# 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:** 5262 |
| **DCR Forest Cutting Plan File Number:** 282-8229-16 |

**Site Information**

| | |
|---|---|
| **Watershed: Wachusett** | **Town(s)**: Sterling |
| **Acres:** 68 | **Nearest Road: Newell Hill Road** |
| **Natural Heritage Atlas overlap?: No** | **Public Drinking Water Supply Watershed?:** Yes |
| **Forest Types: Northern red oak** | **ACEC?: No** |
| **Soils: Chatfield-Hollis-Rock outcrop complex** | |
| **Wetland Resources: A small stream forms the western boundary of the sale area. A very small stream form a portion of the eastern boundary.** | |
| **Vernal Pools: There is a large vernal pool high up on the hill in the middle of this area. There are two other vernal pools in the bottom of the ravine along the eastern boundary of this area.** | |

**Harvest Information**

| | |
|---|---|
| **DWSP Permit Start Date:** 04/12/17 | **DWSP Permit End Date:** 06/28/19 |
| **Number of Wetland Crossings: 0** | **Number of Stream Crossings:** 0 |

**Best Management Practices Applied**

| | |
|---|---|
| **Stream Crossings** | There are no stream crossings. |
| **Filter Strips** | No trees are marked in any of the filter strips. |
| **Wetland Crossings** | There are no wetland crossings. |
| **Harvesting in Wetlands** | No harvesting in wetlands will occur. |

| **DWSP Forester supervising this harvest** |
|---|
| **Name: Russ Wilmot** |
| **Forester License #: 426** |
| **Phone #: 978-792-7806 x318** |

# NARRATIVES

## General Description/Forest Composition/History:

This area is dominated by a 105 year old red oak stand comprised primarily of red oak and a lesser component of white pine, black birch, red maple, hickory, white oak, hemlock and sassafras. On the lower slopes, especially to the west nearing a small red maple stand, there is a component of sugar maple, elm and yellow birch. In and near the red maple stand the overstory is comprised primarily of red maple, white ash, black cherry and elm.

The southern half of this area was cut by the MDC in 2002. The primary purpose was to begin the establishment of regeneration. At the same time, where advance regeneration was adequate, a few, very small openings totaling about 1 acre were created. Prior to this, the main disturbances to this site were the gypsy moth population explosions in the late 1980s and a forest fire in 1999. The gypsy moth infestation resulted in the death of most of the hemlocks which were scattered throughout this area and it had the effect of encouraging the establishment of regeneration by thinning the overstory through defoliation allowing more sunlight to reach the forest floor. The oak stand itself was also very lightly thinned through the mortality of the individual trees of weakest vigor. The fire, which occurred on April 8th, 1999, was an unusually severe fire for this part of Massachusetts and occurred in an unusually dry spring. Nearly 20 acres in this working unit were burned with almost complete overstory mortality in three areas totaling nearly 3.5 acres. These areas are now well-stocked young stands of oak, hickory, red maple and white pine.

As a result of these two disturbances, there is good advance regeneration throughout the area. There was adequate advance regeneration on 71% of 107 plots taken with marginal regeneration on an additional 14% of the plots. The composition of the regeneration is more diverse than the red oak-dominated overstory although oak regeneration is present on 76% of the plots. In addition to oak, the regeneration is dominated by white pine, white oak, red maple, black birch and hemlock with lesser numbers of hickory, sugar maple, beech, sassafras and eastern hophornbeam.

## 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 chosen due to the lack of age diversity both in these 68 acres as well as the 1,007 acres owned by the DCR that flows into West Waushacum Pond and Waushacum Brook.

## Silvicultural Objectives:

Given the good advance regeneration present, openings will be made to release this regeneration resulting in a new age cohort. Twelve openings will be made that range in size from 0.2 to 2.0 acres, averaging about 0.9 acres in size. These openings total 10.4 acres which represents 15% of the manageable acreage in this area. They are well distributed throughout the sale area taking advantage of the areas of diverse regeneration.

## Cultural Resources:

This proposal has been reviewed by the DCR Archaeologist and all recommendations will be followed to minimize the risk of disturbance to both historic and archaeological resources.

**Wildlife/Rare or Endangered Species:**

All DWSP CMPs regarding the protection of vernal pools will be followed. These include keeping main haul roads well away from the pools and maintaining a shaded condition within 100 feet of the pools.

## 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 26 2016

**For DCR Use Only:**

| | | | |
|---|---|---|---|
| File Number | 282-8089-16 | Case No. | |
| Date Rec'd | 5/26/16 | Nat. Hert. | N.D. / |
| Earliest Start | 6/10/16 | Nat. Hert. Imp. | N.D. |
| River Basin | Housatonic | Pub. Dr. Wat. | Est. Watershed |
| Gen. Obj. | CT | ACEC | N.D. |

## Site Information

### Location

Town: Sterling — Lot 5262

Road: Newell Hill Rd.

Acres: 68 — Proposed Start Date: 7/1/16

Vol. MBF: 24.9 — Vol. Cds.: 162 — Vol. Tons: 2

### 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 | | | | |
| 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) | 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

## 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 | BB | 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 | 0.7 | Red Maple | |
| Red Pine | | Sugar Maple | |
| Pitch Pine | | Red Oak | 19.9 |
| Hemlock | | Black Oak | 4.3 |
| Spruce | | White Oak | |
| Other Sftwd. | | Other Hdwd. | |
| White Ash | | **Total Mbf** | 24.9 |
| Beech | | **Cordwood (Cds)** | 162 |
| White Birch | | **SW Pulp (Tons)** | 2 |
| 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 | OR | | | |
| Acres | 68 | | | |
| 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: 5/25/16

## Service Forester

### Determination and Status

| | Approved | Disapproved | Expires |
|---|---|---|---|
| Cutting Plan | ☒ | ☐ | 5-26-2018 |

Signature of Service Forester/Director's Agent — Date: 6-2-2016

| | | | 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: 382-8229-16

**BMPs**

There are no stream or wetland crossings in this lot.

**Silviculture**

In order to release advance regeneration, 12 openings in the overstory are being created, covering 10.4 acres. These openings range from 0.2 acres to 2.0 acres in size with an average of 0.9 acres. They are well distributed throughout the sale area taking advantage of the advance regeneration comprised of white pine, oaks and other hardwoods.
Trees are only being cut in the areas of overstory removal.

**Objectives**

The main 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. A secondary objective is to target pine regeneration for release.

**Other**

A forwarder trail has only been flagged from the landing to the first two openings up the hill. Topography greatly limits where equipment can reasonably travel along with the absence of stream or wetland crossings and regular DWSP Forester oversight making further flagging unnecessary.

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

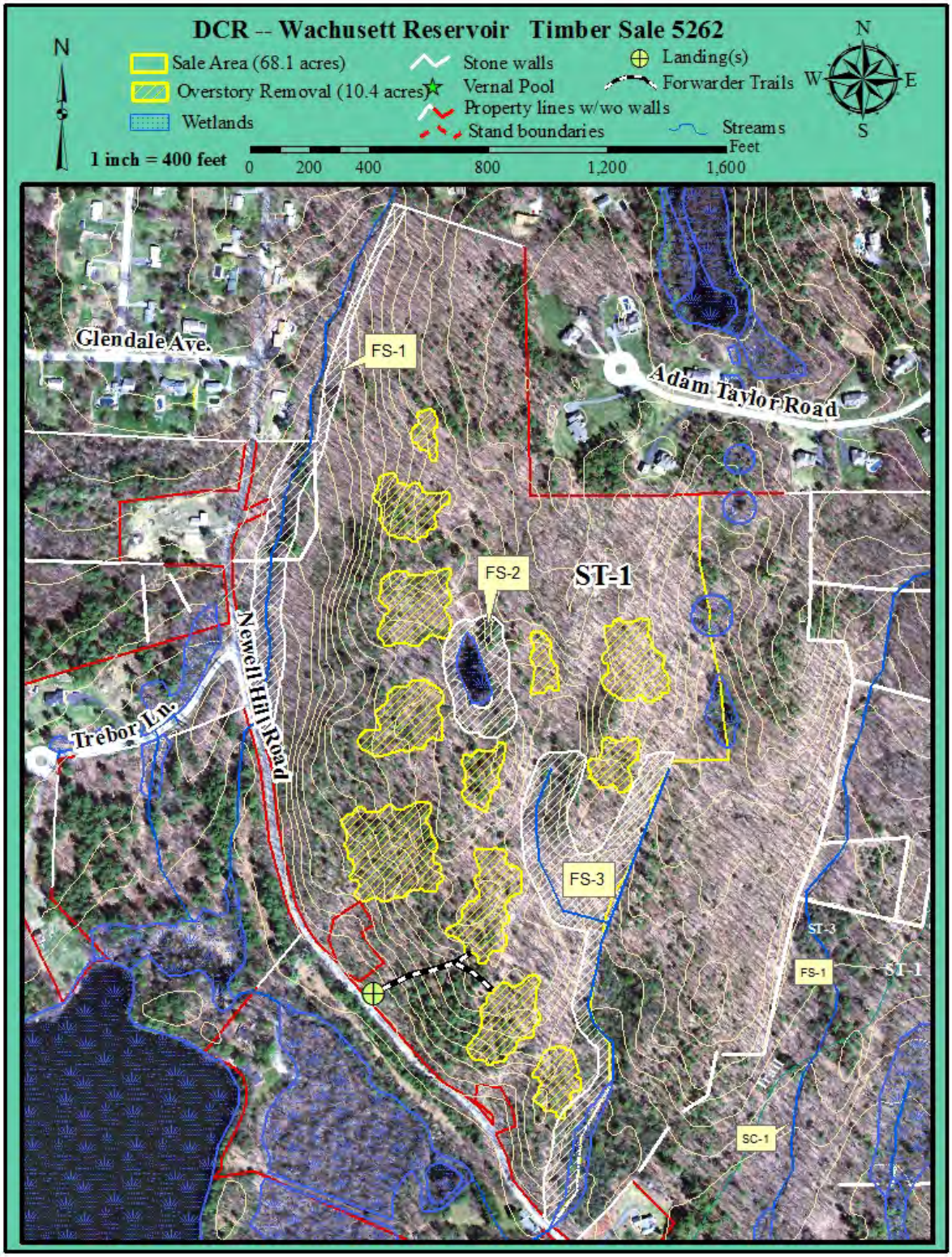

**Figure 3. General locus map showing the location of the proposed timber harvest**

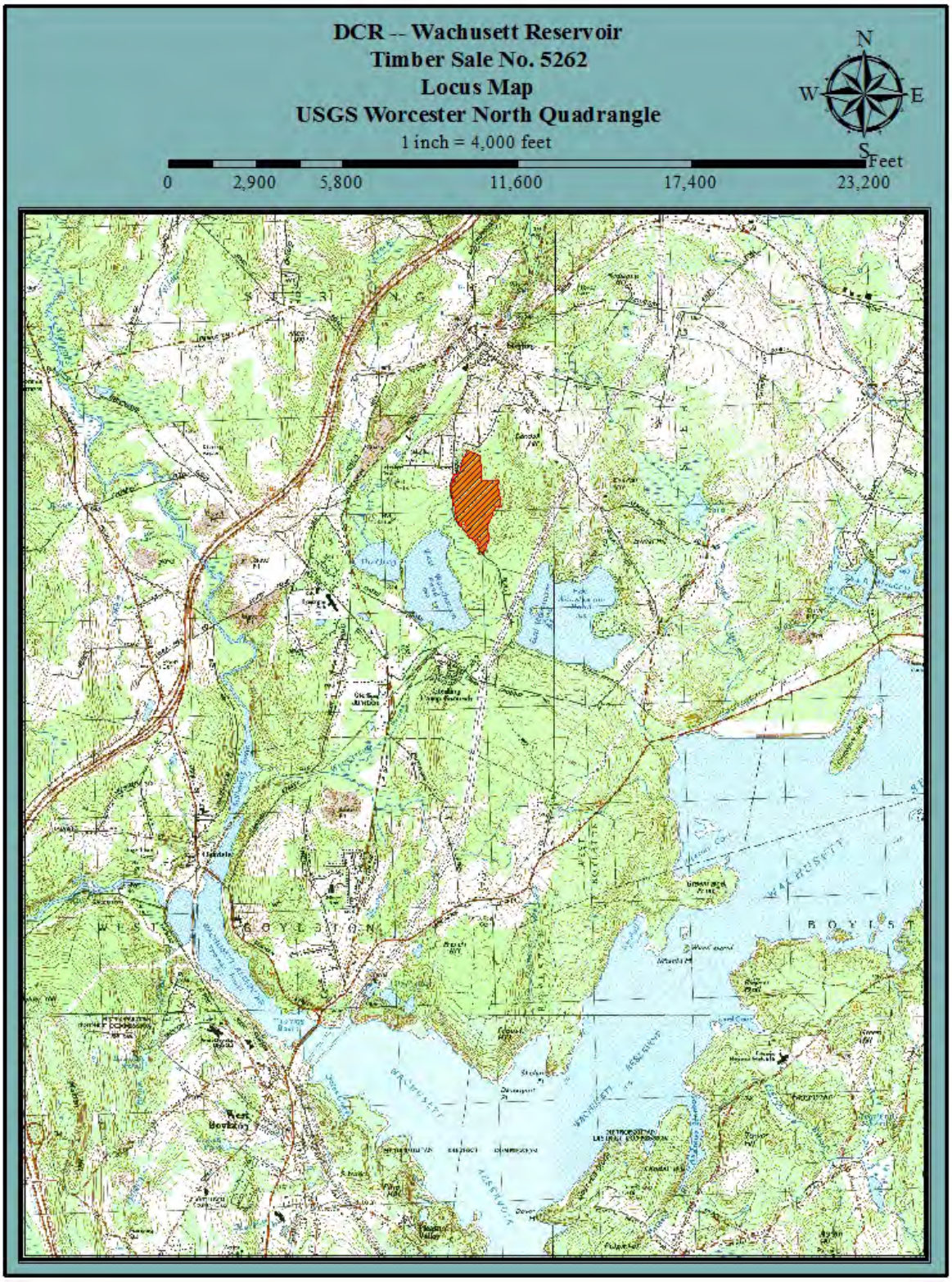

**Figure 4. Pre-Harvest Photographs, A-D**

A. The landing on Newell Hill Road. This is the same landing location that was used for a previous operation in 2002.

B. An opening is being made here to release the excellent understory of pine, oak and maple.

C. This small gap was created by the cutting in 2002. The regeneration that was established will now be released by enlarging this small gap. Note the large red oak just to the right of the center of the photo. This tree is being retained to provide long-term structural diversity which has a wide range of benefits.

D. This tiny pond, while perennially wet, is a functioning vernal pool. It is perched high up on the hill and has no inlet or outlet.

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

A. One of the patches of overstory removal thus creating an area of young forest. The oak tree in the middle of the photo was intentionally retained to provide added structural diversity.

B. Another area where the older trees are removed in order to give the young trees the room and light they need to thrive.

C. The chunks of oak trees visible in the foreground of this photo show the quality of many of the oaks in this area. These rotten and hollow trees are due to both carpenter ant infestations which are common on this thin-soiled, rocky sites as well as a serious forest fire in 1999 which killed many trees and scarred others which leads to internal decay.