

# Forests Changing Slowly and Quickly in Webster Woods

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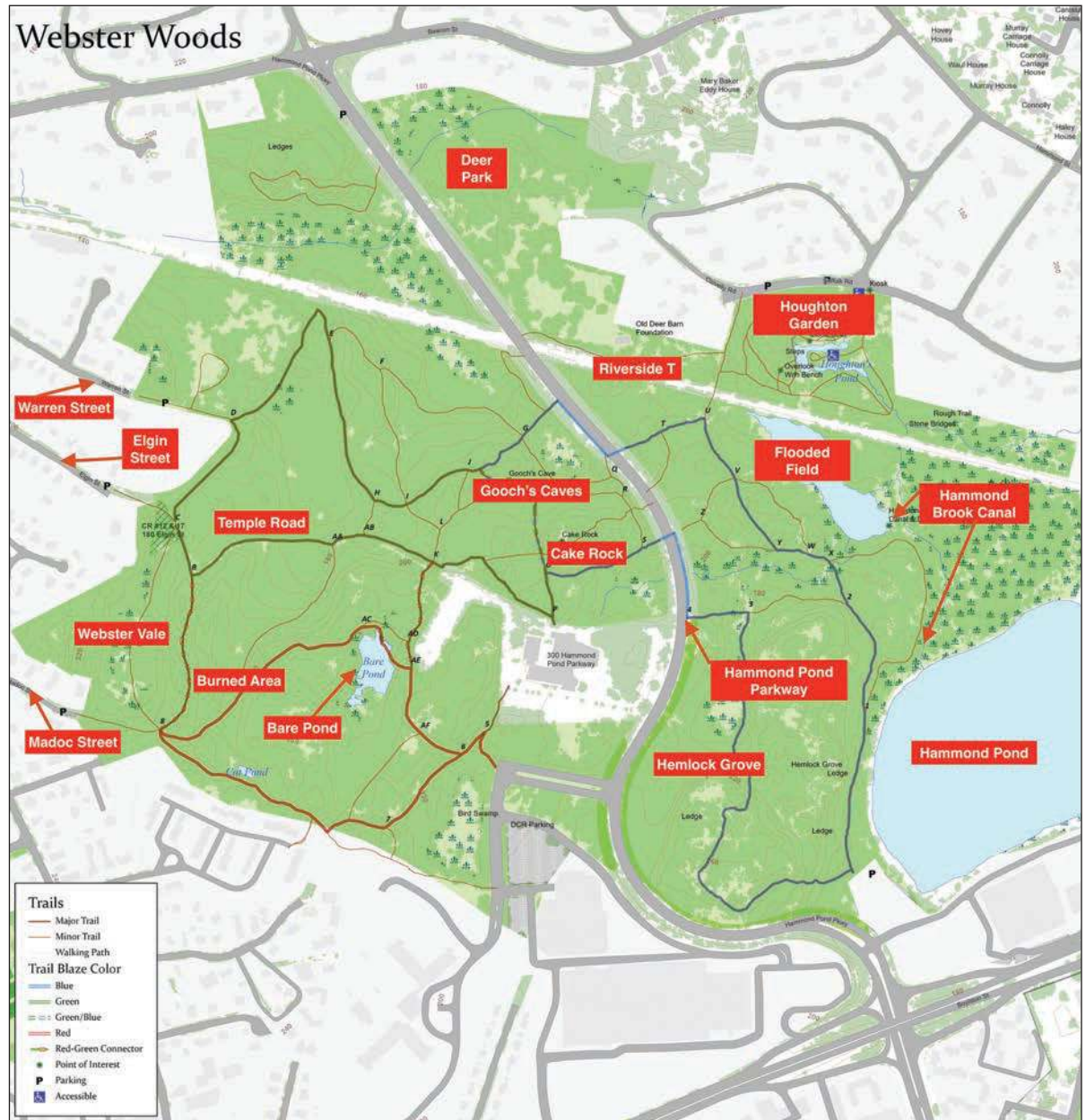
I have been walking for over 60 years in the Webster Woods, the forest on both sides of Hammond Pond Parkway, and sometimes called the Hammond Woods. When people ask me if the woods have changed over that time, my instinct is to say that they have pretty much stayed the same. But upon further reflection, while some parts of the woods have not noticeably altered in my lifetime, overall, much has changed — some parts slowly and others very quickly.

## Past Changes

The history of the woods begins with the retreat of glaciers from Massachusetts about 16,000 years ago, when the area was barren and lichens began colonizing newly exposed rock. We can still see evidence of the glaciers in the giant boulders they left behind in the woods. One giant cube-shaped boulder, five feet across, still perches on the ridge above Gooch's Caves.

In more recent times, the woods' rugged landscape, steep ridges, and swamps protected them from being developed.

The woods could not be easily crossed by roads, and they were not suited to cultivated crops. Hardy souls used the land for pasture, as evidenced by the rock walls running through the woods. These walls were likely constructed in colonial times and had wooden rail fences running along the top. Farmers used the land as pastures for dairy cattle, with scattered patches of wood lots providing firewood.



Graphic courtesy of Doug Greenfield, Newton's GIS manager and Newton Conservator board member Dan Brody, modified by Ken Mallory

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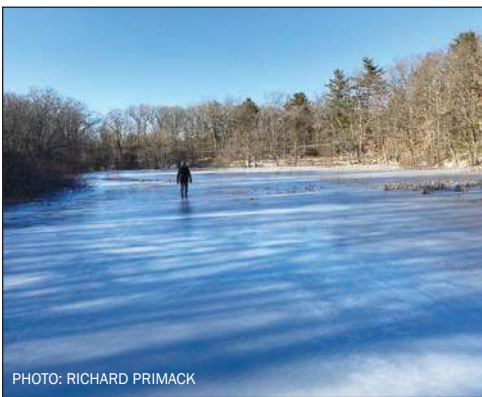
*Giant boulder*

cut firewood in the woods.



*Rock walls running through the woods*

Other areas of the woods were extensively altered for water use. The Hammond Brook, emerging from the northwestern edge of Hammond Pond and angling through the red maple swamp towards Houghton Garden, is lined with highbush blueberries and coastal pepperbush. It looks like a natural stream but is actually a canal built in the distant past to deliver water to the mill at Bullough's



*Flooded field*

the distant past to deliver water to the mill at Bullough's Pond. The canal also supplies water to the flooded meadow just south of the train tracks, which might have been managed for hay and cranberries in the past; the engineered hydrology prevents the field from undergoing succession to become a swamp forest.

### Slow Change

The ridge and plateau just west of Hammond Pond and the plateau just to the southwest of Bare Pond seem to have changed the least. At these locations, the oak, black birch, and red maple trees are only about 20 to 30 feet tall with twisted, often broken trunks, but they are likely 100 years or

more old. According to Brendon Whittaker, who grew up in Newton, in the 1940s Mrs. Webster (namesake of the woods) still had dairy cattle at her barn near Suffolk Road and her employees still



*Stunted pitch pine on ridge east of Bare Pond*

cut firewood in the woods. more old. The short, bonsai-like stature of these trees is likely due to thin, nutrient-poor soils. Rings of tree stumps provide evidence of past tree cutting; sprouts grow out of the edges of some of the cut trunks.



*Pine saplings growing up in the former deer park; the oak tree above has a spreading crown from growing in the open.*

Between the ridges in the woods are distinctive mixtures of massive oak trees with spreading branches and smaller, upright black birch trees. These oak trees may have grown in open pastures

with plenty of light after the pastures were abandoned around the time of the Civil War. When oaks died or were damaged, fast-growing black birch trees with upright branches grew up in the gaps.



*Tree trunk broken in the 2020 storm*

Big winds were responsible for toppling many of the oaks that fell. The Great New England Hurricane of 1938, with gusts of wind up to 186 miles per hour, knocked down many trees and broke the tops off others. The winds from that storm probably caused many of the old trees, including one of the huge pine trees along the road leading west from the former Temple, to lean to the northwest, away from

the direction of the hurricane wind. Other groups of trees, such as around Cake Rock and Hemlock Grove, lean to the east probably due to another great storm of unknown date. Two years ago in 2020, a windstorm broke many trees (most weakened by disease) 10–30 feet above ground.

## Fast Change



*Hemlock tree on a cliff*

Other parts of the woods are being transformed more quickly. With the deer herd removed from the old deer park, just east of the Parkway, hundreds of white pine saplings are rapidly growing up and forming thickets. Within a few decades, this field will become a pine forest. This change is typical in New England, where people (or deer) have stopped maintaining open areas.

The notch in the ridge just west of Hammond Pond is also changing rapidly. For



*Sassafras shoots sprouting from the roots of a burned tree*

a century or more, a stand of hemlock giants presided over the most tranquil and coolest spot in the woods. The hemlock grove provided a glimpse of what New England forests might have been in the past. But today, these trees are sick and dying because of the hemlock woolly adelgid, an insect which infests their twigs, leaving behind dead dead branches. Black birch saplings are filling the

gaps left by the dead trees. Within a few years, most hemlock trees will be gone.

About four years ago, a ground fire between Bare Pond and what I call the Thompsonville Road, which runs from the end of Madoc Street to the train tracks, ignited leaves, fallen branches, and the bases of some trees. The fire killed many small and medium-sized trees and shrubs, leaving the area more open. The roots of some trees, especially oaks and sassafras, survived and are producing new sprouts.

Tree diseases are also changing the Webster Woods. Chestnut trees were once common in the woods, but 90 years ago

a fungus infected their stems and killed them, creating opportunities for young birch and oak trees to grow into



*Fungus growing out of a black birch tree*

the forest canopy. The roots of chestnut trees persist and send up new shoots that usually live just few years until the fungus kills them too. Many of the stately beech trees in Webster Vale (the valley which includes Thompsonville Stream) are sick because of beech bark disease, which discolors and cracks the bark. Oak trees are prone to rotten hollow trunks, and birch trees

suffer from a dry rot fungus with abundant white fruiting bodies. These diseases reflect the declining health of our forests.

Introduced Norway maples and buckthorns are increasing in number and size, particularly along paths leading into the woods. Such non-native trees thrive in our rapidly changing conditions, contributing to the decline of native tree and wildflower species by shading and crowding them out.

## The Future of the Webster Woods

The Webster Woods will continue to change. As the climate continues to warm and rainfall patterns alter, some tree species will benefit — perhaps the oaks and hickories and non-native species such as Norway maple, buckthorn, and tree of heaven — while others might start to die.

The increased presence of deer could transform the forest understory, as they prefer to eat native and more palatable plant species, thus encouraging the less palatable species.

The complex interaction of birds, insects, and disease could tip the balance in favor of some tree species over others. Even though change may appear slow in the Webster Woods, parts of it are shifting quite quickly and will change even faster in coming decades — faster than we may think possible.

Now that the City of Newton has acquired the remaining section of undeveloped forest from Boston College, the future of the Websters Woods seems more secure. However, the people of Newton still need to monitor the woods and take action in response to ongoing and future threats, such as fires, tree diseases, and harmful non-native species. ♦