

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

Project Title: East Entrance Red Pine
DWSP Harvest Permit Number: 1049
DWSP Proposal ID: HA-16-RP
DCR Forest Cutting Plan File Number: 309-8230-16

Site Information

Watershed: Quabbin
Town(s): Ware
Acres: 27
Nearest Road:
Natural Heritage Atlas overlap: Yes, no impact
Public Drinking Water Supply Watershed: Quabbin
Forest Types: Red pine and mixed red/white pine.
Area of Critical Environmental Concern (ACEC): No
Soils: Hinckley loamy sand, Canton fine sandy loam and Merrimac sandy loam.
Wetland Resources: Parts of harvest abut Quabbin Reservoir and 3 small streams.
Vernal Pools: No

Harvest Information

Harvest Start Date: 11/23/2016
Harvest End Date: 2/7/2017
Number of Wetland Crossings: 1
Number of Stream Crossings: 1

Best Management Practices Applied

Stream Crossings: Existing culvert in dirt road, portable bridge required to reinforce.
Filter Strips: Variable width with no cutting to a maximum of 50% of basal area cut.
Wetland Crossings: One existing, 20' long, will be corduroyed or crossed with a portable bridge.
Harvesting in Wetlands: No harvesting in wetlands.

DWSP Forester supervising this harvest

Name: Steven J. Wood
Forester License number: 257
Phone number: (413) 323-6921 ext. 156
Email: steven.wood@state.ma.us

Narrative

General Description/Forest Composition/History

The area to be harvested is in the town of Ware and contains nine separate stands along the East Entrance Road of Quabbin Park up to the lower Goodnough Dike Road. 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, the land reverted to forest. The areas to be cut were all planted to red pine. All have been cut multiple times over the last 40 years. This has resulted in most being two-aged stands with an unevenly stocked overstory of mainly red and white pine. Some hardwoods have also emerged over the years.

All the red pine is in various stages of decline due mainly to the red pine scale and root rot. Sections already have significant mortality. The outlook for red pine surviving in this area is very poor and the species no longer meets our objectives of having "a diverse mix of healthy trees that are long-lived, well-suited to their location, and vigorously growing and assimilating nutrients".

The understory is well stocked with white pine (many over 15' tall) and some hardwood and hemlock in areas that haven't been heavily browsed. In general, due to the high deer population, the understory has low species diversity.

The soils on this lot are well drained, primarily Hinckley loamy sand, Canton fine sandy loam and Merrimac sandy loam. Some sections have a lot of surface stone. Slopes are generally flat to moderate.

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.

Silvicultural Objectives

The goal of this harvest is to build on the success of the work started in 1980 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 and should be enhanced. 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 (most of the remaining red pine) to encourage new regeneration and release existing regeneration. Groups were placed according to our guidelines. Areas with regeneration created from the previous cut were released by cutting the remaining overstory or expanded upon by creating an abutting group. Exceptional individuals of all species present were retained in the stand for seed and to enhance diversity. Wherever possible wildlife habitat features, such as snags (dead trees) and trees with cavities or nests were maintained and protected.

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.

Rare or Endangered Species

There are two sections of this lot within a habitat "bubble" designated for protection by the Natural Heritage and Endangered Species Program (NHESP). NHESP does not expect the 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 used by a variety of wildlife including deer, turkey, coyote, bob cat, bald eagle and moose.

Figures

- Figure 1.** **Final Forest Cutting Plan**
- Figure 2.** **Pre-harvest photographs**
- Figure 3.** **Post-harvest photographs**

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)

For DCR Use Only:

File Number 309-8232-110 Case No. _____
Date Rec'd 5/24/16 Nat. Hert. Y
Earliest Start 6/13/16 Nat. Hert. Imp. N
River Basin CHICOREE Pub. Dr. Wat. QUABBIN
Gen. Obj. LT ACBC N

05-26-16P12:26 RCVD

Site Information

Location

Town Ware Quabbin Lot 1049
Road Quabbin East Entrance
Acres 27 Proposed Start Date 10/1/16
Vol. MBF 265.4 Vol. Cds. 111 Vol. Tons 278

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	CU			
Existing Structure	yes			
Type of Bottom	ST			
Bank Height (ft)	1.0'			
Stabilization	PBR			

Wetland Crossings

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing	15'			
Mitigation	PO			
Stabilization	CO/SE			

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

NO NETTED IMPACT - SEE
ATTACHED LETTER

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

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

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Products to be Harvested*

Species	Mbf/Cds		Mbf/Cds
White Pine	60.3 M	Red Maple	2.2 M
Red Pine	182.4 M	Sugar Maple	
Pitch Pine		Red Oak	
Hemlock		Black Oak	17.2 M
Spruce		White Oak	
Other Sftwd.		Other Hdwd.	
White Ash	3.3 M	Total Mbf	265.4
Beech		Cordwood (Cds)	111
White Birch		SW Pulp (Tons)	278
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.

Cutting Standards

Indicate location on map	ST-1	ST-2	ST-3	ST-4
Forest Type	RP	RP/WP		
Acres	24	3		
Landowner Objective	LT	LT		
Designation of Trees	CT	CT		
Type of Cut	SE	SH		
Source of Regeneration	AD/SE	AD/SE		

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]

Signature of landowner(s)

Date

5-20-16

Determination and Status

309-8230-16

Approved	Disapproved	Expires
☒	☐	5/27/18
Cutting Plan		6/7/16
Signature of Service Forester/Director's Agent		Date

Final Report and Comments

I hereby certify that the afore described Forest Cutting Plan and all relevant statutes have been substantially complied with.

[Signature]

Signature of Service Forester/Director's Agent

Date

2/16/17

Forest Types				Designation of Trees	Type of Cut	Intermediate Harvests:	Source of Regeneration
WP White Pine	HK Hemlock	OM Mixed Oak	CT Cut Tree	SH Shelterwood	CT Commercial Thin	AD Advanced	SE Natural Seed
WK WP/Hern	HH Hem/Hdwd	RM Red Maple	LT Leave Tree	ST Seed Tree	NT Non Corn Thin	PL Plant	CO Coppice
WH WP/Hdwd	BC Blck Cherry	BE Beech	SB Stand Boundary	CC Clear Cut	SE Selection	Non-Standard Systems*	DS Direct Seed
WO WP/Oak	BB Bee/Bir/Map	SF Spruce/Fir	OT Other	SE Salvage	HG Highgrade*	DL Diameter Limit*	OT Other
RP Red Pine	OH Oak/Hdwd	SM Sugar Maple	Landowner Objective	SN Sanitation	OT Other*		
SR Red Spruce	OR N Red Oak	PP Pitch Pine	LT Long-term Mgt.				
			ST Short-term Har.				

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

pg 4 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 Ware

File Number 309-8230-16

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 harvest is a pre-salvage of red pine plantations that were previously cut and are now starting to decline due to scale and root rot. Some white pine and hardwoods will also be cut in and around the plantations. Regeneration is present throughout, mainly white pine and black birch and as much as possible will be protected. This treatment will remove most of the RP. Most of treatment best described as group selection with openings up to 5 acres created. 5-10 sq ft of basal area will be retained in openings over 0.5 ac. Note: most of stands are in NHESP bubbles. ST-1, 1a and 2 have wood turtle listed. If NHI determines impact then limit to 11/1-3/31. Cut trees marked with blue paint, stand boundaries and save trees marked with orange.

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.

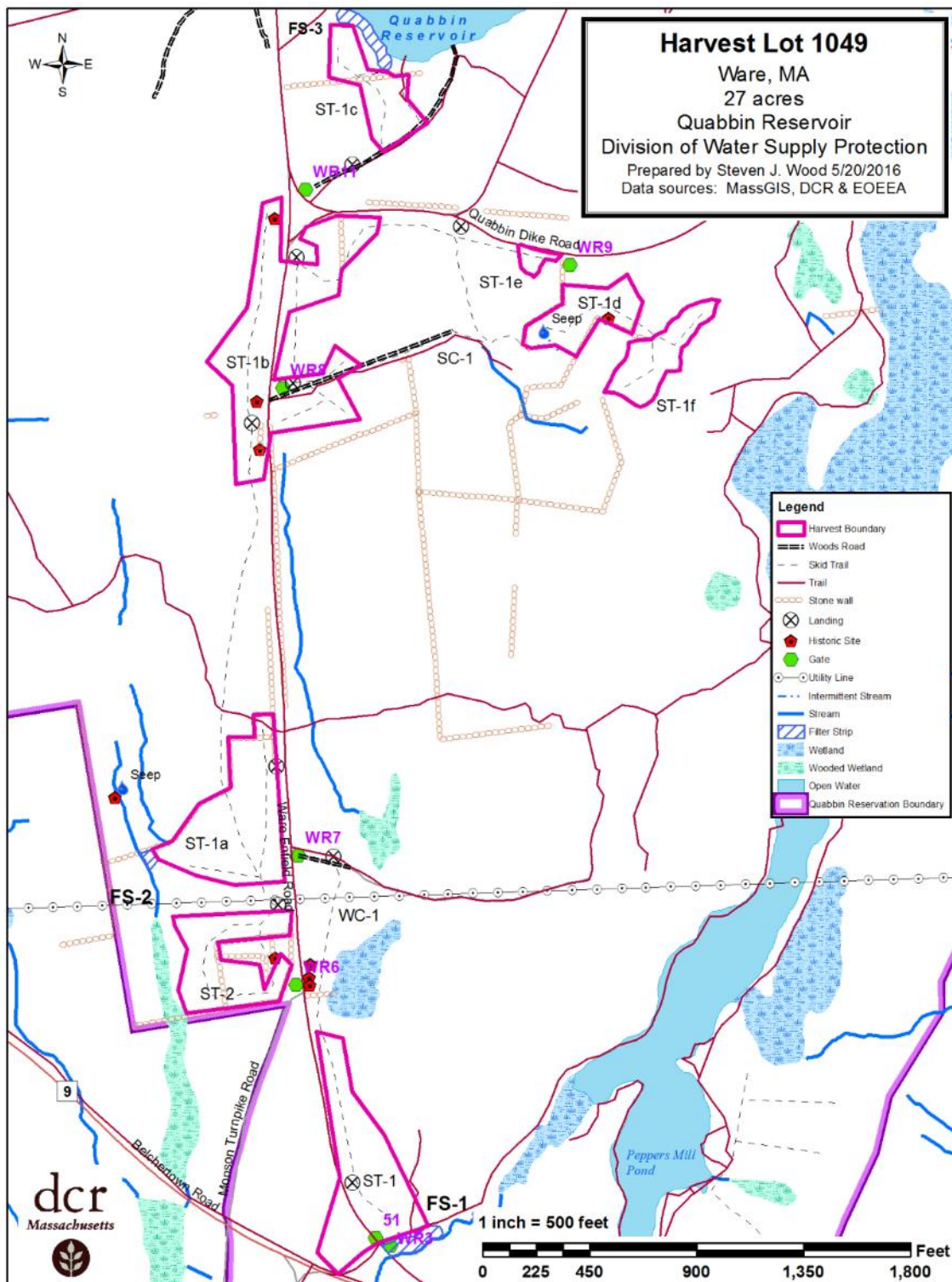
Stand No.	Species to be Cut	Size of Trees to be Cut	Quality of Trees to be Cut	% BA/Acre Removed

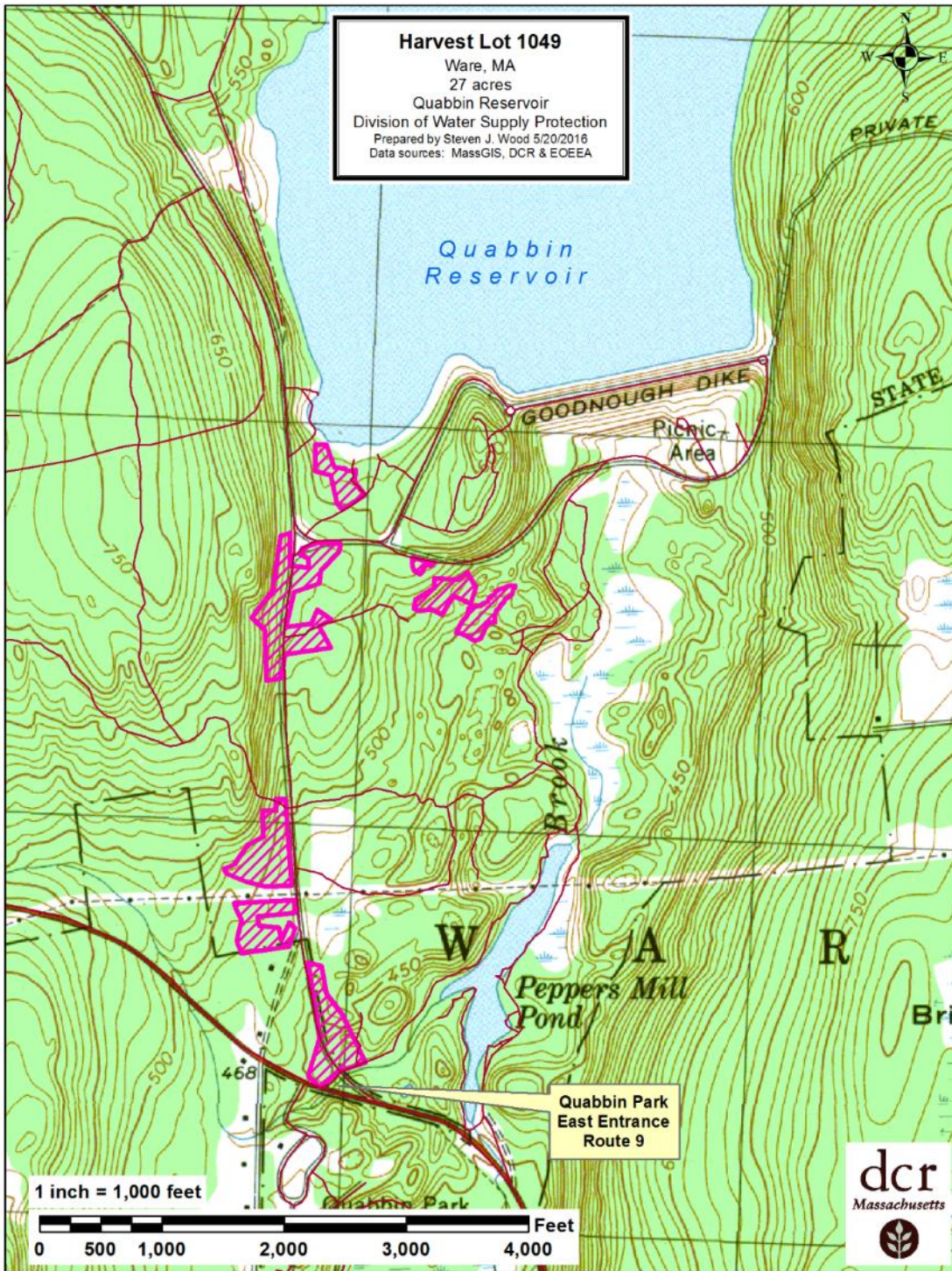
Regeneration & Future Condition

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

FILE # 309-8230-16

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 DCR-DWSP Quabbin 485 Ware Rd. in accordance with the
(Name of Owner) (Address) Belchertown, MA

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
East Entrance lot. "Lot 1049"

Approval Date 6/7/16
Director's Agent Doug Hutcheson
DCR Phone No. (413) 545-7020

ISSUED BY:

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

Figure 2: Pre-Harvest Photographs (9/16/2016)

A.



Photo point 1 looking north from point on east side of road just inside east entrance to Quabbin Park. Declining crowns of red pine are evident.

B.



Photo point 2 taken from west side of road, south side of power line. Dead and declining red pines are evident as is dense white pine regeneration in understory. In the foreground is the cleared power line right of way.

Figure 3. *Post-harvest photographs (2/23/2017)*

A.



B.

