

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

**Project Title:** 202+ Red Pine Scale  
DWSP Harvest Permit Number: 2049  
DWSP Proposal ID: PE-16-red pine sal  
DCR Forest Cutting Plan File Number: 230-8505-17

***Site Information***

Watershed: Quabbin  
Town(s): Pelham  
Acres: 5  
Nearest Road: Route 202  
Natural Heritage Atlas overlap?: No  
Public Drinking Water Supply Watershed?: Yes  
Forest Types: red pine plantations  
Area of Critical Environmental Concern (ACEC)?: No  
Soils: The dominant soil types are Charlton-Hollis-Rock outcrop complex; Canton fine sandy loam; Scituate fine sandy loam, extremely stony; and Canton fine sandy loam, extremely stony  
Wetland Resources: none  
Vernal Pools: none known

***Harvest Information***

Harvest Start Date: 10/05/2016  
Harvest End Date: 12/20/2016  
Number of Wetland Crossings: none  
Number of Stream Crossings: none

***Best Management Practices Applied***

Stream Crossings: no crossings  
Filter Strips: none  
Wetland Crossings: no wetlands  
Harvesting in Wetlands: no wetlands

***DWSP Forester supervising this harvest***

Name: Helen Johnson  
Forester License number: 383  
Phone number: 978-544-6343  
Email: helen.johnson@state.ma.us

## **Narrative**

### ***General Description/Forest Composition/History***

This harvest is a conversion of two red pine plantations inside DCR-DWSP Gate 11 in the town of Pelham. These are essentially fields of red pine trees that were planted after the Quabbin Reservoir was built. Like all monocultures, red pine plantations are more vulnerable than diverse stands because a single species-specific infestation can potentially kill most of the trees in any given location.

That threat has become a reality in the Quabbin region, where entire stands of red pine have already died due to red pine scale. This invasive insect first came to the United States in 1939 on exotic pines planted at the New York World's Fair. The earliest sign of infestation is needle browning, usually on the lower branches, often accompanied by beetle infestation and followed rapidly by mortality. There are no effective treatments of any type (chemical, biological or silvicultural) that would save these plantations.

The goals of this harvest are to remove the red pines before they die, at which point they would become safety hazards that would be expensive and dangerous to remove, and to facilitate the transition from these monocultures to diverse stands of native species.

The largest stand is 4 acres just north of Gate 11 and adjacent to Route 202. All of the red pines along the highway are being cut in order to prevent the development of a safety hazard as these trees die. In this area there are numerous white pine and hardwood saplings that are expected to grow rapidly after the red pine is removed. The few larger white pines and hardwoods are also being retained, except for a few that have defects that will become more dangerous when they are exposed to wind. Farther from the highway there are more numerous mature white pines and hardwoods and denser sapling-sized regeneration from a previous harvest, all of which are expected to grow vigorously after the harvest.

This stand contains several invasive plant species, including celestial bittersweet (*Celastrus orbiculatus*), Japanese barberry (*Berberis thunbergii*), and winged burning bush (*Euonymus alatus*). The infestation is concentrated in the portion of the stand nearest Gate 11. In order to minimize the spread of these plants, the harvest will start in the least infested area and end with the worst area, and the equipment used will be power washed both before and after the harvest.

Another red pine plantation is being removed farther inside Gate 11 as part of the same operation. This plantation is only one acre in size and has no invasives. It will be harvested first in order to prevent invasives near Gate 11 from being transported here.

There are no streams or wetlands in either plantation. The dominant soil types are Charlton-Hollis-Rock outcrop complex; Canton fine sandy loam; Canton fine sandy loam, extremely stony; and Scituate fine sandy loam, extremely stony. These are moderately to somewhat excessively drained glacial till soils derived from granite, gneiss, and schist.

### ***Site Selection***

The primary goal of harvesting on the watershed is to create and maintain a forest that is resilient to and can quickly recover from small and large scale disturbances such as diseases, insect infestations, ice storms and hurricanes, all of which are becoming increasingly common. The ideal way to achieve this is to have a diversity of species in various stages of development (seedlings through large legacy trees) that are actively growing and regenerating. This combination of structural and species diversity builds resistance and resilience into the forest.

This harvest will remove red pine plantations that were planted in the first half of the 20th century and are now threatened by red pine scale. The native stands of diverse species

that replace these monocultures will be better able to resist and recover from natural disturbances, including invasive insects and diseases.

### ***Silvicultural Objectives***

All red pine will be removed in this harvest, as well as a few white pines that have defects that would make them likely to break or uproot if they were left in place. Advance regeneration and mature trees of native species are being retained and protected wherever possible.

### ***Cultural Resources***

There are interior walls in both stands, and stone walls line the boundaries of the stand by Route 202. There are cellar holes and old foundations near but not within the harvest area. All cultural features are being protected and avoided as much as possible. Existing barways (breaks in walls) are being utilized in order to minimize damage.

### ***Rare or Endangered Species***

This lot contains no known rare or endangered species.

# Figures

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)

FINAL (1/18)

### For DCR Use Only:

File Number 230-8505-17 Case No. \_\_\_\_\_  
Date Rec'd 11-2-16 Nat. Hert. N  
Earliest Start 11-18-16 Nat. Hert. Imp. N  
River Basin CT Pub. Dr. Wat. QUABBIN  
Gen. Obj. LT ACEC N

Site Information

### Location

Town Pelham **LOT 2049**  
Road Daniel Shays Highway (Rte 202)  
Acres 5 Proposed Start Date Fall 2016  
Vol. MBF 43 Vol. Cds. 1 Vol. Tons 7

### Plan Preparer

Name Helen Johnson & Richard MacLean  
Address DCR-DWSP Quabbin Section  
485 Ware Road  
Town, State, Zip Belchertown, MA 01007  
Phone 413 323-6921 x 553  
Type of Preparer Mass. Licensed Forester  
\*Mass. Forester License # 383  
\*Required for land under Ch61, Ch61A or Forest Stewardship

### Landowner

Name DCR-DWSP Quabbin Section  
Mailing Address 485 Ware Road  
Helen.Johnson@state.ma.us/Richard.MacLean@state.ma.us  
Town, State, Zip Belchertown, MA 01007  
Phone (978) 544-6343 / (413) 323-6921 x 553  
Ch61 ☐ 61A ☐ 61B ☐ Stew ☐ \*Case # \_\_\_\_\_  
CR ☐ CR Holder \_\_\_\_\_

### Licensed Timber Harvester\*\*

Name TBD  
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 No 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 No Crossings

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing				
Mitigation				
Stabilization				

### Filter Strips No Filter Strips

Indicate location on map	FS-1	FS-2	FS-3	FS-4
Width (50', 100', or VA)	VA	VA		

### Harvesting in Wetlands None

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

DUE TO THE PUBLIC SAFETY  
CONCERNS ABOUT DEAD AND  
DYING RED PINE FALLING  
ON RTE 202, I AM WAIVING  
THE 50% RESIDUAL BASAL AREA  
REQUIREMENT WITHIN THE  
BUFFER STRIP ALONG THE  
HIGHWAY'S EDGE 1/18/16

Notes

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 Has 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

pg 1 of 5

Figure 1a: Forest Cutting Plan page one.

Species	Mbf/Cds	Mbf/Cds	Mbf/Cds
White Pine	4.4	Red Maple	
Red Pine	38.2	Sugar Maple	
Pitch Pine		Red Oak	
Hemlock		Black Oak	
Spruce		White Oak	
Other Sitwd.		Other Hdw.	
White Ash		<b>Total Mbf</b>	42.7
Beech		<b>Cordwood (Cds)</b>	1
White Birch		<b>SW Pulp (Tons)</b>	7
B & Y Birch		<b>HW Pulp (Tons)</b>	
Black Cherry		<b>Chips (Tons)</b>	

**Products to be Harvested\***

\*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.

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

**Cutting Standards**

**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 of landowner(s) \_\_\_\_\_ Date 11/1/16

**Determination and Status 230-8505-17**

Approved ☒ Disapproved ☐ Expires 11/2/18

Cutting Plan \_\_\_\_\_ 11/28/16

Signature of Service Forester/Director's Agent \_\_\_\_\_ Date 10/28/16

Extension 1 ☐ 2 ☐ Expires \_\_\_\_\_ Ser. For. Ints. \_\_\_\_\_

Amendment App 1 ☐ Dis 1 ☐ App 2 ☐ Dis 2 ☐ \_\_\_\_\_

**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 11/11/18

Forest Types	Designation of Trees	Type of Cut	Intermediate Harvests:	Source of Regeneration
WP White Pine	HK Hemlock	OM Mixed Oak	CT Cut Tree	AD Advanced
WK WP/Hem	HH Hem/Hdw	RM Red Maple	LT Leave Tree	SE Natural Seed
WH WP/Hdw	BC Black Cherry	BE Beech	SB Stand Boundary	PL Plant
WO WP/Oak	BB Bee/Bir/Map	SF Spruce/Fir	OT Other	CO Coppice
RP Red Pine	OH Oak/Hdw	SM Sugar Maple	SA Salvage	DS Direct Seed
SR Red Spruce	OR N Red Oak	PP Pitch Pine	LT Long-term Mgt	DI Diameter Limit*
			ST Short-term Har	OT Other*

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

Figure 1b: Forest Cutting Plan, page two with final approval signature from Service Forestry.

# 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 Quabbin

Town Pelham

File Number 230-8505-17

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.

FLAGGING: Pink "Do Not Cut" = trees to be protected Blue = skid road

ORANGE PAINT: Dot = cordwood or pulp, or red pine sawlog or pulp. Three vertical dots = edge of stand.

Horizontal line = sawlog

Vertical line = TSI

"X" = cull

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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ST-1		
ST-2		
ST-3		
ST-4		

Stand No. Desired Future Condition

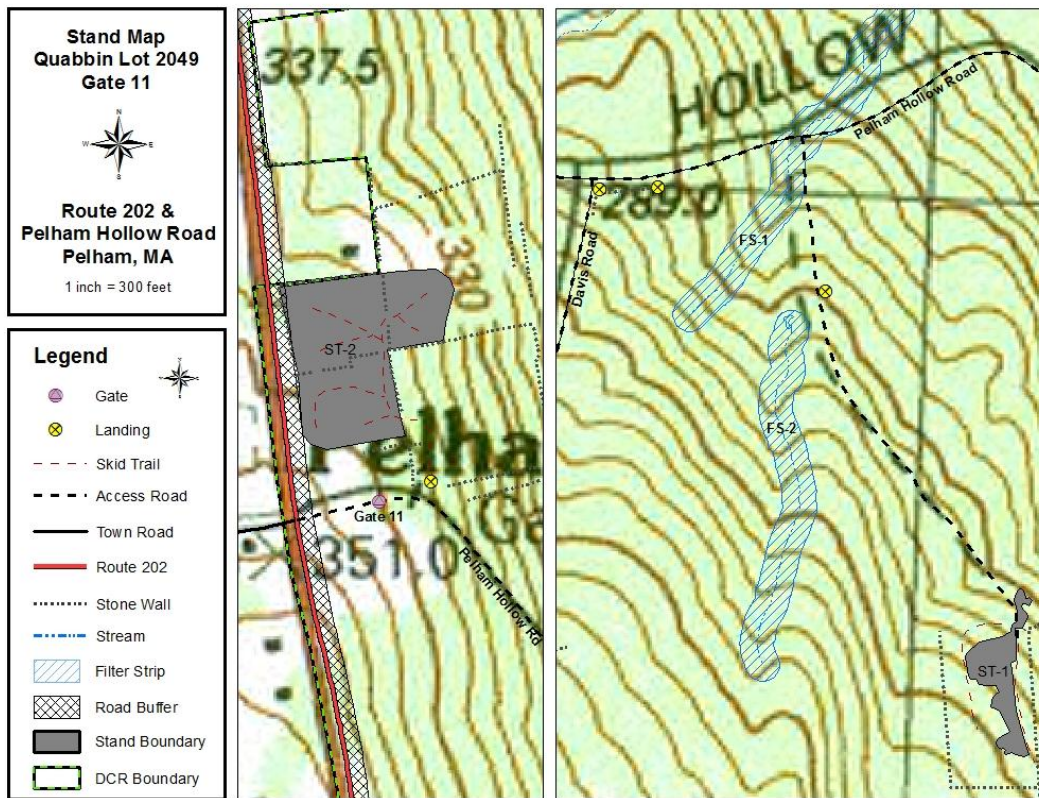
Describe what the stand is expected to look like five years from the harvest, including the condition of the overstory & understory

ST-1	
ST-2	
ST-3	
ST-4	

pg 3 of 5

Figure 1c: Forest Cutting Plan, page three.





**Figure 1d:** Forest Cutting Plan, stand map.

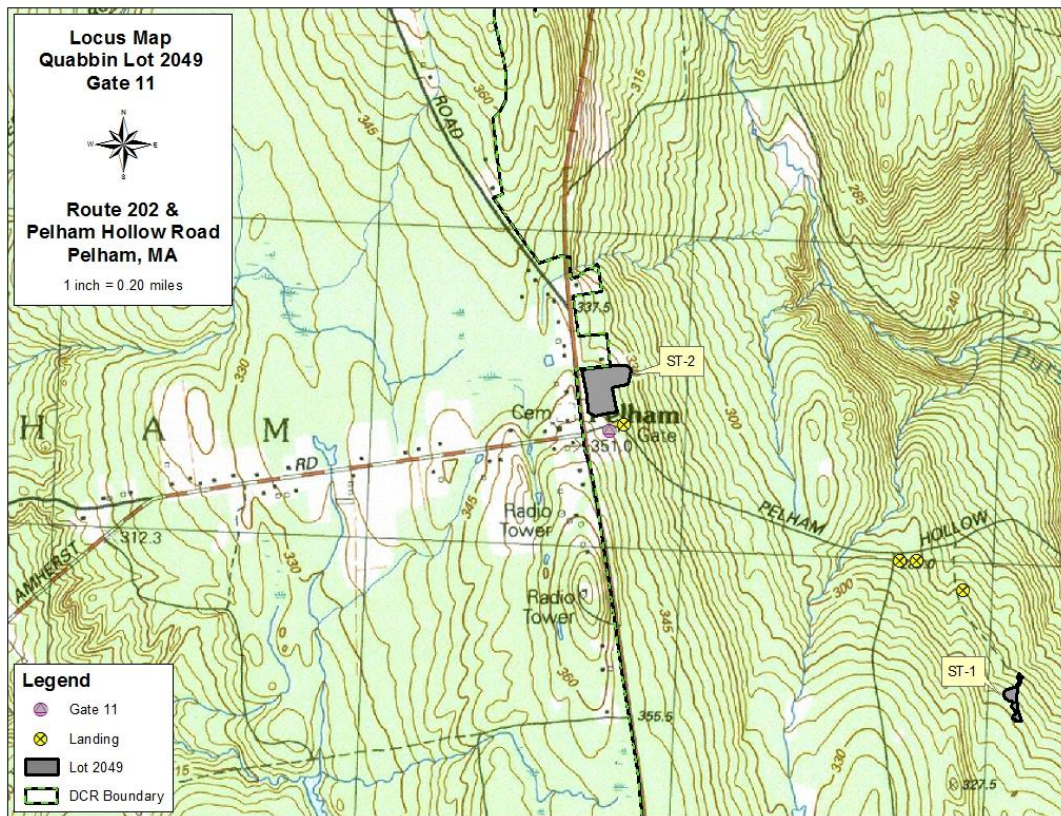


Figure 1e: Forest Cutting Plan, locus map.





dcR

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

FILE # 230-8505-17

## 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 DE. DWSP Quabbin 485 Ware Rd, B'town in accordance with the  
(Name of Owner) (Address)

provision of M.G.L. Chapter 132, Section 40-46, filed in Amherst FO with the Dept. of Conservation  
and Recreation, Division of State Parks and Recreation, a Notice of Intent to cut forest products upon the

Daniel Sways Hwy lot (2049), Pelham

Approval Date 11/28/16

Director's Agent Douglas Hutchinson

DCR Phone No. (413) 545-7020

ISSUED BY:

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

Figure 1e: Forest Cutting Plan Certificate.

**Figure 2. Photo Point**



**Figure 2a.** Pre-Harvest Photo, November 2016. The trees with reddish color bark are red pines, which face imminent mortality due to red pine scale, an invasive insect for which there is no viable control.





**Figure 2b:** Post-Harvest Photo, January 2017. The red pine trees pictured in Figure 2 have been harvested and advanced white pine regeneration protected.





**Figure 2c:** Follow up photo, July 2017. During the first growing season after the harvest, ground cover is regrowing and maple and birch regeneration is already present and growing.





**Figure 2d:** Follow up July, 2018.





**Figure 2e:** Follow up July, 2019





**Figure 2f:** Follow up September, 2021.