

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

**Project Title:**

<b>DWSP Harvest Permit Number: 5252</b>
<b>DCR Forest Cutting Plan File Number:282-7273-15</b>

**Site Information**

<b>Watershed: Wachusett</b>	<b>Town(s): Sterling</b>
<b>Acres: 32</b>	<b>Nearest Road: Beaman Road</b>
<b>Natural Heritage Atlas overlap?:Yes</b>	<b>Public Drinking Water Supply Watershed?: Yes</b>
<b>Forest Types: White pine-mixed oak</b>	<b>ACEC?: No</b>
<b>Soils: Chatfield-Hollis-Rock outcrop complex</b>	
<b>Wetland Resources: Bailey Brook flows through the middle of this lot. Rocky Brook borders the lot on the eastern side with the south side bordered by the large wetland where Rocky Brook and Bailey Brook join the Stillwater River.</b>	
<b>Vernal Pools: None</b>	

**Harvest Information**

<b>DWSP Permit Start Date: 05/01/15</b>	<b>DWSP Permit End Date:12/01/16</b>
<b>Number of Wetland Crossings: Two</b>	<b>Number of Stream Crossings: Two</b>

**Best Management Practices Applied**

<b>Stream Crossings</b>	This stretch of Bailey Brook is intermittent in flow. If crossed while flowing, they will be bridged otherwise they may be crossed with a pole ford.
<b>Filter Strips</b>	Variable width filter strips have been applied to Bailey and Rocky Brooks. No trees are being removed from the filter strips in this operation.
<b>Wetland Crossings</b>	The bordering vegetated wetlands associated with the two stream crossings will be crossed when frozen or dry or will be protected with adequate tree tops or corduroy.
<b>Harvesting in Wetlands</b>	No harvesting in wetlands will occur.

<b>DWSP Forester supervising this harvest</b>
<b>Name: Greg Buzzell</b>
<b>Forester License #: 025</b>
<b>Phone #: 508-792-7806 x317</b>

## **NARRATIVES**

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

This area is located in Sterling across from the Eight Point Sportsman's Club on Beaman Road. Rocky Brook forms the eastern edge with Bailey Brook flowing through the middle. This site is characterized by dry soils and irregular slopes with a steep-sided gravel ridge separating the two brooks. The soil is so sandy that for much of the year, Bailey Brook disappears beneath the sand a couple hundred yards south of Beaman Road.

The forest is comprised primarily of white pine, red oak, white oak and black oak along with red maple, black cherry and hemlock. Most of this forest originated in the 1930's with the forest on the oak-dominated gravel ridge originating in about 1905. Many of the white pines are of exceptional size and quality with many over 100 feet tall. An MDC timber sale took place in 1997 in the portion of this area north of Bailey Brook resulting in a little over an acre of young forest as well as the further development of the advance regeneration. There is also excellent advance regeneration throughout the balance of this sale area comprised of white pine, oaks (especially white oak) and hemlock along with a few other hardwoods such as black cherry and red maple.

### **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 32 acres as well as in the forest of the much larger area from which water flows into Bailey Brook and ultimately into the Stillwater River, there are too few acres of young forest. There is no young forest in this 32 acre area and only 9% of the forest in this subwatershed, of which the DCR owns 1,778 manageable acres, 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.

### **Silvicultural Objectives:**

Given the excellent advance regeneration throughout this area, openings will be made in the overstory thereby releasing the young trees from the shade of the older and taller trees and creating a more diverse forest. Throughout this area, openings have been marked totaling 7.3 acres, ranging in size from 0.2 to 0.7 acres with an average size of 0.4 acres. These openings are well distributed with adequate spacing between the patches to allow for future patches of a similar range of sizes. Standards regarding green retention (live trees left within patches for structure and seed) have been followed.

Commonly, a second goal is to further condition the overstory trees in the matrix forest surrounding the new patches by targeting individual trees of poorest vigor and form to reduce competition for healthier trees. However, in this case given the cutting from the timber sale that took place in 1997 as well as the quality and spacing of the trees between the openings in the rest of the area, no cutting between the openings will occur.

### **Cultural Resources:**

There are no known or documented significant historic or archeological resources in this area. However, given a number of environmental factors such as proximity to reliable sources of water and certain characteristics of the soil and slopes (e.g. gentle slopes and lack of surface rocks), this area rates as moderately to highly sensitive for Native American resources. Damage to these unknown resources can occur through compaction and rutting of the soil. Therefore, effort will be made to prevent or minimize compaction and rutting by only allowing work to occur when the soil is either frozen or dry enough to adequately support the equipment which will perform the harvesting in this sale.

### **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 may be placed on the operation to protect the species. In this case, given that only the very southern tip of the sale area is within wood turtle habitat and that very little harvesting activity will occur in this area, NHESP has placed no restrictions on these activities.

## **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-D**

**Figure 5. Post-Harvest Photographs, A-D**

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)

OCT 30 2014

**For DCR Use Only:**

File Number 228-7992-15 Case No. \_\_\_\_\_  
 Date Rec'd 1030-14 Nat. Hert. YES 1  
 Earliest Start 11-10-14 Nat. Hert. Imp. NO  
 River Basin NASHUA Pub. Dr. Wat. WACHUSETT  
 Gen. Obj. 17 ACEC NO

**Location**

Town Sterling Lot 5252  
 Road Beaman Street  
 Acres 32 Proposed Start Date 12/14  
 Vol. MBF 113.3 Vol. Cds. 29 Vol. Tons 166

**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 \_\_\_\_\_

**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

**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.

**Stream Crossings**

Indicate location on map	SC-1	SC-2	SC-3	SC-4
Type of Crossing	BR/PO	BR/PO		
Existing Structure	No	NO		
Type of Bottom	GR	GR		
Bank Height (ft)	1'	1'		
Stabilization	CO	CO		

**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**

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing	100'	50'		
Mitigation	FR/DR	FR/DR		
Stabilization	CO	CO		

**Filter Strips**

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

**Service Forester Comments**

ALL SLO ROADS / TRAILS ARE EXISTING

**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	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			

If Other (OT) is used in any category an explanation must be given on an attached narrative page

Forest Products

### Products to be Harvested\*

Species	Mbf/Cds		Mbf/Cds
White Pine	101.4	Red Maple	
Red Pine		Sugar Maple	
Pitch Pine		Red Oak	4.7
Hemlock		Black Oak	1.2
Spruce		White Oak	3.0
Other Sftwd.		Other Hdwd.	
White Ash		<b>Total Mbf</b>	113.3
Beech		<b>Cordwood (Cds)</b>	29
White Birch		<b>SW Pulp (Tons)</b>	166
B & Y Birch		<b>HW Pulp (Tons)</b>	
Black Cherry		<b>Chips (Tons)</b>	

\*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.

Stand Treatment

### Cutting Standards

Indicate location on map	ST-1	ST-2	ST-3	ST-4
Forest Type	WO	OM	RM	
Acres	20	5.5	6.5	
Landowner Objective	LT	LT	LT	
Designation of Trees	CT	CT	CT	
Type of Cut	SH	SH	SH	
Source of Regeneration	AD	AD	AD	

Landowner

### 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]* 10/30/14  
 Signature of landowner(s) Date

Service Forester

### Determination and Status

Approved  Disapproved  Expires 10-30-2016

Cutting Plan

*[Signature]* 11-13-2014  
 Signature of Service Forester/Director's Agent Date

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

Amendment     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

Codes

Forest Types			Designation of Trees	Type of Cut	Source of Regeneration
WP White Pine	HK Hemlock	OM Mixed Oak	CT Cut Tree	SH Shelterwood	AD Advanced
WK WP/Hem	HH Hem/Hdwd	RM Red Maple	LT Leave Tree	ST Seed Tree	SE Natural Seed
WH WP/Hdwd	BC Blck Cherry	BE Beech	SB Stand Boundary	CC Clear Cut	NT Non Com Thin
WO WP/Oak	BB Bce/Bir/Map	SF Spruce/Fir	OT Other	SE Selection	CO Coppice
RP Red Pine	OH Oak/Hdwd	SM Sugar Maple	Landowner Objective	SA Salvage	HG Highgrade*
SR Red Spruce	OR N Red Oak	PP Pitch Pine	LT Long-term Mgt.	SN Sanitation	DL Diameter Limit*
			ST Short-term Har.		OT Other*

\*If Other (OT) or a non-standard system is used an explanation must be given on attached narrative page no 4 of 5

# Forest Cutting Plan

## Narrative Page

Landowner: DCR/DWSP

Town: STERLING

File Number: 282-7273-15

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

BMPs	<p>SC-1 is on a flat, sandy stretch of Bailey Brook that is dry for a significant part of the year. This location is where the old cart path crosses the brook and over the years, ATV use has destroyed the banks. Bridging will not be required if the stream is dry. In this case, tops or poles will be used to prevent damage to the stream. The approaches to the streams will be protected with tops unless the ground is adequately frozen or snow-covered. WC-1 is across the wetland that borders each side of Bailey Brook. This will be protected with wood (corduroy and/or tops) as needed depending on conditions.</p>
Silviculture	<p>In order to release advance regeneration, 18 openings in the overstory are being created, covering 7.3 acres. These openings range from 1/5th to 1/2 acre 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 and other hardwoods. No thinning will occur between any of these patches.</p>
Objectives	<p>The objective of this operation is to diversify the age structure of the forest by removing the overstory in patches thereby releasing the advance regeneration. The current age structure is limited with an insufficient component of young forest although there is diversity in middle-aged and older stands owing to the gradual abandonment of these former pastures.</p>
Other	



# Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

Michael Downey  
Department of Conservation and Recreation  
355 West Boylston Street  
Clinton, MA 01510

Cutting Plan No. 282-7273-15  
NHESP Tracking No. 14-33826  
Town Sterling  
Road Beaman Street  
Landowner DCR/ DWSP  
Preparer Gregory Buzzell  
Date November 10, 2014

Dear Michael,

The Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife (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 does not expect activities proposed in the Plan to negatively impact Estimated Habitat or result in "Take" (as defined in 321 CMR 10.02) of plant or animal species protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). Therefore, the Division does not require that the Plan be modified at this time.

Please copy the Division on any proposed amendments 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: Sterling Conservation Commission (via e-mail)



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

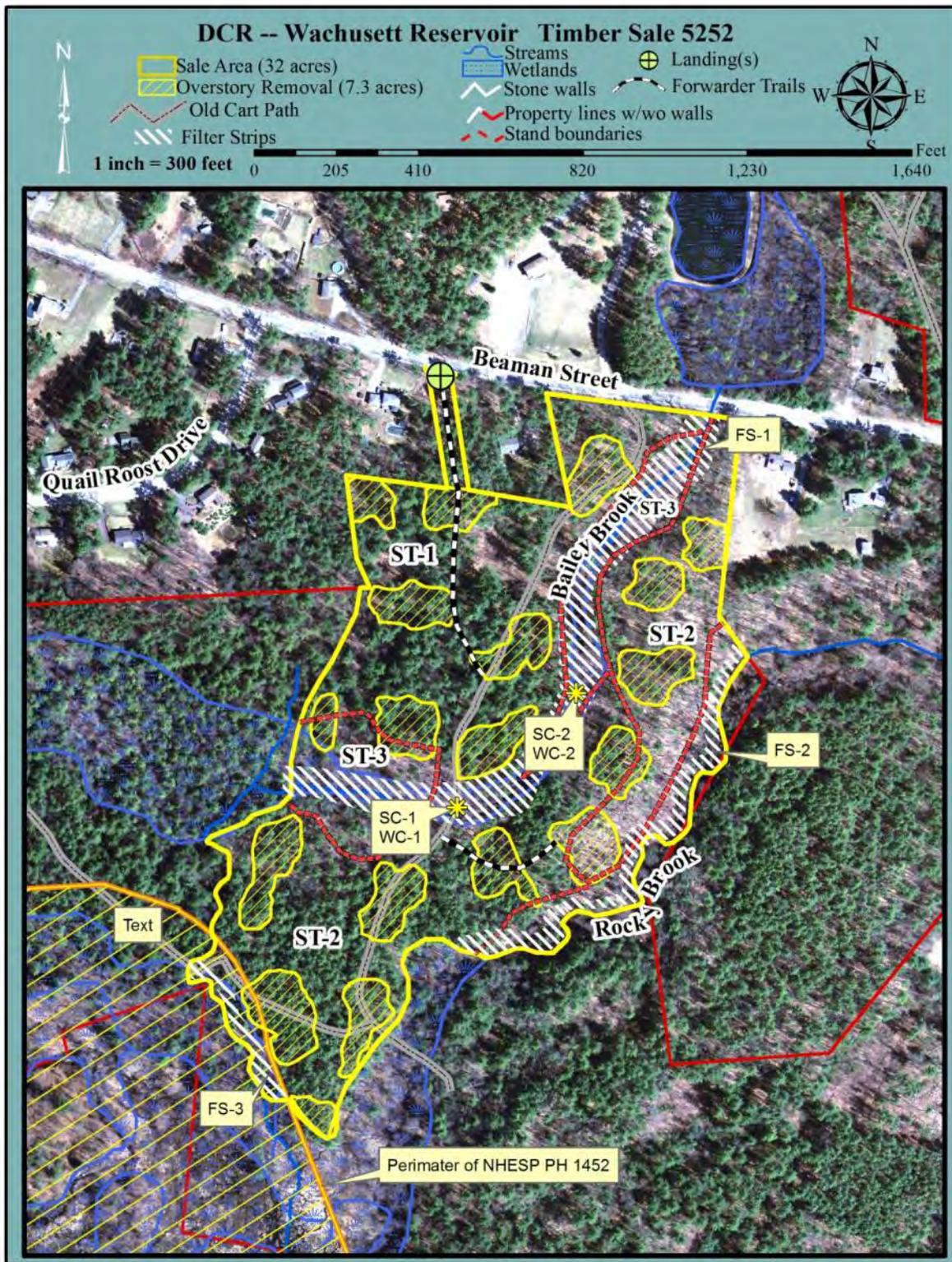
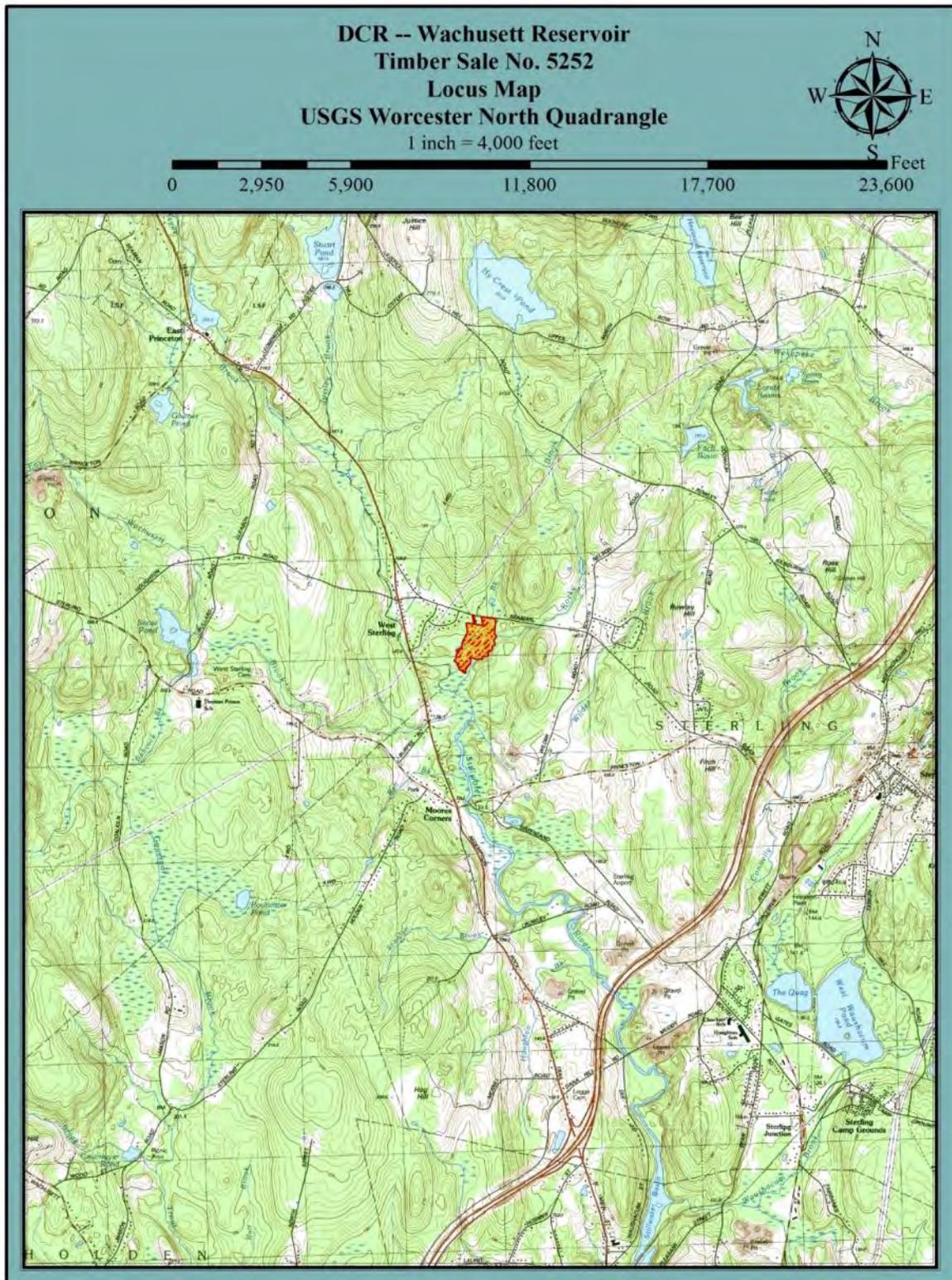


Figure 3. General locus map showing the location of the proposed timber harvest



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



A. White pine and oak stand where harvesting took place in 1997 with excellent pine, hemlock and oak regeneration in northern part of sale area.



B. This is where Bailey Brook will be crossed in order to access the oak-dominated gravel ridge that separates Bailey Brook from Rocky Brook.



C. An opening being made on the oak-dominated gravel ridge in order to release the excellent understory of white pine, oaks and hemlock.



D. A white pine dominated stand in the southern part of the sale where the overstory is being removed to release the thick understory of hemlock, white pine, oak and other hardwoods.

**Figure 5. Post Harvest Photographs, A-D (January, 2017)**



A. The landing on Beaman Road.



B. In this opening, the white pine and hardwood regeneration has been released by the removal of the overstory. The larger white pine in the middle of the opening was intentionally retained.



C. This stream was crossed in this location in order to access the southern part of the sale area.



D. This opening released a good mix of sugar maple and other hardwood saplings. The multi-stemmed black cherry and white pine to its left were retained.