

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

Project Title

DWSP Harvest Permit Number: 5247
DCR Forest Cutting Plan File Number: 039-6803-14

Site Information

Watershed: Wachusett	Town(s): Boylston
Acres: 45	Nearest Road: Linden Street
Natural Heritage Atlas overlap?: No	Public Drinking Water Supply Watershed?: Yes
Forest Types: White pine-oak, Red oak, Mixed oak	ACEC?: No
Soils: Primarily Chatfield-Hollis-Rock outcrop complex along with the Woodbridge fine sandy loam.	
Wetland Resources: There is a 12.7 acre beaver pond/shrub swamp bordering the south end of this area.	
Vernal Pools: None	

Harvest Information

DWSP Permit Start Date: 4/1/2014	DWSP Permit End Date: 7/1/2016
Number of Wetland Crossings: None	Number of Stream Crossings: None

Best Management Practices Applied

Stream Crossings	There are no stream crossings.
Filter Strips	There are no filter strips.
Wetland Crossings	There are no wetland crossings.
Harvesting in Wetlands	There is no harvesting in wetlands.

DWSP Forester supervising this harvest

Name: Greg Buzzell
Forester License #: 25
Phone #: 508-792-7806 ext.317

NARRATIVES

General Description/Forest Composition/History

This general area east of Linden Street in Boylston is referred to on USGS maps as the East Woods. DCR purchased this piece of land from the Barnes and Philbin families in July 2010. No forest management was undertaken by prior owners, apart from a small amount of cordwood cutting by a neighbor many years ago. In 2007 or 2008, a small fire occurred on about 1.5 acres in the middle of the parcel, killing a number of pines which were replaced by a mix of pine and black birch.

Nearly all of the remaining forest originated around 1925 following the abandonment of these pastures. The eastern half is a typical dry-site mixed oak stand: short trees, mostly black and white oak with scattered pine, over a shrubby -- primarily huckleberry -- understory; however, here there is good white pine regeneration as well. Moving down-slope and to the south, the soil layer thickens and this mixed oak grades into more of a red oak stand with witch hazel replacing the huckleberry. The western half of the working unit, defined by a stone wall running north-south that probably separated two pastures, is covered by a white pine-oak stand.

The soil in most of this unit is the Chatfield-Hollis-Rock outcrop complex which is a complicated mixture of exposed bedrock outcrops, shallow excessively drained soils and deeper somewhat less excessively drained till soils. Also present is the Woodbridge fine sandy loam, a very deep well drained till soil.

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.

About 95% of the forest in this working unit is approaching 90 years old and lacks any young or middle-aged stands. Given the goal to have multiple age classes on every area, this stand is ideally suited for regeneration cutting. We can capitalize on very good amounts of advance regeneration (70% of 90 sampled plots had adequate seedlings, well-distributed throughout the lot) to quicken the replacement of any overstory patches created. .

Sampled plots also revealed that invasive plants are absent from the lot, apart from the disturbed roadbed area where the landing will be located; post-harvest monitoring and control of any invasives that may spread into the woods will be necessary.

Silvicultural Objectives

There is ample advance regeneration of a species mix appropriate to the site (i.e., plenty of white pine on this largely dry site) to warrant release of a new age cohort by the removal of the overstory in patches. In this area, 21 openings have been marked totaling 8.7 acres. These range in size from 0.27 to 0.5 acres in size with an average of 0.4 acres. These openings are well distributed throughout the working unit with

adequate spacing between the patches to allow for future patches of a similar range of sizes (See Figure 2). Standards regarding green retention (live trees left within patches for structure and seed) have been followed.

A second goal is to remove some of the overstory trees in the forest surrounding the new patches. Individual trees of poorest vigor and form have been targeted to reduce competition for healthier trees. Partial cutting will occur on 12.8 acres. About a third of the stocking (total volume of trees in the areas) will be removed. Further, in the driest areas that are currently dominated by oak, competing oaks and maples will be targeted to encourage as much of the white pine in the overstory as possible.

Of the 45 acres in this timber sale, trees are being removed from 21.5 acres.

Cultural Resources

There is a fairly large rock quarry located in the northwest end of the working unit only about 100 yards in from Linden Street just east of the small wetland. This ‘opportunistic’ quarry was located here to take advantage of a large exposed outcrop; it is larger than the typical site we see where a small section of ledge may have been worked to provide stone for the landowner’s personal use. Its steep areas warrant caution.

This lot was reviewed by the DCR archaeologist and all recommendations will be followed. This land has been determined to not be culturally or archeologically sensitive. Standard practice dictates that all efforts are made to keep existing stone walls intact, and in this case there are no walls that cut off any portion of the managed area so no disturbance to them is expected.

Wildlife/Rare or Endangered Species:

This area contains no vernal pools, critical habitats, or known rare or endangered plants or wildlife. However, there is a large wetland bordering the south end of the lot area, once partly wooded and now maintained as a pond by beaver. This change of habitat provides an interesting break from the surrounding rocky woodland, and serves to draw a diverse array of wildlife.

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-B

Figure 5. Post-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)

JAN 7 2014

For DCR Use Only:

File Number 5247-2014 Case No. _____
 Date Rec'd 1-6-14 Nat. Hert. NO
 Earliest Start 1-20-14 Nat. Hert. Imp. NO
 River Basin Wachusett Pub. Dr. Wat. Wachusett
 Gen. Obj. LT ACEC NO

Site Information

Location

Town Boylston
 Road Lindens Street
 Acres 45 Proposed Start Date 3/1/14
 Vol. MBF 33.4 Vol. Cds. 195 Vol. Tons 54

Plan Preparer

Name Gregory S. Buzzell
 Address 180 Beaman Rd.
 Town, State, Zip West Boylston, MA, 01583
 Phone 508-792-7806 Ext 317
 Type of Preparer Mass. Licensed Forester
 *Mass. Forester License # 25
 *Required for land under Ch61, Ch61A or Forest Stewardship

Best Management Practices

Stream Crossings

Indicate location on map	SC-1	SC-2	SC-3	SC-4
Type of Crossing				
Existing Structure				
Type of Bottom				
Bank Height (ft)				
Stabilization				

Wetland Crossings

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)				

Codes

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom	Note:
LF Mass. Lic. For.	CU Culvert	SE Seed	FR Frozen	LE Lodge	Applicants 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 Mutch	DR Dry	ST Stony	
TB Timber Buyer	FO Ford	CO Corduroy	OT Other	MU Mud	
LO Landowner	PO Poled	ST Stone		GR Gravel	
OT Other	OT Other	HB Hay Bales		OT Other	
		OT Other			

Landowner

Name DCR/DWSP/OWM Wachusett/Sudbury
 Mailing Address 180 Beaman St.
 Town, State, Zip West Boylston, MA 01583
 Phone 608-792-7806
 Ch61 Ch61A Stew *Case # _____
 Est. Stumpage Value _____

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.

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%?)				

Service Forester Comments

No Harvesting in Stream 4 (LT-4)

Service Forester Comments

No Harvesting in Stream 4 (LT-4)

Codes

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom	Note:
LF Mass. Lic. For.	CU Culvert	SE Seed	FR Frozen	LE Lodge	Applicants 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 Mutch	DR Dry	ST Stony	
TB Timber Buyer	FO Ford	CO Corduroy	OT Other	MU Mud	
LO Landowner	PO Poled	ST Stone		GR Gravel	
OT Other	OT Other	HB Hay Bales		OT Other	
		OT Other			

Products to be Harvested*

Species	Mbf/Cds		Mbf/Cds
White Pine	29.6	Red Maple	
Red Pine		Sugar Maple	
Pitch Pine		Red Oak	3.0
Hemlock		Black Oak	0.8
Spruce		White Oak	
Other Sawd.		Other Hdwd.	
White Ash		Total Mbf	33.4
Beech		Cordwood (Cds)	195
White Birch		SW Pulp (Tons)	54
B & Y Birch		HV 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	WO	OR	OM	RM/OM
Acres	13.0	12.3	11.9	2.3
Landowner Objective	LT	LT	LT	LT
Designation of Trees	CT	CF	CT	n/a
Type of Cut	SE	SE	SE	n/a
Source of Regeneration	AD	AD	AD	n/a

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.

[Signature]
 Signature of landowner(s)

1/7/14
 Date

Determination and Status

Approved Disapproved Expires 1-7-2016

[Signature]
 Signature of Service Forester/Director's Agent

1-16-2014
 Date

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

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

Amendment App 1 Dis 1 App 2 Dis 2 1

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

Forest Cutting Plan

Narrative Page

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

Landowner: DCR

Town: Boylston

File Number: 039-6A03-14

BMPs	<p>The only possible location for the landing is at the junction of Linden Street and the Linden Street extension (a partially constructed but never completed road of which the DCR purchased a portion in 2010). However, there is a small wetland adjacent to this area at the bottom of the built-up road intersection. While the general slope of the landing is away from the wetland, all necessary precautions will be taken to prevent soil erosion and the accidental release of hydraulic fluid or fuels from impacting this wetland. Grading of the landing will occur as needed and oil-absorbant mats will be required at the landing and in all logging equipment at all times. Regular inspection of the logging equipment for leaks will occur.</p>
Silviculture	<p>In order to release advance regeneration, 21 openings in the overstory are being created. These openings range from 0.27 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, oaks, red maple and black birch. A thinning will occur on an additional 12.8 acres 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 white pine in these excessively drained soils where the thinning will occur.</p>
Objectives	<p>The objective of this operation is to diversify the age structure of the forest in this 45 acre working unit by removing the overstory in patches thereby releasing the advance regeneration. There is currently essentially zero diversity in age structure as 99% of the forest is about 90 years old (estimates by increment coring of the origin of these stands place it at about 1925).</p>
Other	<p>There are no trees marked in ST-4. It is included in the Stand Treatment table on page 2 in order to avoid confusion between the sale area perimeter (which includes unmanageable wetlands and unmarked upland forest) and the stand boundaries as shown on the detail map.</p>

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

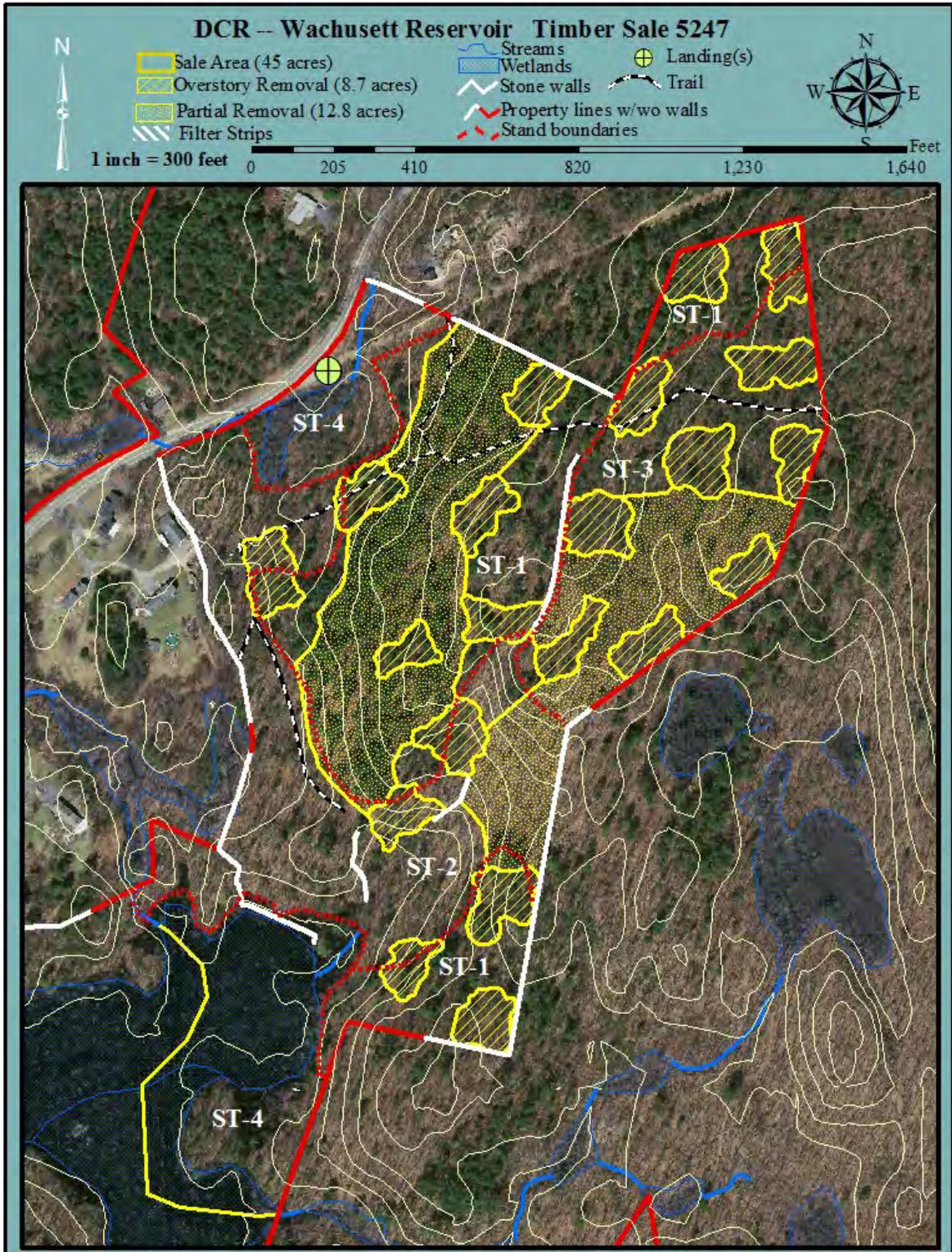


Figure 3. General locus map showing the location of the proposed timber harvest.

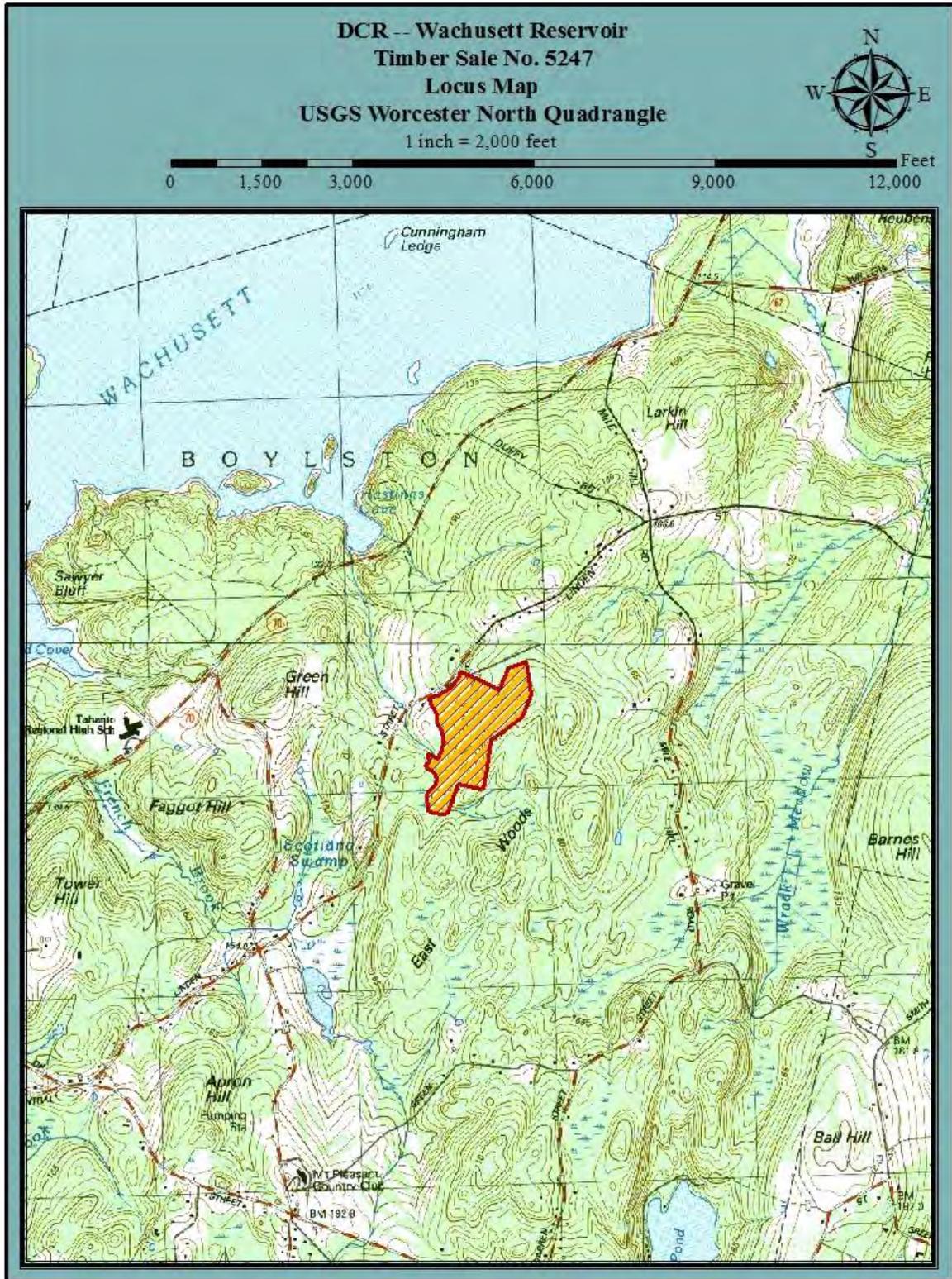


Figure 4: Pre-Harvest Photographs, A-B (January 2014)



A. 90 year-old mixed oak forest with scattered dominant white pines and ample white pine regeneration. The overstory is being removed to release these younger trees.



B. Rock outcrops, a common feature of the Chatfield-Hollis-Rock outcrop soil type.

Figure 5. Post-Harvest Photographs, A-C (December 2015)



A. An overstory of oak and white pine has been removed to release and excellent understory of primarily white pine regeneration on this very dry site.



B. A light thinning in this predominantly white pine stand.



C. A white pine snag that has purposefully been retained in an opening. Such features have tremendous wildlife value.