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: 3162
DCR Forest Cutting Plan File Number: 204-21474-20

Site Information

Watershed: Quabbin	**Town(s)**: New Salem
Acres: 52	**Nearest Road:** Osborne Rd Gate 21
Natural Heritage Atlas overlap?: Yes	**Public Drinking Water Supply Watershed?:** Yes
Forest Types: White Pine/Red Pine, Mixed Oak	**ACEC?:** No
Soils: Gneiss derived rock sandy loam	
Wetland Resources: No	
Vernal Pools present or within 200 feet of harvest?: Yes	

Harvest Information

Harvest Start Date: December 3, 2019	**Harvest End Date:** December 15, 2021
Number of Wetland Crossings: 0	**Number of Stream Crossings:** 2

Best Management Practices Applied

Stream Crossings	2
Filter Strips	Variable width
Wetland Crossings	None
Harvesting in Wetlands	None

DWSP Forester supervising this harvest
Name: Derek Beard
Forester License # 14
Phone #: 617-780-0631
Email: derek.beard@mas.gov

ACEC: Area of Critical Environmental Concern

NARRATIVE

General Description/Forest Composition/History:

Located in the Bials Hill area of New Salem, most of the project encompasses the west slope of the hill then westerly to points just west of Vaughn Rd (aka Gate 21 Rd); then south to a weir on the east branch of Underhill Brook. Outlying areas include two small red pine plantations closer to the west branch of Underhill Brook and a section of mostly dead oak on the west side of Brown Rd (southerly most portion of harvest). The project covers 194 acres of which 52 are being treated.

Past agrarian use has significantly influenced todays forest composition. Used for tillage and pasture, most of the land was open when purchased by the Commonwealth. The readily accessible tillage was planted to red pine while remote rougher ground was left to naturally reforest into what is now dense oak forest (red, black, white, scarlet and chestnut).

Following state ownership much of the area was thinned in the early 1970s and some portions again in the early 80s. Most recent activity was a three acre clear cut completed in 1986. In the past few years, changes in composition continue with significant red pine mortality from a beetle infestation as well as scattered oak mortality from gypsy moth caterpillar defoliation.

Three decades have elapsed, a slightly longer period then usual, since the last silvicultural treatment. The extension is due to selection of much of the area for a paired watershed study beginning in 1999.

The study was designed to assess change in water yield and nutrient deposition resulting from loss or alteration of forest cover. Beginning in 2002, monthly water samples were taken from two separate watersheds; the east branch of Underhill Brook (the experiment watershed) and middle branch of Dicky Brook (the control watershed). The sample duration has established a solid baseline of data from each watershed. In 2018, the decision was made to begin altering forest cover via timber harvesting within the Underhill Brook experiment watershed.

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 and future users. 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. Forest in this condition is ideally suited to be resilient to and quickly recover from small to large scale disturbances such as disease, insect infestation, ice storms and hurricanes.

Specifically, the area was selected to launch the second phase of the paired watershed study cited above.

Silvicultural Objectives:

Primary project purpose is to modify, through regeneration harvesting, approximately 20 to 25% of forest cover within the Underhill Brook watershed. A secondary objective is to remove dying or dead red pine and oak both in and outside, the experiment watershed.

Within the watershed this has been accomplished by salvage harvesting approximately 19 acres; 17 in red pine plantations and 2-acre area of dead oak. There are also 4 patch harvests covering approximately 12 acres. Specifically, two around 2 acres each and two around 4 acres each. Off watershed harvesting is all salvage work covering approximately 21 acres; 8 acres of red pine and 13 acres of dead oak.

Cultural Resources:

Stone walls are the most prominent cultural resource on the project. It is also home to several stone causeways over Underhill Brook that were constructed long ago by local farmers. There are two cellar holes that have been flagged for their protection during harvesting.

Wildlife/Rare or Endangered Species:

Maintaining and/or enhancing habitat is a high priority when planning and executing watershed forest management projects. As such, retaining live and dead snags, trees that show sign of use by wildlife for nesting/denning, scenting and foraging is a priority. Falling in a natural heritage bubble, the project area was reviewed by MA Natural Heritage and Endanger Species program and deemed to have no impact on the specie(s) within the bubble.

FIGURES

Figure 1. Forest Cutting Plan

Figure 1: 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: 3/15/16)

For DCR Use Only:

File Number	204-21474-20	Case No.	–
Date Rec'd	10-10-19	Nat. Hert.	YES
Earliest Start	10-28-19	Pub. Dr. Wat.	NO
River Basin	Chicopee	ACEC	N/A
Gen. Obj.	LT		

Site Information

Location

Town: New Salem
Road: J. Vaughn (Quabbin Gate 21)
Acres: 52 Proposed Start Date:
Vol. MBF: 480.1 Vol. Cds.: 451 Vol. Tons: 279

Plan Preparer

Name: Derek Beard
Address: 485 Ware Rd.
Town, State, Zip: Belchertown, MA 01007
Phone: (617) 780-0631
Type of Preparer: LF
*Mass. Forester License #: 14
*Required for land under Ch61, Ch61A or Forest Stewardship

Landowner

Name: DCR - Div. of Water Supply Protection
Mailing Address: 485 Ware Rd
Town, State, Zip: Belchertown, MA 01007
Phone: 413-323-6921
Ch61☐ 61A☐ 61B☐ Stew☐ *Case #
FSC☐ CR☐ CR Holder

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	CU	BR		
Existing Structure	YES	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		

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

* Heritage Restrictions - 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.

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	16.3	Red Maple	5.9
Red Pine	375.5	Sugar Maple	5.5
Pitch Pine		Red Oak	51.8
Hemlock		Black Oak	9.4
Spruce		White Oak	3.4
Other Sftwd.		Other Hdwd.	2.7
White Ash	5.1	**Total Mbf**	480.1
Beech		**Cordwood (Cds)**	451
White Birch		**SW Pulp (Tons)**	279
B & Y Birch	1.5	**HW Pulp (Tons)**	
Black Cherry	3.0	**Chips (Tons)**	

*Note: Volumes 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 * See Next Page

Indicate location on map	ST-1	ST-2	ST-3	ST-4
Forest Type	WP	OM	OM	RP
Acres	2	8	2	6
Landowner Objective	LT	LT	LT	LT
Designation of Trees	CT	CT	CT	CT
Type of Cut	CC	CC	SA	SA
Source of Regeneration	CO	SE	SE	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 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 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: 10-10-19

Service Forester

Determination and Status 204-21474-20

	Approved	Disapproved	Expires
Cutting Plan	☒	☐	10/10/21

Signature of Service Forester/Director's Agent — Date: 12-4-19

		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: 2-7-22

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: 3/15/16)**

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 New Salem

File Number 204-21474-20

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.

The project covers a 194 acre unit of which 52 acres are being harvested. Stands 4,5 &7 (25 acres) are plantation red pine that have experienced 25-33% mortality. The stands remaining live red pine is being removed as a salvage operation. Residual structure is composed of randomly scattered sawtimber white pine and black birch sapling/poles. Stands 3 and 8 (15 acres) is mixed oak that has experienced 50% gypsy moth caterpiller mortality. The dead trees are being removed as a salvage operation. Approximately 60 sqr. ft. per acre of basal area in healthy live oak, maple and birch will remain. Stands 1,2 & 6 (12 acres) have roughly 5 to 10 sqr. ft. of basal area per acre of live tree retention. Live snag retention was of particular importance. Harvest stands are marked with blue paint. A landing to be made and all main skid roads are marked with orange paint.

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. Additional narrative description may be added on a separate page.

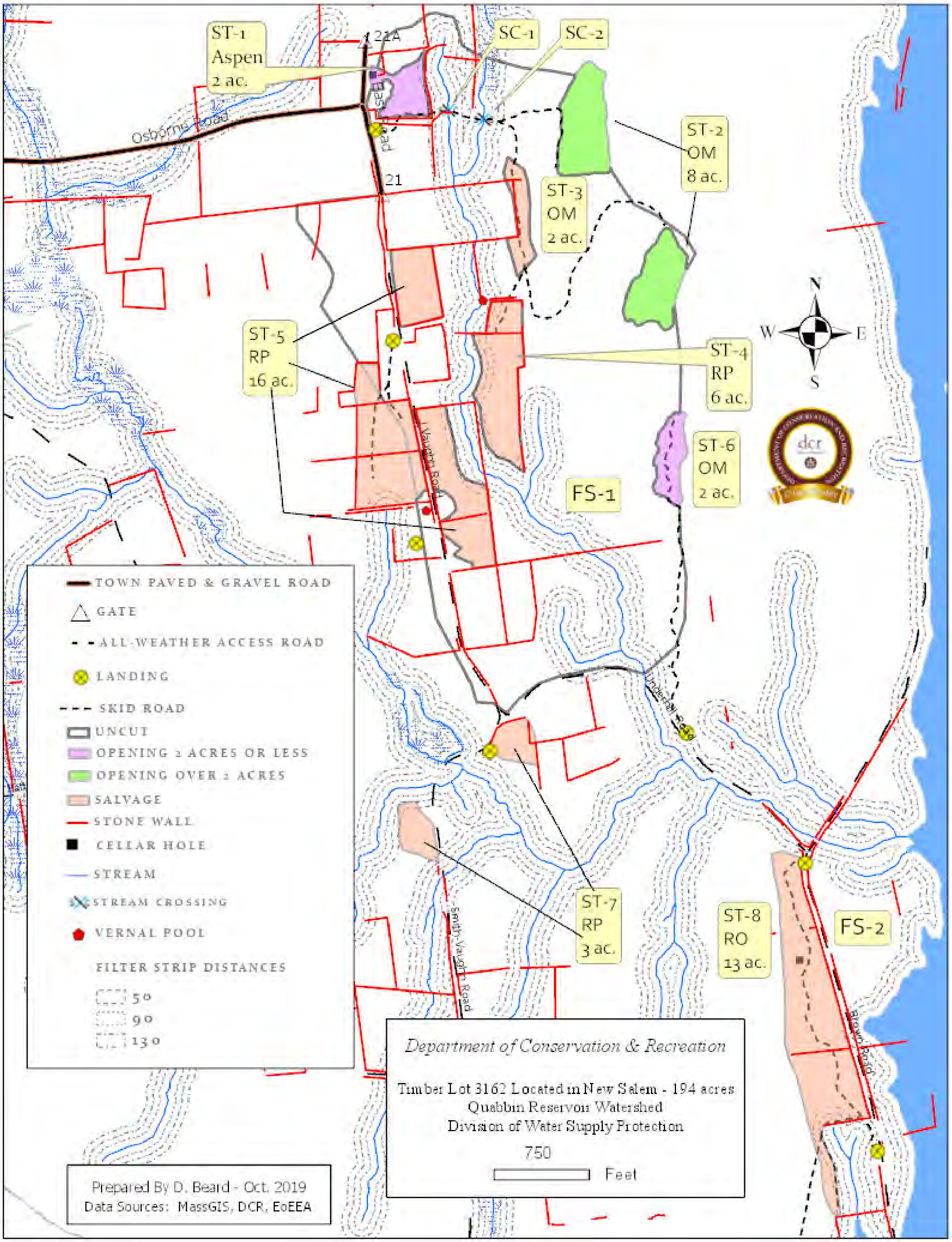
	Describe Trees to be Cut			Describe Trees to be Left			% BA/AC	
Stand No.	Species	Size	Quality	Species	Size	Quality	Cut	Left

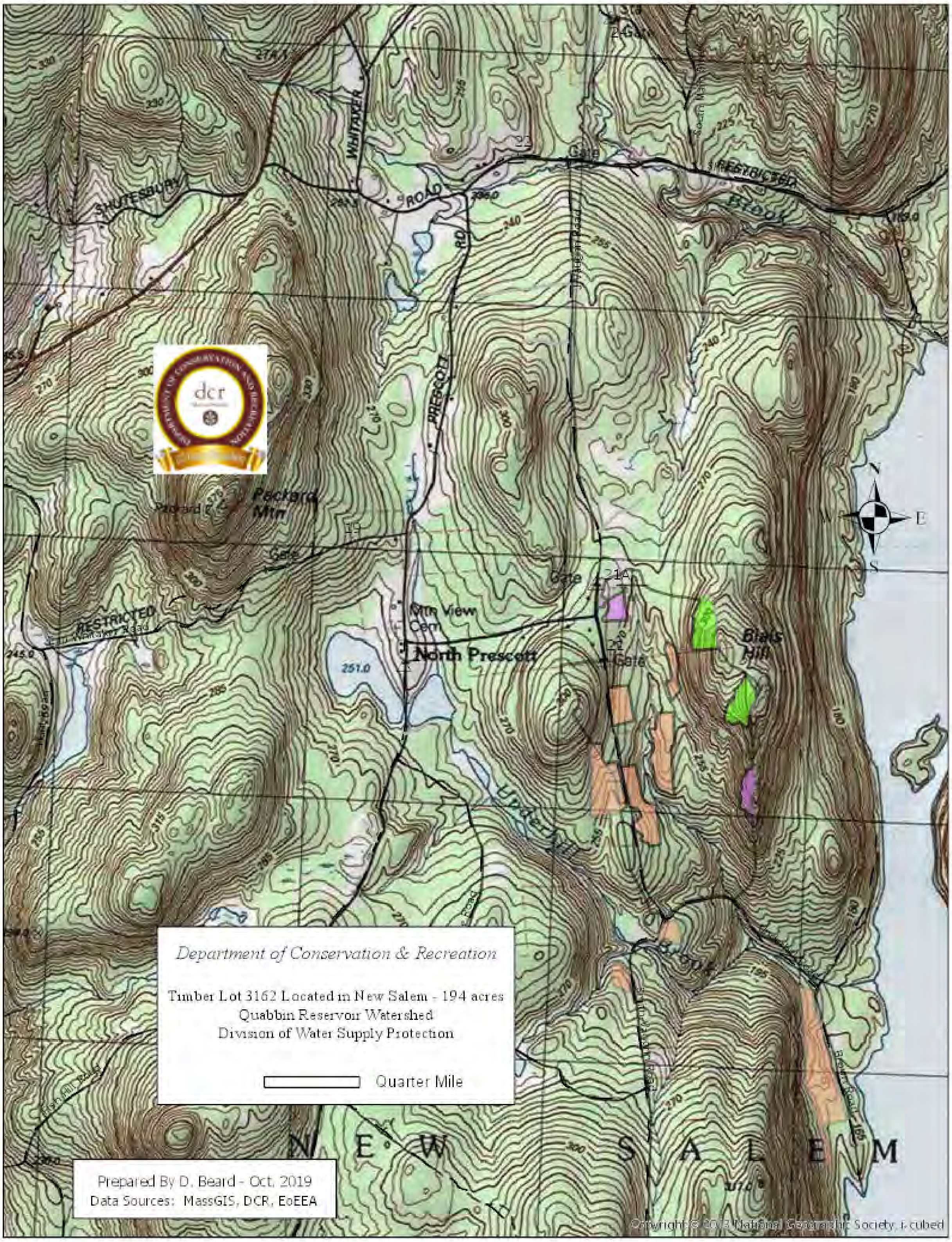
Regeneration & Future Condition

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
* Cutting Standards Cont'd from Page 4		
5	SE	RP 16 ac. SA LT CT
6	SE	OM 2 ac. CC LT CT
7	SE	RP 3 ac. SA LT CT
8	SE	OR 13 ac. SA LT CT

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


ST-1
Aspen
2 ac.
21A
SC-1
SC-2
Osborne Road
21
ST-2
OM
8 ac.
ST-3
OM
2 ac.
ST-5
RP
16 ac.
ST-4
RP
6 ac.
N
W
E
S
ST-6
OM
2 ac.
FS-1
TOWN PAVED & GRAVEL ROAD
GATE
ALL-WEATHER ACCESS ROAD
LANDING
SKID ROAD
UNCUT
OPENING 2 ACRES OR LESS
OPENING OVER 2 ACRES
SALVAGE
STONE WALL
CELLAR HOLE
STREAM
STREAM CROSSING
VERNAL POOL
FILTER STRIP DISTANCES
50
90
130
ST-7
RP
3 ac.
ST-8
RO
13 ac.
FS-2
Smith-Vaughn Road
Brown Road
Department of Conservation & Recreation
Timber Lot 3162 Located in New Salem - 194 acres
Quabbin Reservoir Watershed
Division of Water Supply Protection
750
Feet
Prepared By D. Beard - Oct. 2019
Data Sources: MassGIS, DCR, EoEEA



Department of Conservation & Recreation
Timber Lot 3162 Located in New Salem - 194 acres
Quabbin Reservoir Watershed
Division of Water Supply Protection
Quarter Mile
Prepared By D. Beard - Oct. 2019
Data Sources: MassGIS, DCR, EoEEA
SHUTESBURY
ROAD
WHITAKER
PRESCOTT
RD
RESTRICTED
Gate
Packard Mtn
Mtn View Cem
North Prescott
Bials Hill
251.0
N
E
S
W
N E W S A L E M

dcr

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

FILE # 204-21474-20

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 485 Ware Rd Belchertown, MA 01007 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 Quabbin Oak 21 lot.

Approval Date 12/4/19

Director's Agent Andrew Rawcliffe

DCR Phone No. 617-549-1677

ISSUED BY:

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