A Natural History of the West Farms Conservation Area

Prepared by Laurie L. Sanders, M.S.
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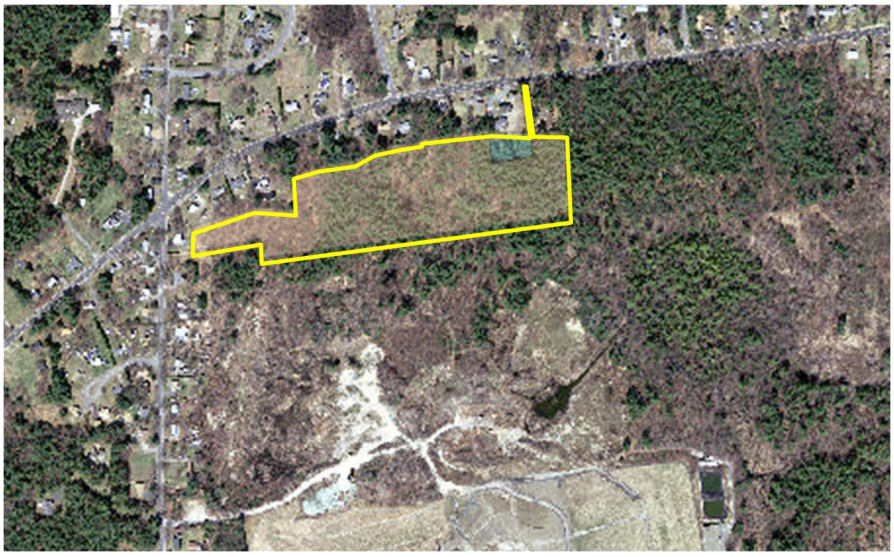
West Farms Conservation Area

Overview

Unlike most of Northampton's conservation areas, this property was not acquired with conservation as its primary purpose, but rather as part of a broader, limited development project. Orchestrated by the City, the project had four independent goals:

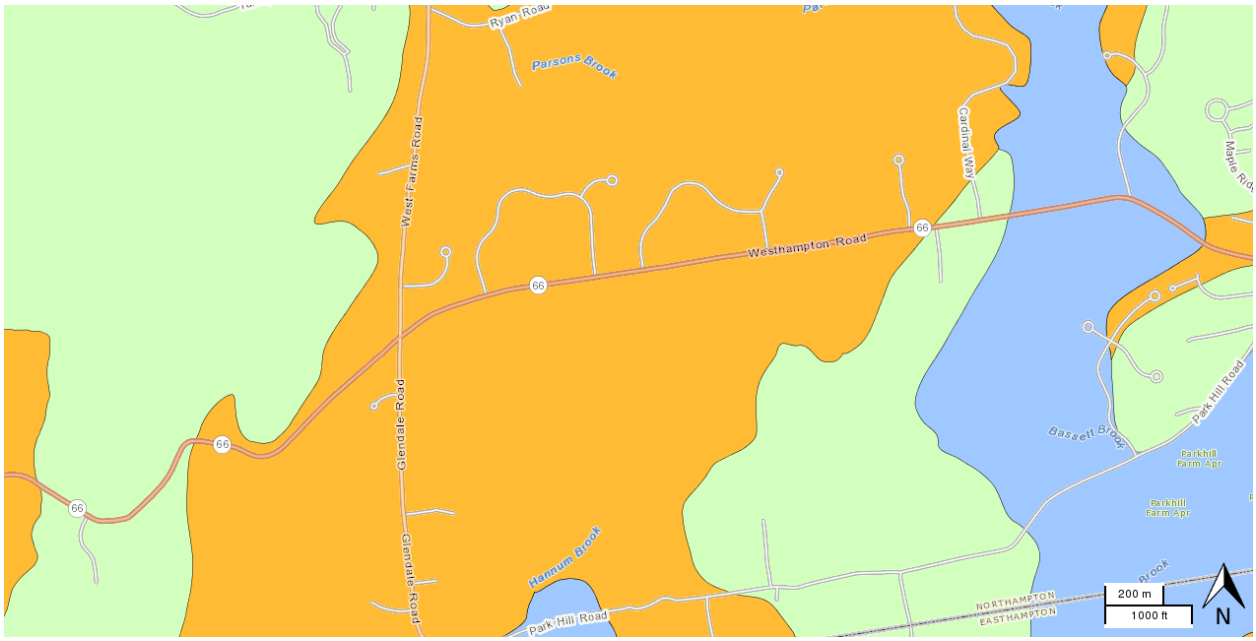


The city-owned property outline in yellow, with a blush of orange denoting the land dedicated for conservation and the turquoise blue as the land earmarked for a future playground. Due south are the scars left behind by former gravel pits and the city of Northampton's landfill. To the east is a large patch of pitch pine/white pine woods and a former pig farm, now growing up into brush.

1. Establish a broader buffer between Route 66 and the then-open, but now-closed city landfill;
2. Create a small affordable housing project (in collaboration with Habitat for Humanity);
3. Set aside a future playground lot; and
4. Protect the remaining land as a conservation area.

Although the underlying purposes were different than most conservation acquisitions, it turns out that the 16-acres include a fairly good example of a pine barren, now one of the rarest habitat types in the Commonwealth and Northampton. The land also includes a vernal pool and a small patch of woods that were historically cleared and are underlain by slightly richer soils.

Geology



The surficial geology of the area shows vast outwash plains (orange) in this part of Northampton. Light green equals unsorted glacial till, while light blue are clays left behind during the era of glacial Lake Hitchcock. *From MA GIS Oliver.*

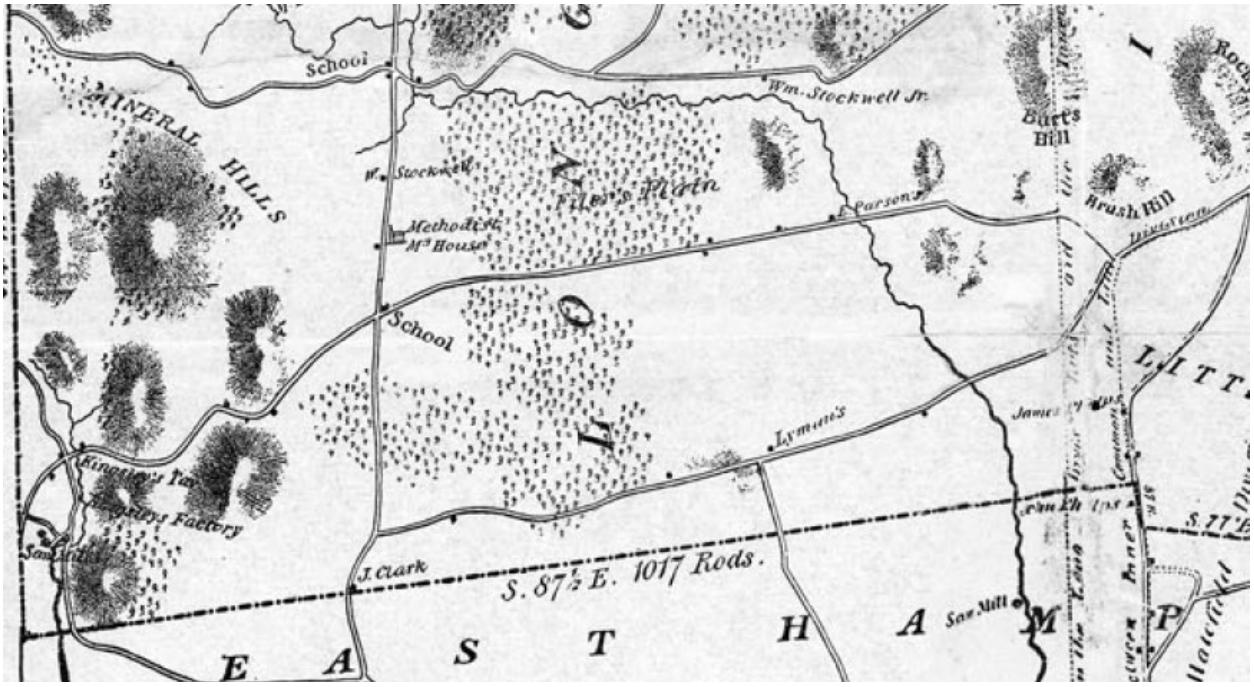
If we could go back 14,000 years and explore this part of Northampton, we would find braided rivers, milky with sediments from the retreating continental glacier. As they poured into the shallow margins of glacial Lake Hitchcock, the velocity of the water slowed down and the sands and gravels that had been held in suspension dropped out. Over time, these water-sorted sediments created the deep, broad outwash plain that underlies and characterizes this section of Northampton. In some areas, these deposits extend 100 feet down before intercepting the sandstone bedrock below. The sandstone is 200-million year old New Haven Arkose, but the sands and grav-

els were derived from 450-million year old metamorphic and igneous rocks that lie to the northwest.

During the last 12,000 years, streams, rain and erosion have modified this landscape, cutting down through the sands, and created the conservation area's varied terrain. Along Route 66, the land is mostly level, but to the south, the land drops off steeply before flattening out again and then sloping south. A vernal pool lies in the lowest hollow, and forms the headwaters of Hannum Brook, a small stream in Easthampton that flows into the Manhan River. Other vernal pools are found on the north side of Route 66; these are kettleholes that formed when large blocks of ice from the glacier were buried by sands and sediments. When the buried blocks eventually melted, the overlying sands dropped down, leaving behind depressions in the landscape.

Human History

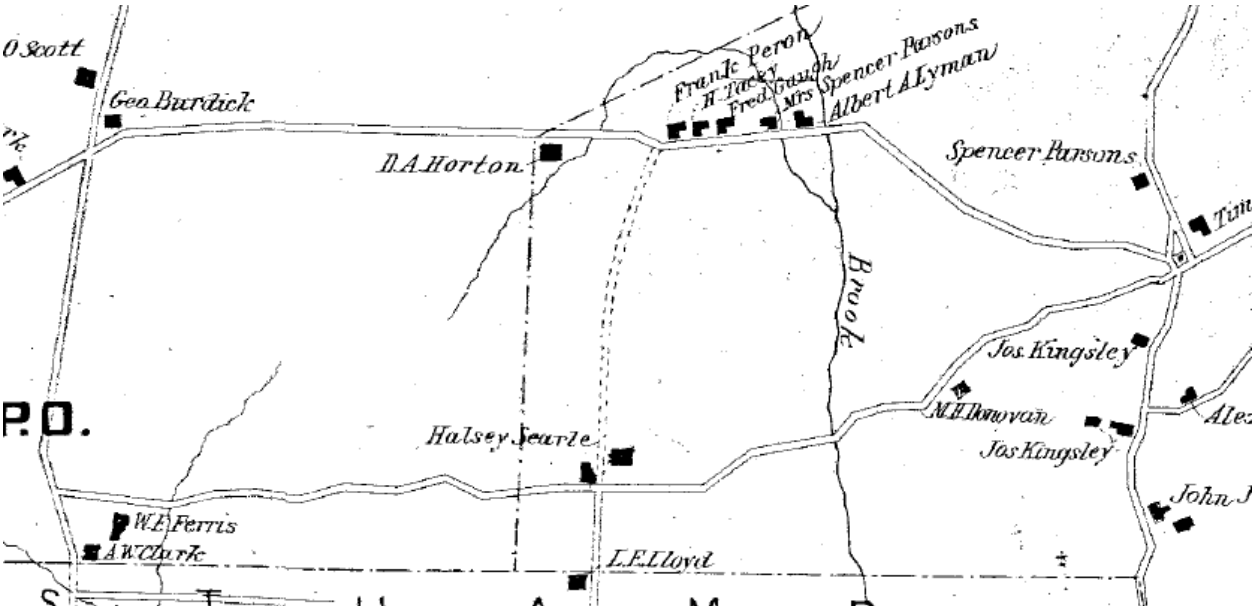
By the time the English explored this area, the Nonotuck had been here for thousands of years. For at least five thousand years, they used fire as a tool to manage and manipulate their landscape--to improve their hunting grounds, eliminate undergrowth to make travel easier, and once agriculture arrived, to clear land for crops. In many upland areas, the fires created park-like for-



The southwestern corner of Northampton was sparsely settled in 1831 when this map was created. At that time, the land that now contains the Willard Gravel Operation was known as Filer's Plain.

ests, with massive canopy trees and a grassy understory. But in places underlain by sand like this one, a different kind of plant community developed after fire. The plants growing on these sites were specialists, adapted both to frequent fire and a tolerance to tough environmental conditions—thin, acidic soils underlain by droughty, nutrient-poor sands. Instead of massive oaks and chestnut, places like this conservation area would have been dominated by pitch pine, scrub oak, low-bush blueberries, and grasses like little bluestem and switchgrass. The English called these sandy, open grasslands and pitch pine barrens "plains." On the 1831 map, this area not far from Filer's Plain.

Pitch pine was once exceedingly common in Northampton and its resinous ranch knots were used by early European settlers for lighting.



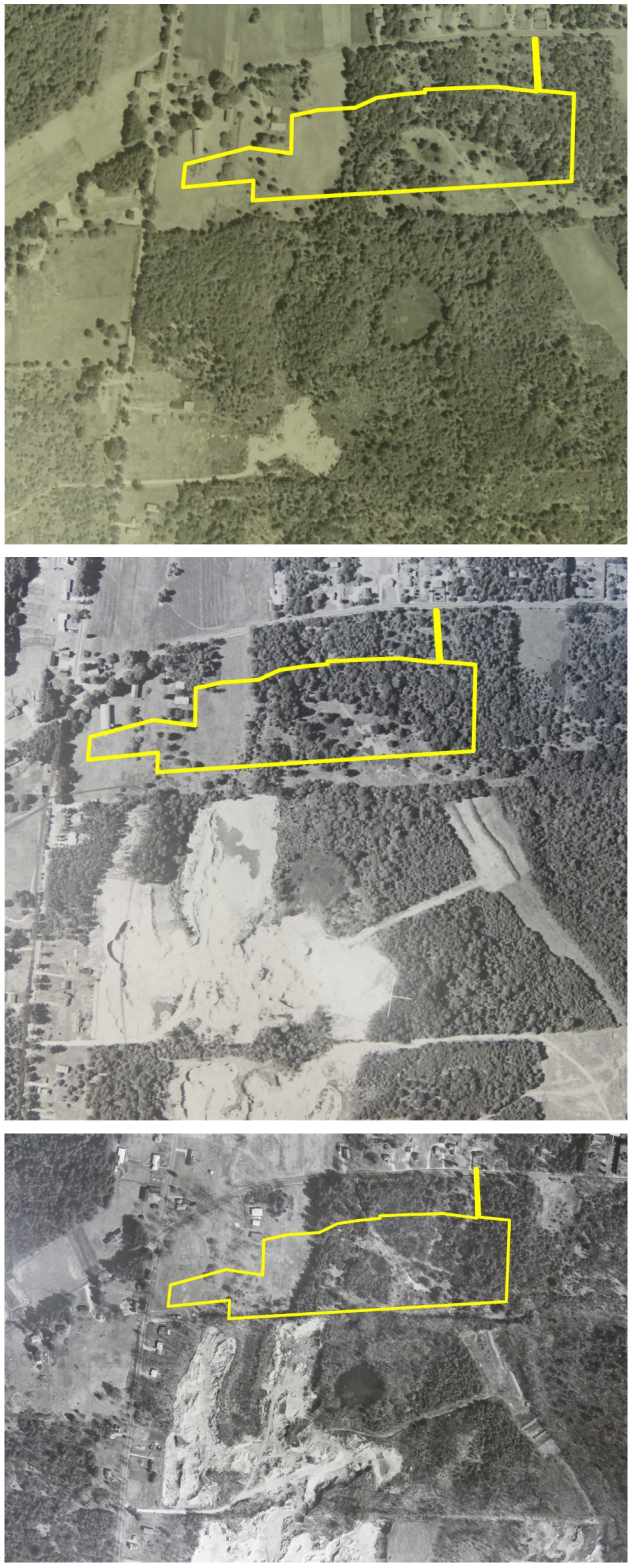
The 1895 map for Northampton shows few houses along what is now Route 66. The tavern, which was present in 1831, is now owned by George Burdick and lies northwest of the conservation area. It still stands today at the intersection of West Farms Road , Route 66 and Glendale Road.

Because the English were so focused on agriculture and livestock, these areas were a low priority. Pigs could feed on the acorns, and pitch and candlewood could be collected, but otherwise,

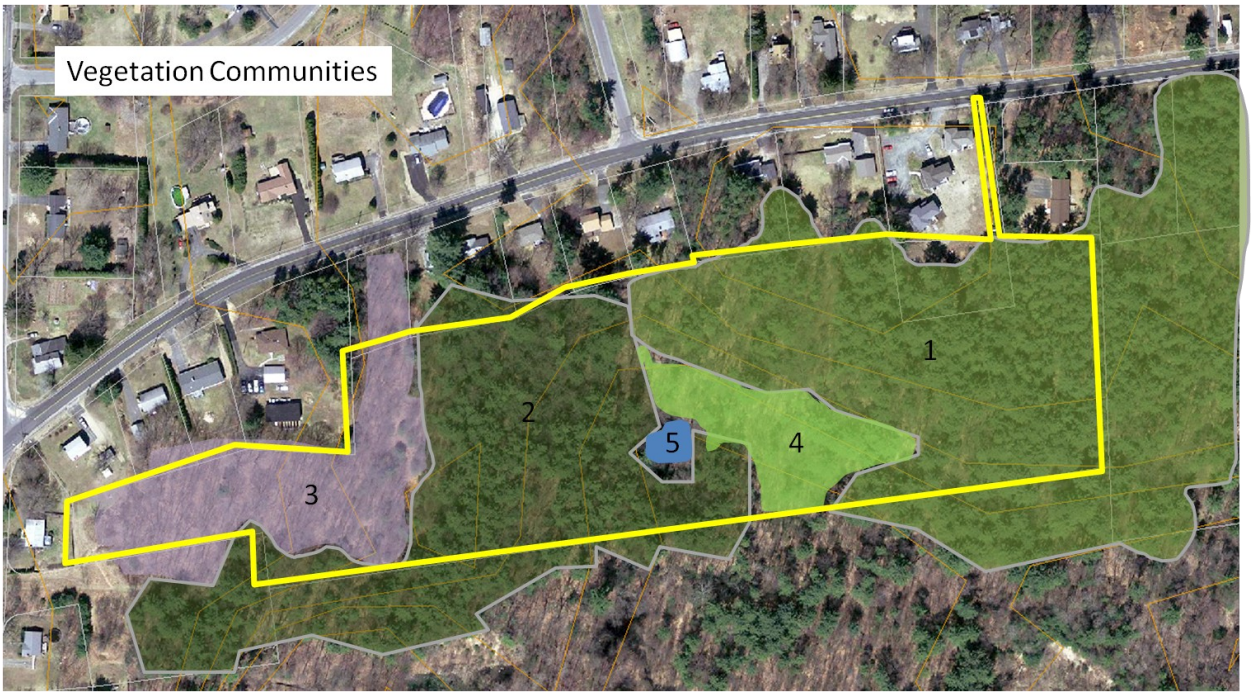
these sandy places made for lousy farming or poor woodlots. During the colonial period and long after the American Revolution, few people settled here. In fact, Northampton's 1831 map shows just four houses along more than a mile of what is now Route 66, and by 1895, there weren't many more! It wasn't until the mid-20th century that this area saw any real development, and then, in an odd reversal, the big attraction was what had discouraged people for so long: the sand itself.

Sand became a commodity after WWII when a building boom drove the need for sand and gravel. In this part of Northampton and Easthampton, more than half a dozen new gravel mining operations got underway. During the 1940s, 50s and 60s, hundreds of acres were stripped and mined. Somehow this property escaped being mined, but an enormous gravel pit was dug immediately to the south and in 1969, it became a landfill. Other large sand pits occur to the north (Willard's) and to the west (Brakey's).

During the 1950s and 60s, this area also had a mini-building boom. The land was inexpensive, it was mostly flat, and the sandy soils were easy to build on. Dozens of new homes went in, and since then some new subdivisions and lots have been developed.



The conservation area through the years of 1952, 1965 and 1986. Although it remains mostly open pasture and unchanged, the land due south became a massive gravel pit operation and then Northampton's landfill.



During the 1950s parts of this property were cleared and open and were used as hayfields and pasture. Other parts of the land, however, were allowed to grow into forest and today are a mix of white pine, pitch pine and oak. Since then, in the absence of clearing or fire, this property has grown up into a mix of species that reflect both the property's land use history and differences in the underlying soils and topography.

Vegetation Patterns

Today this conservation area is entirely forested and based on the mix of species, can be separated into five major areas (see *Vegetation Communities* map).

White Pine Dominated, with Oak and Scattered Pitch Pine (1)

Behind the new condominiums and surrounding the future playground lot, the sandy flats are dominated by white pine, but include an abundance of white oak, red oak and black oak. Pitch pine is common too, but the trees are scattered and in the absence of fire, they

are gradually being outcompeted by the other canopy trees. The forest here is mostly open and easy to walk through, with occasional small patches of lowbush blueberries, deerberry and mountain laurel.

On the forest floor, the plants are typical of dry acid soils. Canada mayflower, partridgeberry, common wintergreen and starflower are all common. The botanical highlight is the abundance of pink lady's slippers. In fact, I know of no other place in Northampton where you can find so many.

(A) A broad swale was carved by water and is now dry and isolated. On the other side of Route 66 are two kettleholes that were formed by buried blocks of ice and now intercept groundwater. These areas used to drain through this ravine.

(B) Shady, hemlock woods grow on the slope near the western boundary of the conservation area.

(C) A sugar maple grows along the old wood road that once crossed the property and led to fields to the south-east.

(D) A small cluster of pink lady's slippers, a common orchid in Massachusetts.

White Pine/Hemlock-Dominated Woods (2)

Heading west, the forest changes as the land dips to the remains of an old road, beside which is a large patch of pachysandra and a couple of catalpa. In this swale, not far from the vernal pool, is a single sugar maple. Its branching architecture reveals that it once grew in a clearing. From here, the land rises again and hemlock becomes much more common, with white pine as a co-dominant. The lady's slippers have dropped out, and below the hemlock stands, there are no understory plants. In areas where the pine is more common, witch hazel and mountain laurel appear in the shrub layer and partridgeberry is common.

Formerly Open Land/Deciduous Forest (3)

On the western edge of the property is a young, predominantly deciduous forest. This area was open until fairly recently and what's curious is that most of the scruffy young trees are sugar maple, a species that re-

Top: Young forest and a small clearing in the former pasture (NW corner of conservation area); Middle and bottom images are the woods near the vernal pools.

quires richer, more pH neutral soils. The other trees in this part of the property are white pine, oak, ash, hemlock and black cherry.

Unfortunately, this area also includes the most invasives on the property. The good news is that the patches are still fairly small, but Asiatic bittersweet, Morrow's honeysuckle and even some swallowwort have all established here.

Two views of the vernal pool, in early June and late August. This pool is part of the headwaters to Hannum Brook.

<u>Deciduous Forest Near Vernal Pool (4)</u>

Located at the base of the slope on a nearly level grade, this area was cleared and open fifty years ago, but has since grown into a mix of black birch, red maple and white pine. The water table is fairly close to the surface and the wetter soils support tall swaths of cinnamon fern, as well as patches of New York Fern, bracken, and wild sarsaparilla.

<u>Vernal Pool</u>

Located in a small depression that intercepts groundwater, this circular-shaped vernal pool is not certi-

The entire conservation area falls within a MA NHESP priority habitat for rare species.

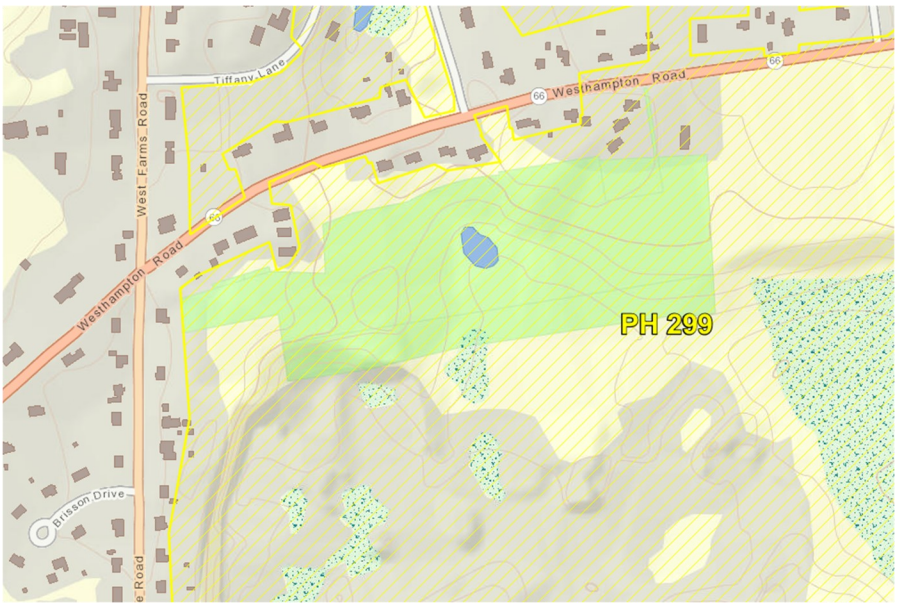
fied and doesn't even appear on the datalayer of potential vernal pools. It is surrounded by some impressive pin oak and large red maple, as well as shrubby tangles of winterberry. Hayscented fern, cinnamon fern, spinulose wood fern, and New York all grow in abundance nearby.

A female box turtle, a protected species in Massachusetts, lays her eggs in the gravels not far from the conservation area. Sand barrens like this site were always rare features in the interior parts of the state, but because of development, roads, and lack of fire, they are now one of the most imperiled habitat types in the state.

Wildlife

Although this conservation area is relatively small, it includes one of the largest remnant patches of pine barren habitat. Historically pitch pine barrens and sandplain grassland habitats accounted for about 10% of the city's acreage, but today, due to fragmentation, development and mining, they account for less than ½ a percent.

As a community type, pitch pine barrens support an unusual mix of specialist animals, particularly reptiles and insects. No rare species were observed on this particular parcel in 2014, but it falls within the Estimated Habitat of Rare Wildlife and during the last twenty



years I have found five species of conservation interest in the immediate vicinity; these include box turtle, wood turtle, spotted turtle, black racer and hog-nosed snake. Whip-poor-wills nested here in this area historically, but none have been observed since before 1987.

In addition to rare and unusual species, many common animals use this woodland habitat. Pileated woodpeckers and pine warblers were heard and deer sign was abundant. All of the mammals that tolerate forest fragmentation (raccoons, skunk, opossum, red fox, coyote, gray squirrels, red squirrels, chipmunks) either live on or use this property.

The vernal pool is used as a breeding ground by wood frogs and spotted salamanders. Its value is slightly higher than a single isolated pool as it is within half a mile of four other vernal pools. None of these, however, are certified or shown as potential vernal pools.

Recommendations

Although this is a fairly small conservation area, it offers a glimpse at a forest type that is regionally and locally rare. The woods include some old paths that could easily be improved so that people could enjoy this patch of woods, which, even barring improvements, is fairly open and easy to walk through.

The biggest challenge here is access. There is no easy place to park and the "informal" trail that is supposed to run along the eastern edge of the condominiums was never created. There is also no sign to let people know that this land is open to the public.

A trail from the past is still present and used by a few people.

Aside from controlling the existing non-natives in the young forest, it would be wise to monitor

the entire site to make sure that Asiatic bittersweet doesn't become more abundant. Its seedlings were found throughout most of the property.

To ensure the integrity of this site, it would be beneficial to acquire the parcel to the east. This would provide better access and help with management activities (including a potential controlled burn).

Finally, the lot for the future playground should be relocated to the young forest to avoid cutting down more pitch pine and white pine.

Some trash and debris have been left in the conservation area, not far from the new homes that were associated with this limited development project.

The light blue area is currently slated for a future playground. In order to protect more of the pitch pine forest habitat, it would be better to relocate the future tot lot to the western part of the property that was a pasture/ clearing just a few decades ago. This image also shows the pitch pine forest to the east, which would be good to acquire so that this bigger area could be managed to promote this special habitat type and the rare and unusual species it supports. If the land to the west were acquired, part of its old field habitat could be used for the playground, or alternatively a portion of the former landfill could be used for the playground, assuming that it had no history of dumping or contamination and was safely away from any potential threat.

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