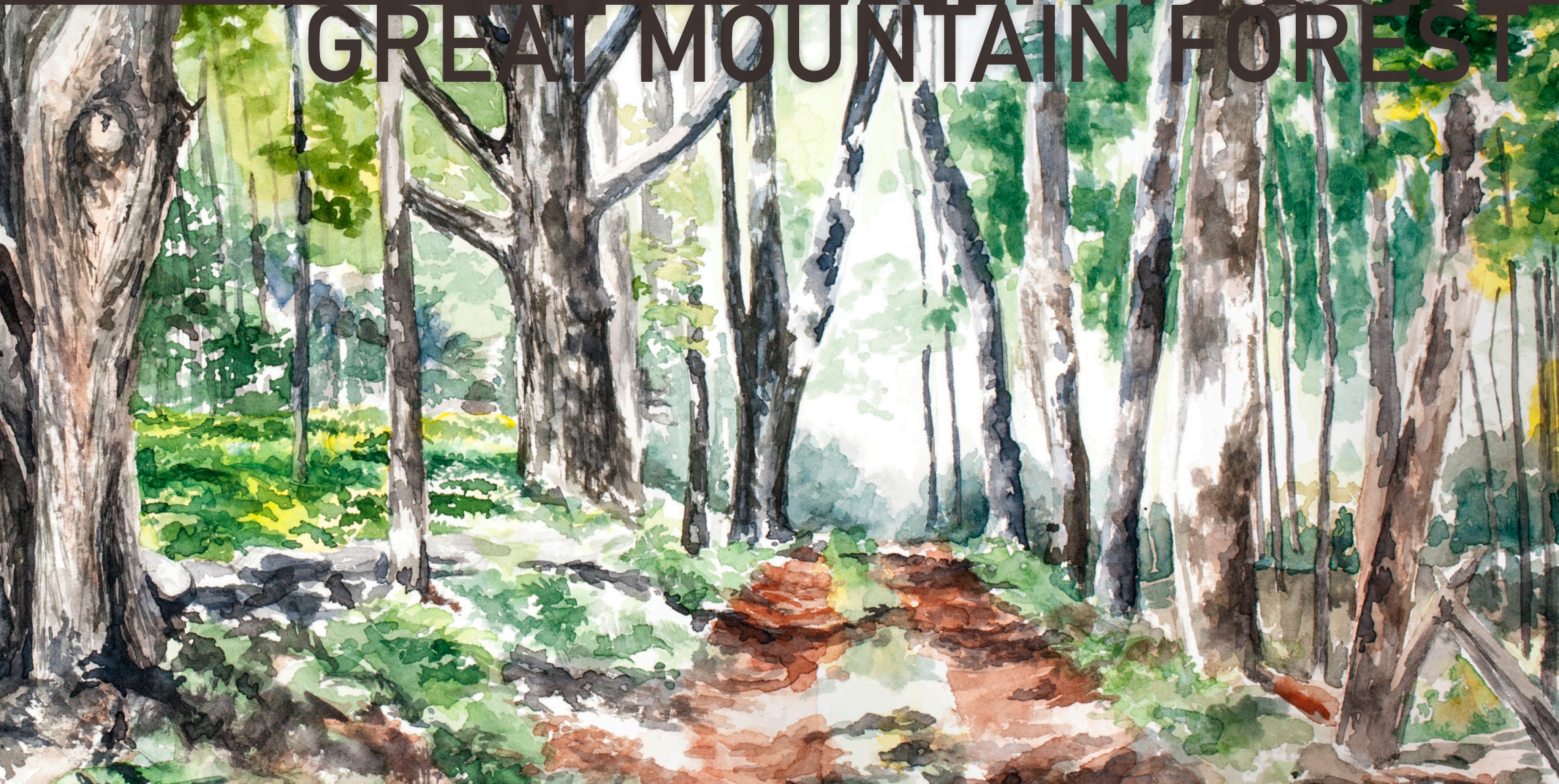


A FIELD BOOK GREAT MOUNTAIN FOREST



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Watercolors and Design by Autumn Von Plinsky

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LAND USE HISTORY

At GMF past land use in an ecological sense is nothing more than a forest disturbance. Cutting, burning, grazing, plowing, road building all occurred in Great Mountain Forest with one of these on almost every acre. But disturbance is a spectrum; cutting a few trees could be considered a minimal disturbance. Clearing the land, however, then burning it and turning over the soil is a much more substantial form of disturbance where very little of the original ecological community remains.

While most of GMF has been cutover, or settled, only a portion of the landscape has been cleared. During the charcoal and sawmill days, those cutters were selective in the species and sizes that served their needs. Hemlock was typically left behind, until the tannery era. And oak was cut repeatedly for charcoal, but it continuously resprouted. Cutting, then, was and still is, one of the lighter to moderate forms of human disturbance.

Agriculture, as well, can be a light touch, such as grazing a few animals over large acreage. Or it can be landscape altering with clearing, burning, grazing, and plowing. On several sites described here, agriculture, as short lived as it was, allowed a suite of early successional trees and other plants to emerge unlike the composition previously on the site. Stands of old-field white pine, for example, often now grow on these sites. The soil was disturbed and any long-lived ground flora is gone, replaced by ruderal, old field species for at least a couple centuries. It takes hundreds or even a thousand years or more for the full suite of forest organisms to reclaim a completely disturbed site.

In this section you will find nine sites that tell the story of peoples' interaction with the land at Great Mountain Forest over the past 200 years. People of varying means settled this land. Few made it work for more than

a couple generations. Their stories today live on in the stone walls, collapsing cellar holes, clearance cairns, hearths, fireplaces, barbed wire, sawmills, and more. After visiting these nine sites, you should have a reasonable understanding of the intersection of people and forest at Great Mountain. When we view the landscape through both ecological and cultural lenses we find the two lenses inseparable.

The exception is recent forest management. Forest activity since Ted Childs' day is important and interesting enough to warrant its own Forest Management section which follows. This Land Use History section covers settlement up to the Ted Childs era.

LAND USE HISTORY 1: CHARCOAL HEARTHES

Summary

This is a general landscape feature that appears dozens if not hundreds of times in GMF. The charcoal hearths, along with coppiced trees, provide a lasting legacy of GMF history. Because charcoal hearths are the most common land use feature in GMF after coppiced trees, it is worth expanding here, from what is otherwise simply a field mark.

Access

Many hearths along Canaan Mt. Road are visible from the road. See location for several easily accessible sites. Other easy sites occur south of Yale Camp. See maps and locations right.

Location

Charcoal Hearths with easy access occur at:

Canaan Mt Road area: (see map)

East roadside 1: 41°56'59.01"N; 73°16'53.36"W

East roadside 2: 41°56'57.73"N; 73°16'53.30"W

At Katsura stand: 41°56'55.86"N; 73°17'10.85"W

Along road cut: 41°56'57.94"N; 73°17'11.49"W

North side of road in Appalachian forest and 2000 cut: 41°56'54.76"N; 73°17'4.38"W

In forest with Chestnuts and maidenhair fern: 41°57'0.75"N; 73°17'7.48"W

In forest near cliffs: 41°57'2.65"N; 73°17'7.12"W

Farther north outlier in forest: 41°57'7.12"N; 73°16'57.40"W

South of Yale Camp (see map):

Along Chatteleton Road (turn here for Collier's Cliff): 41°56'6.98"N; 73°16'7.35"W

At Collier's Cliff: 41°56'7.10"N; 73°16'13.77"W

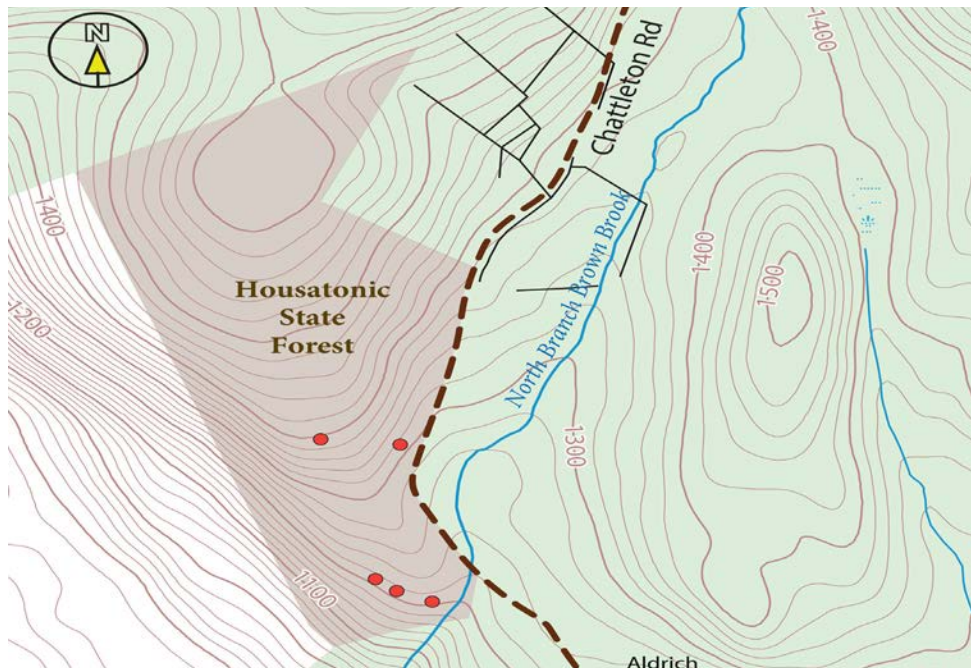
South from above along ridge: 41°56'0.82"N; 73°16'9.31"W

Next south: 41°56'0.12"N; 73°16'8.55"W

Last south: 41°55'59.33"N; 73°16'7.30"W

Description

The estimated hundreds of charcoal hearths found in GMF are a legacy of the region's history, and a demonstration of human-nature

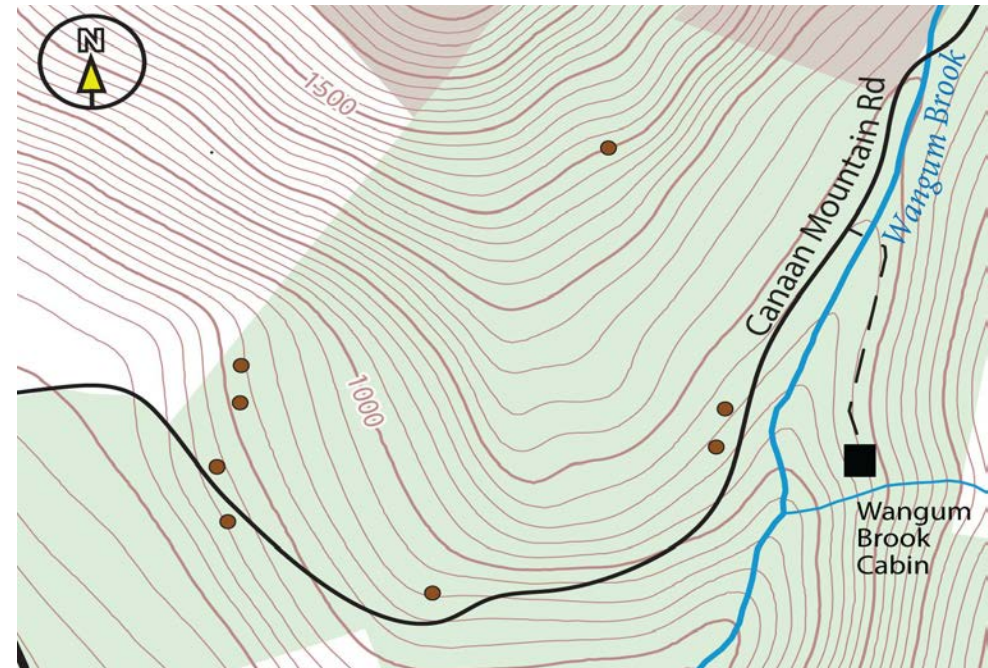


South of Yale Camp area charcoal hearth locations.

relationship. The direct effect of charcoal hearths on the landscape is small (100 hearths amounts to less than 2 acres). However, the indirect effects though the process of making charcoal were significant, altering forest composition and structure for hundreds of years.

Process

Charcoaling first involved cutting wood into four-foot lengths, called billets. This was typically done in winter when sap quantity was lower. In summer colliers would clear a hearth. Hearths were typically set on gentle slopes where the uphill portion was dug out and filled into the downhill portion. This made a roughly circular flat area approximately 20 feet (6m) to 30 feet (9m) in diameter. Upon this, 30-50 cords of wood, taken from about 3-acres of land, was stacked in the shape of a dome with an open chimney in the middle. Wood thicker than 6-inches in diameter was split. Hardwoods were used almost exclusively and hemlock was rarely used as Connecticut furnaces typically avoided it (Gordon 1996). The stack was covered in leaves and soil to prevent the wood from igniting. Many of the GMF hearths have small pits dug around the edges presumably from soil



Map of Canaan Mt Road area charcoal hearth locations.



This hearth occurs on the north side of Canaan Mt Road up along the base of the steep slope. It is a large hearth, and though no trees grow on it, there are a number of herbs. Notice how it has been mounded up on the left and cut into the side of a slope. Typical GMF hearth.



This hearth also shows excavation from the slope on the right and mounded up on the left. This hearth has a few white pines growing on it. Often one tree grows on the site from the location of the pole placed in the center of the stack.



This hearth in the rocky soil on a higher slope has stones forming the base of the built-up section (lower left). Though the surrounding forest has grown up (background) the hearth has only herbs and seedlings.

excavation for this purpose. Smoldering water, gasses, and resins out of the wood produced pure carbon charcoal.

Colliers would build three or more hearths close together and then construct a small hut nearby from where they could watch over the hearths. If the pile began igniting they would have to add more leaves and soil, or douse it with water. Once in a while the fire would get away and scorch the slash and burn the cutover forest.

Typically stems down to 3-inches (8 cm) were used. Clear cutting was the most common practice. The controlled smoldering of wood from forest trees produced a form of crystallized carbon that was ideal for iron furnaces. Smoldering would take approximately 2-weeks. When the charcoal was unearthed, it was extinguished or cooled with water, bagged into bushels, and loaded for transport to the furnace.

One-acre of land yielded 20-cords of wood. One cord of wood made 33-bushels of charcoal, or 660-bushels of charcoal per acre (~1500-bushels per hearth). It took 250-bushels of charcoal to make a ton of iron, or 1-acre of woods to yield 2.4 tons of iron. (J. Bronson personal communication).

Legacy

Studies by Mikan and Abrams (1995; 1996) and Young et al. (1996) suggest numerous soil chemistry changes from the charcoal process. The legacy is evident in the slow and poor recruitment of vegetation on hearth sites. Specifically, Mikan and Abrams (1996) show hearth sites have elevated pH, cation exchange capacity, base saturation, and exchangeable Ca, Mg, and K relative to surrounding soils. Greenhouse experiments of hearth soils show reduced growth and vigor compared to surrounding soils.

Interestingly, at least two sites in GMF show remarkable diversity and richness growing on the hearth site. On a site near the Meekertown Sawmill (this section) plants include wake robin trillium, hog peanut, jack in the pulpit, Solomon's seal, among others. These plants occur only on the hearth site in a hemlock forest with otherwise little herbaceous vegetation. What happened to this soil on the hearth to allow not just richness, but richness in a low-diversity forest? In the Appalachian Forest (see Natural Communities) a hearth lies covered in maidenhair fern and small chestnut trees. The chestnut sprouts must postdate the last burning around 1900. There is



This is the "Rich Hearth" found near the confluence of Brown Brook and the North Branch of Brown Brook. In the background notice the complete lack of herbaceous growth in the hemlock forest. However, the hearth is lush with flowers atypical for both the hearth and the forest.

no evidence of dead stems from chestnut blight and dieback. It is possible that this tree arose from a seed recently.

Charcoaling altered forest composition in favor of vigorous coppice resprouts such as oak. Coppice red oak is abundant throughout GMF especially on higher slopes in communities now dominated by oak and which also contain many hearths.

Importance

The Charcoaling era was noteworthy in GMF history. The amount of wood cut and the shift in forest's composition, suggests this was a significant disturbance in GMF. Understanding the charcoal era is critical to understating the contemporary forest as well as the human history and conservation efforts that followed.

Research Suggestions

What species of wood was burned in the hearths? (Observable charcoal fragments available at sites should reveal the species of tree burned.)

- What is the process of succession on charcoal hearths?
- What soil chemical or physical changes occur on charcoal hearths?
- Why are two hearths covered in flowers when no other (known) hearth is, nor the surrounding forest?
- How did charcoaling alter forest composition in GMF? Which species were selected for? Which species regrew? Did vigorous coppice sprout species (oaks) come to dominate?
- What stand ages are found around charcoal hearths? Do these match the dates of cutting indicated by coppiced oaks?

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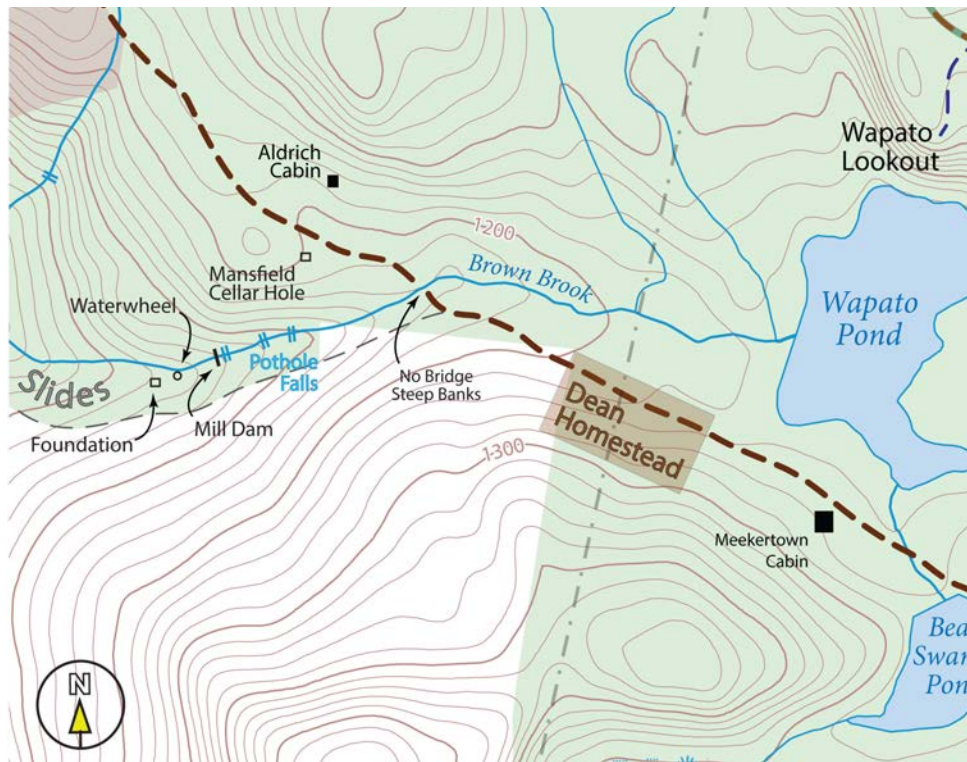
LAND USE HISTORY 2: S. DEAN HOMESTEAD (MEEKERTOWN)

Summary

This small settlement site located in southern GMF provides a glimpse at the marginal conditions upon which farming was attempted, and leaves questions about intention from several landscape legacies. Little is known of the settlers of this property. Both groundwork and historical research present opportunities for discovery.

Access

The site is 1.67 miles walk south on Chatleton Road from Yale Camp. Or, it is 0.66 miles walk west on Meekertown Road from Trail #4 at Wampee Pond.



Location of Dean homestead at Meekertown. Evidence of the settlement is scattered throughout the area, and perhaps beyond. The Norfolk-Canaan Town Line is the dashed line running north-south.

Location

Site occurs on the south side of the road/trail: 41°55'44.25" N; 73°15'35.08" W

Near-by or Comparative Sites

The site serves as an excellent comparison to other settlement sites. It compares nicely with other small sites to see how the smallest farms got by. These include the Trail #4 Pioneer cabin, and the Mansfield site.

Description

On the south side of Meekertown Road at this site a faint trail rises up the slope. It quickly fades in an area with several clearance cairns. Settlers created these stone heaps by ridding the ground of stone to increase pasture production. This site does not appear to have had crops (though a small garden likely occurred somewhere); the area would have been pasture for animals. The extent of the area pastured is unclear; it may have remained close to the settlement, or continued upslope some distance. If it had continued up-slope, the impact on the land was minimal. An acre or two of land shows sign of intensive land-use (smooth ground, indicator plants).

A stonewall runs along Meekertown Road to the west. And another wall runs south (uphill) away from the road for about 100 yards. This fence would have hemmed in the farm on its western edge. This stone fence appears to occur on a property line slightly west of the town line that may have itself been a survey error for the town line. The western line serves as the property line for GMF today. Inside this wall (to the east) are the telltale signs of pasture: smooth ground, young even-aged trees, dense Canada May-flower, and about a dozen clearance cairns.

Subtle remains of a foundation occur on a small rise near the stonewall, just beyond the smooth ground. The rise has been flattened, and a few stones serving as piers likely supported a structure. There is no cellar hole, so maybe this was not a year-round settlement. The site would have provided nice access to the pasture, and also a perch above the road.

The site is located on Meekertown Road and could have served products to the many colliers and sawyers working these woods. It appears to have been small production, nonetheless, and/or perhaps only lasted for short duration.



Location of the Dean homestead on the 1853 (Fagan) maps of Canaan and Norfolk, Conn. The maps are joined in the center where the dean property occurs on both maps as it lies on the town line. Chattleton Road enters from the upper left, Meekertown Road from the lower left.



Three clearance cairns at the Dean site. There are a dozen or more clearance cairns (aka: stone heaps) at this site. These indicate clearing of stones from fields. Small stones were simply placed on a large unmovable boulder.



The stonewall running north-south along the west property line at the Dean site. The wall is short (~100-meters) and ends abruptly where a wooden fence would continue. Large stones indicate it was a fence rather than clearing frost-derived stones (small) from an agricultural field.

Importance

This site is small and compared to other settlement sites is probably of minor importance. Nevertheless, it serves as a good example of yet another way people were making a living in Meekertown and GMF in general.

Research Ideas

Mapping cairns, walls, and house site etc.

Succession on old pastures

Historical research into ownership and/or tenants (who lived here?)

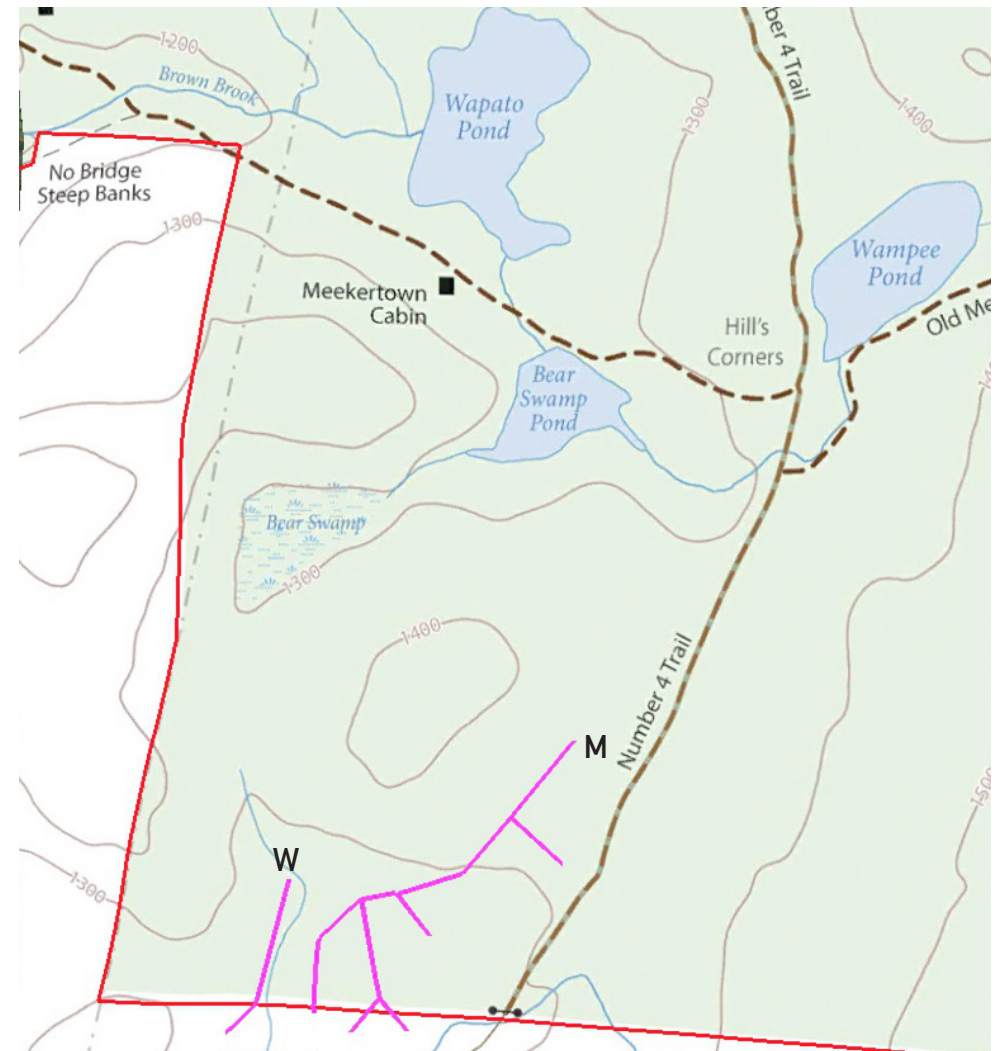
Resources

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LAND USE HISTORY 3: SOUTHWEST STONE WALLS

Summary

This site contains a system of stonewalls amounting to 1.25 miles on GMF property and an unknown amount of contiguous wall south of GMF lands. Classic examples of former pasture, as well as sections of wall occur in hardwood forest and old field pine.



Location of Southwest Stonewalls in the southern reach of GMF. Walls are shown in pink. M indicates moose enclosure site and W indicates West Wall for coordinates reference.



A length of well-preserved wall from the southern stonewall maze. Over a mile of wall, much of it well preserved, occurs here. Notice the distinct communities on either side of the wall. The near side contains sparse ground-flora while the far side contains a dense rich layer. The differences will be accounted for by the land-use practices occurring on the opposite sides of the fence. Closer examination will reveal the exact practices.

The area around the stone wall maze contains abundant old-field white pine including many weevil-damaged pines such as these. When pine establishes in dense, full sun areas like old fields, weevils proliferate and damage the trees' leaders. This creates multi-trunked trees. Pines do not coppice or resprout like oaks, maples, etc.

Access

Best access is from the southern end of the Number 4 Trail. Access via the Moose Exclosure site (see forest management sites) brings one to the northeastern terminus of the wall system.

Location

The walls occur in the far southwest corner of GMF property, and run off the southern property boundary. Coordinates for two locations given below:

Western Wall:

41°54'57.77"N; 73°15'34.33"W

Moose Exclosures:

41°55'12.69"N; 73°15'10.84"W

Near-by or Comparative Sites

Adjacent to this wall-maze is the moose exclosure. A rich talus community occurs in the ravine to the northwest of the Western Wall (see map). The Dorman home-site on Chatteleton Road also contains abundant stonewalls.

Description

This is an excellent but sprawling site for people interested in pasture abandonment, old-field succession, and stonewalls. A dozen wall segments link up to create a 1.25 mile long wall complex, with contiguous walls continuing on private lands to the south. The walls appear to all be pasture fences, indicated by the large stones. (Walls made from stones removed from crop fields would have small stones.)

There are clear signs of old field communities. These include stands of old field white pine, some weevil-damaged white pines, extensive patches of smooth ground, dense communities of Canada May-flower, and

clear community delineation on opposing sides of walls. Additional early successional species are found (black cherry, red maple, etc.).

Many of the pines show damage from the white pine weevil (*Pissodes strobe*). The weevil kills the terminal leader of vigorous white pines growing in the open. Once the leader is damaged and dies, branches from the upper-most whorl shoot up.

It is unclear when this area was pastured, for how long, and when it was abandoned. The photo right shows the site in 1934 and also in 2012. Even in 1934 there was considerable tree cover suggesting that abandonment occurred at least 50 years before that. The peak of agricultural abandonment in New England was the late 1800s (beginning ~1860 and leveling out by ~1950). By coring pines, one should be able to attain an accurate date of abandonment.

Research Ideas

Date of pasture abandonment? Degree of clearing (percent cover?)
Effect of stonewalls on wildlife in second-growth forests: corridors or impoundments?

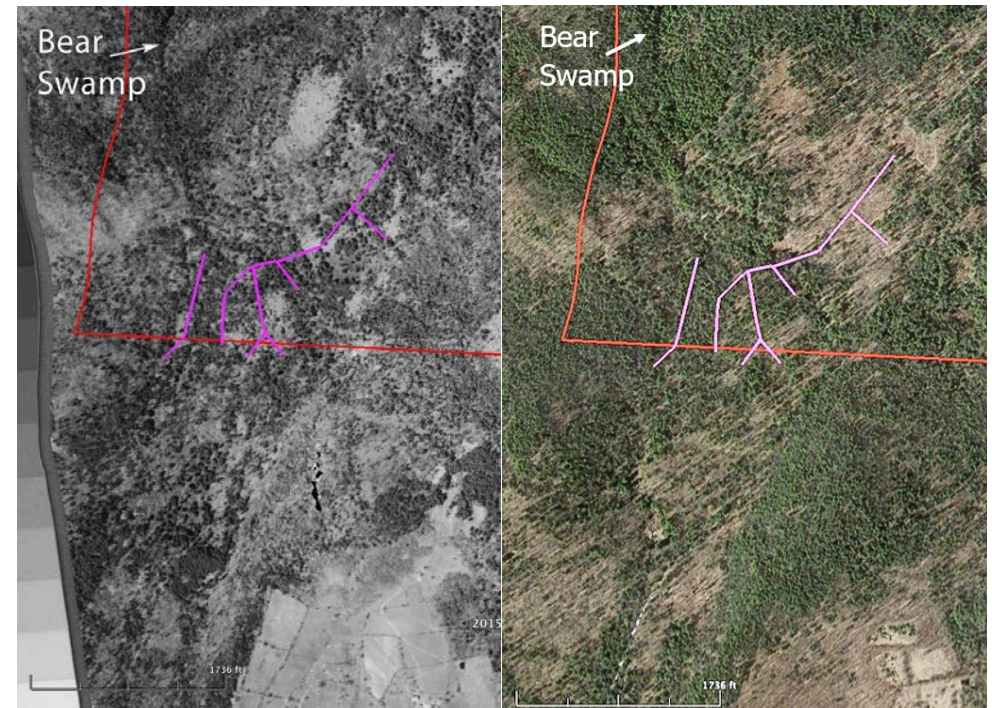
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Thorson, R. 2004. *Stone by Stone: The magnificent history of New England's Stone walls*. Walker and Co.

Foster, D. G. Motzkin, and B. Slater. 1998. *Land-use history as long-term broad-scale disturbance: regional forest dynamics in central New England*. *Ecosystems* 1: 96-119.

Wessels, T. 2010. *Forest Forensics: A Field Guide to Reading the Forested Landscape*. Countryman Press.



Southern Stone wall Maze and adjacent property south of GMF taken 1934 (left) and 2012 (right). Stone walls in pink and GMF southern border in red. The walls amount to 1.25 miles. It appears the old pastures around the walls were accessed via properties to the south as they occur in the same watershed. Note the change in field cover at the bottom

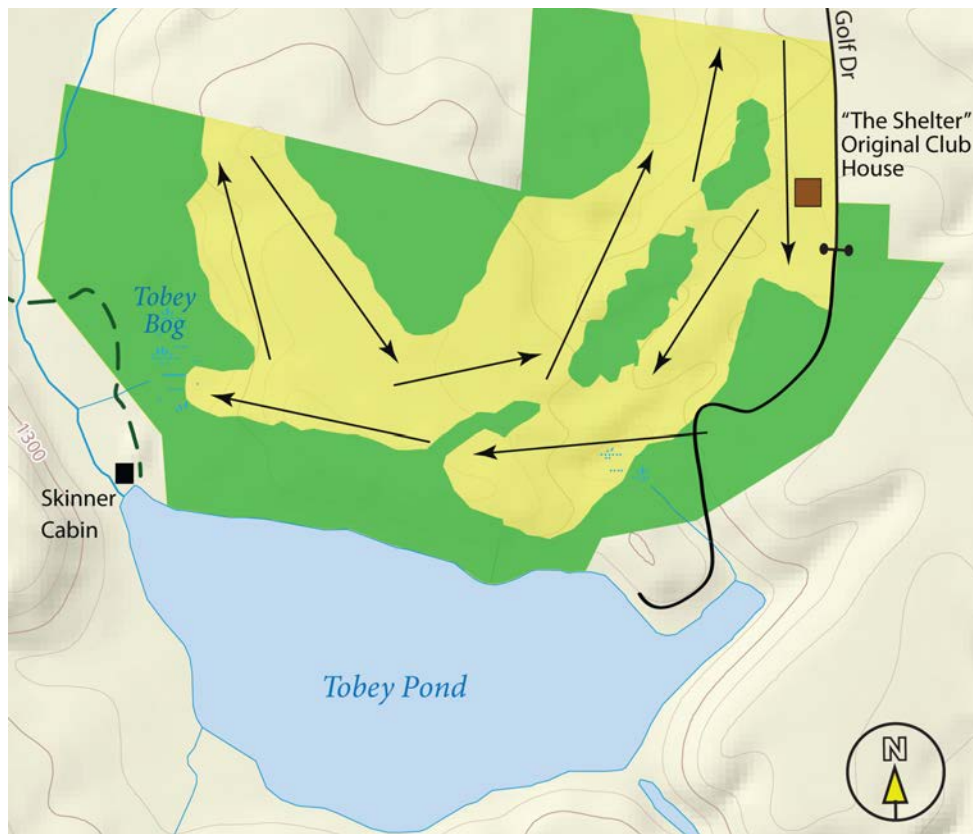
LAND USE HISTORY 4: NORFOLK DOWNS GOLF COURSE

Summary

The abandoned Norfolk Downs golf course is an interesting slice of land-use history showing that even contemporary land-uses can fail and revert back to forest. Here, a golf course purchased by Ted Childs in the 1940s, naturally reforested (portions were put in plantation). The white pine dominated forest provides a nice laboratory growing on glacially derived deposits.

Access

Best access is via “The Shelter” on Golf Drive. Inquire with GMF.



Norfolk Downs golf course as played in the 1940s. The site is forested now having grown since Childs purchased the property.

Location

The old golf course occurs south of the existing Norfolk Country Club and north of Tobey Pond. The property is GMF owned but inquire to gain access.

Legacy Cherries:

41°58'52.71"N; 73°13'20.64"W

Young Pines:

41°58'51.37"N; 73°12'59.52"W

Glacial Deposits in white pine:

41°58'43.14"N; 73°13'5.77"W

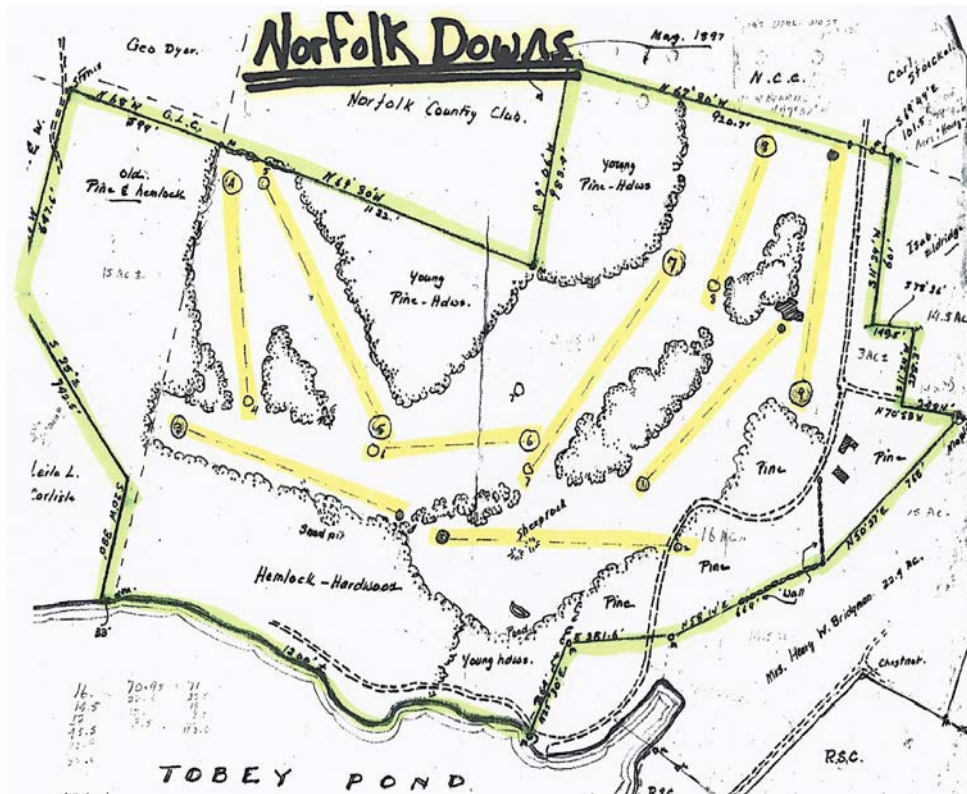
Near-by or Comparative Sites

This site contains glacially deposited sediments and topography of Glacial Lake Norfolk described in the geology section. To the west is Tobey Bog (see Natural Communities) and the North-40 old growth hemlocks (see Natural Communities).

Description

This interesting site contains a 9-hole golf course that has, over about 60 years, reverted back to young forest. Ted Childs bought the property in the 1940s and allowed it to revert naturally to forest. A few small plantations were established, but the majority of the property has reverted to old field white pine. The ground, although it is dramatically topographic due to glacial deposits, is remarkably smooth as a golf course would be. To the observer, a pasture would come to mind, which the land likely was prior to golf. Perhaps using the maps shown here one could seek out the greens and tees. We found the undulating glacial deposits masking any sense of fairways or greens.

Nonetheless, this is a fascinating area with several successional stands ranging from about 15 years, to 25 years, and over 50 years. A few legacy black cherry and hemlock trees were also found (see location for coordinates). Invasive plants, mainly barberry, are scattered but not prolific.



Map of the Norfolk Downs golf course by D.G. Bush dated June 2, 1945 showing forest types in the wooded areas between fairways. These could be groundtruthed for relevance. (Map courtesy of Great Mountain Forest.)

Importance

Another example of old field pine succession. It could be interesting to see if the greens, tees, and traps contain unusual communities.

Research

Colonization of greens, and traps.

Old field pine succession and wildlife

To see if the distribution of current species shows dispersal from the various source populations around the edges (hemlock to the west, cherry and hardwoods to the north, etc.).



Typical old-field white pine community in the abandoned Norfolk Downs golf course at GMF. Some pines, as expected, are weevil damaged. Trees appear to be about 60 years old. Coring should confirm actual date of abandonment.



A younger stand of paper birch and yellow birch on the golf course. Dense stands such as this occur mainly on the east side of the parcel. Areas within these are dominated by white pine.

LAND USE HISTORY 5: MANSFIELD SITE

Summary

According to the 1853 (L. Fagan) map the site was owned or inhabited by E. Mansfield. Since Elisha Mansfield was a land trader of sorts, it is unclear if he and/or his family actually lived there, or simply owned it, or something else. It may have been the elder Mansfield's homestead, and perhaps simply owned by the younger Mansfield, uninhabited or rented in 1853. Nonetheless, the site contains an excellent cellar hole, a series of poorly constructed stonewalls and cairns, and several legacy trees.

Access

Access to this site is from Chatleton Road, 1.45 miles south of Yale Camp. Alternatively, one could enter from the Number 4 Trail and walk 0.8 miles west on Old Meekertown and Chatleton Roads. The site is listed as Point 7 on the GMF Trail Map.

Location

Coordinates to cellar hole:

41°55'50.58"N; 73°15'52.64"W

Near-by or Comparative Sites

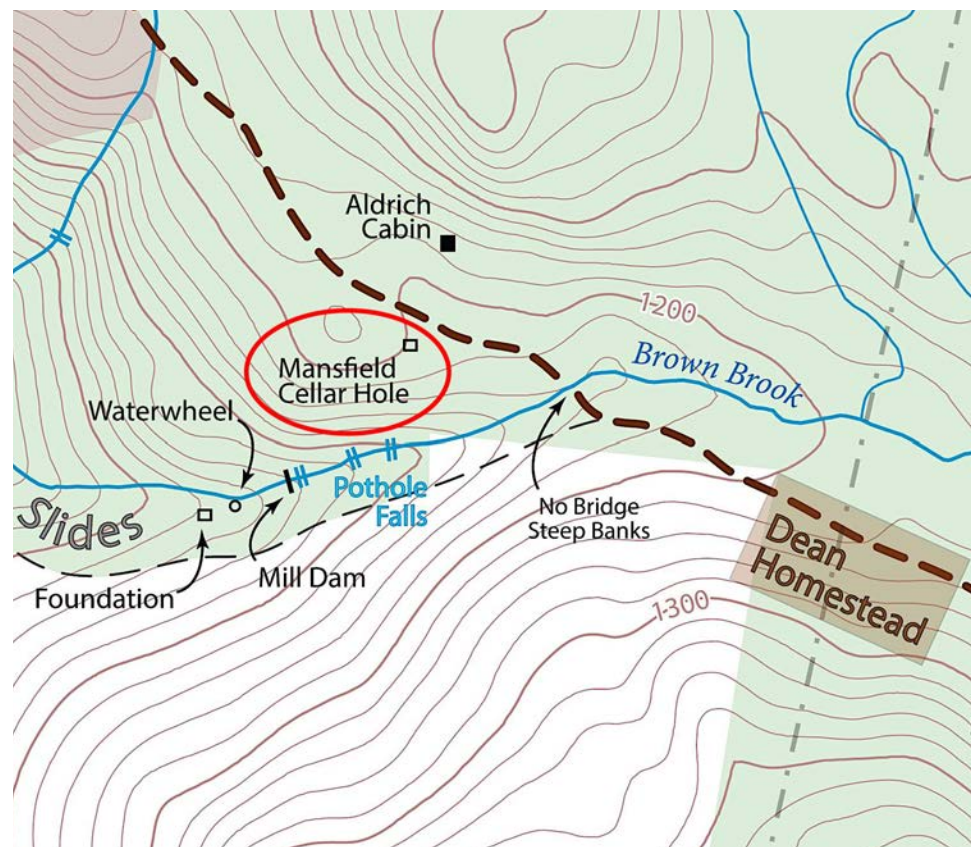
The Dean homestead (Land Use section) occurs 0.3 miles east on the Meekertown Road. Sawmill remains (this section) occur nearby on Brown Brook. Stonewalls and hearths are scattered throughout.

Description

This site contains one of the best preserved cellar holes in GMF along with a series of small, incomplete stonewalls, and clearance cairns. The Mansfield homestead provides yet another example of the ways people were living and making it work in Meekertown.

The 1853 map identifies the site as belonging to Elisha Mansfield. Winer (1995) makes few references to the site, instead noting the various land purchases by the Mansfields' and their sawmill located slightly southwest on Brown Brook. Winer (1955) also discusses in some detail the Mansfield burn – a fire that occurred on a property owned by Mansfield in 1851. See Winer (1955 p.190) for more details on the Mansfield Burn.

According to Winer (1955) Elisha Mansfield built a cabin in 1795 on



Location of the Mansfield Cellar Hole in Meekertown.

the site of today's Yale Camp. Sometime after 1806, when he and Dorman bought land, on what was then called Meekertown Brook (aka Rocky Brook) at the town line, he built a sawmill. Today this is known as Brown Brook (presumably named for Meeker's wife with last name of Brown). He also cleared and graded Chatleton Road from today's Yale Camp to the Meekertown Road. In 1829 Mansfield sold the mill to his son Elisha D. Mansfield. In 1831 Lyman Howe purchased the mill and operated it until 1874. Thus we don't know if it was Mansfield the elder or younger who owned the homestead property in 1853, though chronologically it seems it was the younger.

The cellar hole is one of the larger cellars found in GMF though still amounts to only one or two rooms. With its topographic setting (see location map above) the inhabitants would have had vast southwest views from the hilltop just a few dozen yards from the house. The scant amount



1853 map of Canaan, CT showing the area of Meekertown including the Mansfield home site (center) and sawmill.



Mansfield Cellar Hole along Chattleton Road near Brown Brook. This is one of the better-preserved cellar holes in GMF. With this are an array of stone walls, clearance cairns, and a couple legacy trees.

of stonewall present is not surprising; they would have used much wood fencing as long as wood was available on site. Stone was used only to get it out of the fields (or roads), and as fencing when wood became sparse. So at this site the stonewall (fence) looks pathetic, which it was, because wood and brush would have covered it making a real fence.

Importance

This is one of the best-preserved cellar holes in GMF (and should be maintained as such mainly by keeping the trees away). The site provides another example of how people were making a living in challenging terrain.

Research Ideas

Additional work mapping the site and completing a thorough botanical inventory in order to determine the layout and extent of the original farm. Historical research on inhabitants, landowners, etc.

Resources

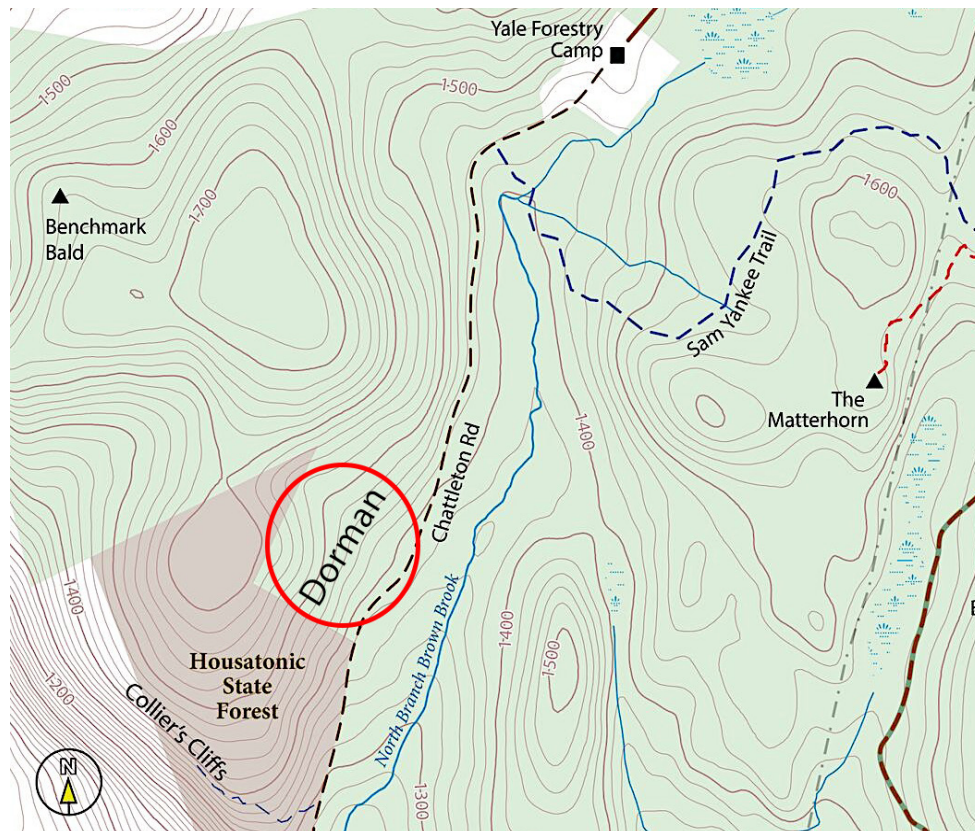
Winer, 1955. *History of Great Mountain Forest. Yale University Dissertation.*

Fagan, K. 1853. *Map of Canaan, CT.*

LAND USE HISTORY 6: DORMAN FARM

Summary

This is an outstanding site that inspires contemplation in a forest filled with stonework, centuries-old sugar maples, and young stands of trees in abandoned pastures. Approximately 1.1 miles of stonewall occurs in an area of under 30-acres. Complete with a barn foundation, an intact cellar hole, abandoned crop fields, a stream, and dozens of sugar maple and black cherry legacy trees, this outstanding site is an easy walk from Yale Camp. We have expanded the site relative to others because of its value, to include more information, photos, maps, including a detailed map of most site features.



Map of Dorman Farm location.

Access

The site is accessed via 0.6 mile walk south of Yale Camp on the Chattleton Road. After passing a wet area (with phragmites), large sugar maples and stone walls mark the site.

Location

Site entrance coordinates: 41°56'22.47"N; 73°15'59.63"W

Additional coordinates for particular places within the site are referenced in the text and map.

Near-by or Comparative Sites

A burned-over stunted oak woodland also occurs near the summit of the hill above the site. A beaver meadow occurs slightly upstream on North Branch Brown Brook from the site. Two forest management sites occur on the Chattleton Road between this site and Yale Camp.

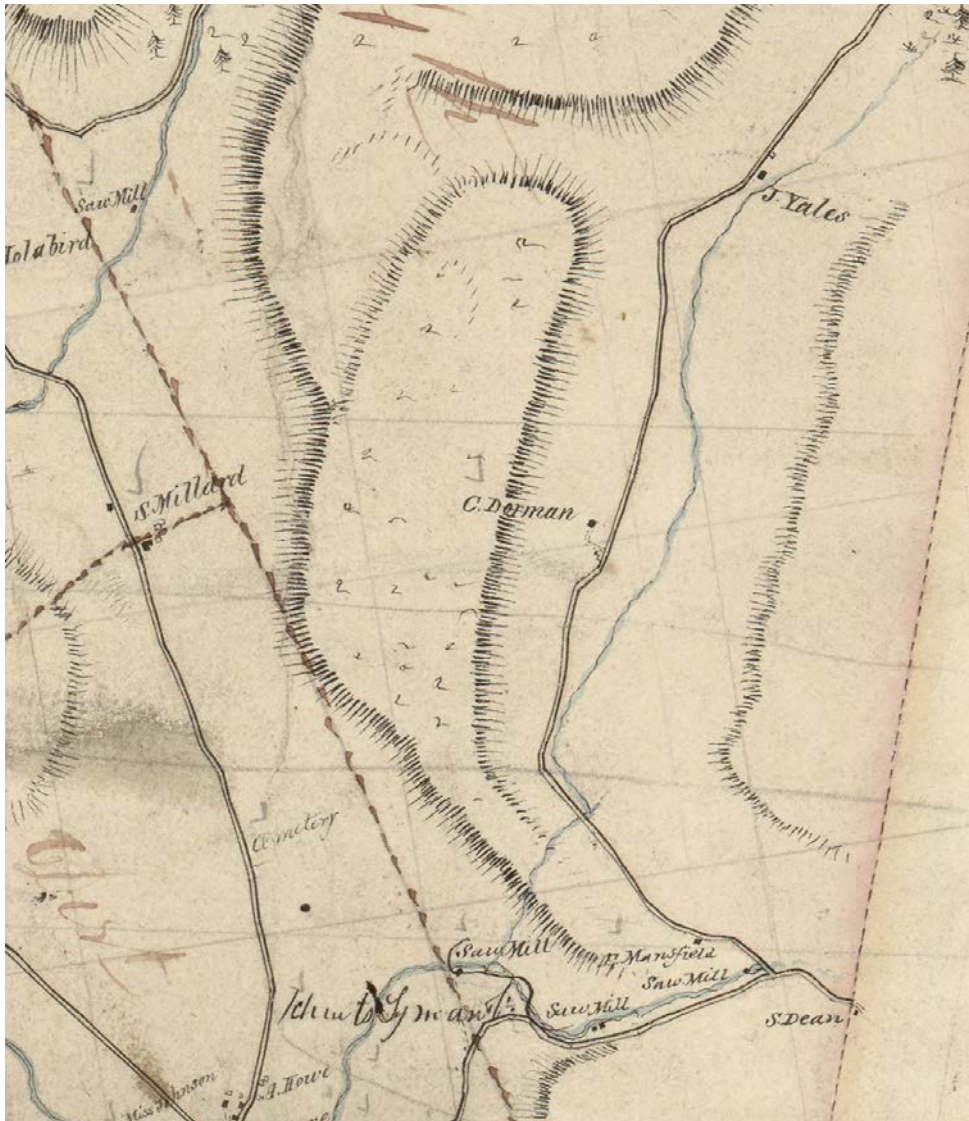
Description

General Background and History

The Dorman site – so-called because it is listed as such on the 1853 map of Canaan, Connecticut – is one of GMF's gems. In a compact area of ~30-acres, one can explore the remains of a life strategy that flourished in New England for a brief century. Today, like the remains of great civilizations the world over, this site lies reclaimed by forest, leaving the contemporary explorer to imagine, study, and search for answers of who they were, how they lived, and what they left behind.

The 1853 map shown here indicates this property along Chattleton Road as owned or resided by C. Dorman. Winer (1955) references Chauncey Dorman, which online records indicate was born in Litchfield County in 1777. It is unclear when Dorman acquired the property or when he settled it. But likely this occurred not before the early 1800s.

Winer (1955) mentions Dorman sparsely and he does not definitively describe this homestead. He notes Dorman and Elisha Mansfield bought the land that would become the sawmill (see 1853 map) in 1806 (p. 171). He further notes (p. 195) that the Dorman and Mansfield families “were associated in a number of ventures.” The land south of Mansfield's in 1851 belonged to Dorman. This is today Housatonic State Forest land immediately west of the Dorman site and GMF more generally. Writing about the Mansfield Burn, Winer (1955) states: “as the fire may



1853 Map showing the C. Dorman property in center. The J. Yales property to the north is the site of Yale Camp (no relation) while E. Mansfield and S. Dean farms occur farther south in the heart of Meekertown.

have started on Dorman's land, one may speculate on the possibility that enough ill will had arisen to breed a claim or suit for damages" (p. 195). These are the only references to Dorman in Winer's dissertation.

To describe the site we will take it element by element, providing coordinates, photos, and referencing a detailed map that follows at the end of this section.

Stonework and other farm improvements

Today the most obvious remains of the farm are the stonework and the sugar maples. The stonework represents an often-underappreciated amount of work. With stones at hand, two men could build 10 to 20 feet of stone wall per day (Alport, 2012; Thorson, 2004). At this rate, the ~1-mile of wall at the Dorman site would have taken two men about 365-days. This was only after they had collected and staged all the stones.

The maps on the next page outline in purple all the stone walls found at the Dorman site. You will see several are comprised of small sections. These gaps would have been filled with wood rails or gates. Larger spans in the north and west lacking wall would have had wood fences initially and later barbed wire after its introduction in the 1870s. Barbed wire is found in the northern sections today (see large map). Other than those sections, we did not find additional barbed wire on this site.

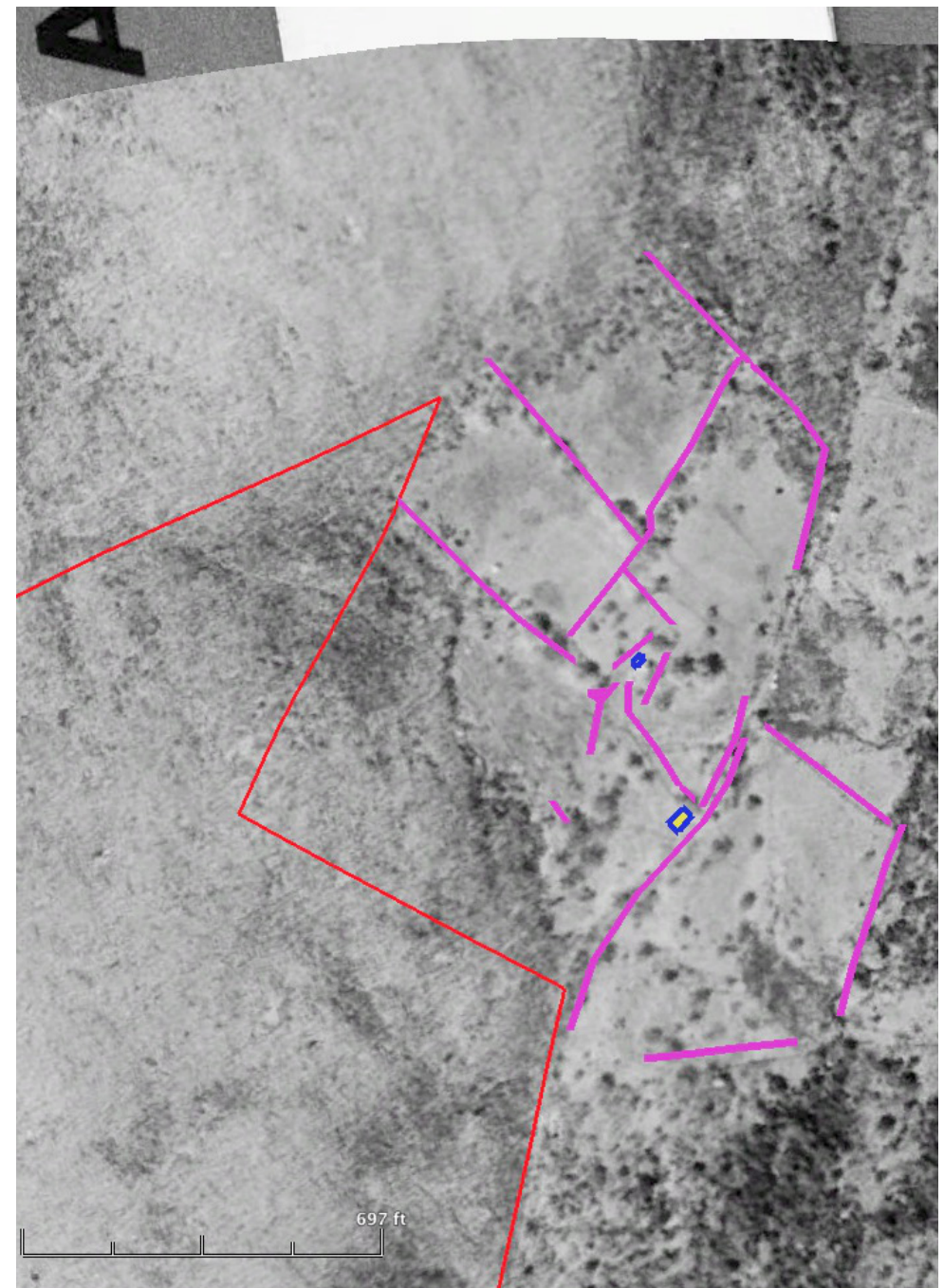
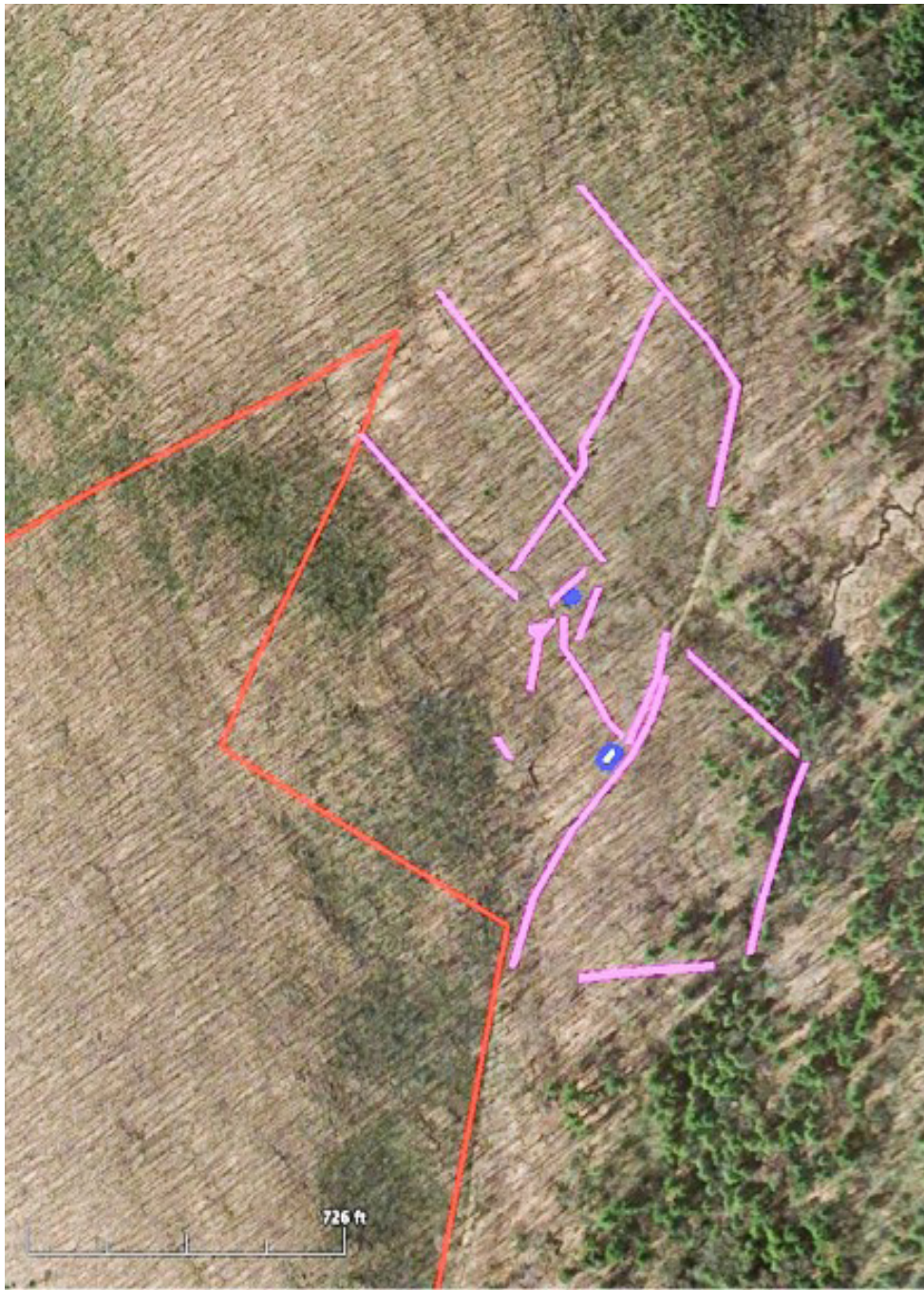
A New England stone wall is rarely taller than thigh-high, though occasionally some reach waist high. It's believed this is a result of ergonomics; lifting stones above the thigh is challenging (Thorson, 2004). To properly pen animals in, the wall would have a rail or rails along the top.

Looking at the size of the stones and the construction we can interpret the purpose of a wall. A well-stacked wall with large stones built was a fence for keeping animals in, or out, of a field. It was as important to for an owner to keep their animals in an enclosure. And it was important for a crop grower to keep animals out of their fields. Stone-fence regulation was serious business in early New England (Wessels, 1997).

A wall comprised of many small stones indicates an agricultural wall, or in other words, stones moved simply to get them out of a field. Freeze-thaw activity, animals, and soil erosion in plowed or overgrazed fields, all expose stones. In a crop field these are always removed so the stones do not damage the plow. In pastures, too, stones are often removed because forage does not grow under rocks and the removal of rocks increases the amount of forage area. Often these fieldstones are heaped or dumped rather than properly stacked, as in a fence (see photos).

Often in pastures or crop-fields stones will be picked up and placed on larger rocks. This could be to simply expose more ground to sun to promote forage, or to clear a crop field. If there are large, unmovable rocks in a field the small stones may simply be placed atop the large ones. These stacks are called clearance cairns, or sometimes stone dumps (see photos on page 142). Little has been written about clearance cairns in New England.

The last stone features at the Dorman site are the cellar hole



Dorman Farm from 2012 (left) and 1934 (right). Red line on left is GMF property boundary. Pink lines are stone walls identified on the ground and marked with GPS. There is over 1-mile of wall. The small blue rectangles locate the house and barn. Many of the pasture trees in the 1934 image are still alive. Note the patches of mountain laurel that occur in center-left of both images (dark areas). Conifer distribution is also similar despite being nearly 80-years apart.

and barn foundation. The site contains one of the larger and better-preserved cellar holes found in GMF. One wall has collapsed. The house foundation contains a chimney suggesting it was built before 1830 when woodstoves and stovepipe came into use. The barn foundation lies along Chattleton Road at the entrance to the farm. The rectangular structure can be discerned with two steps in the front, foundation stones around the perimeter, and stone footings for center posts (see photos right).

On the west side of the farm, on the edge of the forest (identified by change in community and old edge trees) is a charcoal hearth. It is a typical hearth, and charcoal fragments are evident on the edges. While the surrounding forest contains ferns, and other woody vegetation, the hearth contains mainly grass. Charcoaling changes the soils chemistry such as to prevent plant growth. See the hearth section (Land Use 1). Charcoal was typically not a family operation, but a skilled trade. We can only speculate on the presence of the hearth on the farm site.

It is also important to point out the most widespread and often overlooked field mark for unraveling this site. All the pastures and formerly cleared areas have smooth ground. Unlike the adjacent forest, which, despite almost two centuries of disturbance, has undulating lumpy-bumpy ground, all the pastures and formerly cleared areas have smooth ground. This is an indicator and field mark for identifying formerly cleared areas.

Trees and Vegetation

With the stone walls, the many large old sugar maples comprise the other dominant landscape feature on the Dorman site. Dozens of trees, up to 48-inches in diameter, occur in and among stone walls, near the cellar hole, and along Chattleton Road. The maples are identifiable in the 1934 imagery, and based on bark characteristics they are estimated to be 200-years old. Some trees may be nearer to 300-years. Several large black cherry trees also occur in and among the stone walls. Cherry, as an early successional sun-loving tree probably sprouted up in the walls. Dorman, or whoever the first settler on the site was, likely left many of the sugar maples uncut from the original pre-settlement forest. The trees would have provided sugar as well as shade for cows. Some may have sprouted up in the walls and could now be around 200 years old.

Today the legacy of sugar and shade lies with wildlife. Unlike the small, young trees taking over the old pastures, these old trees provide important forests structural features otherwise not found. Cavities, large hollows, rugose and decorticating bark, form only on old trees. These

features are important to birds and mammals as well as invertebrates upon which the larger animals prey. See Gaige, (2009) for more on wildlife use of legacy trees. See photos for examples of the sugar maples.

Another small group of trees with a story to tell occurs on the western edge of the farm area. In this area stand several edge-trees. The white oaks have branches on the lower (downhill) side of the tree while the uphill side contains no branches. In Dorman's days, these trees backed up to the forest, while the sides with the spreading branches faced the open pasture. The sun exposure allowed the trees to branch out, and spread into the open. See photos for image and coordinates.

Filling in the pasture matrix today are young, early successional trees. On the west side of Chattleton Road, in the main part of the farm, sugar maple dominates (especially lower on the slope) with ash, black cherry, some paper birch. There is surprisingly little oak regenerating in these old pastures, despite the fact that oak dominated the surrounding forest. Perhaps they were not of acorn-producing age when the pastures were abandoned in the 1940s.

On the east side of Chattleton Road, downhill from the main farm, the old fields are dominated by white pine mixed with other species. These pines appear to be 60 years old but they could be cored for accurate aging.

Japanese barberry dominates some areas east of the cellar hole and is a typical invader in old pastures. Often the species was planted decades ago for promoting turkey habitat when turkey was a focal species for conservation and reintroduction. Unfortunately, the people administering those policies did not anticipate the problems we see today from barberry infestation. It is the dominant exotic invasive plant in GMF. No Japanese barberry was planted in GMF for turkeys, though it was distributed to adjacent land owners.

Map

A detailed map of the site is provided at the end of this section. The intention for this is to help groups with limited amounts of time see the layout and be able to visit the features. However, groups with longer amounts of time may wish to engage students by having them map the site (a challenging task!) and checking their work. Or a group may wish to use this map as a starting point to discussion and discovery.



The cellar hole at the Dorman property. The cellar is in moderately good condition with one collapsed section. Removal of the trees would help preserve it. The fireplace foundation suggests it was built before 1830. It is one of the larger cellars in GMF. It may have been expanded over the years.
 COORDINATES: 41°56'24.31"N; 73°16'2.23"W

Importance

This is one of the best homestead sites we found in GMF. It is replete with so many legacy features condensed into a small space (~30 acres) that we felt it should be mapped closely and presented with more detail than other sites. That it is so close to Yale Camp makes it better still.

It is rare to find an entire farm lie as an unaltered landscape legacy in New England. Since most of the farming occurred in flatter areas of low elevation, those areas remain inhabited at best, and paved-over at worst. Here, farming was at its fringe and the poor productivity of the mountains lead to farm failure in a changing economy. And today, when we view the landscape as a historical and ecological landscape, we find the two inseparable.



The two stones in the center foreground in this image are the steps that lead into the barn at the Dorman site. The tree in the center-background sits on rocks that served as the center-post for the barn. The barn is located on Chatleton Road and likely served as a staging for the sale of products to travellers and for bringing products to Meekertown and Lower City.
 COORDINATES: 41°56'20.99"N; 73°16'0.79"W

Research Ideas

- The progression of pasture succession: dates, composition, processes
- Historical research into ownership and farm production. Who lived here?
- What did they produce?
- Wildlife use of cultural landscape legacies (stonewalls, old pasture trees, etc).
- Succession in old fields: why maple and why not oak?



This clearance cairn lies in the northeast corner of the Dorman site where a number of stone dumps also occur. The northwest corner also contains clearance cairns, though smaller than this one. Clearance cairns indicate pasturing or crop production where smaller stones are laid upon larger, unmovable rocks. Note the paper birch in the background, indicating relatively recent abandonment.
COORDINATES: 41°56'28.05"N; 73°15'58.62"W



This barbed wire fence occurs in the northern reach of the site. Barbed wire hems in the farm on its northwest edge backing to the forest. Much of this can be found strung in oaks and on the ground. Barbed wire was popularized in the 1870s, primarily for cattle since sheep get their wool caught up in it. By cutting one of these oaks, the exact year this wire was strung could be obtained.
COORDINATES: 41°56'32.31"N; 73°16'2.16"W

Resources

- Allport, S. 2012. *Sermons in Stone: The Stone Walls of New England and New York*. Countryman Press.
- Thorson, R. 2004. *Stone by Stone: The magnificent history of New England's Stonewalls*. Walker and Co.
- Gaige, M. 2006. *The use of abandoned pasture trees (wolf trees) by birds and mammals in second growth forests of Vermont*. Master's thesis, Antioch University New England.
- Gaige, M. 2014. *Wolf trees: elders of the eastern forest*. *American Forests*. 120(3): 16-23.

- Foster, D. G. Motzkin, and B. Slater. 1998. *Land-use history as long-term broad-scale disturbance: regional forest dynamics in central New England*. *Ecosystems* 1: 96-119.
- Wessels, T. 2010. *Forest Forensics: A Field Guide to Reading the Forested Landscape*. Countryman Press.
- Winer, H. 1955. *A history of Great Mountain Forest*. Yale University Dissertation.



Note the branches reach to the left on this tree, while no branches reach right. The tree grew on an edge: forest to the right, and pasture on the left. The plant community types are dramatically different on the forest side of the tree compared with the second-growth side. 41°56'22.49"N; 73°16'6.13"W



This small grassy clearing at the Dorman site was a charcoal hearth. Bits of charcoal can be found around the edges. Vegetation typically remains sparse on old hearths. Perhaps Dorman (or later inhabitants) sold charcoal or rights to it as a farm commodity. 41°56'24.29"N; 73°16'6.45"W



A confluence of stone walls in the center of the Dorman site. It is unclear what this central "paddock" area was for, but could have been for penning animals for brief periods. 41°56'23.41"N; 73°16'2.96"W



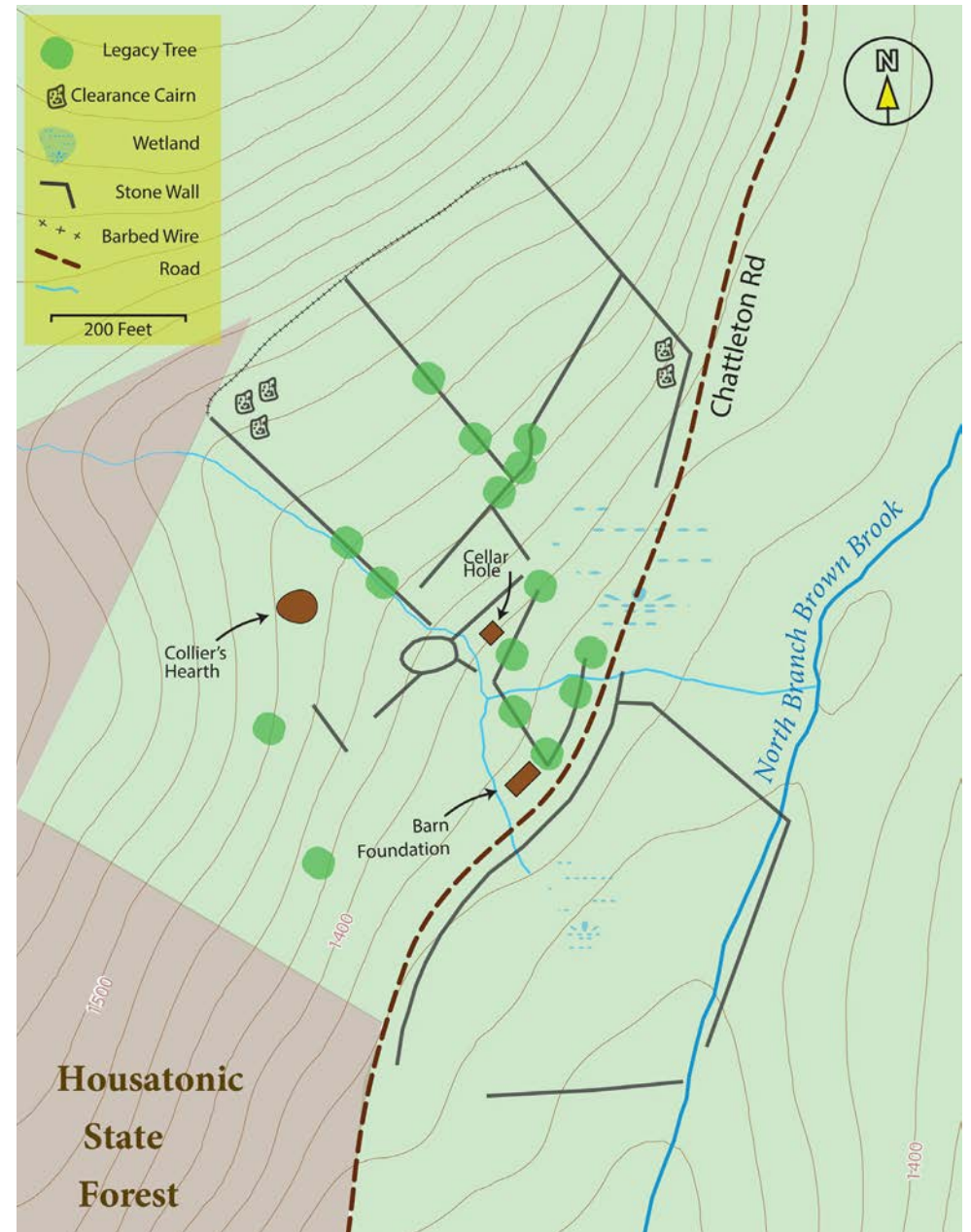
Well-preserved stone fence along the northeast border of the Dorman site illustrates the quality of work that went into fence construction. On top of this would have been wood or other material to attain the height necessary for keeping animals penned. 41°56'29.14"N; 73°15'57.90"W



This stone wall, internal to the Dorman site, contains small and large stones heaped rather than stacked. Small stones indicates some level of cultivation, and the removal of stones from such a field. The sugar maples here can be seen in the 1934 image. 41°56'25.86"N; 73°16'2.63"W



A large spreading sugar maple legacy tree from the Dorman site. Many of these trees pre-date the settlement of the farm and are over 200 years old. Legacy black cherry trees also occur. The spreading form shows they formerly grew in an open setting. They are outstanding wildlife features. Shade now threatens their longevity. 41°56'23.99"N; 73°16'3.70"W



Map of Dorman Site.

LAND USE HISTORY 7: PIONEER CABIN ON NUMBER 4 TRAIL

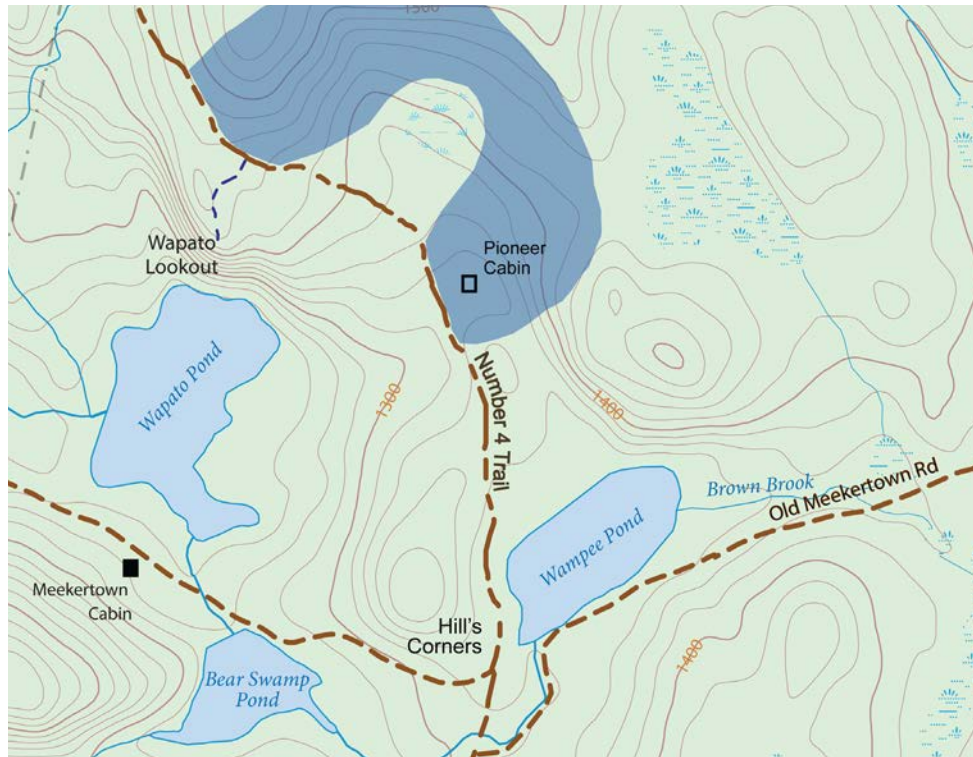
Summary

This site represents perhaps the smallest settlement site we identified in GMF. It consists of a small cabin foundation (earthen, not stone) and other stone features. The vegetation and cultural features showcase the site's history. This is a good, small site to challenge beginners with the process of reading the landscape.

Access

Number Four Trail to Wapato Pond Overlook parking area. Continue down Number Four Trail to an opening from a cut on the left. Site is ~200 feet in. The cellar hole occurs on the skid trail; rest of site on the side south of trail.

Location



Map of Pioneer Cabin area.



The earthen cellar hole from the pioneer cabin on the Number Four Trail. It was a small cabin, maybe 12x10 feet.

41°55'58.37"N; 73°14'56.58"W

Near-by or Comparative Sites

Several forest management sites occur in this area. A stand of old tulip trees occurs to the east near a swamp.

Description

This small but excellent site contains a handful of cultural features and a few ecological features that together tell a short story of early habitation. The first feature is the cellar hole. The cellar is earthen, not stone. It is shallow, but still dug indicating that people were spending winters here and storing food in the cellar. The cellar is approximately 10x12 feet. Its intention may have been for temporary use and for this reason not built of stone. Certainly, there is no shortage of stone on the site.

Across the skid trail (southeast) a short distance one finds other features. Several clearance cairns, containing no more than a few stones, dot the site. The makings of a stone wall, as incomplete and insignificant as it is, lines the edge on the downhill side. The inhabitants likely were growing food by hoe in this area, working around the larger stones, and moving only the smaller ones. This was a simple, but perhaps hard, life.

The vegetation also speaks to this history. A fallen dead eastern



The fallen eastern red cedar at the pioneer cabin. Cedar is an early successional tree requiring full sun to establish. Its presence here tells of us of the open farm environment on the site a century prior.

red cedar lies close to the stonewall. Cedar is an early successional tree requiring full sun for germination. This indicates the site was formerly open, despite its present forest cover. The tree is about nine inches in diameter, suggesting it was 80 years old when it died. Cedar is slow to rot and fall, so this tree may date to the 1800s when it germinated. Coring the tree could provide an accurate age, but the age that it died can only be speculated on. A tangle of grape vines weaves through the interior of the site. Grape is also an early successional, sun-loving plant. However, it is possible that pioneers planted them. Grape is notoriously difficult to identify to species.

Importance

In the spectrum of the scale to which people settled what is now GMF, this site ranks as the smallest footprint and extent, but still leaving an imprint. When compared to the Dorman Farm, the Dean Farm, or even the Mansfield site, this pioneer cabin was a small enterprise. The site is small, and the features are apparent, and so this site is excellent for beginners to



A small clearance cairn at the Pioneer Cabin on the Number Four Trail. The site contains several small clearance cairns, and a small length of wall. This was a small, single family or single person operation. Also note the tangle of grape vines (*Vitis sp.*) in the background. These also indicate the disturbed nature of the site and may be agricultural relicts.

the process of cultural landscape interpretation.

Research

Historical research to find out who owned/settled this site and when.

Can anything be found in the cellar hole and is it in fact earthen and not stone?

Coring trees could reveal when the site was abandoned. Coring the cedar would help with that mystery.

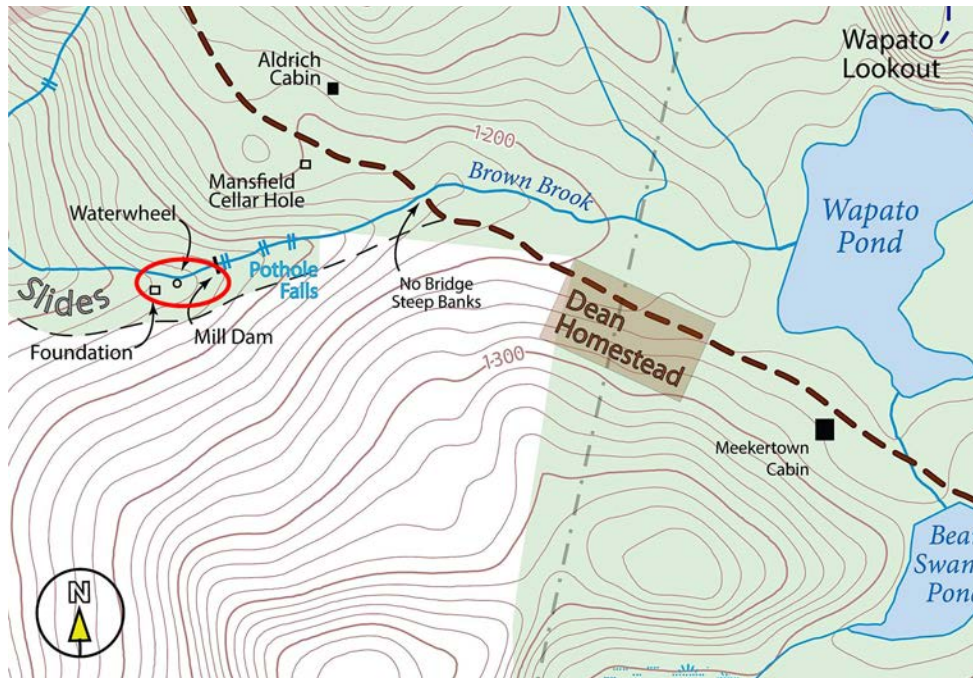
LAND USE HISTORY 8: BROWN BROOK SAWMILL

Summary

This site displays the remains of one of Great Mountain Forest's many 19th century sawmills. The site contains basically three features: the dam; the mill remains; and an unknown foundation. This may have been one of the larger, more significant mills and its robust construction has allowed its persistence for over 160 years. As such an important aspect of GMF history, as well as its present day operations, the sawmill represents a significant feature in the forest's story. Understanding the mill is important to understanding the ways people have made habitat from this land.

Access

Easiest approach is from Yale Camp, past Dorman site to Meekertown. Alternatively, Number Four Trail to Meekertown cabin and beyond. Either way, expect a good walk on trails until reaching the site.



Location of the sawmill structures in Meekertown. The site contains three structures: dam, waterwheel house, and a foundation.

Location

41°55'44.39"N; 73°16'1.97"W

Near-by or Comparative Sites

Meekertown is full of homesteads including E. Mansfield and S. Dean. Around this sawmill on the far side of the stream are a few charcoal hearths.

Description

The site displays three main features that comprise a significant and robustly built sawmill on Brown Brook in Meekertown. (According to Eldridge (1900) Phineas Meeker, namesake of Meekertown, married Sarah Brown in 1764. Brown is probably the namesake for Brown Brook, the power behind the sawmill.) The first feature is the dam. It sits at the top of a waterfall and stretches ~100 feet across the stream. The rocks comprising



The 1853 (Fagan) map of Canaan, Conn. showing Meekertown (upper right) and Hunt's Lyman Ironworks of lower city (bottom left). The two foundations remaining for this sawmill are circled. No sign of the sawmill farther upstream remains. A lower sawmill is off GMF property and any remains were not verified.

the dam are huge, up to approximately 20 cubic feet, which would weigh 3500 lbs. The construction of the dam is impressive. Floods have blown out the channel, but the majority of the dam remains.

The second feature is the mill, 50 yards or so downstream from the dam. There is a cylindrical well which, by way of a sluice, would have powered a wooden wheel, moving a reciprocating saw above. The stonework on this feature is also impressive in appearance and by the fact it has held up for over 160 years. The third feature, 50 feet downstream from the mill, is a stone foundation of about 20x20 feet. It is unclear what the building's purpose was. But once again, the stones are large and it was built to last.

The Fagan map of 1853 shows the sawmill and the other features of Meekertown and beyond.

In addition to the cultural history, the site at the waterfall below the dam contains American fly honeysuckle (*Lonicera canadaensis*) and Canadian yew (*Taxus canadensis*). These are uncommon or rare plants in GMF and regionally. Watch your footing.

Importance

This sawmill is yet another excellent cultural feature at GMF. This is the type of feature that a national park would highlight, learn about, and interpret in a way the public can safely explore and learn. The sawmill represents a significant element in the forest's story. Understanding the mill is important to understanding the ways people have made habitat from this land. This site ranks high on the list of cultural sites.

Research

What did the sawmill look like and how did it function?
Was the wood used locally or did it supply a market farther away?
How was it built and the stones moved?

Resources

Eldridge, J., and T.W. Crissey. 1900. History of Norfolk 1764-1900 Litchfield County, Connecticut. Massachusetts Publishing Company.



Dam site for the millpond at the Brown Brook sawmill. The stones are impressive in size and number. The site was built on a massive investment in human labor.

LAND USE HISTORY 9: DEAN FARM AT THE JEAN TRAIL

Summary

This is an excellent site about 30 minutes walk from Yale Camp that displays another example of people making a living from the land. The former agricultural lands are now covered in Norway spruce plantation. However, the ground, the trees, the cellar holes walls, and apple trees paint a reasonable picture of the site's history. The site is especially useful when contrasted with the Dorman site, and visa versa.

Access

The site is located on the Jean Trail, which provides the best access. Much of the site is located off of GMF property, however, permission has been granted to use it. Inquire with GMF prior to visiting.



Quartzite boulder from the Dean Farm. The boulder has two large flakes removed (shown here where the pine needles had settled). These are likely Native American flake removals. The stone is about 3 feet in diameter.

Location

Main cellar Hole: 41°57'28.21"N; 73°15'57.69"W

Use this main location as a starting point, and then use the large map below for further exploration.

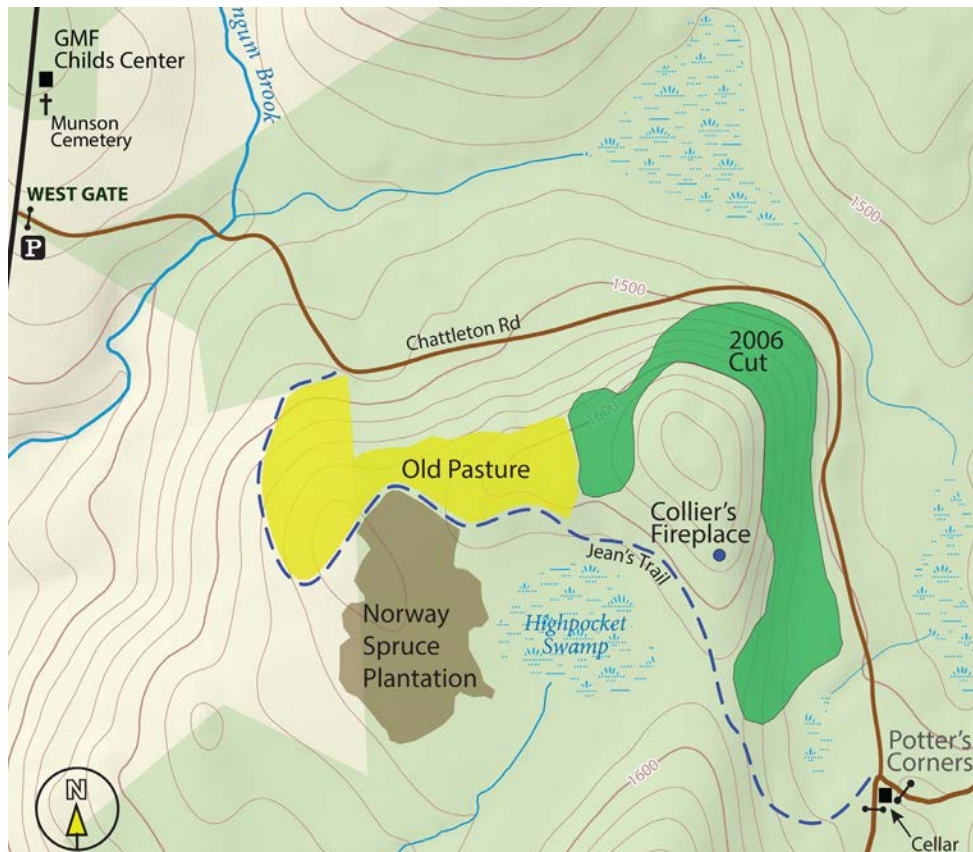
Near-by or Comparative Sites

The Dorman site (this section) provides an excellent comparison. The two farms are similar in size, similar distance from Yale Camp, but differ in their environmental setting, history, and contemporary composition and structure.

Description

Evidence of this site's human history begins with a quartzite boulder located 200 feet SSE from the main cellar hole. A couple large flakes have been removed from the boulder (see photo) suggesting resource use by indigenous Americans hundreds or thousands of years ago.

But the thrust of this site is more recent land use history. We begin with the nucleus of the farm: the cellar holes. Two cellar holes occur at the abovementioned GPS point. The first is larger, deeper, and also more thickly covered in vegetation. The second lies to the east. The first hole



Map of Dean Farm location.



Norway spruce plantation on old crop field indicated here by smooth ground and stone wall dump. Spruce was planted 1962. Note that moss is largely absent on the quartzite stones.

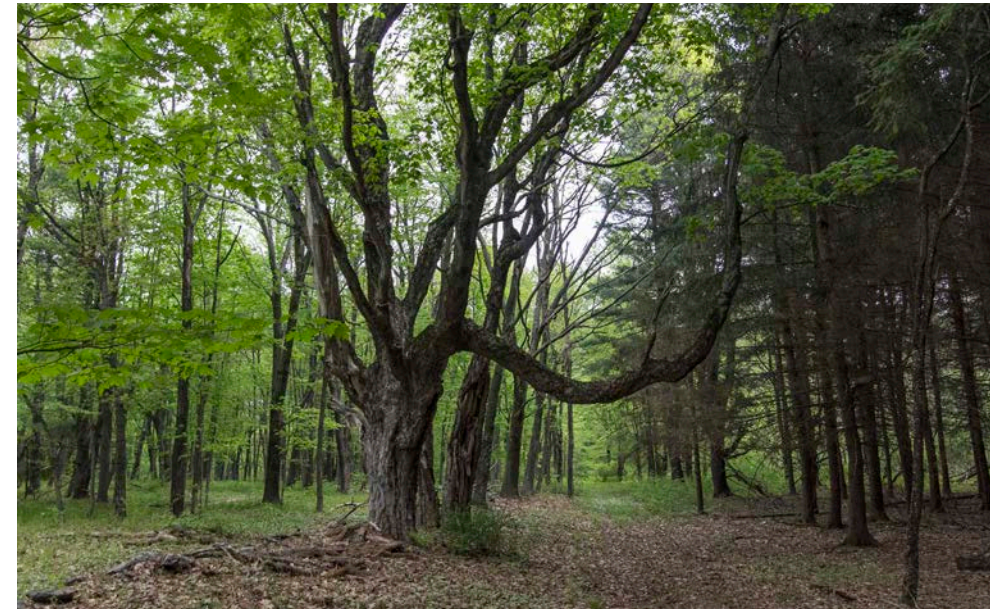


Apple tree among Norway spruce plantation at the Dean Farm cellar hole.

clearly suggests a house site. The lack of a central fireplace suggests it was built after 1830 when stovepipe became common. The site does not appear on the 1853 (Fagan) map of Canaan, so likely post-dates that year as well. The second cellar is smaller, shallower and it is unclear what its function was. It could have been a house for children or elders, or a barn, or cider house. Apples were just beginning as an industry in the mid-1800s and Canaan would have had rail-to-market access by 1860. There are several apple trees still on the site today. Nonetheless, the cellar hole suggests people were storing food below ground.

Stone walls on the farm are mapped on the large map that follows. The walls are generally loose, unformed stone dumps except for one along the Jean Trail that appears to be stacked into a fence for domestic animals. We identified the space to the north of the wall and trail as pasture. The area has bedrock at the surface, no smooth ground to indicate crops, and the wall contains no small stones. A few strands of barbed wire also indicate pasture, specifically for cows (not sheep as their wool gets caught in the barbs).

The stones in the walls are largely quartzite and are similarly sized. The wall clearly differs from other GMF walls in its geology. This suggests a different glacial or geomorphic history of this site (or at least a different



Old farm road through woods, now the Jean Trail. The left side of the formerly open grown sugar maples was pasture, indicated by lumpy ground, bedrock, and a stone fence. The right of the road is now plantation and was formerly crop fields.

source of glacial sediment). In addition to the quartzite, there is also a block of marble located 150 feet SSW from the abovementioned quartzite boulder. This block also must have been glacially deposited from several miles farther north. Perhaps additional marble was deposited here creating richer soils indicated by a large basswood tree. Basswood and calcareous soils are atypical for GMF and Canaan Mountain in general (see geology section).

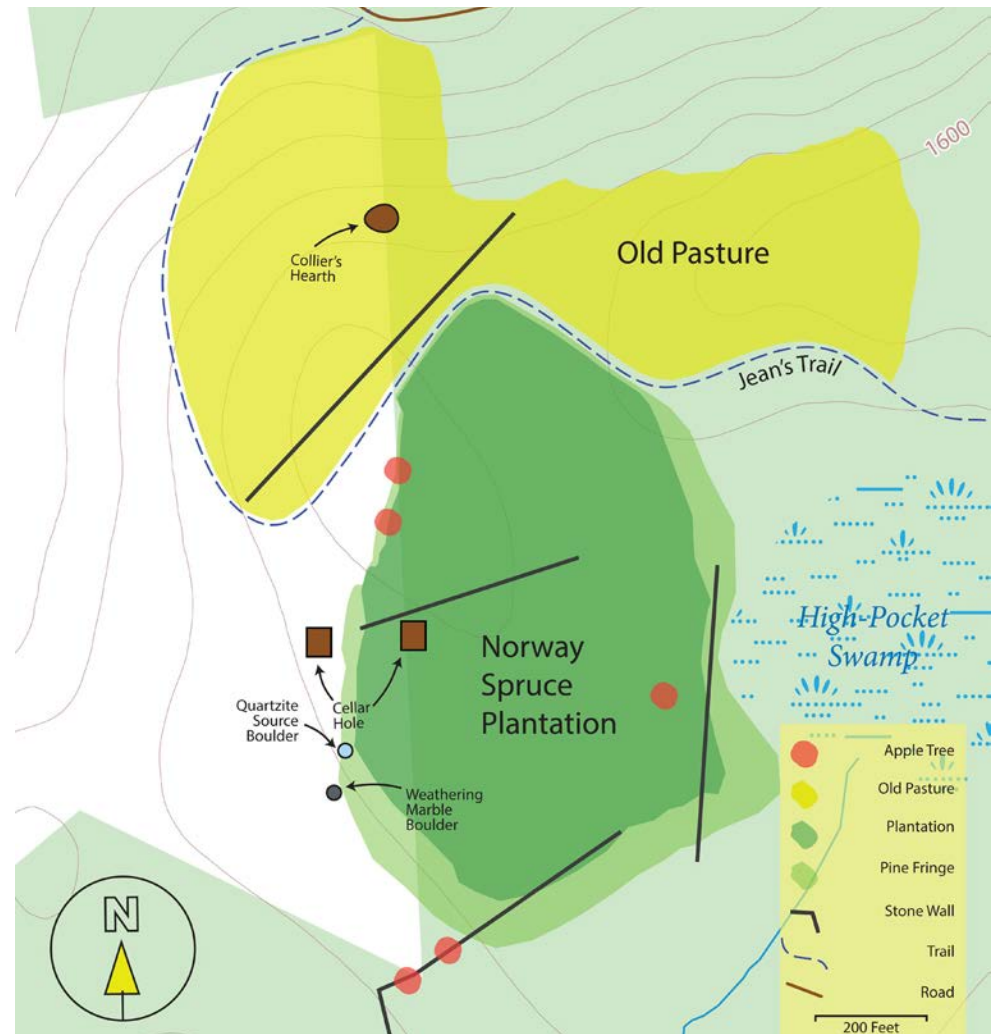
Somehow, Dean, or the original settler (if someone else) identified this site as being rich and carved out a living here. Settlers often recognized sugar maple and basswood among other trees and plants as indicators of rich soils. Nonetheless, the farm didn't last—it was gone in less than 100 years. The site doesn't appear on the 1853 map. Childs bought it by the 1950s and planted spruce in the 1960s.

The dominant feature today is the spruce plantation. A look at the ground among the spruces reveals completely smooth ground, indicating previous cultivation. GMF history suggests the plantation site was once an old potato field. The land was leased to the Torrington Brass co., which permitted workers to grow potatoes for themselves there. Undoubtedly, over the years a variety of crops were grown in these fields. The former fields stretch away to the south. Today this area has become an impenetrable thicket of Japanese barberry.

The Norway spruce plantation was planted from 1962-64. The trees are now over 50 years old. The species was chosen for growing fast. The pines mixed in were tiny when the spruce were planted, or seeded in later as the plantation self-thinned. Several of the pines have been girdled with an axe. Since the spruce was planted and pines girdled, the site has seen little activity. However, the opening along the Jean Trail is maintained by mowing. There is a research plot of unknown origin among the spruces, evidenced by the tagged trees of mixed species.

Importance

The Dean Farm offers an excellent site for uncovering land use history and observing the way people have made a living from this landscape during different economic-cultural periods. The site also contains one of the few Native American relicts in GMF (quartzite boulder with flakes removed).



Research

Soil changes in the spruce plantation after half a century of agriculture and half a century of Norway spruce plantation.

Additional soil and geomorphic study to reveal the site's history.

Comparisons of soil among the plantation, pasture, and natural succession sites.

Growth rates of Norway spruce.

Resources

Wessels, Tom. 1997. *Reading the forested landscape: a natural history of New England*. Countryman Press.

