

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

Project Title: Shaft 12 Road Red Pine
DWSP Harvest Permit Number: 1051
DWSP Proposal ID: HA-17-10
DCR Forest Cutting Plan File Number: 124-8857-17

Site Information

Watershed: Quabbin
Town(s): Hardwick
Acres: 35
Nearest Road: Greenwich Road
Natural Heritage Atlas overlap: Yes
Public Drinking Water Supply Watershed: Quabbin
Forest Types: Red pine, pine/oak, oak/hardwood
Area of Critical Environmental Concern (ACEC): No
Soils: Montauk-Scituate-Canton association
Wetland Resources: Small streams and wetlands.
Vernal Pools: No

Harvest Information

Harvest Start Date: 1/18/2018
Harvest End Date: 3/19/2018
Number of Wetland Crossings: 2
Number of Stream Crossings: 2

Best Management Practices Applied

Stream Crossings: Crossed with portable bridges, seed and corduroy used for stabilization
Filter Strips: 4 variable width strips
Wetland Crossings: Crossed during frozen/dry conditions, seed and corduroy used for stabilization
Harvesting in Wetlands: N/A

DWSP Forester supervising this harvest

Name: Steven J. Wood
Forester License number: 257
Phone number: (413) 237-9713
Email: douglas.hutcheson@mass.gov

Narrative

General Description/Forest Composition/History

The area to be harvested is in the town of Hardwick, access through gate 43a or 44. Lot is on the north side of Shaft 12 Road across from intersection with Fitzpatrick Road and runs down towards the reservoir.

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. 5 separate upland areas were planted to red pine in the 1940's. See Cultural Resource section for further details on past use.

The primary tree species present are white and red pine and mixed oaks (predominately red oak). Other hardwoods include black and paper birch, red maple, ash, and hickories. Scattered hemlock is present mainly as suppressed mid-story trees. The red pine is infected with scale and root rot and there are numerous dead and dying stems present. Understory is mostly black birch and white pine, and a lot of the pine is dropping out due to needle casts, competition and probably the recent gypsy moth defoliations. There is some scattered regeneration of the other common hardwoods throughout the area, most notably sugar maple in the north central part of the lot.

The excluded section in the north central section of lot appears to have been an old field which was at least partially planted to red pine, much of which has died. There are a couple of acres here now that is infested with Japanese knotweed, which is spreading, mainly to the north and east. A buffer of red pine was left around this to slow the invasives spread into the surrounding stand.

The soils on this lot are primarily Montauk-Scituate-Canton association and are stony with surface stone present on some sections. Soil is well drained but there are a few low areas that get seasonally wet, these areas were mostly avoided.

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. 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 area was selected for harvest due to the stands of declining red pine (infected with red pine scale and root rot). Additional surrounding acreage between the streams is treated to complete the treatment and avoid having to reenter this area for a while. This limits stream crossings required and the frequency and duration of soil disturbance.

Silvicultural Objectives

The goal of this harvest is to build on the success of the work started in 1992 and expanded upon in 1995 and 2003, 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.

Since most of this area had been cut several times in the past the majority is well stocked with sapling to pole sized stems. These areas are having most of the remaining overstory cut to make the final release. Individuals and groups of better formed, vigorous and healthy stems of hardwoods, particularly mast producers, are retained for seed production, habitat and diversity. The areas that contained more white pine and hardwood had scattered openings between 0.4-1.0 acres created. Advance regeneration will be protected as much as possible and again some of the overstory will be retained. Most of this lot won't need to be cut again for decades.

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

This area has much evidence of past human use including a couple of walled lanes and remains of a railroad spur line which was never completed. Areas of cut and fill are still apparent and there are 2 stone culverts which are still functioning. One has been used as a stream crossing and will be again for this project. It will be overlain with a portable bridge during the harvest to protect it.

Stone walls are numerous throughout this area. There are 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. There is a small well in one of the adjoining wetlands which could have been used for watering livestock. Otherwise, this area has been determined not to be culturally or archeologically sensitive based on a review by the DCR Archaeologist.

Rare or Endangered Species

The lot is along the reservoir shoreline so is within a habitat "bubble" designated for protection by the Natural Heritage and Endangered Species Program (NHESP). No known active nests exist nearby. NHESP does not expect activities proposed in the plan to negatively impact listed species and did not require modifications to the plan.

The lot contains no other critical habitats or known rare or endangered species, and no vernal pools. The uplands are home to a variety of wildlife including deer, turkey, coyote and moose.

Figures

Figure 1. Final 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)

JUN 16 2017

For DCR Use Only:

File Number 04-885-117 Case No. _____
 Date Rec'd 6/16/17 Nat. Hert. Y
 Earliest Start 7/3/17 Nat. Hert. Imp. _____
 River Basin CHOCOPPE Pub. Dr. Wat. QUABBIN
 Gen. Obj. CT ACEC _____

FINAL

Site Information

Location

Town Hardwick DWSP Lot 1051 Amendment SC2
 Road Off Greenwich Rd, access through gate 43A, 44
 Acres 35 Proposed Start Date _____
 Vol. MBF 174.4 Vol. Cds. 75 Vol. Tons 185

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 16,000

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	BR	BR		
Existing Structure	N	N		
Type of Bottom	ST	ST		
Bank Height (ft)	0.5'	1'		
Stabilization	SE/CO	SE		

Wetland Crossings

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing	10'	32'		
Mitigation	FR,DR	FR,DR		
Stabilization	SE/CO	SE/CO		

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

Portable bridges required SC-1, SC-2 and WC-2; WC-1 if wet when used. SC-2 is only for transport of equipment between sections. *Stems wood*
 • NO NETECP IMPACT - SEE ATTACHED REVIEW

Codes

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom	Note:
LF Mass. Lic. For.	CJ 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*

Table with 3 columns: Species, Mb/Cds, Mb/Cds. Rows include White Pine, Red Pine, Pitch Pine, Hemlock, Spruce, Other Sftwd., White Ash, Beech, White Birch, B & Y Birch, Black Cherry.

*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

Table with 5 columns: Indicate location on map, Forest Type, Acres, Landowner Objective, Designation of Trees, Type of Cut, Source of Regeneration. Rows include ST-1, ST-2, ST-3, ST-4.

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.

[X] 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.

Signature of landowner(s)

Date 6-9-17

Service Forester

Determination and Status

Form with checkboxes for Approved, Disapproved, Extension, Amendment. Includes handwritten dates and signatures.

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 and Date 5/7/18

Codes

Table with 4 columns: Forest Types, Designation of Trees, Type of Cut, Source of Regeneration. Lists various codes and their corresponding descriptions.

*If other (OT) or a non-standard system is used an explanation must be given on attached narrative page pg 2 of 5

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 124-8857-17

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.

Area has been cut multiple times previously, most of harvest is a final overstory removal on red pine plantations. There is a good understory of black birch and/or white pine throughout. Patch number 7 has denser overstory and understory white pine mostly died so is more of an opening.

There is thinning around patches were appropriate. Edge of patches are marked with an orange stripe and dot. Save trees have an orange band, cut trees are blue marked, edge of harvest is pink flagged or double orange stripe. SC-1 is an existing stone culvert which will be protected with a portable bridge, or portable bridge will be used just upstream. If done during dry or frozen conditions WC-2 could be used instead, will not be used otherwise.

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

Harvest Lot 1051
 Hardwick, MA
 35 acres
 Quabbin Reservoir
 Division of Water Supply Protection
 Prepared by Steven J. Wood 5/30/2017
 Data sources: MassGIS, DCR & EOEEA

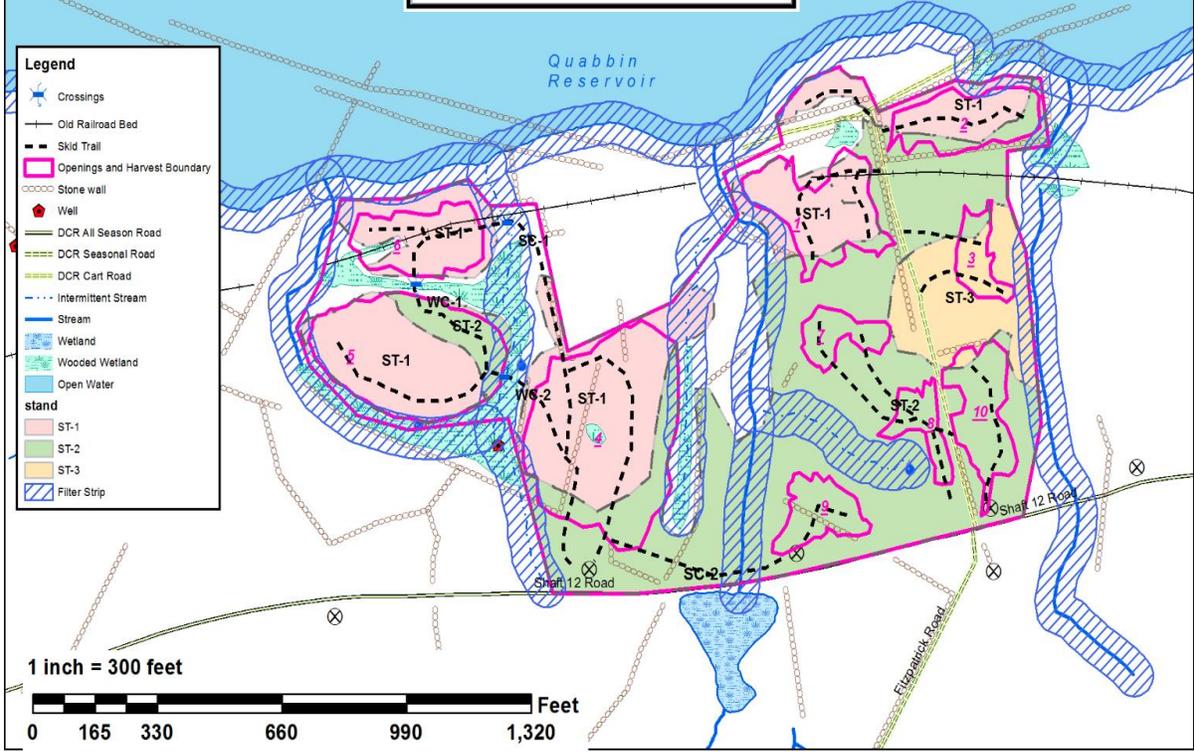


Legend

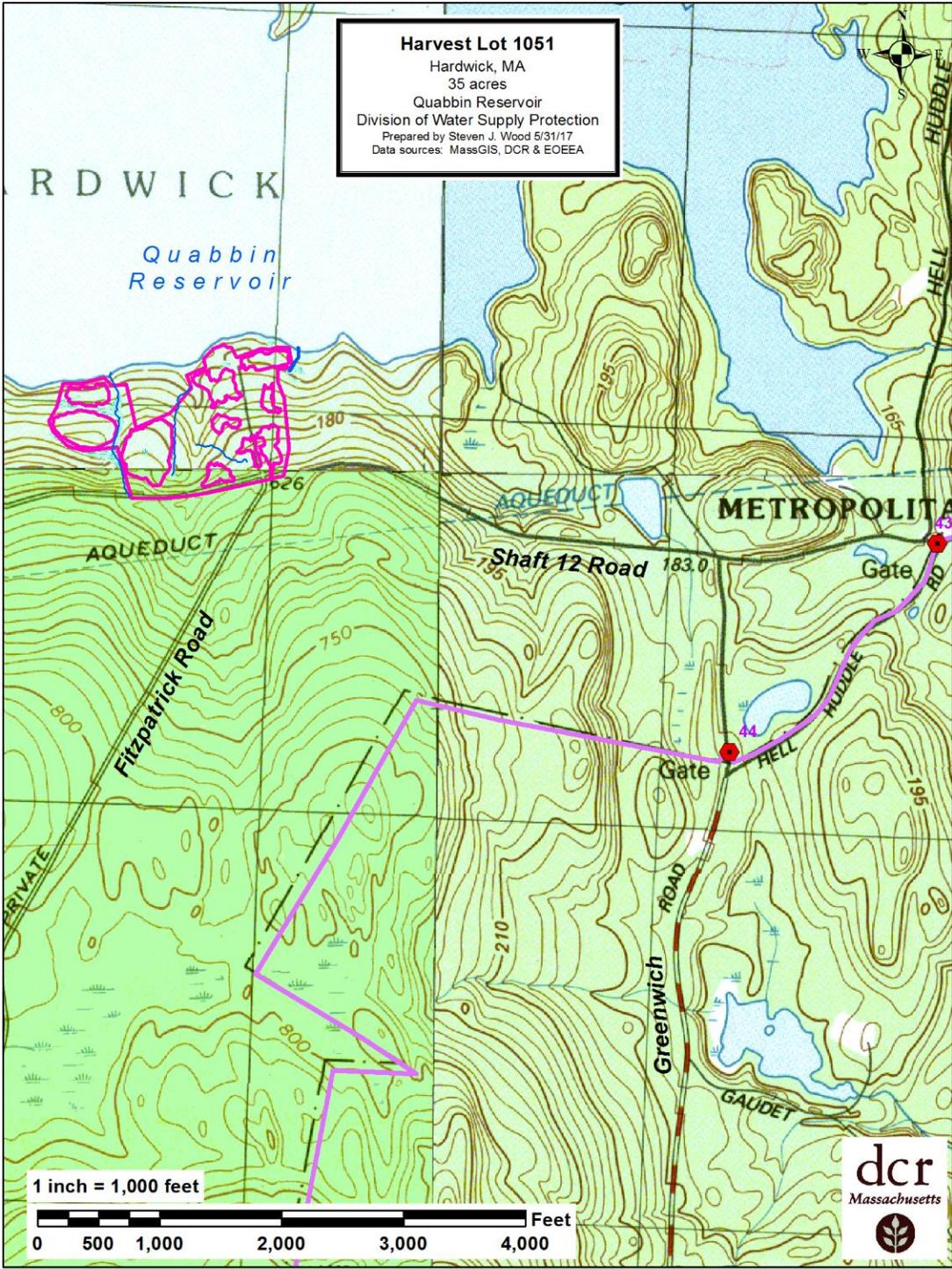
- Crossings
- Old Railroad Bed
- Skid Trail
- Openings and Harvest Boundary
- Stone wall
- Well
- DCR All Season Road
- DCR Seasonal Road
- DCR Cart Road
- Intermittent Stream
- Stream
- Wetland
- Wooded Wetland
- Open Water

stand

- ST-1
- ST-2
- ST-3
- Filter Strip



Harvest Lot 1051
Hardwick, MA
35 acres
Quabbin Reservoir
Division of Water Supply Protection
Prepared by Steven J. Wood 5/31/17
Data sources: MassGIS, DCR & EOEEA





**DIVISION OF
FISHERIES & WILDLIFE**

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

Jack Buckley, *Director*

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

Cutting Plan No. 124-8857-17
NHESP Tracking No. 17-36875
Town Hardwick
Road Greenwich Road
Landowner DCR - DWSP
Preparer Steven Wood
Date June 23, 2017

Dear Kate,

The Natural Heritage and Endangered Species Program ("the NHESP") of the Massachusetts Division of Fisheries and Wildlife ("the Division") has reviewed the above-referenced Forest Cutting Plan ("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 or brent.powers@state.ma.us.

Sincerely,

Thomas W. French, Ph.D.
Assistant Director

Cc: Town of Hardwick Conservation Commission

MASSWILDLIFE

5A of 5

dcr



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

FILE # 124-8857-17

W

FOREST CUTTING PLAN CERTIFICATE

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

This certifies that DCR-DWSP 485 Ware Rd, Belchertown, MA in accordance with the
(Name of Owner) (Address)

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

"DWSP 1051" lot. Hardwick, MA
(off Greenwich Rd)

Approval Date 6/30/17

Director's Agent Douglas Hutcheson

DCR Phone No. (413) 545-7020 (o)
(413) 237-9713 (c)

ISSUED BY: 

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