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: 5254A
DCR Forest Cutting Plan File Number: 282-7612-15

Site Information

Watershed: Wachusett	**Town(s)**: **Sterling**
Acres: 83.8	**Nearest Road: Redemption Rock Trail (Rt. 140)**
Natural Heritage Atlas overlap?: Yes	**Public Drinking Water Supply Watershed?:** Yes
Forest Types: White pine-hardwood/White pine	**ACEC?: No**
Soils: The Paxton fine sandy loam, a well-drained till soil.	
Wetland Resources: Justice Brook borders the sale area on the west, an intermittent stream forms the eastern border and two very small intermittent brooks flow through the interior of the sale area.	
Vernal Pools: There is a vernal pool about 450' north of the landing.	

Harvest Information

DWSP Permit Start Date: 10/01/15	**DWSP Permit End Date: 12/01/17**
Number of Wetland Crossings: 0	**Number of Stream Crossings: 2**

Best Management Practices Applied

Stream Crossings	Two small very rocky intermittent brooks will be crossed. Depending on conditions at the time (e.g. flowing or dry), bridging, pole ford or corduroy will be used. Tops may be used to armor the approaches.
Filter Strips	No trees are marked in the filter strips.
Wetland Crossings	No wetlands will be crossed.
Harvesting in Wetlands	No harvesting in wetlands will occur.

DWSP Forester supervising this harvest
Name: Greg Buzzell
Forester License #: 25
Phone #: 508-792-7806 x317

NARRATIVES

General Description/Forest Composition/History:

This area is located in Sterling on the east side of Redemption Rock Trail (Rt. 140) at the Sterling-Princeton town line. Purchased by the state in 1996, this former pasture was logged at least twice before acquisition...the first time in the mid-1980s and the second in the mid-1990s. The result of these harvests has been the establishment of good and diverse advance regeneration throughout the area. The overstory is typical of former pastures with a significant component of white pine along with red, black and white oaks, shagbark hickory, red maple, black and yellow birch, black cherry and sugar maple. The hardwoods dominate at the higher elevations. Most of this forest originated in about 1920 following abandonment of the pasture.

Notable features in this site are several areas of extremely rocky ground. There are a couple of small areas where surface boulders are so prevalent that even trees are not present. One area, about 5 acres in size, while growing a stand of white pines, is so rocky that no logging has occurred since the pasture was abandoned.

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 83 acres as well as in the forest of the much larger area from which water flows into Justice Brook and into the Stillwater River, there are too few acres of young forest. There is no young forest in this 83 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 1/3rd of the area growing young trees.

This area was also selected in order to take advantage of the excellent understory of seedlings and saplings resulting from the previous harvests.

Silvicultural Objectives:

There is enough advance regeneration of a species mix appropriate to the site (a mix similar to the overstory) 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 16.7 acres. These range in size from 0.2 to 2.0 acres in size with an average of 0.8 acres. These openings are primarily distributed with adequate spacing between the patches to allow for future patches of a similar range of sizes. The excessively rocky 5 acre area will not be cut during this operation. Standards regarding green retention (live trees left within patches for structure and seed) have been followed

Cultural Resources:

There are no known or documented significant historic or archeological resources in this area. According to models that predict the likelihood of the past use of a site by Native Americans, this area ranks as “Not Sensitive” due to its hilly, rocky character.

Wildlife/Rare or Endangered Species:

A small portion of this area coincides 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, NHESP has determined that no modifications are necessary.

Many years ago, DCR established a series of long-term wildlife monitoring plots throughout the watershed forest. The purpose of these plots is to first establish a baseline for the vegetation, breeding birds, reptiles, amphibians and small mammals present in each area. Data then gathered following a forest management operation allows for the impact on wildlife populations, both potentially negative and positive, to be known. One such plot is present in this area.

The excessively rocky sites with limited trees present are potential snake hibernacula and basking sites. Removal of trees along the south and south-east, allowing direct sunlight to reach the rocks should enhance these sites for this purpose.

FIGURES

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 12 2015

For DCR Use Only:

File Number	282-7419-T5	Case No.	
Date Rec'd	5-12-15	Nat. Hert.	YES /
Earliest Start	5-20-15	Nat. Hert. Imp.	NO
River Basin	NASHUA	Pub. Dr. Wat.	YES-WATCHLIST
Gen. Obj.	LT	ACEC	NO

Site Information

Location

Town: Sterling — LOT 5254
Road: Redemption Rock Trail (Rt. 140)
Acres: 83.8 — Proposed Start Date: 7/1/15
Vol. MBF: 181.6 — Vol. Cds.: 117 — Vol. Tons: 460

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

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.

Best Management Practices

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	ST	ST		
Bank Height (ft)	1'	1'		
Stabilization	CO	CO		

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)	VA	VA	VA	VA

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

ALL SKID ROADS/TRAILS ARE EXISTING
& PLEASE CONSIDER USING VERNAL POOL BMPs (see attached)

Codes

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom
LF Mass. Lic. For.	CU Culvert	SE Seed	FR Frozen	LE Ledge
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		

Note:
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.

Forest Products

Products to be Harvested*

Species	Mbf/Cds		Mbf/Cds
White Pine	174.4	Red Maple	
Red Pine		Sugar Maple	
Pitch Pine		Red Oak	2.8
Hemlock		Black Oak	3.6
Spruce		White Oak	0.6
Other Sftwd.		Other Hdwd.	
White Ash		**Total Mbf**	181.6
Beech		**Cordwood (Cds)**	117
White Birch		**SW Pulp (Tons)**	460
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.

Stand Treatment

Cutting Standards

Indicate location on map	ST-1	ST-2	ST-3	ST-4
Forest Type	WO			
Acres	83.8			
Landowner Objective	LT			
Designation of Trees	CT			
Type of Cut	SH			
Source of Regeneration	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 of landowner(s) — Date: 5/11/15

Service Forester

Determination and Status

	Approved	Disapproved	Expires
Cutting Plan	☒	☐	5-12-2017

Signature of Service Forester/Director's Agent — Date: 5-26-2015

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

	App 1	Dis 1	App 2	Dis 2	
Amendment	☐	☐	☐	☐	/

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
WP White Pine
WK WP/Hem
WH WP/Hdwd
WO WP/Oak
RP Red Pine
SR Red Spruce
HK Hemlock
HH Hem/Hdwd
BC Blck Cherry
BB Bee/Bir/Map
OH Oak/Hdwd
OR N Red Oak
OM Mixed Oak
RM Red Maple
BE Beech
SF Spruce/Fir
SM Sugar Maple
PP Pitch Pine

Designation of Trees
CT Cut Tree
LT Leave Tree
SB Stand Boundary
OT Other

Landowner Objective
LT Long-term Mgt.
ST Short-term Har.

Type of Cut
SH Shelterwood
ST Seed Tree
CC Clear Cut
SE Selection
SA Salvage
SN Sanitation

Intermediate Harvests:
CT Commercial Thin
NT Non Com Thin

Non-Standard Systems:*
HG Highgrade*
DL Diameter Limit*
OT Other*

Source of Regeneration
AD Advanced
SE Natural Seed
PL Plant
CO Coppice
DS Direct Seed
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 DWSP

Town: Sterling

File Number: 282-06/2-15

BMPs

SC-1 and SC-2 are on very small, rocky intermittent brooks. Bridging will only be required if work is occurring when the streams are flowing. Otherwise, depending on conditions at the time, poles or tops may be used to prevent damage to the stream banks and bottoms.
No trees are marked within any of the filter strips.
No trees are marked within 100' of the vernal pool. However, a preexisting forwarder trail, which will be used, is within 100' of the vernal. Depending upon conditions at the time, tops or corduroy may be used to minimize rutting on the section of the trail nearest the vernal pool.

Silviculture

In order to release advance regeneration, 21 openings in the overstory are being created, covering 16.7 acres. These openings range from 1/5th to 2 acres in size with an average of 0.8 acres. They are well distributed throughout the area taking advantage of the advance regeneration comprised of white pine, oaks and other hardwoods. No trees have been marked between any of these patches.

Objectives

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.

Other

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

Jack Buckley, *Acting Director*

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

Cutting Plan No.	282-7612-15
NHESP Tracking No.	15-34452
Town	Sterling
Road	Redemption Rock Trial (Route140)
Landowner	DCR Water Supply
Preparer	Gregory Buzzell
Date	May 22, 2015

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 amendment, extension 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

Thomas W. French, Ph.D.
Assistant Director

Cc: Sterling Conservation Commission (via e-mail)

Natural Heritage & Endangered Species Program
North Drive, Route 135, Westborough, MA 01581 **Tel:** (508) 389-6360 **Fax:** (508) 389-7891

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

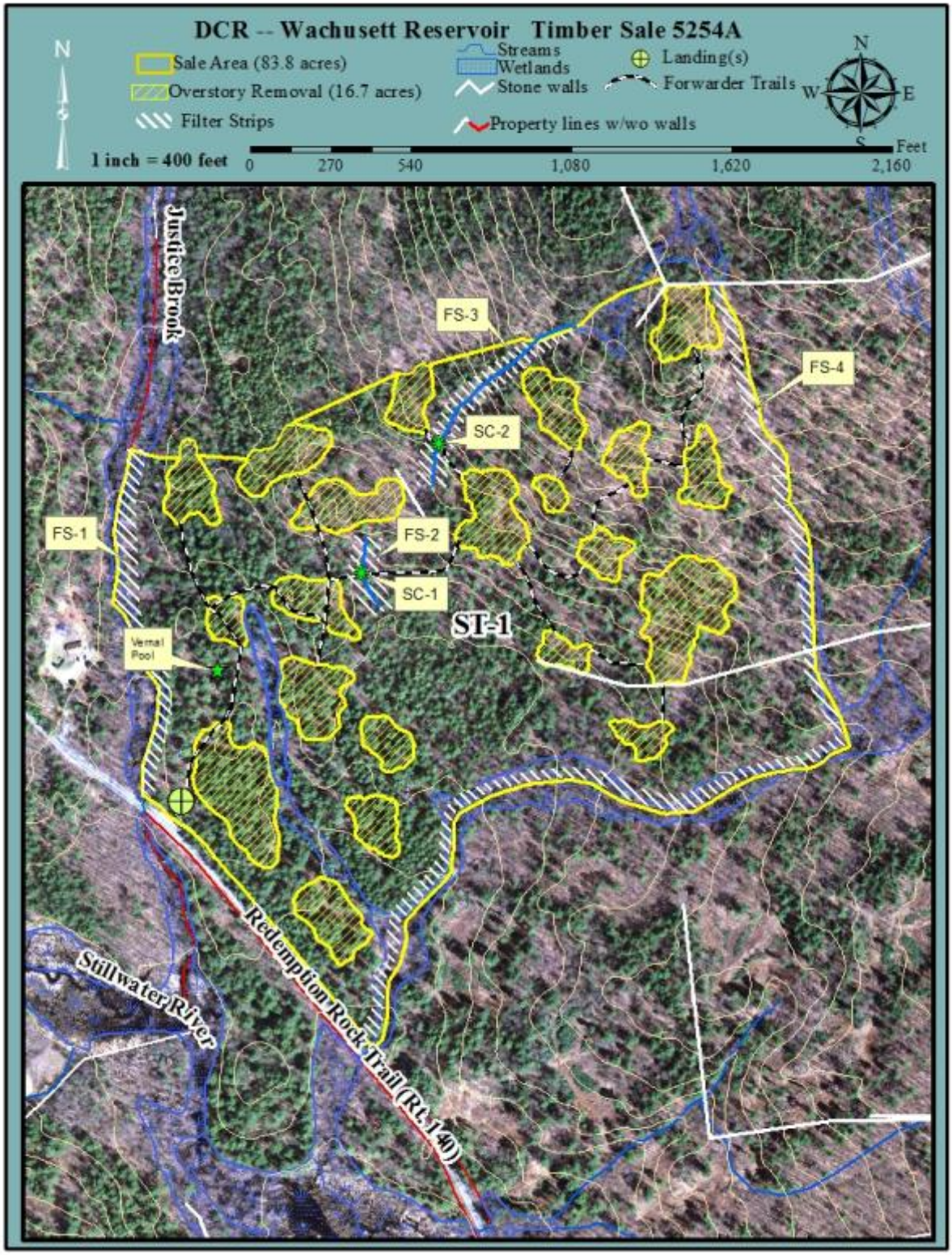

Figure 3. General locus map showing the location of the proposed timber harvest

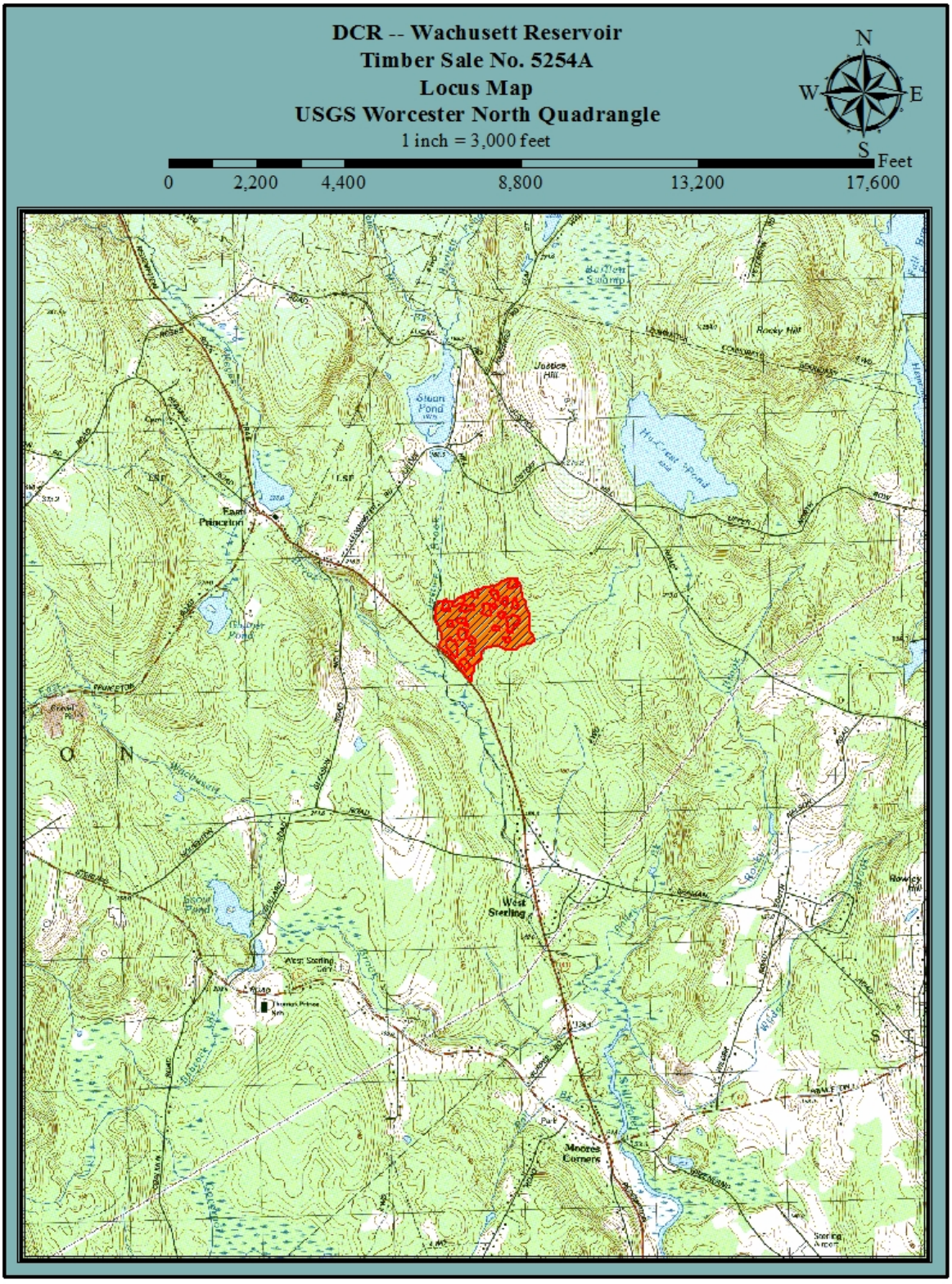

Figure 4. Pre-Harvest Photographs, A-C

A. Landing location on Rt. 140.

B. White pine/hardwood stand where most of the overstory is being removed to release the abundant diverse regeneration beneath.

C. One of the small areas of extreme rockiness. A porcupine had several dens among these rocks during the winter of 2015.

Figure 5. Post-Harvest Photographs, A-B

A. An area of overstory removal with excellent hardwood regeneration.

B. Note the large white pine that was retained in this opening. It provides important structural diversity.