# 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:** 1046 |
| **DCR Forest Cutting Plan File Number:** |

### Site Information

| | |
|---|---|
| **Watershed**: Quabbin | **Town(s)**: Hardwick |
| **Acres:** 38.8 | **Nearest Road:** Mellon Road |
| **Natural Heritage Atlas overlap?:** Yes | **Public Drinking Water Supply Watershed?:** No |
| **Forest Types:** mixed oak and white pine/oak | **ACEC?:** No |
| **Soils:** Woodbridge-Paxton and Charlton-Paxton associations, extremely stony | |
| **Wetland Resources:** Muddy Brook runs parallel to the harvest area on the east side. | |
| **Vernal Pools:** None on lot, one on west side of Mellon Rd. on private property and is buffered on this lot. | |

### Harvest Information

| | |
|---|---|
| **Harvest Start Date:** Has not started | **Harvest End Date:** 12/1/17 |
| **Number of Wetland Crossings:** None | **Number of Stream Crossings:** None |

### Best Management Practices Applied

| | |
|---|---|
| **Stream Crossings** | There are no stream crossings. |
| **Filter Strips** | Variable width filter strip along Muddy Brook; no harvesting within 50 feet of Brook. |
| **Wetland Crossings** | There are no wetland crossings. |
| **Harvesting in Wetlands** | There is no harvesting in wetlands. |

| **DWSP Forester supervising this harvest** |
|---|
| **Name:** Steven Wood |
| **Forester License #:** 257 |
| **Phone #:** 413-323-6921 ext. 156 |
| **Email:** Steven.Wood@state.ma.us |

# NARRATIVES

## General Description/Forest Composition/History:

The area to be harvested is in the town of Hardwick, and is bounded by Fleming Road to the north and Mellon Road to the west. Muddy Brook runs parallel to the east boundary of the lot, about 100 feet away. Lot 1045 abuts this lot on the south and runs south along Mellon Rd. to Greenwich Rd.

The stone walls on this lot attest to its history of clearing for agriculture, mostly for pasture. When the farmland was abandoned, probably in the late 19$^{th}$ or early 20$^{th}$ century, it reverted to forest. This lot was part of a privately owned parcel that was given to the Nature Conservancy in 1978, which donated it to DCR (then called the Metropolitan District Commission) in 1980.

The primary tree species are white pine and mixed oaks, particularly red oak. Other hardwoods include black and paper birch, red maple, aspen, ash, and hickories. Hemlock occurs in small groups, mainly as suppressed mid-story trees, particularly near Mellon Road. A harvest in 1990 resulted in extensive regeneration, some of which was damaged and/or partially released by recent winter storms.

The soils on this lot are primarily Woodbridge-Paxton and Charlton-Paxton associations, extremely stony. These are glacial till soils derived from granite and gneiss, composed mostly of fine sandy loams. They range from moderately well drained (Woodbridge) to well drained (Charlton and Paxton).

## Site Selection:

The primary goal of the watershed forest management program is to create and maintain a forest that provides high quality drinking water to current users and future generations. In order to achieve this, DWSP has determined that the forest should contain a diversity of species in various stages of development (seedlings through large legacy trees). In addition, the forest should be vigorous; actively growing and regenerating. A forest in this condition is resilient to and can quickly recover from small and large scale disturbances such as diseases, insect infestations, ice storms and hurricanes.

The goal of this harvest is to build on the success of the work started in 1990 by continuing the process of establishing new tree seedlings and providing space for existing regeneration to expand and grow. The full diversity of native species is being maintained in all age classes. This combination of structural and species diversity builds resistance and resilience into the forest.

## Silvicultural Objectives:

The main treatment at this time is the removal of the overstory in small groups, up to ½ acre in size, in order to foster regeneration. Some groups were placed where there were clusters of trees that were declining or had weak stem form, often due to insects, diseases, or storm damage. These vulnerable trees will be replaced with vigorous new seedlings, or with saplings where there is existing regeneration to be released. Where there were groups of regeneration created from the previous cut these were expanded upon by creating a new abutting group.

On the slope leading to the stream the areas between groups were thinned to improve the vigor of the remaining overstory trees. Wherever possible wildlife habitat features were maintained and protected, such as snags (dead trees) and trees with cavities or nests.

**Cultural Resources:**

Stone walls are numerous throughout this section. There are many breaks and barways in these walls and other than one barway which will need to be widened they can easily be avoided and protected during the upcoming harvest. This is in keeping with DWSP's standard practice, which dictates that every effort is made to keep existing stone walls intact. Otherwise, this area has been determined not to be culturally or archeologically sensitive based on a review by the DCR Archaeologist.

**Wildlife/Rare or Endangered Species:**

The eastern most portion of this lot is within a habitat "bubble" designated for protection by the Natural Heritage and Endangered Species Program (NHESP). NHESP has determined that the area within 50-300 feet of Muddy Brook should be harvested between November 1 and March 31 in order to protect these species. (The time window would be narrower for the area within 50 feet of the Brook, but this area will not be part of this harvest.)

The lot contains no other critical habitats or known rare or endangered species, and no vernal pools. Beavers have had a substantial impact on Muddy Brook, altering the hydrology and killing hardwoods on the banks. The uplands are home to a variety of wildlife including deer, turkey, coyote and moose.

**FIGURES**

**Figure 1. Forest Cutting Plan**

**Figure 2. 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)

**For DCR Use Only:**

| | | | |
|---|---|---|---|
| File Number | 39-7796-16 | Case No. | |
| Date Rec'd | 8-11-15 | Nat. Hert. | Yes |
| Earliest Start | 8.26.15 | Nat. Hert. Imp. | Yes |
| River Basin | Chicopee | Pub. Dr. Wat. | Quabbin |
| Gen. Obj. | LT | ACEC | N |

## Site Information

### Location

Town: Hardwick, Lot 1046
Road: Mellon Rd.
Acres: 38.8 Proposed Start Date: 9/15/15
Vol. MBF: 98.5 Vol. Cds.: 192 Vol. Tons: 97

### Plan Preparer

Name: Steven J. Wood
Address: DCR, Division of Water Supply Protection
485 Ware Rd.
Town, State, Zip: Belchertown, MA 01007
Phone: (413) 323-6921 ext. 156
Type of Preparer: Mass. Licensed Forester
*Mass. Forester License #: 257
*Required for land under Ch61, Ch61A or Forest Stewardship

### Landowner

Name: DCR, Division of Water Supply Protection
Mailing Address: 485 Ware Rd.
Town, State, Zip: Belchertown, MA 01007
Phone: (413) 323-6921
Ch61 ☐ Ch61A ☐ Stew ☐ *Case #
Est. Stumpage Value

### Licensed Timber Harvester**

Name
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 | | | |

### 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

*See attached NHESP determination
- boundaries of 300' buffer has been staged

## 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.

**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 | 25.7 | Red Maple | |
| Red Pine | | Sugar Maple | |
| Pitch Pine | | Red Oak | 49.8 |
| Hemlock | | Black Oak | 15.1 |
| Spruce | | White Oak | 7.5 |
| Other Sftwd. | | Other Hdwd. | 0.5 |
| White Ash | | **Total Mbf** | 98.5 |
| Beech | | **Cordwood (Cds)** | 192 |
| White Birch | | **SW Pulp (Tons)** | 97 |
| 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 | OM4 | | | |
| Acres | 38.8 | | | |
| Landowner Objective | LT | | | |
| Designation of Trees | CT | | | |
| Type of Cut | SE | | | |
| Source of Regeneration | AD/SE | | | |

## 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 specie

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.

Walter E Peda 8-6-15

Signature of landowner(s) Date

## Service Forester

### Determination and Status

| | Approved | Disapproved | Expires |
|---|---|---|---|
| Cutting Plan | ☒ | ☐ | 8-11-2017 |

9-18-2015

Signature of Service Forester/Director's Agent Date

| | | | 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

***If Other (OT) or a non-standard system is used an explanation must be given on attached narrative page**

# Forest Cutting Plan

Narrative Page **(Effective Date: 1/1/04)**

Use this page to provide further explanation or if Other (OT) was used in any category on pages 3 or 4.

Landowner DCR, DWSP

Town Hardwick

File Number

## BMPs

Use this Section to provide further explanation or if Other (OT) was used in any category in the Best Management Practices Section on Page 3.

This area is being managed as an irregular shelterwood using group selection with some thinning between groups occuring mainly in road and wetland buffers.There are 20 groups ranging in size from .2-.5 acres. Cut trees are yellow marked with some blue used in the northern end. Edges of groups are designated by an orange stripe and dot and pink flagging. Orange marked trees are to be protected. This is a continuation of and similar treatment as lot 1045, covered by another cutting plan, and is marked with blue paint and pink "Harvest Boundary" flagging seperates the 2 lots. The same landings or only the northern one may be used depending on the timing and who wins the bid. A NHESP bubble is along Muddy Br. and openin 13, 14 and 16 fall within it.



## Designation of Trees

Use this Section to describe the types of trees to be harvested and/or retained if Other (OT) was used for "Designation of Trees" in the Stand Treatment Section on page 4.

| Stand No. | Species to be Cut | Size of Trees to be Cut | Quality of Trees to be Cut | % BA/Acre Removed |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## Regeneration & Future Condition

Use this Section to describe how Chapter 132 requirements will be met if a non standard system (HG, DL, or OT) was used for the "Type of Cut" in the Cutting Standards Section on page 4.

| Stand No. | Source of Regeneration (ex. AD, SE ) | How will Regeneration be obtained/protected? If using AD - Describe the species present and how the regeneration will be protected If using SE - Describe the source of the seed and the number of seed trees/acre |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| Stand No. | Desired Future Condition Describe what the stand is expected to look like five years from the harvest, including the condition of the overstory & understory |
|---|---|
| | |
| | |
| | |
| | |

Commonwealth of Massachusetts

# Division of Fisheries & Wildlife

Jack Buckley, *Director*

Kate Marquis
Department of Conservation and Recreation
355 West Boylston St.
Clinton, MA 01510

| | |
|---|---|
| Cutting Plan No. | None Provided |
| NHESP Tracking No. | 15-34750 |
| Town | Hardwick |
| Road | Mellon Road |
| Landowner | DCR- DWSP |
| Preparer | Steven Wood |
| Date | September 3, 2015 |

Dear Kate,

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.

Muddy Brook and the upland forest area surrounding the Brook is 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 0 - 50' of Muddy Brook shall be conducted only during the time period beginning November 15 and ending February 28, of any year.
- Operation of motorized vehicles within 50 - 300' of Muddy Brook shall be conducted only 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.

Additionally, the Division requests that the boundaries of 300' buffer be flagged (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:



**Natural Heritage & Endangered Species Program**
1 Rabbit Hill Road Westborough, Ma 01581 Tel: (508) 389-6360 Fax: (508) 389-7890

- The boundaries of the 300' buffer need not be marked if timber harvesting operations across the entire site occurs during the above requested time of year for operation within the 300' buffer (i.e. November 1 –March 31).

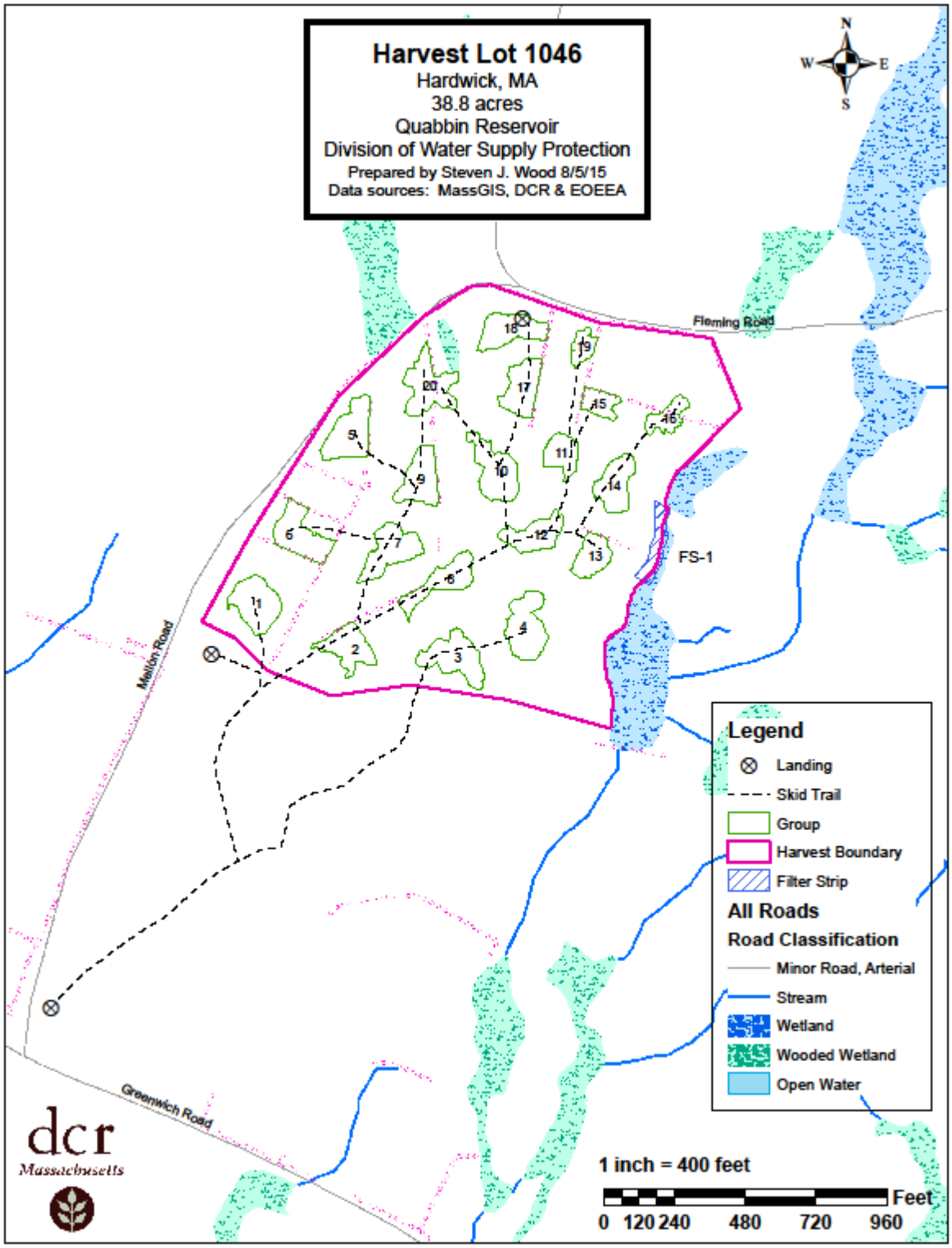
Please copy the Division on any proposed amendment, extension and on the approved Plan for the site. If you have any questions about this letter, please contact Brent Powers at (508) 389-6354.

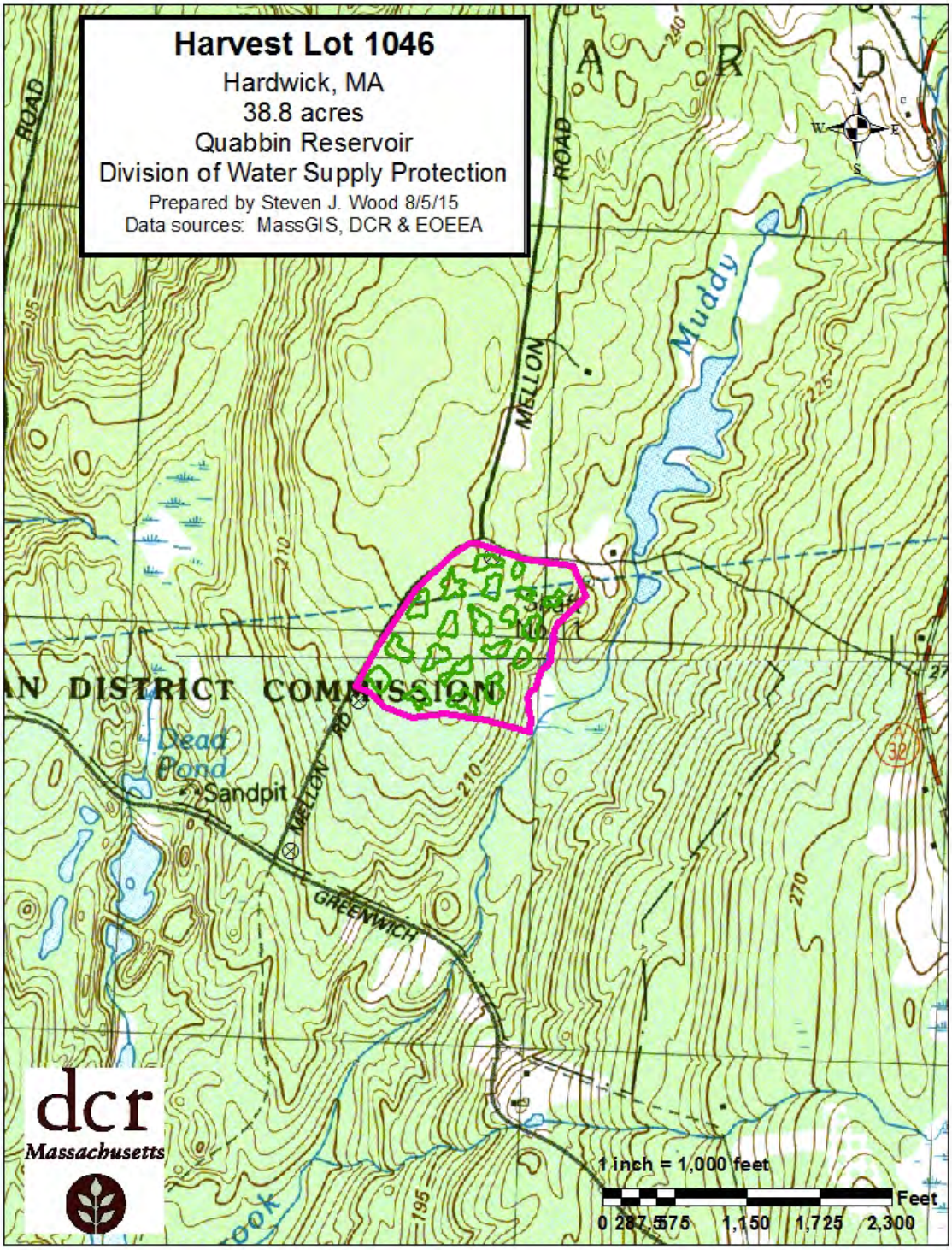
Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

Cc: Hardwick Conservation Commission (via e-mail)


Harvest Lot 1046
Hardwick, MA
38.8 acres
Quabbin Reservoir
Division of Water Supply Protection
Prepared by Steven J. Wood 8/5/15
Data sources: MassGIS, DCR & EOEEA
N
W
E
S
Fleming Road
Mellon Road
Greenwich Road
FS-1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Legend
Landing
Skid Trail
Group
Harvest Boundary
Filter Strip
All Roads
Road Classification
Minor Road, Arterial
Stream
Wetland
Wooded Wetland
Open Water
1 inch = 400 feet
0 120 240 480 720 960
Feet
dcr
Massachusetts


Harvest Lot 1046
Hardwick, MA
38.8 acres
Quabbin Reservoir
Division of Water Supply Protection
Prepared by Steven J. Wood 8/5/15
Data sources: MassGIS, DCR & EOEEA
ROAD
MELLON
ROAD
Muddy
Dead Pond
Sandpit
MELLON RD
GREENWICH
DISTRICT COMMISSION
dcr
Massachusetts
1 inch = 1,000 feet
Feet
0 287.5 575 1,150 1,725 2,300

dcr

COMMONWEALTH OF MASSACHUSETTS
Department of Conservation and Recreation
Division of State Parks and Recreation

FILE # 124-7796-16

# FOREST CUTTING PLAN CERTIFICATE

W

Post this in a conspicuous place within the area in which the harvesting operation is to take place.

This certifies that DWSP (Name of Owner) 485 Ware Rd Belchertown (Address) in accordance with the provision of M.G.L. Chapter 132, Section 40-46, filed in Clinton with the Dept. of Conservation and Recreation, Division of State Parks and Recreation, a Notice of Intent to cut forest products upon the Mellen Rd lot.

Approval Date 9/18/2015

Director's Agent Kate Marquis

DCR Phone No. (413) 992 8734

ISSUED BY:

Priscilla E. Geigis, Director
Division of State Parks and Recreation

**Figure 2: Pre-Harvest Photographs A, B & C**

**A.**

Photo point 1 looking west towards barway on Mellon Rd., in opening #6, 0.5 acres. Yellow marked trees to be cut.

**B.**

Photo point 2 northeast of barway (orange/black flagging) looking southwest along wall into 0.5 acre group #6.

**C.**

Taken from proposed entrance to new landing, just south of Fleming Rd. looking south.