

A Natural History of the Florence Meadows Conservation Area



Prepared by Laurie L. Sanders, M. S.
December 2014



Florence Meadows Conservation Area



A Natural History of the Florence Meadow's Conservation Area

a k a

Bean Farm (1902-2010) & Allard Farms (1978-2010)

Broughton's Meadows (1657-1846)

Overview

During the last 350 years, the 180 +/- acres known to many as the Florence Meadows have played a significant part in Florence's history. The most poignant and heartrending role occurred in the aftermath of the 1874 Mill River Disaster when tons of flood debris poured out onto this broad, open interval. In the days that followed, more than one thousand volunteers combed through the layers of timbers and mud, searching for victims and ultimately finding more than 40 people—mostly children—whose bodies had been overwhelmed by the floodwaters and washed downriver (Sharpe, 2007).

In addition to that devastating event, this land has also been important to Florence's economic, cultural, and aesthetic identity. Its rich alluvial soils have produced crops for more than three centuries, and for a brief time during the 19th century, the land was used by "the Community" as a site for anti-slavery conventions. Finally, both historically and today, generations of Florence residents have appreciated the long, beautiful view that the Meadows afford, and for them, it is not only a favorite vista, but also an integral part of their sense of place.

Since 2010, thanks to the contributions and vision of dozens of volunteers, GrowFood Northampton, The Trust for Public Land, Massachusetts' Department of Agricultural Resources,



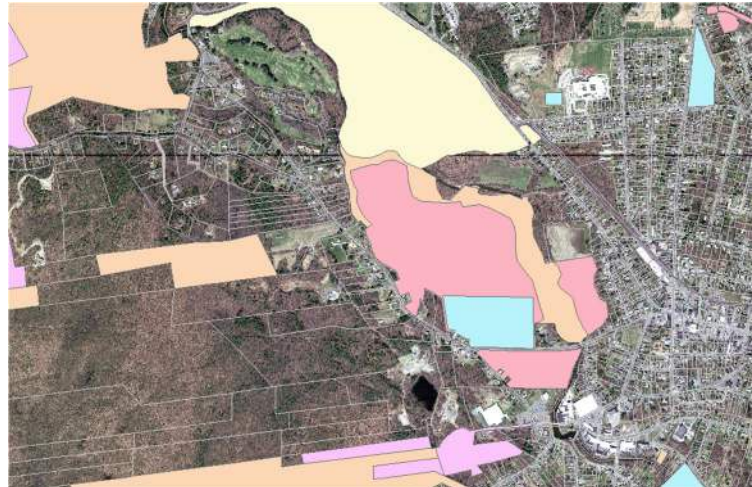
Searching for dead among debris, Florence Meadows. Photographed by A. E. and A. J. Alden, Springfield, MA. *Courtesy Digital Commonwealth.*



In 1971, a 232-unit condominium project was approved on the north side of Meadow Street. A clerical error on the permit, however, listed the project on the south side of Meadow Street. Were it not for that mistake, this landscape might have been developed and lost to posterity. This image shows what the land looked like in 2013 with a cover crop of mustard. It is now part of the recreation fields.

and the City of Northampton, that view and this important landscape has been protected in perpetuity. Today, more than 60% of the Florence Meadows (121 acres) is permanently protected through an Agricultural Preservation Restriction, dedicated to sustainable agriculture and owned by GrowFood Northampton. The remaining land is owned by the City of Northampton, with 24 acres set aside for playing fields and 35 acres along the Mill River held as conservation land. The City of Northampton has also leased twenty acres on the south side of Meadow Street from GrowFood Northampton and manages the land as Community Gardens.

Although much, much more could be written about the history of these 180 acres, given the nature of this report, the rest of this document focuses only on the thin strip that has been protected as conservation land, which, at least for now, is the largest city-owned conservation parcel along the Mill River.



The long, wiggly 35-acre conservation area shown along the Mill River is bordered by protected farmland owned by GrowFood Northampton (light red) and Look Park (light yellow). Nearby are other conservation areas (orange—Sawmill Hills and Roberts Hill) as well as some land protected around the City's wellfields (pink). The light blue areas are recreation fields owned and managed by the City's Recreational Department.

Introduction

Although just 35 acres in size, this conservation area is so long and skinny that it actually stretches for more than a mile along the meandering path of the Mill River and also includes another ¼ mile of steep hillside behind Spring Street. Along much of this length, the conservation area abuts other protected land, much of which is owned



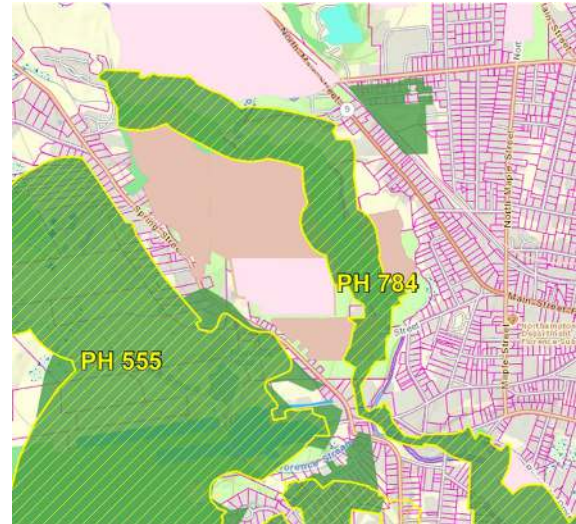
A forested riparian corridor borders the river and defines the boundary of the conservation area. With the exception of the steep, wooded slope on the west, all of the land is within the 100-year floodplain.

by GrowFood Northampton, as well as 1/3 of a mile along the Mill River that is contiguous with Look Park.

From a recreational standpoint, this conservation property has a lot of potential. Although it currently has no formal trails, there are a couple of informal trails and some sections of the woods are open and easy to explore. It also includes a couple of nice swimming holes, several good spots for fishing, and some sites of historic significance.

From an ecological perspective, this property's wooded, riparian corridor—in spite of its narrowness--supports a wide variety of plants and animals and includes a good example of a High Terrace Floodplain Forest, an imperiled natural community type in Massachusetts (Swain, 2000; Eiseman, 2012). What's more, because the river's water quality has improved significantly during the last forty years, this stretch is now classified as a Coldwater Fishery and also provides habitat for the nymphal stage of a rare dragonfly known as the Ocellated Darner (Special Concern). For these reasons, this entire conservation area is identified as a Priority Habitat for a Rare Species (MA NHESP) and has been designated as BioMap Core Habitat by The Nature Conservancy and MA NHESP.

Unfortunately, the forested corridor is also heavily impacted by invasive non-native plants. In fact, it is one of the most invaded of all the city's conservation areas—an unwelcome distinction. Of the invasive non-native plants, the most prevalent and widespread are Japanese knotweed, Asiatic bittersweet and Japanese barberry, but many others are growing here too. Collectively their spread and growth has compromised this conservation area's biological integrity, degraded its value to wildlife, reduced its recreational potential and even impacted its aesthetic values. In addition, the spread of Japanese barberry poses an increased public health risk: based on research in



The conservation area lies within a Priority Habitat for Rare Wildlife (PH 784).



My daughter demonstrating the effects of Asiatic bittersweet next to a tree that has been completely distorted by this non-native vine. Many trees in the conservation area's floodplain forest are like this.

Connecticut, the risk of Lyme disease is statistically higher in areas with high populations of Japanese barberry.

Geology

From its headwaters ten miles upstream, this area is the first place along the Mill River where its course is no longer hemmed in by bedrock and over time, the river has meandered back and forth across the landscape and created a broad valley. How and why that happened is a function of both geology and time.

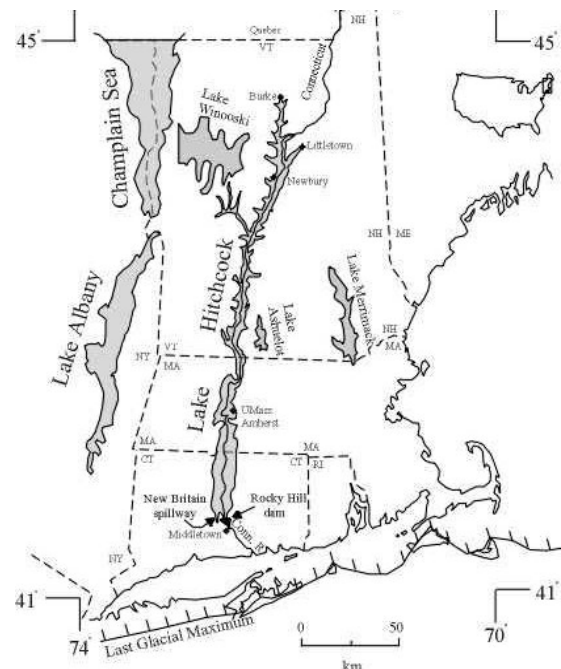
Twenty thousand years ago, this area was still covered with a mile-high, continental glacier. But change was coming. As the climate warmed and the glacier began to retreat, it left behind a layer of unsorted and unconsolidated till, a mix of rubble and glacial flour that covered the metamorphic bedrock below. By around fifteen thousand years ago, a dam of glacial debris had piled up in Rocky Hill, CT and effectively blocked the meltwaters. This “natural dam,” made of boulders, till, sand and gravel, held for many centuries because the spillway was on solid bedrock.

Meanwhile, as the glacier continued melting back, a long, skinny glacial lake now called Lake Hitchcock formed behind the dam. The lake ultimately extended 200 miles along the Connecticut River valley, from the dam in Rocky Hill, Connecticut to St. Johnsbury, Vermont.

Here in Florence, when the lake was at its highest level, its western shore roughly matched our modern day 300-foot elevation mark. Another way to visualize this is to



The conservation area supports some incredibly dense thickets of Japanese barberry. These are painful and almost impossible to walk through, plus they are more likely to support higher populations of Lyme-disease infected deer ticks.



Courtesy: <http://www.bio.umass.edu/biology/conn.river/hitchcock.html>



Bedrock appears at the surface along the farm road that leads from Crimson and Clover's barn down to the Meadows.

imagine that if we could go back in time, the barn at the Crimson and Clover Farm would have been beachfront property.

During the era of glacial Lake Hitchcock, the glacially-charged Mill River and countless other tributaries were carrying massive amounts of sediments into the lake. In the deeper, calmer waters, fine silts that would become clay layers eventually settled out, covering the layer of unsorted till below.

Eventually the dam at Rocky Hill gave way, leading to new, lower lake levels in the Connecticut Valley (esp. glacial Lake Hadley). On its way to these lower levels the Mill River began to cut down through the outwash sediments and the delta that it had deposited near and in glacial Lake Hitchcock. Most of those sediments still remain, extending as a relatively flat expanse across much of Florence and as far as downtown Northampton and King Street.



The location of the Crimson & Clover farm on the edge of Glacial Lake Hitchcock. *Image of lake courtesy of Northampton DPW, Andy Keuther.*

The broad flat plain that we now call the Florence Meadows developed here because in this location the river could meander back and forth across the landscape, no longer hemmed in as tightly by bedrock as it is upstream in Leeds, Haydenville and Williamsburg. Eventually its lateral movements cut away about 50 feet of the overlying, easily eroded glacial sediments and subsequently deposited rich riverine sediments. Difficult-to-erode bedrock at the location of the Vistron dam is likely to have been the factor that kept the river from cutting down any deeper than its present day ~250 foot elevation.

Over time, repeated flooding and the deposition of silt have increased the area's fertility and floods have also been



This map of the surficial geology shows recent alluvial deposits (yellow) along the broad floodplain created by the Mill River. To the east and west, the orange is deltaic deposits, while the light green beyond is till. Green hatchmarks are forested wetlands. *Map courtesy MA GIS.*

the principal driver in changing the river's course. The 1874 Mill River Disaster is the most famous of these, but many other floods—both earlier and later—altered the river's pathway. In Northampton, the first severe flood on record occurred in 1667 and “carried off one of Northampton’s early grist mills near the old South Street Bridge.” Another bad flood took place in 1680, and then a whopper struck in 1691. Referred to as the Great Flood, it was a time when “rain fell in February almost continually for 5 days, during which ‘the sun was not seen,’ and ‘the water rose to such a height as was scarce known in the country before’” (Mill River Greenway Initiative website).



Searching for dead among debris, Florence Meadows. Photographed by A. E. and A. J. Alden, Springfield, MA. Courtesy Digital Commonwealth. Original at Meekins Library, Williamsburg, MA.

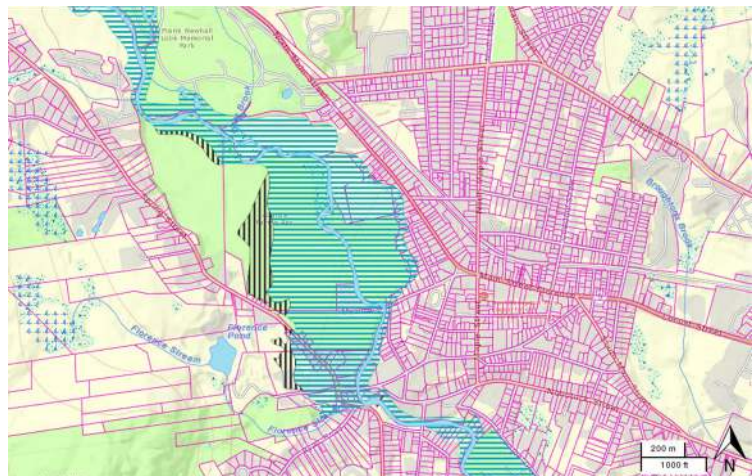
“...for almost a mile to the center of Florence, the flood spilled a layer of mud and gravel two to three feet deep, topped with a six-foot thick carpet of debris. Scarcely an acre of meadow remained untouched, either doused with sediment and debris or scoured to a hardpan. There was ‘not enough soil...left on the field to produce material for a decent breakfast,’ the Hampshire Gazette bemoaned.”

Elizabeth Sharpe, In the Shadow of the Dam

Several floods occurred during the 18th century, but the worst century for the number of floods was the 1800s, which kicked off with The Jefferson Flood in 1802 and included eight more natural floods (1828, 1840, 1843, 1854, 1862, 1869, 1878, 1896), plus the man-made Mill River Disaster (1874).

During the 20th century, the Florence meadows were affected by even more floods. One of the most severe was the disastrous flood in 1936, when the Daily Hampshire Gazette reported:

“At Lone Oak Farm on West Street, Florence, owned by H. I. Bean and Sons, the Mill River rampaged to such an extent that it again cut through



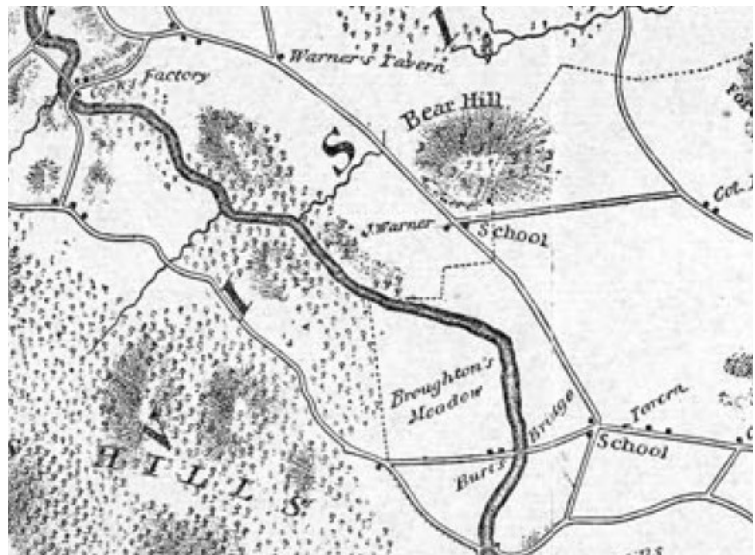
The blue horizontal hatching represents the 100-year floodplain. The black vertical hatching is the 500-year flood zone. Maps are according to FEMA.

the old channel it formed at the time of the famous Mill River flood sixty years ago. The old channel was gradually filled up as much as possible and a dam built at the river with a view to preventing the stream from coming through again. The dam, however, did not hold in this flood, and the farm land in the old channel was cut down to gravel, and the work of some thirty years of filling in has been undone. The channel cut by the river sixty years ago was never entirely filled, but made high enough so that it could be used along with the adjoining land.” (Daily Hampshire Gazette, 1936)

The 1938 hurricane caused the river’s course to shift again. And the 1955 flood shifted it again. And then again in 1982, when the floodwaters destroyed “acres of farmland and scores of trees, which fell into the river when the river bank collapsed during heavy rains in June.” The costliest damage, however, occurred “when the river cut a new channel straight across the Allard farm cornfield and brought down almost thirty trees, and that area, now an island, is no longer accessible.” (Daily Hampshire Gazette, 1982)

Vegetation Changes Over Time

Although flooding has been a prime agent in changing both the course of the river and its bordering vegetation, people have modified things as well. The earliest written accounts of this area come from the Proprietors’ book which notes that in 1657 John Broughton was granted “five acres more or less” that “lieth up the Mill River” (Sheffield, 1895). This grant was in lieu of meadowland along the Connecticut River and so strongly suggests that this area was already an open meadow, having been cleared and burned (and probably farmed) by the Nonotuck. By 1663, all of the land in this area had been given out to new settlers, and by then it was “now commonly called Broughton’s meadow” (Trumbull, 1898). Also by then, the English settlers had adopted the Indian practice of burning the woods and meadows, and in 1664, the local government ordered Joseph Parsons “to burn the woods on the easterly and northerly sides of the Mill River, two or three miles above Broughton’s

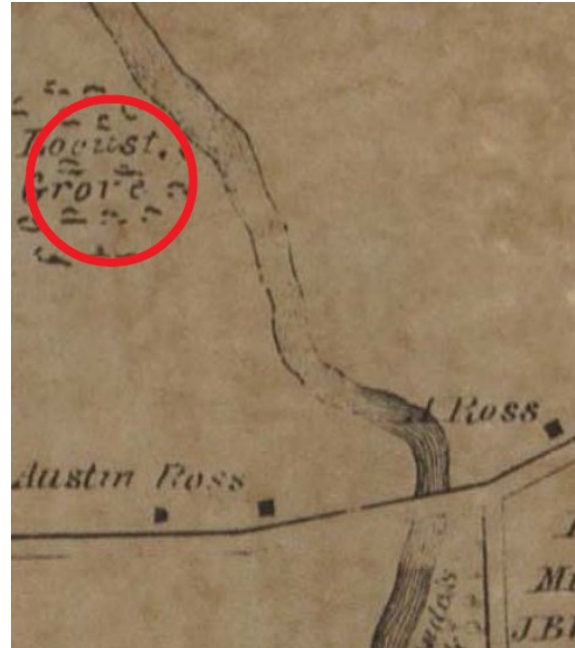


This property was known as Broughton’s Meadow from 1657-1846. The 1831 Map shows the homes owned by Gaius Burt, who was only the second permanent settler in what is now known as Florence. Burt first purchased 30 acres, but eventually accumulated 100. He sold the property in 1835 to Samuel Whitmarsh, who instigated the region’s silk craze and changed the history of Northampton.

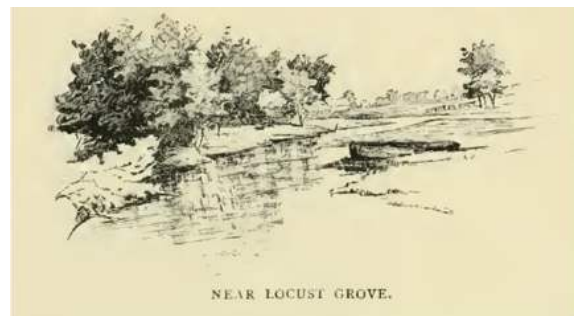
Meadow” and gave Robert Bartlett “instructions to burn them on the westerly and southerly sides of the same river” (Trumbull, 1898). According to Trumbull, annual burning continued for “nearly one hundred years.”

Annual burning would have dramatically changed the vegetation along the river, not only clearing out the woody underbrush, but changing the composition of the herbaceous layer, which would have included mostly grasses and wildflowers. Fires would have also established perfect conditions for the germination of black locust seeds, which require open, sunny conditions to sprout. In fact, by the 19th century, “Locust Grove” along the Mill River was a local place name. In his reminiscences, Paul Munde (son of Dr. Munde, who took over David Ruggles’ water cure) describes swimming in the Mill River during the 1850s at “Locust Grove many times with my friend Arthur Hill” (Sheffield, 1895), who, in separate papers, described the Locust Grove as the location of anti-slavery meetings (Strimer, pers. comm.). By the 1860s, Locust Grove was sufficiently well known that it appeared on Walling’s 1860 map and later as a pen-and-ink illustration in Sheffield’s *History of Florence*.

By the time of the Mill River Disaster in 1874, farming has been going on in the adjacent floodplain for more than two centuries. At that time, much of the land was owned by the Ross family. They had been members of “the Community” and had purchased a large chunk when it disbanded in 1846. One result is that the meadows, which had been known as



Walling’s 1860 map shows the Locust Grove and the homes now owned by Austin Ross.



The pen-and-ink drawing of the Locust Grove along the Mill River. Note that the river is almost clear of vegetation. Whether this was artistic license or accurate is unknown. From Sheffield, 1895.



Corn on Ross Meadows. Photo by Robert Emrick. ~ 1940s. Courtesy Forbes Library, Northampton MA.

Broughton's Meadows since 1657, developed a new place name: they were now known as Ross's Meadow.

By 1874, the Ross family owned one of the largest dairies in Florence and was its most important tobacco grower. When the Mill River flood struck in May, the fields had only recently been dressed and several farmhands were out in the field getting them ready. Austin Ross was warned by his brother and rushed out to warn the hands. Hearing his cries and the roar of the floodwaters, the men "sprang into the wagon and ran the horses at top speed to the high land" (Sharpe, 2007). When the floodwater struck this stretch of the Mill River, it "captured hundreds of trees, thatching them into a fortress" (Sharpe, 2007).

During the next century, the vegetation along the river grew back and during the last 60 years, the width of the forested buffer has remained fairly consistent. These aerial photos from the 1950s and 60s also help to explain some of the vegetation patterns on the landscape today. For instance, two of the areas that were cleared in the 1950s for agriculture as well as the areas of the lower floodplain that are most prone to flooding are today dominated by cottonwood and



sycamore,. They are also the areas that are now the most impacted by non-native plants, many of which thrive in disturbed soils and sunny conditions. In contrast, the other areas that had either less human alteration and/or are less frequently scoured by floodwaters, remain in fairly good condition, with sugar maple and hickory as the most abundant species, and with significantly lower numbers of invasive plants.

Aside from flooding and human alteration, the arrival of non-native plants and pathogens is the other important source of change. At this conser-



Elm can be found on the conservation area, but it is much less common than it was prior to the arrival of Dutch Elm Disease. That said, researchers believe that a strain of American elm exists that is resistant to the disease and is making a comeback.



The swath of rusty brown stems in the background (*Photo A*) of the Mill River is one of many large patches of Japanese knotweed that have established along this corridor of the Mill River, while Photo B shows this species growing along the edge of the farm fields. A serious problem in North America and Europe, this Asian introduction can grow more than 7 feet in a growing season and a single plant can produce more than 200 stems. Worse yet, only about 1/2 the plant is above the surface; the rest is an underground network of roots, which extends much further out. This is part of the reason these clones are so good at spreading. Another reason is because, as (C) shows, the leaves are virtually free of insect damage. Like so many non-native plants, this intentional 19th century introduction arrived without its native pests and pathogens, which might help control it. A biocontrol insect, however, has been found and appears to help with control in European. It may soon be released in our area by UMASS researchers. Although this species is a prolific seed producer, the seeds are not viable. Instead it spreads entirely by pieces of rootstock. Along a river like the Mill, small sections of root are easily torn away from the parent plant and carried downstream to other suitable habitat.





(A) A swath of garlic mustard, a species that has taken off during the last two decades. (B) Morrow's honeysuckle, an understory shrub that is common throughout Northampton, particularly in areas where the acidity of the soils are more neutral.

vation area, American elms were probably much more common historically, but are now largely absent due to Dutch Elm Disease. During the last century gypsy moth caterpillars probably had an effect on the canopy trees here too, but the biggest changes in the flora have taken place in the understory—and mostly during the last two decades. During the last twenty years, half a dozen non-native invasive plants have undergone explosive growth. The worst of these are Asiatic bittersweet, Japanese knotweed, Japanese barberry, Morrow's honeysuckle, privet, winged euonymus and garlic mustard—all species that do well in disturbed soils like these that are regularly altered by flooding or were cleared in the past.

These non-native plants have dramatically altered the look and ecology of this riparian corridor, affecting light levels, nutrient cycling, forest succession, and even geomorphological processes. Without active management or the serendipitous appearance of biocontrols, the understory will probably become thoroughly overtaken by invasive non-native shrubs and herbaceous plants during the next twenty years.



A giant bittersweet vine wraps around a tree in the floodplain. At its maximum girth, this vine was nearly 7" across.



This 1950s photo shows an area along the river that was cleared and used for part of the farming operations. This area is now among the worst impacted in terms of invasive plants, especially Asiatic bittersweet.



Two views of the forest in the conservation area. A cottonwood in the historic clearing and now wrapped in Asiatic bittersweet, as well as my daughter in front of an even larger cottonwood, but this one without an bittersweet.



Vegetation Patterns Today

Although entirely forested, the vegetation patterns within this conservation area shift depending on historic alterations, soil conditions and flooding frequency.

(A) Dutchman's Breeches; (B) Trout lily; (C) Bloodroot; (D) False Hellebore; (E) A view of the sugar maple dominated high terrace floodplain forest. This particular photo was taken in the area that includes a handful of giant black locust trees, which may be the remnants of the Locust Grove where Sojourner Truth and other abolitionists gathered in the 1840s.



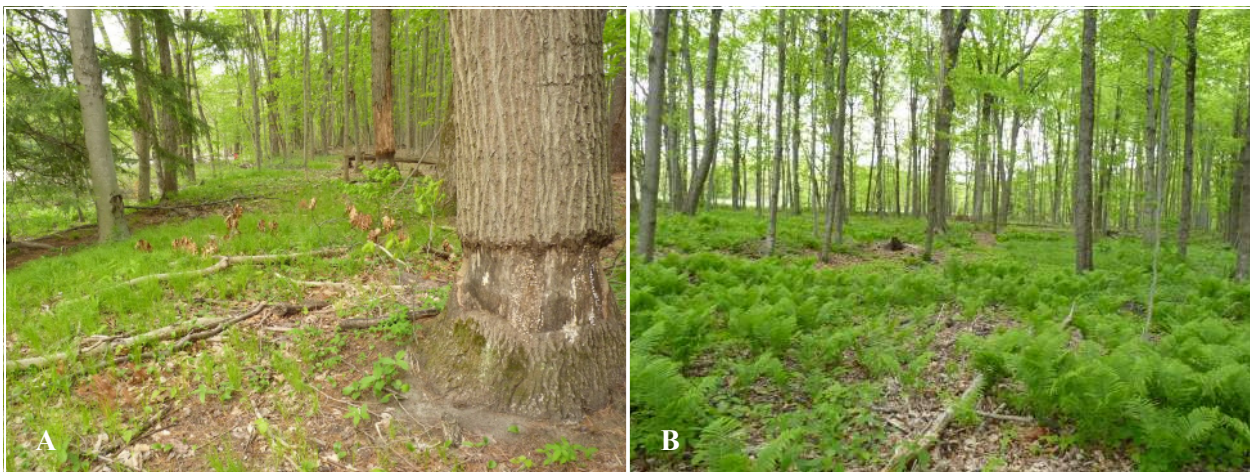
Furthest downstream and closest to the former Ross homestead and barns, the forest is dominated by black locust on the west and by a mix of cottonwood and black locust on the east. Moving upstream, cottonwood and sycamore dominate the lower, more flood prone areas, while a mix of hardwoods (sugar maple, bitternut hickory, basswood, yellow birch, black birch, red oak, red maple, black cherry) dominate the drier, more upland sites. The sugar maple-dominated woods are within the high terrace floodplain forest, and are more open and easier to walk through. They are also much less impacted by invasive plants.



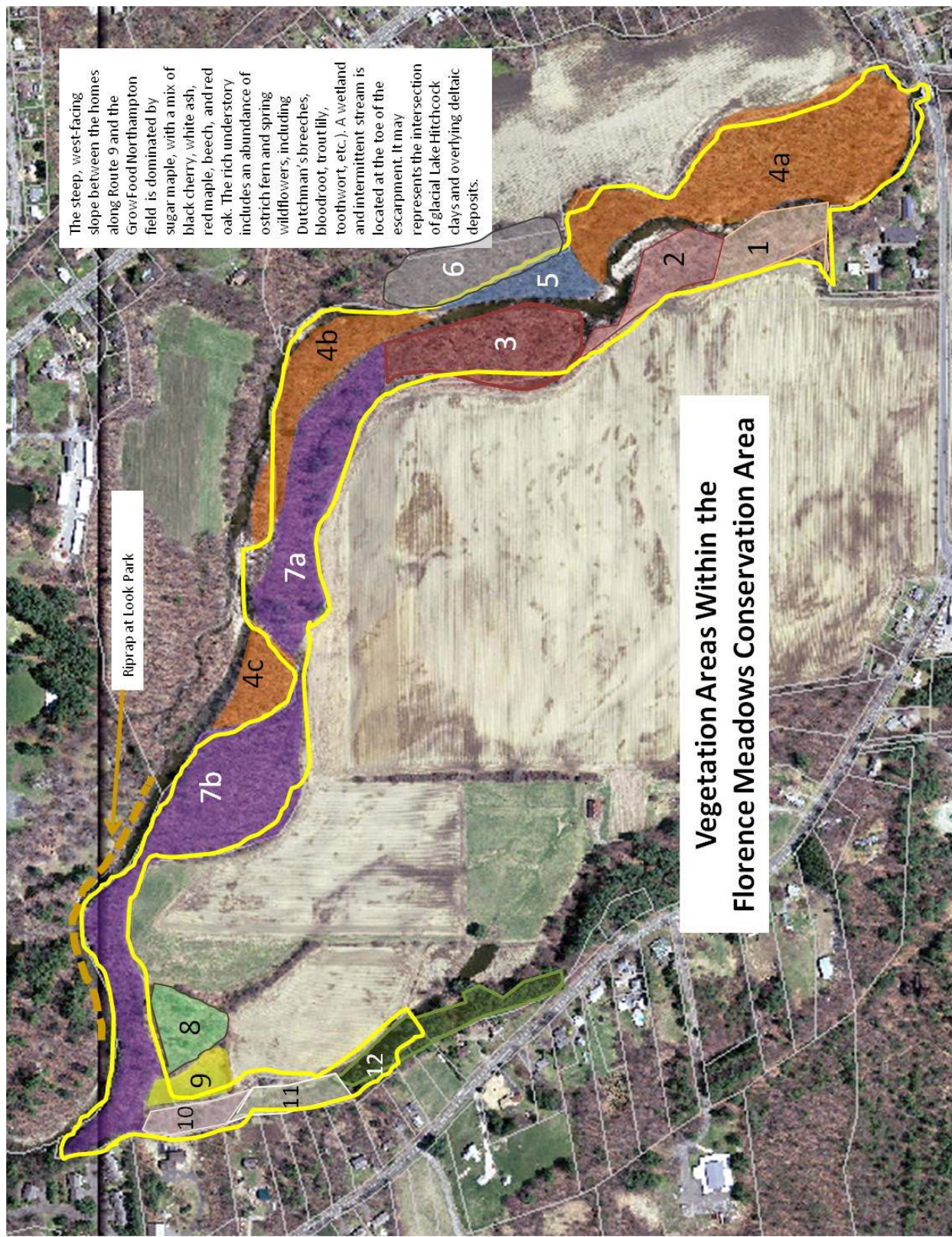
An impressive multi-trunked basswood grows on the east side of the Mill River, not far from the boundary with the private land and Look Park.

At the northern end of the property, the steep slope varies—one section was cut in the recent past and is now a tangle of sumac, goldenrod and bittersweet, while the rest is forested, either with a mix of hardwoods or dominated by white pine and hemlock, with a sparse understory.

What follows are descriptions of the dozen different vegetation areas (see *Vegetation Map*); with numbering corresponding to the Vegetation Map. The units were not GPS'd, but were mapped visually. For detailed maps of the woody invasives and Japanese knotweed, refer to the maps prepared by Polatin Ecological Services, LLC (Polatin, 2014).



(A) The edge of the high-terrace floodplain forest is dry enough to support red oak, including this one that has been girdled by beavers. (B) At the upper end of the property is the richest stretch of floodplain forest. Dominated by sugar maple and hickory, it includes a swath of ostrich fern and an abundance of spring wildflowers.



Key to Vegetation Map

1. A former clearing for the farm, this area is now dominated by black locust. Bittersweet is common along the edges and interior, as is Morrow's honeysuckle, which forms an almost impenetrable thicket. Japanese knotweed forms an edge between the forest and field, with large patches along the river and in the forest.
2. Black locust is present, but it now mixes with other species including black cherry, ash and hickory on the drier slopes, and cottonwood and sycamore in the wetter, low-lying areas. This area is also heavily affected by bittersweet, Morrow's honeysuckle, barberry and privet. Japanese knotweed forms an almost solid border along the edge and is widespread in the forest as well.
3. This flood-prone area is dominated by sycamore and cottonwood, with occasional black willow. Staghorn sumac and Japanese knotweed grow along the edges. Asiatic bittersweet, garlic mustard, privet, Morrow's honeysuckle are abundant. Wintercreeper also occurs in this area.
4. Lower floodplain forest
 - 4a. Located on the east side of the river, this forest is dominated by cottonwood and black locust. It was cleared historically and portions are subject to flooding. Some parts of this are loaded with Japanese knotweed (*see Polatin map for detail*) and Asiatic bittersweet. This area includes an informal trail that leads to a campsite/hang out, where quite a bit of trash has been left behind. It also has impressive patches of bloodroot and trout lily. Near the northern end it grades into sugar maple and basswood.
 - 4b. Located on the west side, this area is loaded with flood channels and includes a mix of species, including cottonwood and sycamore along the lowest elevations, but also yellow birch, shagbark hickory, white birch, red oak, black cherry, and elm. Asiatic bittersweet and Japanese knotweed are abundant, as is barberry, privet and Morrow's honeysuckle.
 - 4c. Quite similar to 4b, with abundant flood channels and dominated by sycamore and cottonwood, with scattered black willow, sugar maple, yellow birch, and hickory. Asiatic bittersweet, winged euonymus, barberry, and Japanese knotweed are all present. Christmas fern is common on the drier slopes and slightly higher ground.
5. A small triangle of forest above a popular swimming hole, this area is dominated by a mix of red maple, yellow birch, and red oak, above a sea of Japanese barberry and Morrow's honeysuckle. Remnant patches of trout lily, blood root and lady fern are present.
6. Just outside the conservation area, this patch of woods shifts to one dominated by black birch.
7. High Terrace Floodplain Forest
 - 7a. Higher and drier, this flat river terrace is mostly open and dominated by sugar maple, with old locust trees, hickory and a scattering of white pine. The soils here are sandier and the herb layer is sparse. Barberry, privet and Morrow's honeysuckle are widely scattered. Pennsylvania sedge and white wood aster are regular in the understory.

7b: Lower in elevation and richer, this area is also dominated by sugar maple, but with an extensive amount of impressive bitternut. Ostrich fern is common here and spring wildflowers are abundant. The most worrisome invasive in this area is the spread of Japanese barberry.

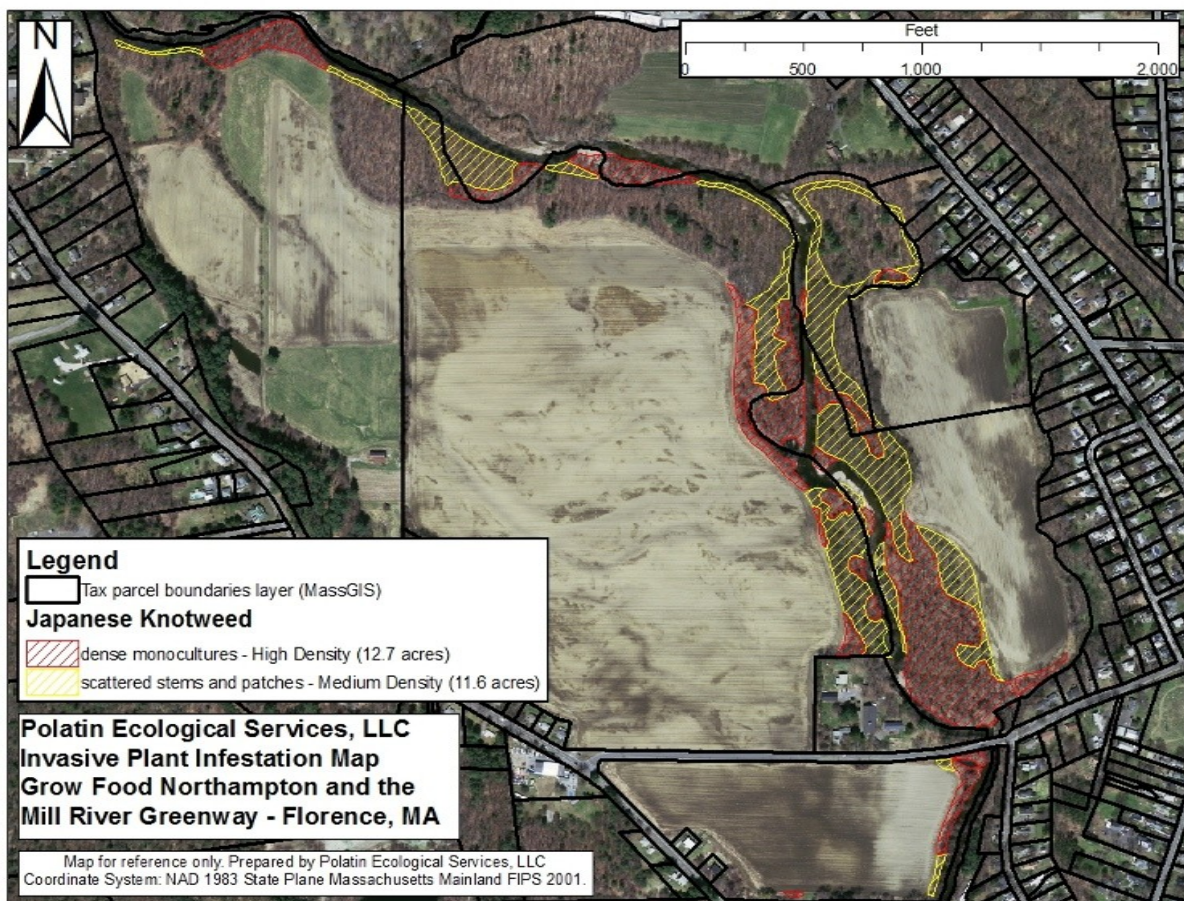
8. Off the conservation land, this triangle occurs on the other side of a wood road that leads to an old clearing. This area is dominated by red oak, white pine, hemlock, with witch hazel in the understory. Invasive shrubs are not common here.

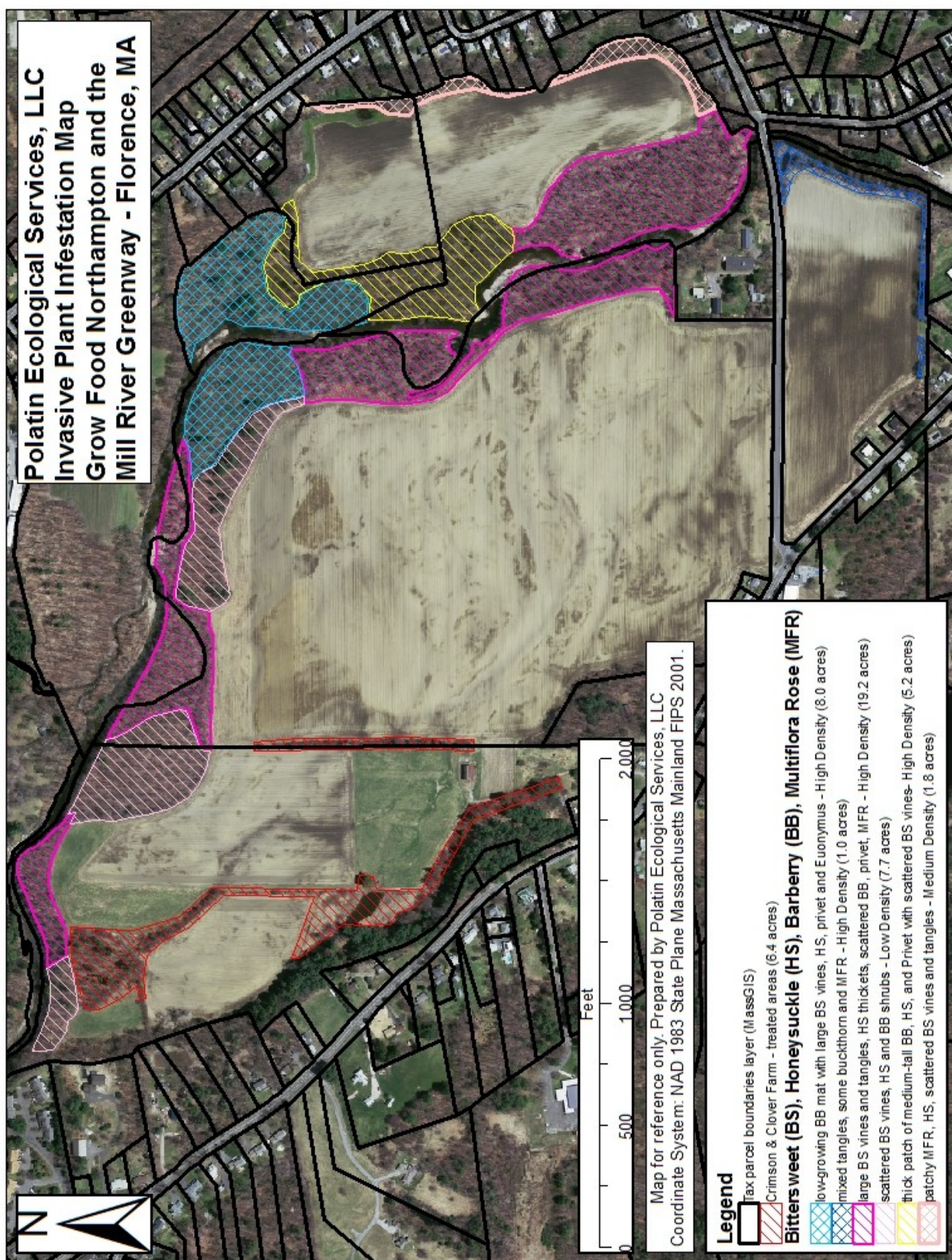
9. A former hayfield and open clearing.

10. A steep slope that has been cut (probably by the abutter to gain a view) and is now a tangle of staghorn sumac, bittersweet, goldenrod and other weedy species. The abutter appears to be pushing yard waste and fill over the edge and on to the city-owned land.

11. A small patch of hardwood forest dominated by oak and hickory. The herb and shrub layers are sparse.

12. A narrow steep slope underlain by loamy sand covering till. This portion is dominated by hemlock and white pine, with a sparse understory. An old river channel/flood channel lies at the toe of the slope and wetland vegetation has grown up along and in it. In places it may hold enough water to function as a vernal pool.







A



B

In this stretch, the Mill River (A) is between 40-50 feet wide and includes a handful of deeper pools, but mostly is shallow and rock-bottomed. Around the middle of the conservation area (B), there is an important side flood channel, which borders the high-terrace floodplain forest. In this section and along the cobbly peninsulas, Japanese knotweed is gaining ground.



C



D

(C) One of the most impressive Japanese barberry thickets in all of Northampton exists on the eastern side of the conservation area. It is, as shown in this photo, an impenetrable thicket. (D) White pine and scattered hemlock dominate much of the steep slope that is underlain by till and parallels Spring Street. Rounded rocks are easy to find along the slope.



E



F

(E) A wetland exists at the base of the steep slope in the northwestern edge of the conservation area. It is fed by both groundwater and an intermittent stream that drains out of the Sawmill Hills and underneath Spring Street. (F) A house along Spring Street has cleared trees and dumped yard waste along the slope that, based on maps, appears to be part of the conservation area.

Wildlife

This narrow forested corridor along the river is used by a wide variety of wildlife, from native bees and butterflies to pileated woodpeckers, screech owls, white-tailed deer, raccoon, red fox and much, much more. Meanwhile, the river itself is its own corridor of aquatic life. In addition to providing habitat for rare dragonflies and cold water fish species, the Mill River supports hundreds of other aquatic invertebrates—crayfish, hellgrammites, water striders, caddisflies, mayflies, to name just a few. In addition, the river and its riparian corridor are an important migratory and travel route for migratory birds, otters, mink, and even the occasional bear.



Recommendations

1. In collaboration with GrowFood Northampton, Crimson & Clover Farms, and other abutting landowners, review and take action on the invasive species management proposal submitted by Chris Polatin of Polatin Ecological Services (2014). His 3-year plan includes the control of Japanese knotweed and other woody invasives, with an initial year of control followed by two years of spot work. The estimated cost for a three-year was \$55,000 and assumed that volunteers would take over after the three years of treatment.
2. Create formal trails on the west side of the Mill River, beginning in the new parking area.
3. Clean up trash along the east side of the Mill River.



4. Install a kiosk near the parking lot that describes the history of this part of the Mill River and a map of the area.
5. Determine if the farm road on private land (east side of Mill River) allows the public to access the conservation land on this side of the Mill River or if only farm-related activity is allowed. If public access is allowed, create a trail on this side as well.
6. Lead natural history walks in order to introduce more people to this interesting site and possibly hold vernal pool/aquatic creature/wetland workshops in the north-west portion of the property where an old river channel/wetland exists.
7. Encourage more research to take place on this conservation area.



This site is currently being used for a long-term research project by The Nature Conservancy. Aside from these tags in a handful of trees, the project has no other impact on the conservation area.

Sources

Daily Hampshire Gazette. (1936, March 25).

Daily Hampshire Gazette. (1982, July 16).

Digital Commonwealth, Searching for Bodies in the Florence Meadows
<https://www.digitalcommonwealth.org/search/commonwealth:c534g082g>

Digital Commonwealth, Searching the Debris in the Florence Meadows.
<https://www.digitalcommonwealth.org/search/commonwealth:c534g0859>

Eiseman, C. (2012). *Baseline Documentation Report for the Bean/Allard Farms Conservation Area*. Retrieved from Public File Cabinet: <http://city.northampton.ma.us:8080/weblink8/0/doc/485282/Electronic.aspx>

Polatin, C. (2014, March). Preliminary Proposal—Invasive Plant Management within a 39-Acre Riparian Corridor.

Sharpe, Elizabeth. (2007). *In the Shadow of the Dam*. New York: Simon & Schuster.

Sheffield, C. (1895). *A History of Florence, Massachusetts*. Florence: By the Editor.

Sinton, J. *A Short History of the Mill River Greenway*. Retrieved December 2014, from Mill River Greenway Initiative: <http://millrivergreenway.org/the-river-2/a-short-history-of-the-mill-river-greenway/>

Swain, P. a. (2000). *Classification of Natural Communities of Massachusetts*. Westborough, MA: MA NHESP.

Trumbull, J. R. (1898). *History of Northampton, Massachusetts: From its Settlement in 1654. vol. 1*. Northampton.

This report was made possible through support from Northampton's Community Preservation Fund.

*Unless otherwise noted,
all photographs © Laurie Sanders.*



The silty loams and sandy loams that dominate this site are all prime agricultural soils. Map data from MA GIS.



Wild oats, *Uvularia sessilifolia*, a spring ephemeral found in the conservation area.



An old farm road crosses through the conservation at the northern end of the property.