

# Hawkwood Estate

## Landscape Inventory and Management Plan



Prepared for:  
The office of Richard Wickerham – 28 Jay Street Schenectady, NY

Prepared October 11, 2015 by:



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## Introduction

As the acquisition of the Hawkwood Estate (248 Acres, Town of Ballston) is finalized, implementing the wishes of Frank W. Schidzick, Jr. through a thoughtful management plan becomes a vital next step. The forested property, with wetlands, small streams, and rich history, presents an outstanding opportunity for local land and water conservation and public enjoyment.

This land inventory and management plan will set the foundation in making the Hawkwood Property a success with three guiding goals. The first, and the overarching goal, is carrying out the wishes of the deceased, Frank W. Schidzick, Jr. As Mr. Schidzick requested in his will: *...the park is to remain forever wild, except for improvements consistent with recreational purposes dedicated to the public use.* A forested property with basic infrastructure designed for the long term, will keep the property “forever wild” and keep maintenance costs low. The conditions he set forth guide this plan.

A second goal is building a park that is well-used and well-loved. Mr. Schidzick requested public use as an element of protecting a piece of land. For Hawkwood to be a success, it needs to be well-used and well-loved. This means creating a park that is thoughtful in design and intention, and a park that is clean, safe, fun, and beautiful. Today, walking remains the most popular form of recreation, just as it did in the 1800s when park planning in the United States began. Building a park for 90% of users rather than a select few will help ensure it is well-used and well-loved. A beautiful park is one that ensures ecological processes continue over the long term. Understanding what is on the property, and where the land is going, ecologically, is a necessary first step.

The third goal is building a park for the long term that is sustainable, and does not become burdensome on the community. Again, thoughtful and intentional design, building trails that hold up and are a joy to use, will keep people coming back, keep their support, and keep costs down. By going in first with intentionality about the user-experience—identifying special places and trail possibilities—a foundation for success can be realized.

This land inventory and management plan contains background information on the physical landscape, a thorough inventory of the vegetation, including exotic species, and a complete inventory of the cultural landscape. This of course includes the Hawkwood Mansion, but there is so much more. Three-miles of stonewalls are mapped, and I also created a map of existing trails, and a map of debris and dangerous open wells.

The Visitor Opportunities section outlines the various ways park users might engage with the landscape. Special places will define the park in the minds and experiences of the users. The top-13 sites have been described here (others occur in the appendix). A proposed trail plan offers suggestions on how and where to get people on the land. Sections on camping and education outline the potential for those opportunities.



The third section contains a number of recommendations, and perhaps more importantly, questions for Hawkwood’s leadership team to consider before any action can be taken. The recommendations are simply that, ideas inspired from the land to move the project forward. The recommendations are accompanied by the document’s 13 maps, many photos, descriptions, and details, to guide Hawkwood’s leadership team toward realizing the potential of this impressive property.

A survey of this type has certain limitations. First, I groundtruthed the property only in September, therefore missed the nuance and natural variation that other seasons bring. Some plants only occur during a brief period in spring. Further, late summer 2015 was exceptionally dry. While the plants are good indicators of a soil’s wetness throughout the year, trail routing on the ground should occur during a period of more typical (wetter) weather.

Hawkwood is a remarkable property with an impressive history. The site can, with proper planning and support, become a regional draw for park-users interested in learning, walking, observing, and exploring. Mr. Schidzick has presented the town and the region a wonderful gift. Ensuring its success in his honor is essential.



*The stream at Hawkwood, with legacy sugar maple on far side.*



## Site Inventory and Background

### *Physical Landscape*

#### **Geology**

Hawkwood is underlain by Canajoharie Shale, a black shale of middle Ordovician age (~450 million years). Shale is a sedimentary rock formed by the settling of clay and other fine particles suspended in a calm, marine environment. The black shale of this region settled in a sea as the Taconic Mountains rose to the east. The black color comes from carbon; organic matter that, because it was deposited in a deep environment, did not fully decompose. There are only a few areas where shale bedrock occurs at the surface in Hawkwood. These all occur on the main stem of the stream near the Hawkwood Mansion site, especially at the site of the old bridge (point: HW12).

Though many geological events occurred after the formation of shale bedrock, the other major geological process to shape Hawkwood was the recent glacial period ending approximately 13,000 years ago. This event shaped not only the region, but deposited the sands and stones that we find at Hawkwood today. Stones are found in the streams, heaped up into stonewalls, and still on the ground in the mature forests as these sites were never cleared for agriculture. The largest glacial stone on the property occurs at point HW105 in the southwest corner of the property (see Special Places).

#### **Topography**

The topography of Hawkwood is generally flat and slightly sloping. Elevations range from 440 feet (134 meters) above seal level in the north of the property to about 360 feet (110 meters) where the unnamed stream exits the property on the east side at Middle Line Road. Slopes are gentle (mainly flat) and nowhere reach above ~15%.

#### **Hydrology**

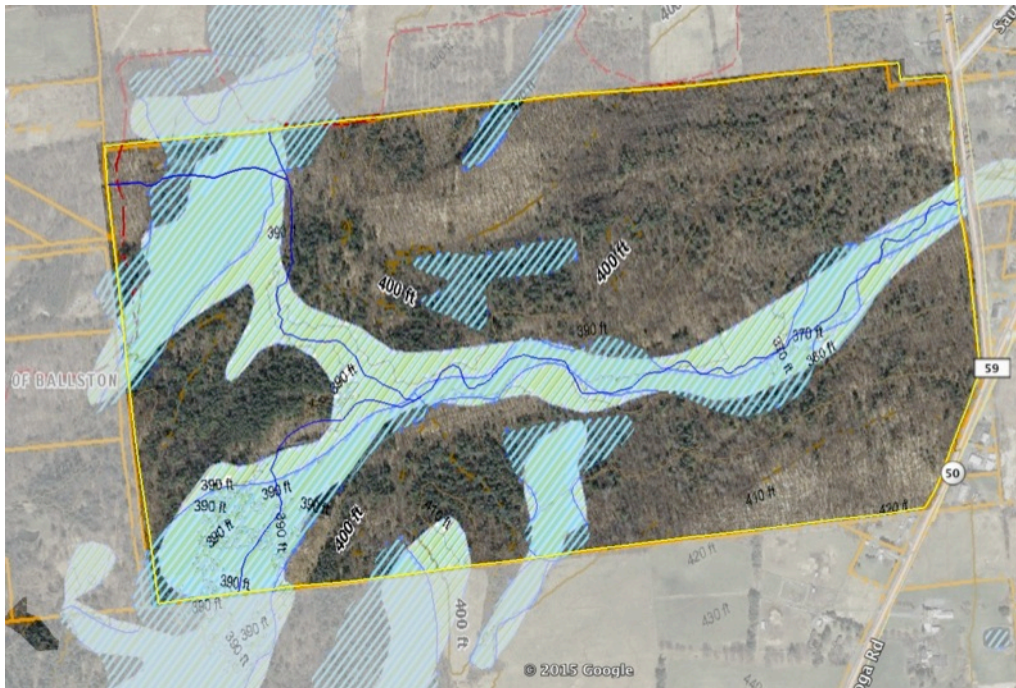
Hawkwood is conveniently laid out with two tributary streams, in the northwest and southwest corners of the property, forming a confluence in the middle (point Hw78), and then into a central stream running east to Middle Line Road and beyond. The catchment area for these small tributary streams reaches less than a mile to the south and north, and a half-mile to the west. The tributaries do not cross other roads. Exiting Hawkwood at Middle Line Road, the unnamed stream runs slightly less than one mile (~5,000 feet), and drops 115 feet to Ballston Lake. The entire watershed of Hawkwood drains to Ballston Lake. Because the property is entirely forested, a buffer to Ballston Lake is created which benefits water quality.

Because Hawkwood is generally flat and is at times poorly drained, it contains many wetlands. These are all swamps and swampy woods, in addition to the stream and its floodway. NYDEC and Federal USACE wetlands make up approximately 35% of the property. These wetlands, forested and relatively natural, further enhance the water



quality of the site, and by extension, the watershed and Ballston Lake. (See vegetation Wet Woods below for details.)

There is one pond on the property. It is located southeast from the mansion site, immediately south of the stream (point: Hw7). The pond is circular and has a diameter of approximately 115 feet. The pond appears man-made for benefit of the estate, however, today it functions as water retention and wildlife habitat. (See special places.)



NYDEC and USACE wetlands on the Hawkwood property. The wetlands largely follow the streams. Additional wet soils not designated as wetlands by the agencies occur on the property. Red dashed line is snowmobile trail. *Source: Saratoga County GIS.*

## Soils

Hawkwood's soils are the result of glacial activity ending ~13,000 years ago and subsequent weathering and ecological processes. The property contains a variety of soil types (listed here in decreasing abundance). Soil properties (slope, permeability, etc.) drive the vegetation on the site, the previous land uses, and also determine the feasibility and sustainability of future trail improvements.

- BvB: Broadalbin-Manlius-Nassau, undulating: Deep, moderately drained, silt loam. Occurs in the eastern portion of the property away from the streams and lowlands.
- MxB: Mosherville-Hornell, undulating: Deep, poorly drained, silt loam. Occurs throughout the property away from streams. The estate compound sits on this soil type.
- FL: Fluvaquents: Deep, nearly level, poorly drained, frequently flooded. Occurs along the main stream in Hawkwood from the confluence of the tributaries to Middle Line Road.



- MvB: Mosherville Silt Loam: Deep, somewhat poorly drained glacial till. Occurs in the west in the coniferous forest.
- CcB: Charlton Loam: Deep well-drained, glacial till. Soil occurs in the western coniferous forest.
- Sn: Sun silt loam: Deep, level, poorly drained, glacial till. Occurs in small northwest corner.
- Pp: Palms muck, ponded: Deep, very poorly drained, organic muck. Occurs in small area in the northwest corner in the beautiful open swamp (see special places).

### Vegetation Inventory

Hawkwood’s vegetation was sampled in September 2015 by walking 25-miles (see Appendix A for survey track) on the property and noting vegetation change with regard to topography and land use history. This was not a systematic or quantitative inventory, but a general examination to characterize substrate conditions, successional status, diversity, and the user experience. The map below shows the community types by color and letter and all these community types are described below.



Vegetation compartments of the Hawkwood property. Letters correspond to unit descriptions below. Purple lines are existing trails and bright green lines are stonewalls (both are discussed later).

#### **A/■ Mature Coniferous Forest**

While most of Hawkwood is covered in young, deciduous woods, this large compartment is dominated by coniferous white pine and eastern hemlock. Subtle differences in topography create low wet swamps, and drier uplands. The compartment



covers much of the western third of Hawkwood. Unlike most of the property, this area was never cleared during the agricultural period. It is not old growth forest, though it does contain old growth trees (>200-years).

The ground indicates continual forest cover with many tip-up mounds from trees that fell centuries ago. Unlike the rest of Hawkwood, where glacially derived stones were cleared from fields and heaped into stonewalls and fences, the ground in this forest still contains its stones. The stones and mounds indicate a site that has never been open to agriculture and has always been forested.



White pine is the dominant tree in this compartment. Some trees reach 30-inches in diameter and tower 100-feet high. They are remarkable trees. Cores reveal the trees to be 175 to perhaps slightly over 200-years old (originating early 1800s). With the pines grow less abundant hemlock, which reaches approximately 150-years (see photo). Scattered throughout are about 10 old

growth sugar maples. The trees are forest grown (not pasture trees) and their bark characteristics and form suggest 300 to 350 years (late 1600s or early 1700s). Yellow birch, black birch, American beech, and other trees also occur. Two American beech trees are also old growth (one is freshly dead) and top 300 years. This is an impressive find, especially considering the level of cleaning on the rest of the property. A single old growth red maple also occurs. (See Special Places.)

The woods are fairly open and shrubs are uncommon. Because pines and hemlocks create a dark forest interior, ground flora is scant as well. Some of the lower and wetter areas, have a more open canopy and the light allows for ferns and wet-sited shrubs. Even in the wetlands, stunted white pines ~200-years old (confirmed through coring) occur with red maple, ash, winterberry holly, among others.

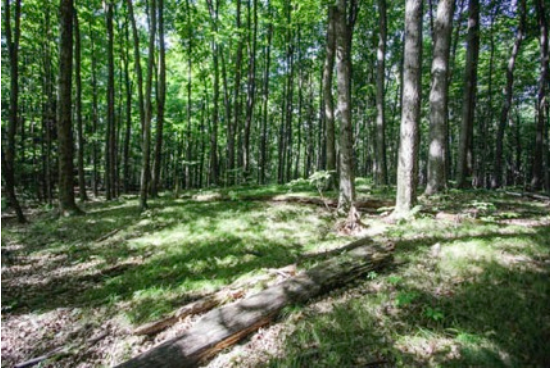
The beauty and value of this forest patch cannot be overstated. It is remarkable that the pines were not logged. This part of Hawkwood will be a regional draw.

### **B/■ Mature Deciduous Forest**

This community type occurs in two areas, in the extreme northwest corner, and a second area more internal to the property. The corner section is less impressive than the internal compartment, but they are both nonetheless, very nice. Unlike the majority of Hawkwood, which has been cleared of natural vegetation during the agricultural period, these sites have remained forested. They are not old growth forest, as trees have been removed and it has probably been pastured, but it has always been tree-covered and the soil has been minimally disturbed.







In the internal section, sugar maple and American beech dominate. Trees are tall, mature, and aesthetically pleasing to walk through or adjacent to. The woods are open, with long sight lines. Other less frequent trees include bitternut hickory, white oak, and shagbark hickory. Shrubs are uncommon, but a few spicebush and grape vines occur. The ground vegetation is sparse, suggesting that it may have a rich

spring bloom of ephemeral wildflowers. (These should be looked for.) Some areas contain carpets of Pennsylvania sedge, a forest plant that resembles a grass. This is one of the more high quality natural areas of the property.

### **C/■ Sugar Maple Plantation**



The sugar maple plantation comprises less than 2-acres of trees planted in rows. Based on bark and tree form characteristics, it appears the trees were planted in the ~1940s, prior to which the site was open. Soil was mounded up in rows and sugar maples were planted on the strips. It is possible the trees seeded naturally from surrounding maples, but the lack of any other species suggests intentional planting.

It appears there was no uniform spacing within the rows, though the rows themselves are spaced at about 15-feet. Likely this was going to be a sugar bush for maple syrup. Where the existing trail passes, several old, open-grown sugar maples grow. These trees are perhaps 150 years old and likely date to the establishment of the estate. This is a pleasant area.

### **D/■ Hawkwood Estate Compound**

The Estate compound contains a variety of trees and plants that are remnants of, and a legacy of, the estate grounds and its vintage vegetation. Black locust is a dominant tree, with some exceptionally large individuals between the mansion and the outbuildings (to the west). The species was planted here since black locust is not native to New York (original range reached central Penn.); however, it is now widely naturalized. With the locusts a few large silver maples grow between the house and farm. These must also have been planted because silver maple is a wetland tree here growing in uplands. Several old sugar maples occur in the northeast behind the mansion site.

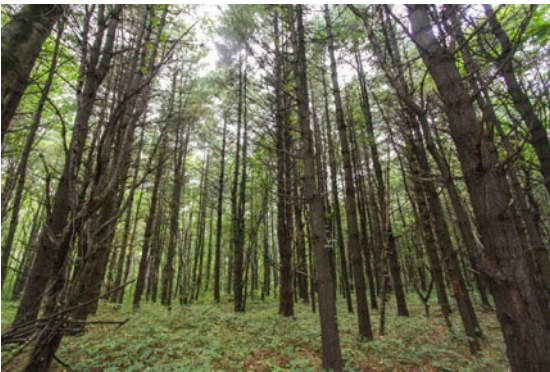




*Vinca*, an exotic invasive creeping ground plant occurs on the east side of the mansion site (see photo). Also known as periwinkle, it is a widely planted ornamental and often indicates old settlements. It should be contained or eliminated. Honeysuckle (*Lonicera* sp.), another troublesome exotic plant occurs as dense, mature individuals and patches. With it occurs, multiflora rose, European

buckthorn, and Japanese barberry. All these shrubs should be eliminated because they will take over all of Hawkwood. Apple trees grow in an overgrown orchard among the west buildings/foundations. The site is a tangle of emerging trees and shrubs, many of which are exotics and invasive. The site needs management.

#### **E/■ Old-Field White Pine Woods**



Old-field stands of white pine occur scattered throughout the property, but in the three compartments shown, they dominate. When agricultural fields are abandoned, white pine often colonizes, forming nearly pure stands such as these. Since  $\frac{3}{4}$  of Hawkwood was completely cleared during the agricultural era, we would expect to see stands of old-field white pine.

The trees in these compartments are approximately 50-years old, dating to about the 1960s. White pine forms  $\frac{3}{4}$  or more of the tree cover on these sites. Other trees include black cherry, ash, elm, red maple, and occasionally red oak and shagbark hickory among others. Multiflora rose is commonly seen. Virginia creeper covers the ground with summer asters and ferns filling in. Some sugar maple and American Beech are seeding in and these will, in time, grow to replace the pines. Overall, diversity is low, which is expected since 50-years ago the site was bare soil or pasture.

#### **F/■ Successional deciduous woods**

This large compartment, mainly in Hawkwood's northeast and southeast, was entirely cleared during the agricultural era and remained cleared until about 1960. It is remarkable to see how resilient nature is and how it has reclaimed the fields and returned them to forest. Having said this, plant diversity is predictably low, structure is exceedingly simple, and these woods need several centuries to develop into something like what grew prior to agricultural clearing.





This compartment is mainly upland and dry, however, some low and flat areas do contain poorly drained (wet) soils. The vegetation is, nonetheless, similar to that of the Wet Woods (below) with more wet-tolerant species tending toward those areas and more dry-sited species tending to the slightly higher, drier sites. It's a gradient.

Trees in this compartment are *early successional*, meaning they grow in areas with full sun, on previously disturbed substrates, and their seeds are easily dispersed. Common tree species include: ash, elm, aspen, white pine, black cherry, and red maple. Infrequent species include red oak, white oak, swamp white oak, shagbark hickory, and hawthorn. Average tree diameter is 8 to 10 inches.

Shrubs are dominated by exotic multiflora rose. Other shrubs and sub-canopy trees include, European buckthorn, honeysuckle, native spicebush, and native grape vines. The herbaceous layer is heavily dominated by Virginia creeper, with sensitive fern, and intermediate wood fern as secondary. Poison Ivy is common, but nowhere abundant. Other woodland herbaceous species occur in small numbers. The area contains many stonewalls. Those are described in the cultural landscape section below.

### **G/■ Wet woods**

Wet woods cover several areas of Hawkwood and most of these sites were completely cleared of native vegetation during the agricultural period up until the 1960s.



Though these areas are wet, there is much variability in the degree of wetness in any location. This is driven by specific topography and soil type, which in turn creates a variety of community types. In general, these communities are composed of red maple, ash, elm, with less frequency of white pine, and shagbark hickory. Shrubs include the exotic multiflora rose, silky dogwood, buckthorn (exotic), and

spicebush. Ground flora is heavily dominated by sensitive fern, and to a much lesser degree intermediate wood fern, Virginia creeper, spotted jewelweed, hog peanut, and some poison ivy.



The wettest areas tend to be somewhat open, with less tree cover, more shrubs and herbs. Cattails occur in these areas along with ostrich fern, tussock sedge, alder, winterberry holly, and scattered swamp white oak. These wetland communities are infrequent, moderately diverse, special areas. One excellent site in the northwest of the property is listed in the special places and should be considered for a boardwalk trail. In general, trails should avoid these areas unless improvements are made to keep feet dry, and hydrology (drainage) intact.

### H/■ Large Southwest Wetland

This large wetland area creates a lovely opening in an otherwise forested property. It is



wet, densely vegetated and difficult to penetrate on foot. The north end contains a number of standing dead trees (snags) that appear to be mostly white pine and ash. This suggests a change in the water table (rise) that would have flooded the area and killed the trees. It is likely that beavers built a dam here to cause the flooding. But today only small vestigial pools remain, and the water table appears low. Beavers typically return to sites after a decade when small

trees have grown for them to eat. As a recreational, forever-wild land, return of beaver to the site would be beneficial.

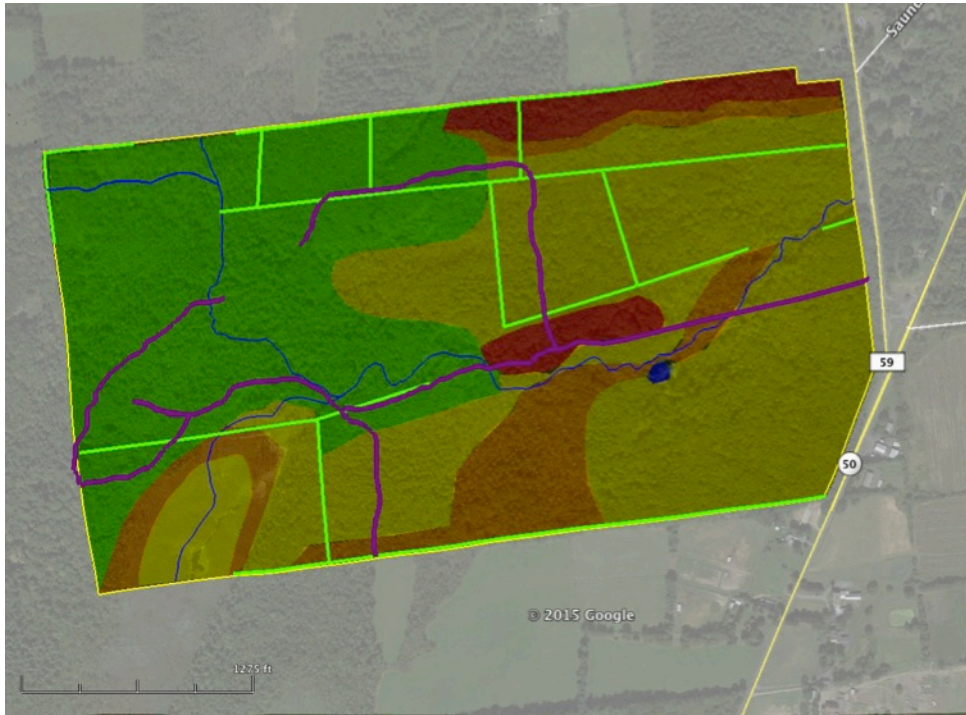
Today the site contains a mix of small, wet-adapted trees, such as red maple, ash, elm, and even some white pine. Shrubs include silky dogwood, alder, raspberry, among many others. A wide variety of herbaceous plants occur, including cattails, that vary with the seasons. There are pools of open water, and this is probably the most diverse areas for birds and other wildlife at Hawkwood. An elevated observation platform is strongly recommended.

Troubling the site is an abundance of *Phragmites* sp., a tall weedy (exotic) plant that invades wetlands. The plant is difficult to remove, but is not impossible. It has the potential to completely cover the wetland and exclude all other plants as well as beaver.

### Exotic Species

*Exotic* plants are those that are not native to a region. They have been brought in as ornamental plants, culinary plants, or hitched here inadvertently. *Invasive* plants are those that spread and take over a site to the detriment of native vegetation. Exotic invasive plants outcompete native vegetation reducing diversity and changing soil chemistry. The following map and table documents exotic, invasive plants found on Hawkwood and their relative abundance.





Distribution of exotic invasive plants at Hawkwood. Red = highly infested; orange = moderately infested; yellow = mild infestation; green = discrete localized individuals or no plants. The main problem areas are around the estate compound (center) and north border. List of species and their relative abundance is listed below. Purple lines = existing trails; green lines = stone walls.

Exotic plants can be controlled. Grants and other resources are often available and volunteers can find the work rewarding. Some species require the application of herbicides for effective control. Generally, pesticides cannot be applied by volunteers. The priority areas for eradication of exotics include the two red areas, especially the Hawkwood estate compound area.

#### Exotic plant species and relative occurrence at Hawkwood.

Multiflora Rose ( <i>Rosa multiflora</i> )	The most abundant exotic plant at Hawkwood. Rose occurs in dense patches and discrete individuals. Rose indicates previous pasture lands.
Japanese Barberry ( <i>Berberis thunbergii</i> )	The species is scattered as discrete localized individuals throughout the property.
Shrub Honeysuckle ( <i>Lonicera</i> spp.)	The species is uncommon in Hawkwood, except for the area around the old estate compound.
European buckthorn ( <i>Rhamnus cathartica</i> )	The species is almost everywhere present, but nowhere abundant. It can become more abundant over time and dominate a site.
Norway Maple ( <i>Acer plantinoides</i> )	Occurs as scattered mature individuals and patches of seedlings. It is difficult to distinguish from native sugar maple when young.
Phragmites ( <i>Phragmites</i> sp.)	The species occurs only in the large southwest wetland. It grows in dense patches but has the ability to colonize the entire wetland.
Garlic Mustard ( <i>Alliaria petiolata</i> )	Seen only at the estate compound site. Should census in early spring. It has the potential to take over the entire forest.



## Forest Pathogens

In addition to exotic plants, Hawkwood is faced with the immanent arrival of two exotic forest pathogens: the hemlock woolly adelgid, and emerald ash borer. The adelgid affects hemlock trees and kills them within a decade. This could occur in the next 10 to 15 years, depending on the severity of the winters. The ash borer should arrive sooner. It kills all species of ash trees within ~5 years of its arrival. Ash is one of the most abundant tree species at Hawkwood. Never large in size, the species makes up over 30% of the trees in some areas (especially the wet woods). There is nothing to do to manage these outbreaks, nor is there value in removing them. Treating individual trees determined to warrant saving could be considered.

## Cultural Landscape Inventory

Hawkwood Mansion is listed on the Library of Congress' Historical American Buildings Survey. But the cultural landscape of the property neither begins nor ends there. The property contains three-miles of stonewalls. The trees and ground tell what areas were farmed in crops, which were pastured, and what was forested. Hawkwood showcases stone bridgework, stone foundations from outbuildings, an orchard, and, from an unknown cabin, a fireplace that stands deep in the hemlock forest.

To outline Hawkwood's cultural landscape, it's valuable to start at the beginning. There are no known Native American artifacts from the site; however, indigenous people populated the region, especially around Ballston Lake (<1-mile away). Therefore it is certain that Native Americans passed through Hawkwood, and likely used it directly.

## Pre-settlement Forest

Based on what we find today, and what is known from previous studies, we can predict what the *pre-settlement landscape* – the landscape prior to European-American settlement – looked like. The presence of ancient old growth trees on the site helps in this regard. American beech, sugar maple, red maple, shagbark hickory, white pine, and a white oak found at Hawkwood all date to the early 1800s, or as far back as the 1600s (in the case of sugar maple and beech). The original forest, therefore, would have contained the abovementioned species, along with others found on the property. Their proportions, however, would have tended to favor the longer-lived oaks (especially white oak), hickories, maples, and beech trees. American Chestnut, now functionally extinct in its native range due to an exotic blight introduced 100 years ago, likely would have been abundant at Hawkwood in the acidic upland soils. The forest trees would be large, widely spaced, and likely grew with sparse understory, a result of Native American burning (nearby Burnt Hills gets its name from Native-set fires). As today, the swamps would have contained swamp white oak and a scattering of shrubs, ferns, and flowers. Bears, wolves and cougars, along with elk, would have roamed the forest.



## Land-use history

Understanding a site's land use history leads to a richer understanding of local human history and the way people have interacted with landscape. Land use history understanding also leads to a greater appreciation for local ecosystems, species, and the way human actions affect natural ecosystems and visa versa. Hawkwood is a cultural landscape as much as it is a natural one. And by looking at the land through both a historical and ecological lens, we find the two lenses inseparable.

Briaddy (1997) notes the first house at Hawkwood was built in 1790. Thus we approach the land anticipating 225 years of land use history (after Native Americans). Land use is driven by the resources available to fit a settler's land use desires. Soil is the most significant resource consideration for early agriculturalists.

Over time, as fields were cleared for crops, stones deposited from glacial times were removed. These were heaped into walls along the edges of the fields. A wall created by this activity is revealed by the presence of small stones (baseball sized) in the wall. Many of the walls in Hawkwood contain small stones.



Inventory of Stonewalls at Hawkwood. There are over 15,000-linear feet (~3-miles) of stonewalls and fences at Hawkwood. The sizes of stones in the walls and the way they are placed suggests the they were created both as heaps for ridding cultivated fields of stones, and constructed as fences for penning livestock. Barbed wire also occurs on the property. It was made widely available in the 1870s, so the stone fences on the property would predate that time. The 1830s was the peak period for stone fence construction in the Northeast.



But sometimes walls were built as fences for keeping domestic animals in or out of crop areas or hayfields. These types of walls (fences) are revealed by the absence of small stones, and the larger stones are stacked tall. Hawkwood contains some of these, but fewer. I did not keep track of which walls were of which type, though that would be valuable to do. Over time, the ground of a pasture, hayfield, and cropland would become smooth and free of stones. Today, it is the opposite (lumpy ground with stones present) that indicates areas that have always been forested.



Stonewalls at Hawkwood. The wall on the left contains many small unstacked stones. This indicates stones pulled from a crop field. The wall on the right contains larger stones, stacked. This was a fence for domestic animals. It would have had a rail on top.

It is unclear when the property reached its peak of clearance, however, that lasted until about 1960. This is revealed by the fact that none of the previously cleared areas contains forest older than 50 years. Only the continuously forested area in the west contains forest older than 50-years (and it is much older than that).

### **Timber Harvesting**

The lack of cut tree stumps on the property suggests tree cutting has not occurred for at least 50-years. The lack of coppiced trees (trees with two trunks that resprout from stumps) suggests even longer without significant cutting. Most of the property has not had trees long enough for timber to be considered (trees began growing in the 1960s). Only the mature coniferous forest and the mature deciduous forest could have supported any cutting during the late agricultural period (mid 1900s). Surely they cut trees, but no such activity has occurred since the abandonment of the estate. It appears that deer hunting and recreation have been the only activities on the property since the farm was abandoned around 1960.

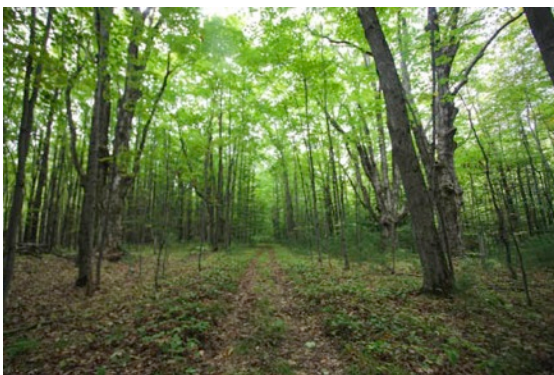


## Historical Hawkwood Map



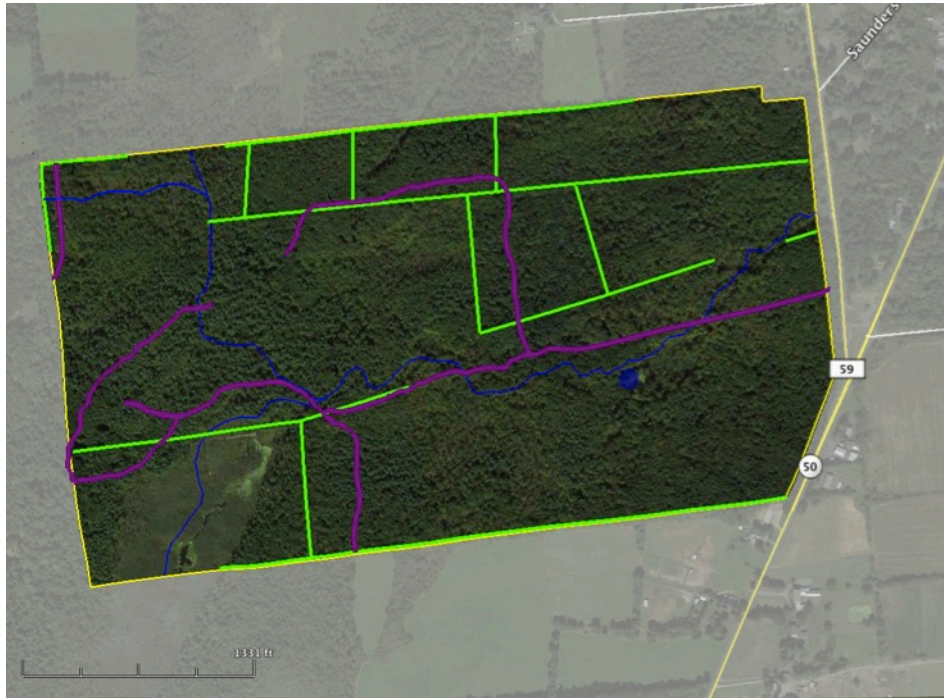
The Hawkwood Landscape during the agricultural period until ~1960. Yellow shows agricultural fields (crops or pasture) and green indicates areas that have always been forested. The red strip is the Hawkwood compound (mansion, outbuildings, etc.). The bright green lines show stonewalls. Blue is water. Today the entire property is wooded.

## Existing Trails



Hawkwood contains approximately 2.2-miles of existing trails. Entering from Middle Line Road, one walks the original Hawkwood entry road (“Estate Trail”). This trail is in relatively good condition, and contains two bridges. From there, a trail continues north on an old woods road before turning west along the stonewalls. Sections of this trail are in fine condition, while other sections are eroded, and puddled. Trails meander through the forest section in the west, and are also in mixed condition. A short trail segment occurs in the far northwest and has ingress and egress to the property. This is a snowmobile trail and contains a substantial bridge.





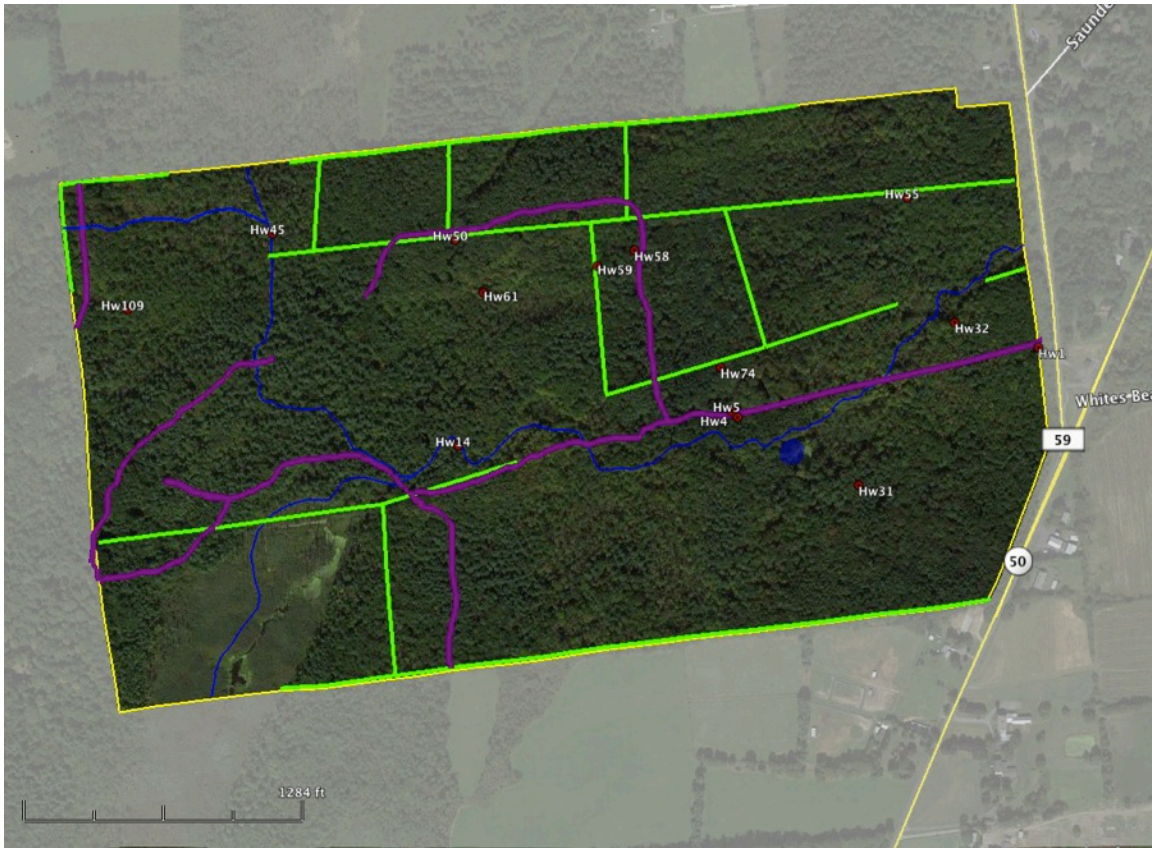
Existing Trails at Hawkwood, shown in purple (green lines show stonewalls, and blue are streams). Existing trails total ~2.2-miles and do not form complete loops. The central line from Middle Line Road is the old Estate Trail. In the west, the trail exits the property briefly. This was confirmed on the ground.

### **What they left behind / Special Management Concerns**

Another piece of the cultural landscape is the scattering of treasures left behind by previous landowners. These are shown on the map below as *Special Management Concerns*. Some of these are dangerous (open wells) and others are unsightly (55-gallon barrels). Others need to be dealt with diplomatically (tree stands for hunting). All of them will require a decision and no decision is, by default an approval to leave these in the park.

In addition to the places shown here, The Estate Compound area, as noted elsewhere in this document contains heaps of debris (metal, glass, etc.). The map here contains all the sites identified outside of that area as it is not shown here (except for its open wells).





Special management concerns at Hawkwood. Site contents as follows: Hw1=tires and debris; Hw4=open well; Hw5=open well; Hw14=tarp shelter; Hw31=tree stand (hunting); Hw32=tree stand; Hw45=tree stand; Hw50=tree stand; Hw55=tree stand; Hw58=bales of wire, metal debris; Hw59=metal debris, farm junk; Hw61=farm vehicle chassis; Hw74=metal 55-gal. barrels; 109=tree stand. Additionally, the estate compound area contains lots of debris, metal, glass, etc. Purple lines show existing trails and green lines are stonewalls for reference.

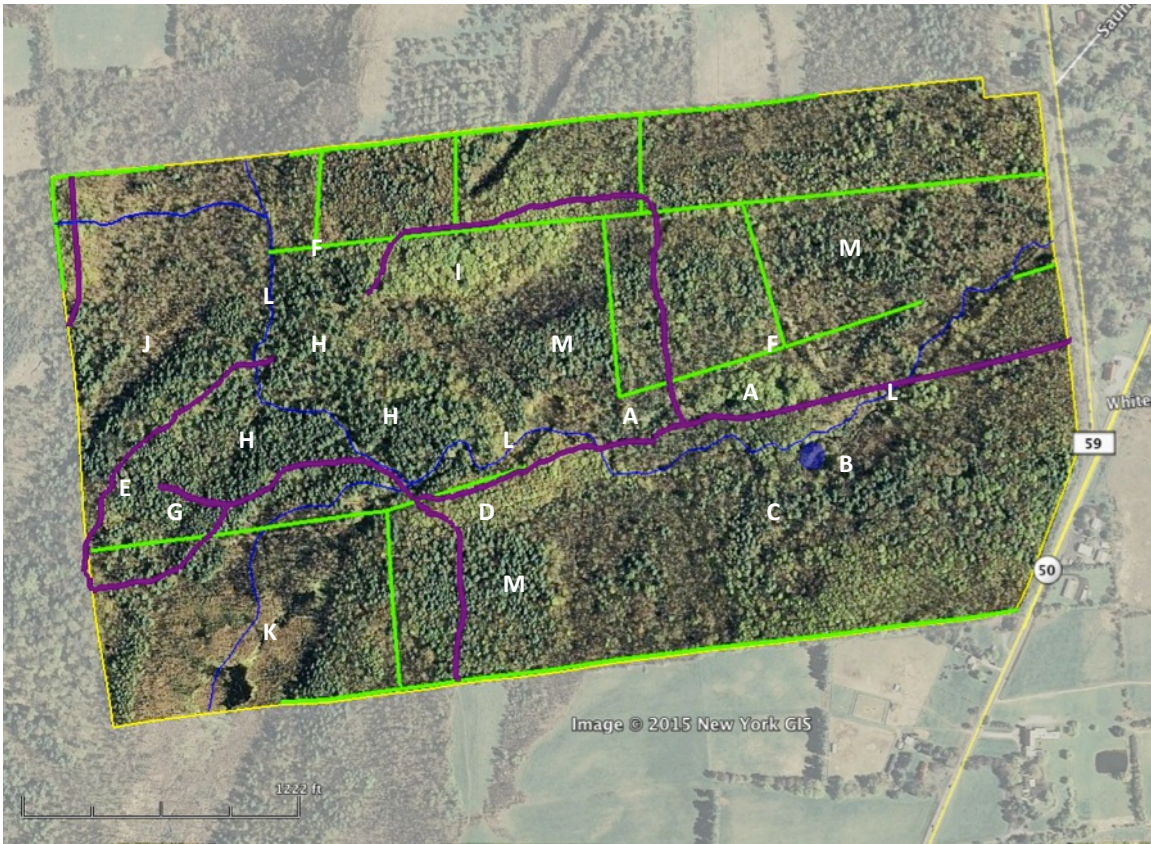
## Visitor Opportunities

### *Special Places*

Every park has its iconic places. Central Park in New York has its Boathouse, The Rambles, and Strawberry Fields. Yosemite has Half Dome and Yosemite Falls. Such features define a place, make it special to its users, and keep people coming back.

Hawkwood, although small when compared to Central Park and Yosemite National Park, has no shortage of special places. Below is a map identifying the best sites. Brief descriptions and photos follow. These sites should be used for trail routing and for educational and interpretive opportunities.





Locations of Special Places at Hawkwood. Descriptions are listed by letter/name in the following section. Purple indicates existing trails and green lines are stonewalls provided for reference. A= Hawkwood Estate; B=Pond; C=Windmill; D=Sugar Maple Plantation; E=Fireplace; F=Stonewalls (at large); G=Glacial boulder; H=Old growth trees; I=Rich hardwoods; J=Swamp; K=Large wetland; L=Stream; M=Old field pines.

### A: Hawkwood Estate



The Estate Compound is a large, sprawling site that stretches 200 yards along the Estate Trail. Approaching from Middle Line Road, the first feature is the mansion itself. (Watch for two open wells here that could be deadly if one fell into them.) The stairs and foundation remain, along with piles of brick, metal objects, and other such debris. Ornamental plants also still occur.

Continuing along the Estate Trail, one passes a grove of large old locust trees. This area showcases four more stone foundations, which also contain debris, metal objects, etc. Some of the stonework is in good condition. It is unclear what the various buildings

were, but it appears from old photographs there were living quarters and barns. An expert in this type of infrastructure should be retained.

The third section of the estate compound occurs just prior to the creek crossing farther down the Estate Trail. This area contains still more foundations (one appears to have been a large barn) and the remnants of an apple orchard (apple trees still producing). There is a small footbridge over the stream, supported by original stonework from an earlier bridge (could have been a mill, but no evidence suggests that).

In its current condition, the Estate compound is deteriorating, difficult to explore, and dangerous (open wells, glass, metal). Hawkwood's leadership team could leave it this way, and forgo the site's potential. Or, at the other end, the site could be improved to national park-level quality: clear the obscuring vegetation; clean up debris; stabilize the stonework; clearly define where people can explore; and interpret the site with informative signage. The opportunities at this site are vast and worthwhile.

#### **B: Pond**



The Pond could be considered part of the estate (it lies just across the stream) but is separated here as its own special place. Though it is historical (and manmade), its function for the park user will be scenic and for viewing wildlife. The pond is small (100 feet diameter), circular, and peaceful. On my visit in September 2015 the pond was covered in duckweed, a normal occurrence for small ponds on abandoned farms in late

summer. As an accessible pond, the site will be valuable for education.

#### **C: Windmill**



Close to the pond, and still also part of the Estate but described as its own site here, is the Windmill. The site features a toppled wind tower from the estate period. Surrounding it are six stone pillars used perhaps to stabilize the tower. It may have had a well, or it may have generated electricity. An expert should be retained to interpret the features of the site. Bringing a trail close to this site is recommended and

is illustrated on the trail plan that follows.



### D: Sugar maple plantation

Across the stream from the Estate orchard is a lovely section of original trail that passes several old sugar maples. It is a classic scene of the northeastern landscape. Adjacent to the trail is a sugar maple plantation established approximately in the 1940s (coring the trees could provide a solid year of establishment). The trees are planted in rows, and were established on mounded up soil. The trees were likely established for a maple sugar operation. Additional description and a photograph are provided above in the vegetation inventory. The site is interesting as much as it is scenic.

### E: Fireplace



a hunting camp, or a man cave.

Deep along the western edge of the property in the coniferous hemlock and pine forest, stands an old stone chimney. The fireplace bricks are stamped “Buckeye S.M.” for the manufacturer. It’s unclear what structure was attached to it; no foundation was found. It is also unclear what the structure’s purpose was being so removed from the estate compound. Perhaps it was some kind of artist’s retreat,

### F: Stonewalls

The roughly 3-miles of stonewalls on Hawkwood create not so much a special place, but a theme that should be explored through well-planned trail alignment (including possibly a “Stonewall Trail”). I did not identify all the best sections of stonewall, but this should be done to find the best places. A description of the walls, photographs, and maps showing their extent are provided above in the Cultural Landscape section.

### G: Glacial Boulder / Big Rock



This large stone represents the largest glacial boulder on Hawkwood. The rock is about 4 feet tall. The rock tells the glacial story, and it also showcases the difficulties that early settlers encountered in creating an agricultural landscape from a recently deglaciated one. It could be interesting not to bring a trail to this site, and instead list the GPS coordinates at a trailhead kiosk and allow the user an opportunity for discovery.

Other sites could be presented this way too.



**H: Ancient Trees**

Hawkwood contains dozens of trees that predate settlement of the land by European Americans. Such trees are identified by: their size; the texture and characteristics of the bark; and the shape of the canopy branches. Most such trees occur in the western coniferous forests (recall it has always been forested). The trees initiated as late as the early 1800s and as early as the late 1600s. These trees could be a regional draw for trail users. Trails should not go too close to the trees.

Species	Approximate Age	Occurrence
White Pine	200 years	Old, forest grown white pines are concentrated in the western coniferous forest. I cored three of these trees and confirmed the age to 175 years and estimate 200 years.
Eastern Hemlock	150 years	Hemlocks are younger than other trees, but cored trees revealed at least 150 years.
Sugar Maple	300 years+	About a dozen old growth sugar maples were found. The trees are forest grown, tall, and with course bark texture and buttressed roots. They were probably tapped for sap long ago.
Red Maple	250 years+	A single old growth tree was found in the coniferous forest (Hw82).
American Beech	300 years	Two trees occur, one has died, near the fireplace in the hemlock forest (H107).
Shagbark Hickory	175?	I am less familiar with dating shagbark hickory. A single ancient tree occurs on the north edge of the coniferous forest (Hw66).
White oak	200	A single tree occurs along a stonewall (Hw53). A fallen branch was dated to 137 years old; the tree is estimated at ~200.



The buckling bark of this white pine indicates it is over 175 years.



A dozen sugar maples like this one stand in the coniferous forest. The trees are around 300 years old.

**I: Rich hardwoods**

The rich hardwood forest is described in the Vegetation Inventory section above. This is one of the most scenic areas of the property because of its tall, old trees, open understory, and lining stonewalls. Botanical explorers might enjoy it in the spring when



there should be a bloom. In the trail plan, I routed a trail along the edge of this area by a stonewall. A photograph also accompanies the abovementioned description.

### **J: Swamp**



This swamp community composed of swamp white oak, red maple, ash, white pine, elm, and others, along with ferns of four species, sedges, and cattails, is a lovely area if one can keep their feet dry. It presents one of the few openings in the otherwise forested Hawkwood property. The community found here occurs in other areas of Hawkwood, but not with the same level of quality or quantity found here. In

the proposed trail plan, a trail traverses this area with a boardwalk.

### **K: Large Wetland**



The large marsh wetland is described in the Vegetation Inventory above (Southwest Wetland). This is a large wetland complex with a diverse array of community types including some open water. It appears to have recently been a beaver pond that has breached and drained. The site will be rich with birds and other wildlife. Access is difficult due to thick, tall vegetation on the margins and high water table. In the trail plan, I proposed an elevated observation

platform in the northeast corner from which visitors can view the wetland and its wildlife. This could be the end point of an ADA trail from Middle Line Road.

### **L: Stream**



The stream (system) is a 1.5 mile long special feature at Hawkwood. People love to be around water. Accessing the stream is difficult because of saturated soils. The bridges that carry trails over the stream will be the best place to access it. However, near the mansion site and in the coniferous forest, the stream runs against higher, drier, land. Education groups could do stream surveys in these areas and compare that to

surveys elsewhere. A quiet place along the stream for a bench or picnic table should also be identified.





### **M: Old-field pines**

The stands of old-field white pines, described above in the Vegetation Inventory, display Hawkwood's land use history in a way that also showcases its resilience. Old-field white pine stands are a common feature in the northeast and they allow the visitor to uncover a site's history with reasonable accuracy. When compared to the adjacent successional deciduous woods, the site becomes all the richer.



The old-field white pines at Hawkwood are young, having emerged in the 1960s (50 years old). White pines growing in old fields commonly suffer from white pine weevil. As part of its life cycle the insect kills the terminal leader of the tree, causing side branches to claim the leader position. Thus many of the trees in these stands are misshapen, with multiple trunks (see photo). They also have lots of dead low

branches, a result of growing under conditions of full sun during their early years. Comparing the old field pines with the mature conifer forest where the trees were forest grown and much older present an excellent contrast of a single species.

### *Trails*

Trails guide and shape a visitor's experience. The type of terrain encountered, the nature of the environment through which the trail passes, and trail length determine the user-experience. Trails often are placed somewhat arbitrarily on a landscape. Why do this when remarkable features lies close-by waiting to be discovered?

Trails should be designed and planned for the user-experience and sustainability. Trails should be planned for four-season use and accommodate skiers and snowshoes. Because of the nature of the soils, and that the property is historical and educational, the use of bicycles are not recommended for Hawkwood trails.

On a property this size, whether winter or summer, the user should have options of trails at various lengths and trails should pass through as diverse an array of environments as possible. The trails should bring people to the beautiful spaces, special places, and sites with something to learn. A goal for this field inventory was identifying those locations (see special places above).

Trails need to be sustainable in the sense that the grade does not lead to erosion, that existing hydrology is not compromised, and that the trails do not degrade over time. A



well-planned trail can do these things and be more cost effective. As seen in Hawkwood's existing trails, randomly placed trails do not always hold up.

Hawkwood currently contains ~2.2-miles of trails (see Existing Trails map in Cultural Landscape). Most of these trails developed during the agricultural period. Some of the existing trail sections are usable and pass through valuable, attractive areas. Some trail sections, however, are eroded, hold water, and should be abandoned. Hawkwood is mostly flat and this poor drainage poses challenges to building sustainable trails.

If built out, the 248-acres could hold 8-miles of trails without being overly congested. Locally, there are a number of parks and preserves with much shorter length *natural surface* trails:

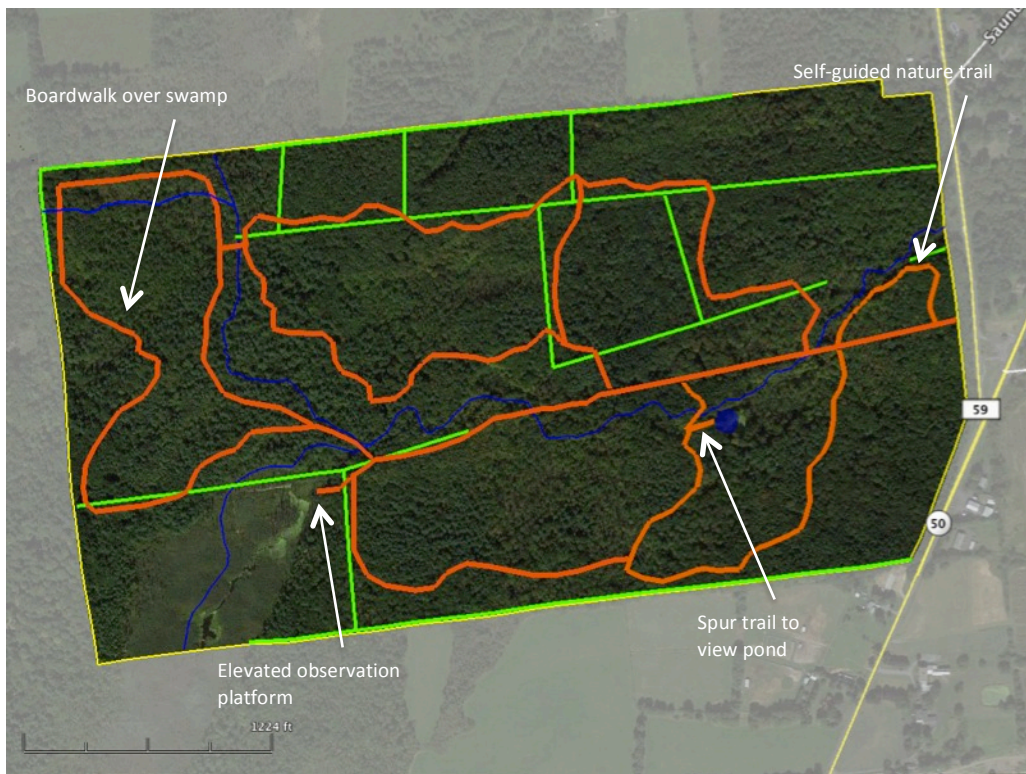
- Shenentaha Park (Malta): ~1-mile of trail
- Ballston Creek Preserve (Ballston): ~1-mile
- Veteran's Memorial Park (Clifton Park): ~1-mile
- The Burl Trail (Saratoga State Park): ~1-mile
- Woods Hollow Nature Preserve (Milton): <2-miles
- Indian Kill (Glenville): >2-miles

Hawkwood could fill a regional niche by offering 5-miles of natural surface trails. The trails can use sections of the existing network and would also require new trails to be planned and built. The trail system should account for:

- Variable lengths
- Diverse environments
- Special/educational places
- Avoiding wet areas (unless improved)
- Distance from Middle Line Road due to noise (see map)

The proposed trail plan below contains 4.5 miles of trail and passes all of the top special places listed above, and many of the secondary special places listed in the appendix. The main stem of the Estate Trail could be upgraded to an ADA accessible trail, with an elevated observation platform at the large wetland. A trail user could assemble dozens of different trail routes ranging from 0.3 miles to over 4-miles.





A hypothetical trail plan for Hawkwood. The orange trails create a *stacked loop* trail network where a person can utilize dozens of different combinations ranging from 0.3 miles to over 4 miles without using the same trail twice. A “Stonewall Trail” takes in a mile of walls, while a “Forest Trail” takes in old-growth trees and a beautiful swamp, among other special places and scenic areas. The best portions of the existing trail would be retained (~1.5 miles). This trail system totals approximately 4.5 miles and minimizes the use of bridges (5). Green lines show stonewalls and blue are streams and pond.

#### Additional considerations for a Hawkwood Trail System:

- The above plan assumes parking remains at the existing/former entry.
- An elevated observation platform would provide viewing access to the large wetland in the southwest corner. Vegetation currently limits access and observation. A platform would need to be at least six feet high. Such a feature would be a notable regional attraction for bird-watchers.
- A walk from on the Estate Trail to the observation platform could attain ADA grade and create a 1.2 mile (round trip) ADA-accessible hike passing the Hawkwood Estate, and ending at the observation platform. (Grants are often available for this type of trail infrastructure.)
- The small swamp in the northwest would need a boardwalk section to traverse it (~100 feet).
- Sounds of vehicles from Middle Line Road and Route 50 are prevalent in the eastern ¼ of the property (from the pond, east to the road). For this reason (and the lack of interesting features) the trail system is largely absent there.
- A self-guided nature trail (0.3 miles) from the parking area with gentle grade, smooth surface, and educational components could accommodate people looking for a shorter walk.



## Camping

A request for potential camping locations should be considered carefully; it will be challenging to allow camping in a way that prevents impacts, and does not cause conflict among user-groups. Three possible locations are listed below. These were chosen for the following virtues:

- Coniferous forest or edge (warmer, quieter, and provides a visual screen from other users)
- Distance from water (camping should be 200-feet from water)
- Distance from sensitive features
- Distance from property boundaries (respect neighbors)
- Distance from trails (respect other users)
- Distance from Middle Line Road (noise)
- It is unclear what campers will do for a restroom so this factor was not considered. They will either need to hike back to the trailhead restroom (if one exists) or make do with the woods.
- It is unclear what the need is for emergency access; this needs to be considered.



Three potential camping areas in Hawkwood. Base map is 2005 winter to show areas of coniferous forest (dark areas), which offer better camping than open deciduous woods. Orange hypothetical trails are included here. Green is stonewalls. Blue are streams and pond.

Site advantage and disadvantage:



Site	Advantages	Disadvantages
<b>A</b>	-Proximity to water (stream) -Proximity to possible platform for viewing night sky	-Farthest from parking for carrying wood, using restrooms, emergency access; etc.
<b>B</b>	-Proximity to estate compound -Proximity to old forest	-Farther from water
<b>C</b>	-Proximity to parking for restrooms and gear transport -Proximity to water (stream)	-Possible road noise

To minimize impacts, the following should be considered:

- In dry periods fires should not be allowed
- Camping should be limited to small groups (10 people maximum)
- If unresolvable impacts emerge, the camping program should be abandoned

### *Educational Opportunities*

*If preserved what can this landscape teach us?*

Hawkwood presents an outstanding opportunity for learning about history, ecology and perhaps most interestingly, where the two intersect. When the mansion and estate footprint is combined with the forests and wetlands, the number of educational opportunities becomes endless. The sites listed above in the Special Places section outline the best areas for learning. Nevertheless, any spot in Hawkwood will have something to teach.

### **What?**

Below are educational themes for which Hawkwood presents usable features:

- Forest Ecology: Hawkwood has young forest and older forest
- Water quality: the stream, pond, and wetlands
- Stream Ecology: the stream system
- Plant identification: a trail through diverse community types is needed
- Bird watching: see Joan McKiever's list of 67 species in Appendix D; an observation platform over the wetland would become a regional attraction.
- Landscape History: see Cultural Landscape section above
- Hawkwood History: The estate is on the National Register of Historic Buildings; a more detailed local history of the site is needed.

### **Who?**

An education program needs to first ask: *Who is our audience?* The audience could include: Typical park user; organized groups (Scout groups, 4H, etc.); schools.



## Where?

See the special places listing above and in the appendix. These suggest the best places in Hawkwood for teaching and learning.

For successful educational outings at Hawkwood, the site should have:

- Easy to navigate trails with orientation signs and maps
- Trails that reach the best educational and interpretive sites
- A space to get out of the weather (roofed pavilion) near the parking area
- Parking for busses
- Interpretive panels, brochure, and/or a digital interpretive trail available on the web

The opportunities for education cannot be overstate. Clarity on desired user groups, and how to appeal to them will make those opportunities of Hawkwood realized. Nevertheless, the casual user should be afforded quality interpretation through informational kiosk(s), trail signage, and trail design to Hawkwoods many excellent special places.

## Recommended Actions

The following section provides a list of recommended actions inspired by what was found in the inventory. These are *recommendations only*, created to move the project forward based on what I have learned on the ground and about desires for the park.

### *Critical Decision Making*

A number of broad questions of governance, financing, and management, are beyond the scope of this document. Nonetheless, a few general suggestions:

- Identify the park's leadership team. Every successful project has strong leadership. Park projects without strong leadership by people committed to the mission and goal fall short of their potential.
- Determine the park's name, identity, and brand. These are important, often overlooked aspects that help build public support.
- Determine what degree of investment the leadership team is committed to. Potential expenditures include: basic infrastructure (parking); trails; ecological; interpretive; historical preservation; secondary infrastructure (restroom, building, etc). Some investments have low long-term costs (well-planned trails) whereas others have significant long-term costs (restrooms).



### *Ecological Conservation*

In 60 years, Hawkwood has gone from being 75% open agricultural land, to 90% forested. The clearing of the original forest and the conversion to agriculture led to a reduction in diversity, complexity, and resilience. The property is rebounding from that history and in decades we will see change, but it will take centuries for it to recover.

- Eliminate exotic plants in and around the Hawkwood Estate mansion area.
- Control the exotic plants along the north boundary (red on exotics map).
- Continue to eliminate and monitor exotic plants from remaining property.
- Seek grant support for exotic plant removal (NRCS, etc.).
- Implore a group of local stewards to assist with exotic plant removal. Because the park is new and (if it is presented appropriately) exciting, garnering support has potential.
- Monitor for decline in Ash trees from the exotic emerald ash borer. Consider planting underrepresented tree species in the wake of ash decline (white oak, American beech, American chestnut hybrids, hickory species, etc.). Potential partnership with Saratoga Tree Nursery.
- Determine if deer hunting is compatible with Park mission and goals. Deer can become over-populated and cause ecological degradation. There are ways to manage this successfully. If no deer hunting, inform current hunters (see below).

### *Trails and Visitor Infrastructure*

- Commit to creating a high-quality trail system of ~5-miles as an outstanding amenity for the Town of Ballston and the region. Determine the level of funding available to create a trail system.
- Consider an ADA-accessible “Estate Trail” and Wetland Observation Platform. This feature would be an “engine of attraction” to bring people to Hawkwood. Consider private donor or corporate support for the platform (e.g. “The Curtis Lumber Wetland Overlook”).
- Abandon sections of existing trails that are eroded or wet.
- Determine the need and market for a building. Resources for a building may be better invested in the trails, historic preservation/interpretation, and other



amenities. Think of the 90% of users (ordinary people doing ordinary things) and how to reach them.

- Consider the desire for a restroom. Unless a restroom is inspected *at least once every 24-hours* for cleanliness and graffiti, there is no point building one in a remote location like Hawkwood.
- Consider the remains of the Estate buildings. A do-nothing approach would leave the site hidden, deteriorating, and dangerous. The site's potential for opportunity is high. Consider a national park level of restoration (clearing vegetation, cleaning up debris, stabilizing infrastructure), access (clearly guiding visitors where they go) and interpretation. The goal for the estate compound could be: *to allow people a safe exploring and learning environment that preserves the site and celebrates its history*. This could be an engine of attraction for the park.

#### *Education and Interpretation*

- Answer *Who? What? Where?* questions for education and interpretation at Hawkwood.
- Determine level of commitment to improving the Estate Mansion site for high quality interpretation.
- Seek support for improving and stabilizing the estate compound.
- Retain an expert in interpreting historical architecture (stone foundations) to bring the estate site to life.
- Trace Hawkwood's deed back to the Kayaderosseras Patent and identify the stories within.
- Determine feasibility and need for an education building or alternative level of infrastructure, such as a kiosk, interpretive pavilion, etc.
- Use this document and the special places as a foundation for interpretation.
- Consider how best to honor the deceased, Mr. Frank W. Schidzick, Jr., and this gift he endowed to the Town of Ballston.

#### *Special Management Concerns*





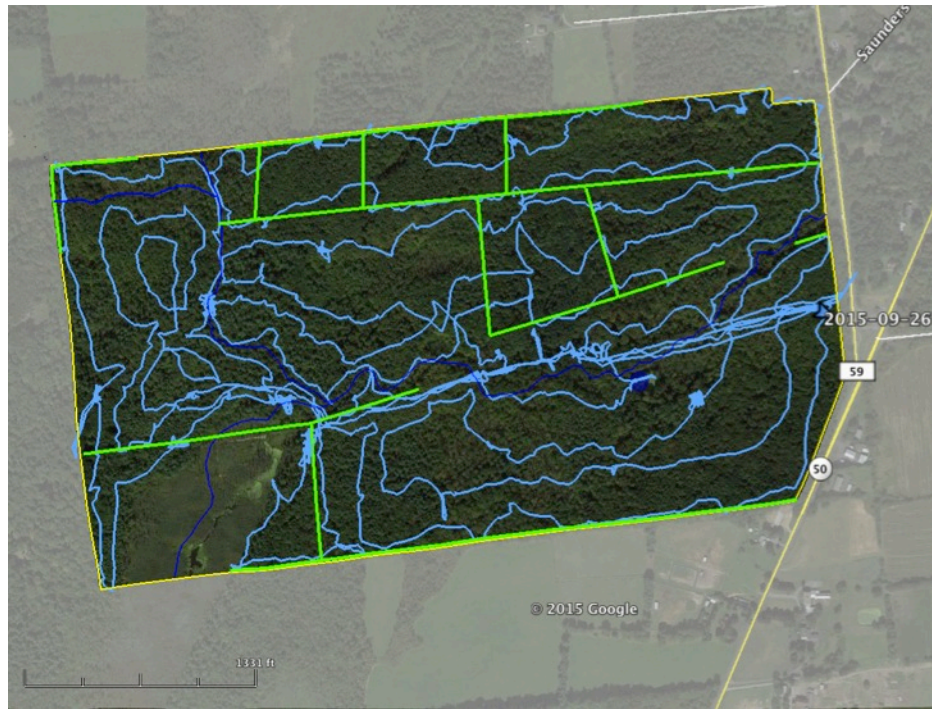
- Fill in/Eliminate the two dangerous open wells at the mansion site. A local hunter named Mark informed me, after the fact, of a third well along the long stonewall in the north. (Contact me about finding this – I'll follow up on it).
- Remove tires, barrels, and general trash from the site. See map below and appendices for specific locations.
- Determine if any of the estate farm equipment has value being left in the woods and clean up accordingly.
- At least three people have permission to hunt the property. Work with previous landowner to contact these people and have tree-stands removed. Over a dozen were found. Several identified in the map below.



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## Appendix A: Field Inventory Route

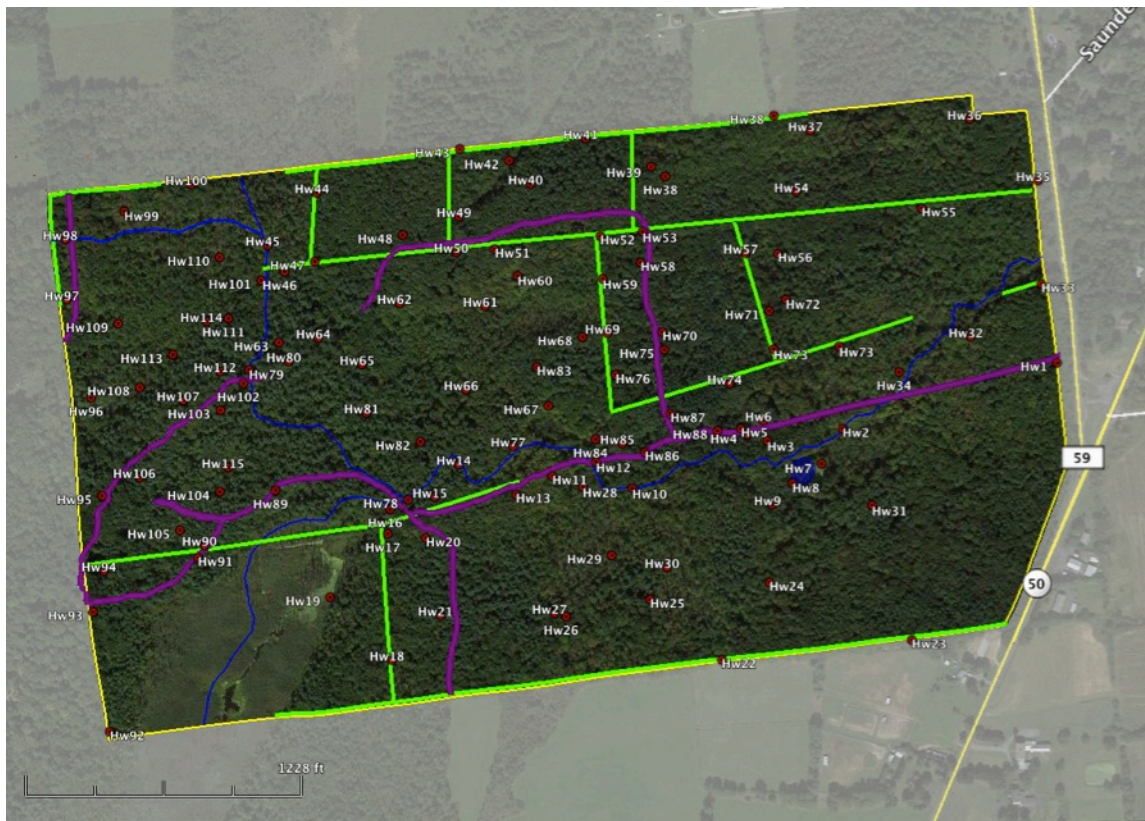


Field inventory route for Hawkwood (September 22-26, 2015). Blue shows my route, which totals 24-miles. Green lines are stonewalls and provided for reference.



## Appendix B: Map and description of all points

This map shows all the GPS inventory points I made during the field survey. Brief descriptions of my field notes are listed below. This is provided to inform about some of the smaller, less significant special places and other features on the property. Contact me if you would like more detail on any of the sites.



Map of all survey points for Hawkwood. Purple show existing trails, green are stonewalls, and blue are streams. Numbered points refer to the list below.

HW1: Tire dump and other trash along main trail stem near Middle Line Road.

HW2: Rows of very large Cottonwood trees. Almost all of these are dead, a couple are alive. Trunks approach 4 feet in diameter. Cottonwood grows in wet areas, like here. Some could fall on the trail, but typically cottonwood decomposes standing. Trees probably date to building of the house.

HW3: Mansion Site. Foundation, stairs, bricks, etc.

HW4: Open Well

HW5: Open Well

HW6: Patch of *Vinca*, exotic plant.



HW7: Pond and nice walking route to pond. Pond is covered in duckweed, also sedges, and dogwood.

HW8: Old fence post.

HW9: Old fallen wind-powered well and tower.

HW10: Stream with old Sugar maple and barbed wire.

HW11: Very scenic spot of large and small sugar maples. This is the sugar maple plantation where in about 1940s rows of earth were mounded up and maples planted over about ½ to 1-acre. Lovely site today.

HW12: Original stream crossing with stonework. Today small pedestrian bridge. Possible could have had a mill site, but no indication of a mill pond occurs.

HW13: East end of stone wall. Forest to north shifts to older, later species.

HW14: Tarp Shelter, needs removal. Old growth sugar maple to north.

HW15: Old growth Sugar maple, approx.. 300 years.

HW16: Wood bridge (snowmobile) over creek.

HW17: Stonewall corner.

HW18: Swamp White oak community; wet woods. Still on stone wall. Pine, red maple, black cherry, creeper.

HW19: Old beaver pond swamp. Mostly dead pine, ash. Old field, then flooded. Infested with *Phragmites*.

HW20: Sugar maple plantation.

HW21: Old field white pine on elevated hill. Trees 8-15 inches, aged ~50 years/ Ground covered in Virginia creeper. Ash, red maple, elm, and black cherry also occur. Site was open agricultural prior to white pine. Point is on trail.

HW22: Scenic section along wall and edge. Nice trail potential; many large hickories on wall, none in woods.

HW23: Survey rod in ground. Forest changes from Sugar maple to black locust. Much debris on ground in this area.

HW24: Up to here open dry woods of red maple, white pine, ash, black cherry, black locust. From here changes to aspen, impatiens, with rosa, and hickory. Creeper is dominant th/o. Some sugar maple regeneration in dry areas. Buckthorn is common.

HW25: Last point to here wetter, ash, sensitive fern, Rosa, etc.

HW26: Wet again, asters, sensitive fern, Swamp white oak, impatiens, elm.

HW27: Human created ditch probably dug to drain wetland. Forest goes to pine west of ditch.

HW28: End of sugar maple plantation. Japanese barberry is here.



HW29: Edge of wet. Ash, elm, sensitive fern, tussock sedge, swamp white oak, arrow viburnum, silky dogwood, Rosa, Lonicera, horsetails, mosses, buckthorn.

HW30: Dense, wettish, Lonicera.

HW31: Edge of open upland and wet thicket. Deer Stand here.

HW32: Wooden built Deer hunting stand. From main trail to here is mesic, hickory, but mostly ash, red maple, sensitive fern, ash regeneration, hog peanut.

HW33: Short stone wall here. Here to trail is mostly red maple and white pine.

HW34: Large stonework along stream. Here veg is red maple, white pine, creeper, jewel weed, hog peanut, sensitive fern, and sugar maple regeneration. Lower riparian is denser with ferns, sedges, ash, shagbark, Rosa, Lonicera, buckthorn, alder, elderberry, swamp white oak, silky dogwood, arrow viburnum.

HW35: Start stone wall here. Solomon seal, poison ivy, Christmas fern, intermediate fern. Wall is agricultural made of small stones. Swamp white oak. Sugar maple on wall.

Property corner area: low, seasonally wet, Swamp white oak, red maple, ash, black cherry, fern creeper, regenerating hemlock and beech.

HW36: Internal corner survey marker. Red maple, sensitive fern, creeper, white pine, regenerating red oak, American beech, ferns, some buckthorn. Seasonally wet: sensitive fern, showing soil, roots. Intermediate wood fern.

HW37: Start Wall. Just went through dense section of Rosa!

HW38: Rosa multiflora! Bad....!

HW39: Wall here north south. Wet area of red maple, ash, swamp white oak, elm, Rosa, and into black cherry, sugar maple, red maple, elm, rosa. Crataegus hawthorns.

HW40: Open woods. Aspen, black locust, sugar maple, red maple, elm. Good placement for trail.

HW41: Border wall and hedge. Black cherry, ash, red maple in wall. Up to 20 inches in diameter. Exotics bad. Crataegus and Canada mayflower.

HW42: Swamp. Royal fern sedge tussock, elderberry, red maple, winterberry holly, ash. Wall continues past swamp.

HW43: Wall junction. Open upland woods. Black cherry, sugar maple in wall. Sugar maple and white pine in woods. Same both sides of new wall. Orchard on adjacent property.

HW44: End of Old Field, now entering older forest.

HW45: Basswood tree at creek. Nice scenic woods, good trail area. Tree stand here.

HW46: Begin stone wall. Forest is white pine, red maple, sugar maple.

HW47: Corner of field. Old growth sugar maple here. Excellent spot, leaning trees, away from hedge trees.



HW48: Old field pines, a textbook example! Stone wall close.

HW49: Top of swamp. On stone wall.

HW50: Junction of wall. Deer stand here. Good trail alignment here.

HW51: Big tree area. High quality mature forest. Sugar maple, American beech, in nice open woods. Good trail area. On wall.

HW52: Stonewall junction. Lower and slightly wet here: red maple, white pine, ash, sugar maple, denser understory. Shagbark hickory, carpinus, white oak.

HW53: Wall running north-south. Hickory, elm, swamp white oak, white oak. Legacy tree white oak on wall with 137 years on fallen branch estimated at 180+ years.

HW54: Mainly old field pines (young) with red maple, ash, black cherry, elm, creeper. Hearing traffic here.

HW55: Deer stand here.

HW56: Buckthorn thick here. Mostly white pine and creeper.

HW57: Excellent wall! Nice trees and dense undergrowth. Good trail area.

HW58: Small interior swamp. Also debris: wire bails, metal objects, old farm equipment.

HW59: More metal farm junk. Stonewall. Edge of swamp.

HW60: Nicest spot in the property. Open mature woods, rich. Big trees. Good for trail.

HW61: Hickories with old vehicle chassis. Still nice woods here.

HW62: Still very high quality sugar maple woods with Pennsylvania sedge. Very nice spot.

HW63: In older forest area. Bigger pines, beech, yellow birch, black birch, hemlock nice. Ground is lumpy pits and mounds. Stones in ground too. Always forested.

HW64: Old growth sugar maple and pine.

HW65: Old pines.

HW66: Old growth shagbark hickory.

HW67: Small shrub swamp. Could bring trail close to here.

HW68: Old field pine. Cretagus hawthorns.

HW69: Stonewalls, with small stones indicates tilled lands not pasture.

HW70: Old trail, walked back to white oak and through white pines.

HW71: Stonewall and maybe old path.

HW72: Large Norway maples: cut them.



HW73: Stonewall, small dilapidated and obscured.

HW73: (double marked) End wall.

HW74: Nice open woods. Locust dominated. Also shagbark, black cherry, red maple, sugar maple. Traces of stonewall, but not much to it. Metal drums.

HW75: On trail again.

HW76: Stonewall. In old field pine. Black cherry on wall (obscured).

HW77: Along stream. Went around swamp/riparian of stream. Nice woods in here, yellow birch.

HW78: Confluence. Mixed hardwood/hemlock/pine. Close to bridge.

HW79: Foot bridge and end of stream trace. Pt 78 to here along stream: pine/hemlock/red maple/yellow birch/others. Wood fern, pipsisawa, among others. Lumpy ground indicates always forested. No agriculture here. Nice woods.

HW80: More Old growth sugar maple

HW81: More Old growth sugar maple, old pines ,tall hemlock.

HW82: Wow, old growth red maple.

HW83: Deer stand in old field white pine.

HW84: Bad Lonicera and Rosa. Old agriculture. Metal, stonework. Barn foundations?

HW85: Orchard! Apples. Another cellar hole ~20x40. Several foundations. Garlic mustard.

HW86: Foundations.

HW87: More barn? Foundations. Ancient locusts.

HW88: More foundations. Old silver maples. Also, Old growth sugar maple at mansion. Last leg east of mansion through ash swamp and sensitive fern.

HW89: Nice, hemlock and pine. Tip mounds show old forest. Old trees.

Hw90: Very old aspen (how old?)

HW91: Stonewall on trail. Has barbed wire.

HW92: Property corner marked. Near swamp white oak, musclewood, shagbark, pine, red maple, ash, red oak, maple leaved viburnum.

HW93: Trail enters exits.

HW94: Stonewall with fence posts.

HW95: Fireplace. Nice hemlock fern forest. On trail. Old wonky pines and bitternut hickory.



HW96: Crossed nice swamp. Other side is younger. Swamp is typical for here. Some Lonicera.

HW97: Survey marker. Legacy red oak just off property. Start stone wall.

HW98: Snowmobile Bridge over creek. Nice hardwood forest here. Sugar maple up to 150 years, bitternut hickory. Stonewall here is fence (large stones).

HW99: Nice wooded swamp: cattails, red maple, ostrich fern, tussocks, elm, wet. Some white pine.

HW100: Boundary, no wall. Wet woods. Here to stream on deer trail.

HW101: West-east ditch with fence post and wire.

HW102: Enter pines.

Hw103: Nice old pine forest.

HW104: Nice back swamp of old small pines, etc. Swamp white oak, sensitive fern, Ilex, impatiens, moss, poison ivy, spice bush, barberry.

HW105: Big rock: the largest boulder on the property. In pines, ash, lowland, sensitive fern, spice bush, some large aspen.

HW106: Fallen large pasture hophornbeam, very cool. Must have been pasture woodland in here.

HW107: Old growth American beech, one alive and one dead.

HW108: In nice swamp. Typical species but nice associations. Small pines, open wetland. Beautiful.

HW109: deer stand. Nice woods, but wet.

HW110: In open, sensitive fern, ash swamp. Nice.

HW111: Cross ditch and enter pines. Smaller trees, younger, mixed with Norway maple, red maple, beech. Ground is bumpy, always forested or light pasture.

HW112: enter good pines. Old.

HW113: In swamp again. Royal fern, milkweed. Beautiful.

HW114: East end of nice swamp.

Hw115: Swamp with Old growth White pine.

[end]





## Appendix C: Coordinates for GPS points

This lists all the points from the list in Appendix B and provides their coordinates.

Point	Latitude	Longitude
Hw1	42.9394	-73.874723
Hw2	42.938572	-73.878353
Hw3	42.93844	-73.879656
Hw4	42.938509	-73.879998
Hw5	42.938587	-73.880102
Hw6	42.938688	-73.879722
Hw7	42.938146	-73.878729
Hw8	42.937914	-73.879232
Hw9	42.937649	-73.879571
Hw10	42.937845	-73.881941
Hw11	42.938	-73.883285
Hw12	42.938174	-73.882551
Hw13	42.93778	-73.883892
Hw14	42.938147	-73.884854
Hw15	42.937748	-73.885251
Hw16	42.937589	-73.886028
Hw17	42.937291	-73.886057
Hw18	42.935744	-73.885972
Hw19	42.936478	-73.887086
Hw20	42.937245	-73.885398
Hw21	42.936298	-73.88515
Hw22	42.935719	-73.880425
Hw23	42.935983	-73.877226
Hw24	42.936693	-73.879622
Hw25	42.936473	-73.881636
Hw26	42.936267	-73.883051
Hw27	42.93631	-73.883246
Hw28	42.937867	-73.882775
Hw29	42.937017	-73.882286
Hw30	42.93687	-73.881351
Hw31	42.937646	-73.877894
Hw32	42.939722	-73.876185
Hw33	42.940383	-73.874961
Hw34	42.939285	-73.877415
Hw35	42.941686	-73.874997
Hw36	42.942439	-73.876198
Hw37	42.942288	-73.878916
Hw38	42.942494	-73.879528
Hw38	42.94171	-73.881379
Hw39	42.941831	-73.881621
Hw40	42.941601	-73.883639
Hw41	42.942167	-73.88272
Hw42	42.941896	-73.884009
Hw43	42.94204	-73.884842
Hw44	42.941503	-73.887263
Hw45	42.940856	-73.888105

Point	Latitude	Longitude
Hw46	42.940527	-73.887811
Hw47	42.940651	-73.887292
Hw48	42.940977	-73.885796
Hw49	42.941203	-73.884849
Hw50	42.940763	-73.884887
Hw51	42.940797	-73.884233
Hw52	42.940966	-73.882477
Hw53	42.941022	-73.881764
Hw54	42.941526	-73.879156
Hw55	42.941322	-73.877023
Hw56	42.940756	-73.879468
Hw57	42.940761	-73.880022
Hw58	42.940638	-73.881795
Hw59	42.940441	-73.882438
Hw60	42.940472	-73.883863
Hw61	42.940101	-73.88442
Hw62	42.940133	-73.885842
Hw63	42.939652	-73.887904
Hw64	42.939706	-73.887213
Hw65	42.939382	-73.886474
Hw66	42.939067	-73.884736
Hw67	42.938868	-73.883354
Hw68	42.939719	-73.882779
Hw69	42.939767	-73.882355
Hw70	42.93978	-73.881427
Hw71	42.940044	-73.879619
Hw72	42.940187	-73.879336
Hw73	42.939605	-73.878421
Hw73	42.93957	-73.879542
Hw74	42.939143	-73.880294
Hw75	42.939563	-73.881395
Hw76	42.939251	-73.882217
Hw77	42.938369	-73.883948
Hw78	42.937711	-73.885714
Hw79	42.939315	-73.888405
Hw80	42.939416	-73.887738
Hw81	42.938783	-73.886403
Hw82	42.938432	-73.885488
Hw83	42.939347	-73.883547
Hw84	42.938452	-73.882562
Hw85	42.938399	-73.882109
Hw86	42.938291	-73.881727
Hw87	42.938771	-73.881291
Hw88	42.938561	-73.880498
Hw89	42.937828	-73.887942
Hw90	42.937151	-73.889139





## Appendix D: Bird List for Hawkwood

This list was generated by local resident Joan McKiever from 2013-2015. I encountered Joan on the property one day and she offered to supply this list of her observations (67 species). This is an impressive list for this size property. It confirms the attraction of the property to birds and bird-watchers alike.

Green heron	Eastern wood pewee	Blue winged warbler
Great Blue Heron	Eastern phoebe	Yellow warbler
Canada geese	Red eyed vireo	Black throated blue warbler
Wood duck	White eyed vireo	Yellow rumped warbler
Mallard	Blue headed vireo	Blackpoll warbler
Turkey vulture	Blue jay	American redstart
Coopers hawk	Common raven	Ovenbird
Red tailed hawk	American crow	Louisiana water thrush
Wild turkey	Tree swallow	Common yellowthroat
Ruffed grouse	Tufted titmouse	Northern cardinal
American woodcock	Black capped chickadee	Rose breasted grosbeak
Mourning dove	Red breasted nuthatch	American tree sparrow
Black billed cuckoo	White breasted nuthatch	Chipping sparrow
Great horned owl	Brown creeper	Fox sparrow
Ruby throated hummingbird	Blue gray gnatcatcher	Song sparrow
Belted kingfisher	Eastern bluebird	Dark eyed junco
Red bellied woodpecker	American robin	Red winged blackbird
Yellow bellied sapsucker	Wood thrush	Common grackle
Downy woodpecker	Veery	Baltimore oriole
Hairy woodpecker	Hermit thrush	American goldfinch
Pileated woodpecker	Gray catbird	
Northern flicker	Cedar waxwing	



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