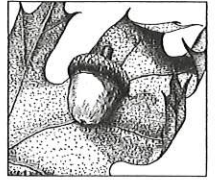


dcr



Woodland Enhancement Plan DCR Working Forest Initiative

JUN 28 2019 PM 3:09



For property belonging to
Bidwell House Museum
100 Art School Road
Monterey, MA

Prepared June 2019 by:
Peter W. Tucker, Consulting Forester
90 West Road, Alford, MA 01266

Assisted by Adam Brown

How to use this report

When your consulting forester visited your property they were documenting many things: (1) the current health and timber quality of the trees in your woods, (2) cultural resources such as stone walls and cellar holes, (3) presence/absence of exotic invasive species, (4) wetlands and terrain features, (5) current forest bird habitat conditions, (6) identifying specific opportunities for protecting and/or enhancing timber quality, tree regeneration and bird habitat, (7) suggesting options for improving habitat over a 10-year period. After reading this report you might consider some of the following steps:

Learn more about the habitat and birds on your property. Whether you're a seasoned birder or just beginning, we hope that this report will show you something new about your property and encourage you to learn more. You can begin by learning to identify the *Birder's Dozen* by sight and sound, if you don't know them already. Start taking notes on when and where you see birds in your woods. If you want help setting up a simple monitoring program let us know and we can help you set something up. To learn more about the birds that breed in Massachusetts, check out the Breeding Bird Atlas 2 (www.massaudubon.org/birdatlas/bba2) and State of the Birds reports (www.massaudubon.org/sotb). **Share this report with neighbors, friends, and family.** Help us spread the word about the importance of breeding habitat for forest birds found here in New England. Teach your neighbors how to identify the priority species, and let others know about the services being offered by Mass Audubon and the DCR Working Forest Initiative. By involving your neighbors in management planning you can maximize the impacts of your efforts by crossing property boundaries and increasing the amount of land you enhance. The benefits for birds and forest health will be worth the coordination effort.

Contact Mass Audubon or your DCR Service Forester with any questions when you're planning management activities. We would be happy to follow up with you, answer questions, and assist with any implementation of our recommendations.

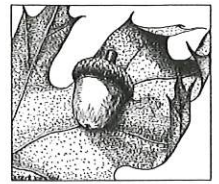
- Mass Audubon—birdconservation@massaudubon.org
- DCR – DCR.Forestry@state.ma.us

Or *google*: MA DCR Service Forestry Program



FOREST MANAGEMENT PLAN

Submitted to: Massachusetts Department of Conservation and Recreation
For enrollment in CH61/61A/61B and/or Forest Stewardship Program



CHECK-OFFS

CH61 cert. <input type="checkbox"/>	CH61A cert. <input type="checkbox"/>	CH61B cert. <input type="checkbox"/>	STWSHP new <input checked="" type="checkbox"/>	C-S EEA <input checked="" type="checkbox"/>
recert. <input type="checkbox"/>	recert. <input type="checkbox"/>	recert. <input type="checkbox"/>	renew <input type="checkbox"/>	Other <input type="checkbox"/>
amend <input type="checkbox"/>	amend <input type="checkbox"/>	amend <input type="checkbox"/>	FSC <input type="checkbox"/>	Birds <input checked="" type="checkbox"/>
Plan Change: _____ to _____			Conservation Rest. <input type="checkbox"/>	CR Holder _____

Administrative Box

Case No.	<u>193-11511</u>	Orig. Case No.	<u>New</u>
Owner ID	<u>506099</u>	Add. Case No.	
Date Rec'd	<u>6-28-19</u>	Ecoregion	<u>M212C</u>
Plan Period	<u>20-29</u>	Topo Name	<u>Monterey</u>
Rare Spp. Hab.	<u>No</u>	River Basin	<u>Housatonic</u>

OWNER, PROPERTY, and PREPARER INFORMATION

Property Owner(s) The Bidwell House, Inc. (dba Bidwell House Museum)
 Mailing Address 100 Art School Road, P. O. Box 537, Monterey, MA 01245 Phone 413-528-6888
 Email Address bidwellhouse@gmail.com

Property Location: Town(s) Monterey Road(s) Art School Road

Plan Preparer Peter W. Tucker, assisted by Adam Brown Mass. Forester License # 240
 Mailing Address 90 West Road, Alford, MA 01266 Phone 413-528-6005

RECORDS

Assessor's Map No.	Lot/Parcel No.	Deed Book	Deed Page	Total Acres	Ch61/61A 61B Excluded Acres	Ch61/61A 61B Certified Acres	Stewshp Excluded Acres	Stewshp Acres
<u>213</u>	<u>14</u>			<u>197</u>			<u>6.7+/-</u>	<u>190.3</u>
TOTALS				<u>197</u>			<u>6.7+/-</u>	<u>190.3</u>

Excluded Area Description(s) (if additional space needed, continue on separate paper)
6.7+/- acres (approximate) containing the buildings and grounds – see attached Forest Map.

HISTORY Year acquired 1989 Year management began 1993

Are boundaries marked: Yes blazed/painted/^{*}flagged/signs posted (circle all that apply)? No Partially

What treatments have been prescribed, but not carried out (last 10 years if plan is a recert.)?

stand no. _____ treatment _____ reason _____
 (if additional space needed, continue on separate page) * East boundary along Schwartz painted red.

Previous Management Practices (last 10 years)

Stand #	Cutting Plan #	Treatment	Yield	Acres	Date
<u>1,2,3,4,5,6,</u>		<u>Selection &</u>	<u>697MBF +</u>	<u>150+/-</u>	<u>1995-2011</u>
<u>9,10,12,13</u>		<u>Shelterwood</u>			

Remarks: (if additional space needed, continue on separate page)

Total cut volumes taken from 8 cutting plans on record at DCR. Actual harvest volume may have been less.
 One cutting plan incorporated some area and volume not harvested under an earlier Cutting Plan.

Landowner Goals

BIDWELL HOUSE MUSEUM, 100 Art School Road, Monterey, MA

Please **check** the column that best reflects the importance of the following goals:

Goal	Importance to Me			
	High	Medium	Low	Don't Know
Enhance the Quality/Quantity of Timber Products*	X			
Generate Immediate Income			X	
Generate Long Term Income		X		
Produce Firewood			X	
Defer or Defray Taxes			X	
Promote Biological Diversity	X			
Enhance Habitat for Birds	X			
Enhance Habitat for Small Animals	X			
Enhance Habitat for Large Animals	X			
Improve Access for Walking/Skiing/Recreation	X			
Maintain or Enhance Privacy		X		
Improve Hunting or Fishing			X	
Preserve or Improve Scenic Beauty	X			
Protect Water Quality		X		
Protect Unique/Special/ Cultural Areas	X			
Attain Green Certification			X	
Other:				

*This goal must be checked "HIGH" if you are interested in classifying your land under Chapter 61/61A.

In your own words, describe your goals for the property:

The Bidwell House Museum property is important for historical, cultural, and ecological purposes. The property is owned by The Bidwell House, Inc., a 501(c)(3) non-profit educational organization. The 193± acres are open to the public year-round at no cost. The property includes the home of Rev. Adonijah Bidwell, the first minister to the new Township No. 1 (later Tyngham, now Monterey) which was settled beginning in 1739. The historic house is listed on the National Register of Historic Places, and house tours are available during the warm months for tours and programs.

The property also includes the site of the township's first meeting house, several 18th century roads, cellar holes and other remnants of several early settlers' homesteads, over sugaring house and sugar bush, over four miles of stone walls, an old stone cairn, charcoal hearths, overgrown orchards, and relics of centuries of overlapping land uses and practices. Loom Brook which flows along the western edge of the property was used as water supply for early mills.

The museum uses the woodlands on the property to "tell the stories" about land uses and practices over many centuries by Native Americans, European settlers, and subsequent occupants. The museum intends to use traditional forest management practices to provide for periodic harvesting of timber and encouraging a healthy woodland with a variety of habitats. In addition, the museum intends to manage the woodlands for interpretive trails with exhibits at various features such the cellar holes, stone walls, charcoal kilns, etc. The existing and new trails will also be open to the public for hiking, bird watching and nature education.

The forest stewardship plan should provide for a variety of habitats on an on-going basis, including mature woodlands, early successional woodlands that provide habitat for birds and other wildlife (including New England Cottontail), open meadows and agricultural fields, vista corridors, and others. In

the long term, the museum might seek to reopen some old overgrown pastures or tillage fields for historic interpretation as well as wildlife habitat enhancement. One or more barns or other out-buildings might be reconstructed.

Among the museum's specific goals and objectives are the following:

- conducting a forest health risk assessment, specifically focusing on ash stocking and potential for harvesting the ash in the near future before the trees die due to disease or invasive insects;
- creating more early successional habitat for birds and mammals;
- expanding the trail network, and possibly clearing part of an old colonial road (Boston-Albany Post Road)
- opening up some vistas;
- resurrecting an old apple orchard; and,
- pursuing a permanent Conservation Restriction on the property.

Due to the museum's uses of the woodlands for hiking, education, and historic preservation, the property is not intended to be used for hunting; however, fishing would be allowed. The trails will not be used for off-road recreational vehicles such as four-wheelers, motorcycles, or snow mobiles. Equestrian uses would be allowed where suitable.

Stewardship Purpose

By enrolling in the Forest Stewardship Program and following a Stewardship Plan, I understand that I will be joining with many other landowners across the state in a program that promotes ecologically responsible resource management through the following actions and values:

1. Managing sustainably for long-term forest health, productivity, diversity, and quality.
2. Conserving or enhancing water quality, wetlands, soil productivity, carbon sequestration, biodiversity, cultural, historical and aesthetic resources.
3. Following a strategy guided by well-founded silvicultural principles to improve timber quality and quantity when wood products are a goal.
4. Setting high standards for foresters, loggers and other operators as practices are implemented; and minimizing negative impacts.
5. Learning how woodlands benefit and affect surrounding communities, and cooperation with neighboring owners to accomplish mutual goals when practical.

Owner(s) (print) **The Bidwell House, Inc. (dba Bidwell House Museum)**

(This page will be included with the completed plan.)

Signature(s): Robert Hoogs

Date: 3-11-2019

Robert Hoogs, President, Board of Directors

Bidwell House Museum

Town: Monterey



Property Overview, Regional Significance, and Management Summary

Property Description

The Bidwell House Museum (BHM) property contains about 196 acres (195.87 acres per deed, 197.5 acres by scale of this forester's multi-source map) of mainly gently to moderately rolling terrain, with somewhat steeper slopes in the east, south, and west edges of the property. The 15 mapped forest stands, including the meadow west of the parking area, account for 190.3 acres; the remaining area of 7.2 acres (by scale from the attached Forest Map) includes the maintained grounds, parking area, and driveway.

The largest forest type occurring in several stands on the property is northern hardwoods (164.3 acres±), and hemlock-hardwoods (17.3 acres±), sugar maple (5.9 acres±), and abandoned field/meadow (2.8 acres±) types are all present. Most of the forest acreage contains a mix of small, medium, and large sawtimber.

Regional Significance

Monterey is a sparsely populated, rural, residential town. Most of the land was cleared for dairy or sheep farming in the 1800's, but it appears to be at least 75% forested now, and there are only a few working farms left. Many properties are managed, at least incidentally, for wood products, and a number of these are classified in chapter 61, 61A, or 61B. Only a handful of working farms are left, but the fact that they keep the land open (non-forested) provides for exceptional scenery. The market demand and value for houses and building sites is very high. The small village, with just a church, town hall, general store and a congregation of residences, is about a 1.5 mile south of the BHM property on Main Road (Route 23).

The land falls within the Housatonic River Watershed, as does nearly all land in Monterey. Water for residential use is obtained for the most part from individual, private wells or springs, though Monterey has a Water Company and a well source that serves a part of the town's center. Before reaching the Housatonic River, water flowing through the museum property drains primarily to Loom Brook, a substantial, 10-15 feet wide, rocky perennial stream with great scenic and wildlife habitat values (it is a documented cold-water fishery) that meanders along the west edge of the property.

Perhaps 20% of the land area in Monterey is in the expansive Beartown State Forest ownership, roughly one-half mile west of the museum property. The Monterey Preservation Land Trust (MPLT) and the Berkshire Natural Resources Council (BNRC) each own several parcels in the town totaling several hundred acres, and also hold conservation restrictions (CRs) on many other parcels. (MPLT owns roughly 900 acres, and holds CRs on roughly 1100 acres.) Both of these organizations own parcels adjoining Bidwell House Museum, and could possibly collaborate on trail systems and forest harvesting or habitat management projects in the future. The Schwartz property along the east

Owner(s) Bidwell House Museum

Town(s) Monterey

side of BHM has a CR held by both BNR and MPLT.

History (including disturbance)

It appears that the entire property was open farmland in the 1800s. The fields may have been somewhat more extensive, but much of the present forest was pasture, as evidenced by the many stone walls and the remnants of wire fencing along much of the perimeter. Most of the forest experienced some type of timber harvesting between the 1990s and 2011, when a large amount of primarily hardwood timber was logged. An ancient stone maple arch just off the north end of stand 7 and some large remaining sugar maples in stand 7 indicate that maple syrup production was undertaken. (See Cultural Resources for more.)

Cultural Resources

Cultural (man-made) resources observed on the property (in addition to the museum buildings – the 1700s home of the Reverend Adonijah Bidwell) are numerous and include remnants of wire fencing and many sections of stone wall, one or the other (or both) occurring along nearly most of the southerly and southwesterly property boundaries (see Forest Map), as well as surrounding small former pasture lots inside the property. The ancient Royal Hemlock Road runs northerly from the museum through the property and on to Jerusalem Road in Tyringham. There are stone remains of an ancient maple arch off the north end of Stand 7 (the sugarbush) noted above. The remains of the Boston-Albany Post Road – a perceptible cart road track partly flanked by stone wall sections - run completely across the property (see Forest Map). Along the north side of the Post Road, in stand 9, is a cellar that may have been the Reverend Bidwell's first home site. Another stone cellar is located in stand 2 at the north edge of the property. The first meeting house site – a surface stone foundation – is south of the Post Road in stand 14. A stone cairn in the southwest corner of stand 10 may have had Native American significance, though that has not been documented. Other mounds of stone in stands 9 and 13 may have resulted from typical pasture clearing efforts, but this also is speculation. A charcoal hearth in stand 5 is evidence of charcoal-making (common in the 1800s to early 1900s) – there are at least two other hearths not far off the property to the east.

Forest Health and Soils

For the most part, the soil is very rocky with some low ledge outcrops particularly on the scattered areas of steeper slope. The common soil types on the property are primarily Berkshire-Marlow Association and Peru-Marlow association (Berkshire County Soil Survey USDA, 1988). Both of these soil types are well suited to forest use, but limited for other agricultural uses due to stoniness or slope.

BmE – Berkshire-Marlow Association

This unit consists of very deep, well drained Berkshire and Marlow soils. These soils are sandy loams on the sides of hills and mountains. Berkshire soils are typically on the steeper and higher slopes, and Marlow soils are on the less steep and the lower slopes or in concave areas. Slopes range from 15-45% and boulders or stones cover from 1-15% of the surface. Rooting zone is deep in

Owner(s) Bidwell House Museum

Town(s) Monterey

Berkshire soils but restricted by a very hard very fine sandy loam substratum in Marlow soils. Marlow soils often have a seasonally perched high-water table at a depth of about 24 inches. Both soils are extremely to moderately acidic throughout. Potential productivity as woodland is high, with surface stones and high erosion potential the main concern (SCS p. 23).

PmC – Peru-Marlow association, rolling, extremely stony

These soils are on the sides and crests of glacial till uplands. Peru soils are very deep, acidic, moderately well drained fine sandy loams that occur on the lower parts of slopes or in slightly concave areas. Marlow soils are very deep, acidic, well drained fine sandy loams on the upper parts of slopes or in convex areas. Marlow soils have a seasonally high water table for brief periods in the winter and following prolonged rains. The root zone is restricted by the firm or very firm substratum. Potential productivity is moderate for sugar maple on Peru soils and for northern red oak on Marlow soils. The main management concern is the large stones at the surface (SCS p. 62).

Most of the property is mapped (in MassGIS) as having prime or state-important forest soils.

Forest health has been impacted noticeably by three factors:

- Black knot disease has caused some mortality of black cherry, and cankers that produce the wind-borne spores that spread the disease are evident on many living black cherry trees.
- White ash trees have suffered some decline and mortality (typical to the region) for undetermined reason that could be disease, environmental factors, or combinations of stressing factors. At this writing, emerald ash borer, a non-native insect, is present in the county, but is not responsible for current health decline of ash on the property. Widespread demise of ash is predicted by forest scientists studying this insect, so this becomes another consideration for harvesting ash soon.
- Beech bark disease is prevalent on mature beech trees in the region, but beech is not prominent in the overstory here. There is, however, a noticeable amount of beech, which is very tolerant of shade, in the seedling and sapling vegetation layers.

Nectria canker is present on some of the birch (as is typical), but not to an unusual degree. Harvesting infected trees that have usable products, as part of planned selection, salvage, or crop tree release cuttings, will reap some value from them while helping to reduce spread of disease.

The hemlock wooly adelgid is an insect causing health and mortality problems in the locality and region. Though it was not readily apparent on the property during the forest inventory, it could be present. White, cottony masses on the underside of hemlock needles or yellow-green discoloring of the normally dark green foliage can indicate infestation.

There is no apparent or known history of fire here.

Recreation

Owner(s) Bidwell House Museum

Town(s) Monterey

Page 6 of 73

Bidwell House Museum has a well-developed network of trails that particularly highlight the easterly portion of the property, where the majority of cultural (historic, man-made) resources are found. These are open to, and well used by, the public. BHM plans on extending the trail system. A report proposing some new trail locations follows the Management Recommendations section in this Plan.

Biodiversity

Refer to the “Stewardship Issues” section on Biodiversity following this Overview.

Wildlife

The property currently provides a large tract of primarily mature, mixed hardwood and softwood forest, though past logging has resulted in a somewhat uneven-aged structure in some stands. Surrounding lands appear to provide similar interior forest cover, though there are some wooded wetlands nearby to the east and northeast. Immediately north of the property is a large beaver pond that provides some open water/deep marsh habitat not otherwise found nearby. Loom Brook provides a perennial brook/cold-water fishery riparian habitat. Deer and wild turkey are common on the property.

Bird Habitat Characteristics

The large area of undeveloped forest is itself an important habitat opportunity, though increasing the diversity of forest growth stages, particularly young, dense forest patches, would enhance habitat for a variety of birds and other wildlife greatly. Presently, the nearly closed canopy favors interior forest birds, and there are few desirable dense patches of understory (0-5’ tall) and midstory (5-30” tall) vegetation. (Stand 6 does have some of these dense patches, but not expanses on many acres.) Snags (standing dead trees that provide perching, foraging, and cavity nesting sites) are present at least in low numbers, but there are few larger than 16” diameter in the much of the property. Coarse woody material (fallen trees, logs greater than 4” diameter) that provides perch sites and insect-feeding sites is fairly well distributed and abundant in much of the property, but fine woody material (piles of branches that are smaller than 4” diameter) that provide nesting sites and cover for certain low-nesting birds is absent or nearly so. Loom Brook, with its rocky bottom and protruding boulders, adds an important aquatic and riparian habitat that may attract Louisiana Waterthrush.

Throughout the property, there is a moderate amount of soft mast available from the many scattered black cherry trees, though there is little soft mast available from fruit-producing shrubs or briars such as blackberry. Stand 6 is the exception – it has significant amounts of blackberry, and many elderberry shrubs in the east edge. Hard mast is relatively available, as there are many red oak and beech trees in several stands (4, 6, 7, 13).

Rare and Endangered Species

At this writing, the MA Natural Heritage & Endangered Species Program (NHESP) maps do not show any Estimated Habitat for rare wildlife or Priority Habitat for rare species (including plants) on the property. The Beartown Mountain State Forest and the surrounding conservation land including

Owner(s) Bidwell House Museum

Town(s) Monterey

the majority of the BHM property form a large contiguous block of interior forest identified as Critical Natural Landscape in the NHESP BioMap2.

Wood Products

MA forest inventory data indicates that MA forests average 162 board feet of growth per acre annually. Though many variables such as disease, insect infestation, and storm damage can limit growth (and above-average sites and diligent forest management can improve growth), the data suggest that this 190+/- acres of forest might produce roughly 30,000 board feet per year.

Boundaries

All forest boundaries should be located, blazed and painted. Maintaining boundary line markings helps prevent unintentional trespass by abutters, and allows landowners to monitor and work on their own property with confidence. See Management Recommendations.

Management Summary

The owners' goals for this property include long term management for forest improvement and conservation, enhanced habitat for birds and other wildlife, improved access for walking and other recreation, and protection of scenic beauty, water quality, and special areas. Generating immediate income is a low priority; multiple-use management with overall concern for a healthy forest environment is the larger consideration. The goal of bird and other wildlife habitat improvement will blend easily with timber management concerns on this tract. An initial consultation with an invasive species control specialist should help guide the extent, priorities, and manner of control work that the owners will choose to pursue. Salvage of diseased, declining, and at-risk trees can be done in concert with crop tree release, individual tree selection, and group selection harvesting, which will create desirable openings of various sizes to initiate patches of dense regeneration. Patch cutting of several acres may be performed in the poorest timber stand to establish some young forest habitat that is currently lacking on the property. These types of harvesting will also result in increases of both coarse woody material and fine woody material – particularly important bird habitat features. The vast majority of the forest will still have 60-80% canopy closure after anticipated harvesting over the next many years, and wood roads will be left in walkable condition with water bars installed for erosion prevention. Dead trees (snags) as well as living trees with cavities will be retained for nesting and feeding uses by numerous birds and small mammals. Buffer zones with little or no cutting or equipment use will be maintained near Loom Brook to preserve its cold-water fishery status.

ABBREVIATIONS:

dbh diameter at breast height
MBF thousand board feet
cd cord

Owner(s) Bidwell House Museum

Town(s) Monterey

Forest Type Abbreviations:

AF Abandoned Field
BB Beech-Birch-Maple, also known as Northern Hardwoods association
HH Hemlock-Hardwoods association
RM Red Maple, or any wooded swamp (most wooded swamps have red maple as a species component)
SM Sugar Maple
WH White Pine-Hardwoods
WP White Pines

DEFINITIONS:

Basal Area - The cross-sectional area, measured 4.5 feet above ground, of all trees in the main overstory canopy, expressed in square feet per acre.

Site index - The height (in feet) of dominant trees at age 50 (age 50 at breast height). The higher the site index, the better the growing site. A site index of 50 is a relatively poor growing site; 60 is average to good, and 70 is very good. Since site index varies for individual species within a particular stand, site index is listed with respect to a species, abbreviated herein as follows: Hem = hemlock, RM = red maple, SM = sugar maple, WA = white ash, and WP = white pine.

Stand - A group of trees (usually 2 or more acres in area) having uniform species composition and size distribution.

Owner(s) Bidwell House Museum

Town(s) Monterey

Forest Stands

For the purposes of this report a forest stand is an easily defined area that is relatively uniform in composition, and structure, *and supports a particular suite of birds.*

Summary of the Forest Stands on your property

Stand	Forest/Habitat Type	Approx. Size (acres)	Notes
1	Hemlock-Hardwoods association	8.0	Uneven-aged, relatively mature hemlock-hardwoods stand dominated by red oak, red maple, and hemlock. Good growing site and timber quality. A few 40" diameter (dbh) red oak legacy trees south of brook.
2	Northern Hardwoods association	11.4	Even-aged, mature northern hardwoods stand dominated by 8-20" dbh beech, yellow birch, and red maple. Former pasture surrounding ancient house and barn foundations.
3	Hemlock-Hardwoods association	3.2	Hemlock, red maple, and red oak, mainly 10-18" diameter. There are two small potential vernal pools, and a small wet area with winterberry shrubs.
4	Northern Hardwoods Association with scattered red oak	24.7	Multi-aged, relatively mature hardwoods stand with scattered large red oak, sugar maple, and white ash of good quality. Logged 2010+/-, but not with young forest characteristics.
5	Northern Hardwoods Sapling-small pole	2.7	2-6" dbh white birch, pin cherry, striped maple, and American beech. Early successional tree species, but the stand has outgrown the young forest habitat stage.

Forest Stands

For the purposes of this report a forest stand is an easily defined area that is relatively uniform in composition, and structure, *and supports a particular suite of birds.*

Summary of the Forest Stands on your property

Stand	Forest/Habitat Type	Approx. Size (acres)	Notes
6	Northern Hardwoods association	36.5	Entirely hardwoods, 2-aged following 2011 shelterwood cut; low density overstory is mainly 10-24" dbh sugar maple and beech. Moderate to high density hardwood midstory has young forest characteristics in portions.
7	Sugar Maple	5.9	A mixed-aged sugar maple type with scattered beech and other hardwoods 8-30" dbh. Some large snags. Rocky, rough ground. Very visible from museum grounds.
8	Northern Hardwoods association	3.8	10-22" dbh sugar maple, black cherry, and white ash of good quality on good growing site. The stand wraps around the north and west edges of the museum grounds.
9	Northern Hardwoods association	11.4	Former pasture around an ancient cellar, includes some wooded wetland. Mainly 10-16" dbh ash, sugar maple, and red maple with few bigtooth aspen. 9a is an abandoned apple orchard – the trees still fruit.
10	Northern Hardwoods association	26.6	Sugar maple dominates, with some yellow birch, red oak, red maple, and others, 8-20" dbh range Sparse 36" legacy trees. Several seasonal stream channels flow westerly toward Loom Brook.

Forest Stands

For the purposes of this report a forest stand is an easily defined area that is relatively uniform in composition, and structure, *and supports a particular suite of birds.*

Summary of the Forest Stands on your property

Stand	Forest/Habitat Type	Approx. Size (acres)	Notes
11	Northern Hardwoods association	8.9	White ash, sugar maple, and black cherry, 10-20" dbh, fair quality trees on a good site flanking Loom Brook, a designated cold-water fishery.
12	Hemlock-Hardwoods association	6.1	Uneven-aged 8-22" dbh hemlock, red oak, red maple, and small amounts of white pine, beech, yellow birch, and white ash bordering Loom Brook.
13	Northern Hardwoods Association & scattered red oak	21.1	Multi-aged stand of red oak, sugar maple, red maple, white ash, and others. Dominant trees mainly 8-24" dbh (a few up to 36") and good quality. Very stony.
14	Northern Hardwoods association	17.2	Mature, even-aged stand of red maple, white ash, sugar maple, and other hardwoods 6" to 32" dbh, with 6-16" trees most plentiful. Timber quality is fair to very good. Very visible along west side of museum entrance road.
15	Meadow	2.8	Abandoned field with grasses, goldenrod and other herbaceous plants. This is available for outdoor events, but is largely a meadow habitat that is kept open by brush mowing.
	(Scaled Stand Areas)	Total 190.3 acres)	

STAND DESCRIPTIONS

OBJ	STDNO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
-----	-------	------	----	-------------------	-------	--------	------------

easterly to Curtin Road. Southeast of Curtin Road, it is maintained as a walking trail (“Royal Hemlock Trail”) by Bidwell House Museum.

Forest health is generally good. Red oaks, though scattered, tend to have dominant crowns and very good timber form. Black cherry is very sparse in this stand, but black knot disease is present in some cherry trees throughout the property, and spreads easily via wind-blown spores. Fortunately, there are few non-native invasive plants present throughout the property, and none was noted in stand 1.

The soil is very stony – though easy to traverse for walking and logging. The soil types, as mapped and described in Berkshire County Soil Survey, USDA, 1988, are Berkshire-Marlow association (15-45% slopes, steep, extremely stony) and Peru-Marlow association, with gradual to moderate (5-15%, rolling, extremely stony) slopes. These soils tend to be deep, rocky, and well drained, with variable aspect, as the perennial stream exiting the large beaver pond north of Royal Hemlock Road transects the stand.

This stand was harvested conservatively around 2010, removing mainly scattered large red oak.

Current Habitat Conditions:

Stand 1 is an uneven-aged, relatively mature (estimated age 70-100 years) hemlock-hardwoods stand dominated by red oak, red maple, and hemlock. Each of these species compose roughly 25% of the overstory basal area. Most of the stand is surrounded by forest, with a large beaver pond immediately north of the property, and a substantial (8-10’ wide) stone-bottom perennial stream transecting the stand. The overstory is estimated to be 80-100 feet high, with at least 80% canopy closure.

The midstory (woody vegetation 5-30’ tall) is variable, but most parts of the stand have a moderate density of beech saplings with some sugar maple and hemlock, resulting in roughly 50-75% foliar coverage. Understory (herbaceous and woody, 0-5’ tall) plants form a sparse to low density ground cover that includes woodfern, partridgeberry, and some beech and yellow birch seedlings. Numerous other herbaceous plants undoubtedly occur here, but were dormant at the time of the field visits in December-February.

Coarse woody material (4” diameter and larger) is moderately to abundantly distributed in the stand, resulting from logging around 2010. Fine woody material (clusters or piles of twigs and branches smaller than 3” diameter) is sparse to absent. A number of dead trees (snags) are present, and scattered declining trees are present in adequate numbers for good habitat. Leaf litter is adequate throughout, and proximity to the wooded swamp inclusion and the stream affords beneficial moist litter conditions.

Soft mast is scarce throughout the stand, provided by just a few black cherry trees. Hard mast is readily available from the many dominant red oaks, and small, dry seeds are available from red maple and hemlock.

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 STD= stand AC= acre MSD= mean stand diameter MBF= thousand board feet BA= basal area VOL= volume

Owner(s) Bidwell House Museum

Towns(s) Monterey

STAND DESCRIPTIONS

OBJ	STDNO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
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The desired future condition is an uneven-aged stand of good quality hemlock-hardwoods, with less presence of beech in the understory and midstory, and a greater proportion of sugar maple, yellow birch, and hemlock regeneration. Individual tree selection cutting and group selection cutting removing scattered groups of 0.05 to 0.5 acres will accomplish conservation of wood products plus creation of patches of denser understory vegetation suited to nesting and foraging habits of many songbirds.

Stand 1 - Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Interior forest condition	Uneven-aged management – Single Tree and Small Group Selection Harvest (after 2029)	Black-throated Green Warbler Black-throated Blue Warbler Black-and-white Warbler Eastern Wood-Pewee Veery (Stand 1 adjoins wetland) Wood Thrush Yellow-bellied Sapsucker
Increased number & size of canopy gaps	Uneven-aged management – Group Selection Harvest to encourage regeneration other than beech	Eastern Wood-Pewee Yellow-bellied Sapsucker Black-throated Blue Warbler Black-and-White Warbler
Increased understory density	Uneven-aged management – Group Selection Harvest	Ruffed Grouse Veery Black-and-White Warbler Black-throated Blue Warbler
Increased fine woody material (FWM) in piles	Uneven-aged management – Group Selection Harvest	Veery, Black-and-White Warbler

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Current Habitat Conditions description

Stand 2 is a relatively even-aged, mature (estimated age 60-80 years) northern hardwoods stand dominated by 8-20" dbh trees that are 80-100 feet high. Crown closure ranges 70-100% with few canopy gaps from the logging. Coniferous trees – mainly white pines - are scarce. The midstory has a moderate but patchy density of beech saplings, and the understory has a low density of primarily beech seedlings with some woodfern and other herbaceous plants.

Coarse woody material is abundant from past logging; fine woody material is scarce. Dead snag trees in the 12-17" dbh range are common, but larger snags are lacking. Leaf litter is adequate throughout.

Soft mast is sparsely available throughout the stand, provided by just a few black cherry trees. Hard mast is readily available from the many dominant beech and scattered red oaks, and small, dry seeds are available from red maple, sugar maple, and white pine.

The desired future condition is an uneven-aged stand of fair to good quality northern hardwoods and dense patches of understory and midstory other than beech.

Desired Stand Conditions

Condition	Action	Responsibility birds that my benefit
Uneven-aged hardwood forest	Infrequent selection harvest	Veery, Black-and-White Warbler, Ruffed Grouse Yellow-bellied Sapsucker
Increase tree species diversity	Group selection harvest	All upland birds

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Towns(s) Monterey

STAND DESCRIPTIONS

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The midstory has a light to moderate but patchy density of mixed hemlock, beech, and other hardwood saplings; the understory has a low density of primarily beech and other hardwood seedlings.

Non-native invasive plants were not observed.

Coarse woody material is moderately distributed in the stand, but fine woody debris is wanting. Dead snag trees are common, though irregularly distributed, and scattered declining trees are present in adequate numbers for good habitat. Leaf litter is adequate throughout.

Soft mast is sparse, but available to a small extent from the few black cherry and small group of winterberry.

The desired future condition is an uneven-aged wooded wetland with no non-native, invasive plants. Other than natural disturbances, and possibly control of invasive plants, no management is anticipated.

Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Interior forest condition	None, eventual selection harvest to develop more understory and midstory density.	Black-throated Green Warbler Veery Black-and-White Warbler Canada Warbler

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STAND DESCRIPTIONS

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STEW 4 BB 24.7 14” 83sqft 7 MBF+
8 cords 65-70(RO)

Stand 4: Northern Hardwoods association with Red Oak

General Description:

This northern hardwoods stand covers some of the high plateau near the Royal Hemlock Trail and the moderate westerly slope leading down to Loom Brook. Substantial logging (heavy thinning or shelterwood preparation cut) was done around 2009-2011, leaving a now multi-aged stand of red oak (about 30% of total basal area), sugar maple (30%), white ash (10-15%), red maple (10%), and sparse beech, yellow birch, and black cherry. The overstory trees range from 10” to 22” dbh. Timber quality is fair to very good – the scattered large, dominant oaks and other hardwoods are tall and straight, but smaller trees growing in intermediate canopy position tend to be only fair. Acceptable growing stock basal area is estimated to be 80% of the total. The soil survey shows Peru-Marlow association in the gently rolling easterly part of the stand, and Berkshire-Marlow association in the steeper westerly edge. Surface stones tend to be scattered and low, so, once in the stand, walking and machinery operation are not difficult. The growing site quality is above average.

Forest health is generally good; no invasive plants were noticed, though there are a few Japanese barberry to the south in stand 10. At this writing, emerald ash borer, a non-native insect, threatens to destroy our ash trees, so pre-emptive harvesting should be considered.

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Current Habitat Conditions:

Stand 4 is a multi-aged, relatively mature hardwoods stand with scattered large red oak, sugar maple, and white ash of good quality. The overstory is estimated to be 80-100 feet high, with about 70% canopy closure. A number of small canopy gaps (0.1 to 0.5 acre) resulted from logging around 2010. The midstory (woody vegetation 5-30' tall) has a medium density (50-75% coverage) primarily of sapling beech, with some striped maple, sugar maple, yellow birch, and hemlock. There is a low-density understory mainly of beech seedlings, with irregular distribution of Christmas fern (and likely many other herbaceous plants).

Coarse woody material (4" diameter and larger) is abundantly distributed in the stand; fine woody material is wanting. Dead snags and cavity trees are sparse, and most are in the 6-16" dbh range. Leaf litter is adequate throughout.

Soft mast is sparse, provided by scattered black cherry trees and occasional blackberry that occurs in canopy gaps. Many large-crowned red oaks and few overstory beech provide significant amounts of hard mast. Sugar maple, white ash, and red maple provide a large source of seeds as additional wildlife food.

The desired future condition is an even-aged stand of good quality northern hardwoods with a red oak component, as red oak and the present hardwoods are well-suited to the site. Though logging occurred around 2010, the forest cover and gentle terrain provide good opportunity to create young forest habitat by cutting a patch of at least 5 acres and possibly 10-12 acres.

Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Creation of young forest condition	Patch clearcut (with 10-20% canopy retention) initially of about 5-10 acres, with subsequent patch cuts	Chestnut-sided Warbler Eastern Towhee White-throated Sparrow Ruffed Grouse American Woodcock Northern Flicker
Increased understory density	Patch clearcut (with 10-20% canopy retention)	(as above)
Increased number of snags	Girdle large, living cull trees to recruit snags	Yellow-bellied Sapsucker Northern Flicker
Increased coarse woody material	Cutting/harvesting	Ruffed Grouse
Increased fine woody material (FWM) in piles	Cutting/harvesting	Black-and-white Warbler (and many other insect eaters)

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STEW 5 BB 2.7 3" 50sqft 6 cords 60(WB)

Stand 5: Northern Hardwoods association sapling-pole

General Description:

This young northern hardwoods stand is composed of large sapling and small poles (2-6" dbh). Density is relatively high, with estimated crown closure of 70%; the dominant species are white birch (about 50% of the basal area), pin cherry, striped maple, and American beech. This is an even-aged patch that originated after a cutting (1990s?) that may have been done to demonstrate charcoal production. The ancient charcoal hearth at the north edge of the stand – a typical leveled, 30' diameter circle with bits of charcoal present under the leaf cover – is the only hearth noted by this forester on the Bidwell House property. (There are at least two others a short distance southeasterly on adjoining property.) The growing site is good, the soil survey showing Berkshire-Marlow association. The terrain slopes gently to moderately to the east, with some areas being extremely stony and others not.

Forest health is generally good. No invasive plants were noted.

Current Habitat Conditions:

This even-aged sapling-pole stand has already outgrown the beneficial 0-20 year young forest habitat stage. The main canopy is now growing out of the midstory level (maximum height of

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Rabbit tracks & pellets

STEW	6	BB	36.5	14"	54sqft	4.0 MBF+ 6 cords	70(SM)
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Stand 6: Northern Hardwoods association, low canopy density

General Description:

A shelterwood cut around 2011 removed roughly half of the canopy, allowing dense regeneration to establish in most of the stand. The remaining overstory trees are mainly 10-24" and irregularly dispersed, with many canopy gaps up to 0.5 acre in size. Sugar maple comprises about half of the overstory basal area, beech about one-quarter, and minor components are red oak, yellow birch, white ash, red maple, and black birch.

The soil types are Berkshire-Marlow association and Peru-Marlow association, the steeper Berkshire-Marlow type occurring mainly on the east-facing slope within 300-500' of the east boundary. Parts of this easterly zone are difficult to traverse due to an abundance of large surface stones. The Peru-Marlow type is on the gently rolling hilltop plateau along Royal Hemlock Trail and to the west of it and, except for dense vegetation, tends to be easier to traverse. The Turkeybush Trail transects the west part of the stand, and the Sugarbush Trail swings out a bit east of the old sugarbush (stand 7) into the southerly tail of stand 6. An ancient maple arch with a tall chimney is about 50' east of the Royal Hemlock Trail at the intersection of the Sugarbush Trail.

Forest health is generally good. Most of the beech are infected with beech bark disease. No invasive plants were noted. Timber quality and growing site are both above average. Stand 6a, about 2 acres along Art School Road, is a denser version of stand 6, as a mainly uncut buffer was retained along the road when logging was last done.

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OBJ	STDNO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
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Stand 6 is a two-aged northern hardwoods forest stand, unique to the property in that it has some young forest characteristics resulting from 2011+/- shelterwood cutting. Scattered large (18-24" dbh) overstory trees are of good quality, and the small proportion that are of poor quality either have cavities or will serve as beneficial snag trees as they decline. Overstory height is 80-100', with canopy closure ranging 30-70% and numerous small canopy gaps. The midstory varies from moderate to very high density, and contains beech (dominant in many areas), yellow birch, and small amounts of sugar maple, black birch, white birch, pin cherry, and black cherry. Understory plants form a sparse to moderate density ground cover that includes hardwood seedlings (beech and others), blackberry (especially in canopy gaps), and elderberry in select spots -particularly east and northeast of the maple arch, near the east boundary.

Coarse woody material is abundantly distributed in the stand; fine woody material is generally sparse. Leaf litter is adequate throughout.

Soft mast is available throughout the stand, provided by blackberry, clusters of elderberry, and sparse black cherry trees.

In December 2018, rabbit tracks and pellets were noted about 100' west of the maple arch. It is not known whether this was Eastern cottontail or New England cottontail.

The desired future condition is an even-aged stand of good quality northern hardwoods, with sugar maple predominating but other species – especially yellow birch, black birch, and red oak - still present, and with far less beech regeneration. Overstory removal on portions of the stand, treating at least 5 acres at a time, may be done in two or more stages, but can wait up to 10 years before beginning. This stand still has some beneficial young forest habitat characteristics.

Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Creation of young forest condition	Patch clearcut (with 10-20% canopy retention) initially of about 5-10 acres, with subsequent patch cuts	Chestnut-sided Warbler Eastern Towhee White-throated Sparrow Ruffed Grouse American Woodcock Northern Flicker
Increased understory density	Patch clearcut (with 10-20% canopy retention)	(as above)

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Current Habitat Conditions:

Stand 7 is a mixed-aged sugar maple forest type, unique to the property in that it has many large sugar maples – a few apparently healthy ones, a few live cavity trees, some large dead snags, and a few dead, fallen ones. The large snags and live cavity trees afford denning and nesting opportunities that are uncommon in most forest properties. Pileated woodpeckers feed here. The overstory is at least 80 feet high, with at least 80% canopy closure.

The midstory (woody vegetation 5-30' tall) has a moderate density of mainly beech saplings with some sugar maple, striped maple, and other hardwoods. The understory has a low density of beech and sugar maple seedlings.

Coarse woody material is plentiful in the stand, but fine woody material is generally absent. Leaf litter is adequate throughout.

Soft mast is lacking in the stand, but hard mast (nuts) is available from beech and the sparse red oaks, and seeds are available from the maples and ash.

The desired future condition is an uneven-aged stand of good quality northern hardwoods, with sugar maple predominating but other species still present, and with a greater proportion of sugar maple regeneration. This stand is quite visible as one approaches the museum buildings, and the sugar maples provide vivid fall foliage.

Stand 7

Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Interior forest condition	Uneven-aged management – Single Tree Selection Harvest; no harvest for 10 years+	Wood Thrush Yellow-bellied Sapsucker Black-throated Blue Warbler Black-and-White Warbler

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The midstory has a light to moderate density of sugar maple with few beech and other hardwood saplings. The understory is quite open, with a light scattering of sugar maple, black cherry, and other seedlings.

There is a moderate amount of coarse woody material; fine woody material (clusters or piles of twigs and branches smaller than 3" diameter) is generally absent. Dead trees (snags) are sparsely scattered but mainly under 17" dbh, and scattered declining trees are present in adequate numbers for good habitat. Leaf litter is adequate throughout.

Soft mast is present throughout the stand, provided by many black cherry trees, and sugar maple and ash provide dry seeds.

The desired future condition is an even-aged stand of good quality northern hardwoods, with a greater proportion of sugar maple regeneration and few or no invasive plants. Little or no management would normally be suggested, but pre-emptive cutting of many ash trees to avoid mortality by emerald ash borer may be wise to limit the hazard of dead, falling trees where visitors walk.

Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Interior forest condition	Crop tree release with canopy gap formation. (Management by pre-emptive cutting of ash.)	Eastern Wood-Pewee Wood Thrush Yellow-bellied Sapsucker Black-throated Blue Warbler Black-and-White Warbler

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Apple trees in 9a

STEW	9	BB	11.4	13"	85sqft	4.6 MBF+ 10 cords	65(RM)
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Stand 9: Northern Hardwoods association, moist to wet

General Description:

White ash makes up about 50% of the basal area; sugar maple and red maple are common, and bigtooth aspen and apple are minor components. Apple trees are primarily in a small abandoned orchard - area 9a on the Forest Map - that is quite shaded by tall, surrounding trees. Overstory tree diameters range 6-20", with the majority in the 10-16" range. Formerly pasture, logging in much of the stand around 2010 effectively thinned the overstory but maintained somewhat uniform canopy closure.

The growing site is reasonably good, the soil survey showing Berkshire-Marlow association, but much of the stand appears to have seasonally high water table with small areas of wooded wetland particularly in the center of the stand. The terrain slopes gently to moderately to the west, with some areas being extremely stony and others not.

Timber quality is generally only fair, though there is a small proportion of high quality, straight stems. The predominant ash and sugar maple appear to be stressed by the high water table; some die-back of canopy branches and spotty tree mortality has occurred. A very few invasive plants

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were spotted – a few bittersweet vines and one or more Japanese barberry shrubs just south of the apple orchard, and a couple of barberry shrubs about 200’ north of the cellar.

Important features in Stand 9 include the old stone foundation (cellar hole) of what is thought to be the Reverend Adonijah Bidwell’s first house, the Cellar Hole Trail, and a portion of the historic Boston-Albany Post Road. A 1940s aerial photo shows a narrow clearing around the cellar and running east to the existing meadow. Three stone piles closely arranged in the northeast part of the stand (see Forest Map) may have been the result of pasture clearing, though their alignment and differing sizes is curious.

Current Habitat Conditions:

Stand 9 is a mainly even-aged northern hardwoods small sawtimber stand with wooded wetland inclusions. The midstory (woody vegetation 5-30’ tall) has a medium to high density of hardwood saplings that varies in composition - beech saplings are in most parts, but sugar maple, black cherry, striped maple, and others also are present.

The patchy understory (light in some spots, dense in others) plants include some beech and striped maple seedlings, but also blackberry, maleberry, and black cherry.

There is a moderate amount of coarse woody material distributed in the stand; fine woody debris is very sparse. Leaf litter is adequate throughout.

Soft mast is available from blackberry and to some extent the apple trees in area 9a. Some scattered black cherry trees also are in the overstory, as well as some red oaks (contributing hard mast) in the edges of the stand.

The desired future condition is an even-aged stand of good quality northern hardwoods, with dense groups of mixed regeneration and dense areas of midstory – and no invasive plants.

For the 10-year period of this plan, little treatment is anticipated except for invasive species control and monitoring, and possibly releasing the apple trees from heavy shade and pruning to improve health and fruiting.

Stand 9 Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Interior forest condition	No management – Single Tree Selection Harvest; no harvest for 10 years+	Yellow-bellied Sapsucker Black-throated Blue Warbler Black-and-White Warbler Veery

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moderately (roughly 15%) to the west and there are several small, seasonal stream channels that flow westerly toward Loom Brook.

Forest health is generally good. A very few invasive plants were noted – mainly Japanese barberry. A cluster of about 6 barberry shrubs is present on a skid trail about 50' west of the northwest corner of stand 9, and a few more are present in the south end of stand 10. A small cluster of common reed (*phragmites*) was found at a seep about 100' west of the stone cairn, and a few multiflora rose shrubs are about 150' north of the cairn in the southeast corner of the stand.

Current Habitat Conditions:

Stand 10 is an even-aged, relatively mature northern-hardwoods stand dominated by 6-20" dbh trees. The midstory has a medium density of beech, sugar maple, and few yellow birch and other hardwood saplings. The understory (herbaceous and woody, 0-5' tall) is variable, with sparse to moderate density seedlings of beech, sugar maple, and spotty occurrence of white ash and black cherry. Blackberry is present in most areas, and is abundant in spots. Herbaceous plants include Christmas fern, woodfern, and likely many others.

There is abundant coarse woody material distributed in the stand. Fine woody debris is wanting, though some is present from tops of dead fallen trees. Dead snag trees are sparse, but there are many greater than 18" dbh, and there are many large, living trees with cavities. Leaf litter is adequate throughout.

Soft mast is present throughout – especially blackberry, but also some very sparse black cherry.

The desired future condition is an even-aged stand of good quality northern-hardwoods, with no invasive plants. For the 10-year period of this plan, no treatment is anticipated except for invasive species control.

Stand 10

Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Interior forest condition	No harvest for 10 years+ – Invasive plant control	Wood Thrush Yellow-bellied Sapsucker Black-throated Blue Warbler Black-and-White Warbler

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Owner(s) Bidwell House Museum Town(s) Monterey

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Loom Brook

STEW	11	BB	8.9	16"	100sqft	6 MBF+ 11 cords	70(SM)
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Stand 11: Northern Hardwoods association along Loom Brook

General Description:

This long, narrow stand encompasses most of the riparian zone of Loom Brook within the property, and spans all of the frontage along Beartown Mountain Road. It has been maintained as an uncut forest buffer zone and filter strip for decades. White ash, sugar maple, and black cherry are the main species in the overstory, each comprising 20-30% of the basal area. Minor components (roughly 3-7% of basal area each) are red maple, yellow birch, white pine, beech, and red oak. The mature, even-aged canopy trees are mainly in the 10-20" dbh range, though there are many larger trees (a very few as large as 40" dbh) well scattered in the stand. The growing site is very good, but timber quality is generally only fair - roughly 50% of the overstory trees (and basal area) is "acceptable growing stock" (AGS) for sawlog products. There are some individual trees with very good timber form (tall, straight, with no low branches), but many trees are crooked, or have low forks or branches low on the trunk – traits typical of trees that originated on abandoned pasture.

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The soil survey shows Berkshire-Marlow association (BmE,, steep, very deep, well drained, extremely stony). West of Loom Brook, the terrain slopes moderately (15%+) to the east, down from Beartown Mountain Road. East of Loom Brook, there is a nearly flat terrace along the brook before the ground rises gently (5-10% westerly slope). The ground surface has scattered large stones, but not to an extent to make walking difficult.

Forest health is generally good, though several of the black cherry trees scattered throughout the stand have black knot disease. Ash trees are at risk of loss to emerald ash borer. Only one invasive plant – a Japanese barberry - was noted east of the Brook, near the center of the stand.

The ancient Boston Albany Post Road crosses the stand and continues northwesterly across Beartown Mountain Road. The old road route is not discernable in stand 11 or in Stand 10, as there are no stone wall segments along it there. Other cultural features include the stone wall at the narrow north border of the stand, and what appear to be old carriage parts (narrow metal wheel rim, leaf springs, axle) along the west property boundary see Forest Map).

Current Habitat Conditions:

Stand 11 is an even-aged northern hardwoods sawtimber stand with 80-100% canopy closure that shades Loom Brook, identified by Massachusetts Division of Fisheries & Wildlife (DFW) as a cold-water fishery. The midstory (woody vegetation 5-30' tall) has a light to moderate density of beech saplings with some sugar and black cherry.

The light density understory (herbaceous and woody plants 0-5' tall) contains sparse seedlings of beech, sugar maple, and black cherry; few hazelnut and hobblebush shrubs; and woodfern and partridgeberry.

There is a high amount of coarse woody material distributed in the stand, as many smaller hardwoods have died from competition and fallen to the ground over time. Fine woody debris is generally lacking. Leaf litter is adequate throughout. Adequate dead snags are present in a range of diameters.

Soft mast is available from the scattered black cherry trees present, and seeds are available from the ash and maples.

The desired future condition is an even-aged stand of good quality northern hardwoods. The main concern is maintaining a dense forest canopy to shade Loom Brook.

For the 10-year period of this plan, little treatment is anticipated except for monitoring of invasive plants. Pre-emptive harvesting of many ash trees would be challenging along the brook, and dead or dying ash in this location will not pose a substantial hazard for visitors, as no trails exist or are anticipated here.

OBJECTIVE CODE: CH61 = stands classified under CH61/61A/61B STEW= stands not classified under CH61/61A/61B
 STD= stand AC= acre MSD= mean stand diameter MBF= thousand board feet BA= basal area VOL= volume

Owner(s) Bidwell House Museum

Towns(s) Monterey

STAND DESCRIPTIONS

OBJ	STDNO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
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The soil survey shows Berkshire-Marlow association, and most of the stand has a very stony surface. The growing site quality is above average. Within 500' of Carrington-Battelle Road, much surface stone was used in stone walls, and that area appears in a 1944 aerial photo to have had very young forest growth (younger than the remainder of stand 13), including dense young pines in area 13a.

Forest health is generally good; very few invasive plants were noticed, including a few Japanese barberry and multiflora rose shrubs. At this writing, emerald ash borer, a non-native insect, threatens to destroy our ash trees, so pre-emptive harvesting of ash should be considered.

Important cultural features include a number of stone walls, the "Stone Wall Loop" trail, and a 20' diameter mound of stones (see Forest Map). A 9" dbh American chestnut (living, but diseased with chestnut blight) was found in the southwest part of the stand.

Current Habitat Conditions:

Stand 13 is a multi-aged, relatively mature hardwoods stand with scattered large red oak, sugar maple, red maple and white ash of good quality. The overstory is estimated to be 80-100 feet high, with about 70% canopy closure. A number of small canopy gaps (0.1 to 0.5 acre) resulted from logging done around 2006. The midstory (woody vegetation 5-30' tall) has a varying density (50-100% coverage) primarily of sapling beech, sugar maple, yellow birch, black birch, and few hophornbeam and white birch. There is a low-density understory mainly of beech seedlings, with irregular distribution of blackberry, maple-leaved viburnum, Christmas fern, and likely many other herbaceous plants.

Coarse woody material (4" diameter and larger) is moderately to abundantly distributed in the stand; fine woody material is wanting. Dead snags and cavity trees are sparse, but range 6-24" dbh. Leaf litter is adequate throughout.

Soft mast is sparse, provided by scattered black cherry trees and occasional blackberry that occurs in canopy gaps. Many large-crowned red oak and few overstory beech provide significant amounts of hard mast. Sugar maple, white ash, and red maple provide a large source of seeds as additional wildlife food. A couple of seeps near the jog in the south boundary allow turkeys to graze on some herbs in the winter.

The desired future condition is an even-aged stand of good quality northern hardwoods with a red oak component, as red oak and the present hardwoods are well-suited to the site. Though logging occurred around 2006, the forest cover and gentle terrain provide good opportunity to create young forest habitat by cutting a patch of at least 5 acres and possibly 10-12 acres.

Stand 13 Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Creation of young forest	Patch clearcut (with 10-	Chestnut-sided Warbler

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STAND DESCRIPTIONS

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This northern hardwoods stand occupies a large area south of the museum grounds, all along the west side of the museum entrance road and part-way down Carrington-Battelle Road. No commercial logging has been done here for several decades; the stand encompasses many cultural features including a large network of stone walls, walking trails, and the site of the first meeting house. The present stand is a mature, even-aged stand of red maple (about 30% of total basal area), white ash (25%), sugar maple (15%), and very minor components of black cherry, yellow birch, red oak, white birch, white pine, and beech. The overstory trees range from 6" to 32" dbh, with 6-16" trees most plentiful. Timber quality is fair to very good – some of the dominant hardwoods are tall and straight, but smaller trees growing in intermediate canopy position tend to be only fair in form. Acceptable growing stock basal area is estimated to be 60% of the total.

The soil types are Berkshire-Marlow association and Peru-Marlow association, the steeper Berkshire-Marlow type occurring mainly on the south and southwest-facing slopes in the southerly parts of the stand. The growing site quality is above average. Soils are extremely stony with some low ledge outcrop, but much surface stone was used in stone walls. There is a vernal pool along the north side of the Boston Post Road, perhaps 100' west of the Meeting House Trail.

Forest health is generally good; no invasive plants were noticed. At this writing, emerald ash borer, a non-native insect, threatens to destroy our ash trees, so pre-emptive harvesting should be considered.

Current Habitat Conditions:

Stand 14 is an even-aged, relatively mature hardwoods stand that originated on former pasture. The overstory is estimated to be 80-100 feet high, with about 90% canopy closure. The midstory (woody vegetation 5-30' tall) has a varying density (50-100% coverage) primarily of sapling beech, with some sugar maple and other hardwoods. There is a low-density (10-25% coverage) understory mainly of beech seedlings.

Coarse woody material (4" diameter and larger) is moderately to abundantly distributed in the stand; fine woody material is wanting. Dead snags and cavity trees are sparse, but range 6-24" dbh. Leaf litter is adequate throughout.

Soft mast is sparse, provided by scattered black cherry trees in most of the stand. Sparse large-crowned red oaks and few overstory beech provide significant amounts of hard mast. Sugar maple, white ash, and red maple provide a large source of seeds as additional wildlife food.

The desired future condition is an even-aged stand of good quality northern hardwoods with a small red oak component, as these hardwoods are well-suited to the site. This is a very visible part of the museum property, with respect to presence of trails and road frontage. Though logging has been avoided here in the past, harvesting much of the ash now seems to be in the best interest of safety.

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Owner(s) Bidwell House Museum

Towns(s) Monterey

STAND DESCRIPTIONS

OBJ	STDNO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
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Stand 14 Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Interior forest condition	Uneven-aged management – Single Tree Selection Harvest; pre-emptive harvest of ash	Black Throated Blue Warbler Veery Wood Thrush Yellow-bellied Sapsucker
Increased number & size of canopy gaps	Crop tree release with canopy gap formation	Yellow-bellied Sapsucker Black-throated Blue Warbler Black-and-White Warbler Eastern Wood-Pewee
Increased understory density	Uneven-aged management – small group selection harvest	Ruffed Grouse Veery Black-and-White Warbler Black-throated Blue Warbler
Increased coarse woody material (CWM)	(Any harvesting will result in increased CWM)	Ruffed Grouse Ovenbird, many others
Increased fine woody material (FWM) in piles	Uneven-aged management – small group selection harvest	Veery Black-and-White Warbler

STEW 15 AF 2.8 0” 0sqft none 70RM

Stand 15: Abandoned Field

General Description:

Stand 15 is mostly an abandoned field vegetated with grasses, goldenrod and other herbaceous plants. This is available for outdoor events, but is largely a meadow habitat that is kept open by brush mowing.

The terrain is nearly flat to gently sloping (0-5% +/-) to the southwest, though much of the stand is nearly free of surface stones due to past agricultural use. The soil type is mapped as Peru-Marlow association.

Current Habitat Conditions:

Stand 15 is the only field on the property that has reverted to goldenrod, grasses, and “weeds.”

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Owner(s) Bidwell House Museum

Towns(s) Monterey

STAND DESCRIPTIONS

OBJ	STDNO	TYPE	AC	MSD OR SIZE-CLASS	BA/AC	VOL/AC	SITE INDEX
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The desired future condition is an abandoned field and upland brush vegetative cover, providing cover and feeding (insects and vegetation) opportunities for songbirds, deer, turkey, woodcock and other wildlife, as well as habitat for pollinators (bees, butterflies, moths...).

Desired Stand Conditions

Condition	Action	Responsibility birds that may benefit
Early successional habitat – grasses & forbs, plus upland shrubs & seedlings	Periodic late-season mowing	American Woodcock White-throated Sparrow Brown Thrasher

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Owner(s) Bidwell House Museum

Towns(s) Monterey

Management Recommendations

For the purposes of this report management practices with an object code of *CH61* are required to be accomplished as a commitment to the Massachusetts Current Use Program. Practices with object codes of *STEW* are voluntary and are provided as suggestions of activities that can help you achieve your woodland objectives.

Summary of the Management Recommendations for your property

Stand	Object Code	Recommendation	Value/Cost/ Cost Sharing opportunities	Acres	Timing
4	Stew	Patch Cut for young forest habitat	Possible NRCS* cost-share; goal is no net cost	10+/-	2020-25
	Stew	Sanitation cut – pre-emptive cut of ash	Possible net income	22+/-	2020-22
7	Stew	Invasive plant control	Possible NRCS-EQIP funding	1	2020-22
8	Stew	Sanitation cut – pre-emptive cut of ash	Goal is no net cost; Possible net income	3+/-	2020-22
9	Stew	Sanitation cut – pre-emptive cut of ash	Goal is no net cost; Possible net income	5+/-	2020-22
	Stew	Invasive plant control	Possible NRCS-EQIP funding	2+/-	2020-22
9	Stew	Mast Tree Release	Possible NRCS-EQIP funding, but some net cost	1+/-	2020-22
10					
	Stew	Invasive plant control	Possible NRCS-EQIP funding	2+/-	2020-22
	*NRCS has	established funding programs.	Other sources may	be available.	

Management Recommendations

For the purposes of this report management practices with an object code of *CH61* are required to be accomplished as a commitment to the Massachusetts Current Use Program. Practices with object codes of *STEW* are voluntary and are provided as suggestions of activities that can help you achieve your woodland objectives.

Summary of the Management Recommendations for your property

Stand	Object Code	Recommendation	Value/Cost/ Cost Sharing opportunities	Acres	Timing
11					
	Stew	Invasive plant control	Possible NRCS-EQIP funding	1+/-	2020-22
13	Stew	Patch Cut for young forest habitat	Possible NRCS* cost-share; goal is no net cost	5-10+/-	2020-25
	Stew	Invasive plant control	Possible NRCS-EQIP funding	10+	2020-22
13	Stew	Sanitation cut – preemptive cut of ash	Possible net income	10+/-	2020-22
14	Stew	Sanitation cut – preemptive cut of ash	Possible net income	15±	2019-21
15	Stew	Meadow mowing	Net cost	2.8+	Annually
All					
	Stew	Invasive plant monitoring	Net cost, or volunteers	All	Every other year

MANAGEMENT PRACTICES
to be done within next 10 years

OBJ	STD NO	TYPE	SILVICULTURAL PRESCRIPTION	AC	TO BE REMOVED		TIMING
					BA/AC	TOT VOL	
Stew	4	BB	Patch Clearcut to Create Young Forest Habitat	10+	65+	40 cds+ 30 MBF+	2020-25
Stew	4	BB	Sanitation cut (ash)	22+	10+	20 MBF+	2020-22

Management Options & Considerations

1. The forest inventory shows roughly 29,000 board feet of white ash, of which about 20,000 bf is mainly in the larger 16-20" diameter range. Much of this may be harvested pre-emptively to avoid loss to emerald ash borer. Consider harvesting as soon as practical – possibly when similar harvesting is done in stand 14, or in conjunction with a habitat cut (see next item) in this stand. See further remarks about ash within the property in following practice for stand 8.

2. Stand 4 is a multi-aged, relatively mature hardwoods stand with scattered large red oak, sugar maple, and white ash of good quality. The overstory is estimated to be 80-100 feet high, with about 70% canopy closure. A number of small canopy gaps (0.1 to 0.5 acre) resulted from logging around 2010. The midstory (woody vegetation 5-30' tall) has a medium density (50-75% coverage) primarily of sapling beech, with some striped maple, sugar maple, yellow birch, and hemlock. There is a low-density understory mainly of beech seedlings, with irregular distribution of Christmas fern (and likely many other herbaceous plants). A patch clearcut (with 10-15% canopy retention) of at least 5 acres is recommended, but a minimum of 10 acres is required to also meet NRCS eligibility for promoting New England Cottontail (NEC) habitat. NEC is our native rabbit (as distinguished from the more plentiful Eastern Cottontail, a non-native species), and is the focus of conservation in small areas of Massachusetts (and in other northeastern states) where populations are known to exist. Much of Monterey, including the subject property, is within the NEC focal area approved for funding. If the 10-acre+ cut is done here, consider staggering the timing of similar (10-acre+) patch cutting in stand 13, so the ages of the two cuts are roughly 7-12 years apart, so availability of young forest habitat is continuous. Heavy shelterwood type cutting around 2010 in stand 6 to the east created some young forest habitat that is beginning to age out of its very dense beneficial stage. MassWildlife recommends that patches should be regularly shaped (roughly circular or square) with rounded edges and corners to maximize inside area and minimize outside edge. The edges between young forest and upland forest habitats should be softened by thinning approximately 50% of the basal area in a fifty-foot strip between habitat types. In order to encompass a 10-acre area and attain a "regular" shape to a patch cut, it may be best to include some of the southerly protrusion of stand 2 in the cut.

When laying out any young forest habitat cut, consider the location of proposed new trails, whether retained forest canopy will be desired to shade trails, or whether slash-free areas within cut areas will be desired for future trail locations that could pass through young forest areas. Although no trail locations have been firmly laid out, some proposed locations have been sketched and described in a 4-page document at the end of this Management Practices section. Also consider whether habitat cutting has occurred nearby on other properties, and how that influences availability of young forest habitat.

Some bird species that might benefit from the young forest habitat treatment include Chestnut-sided Warbler, Eastern Towhee, White-throated Sparrow, Ruffed Grouse, American Woodcock, and Northern Flicker.

Landowner Goals and Management Description

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Owner(s) Bidwell House Museum

Towns(s) Monterey

MANAGEMENT PRACTICES
to be done within next 10 years

OBJ	STD NO	TYPE	SILVICULTURAL PRESCRIPTION	AC	TO BE REMOVED		TIMING
					BA/AC	TOT VOL	

The primary goal for a sanitation cut here is to make use of some of the ash before its value is gone.

The practice of creating young forest habitat can help achieve the landowner goals of long-term forest improvement and conservation, increasing biological diversity (plants and animals), and particularly of enhancing habitat for a large variety of birds and animals that seek low, dense, cover for nesting, brood-raising, and protection from predators. Numerous animals feed on twigs, buds, fruits and seeds of young forest plants, and many migratory birds that breed in the New England area depend on young forest habitat.

Within the patch cutting area, some healthy, soft mast-producing trees -- mainly black cherry -- should be retained among small clusters (e.g. 0.1 acre) of retained canopy trees. Many hard mast trees (there are many beech and red oak) should also be similarly retained, along with some sugar maple and yellow birch. Also, about two large snags per acre, at least 18" dbh, and preferably hardwoods where available, should be retained or created (by chainsaw girdling or left to die naturally) within the retained clusters to provide future cavity-nesting sites for birds and mammals. Blackberry is present in canopy gaps and is apt to regenerate significantly after cutting, and will be a welcome component to contribute soft mast and dense cover.

Stew 7 SM Invasive Species Control 1± 2020-22

Management Options & Considerations

During the field inspection, just a few barberry in the south end, and a small cluster of phragmites at a seep shown on the Forest Map were spotted. Early treatment, while the number of plants is low, is the most efficient control strategy. See general management recommendation "Invasive Plant Monitoring & Control – Consultation" following stand 15 practice.

Stew 8 BB Sanitation cut of ash 3+ 30+ 15MBF, 15cd 2020-21

Management Options & Considerations

Harvest much of the white ash sawtimber in anticipation of its loss to emerald ash borer insect infestation that is spreading through Berkshire County, as well as other environmental factors that have been causing ash mortality for decades. Retain scattered healthy ash trees in hopes of sustaining a presence of ash on the property. Forest stands (see map) that have significant amounts of ash are stands 4, 8, 9, 13, & 14. Stand 8, which is similar to stand 14 south of the museum grounds, is a narrow, unmanaged forest buffer close to the north and west sides of the museum yard. Past logging avoided stands 8 and 14, but the prospect of many dead ash trees that eventually drop branches or uproot and fall over raises concern for safety as well as aesthetics, particularly for visitors walking the trails. Also, as trees die, they become more costly and hazardous to remove, whereas living ash trees of timber size potentially have some net value. Logging in stands 8 and 14 in particular should be done with smaller, low impact equipment (e.g. farm tractor, small skidder, or crawler) and good utilization of firewood for better post-logging appearance.

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Owner(s) Bidwell House Museum Towns(s) Monterey

MANAGEMENT PRACTICES
to be done within next 10 years

OBJ	STD NO	TYPE	SILVICULTURAL PRESCRIPTION	AC	TO BE REMOVED		TIMING
					BA/AC	TOT VOL	

Stand 8 is an even-aged, relatively mature northern hardwoods stand. The overstory is 80-100' high, with at least 80% canopy closure. The midstory has a light to moderate density of sugar maple with few beech and other hardwood saplings. The understory is quite open, with a light scattering of sugar maple, black cherry, and other seedlings. salvage and pre-emptive cutting of much of the ash will guide the short-term management here, and will resemble a combination of single tree and small group selection. Some smaller ash trees (up to 14" dbh) that appear healthy will be retained in hopes that they will survive, and a small number of trees of other species that are of poor form or poor health may be harvested. Healthy red maples, sugar maples, and other hardwoods will remain. Also, retain any of the healthy black cherry and red oak for mast production and species diversity.

Landowner Goals and Management Description

The primary goal here is using some of the ash before its value is gone, and reducing potential hazards of significant tree mortality close to the museum buildings and trails..

Stew	9	BB	Invasive Plant Control	2±	-		2020-22
Stew	9	BB	Sanitation cut of ash	5±	20±	20MBF±	2020-22
Stew	9	BB	Mast Tree Release	1±	-	-	2020-22

Management Options & Considerations

1. There is a very sparse presence of invasive plants. A couple of Japanese barberry were noted in the center of the stand (in wetland), and a few young bittersweet vines and barberry shrubs are growing near the south edge of the small apple orchard (9a on the Forest Map). Prior to any cutting, invasive plants should be treated. See general management recommendation "Invasive Plant Monitoring & Control – Consultation" following stand 15 practice.
2. The forest inventory shows roughly 30,000 board feet of white ash, mainly in the 12-16" diameter range, but only a couple of sample plots were taken here, so confidence in the numbers is low. There are a number of challenges to harvesting, including wetlands, trails, and historic remains of a house (stone cellar) and the ancient Boston Post Road. Some of the ash may be harvested pre-emptively to avoid loss to emerald ash borer, but the harvesting difficulties and the lesser quality of the ash here make this a low priority. Consider this again when other harvesting occurs on the property.
3. Stand 9a is a small (1/4 acre?) apple orchard that has not been tended in years and is quite shaded by tall forest trees growing around it. Nonetheless, it is reported that it produces apples, in spite of the nearly horizontal form some of the trunks have assumed. The orchard is a curiosity, evidence of the farmstead land use, and a food source for deer, ruffed grouse, and a variety of other birds, mammals, and insects. More expertise should be sought regarding orchard restoration, but it appears that these trees would respond if more sunlight reaches them (cut some of the tall trees

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Towns(s) Monterey

MANAGEMENT PRACTICES
to be done within next 10 years

OBJ	STD NO	TYPE	SILVICULTURAL PRESCRIPTION	AC	TO BE REMOVED		TIMING
					BA/AC	TOT VOL	

shading them – especially to the south and west), and with pruning. The expected increase in flowering and fruiting would be of visual interest to those walking the trails, and increased apple crops (as well as buds) would be appreciated by wildlife and humans.

Stew 10 BB Invasive Species Control 2± 2020-22

Management Options & Considerations

The only invasives encountered in 2019 were a few Japanese barberry in the central and south part and one small cluster of phragmites about 100' west of the cairn. Early treatment, while the number of plants is low, is the most efficient control strategy. See general management recommendation "Invasive Plant Monitoring & Control – Consultation" following stand 15 practice.

Stew 11 BB Invasive Species Control 1± 2020-22

Management Options & Considerations

Just a couple of barberry were seen east of Loom Brook in center of stand 11 Early treatment, while the number of plants is low, is the most efficient control strategy. See general management recommendation "Invasive Plant Monitoring & Control – Consultation" following stand 15 practice.

Stew 13 BB Patch Clearcut to Create Young Forest Habitat 5± 75± 40 cds± 30 MBF± 2020-25

Stew 13 BB Sanitation cut (ash) 15± 10± 20 MBF± 2020-22

Stew 13 BB Invasive Plant Control - 10± 2020-22

Management Options & Considerations

1. There is a very sparse density of invasive plants throughout the understory, including Japanese barberry and multiflora rose. (Most sightings were along a more-or-less central transect running northwest-southeast.) Prior to any cutting to create young forest habitat, invasive plants should be treated. See general management recommendation "Invasive Plant Monitoring & Control – Consultation" following stand 15 practice.

2. The forest inventory shows roughly 28,000 board feet of white ash, mainly in the 16-20" diameter range. Much of this may be harvested pre-emptively to avoid loss to emerald ash borer, Consider harvesting as

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Towns(s) Monterey

MANAGEMENT PRACTICES
to be done within next 10 years

OBJ	STD NO	TYPE	SILVICULTURAL PRESCRIPTION	AC	TO BE REMOVED		TIMING
					BA/AC	TOT VOL	

soon as practical – possibly when similar harvesting is done in stand 4, or in conjunction with a habitat cut (see next item) in this stand.

3. Stand 13 is a multi-aged, relatively mature hardwoods stand with scattered large red oak, sugar maple, red maple and white ash of good quality. The overstory is estimated to be 80-100 feet high, with about 70% canopy closure. A number of small canopy gaps (0.1 to 0.5 acre) resulted from logging done around 2006. The midstory (woody vegetation 5-30' tall) has a varying density (50-100% coverage) primarily of sapling beech, sugar maple, yellow birch, black birch, and few hophornbeam and white birch. There is a low-density understory mainly of beech seedlings, with irregular distribution of blackberry, maple-leaved viburnum, Christmas fern, and likely many other herbaceous plants. Initially, a patch clearcut (with 10-15% canopy retention) of at least 2 to 5 acres is recommended, with subsequent patch cuts to occur perhaps at ten-year intervals. Alternatively, a larger cut of 10 acres or more could be done initially, to also meet NRCS eligibility for promoting New England Cottontail (NEC) habitat. NEC is our native rabbit (as distinguished from the more plentiful Eastern Cottontail, a non-native species), and is the focus of conservation in small areas of Massachusetts (and other northeastern states) where populations are known to exist. Much of Monterey, including the subject property, is within the NEC focal area approved for funding. If the 10-acre+ cut is done here, consider staggering the timing of similar (10-acre+) patch cutting in stand 4, so the ages of the two cuts are roughly 7-12 years apart, so availability of young forest habitat is continuous. (Again, also consider whether any habitat cutting has occurred on nearby properties when planning location and timing of habitat cuts on BHM).

A patch cutting in stand 13 could be oriented to create a short-range view, or at least a perceived vantage point looking southwest over the cut, from the higher north edge of the stand, roughly 500' west of the first meeting house site.

Some bird species that might benefit from these treatments include Chestnut-sided Warbler, Eastern Towhee, White-throated Sparrow, Ruffed Grouse, American Woodcock, and Northern Flicker.

Landowner Goals and Management Description

Controlling invasive plants allows native plants to regenerate, providing greater habitat diversity and food benefits for songbirds in particular, but for a variety of wildlife as well. Even the prolific fruit-bearing invasive shrubs like honeysuckle and Japanese barberry generally have low nutrient value for wildlife as compared to native shrubs.

The primary goal for a sanitation cut here is to make use of some of the ash before its value is gone.

The practice of creating young forest habitat can help achieve the landowner goals of long term forest improvement and conservation, increasing biological diversity (plants and animals), and particularly of

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Towns(s) Monterey

MANAGEMENT PRACTICES
to be done within next 10 years

OBJ	STD NO	TYPE	SILVICULTURAL PRESCRIPTION	AC	TO BE REMOVED		TIMING
					BA/AC	TOT VOL	

enhancing habitat for a large variety of birds and animals that seek low, dense, cover for nesting, brood-raising, and protection from predators. Numerous animals feed on twigs, buds, fruits and seeds of young forest plants, and many migratory birds that breed in the New England area depend on young forest habitat.

Within the patch cutting area, some healthy, soft mast-producing trees -- mainly black cherry, but also some small hawthorn trees -- should be retained among small patches (e.g. 0.1 to 0.3 acre) of retained canopy trees. Many hard mast trees (there are many red oaks) should also be similarly retained. Also, about two large snags per acre, at least 18" dbh, and preferably hardwoods where available, should be retained or created (by chainsaw girdling or left to die naturally) within the retained patches to provide future cavity-nesting sites for birds and mammals. Though blackberry was only sparsely noted during field visits, it may appear in the first couple of years after cutting, and would be a welcome component to contribute soft mast and dense cover.

Stew	14	BB	Sanitation cut of ash	15±	30±	50MBF, 25cd	2019-21
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Management Options & Considerations

Harvest much of the white ash sawtimber in anticipation of its loss to emerald ash borer insect infestation that is spreading through Berkshire County, as well as other environmental factors that have been causing ash mortality for decades. Retain scattered healthy ash trees in hopes of sustaining a presence of ash on the property. Forest stands (see map) that have significant amounts of ash are stands 4, 8, 9, 13, & 14. Stand 14 has the most volume of ash (estimate of 64,000 board feet) of any stand, but has greatest visibility from the BHM driveway and Carrington-Battelle Road AND contains the first meetinghouse site and existing walking trails. Past logging avoided stand 14, but the prospect of many dead ash trees that eventually drop branches or uproot and fall over raises concern for safety as well as aesthetics, particularly for visitors walking the trails. Also, as trees die, they become more costly and hazardous to remove, whereas living ash trees of timber size potentially have some net value. Logging in stand 14 in particular should be done with smaller, low impact equipment (e.g. farm tractor, small skidder, or crawler) and good utilization of firewood for better post-logging appearance.

Stand 14 is an even-aged stand of northern hardwoods with a good mix of tree species, but white ash, one of the dominant species, is at risk due to current declining health of some individuals, plus the threat of the advancing infestation of emerald ash borer in the region. Its closed canopy with very light density midstory and understory layers lacks adequate structural diversity to suit many of the native and migratory breeding birds (as well as numerous small and large mammals) that require dense vegetation for nesting, feeding, and cover. Though a number of silvicultural options could be used to attain the desired conditions listed in the description of Stand 1, salvage and pre-emptive cutting of much of the ash will guide the short-term management here, and will resemble a combination of single tree and small group selection. Some smaller

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Owner(s) Bidwell House Museum

Towns(s) Monterey

MANAGEMENT PRACTICES
to be done within next 10 years

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					BA/AC	TOT VOL	

2. Obtain a consultation with an invasive plant control specialist who would help identify a range of options, priorities for working in specific areas with regard to cost-effectiveness, potential costs, and potential cost-share reimbursements through NRCS. The consultation would provide information to help the owners make decisions as to what control work might be reasonable to pursue through contracted services, and whether to attempt any of it on their own. Most of the invasive plants observed occur in the southerly or westerly parts of the property, though there could be some sparse plants in the remainder of the tract. These plants displace other indigenous plants, and may preclude regeneration or survival of native vegetation that has more value for wildlife. Though control of invasive plants is desirable and attainable, long term control depends on frequent (annual) monitoring and follow-up control work as needed. Seed sources nearby, and seed dispersal by birds, will serve to replenish such plants. Maintaining a dense tree canopy will inhibit the rapid spread of invasive species, which prefer partial or full sunlight. The Massachusetts Association of Conservation Commissions website http://maccweb.org/resources_invasive.html has an identification guide with links to control strategies, and there are many other helpful websites.

Stew	15	AF	Periodic Mowing Abandoned Field Habitat	2.8±	-	Annual
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Management Options & Considerations

The meadow west of the parking area is the only grassland habitat on the property. Keeping it open is in the best interest of BHM for a variety of reasons, but this can be managed by scheduled mowing and/or planting of wildflowers and shrubs of benefit to pollinators if desired. Spring mowing allows birds to feed on dried, retained seeds into the winter. A portion of the meadow is kept available for extra parking as needed for events.

Some bird species that might benefit from this treatment, include American Woodcock, White-throated Sparrow, Brown Thrasher, and Eastern Towhee. Bluebirds have nested in boxes here, and indigo buntings have been observed.

Landowner Goals and Management Description

The practice of maintaining this grass-forb-brush habitat can help achieve the landowner goals of increasing biological diversity (plants and animals), and particularly of enhancing habitat for a large variety of birds and mammals that seek low, dense, cover for nesting, brood-raising, and protection from predators. Numerous animals feed on grasses, twigs, buds, fruits and seeds of this vegetation type.

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Locate, blaze, and paint all forest property boundary lines. The BHM Board should decide whether to have a survey done first. If a conservation restriction (CR) will be pursued, a survey (at least of the unrestricted envelope, if not the entire property plus the envelope) will likely be needed. Posting with customized signage (especially if a CR is conveyed) may also be desired. Some grant funding for boundary marking may be available from NRCS. During field work for this plan, this writer tied pink survey tape along much of the southerly and westerly boundary courses, though this may need slight adjustment before more permanently marking with paint. Trial lines were flagged along the northwest section – from Beartown Mountain Road to Royal Hemlock Road, but these flags are very approximate and need correction. All forest boundaries should be located, blazed and painted as soon as practical, and any boundary courses near planned management activities such as logging or trail creation should be marked prior to such activity. (Repainting should occur as needed, usually at 8 to 10-year intervals if a durable, brush type boundary paint is used.) This writer recommends lightly blazing the bark of trees to be marked with a hatchet, so to smooth the bark (but not cut into the cambium) to better accept the paint. At present, there is no regulation regarding what color of paint to use – red, orange, blue and yellow are typical boundary paint colors available. The east boundary (in common with Schwartz} has red blazes, as all of the Schwartz boundaries were painted red by this writer in 2009. Berkshire Natural Resources Council (BNRC) also uses red paint on boundary lines, and the adjoining BNRC Hudson lot to the northeast has some very faded red paint as well as some metal BNRC boundary tags and widely spaced MassWildlife conservation easement boundary tags (yellow plastic). Boundary work is most easily done in spring or fall, when leaves are off and the ground is bare of snow.

Maintaining boundary line markings helps prevent unintentional trespass by abutters, and allows landowners to monitor and work on their own property with confidence. Consult with the writer regarding sources for signs or boundary tags and spacing of posted signs.

STEW Hiking/Skiing Trail Creation ?? feet± 2020-2029

Improved access for walking, skiing, and nature study is a high landowner priority. 4. Expanding the trail network would be desirable – Adam Brown has performed reconnaissance and provided some proposed trail routes in an earlier report to BHM that follows this Management Practices section. The pace of trail creation can occur at BHM’s discretion, but certain sections would best be done after anticipated logging. Berkshire Natural Resources Council (its Hudson property), abutter to the northeast, is updating a Forest Stewardship Plan in 2019, and coordination of trail use and development, as well as timing and location of habitat cuttings may be possible.

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NOTES:

WILDLIFE: Throughout the property, retain trees (dead or alive) that have cavities, particularly large diameter trees, which are sparse. Also retain large-crowned trees such as oak, beech, and cherry, which produce fruit or nuts that are valuable wildlife food (mast). Bigtooth aspen, a tree that occurs in small numbers throughout the property, has little wood product value, but has good wildlife value as it declines and decays, as its soft wood is easy to excavate (especially by woodpeckers and other primary excavators) for cavity nesting sites.

Vernal Pools: Potential vernal pools are located in stand 3 possibly (two of them here) and in stand 14 along the Boston-Albany Post Road. Consider certifying these with NHESP, a program of Massachusetts Division of Fisheries & Wildlife (DFW, or MassWildlife). DFW may assist with determination/certification.

Loom Brook is documented (by MassWildlife) as a cold-water fishery. Maintaining a full forest canopy within 200 feet of the brook is recommended. The scattered ash trees that occur here would be challenging to harvest, and generally will not be hazardous to trails as they die.

Boston-Albany Post Road: BHM listed the possibility of clearing part of the Old Post Road. Most of the easterly half is relatively firm and could be cleared. The westerly part slopes down toward Loom Brook and intercepts high water table soils; some seasonal flow stays within the sunken roadbed for some distance, so it does not lend itself to trail use. The ancient roadbed is barely discernable at the crossing of Loom Brook and leading up the short hill to Beartown Mountain Road. Of particular interest is clearing a section of about 500' that falls between the two north-south trail crossings and contains a vernal pool. This would highlight the post road purpose the road once served, as the road bed and sideline stone wall are visible here.

This plan may be amended, especially in case of damage to the forest from insects, disease, or storms, or in the event of changing markets for wood products, or changing landowner goals.

Damaged or uprooted trees may be salvaged at any time, but standing trees to be thinned or commercially harvested (as in selective harvesting or pre-salvage cutting practices) should be marked or designated by a licensed forester to assure compliance with Stewardship Program expectations.

Once every ten years, an updated forest management (stewardship) plan should be prepared and approved by the state forester to qualify the productive forest area for Stewardship Program status. Prepare and submit a new plan prior to July 1, 2029. (Schedule this with consulting forester in 2028.)

Other General Management Suggestions:

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1. For all logging practices, use up-to-date Best Management Practices. Since there are wooded wetlands and areas with seasonal high-water table, logging should be performed when the ground is dry, or during freezing winter weather, when log skidding trails would freeze. Avoid logging during the peak breeding and brood-rearing season (April 15-August 1) if possible. (BHM may wish to restrict logging during busy visitor season periods.)
2. For any anticipated logging practices (even salvage cutting of one or more damaged trees), inspect for presence of invasive plant species in working areas and attempt to eliminate or inhibit their growth and spread. These most commonly include Japanese barberry, bittersweet, honeysuckle, multiflora rose, and common buckthorn.
3. Preserve all historic cultural features, such as stone walls and stone foundations. Add additional features to the map when encountered.
4. **Every 1 to 2 years (at least) examine the management plan and consider the need for amended practices based on stand conditions, markets, management activities (including habitat cutting and trail development) on nearby properties, and possible changes of ownership goals.**
5. All activity on the property should take into account the potential for uncommon or rare plant species – particularly in or near wetlands. At this writing, the Massachusetts Natural Heritage & Endangered Species Program maps do not indicate Priority Habitat or Estimated Habitat (for rare or threatened species) on the property, though there are many designations within Monterey and nearby Tyringham.
6. **Harvesting:** The standard cable-type log skidder is by far the most common logging method locally, though a small percent of loggers use grapple skidders. Smaller models of skidders, bulldozers, or even a farm tractor with cable winch, would be well suited to selection cutting or salvage cutting anticipated on this parcel in the future. Mechanized tree fellers are in operation, but are more commonly used for larger scale timber harvesting, habitat patch cutting, and land clearing in this locality. Compliance with Massachusetts Best Management Practices for logging, including suspending log skidding operations during wet periods and observing appropriate buffer or filter strips near wetlands and vernal pools, will generally satisfy most environmental concerns related to timber harvesting. For commercial timber harvests, seek out local loggers with established reputations and apparent commitment to land stewardship, and supervise forest management activities directly or through a consulting forester.
7. **Public Outreach:** Bidwell House Museum offers frequent public education and outreach programming on a wide variety of historical and ecological topics. Past events that focused on the property's historical and natural resources included aspects of Native American land use,

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interpretation of stone wall structure, forestry practices, and songbird identification. BHM intends not only to showcase forest and wildlife management practices (through signage along trails and hosted walks), but also to invite public input regarding this Stewardship Plan and particularly about proposed forest cutting practices. This may include a public input session with neighbors and community members to inform them about the museum's forest stewardship planning and to ask for their input. The purposes of the various types of forest cutting should be outlined and explained, including the salvage of the ash trees, patch cutting to create habitats for New England Cottontail and birds, and forest improvement, among others.

Informational signs may be custom-made to explain various forest and wildlife management practices. The museum may also post specialized signs that have been produced for landowners participating in such practices as New England Cottontail habitat management.

Bidwell House Museum will receive some public mention as one of the featured properties of the DCR/Mass Audubon "Forestry for the Birds" program.

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Bidwell House Museum
Proposed Trails
Monterey, MA
2019

Overview and Analysis

The Bidwell House Museum has an existing and extensive network of trails in place on the property that do an excellent job of highlighting the abundant cultural resources around which the organization has built its mission. These trails run the gamut from a self-guided Native American interpretive trail to trails exploring early inhabitants of the region to trails suitable for cross-country skiing. In general, these trails are in fair to good condition construction-wise, although some areas would benefit from better signage/markings, or improvement of trail structures to minimize expansion of wet areas. That is somewhat outside the scope of this plan but could be addressed as part of an overall vision for the entire scope of trails on the property. This document focuses primarily on an analysis of opportunities for new trail construction that will serve to open up new areas of the property and allow visitors to explore portions of it that are currently somewhat inaccessible due to lack of trail infrastructure.

While visiting the property to collect data for the forest stewardship plan, it became readily apparent that the western portion of the property would be well-served by the addition of a trail system that provides access to the beautiful environs of Loom Brook. Along the brook and its feeder streams are some spectacular large-diameter "legacy" red oak trees that will make the slightly longer trek away from the main campus of the museum well worth the effort, especially if combined with a stop by the Champion Oak. In addition, a series of connector trails have been suggested to link existing trails with proposed trails.

The development of the old log landing off of Royal Hemlock Road into a small parking area is certainly an option, if desired. While this may not necessarily be an ideal option from a membership and development standpoint for the Museum since it would potentially direct visitors away from the main campus, it would serve to formalize access to the northern and western portion of the property for those seeking more solitude in their visit or a longer ramble of which the midpoint would be the main house.

Due to the close proximity of the proposed Mill Lot Trail to the southern property line, there potentially exists an opportunity to connect the Bidwell trail system with any existing or future trails on Monterey Preservation Land Trust (MPLT) land, located along Carrington-Batelle Rd. One of the primary resources for obtaining money for trail construction on municipal or non-profit lands in Massachusetts is through the US DOT's Federal Highway Administration RecTrails Program (RTP), which is administered through the state. If the Museum decides to pursue funding through that it may be a more competitive applicant if the proposal serves to increase connectivity onto other protected lands.

Since the Museum already has a partnership with the Greenagers, it is highly recommended to engage them on any grant funding efforts for trail construction as they have extensive experience and will often offer assistance in writing the (somewhat daunting) grant for the applicant. Deadline for submissions is February 1st annually. More information on the application process is available online at: www.mass.gov/guides/recreational-trails-program

Proposed Trails

A very rough GPS track was taken of each of the proposed trails, generally trying to avoid areas that might be unsuitable for trail location. A much more detailed and refined location review would need to be conducted prior to submission of any grant applications or before construction to ensure a sustainable alignment and to get a sense of any necessary structures (i.e. bridges, step stones, etc) that should be included.

Loom Brook Trail

Distance: ½ mile

Elevation gain/loss: 104 ft

The proposed Loom Brook Trail leaves the Charter Oak and heads west gradually downhill until it nears Loom Brook and then turns south paralleling the brook until it turns to the east to meet up with existing trail #4 (Cellar Hole Trail). Sidehill construction where the trail parallels the brook will minimize any erosion and it is recommended that the footpath generally be located about 100 ft. east of the brook along an obvious shelf. This will keep it out of the likely high-water area of the trail and provide nice views of the surrounding environs. During leaf-off season, Beartown Mountain Road would be visible from the proposed trail but it is a lightly travelled dirt road and its presence should not detract from the aesthetics.

There are several feeder streams that flow downhill towards Loom Brook that are unavoidable if a trail is located along the brook. These streams are not large and generally have high enough banks that simple plank footbridges could easily and cheaply be constructed to span the channels.

Loom Brook Connector

Distance: ¼ mile

Elevation gain/loss: 70 ft

The proposed Loom Brook Connector would offer a direct route off of the Royal Hemlocks-to-Charter Oak Trail west towards Loom Brook before linking up with the proposed Loom Brook Trail.

Mill Lot Trail

Distance: ½ mile

Elevation gain/loss: 52 ft

The proposed Mill Lot Trail would provide access to the far southwestern portion of the property, known as the Old Mill Lot, and give a longer loop extension option off of the existing trail #2 (Stone Wall Loop).

Cairn Trail Extension

Distance: ¼ mile

Elevation gain/loss: 31 ft

The proposed Cairn Trail Extension offers another loop opportunity between the Mill Lot Trail and the existing Stone Wall Loop trail. It features a legacy oak and adds another short loop option off of the existing trails in the southern part of the property.

Royal Hemlocks-to-Charter Oak Trail

Distance: 3/10 mile

Elevation gain/loss: 20 ft

This trail already exists as a clearly defined woods road although it does not appear on the current edition of the trails map. It is a direct link from Royal Hemlocks Rd to the Champion Oak tree, and then from there offers options east or west on newly proposed or existing trails.

*Prepared March 2019
by Adam Brown*

*Attached - sketch
of Proposed Trails*








0 300 600ft


Beartown Mountain Rd


Art School Rd


Bidwell House Museum


Proposed Trails


-  Loom Brook Connector
-  Loom Brook Trail
-  Mill Lot Trail
-  Cairn Trail Extension
-  Royal Hemlock-to-Charter Oak Trail

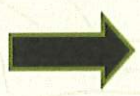
 Bidwell House Museum - Main

 Trailhead

 Parking

 Legacy Trees

 Existing Trails

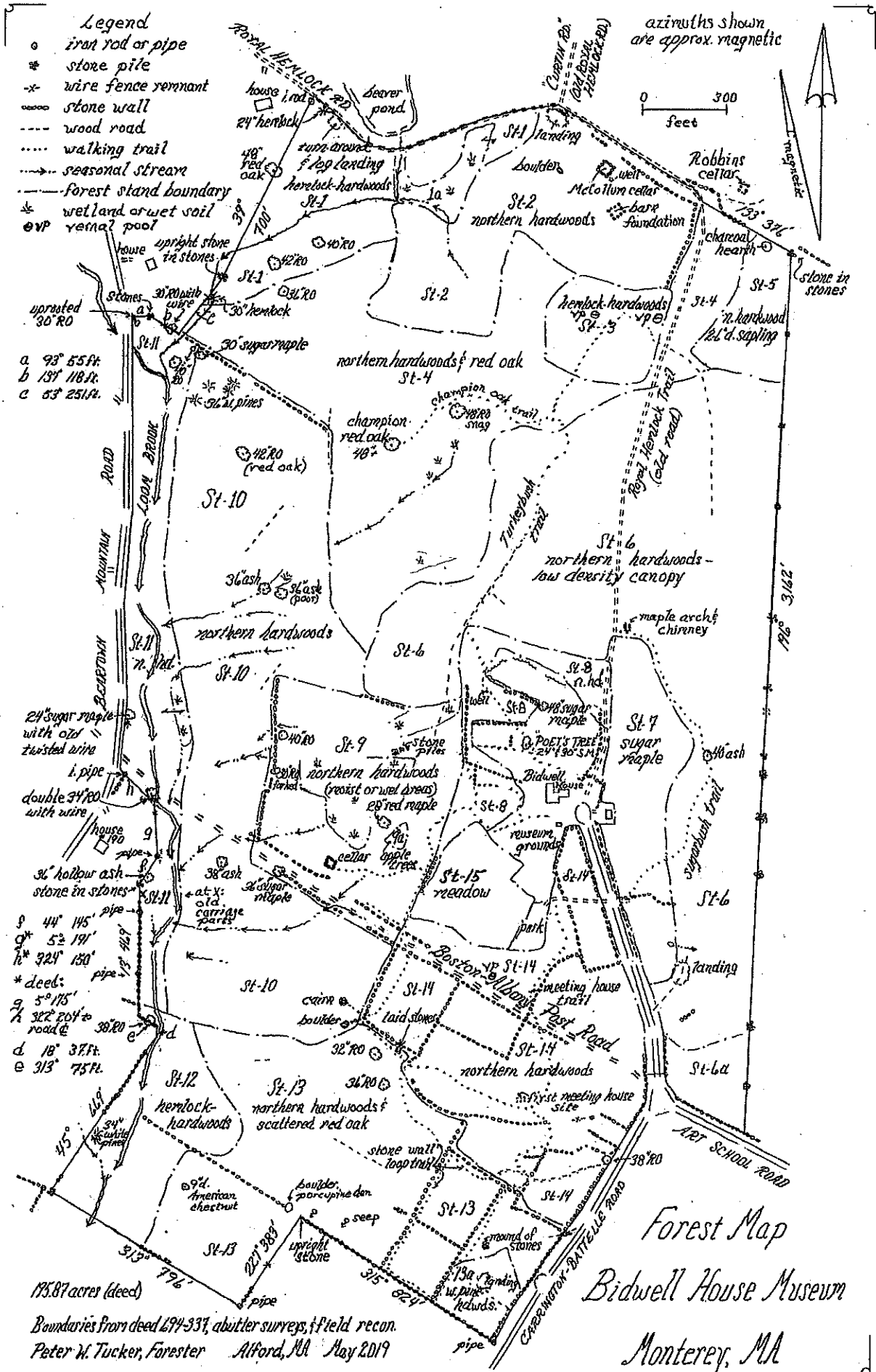
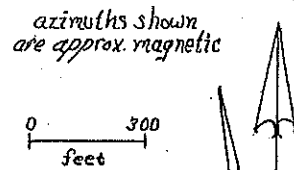


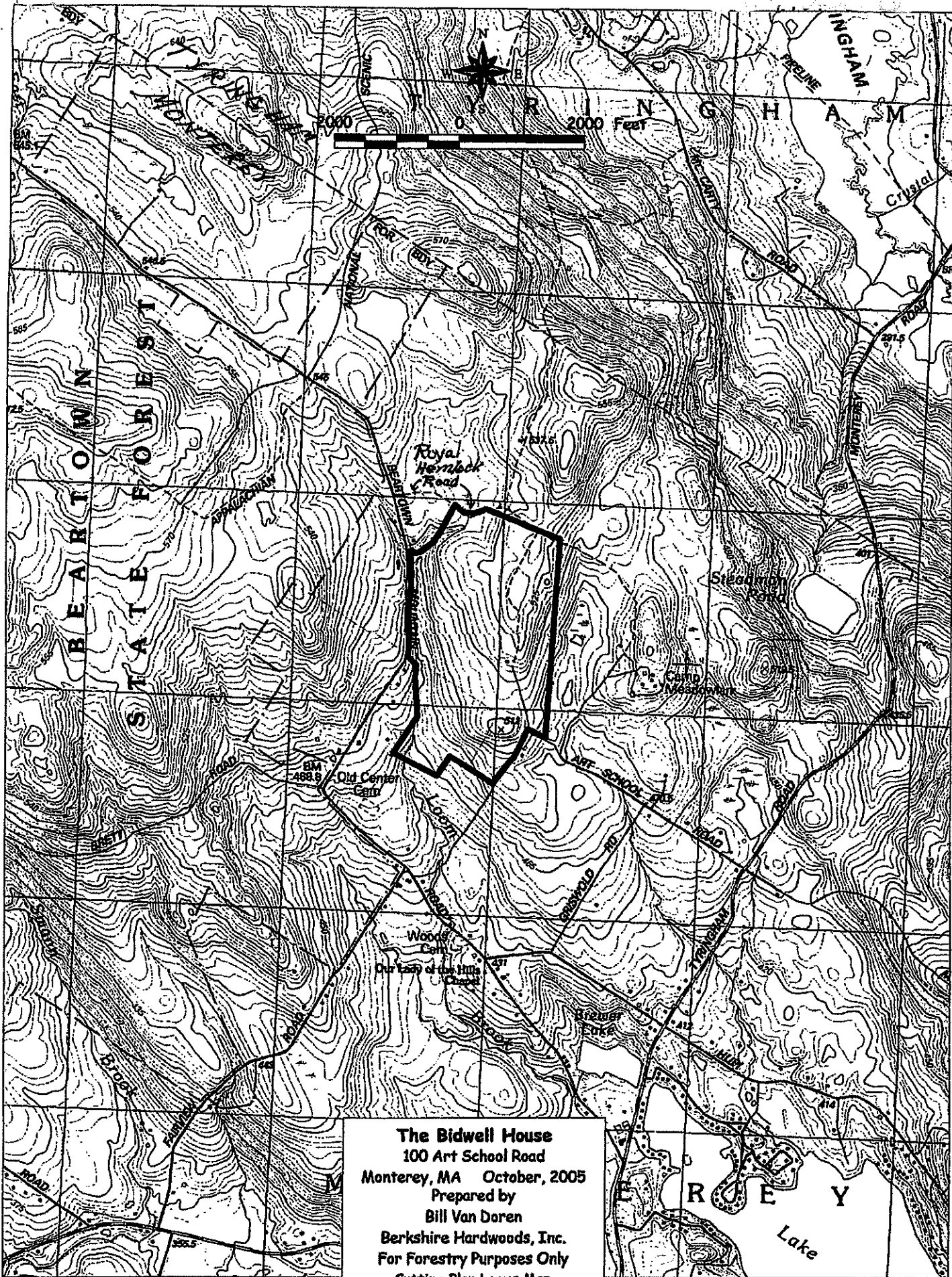
North

USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS, Esri, HERE, Garmin, IPC, Mapbox, Esri Co...



- Legend**
- o iron rod or pipe
 - * stone pile
 - x- wire fence remnant
 - stone wall
 - wood road
 - ... walking trail
 - seasonal stream
 - forest stand boundary
 - * welland or wet soil
 - o VP vernal pool





The Bidwell House
 100 Art School Road
 Monterey, MA October, 2005
 Prepared by
 Bill Van Doren
 Berkshire Hardwoods, Inc.
 For Forestry Purposes Only
 Cutting Plan Locus Map

Signature Page Please check each box that applies.

CH. 61/61A Management Plan I attest that I am familiar with and will be bound by all applicable Federal, State, and Local environmental laws and /or rules and regulations of the Department of Conservation and Recreation. I further understand that in the event that I convey all or any portion of this land during the period of classification, I am under obligation to notify the grantee(s) of all obligations of this plan which become his/hers to perform and will notify the Department of Conservation and Recreation of said change of ownership.

Forest Stewardship Plan. When undertaking management activities, I pledge to abide by the management provisions of this Stewardship Management Plan during the ten year period following approval. I understand that in the event that I convey all or a portion of the land described in this plan during the period of the plan, I will notify the Department of Conservation and Recreation of this change in ownership.

Green Certification. I pledge to abide by the FSC-US Forest Management Standard and MA Private Lands Group Certification for a period of five years. To be eligible for Green Certification you must also check the box below.

Tax considerations. I attest that I am the registered owner of this property and have paid any and all applicable taxes, including outstanding balances, on this property.

Signed under the pains of perjury:

Owner(s) Robert S Hoogs Date June 28, 2019

Owner(s) _____ Date _____
*Robert Hoogs, President
Board of Directors*

I attest that I have prepared this plan in good faith to reflect the landowner's interest.

Plan Preparer Peter W. Tucker Date June 27, 2019
Peter W. Tucker

I attest that the plan satisfactorily meets the requirements of CH61/61A and/or the Forest Stewardship Program.

Approved, Service Forester [Signature] Date 7/17/19
Tom RYAN

Approved, Regional Supervisor _____ Date _____

In the event of a change of ownership of all or part of the property, the new owner must file an amended Ch. 61/61A plan within 90 days from the transfer of title to insure continuation of Ch. 61/61A classification.

Owner(s) Bidwell House Museum Town(s) Monterey