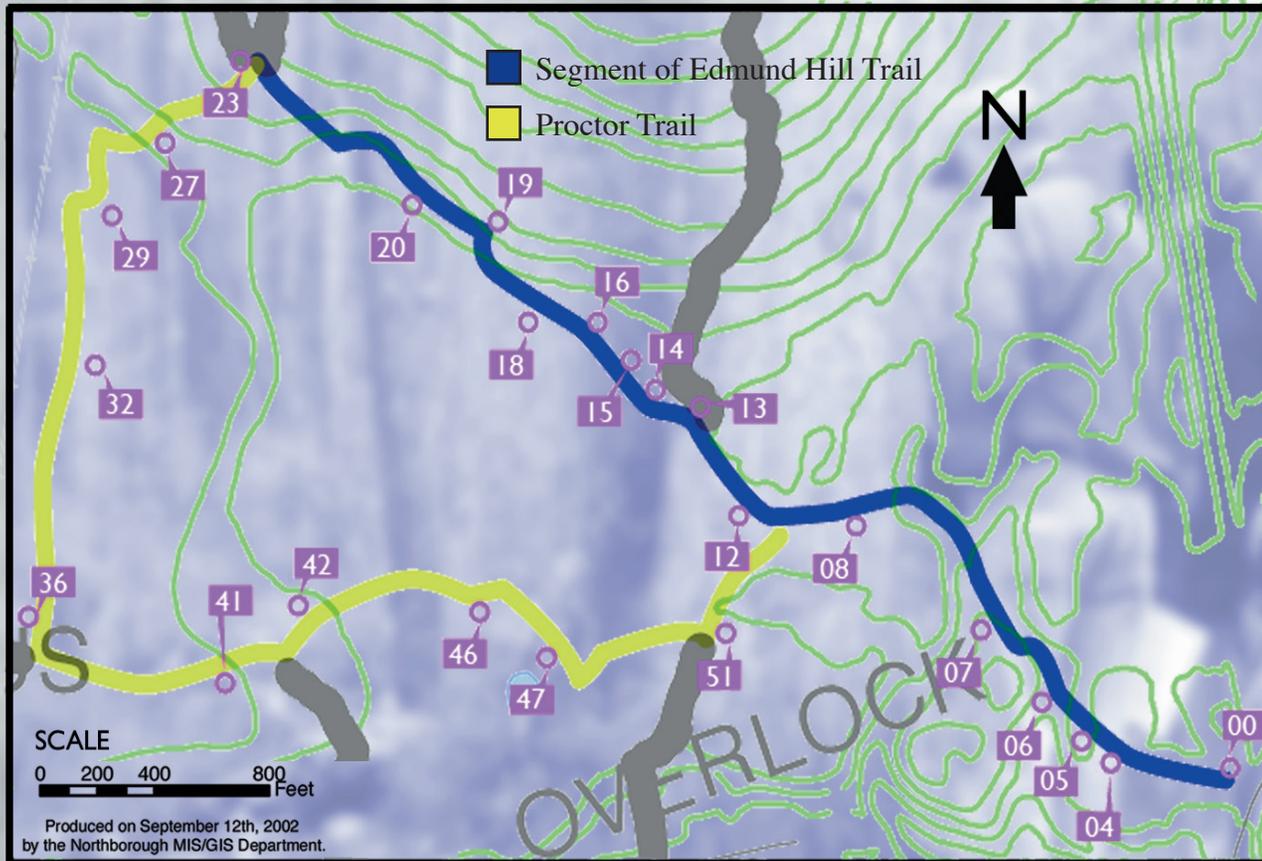
**Beech trees** generate small nuts that are eaten by a variety of wildlife, including deer, squirrels, chipmunks, mice, and bluejays. The trees are tolerant of shaded conditions and typically sprout in forested areas.

## Station 15



This dense grove of **white pine saplings** formed after one or more overstory trees or limbs fell and increased the amount of sunlight that reached the ground. Foresters refer to these groves as “dog hair pine”. As the grove matures, the stronger stems will survive as weaker saplings are pruned by nature.

# Map of Edmund Hill Trail & Proctor Trail with Trail Stations



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