

**Massachusetts Department of Conservation and Recreation**  
**Division of Water Supply Protection, Office of Watershed Management**  
**Forest Management Project Summary**

**Project Title: Quinapoxet Mills Lot**

<b>DWSP Harvest Permit Number: 5249AAA</b>
<b>DCR Forest Cutting Plan File Number: 134-7008-14</b>

**Site Information**

<b>Watershed: Wachusett</b>	<b>Town(s): Holden</b>
<b>Acres: 18.6</b>	<b>Nearest Road: Route 31/Wachusett Street</b>
<b>Natural Heritage Atlas overlap?: Yes</b>	<b>Public Drinking Water Supply Watershed?: Yes</b>
<b>Forest Types: White pine/oak; White pine/hardwood</b>	<b>ACEC?: No</b>
<b>Soils: Almost entirely Hinckley and Merrimac, deep outwash, excessively drained soils</b>	
<b>Wetland Resources: Quinapoxet River and old meanders in the valley to the west of the lot; two drainage courses carrying road and other runoff from the east side of Rt. 31</b>	
<b>Vernal Pools: None</b>	

**Harvest Information**

<b>DWSP Permit Start Date: 10/01/15</b>	<b>DWSP Permit End Date: 12/01/18</b>
<b>Number of Wetland Crossings: None</b>	<b>Number of Stream Crossings: 1</b>

**Best Management Practices Applied**

<b>Stream Crossings</b>	The one stream crossing is over a steep-sided ditch connecting road drainage to a seep and the floodplain to the west of the lot; a bridge will be used to cross.
<b>Filter Strips</b>	A variable-width filter strip has been applied in 4 separate areas on the lot; no patch cuts occur in any part of any filter and some light cutting occurs in portions of 2 of the filters.
<b>Wetland Crossings</b>	There are no wetland crossings
<b>Harvesting in Wetlands</b>	None

<b>DWSP Forester supervising this harvest</b>
<b>Name: Greg Buzzell</b>
<b>Forester License #: 25</b>
<b>Phone #: 508-792-7806 ext. 317</b>

## **NARRATIVES**

### **General Description/Forest Composition/History:**

This area is located in Holden on the west side of Princeton Road (Rt. 31), south of Mill Street and to the east of the Quinapoxet River. The southern end of this sale area is characterized by dry soils with primarily white pine, red oak and black oak in the overstory. These stands originated in the 1890s making this part of the forest about 120 years old. Advance regeneration (i.e., seedlings and saplings) is not widespread or abundant although there are scattered pockets of white pine, oak and red maple. Huckleberry, a common shrub of these excessively drained soil types is the dominant shrub along with mountain laurel and lowbush blueberry.

The northern portion of this area is very different. It is a much richer, moister site with much more diversity in overstory tree species including white pine, red, black and white oaks, sugar maple, red maple, black cherry, white ash, yellow birch and American elm. These stands originated in the 1930s through the 1940s following the purchase of the property from the Quinapoxet Manufacturing Co. by the Metropolitan Water Board (the predecessor of the Metropolitan District Commission which is the predecessor of the DCR/DWSP) in 1930. Scots pine was planted in about 1940. Survivors of this planting hang on near Rt. 31 where a row of mill tenement buildings once stood. Advance regeneration is also far more prevalent and abundant and of a similar makeup to the overstory. Unfortunately there is also a notable diversity and presence of terrestrial invasive species comprised of garlic mustard, Oriental bittersweet, Japanese barberry, honeysuckle and winged euonymus.

A portion of this area along Mill Street near the Quinapoxet River was planted to white pine in 1939 and was then harvested in 1995. This area as well as the flood plain at the base of the steep slope in the narrow “waist” of the sale area will not be treated during this operation.

### **Site Selection:**

The ideal watershed protection forest is one which best serves the function of the land as a producer of high quality drinking water in both short- and long-term. This forest must be vigorous and diverse in tree species and ages, be actively accumulating biomass and actively regenerating. Such a forest will be ideally suited to be resilient to and quickly recover from small- and large-scale disturbances such as diseases, insect infestations, ice storms and hurricanes.

This area was selected for management because both within the forest of these 30 acres as well as in the forest of the much larger area from which water flows into the Quinapoxet River, there are too few acres of young forest. Only 4% of the forest in this area is comprised of young trees less than 20 years old. The ideal protection forest would have closer to 1/3<sup>rd</sup> of the area growing young trees. This is also an opportunity to remove the surviving non-native Scots pines.

### **Silvicultural Objectives:**

Where the advance regeneration is adequate, the overstory will be removed in patches thereby releasing these groups of young trees. To that end, 5 openings are being created totaling 2.1 acres. These openings range in size from 0.3 to 0.5 acres with an average of 0.4 acres. These are primarily located in the southern end of the sale area (see Figure 2.). Where invasive species are most prevalent in the far north end of the area, no tree cutting will take place. To prevent the possible spread of invasive species into the

southern part of the lot where they do not currently exist, the logging must first take place in the southern part of the sale area.

Partial cutting will occur on an additional 14 acres. This thinning will selectively remove the trees of poorest health and vigor while encouraging the healthy long-lived trees of a diversity of species. For example, the Scots pines that were planted in the northern portion of the area will be selectively removed. Scots pine is not native to Massachusetts and they typically are of very poor form and generally do not compete well or regenerate naturally in the Wachusett forest.

Of the 18.7 total acres in this timber sale, trees are being removed from 16.1 acres.

### **Cultural Resources:**

This site contains potentially significant historical features associated with the former village of Quinapoxet which was the location of Quinapoxet Mills. The mill dam was located immediately north of Mill Street with tenements and a school house south of Mill Street along Rt. 31. A Site Avoidance and Protection Plan (SAPP) has been provided by the DCR Archaeologist which details what precautions need to be taken and makes clear what areas need to be avoided entirely. The tree marking and equipment trail layout has been designed to avoid specific physical features (e.g., privy holes and shed footings) that still exist.

### **Wildlife/Rare or Endangered Species:**

This area overlaps with known habitat of the wood turtle (*Glyptemys insculpta*), listed as a Species of Special Concern in Massachusetts. All forest management activity which intersects with known habitats for any state listed species are reviewed by the Natural Heritage and Endangered Species Program (NHESP) and restrictions are placed on the operation to protect the species. For the portions of this sale area that are close enough to the Quinapoxet River, work may only occur between November 1<sup>st</sup> and March 31<sup>st</sup> in order to avoid the period of the year when wood turtles are active in the uplands.

## **FIGURES**

**Figure 1. Forest Cutting Plan**

**Figure 2. Map of harvest area showing approximate boundary, proposed openings and other features**

**Figure 3. General locus map showing the location of the proposed timber harvest**

**Figure 4. Pre-Harvest Photographs, A-C**

Figure 1. Forest Cutting Plan

# Forest Cutting Plan

and Notice of Intent under M.G.L.  
Chapter 132 – The Forest Cutting  
Practices Act, 304 CMR 11.00  
(Effective Date: 1/1/04)

MAY 19 2014

**For DCR Use Only:**

File Number 2014-0782-14 Case No. \_\_\_\_\_

Date Rec'd 5-19-14 Nat. Hert. Yes

Earliest Start 8-8-14 Nat. Hert. Imp. Yes

River Basin \_\_\_\_\_ Pub. Dr. Wat. Yes

Gen. Obj. Ch61a ACEC Yes

**Site Information**

**Location** Lot 5249

Town Holden

Road Wachusett and Mill Streets

Acres 18.7 Proposed Start Date 7/2014

Vol. MBF 23.3 Vol. Cds. 68 Vol. Tons 78

**Landowner**

Name DCR - Division of Water Supply Protection

Mailing Address 180 Beaman Street

Town, State, Zip West Boylston, MA 01583

Phone (508) 792-7806

Ch61  Ch61A  Stew  \*Case # \_\_\_\_\_

Est. Stumpage Value \_\_\_\_\_

**Plan Preparer**

Name Brian Keevan

Address 180 Beaman Street

Town, State, Zip West Boylston, MA 01583

Phone (508) 792-7806 ext 318

Type of Preparer Mass. Licensed Forester

\*Mass. Forester License # 119

\*Required for land under Ch61, Ch61A or Forest Stewardship

**Licensed Timber Harvester\*\***

Name to be supplied when known

Address \_\_\_\_\_

Town, State, Zip \_\_\_\_\_

Phone \_\_\_\_\_

Mass. Lic. Harvester # \_\_\_\_\_

\*\*This information may be supplied after the plan is approved, but before work begins.

**Best Management Practices**

**Stream Crossings**

Indicate location on map	SC-1	SC-2	SC-3	SC-4
Type of Crossing	BR			
Existing Structure	no			
Type of Bottom	gr			
Bank Height (ft)	4'			
Stabilization	MU			

**Harvesting in Wetlands**

Indicate location on map	HW-1	HW-2	HW-3	HW-4
Forest Type (see pg 2)				
Acres to be Harvested				
Resid. Basal Area (>50%)				

**Wetland Crossings (N/A)**

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing				
Mitigation				
Stabilization				

**Filter Strips**

Indicate location on map	FS-1	FS-2	FS-3	FS-4
Width (50', 100', or VA)	VA	VA	VA	VA

**Service Forester Comments**

*\*NIMESP seasonal restrictions*

**Codes**

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom	Note:
LF Mass. Lic. For.	CU Culvert	SE Seed	FR Frozen	LE Ledge	Applicant must provide DCR with all relevant information before plan may be approved and cutting may begin. Some forestry activities, such as prescribed burning and pesticide or fertilizer application may require additional permits. Consult MA Forestry BMP Manual for further information.
TH Lic. Tim Har	BR Bridge	MU Mulch	DR Dry	ST Stony	
TB Timber Buyer	PO Ford	CO Corduroy	OT Other	MU Mud	
LO Landowner	PO Poled	ST Stone		GR Gravel	
OT Other	OT Other	HB Hay Bales		OT Other	

**Products to be Harvested\***

Species	Mbf/Cds		Mbf/Cds
White Pine	18.9 Mbf	Red Maple	
Red Pine		Sugar Maple	
Pitch Pine		Red Oak	2.2 Mbf
Hemlock		Black Oak	
Spruce		White Oak	1.6 Mbf
Other Sftwd.	.2 Mbf	Other Hdwd.	
White Ash		Total Mbf	23.3
Beech		Cordwood (Cds)	68
White Birch		SW Pulp (Tons)	78
B & Y Birch		HW Pulp (Tons)	
Black Cherry		Chips (Tons)	

\*Note: Volumes and values indicated in the Plan are as reported by the plan preparer and have not been independently verified by the service forester upon approval. Mbf = thousand board feet.

**Cutting Standards**

Indicate location on map	ST-1	ST-2	ST-3	ST-4
Forest Type	WH	WO		
Acres	3.9	12.2		
Landowner Objective	LT	LT	LT	
Designation of Trees	CT	CT		
Type of Cut	CT	SECT	none	
Source of Regeneration	AD	AD		

**Landowner Signature**

The most important information on a cutting plan is the Landowner's objective, as this will determine which trees will be harvested and which will remain; this decision will also determine the future condition of the forest for decades to come. After having read the Massachusetts Forest Cutting Plan Information Sheet on page one, indicate your objective by checking the appropriate box below.

**LT - Long-term Forest Management**

Planned management of the forest to achieve one or more of the following objectives: produce immediate and maximize long-term income, enhance wildlife habitat, improve recreational opportunities, protect soil and water quality, or produce forest specialty products.

**ST - Short-term Harvest**

Harvest of trees with the main intention of producing short-term income with minimal consideration given to improving the future forest condition, which often results in a forest dominated by poor quality and low value species.

I (we) have read the Massachusetts Cutting Plan Information Sheet, and am aware of my (our) management options.

I (we) hereby certify that I (we) have the legal authority to carry out the operation described above.

I (we) certify that I (we) have notified the Conservation Commission in the town in which the operation is to take place and the abutters of record within two hundred feet of the area to be harvested.

I (we) understand that the volumes and values (Ch61 only) in this plan have not been independently verified by the service forester upon approval and will report final values and volumes to the Director or his/her agent if the final figures differ from those reported.

*Michael*  
Signature of landowner(s)

5/19/19  
Date

**Determination and Status**

Approved Disapproved Expires

Cutting Plan   5-17-16

*[Signature]*  
Signature of Service Forester/Director's Agent Date 6-10-2014

Extension 1  2  Expires 1 Ser. For. Ints. 1

Amendment App 1  Dis 1  App 2  Dis 2  1

**Final Report and Comments**

I hereby certify that the afore described Forest Cutting Plan and all relevant statutes have been substantially complied with.

\_\_\_\_\_  
Signature of Service Forester/Director's Agent Date

<b>Forest Types</b>	<b>Designation of Trees</b>	<b>Type of Cut</b>	<b>Source of Regeneration</b>
WP White Pine	CT Cut Tree	SH Shelterwood	AD Advanced
WK WP/Hem	LT Leave Tree	ST Seed Tree	SE Neutral Seed
WH WP/Hdwd	SB Stand Boundary	CC Clear Cut	PL Plant
WO WP/Oak	OT Other	SE Selection	CO Coppice
RP Red Pine	<b>Landowner Objective</b>	SA Salvage	DS Direct Seed
SR Red Spruce	LT Long-term Mgt	SN Sanitation	OT Other
		<b>Intermediate Harvests:</b>	
		CT Commercial Thin	
		NT Non Com Thin	
		<b>Non-Standard Systems:</b>	
		HG Highgrade*	
		DL Diameter Limit*	

# Forest Cutting Plan

Narrative Page (Lot 5249 – Quinapoxet Mills Lot)

Landowner: DCR DASP

Town: Holden

File Number: 134-2008-14

Use only if further explanation is required of information on pages one or two or if "other" was used in any category.

<b>BMPs</b>	<p><u>Two landings will be required due to both access issues and the need to minimize the spread of invasive plant species. The landowner will work with the Town to ensure the protection of buried electric and water lines under planned forwarder roads. All filter strips shown on the map are variable width; they generally are drawn all the way up to a natural significant break in topography. SC-1 will be bridged mainly due to the high unstable banks; the watercourse itself is a road runoff ditch. The logger will have a choice to move the Section B wood to either landing, depending on their ability to forward on one short steep stretch south of the northern landing.</u></p>
<b>Silviculture</b>	<p><u>In order to release advance regeneration, 5 openings in the overstory are being created, covering 2.1 acres. These openings range from 0.28 to 0.5 acres in size with an average of 0.4 acres. They are well distributed throughout the area taking advantage of the advance regeneration comprised of white pine and oaks. A thinning will occur on an additional 10.1 acres in Stand 2 where 25-30% of the stocking will be removed. The trees of poorest vigor are the targets for removal with an overall goal of encouraging improved growth on the better residual trees as well as the establishment of a desired understory layer. In Stand 1, 3.9 acres of partial cutting will occur, essentially weeding out all the poor quality white and scotch pine to encourage the best white pine and hardwood pole residuals. Stand 3 is an area of no cutting.</u></p>
<b>Objectives</b>	<p><u>The objective of this operation is two-fold. In the northern stand, we will remove pines to allow the better quality young hardwoods to develop. In the remaining white pine/oak stand, we will be thinning to establish more regeneration and release a small amount of existing advance regeneration.</u></p>
<b>Other</b>	<p><u>The northern half of this property was once a residential area for the Quinapoxet Mills. The DCR Archaeologist has surveyed the site and provided a Site Avoidance and Protection Plan. Forwarder roads in that area have been painted. There are NHESP habitats that overlap a portion of the cutting area, shown on the attached base map.</u></p>



# Division of Fisheries & Wildlife

Wayne F. MacCallum, Director

Fletcher Clark  
Department of Conservation and Recreation  
40 Cold Storage Drive  
P.O. Box 484  
Amherst, MA 01004

Cutting Plan No. 134-7008-14  
NHESP Tracking No. 14-33366  
Town Holden  
Road Wachusett and Mill Street  
Landowner DCR - Water Supply  
Preparer Brian Keevan  
Date June 10, 2014

Dear Fletcher,

The Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife (hereinafter "the Division") has reviewed the above-referenced Forest Cutting Plan (hereinafter "the Plan") pursuant to the special approval procedures of the Forest Cutting Practices Regulations (304 CMR 11.04(6)). Based on details of the Plan and information in the NHESP database, the Division has determined that there is potential for activities proposed in the Plan to result in "Take" (as defined in 321 CMR 10.02) of Wood Turtle (*Glyptemys insculpta*), a species listed as Special Concern pursuant to the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00).

Local populations of Wood Turtle are centered on perennial streams, rivers, and associated ponds and swamps, where individual turtles spend the winter months relatively dormant under the banks or at the bottoms of the wetlands. During early spring, Wood Turtles become more active and begin to spend time on land. Terrestrial habitats used during spring-fall include upland forests, shrublands, and fields, where the turtles seek food and appropriate shelter. Although recent research suggests that most individuals inhabit areas <330 feet from a wintering stream or wetland, some individuals will stray much farther (e.g., >1,000 feet) to reach preferred field habitat or suitable nesting habitat (i.e., open areas with loose or exposed soil). Most nesting in Massachusetts occurs during June, with hatchling turtles dispersing through uplands in search of wetlands during late summer-fall. Presence of Wood Turtles is not always observable, as individuals may spend periods of time hidden under vegetation, logs, leaf litter, or other ground-level substrates.

The Quinapoxet River and the upland forest area surrounding the river are classified as known habitat of Wood Turtle. Timber harvesting at the site may actually improve upland habitat conditions for Wood Turtle, but the Division is concerned that direct mortality of individual turtles (e.g., as a result of crushing by motorized vehicles) will occur if the harvest is not conducted at an appropriate time of year. Therefore, to avoid prohibited Take of Wood Turtle, the Division requests that the following language be added to the Plan prior to its approval:

- Operation of motorized vehicles within 330' of the Quinapoxet River shall only be conducted during the time period beginning November 1 and ending March 31, of any year.

The practice listed above is designed to coordinate operation of motorized vehicles at the site with a time of year that Wood Turtles are unlikely to be present in preferred upland habitats.

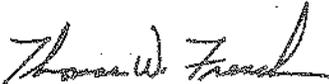
The NHESP requests that the 330-foot buffer boundaries be marked (e.g., with paint or flagging) and inspected prior to approval of the Plan, unless the following condition is met and incorporated into the Plan:



- (1) The 330-foot boundary need not be marked if operation of off-road motorized vehicles site  
wide shall occur only during the time period November 1 – March 31 of any year.

Please copy the Division on any proposed amendments or extensions to the Plan and on the approved plan for the site. If you have any questions about this letter, please contact Brent Powers at (508) 389-6354.

Sincerely,



Thomas W. French, Ph.D.  
Assistant Director

Cc: Holden Conservation Commission (via e-mail)

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Figure 2. Map of harvest area showing approximate boundary, proposed openings and other features

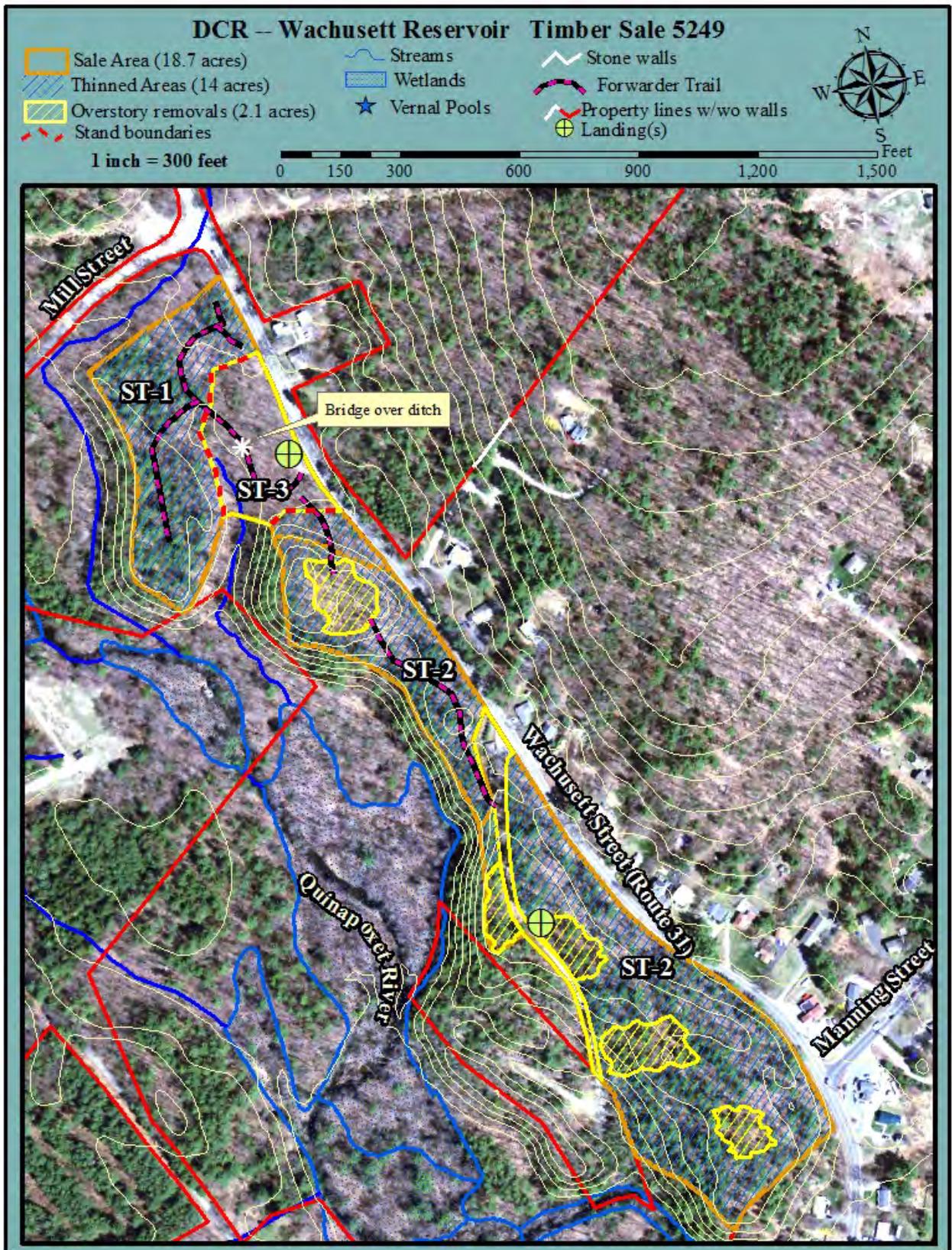
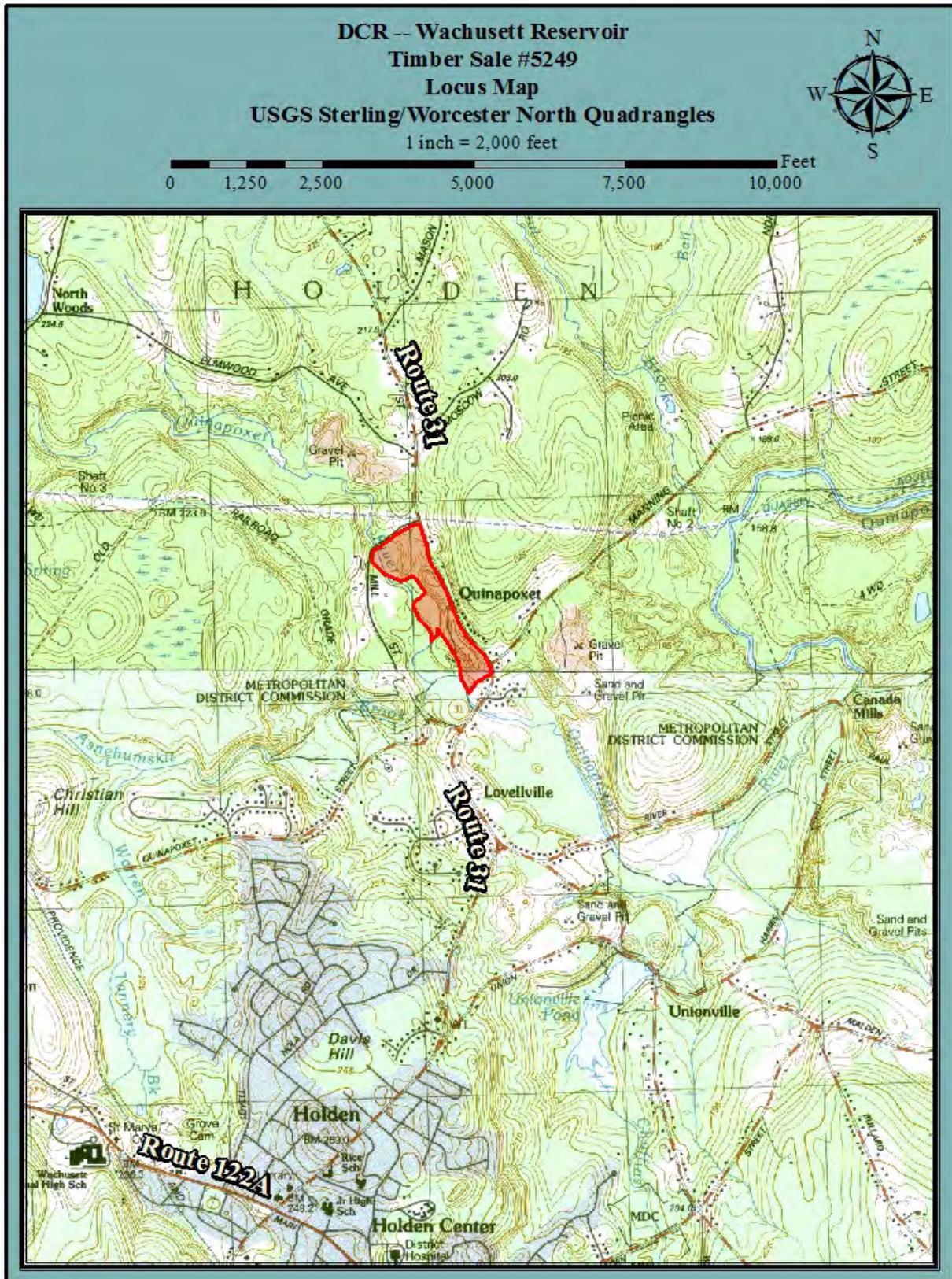


Figure 3. General locus map showing the location of the proposed timber harvest



**Figure 4. Pre-Harvest Photographs, A-**



A. The large-crowned white oak in the background grew between tenement buildings that were part of the village of Quinapoxet. Non-native Scots pine trees are marked to be removed, leaving native hardwood species to grow.



B. This stand has been marked to be thinned, favoring the trees of best vigor and form.



C. The remnant of a structure associated with the old schoolhouse in the former village of Quinapoxet. This and other cultural resources associated with the village will be protected through the implementation of the Site Avoidance and Protection Plan provided by the DCR Archeologist.