# 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:** 1055 |
| **DCR Forest Cutting Plan File Number:** 234-9453-19 |

### Site Information

| | |
|---|---|
| **Watershed**: Quabbin Reservoir | **Town(s)**: Hardwick & Petersham |
| **Acres:** 40 | **Nearest Road:** Petersham Rd (32A) |
| **Natural Heritage Atlas overlap?:** No | **Public Drinking Water Supply Watershed?:** Quabbin |
| **Forest Types:** White Pine/Hardwoods, White Pine/oak and Red Pine | **ACEC?:** No |
| **Soils:** Charlton-Chatfield-Hollis association (925E, C), Charlton-Paxton association (902E), Woodbridge-Paxton (910C) | |
| **Wetland Resources:** Seeps, streams and wetlands present. | |
| **Vernal Pools present or within 200 feet of harvest:** None. | |

### Harvest Information

| | |
|---|---|
| **Harvest Start Date:** TBD | **Harvest End Date:** TBD |
| **Number of Wetland Crossings:** One if north landing used. | **Number of Stream Crossings:** Potentially 4. |

### Best Management Practices Applied

| | |
|---|---|
| **Stream Crossings** | Portable bridge required on all crossings, approaches will be poled and seeded. |
| **Filter Strips** | Variable width filter strips used with less than 50% of basal area cut. |
| **Wetland Crossings** | If north landing is used this crossing will be needed. It is an old road that will need the wet stretch to be poled and/or reinforced with stone and a portable bridge used over stream. |
| **Harvesting in Wetlands** | No harvesting in wetlands. |

| **DWSP Forester supervising this harvest** |
|---|
| **Name:** Steven J. Wood |
| **Forester License #:** 257 |
| **Phone #:** (413) 213-7944 |
| **Email:** steven.wood@state.ma.us |

# NARRATIVE

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

The area to be harvested is half in Hardwick and half in Petersham, and is just south of lot 1054 and has a landing in common with it(north one which might not be used). Lot is all on the west side of route 32A and abuts private property to the south.

The stone walls on this lot attest to its history of being cleared for agriculture, mostly for pasture. When the farmland was abandoned, probably in the late 19th or early 20th century, it reverted to forest. One of these areas along 32A was planted to red pine in the 40's. This stands was thinned in the 80's (as was most of the lot) and since then the red pine has declined from a non-native insect the red pine scale. A root rot is most likely also present. Sapling to pole sized white and black birch is common in the understory with some white pine and red maple mixed in. Seedlings of most native trees are scattered throughout.

The rest of the harvest is in white pine/hardwood or white pine/oak stands which had also been previously thinned with a few openings up to about 1/4 acre created. These stands regenerated similarly to the red pine but most areas were cut again around 2000 and came back to mainly white pine, black birch and red maple with scattered oak in some areas. Some of the white pine in overstory is quite large and, especially on western side of lot, is declining, possibly from one of the needle funguses that have been common recently. The southwestern stand has some large oak which has been impacted by gypsy moth defoliation the last 2 years with some mortality occurring this year. Dead snags of white and red pine (numerous), along with some hardwoods are scattered throughout and will be left standing, as much as possible, during the harvest.

The primary tree species present in overstory is white pine with black birch, red maple and mixed oaks (predominately red oak). Other hardwoods include paper birch, aspen, ash, sugar maple and black cherry. On the area with red pine it is the predominate species with most of the other species above scattered throughout the stand.

The soils on this lot are primarily Charlton-Chatfield-Hollis association (925E, C), Charlton-Paxton association (902E) and Woodbridge-Paxton (910C). Most are well drained and stony though some areas around the wetlands/streams/seeps could be easily rutted.

**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.

This site was chosen since the stands overstory is predominately even-aged and the red pine and oak were declining. Also there is healthy, vigorous and diverse regeneration present that wouldn't stay in that condition much longer.

**Silvicultural Objectives:**

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

Guided by the principles stated above, the primary purpose of this harvest is the establishment of a new age class by harvesting part of the overstory in small groups, up to 2.7 acre in size, in order to foster regeneration. Groups were placed according to our guidelines. Areas where there were clusters of trees that were declining or had weak stem form, often due to insects, diseases, or storm damage, were specifically targeted. Where there were groups of regeneration created from the previous cut these were expanded upon by cutting a new abutting group. The southwestern stand had more of the overstory removed in the past and has a more variable age structure currently. This cut removes about 2/3rds of the remaining overstory and should be the last harvest here till the newer growth becomes merchantable. The red pine stand was already regenerated and well stocked with hardwood poles up to about 9" diameter so this area is having the remainder of the red pine overstory cut. It is just over 2 acres and has scattered white pine and hardwood stems from the original overstory retained along with as much of the hardwood poles as possible.

Wherever possible wildlife habitat features were maintained and protected, such as snags (dead trees) and trees with cavities or nests. Exceptional individuals of all species present were retained in the stand for seed and to enhance diversity.

**Cultural Resources:**

Stone walls are numerous throughout this area. There are many breaks and barways in these walls and they can be used to avoid and protect the stone walls 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 lot contains no critical habitats or known rare or endangered species, and no vernal pools. The uplands are home to a variety of wildlife including deer, turkey, grouse, coyote and moose.

**FIGURES**

Figure 1. Forest Cutting Plan

**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 | 234-9453-19 | Case No. | |
| Date Rec'd | 7/11/18 | Nat. Hert. | / |
| Earliest Start | 7/26/18 | Nat. Hert. Imp. | No |
| River Basin | Chicopee | Pub. Dr. Wat. | NO |
| Gen. Obj. | LT | ACEC | NO |

## Site Information

### Location

Town: Hardwick & Petersham | Quabbin lot 1055
Road: Petersham Rd (32A)
Acres: 40 Proposed Start Date: 8/1/2018
Vol. MBF: 220 Vol. Cds.: 115 Vol. Tons: 263

### Plan Preparer

Name: Steven J. Wood
Address: DCR, Division of Water Supply Protection
485 Ware Rd.
Town, State, Zip: Belchertown, MA 01007
Phone: (413) 213-7944
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: $35,125.00

### Licensed Timber Harvester**

Name: Steve Glaszcz
Address: 171 Old Enfield Rd.
Town, State, Zip: Belchertown, MA 01007
Phone: 413 362-9418
Mass. Lic. Harvester #: 1156
**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 | BR | BR | BR |
| Existing Structure | N | N | N | N |
| Type of Bottom | ST | ST | ST | ST |
| Bank Height (ft) | 0.5 | 0.5 | 0.5 | 1 |
| Stabilization | CO/SE | CO/SE | CO/SE | SE |

### Wetland Crossings

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

### 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 | 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 | 165.8 M | Red Maple | 4.5 M |
| Red Pine | 15 M | Sugar Maple | |
| Pitch Pine | | Red Oak | 23.2 M |
| Hemlock | | Black Oak | 2.9 M |
| Spruce | | White Oak | 4.3 M |
| Other Sftwd. | | Other Hdwd. | |
| White Ash | 1.0 M | **Total Mbf** | 220.0 |
| Beech | | **Cordwood (Cds)** | 115 |
| White Birch | | **SW Pulp (Tons)** | 263 |
| B & Y Birch | 3.4 M | **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 | WO4 | | | |
| Acres | 40 | | | |
| 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.

Signature of landowner(s) — Date: 7-6-18

## Service Forester

### Determination and Status 234.9453.19

| | Approved | Disapproved | Expires |
|---|---|---|---|
| Cutting Plan | ☒ | ☐ | 7/11/20 |

Signature of Service Forester/Director's Agent — Date: 7-18-18

| | | | 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 234-9453-19

## 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.

Note WC-1 is same crossing as on approved cutting plan 234-9313-18 for abutting lot. This is an optional landing and may not be needed. Other than opening 5, all areas had been cut multiple times over last 30 yrs. Opening 2 and 5 have 10-30 BA retained. Other small groups (1,3,4,6,7,9) have 5-10 BA retention but plenty of advanced regeneration and range from 0.4 ac to 2.7 ac. The largest is 9 and has an area of red pine which is all being cut and an area with oak which will be well stocked with saw log size RO. The largest section is 8 at 11.3 acres. This area had the heaviest past cut and is already in a multi-aged condition. This will be the final cut on this section for awhile. Lots of saplings, poles and legacy trees for retention.

## 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.

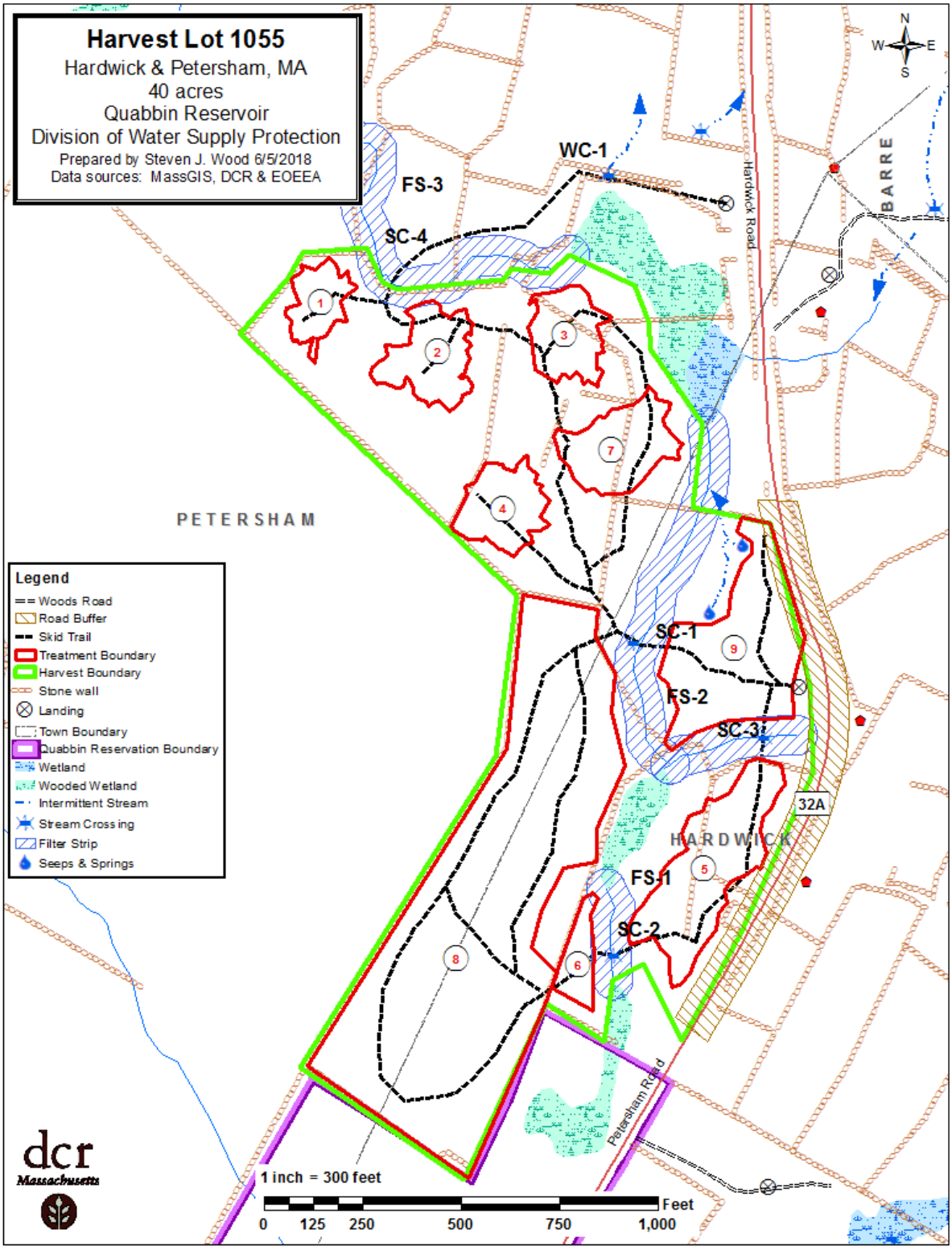
| Stand No. | Species to be Cut | Size of Trees to be Cut | Quality of Trees to be Cut | % BA/Acre Removed |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

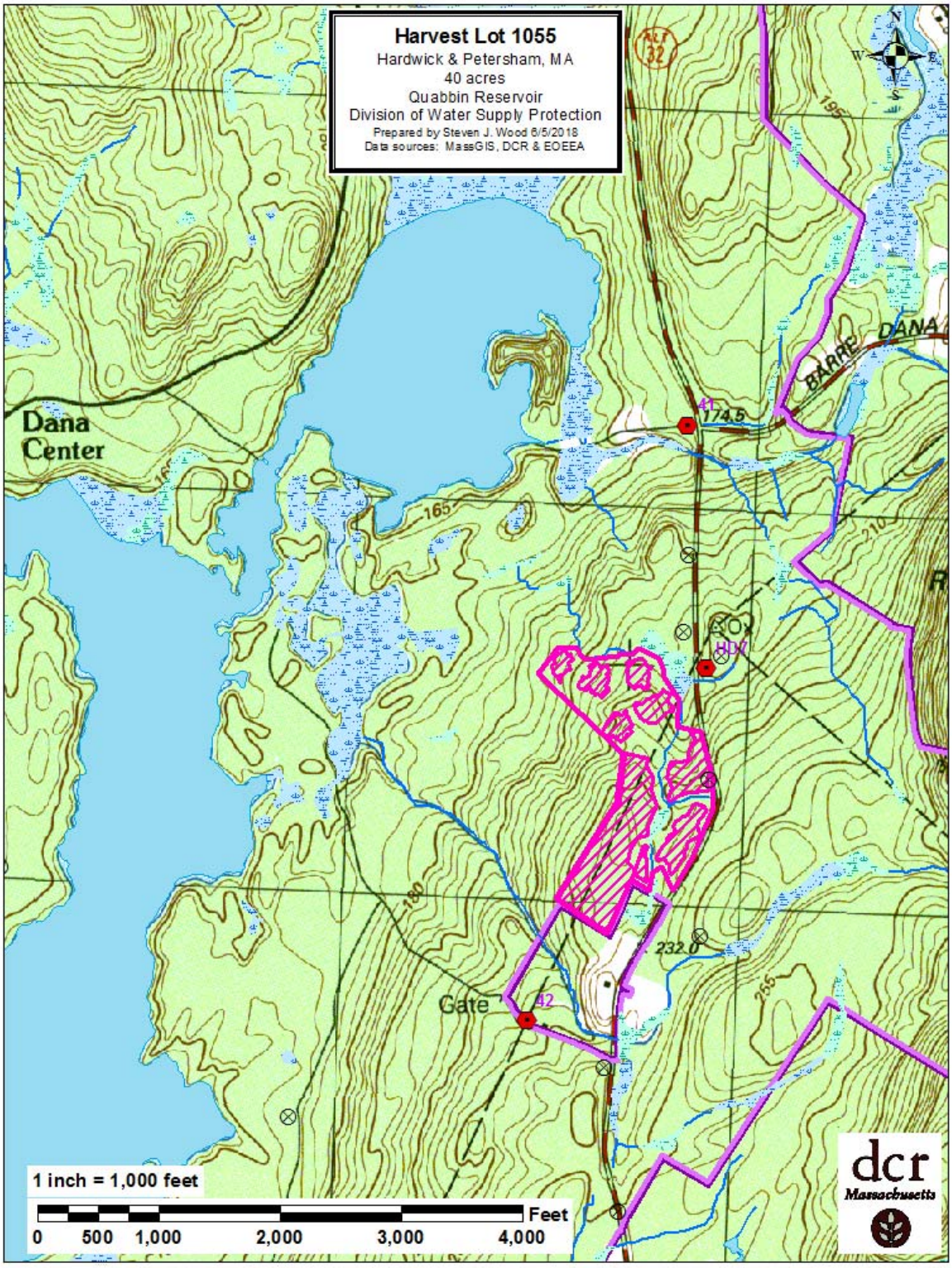
## Regeneration & Future Condition

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<br>Describe what the stand is expected to look like five years from the harvest, including the condition of the overstory & understory |
|---|---|
| | |
| | |
| | |
| | |


Harvest Lot 1055
Hardwick & Petersham, MA
40 acres
Quabbin Reservoir
Division of Water Supply Protection
Prepared by Steven J. Wood 6/5/2018
Data sources: MassGIS, DCR & EOEEA
N
W
E
S
WC-1
FS-3
SC-4
Hardwick Road
BARRE
PETERSHAM
HARDWICK
32A
SC-1
FS-2
SC-3
FS-1
SC-2
Petersham Road
1
2
3
4
5
6
7
8
9
Legend
Woods Road
Road Buffer
Skid Trail
Treatment Boundary
Harvest Boundary
Stone wall
Landing
Town Boundary
Quabbin Reservation Boundary
Wetland
Wooded Wetland
Intermittent Stream
Stream Crossing
Filter Strip
Seeps & Springs
dcr
Massachusetts
1 inch = 300 feet
0
125
250
500
750
1,000
Feet


Harvest Lot 1055
Hardwick & Petersham, MA
40 acres
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Division of Water Supply Protection
Prepared by Steven J. Wood 6/5/2018
Data sources: MassGIS, DCR & EOEEA
Dana Center
BARRE
DANA
41
174.5
165
210
195
180
232.0
255
Gate
42
HDX
1 inch = 1,000 feet
Feet
0
500
1,000
2,000
3,000
4,000
dcr
Massachusetts

dcr

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

FILE # 234.9453.19

# 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 DCR-DWSP (Name of Owner) 485 Ware Rd, Belchertown, MA 01007 (Address) in accordance with the provision of M.G.L. Chapter 132, Section 40-46, filed in Amherst F.O. with the Dept. of Conservation and Recreation, Division of State Parks and Recreation, a Notice of Intent to cut forest products upon the Quabbin 1055 lot. (Petersham Rd), Harwick/Petersham

Approval Date 7/18/18

Director's Agent Andrew Rawcliffe / Sean Libbey

DCR Phone No (617) 548-1677 / (413) 545-4539

ISSUED BY:

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