

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

**Project Title:**

<b>DWSP Harvest Permit Number:</b> 5257
<b>DCR Forest Cutting Plan File Number:</b> 282-7736-16

**Site Information**

<b>Watershed:</b> Wachusett	<b>Town(s):</b> Sterling
<b>Acres:</b> 36	<b>Nearest Road:</b> Route 110 & Chase Hill Rd
<b>Natural Heritage Atlas overlap?:</b> No	<b>Public Drinking Water Supply Watershed?:</b> Yes
<b>Forest Types:</b> Red pine, Oak & Pine/Hardwood	<b>ACEC?:</b> No
<b>Soils:</b> Woodbridge & Paxton tills	
<b>Wetland Resources:</b> A seep that runs south easterly through the sale for 700 feet	
<b>Vernal Pools:</b> None	

**Harvest Information**

<b>DWSP Permit Start Date:</b> 8/19/15	<b>DWSP Permit End Date:</b> 8/18/17
<b>Number of Wetland Crossings:</b> none	<b>Number of Stream Crossings:</b> one

**Best Management Practices Applied**

<b>Stream Crossings</b>	There is a seep that runs south easterly through the sale for approximately 700 feet. There is a heavily graveled old fire road that crosses over the seep. This will be the only crossing on the site. Every opening that is harvested south of this fire road (with exception to the opening right next to the landing) will have to come north (on the western side of the seep) and cross on the preexisting fire road. There is one small opening north of the fire road along the power line that will also use the same crossing.
<b>Filter Strips</b>	There is no harvesting within a minimum of 50 feet from streams.
<b>Wetland Crossings</b>	There are no wetland crossings.
<b>Harvesting in Wetlands</b>	There is no harvesting in wetlands.

<b>DWSP Forester supervising this harvest</b>
<b>Name:</b> Russ Wilmot
<b>Forester License #:</b> 426
<b>Phone #:</b> 508-792-7806x318

## **NARRATIVES**

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

This area is located in Sterling on the northwest side of the intersection of Rt. 110 and Chace Hill Road. These former pastures were first planted to white pine in 1905 most of which were then blown down by the hurricane of 1938. Most of the area was then replanted to red pine during the few years after 1938 along with one small section of white pine. A significant component of hardwoods has invaded the plantation over the years. Red oak, black oak, white oak, red maple and aspen are the most common species. Hickory is also present and is the dominant hardwood species in the northern half of the sale area. A timber harvest occurred in 1987 focusing on removing much of the red pine. This led to the establishment of an excellent understory of a highly diverse mix of hardwood species. The strip of red pine immediately adjacent to Rt. 110 has been slowly succumbing to root rot disease which kills overstory trees in expanding groups. The hardwoods have been quick to fill in the understory.

### **Site Selection:**

The ideal watershed protection forest is one which best serves the function of the land as a producer of high quality drinking water in both short- and long-term. This forest must be vigorous and diverse in tree species and ages, be actively accumulating biomass and actively regenerating. Such a forest will be ideally suited to be resilient to and quickly recover from small- and large-scale disturbances such as diseases, insect infestations, ice storms and hurricanes.

This area was selected for management because both within the forest of these 36 acres as well as in the forest of the much larger area from which water flows into the Wachusett Reservoir, there are too few acres of young forest. There is no young forest in this area and only 7% of the forest in this subwatershed, of which the DCR owns 1,176 manageable acres, is comprised of young trees less than 20 years old. The ideal protection forest would have closer to 1/3rd of the area growing young trees.

### **Silvicultural Objectives:**

The main objective of this operation is to diversify the age structure of the forest by removing the overstory in patches thereby releasing the advance regeneration. The current age structure is limited with an insufficient component of young forest. In order to release advance regeneration, 12 openings in the overstory are being created, covering 12.0 acres. These openings range from less than 0.3 acre to 2.34 acres in size with an average of 1.0 acre. They are well distributed throughout the area taking advantage of the advance regeneration comprised of oaks, hickories, other hardwoods and some pine. While the normal maximum opening size used in DWSP forest management at Wachusett is 2 acres, exemptions are allowed in plantations under certain circumstance. Such a circumstance exists in the narrow red pine plantation that extends for about 700' along Rt. 110 and for a short distance along Chace Hill Road. This plantation has been slowly falling apart for years as the expanding zones of root rot kill the red pine. The District 3 Highway Director for MassDOT who has jurisdiction over Rt. 110 and the Sterling DPW Superintendent who's responsible for Chace Hill Road both agree that these dying trees pose an ongoing and increasing threat to public safety and support removing all of the remaining red pine. An excellent, young mixed hardwood forest will be present immediately following the harvest operation.

### **Cultural Resources:**

There are no known or documented significant historic or archeological resources in this area. This area has been determined to be “Potentially Sensitive” for the possible presence of historic features by the DCR Archeologist. The 1870 F.W. Beers and Company Atlas for Worcester County shows the home of O.S. Howe at the northern end of this area. Stone walls, wells and other features throughout the area will be avoided to the extent possible.

### **Wildlife/Rare or Endangered Species:**

There are no critical habitats or known rare or endangered plants or wildlife.

### **FIGURES**

**Figure 1. Forest Cutting Plan**

**Figure 2. Map of harvest area showing approximate boundary, proposed openings and other features**

**Figure 3. General locus map showing the location of the proposed timber harvest**

**Figure 4. Pre-Harvest Photographs, A-C**

**Figure 5. Post-Harvest Photographs, A-C**

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)

AUG 04 2015

K AMENDMENT # P-28-2015

**For DCR Use Only:**

File Number 282-173016 Case No. \_\_\_\_\_  
 Date Rec'd 8/14/15 Nat. Hert. NO  
 Earliest Start 8/19/15 Nat. Hert. Imp. NO  
 River Basin NASHUA Pub. Dr. Wat. YES-WACHUSETT  
 Gen. Obj. LT ACEC NO

Site Information

**Location**

Town Sterling Lot 5257  
 Road Route 110 & Chase Hill Rd  
 Acres 36 Proposed Start Date 09/01/15  
 Vol. MBF 133.9 Vol. Cds. 36 Vol. Tons 108

**Landowner**

Name DCR/DWSP/OWM Wachusett/Sudbury  
 Mailing Address 180 Beaman St.  
 Town, State, Zip West Boylston, MA 01583  
 Phone 608-792-7806  
 Ch61  Ch61A  Stew  \*Case # \_\_\_\_\_  
 Est. Stumpage Value \_\_\_\_\_

**Plan Preparer**

Name Russell Wilmot  
 Address 180 Beaman St.  
 Town, State, Zip West Boylston, MA, 01583  
 Phone 508-792-7806 Ext 318  
 Type of Preparer Mass. Licensed Forester  
 \*Mass. Forester License # 426  
 \*Required for land under Ch61, Ch61A or Forest Stewardship.

**Licensed Timber Harvester\*\***

Name To be supplied when known.  
 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	<u>OT</u>			
Existing Structure	<u>GR</u>			
Type of Bottom	<u>GR</u>			
Bank Height (ft)	<u>&lt;1'</u>			
Stabilization	<u>ST</u>			

**Wetland Crossings**

Indicate location on map	WC-1	WC-2	WC-3	WC-4
Length of Crossing	<u>20'</u>			
Mitigation	<u>OT</u>			
Stabilization	<u>ST</u>			

**Filter Strips**

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

**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**

\* BUFFER STRIP ATTENTION REQUIREMENTS HAVE BEEN MET

\* WC-1 IS LOCATED ON EXISTING "FIRE ROAD"

\* Amendment 9-28-15  
WC-1 CHANGED TO EXISTING STONE FORD.

Type of Preparer	Type of Crossing	Stabilization	Mitigation	Type of Bottom	Note:
LF Mass. Lic. For.	CU 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 Mutch	DR Dry	ST Story	
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			

FOREST PRODUCTS

**Products to be Harvested\***

Species	Mbf/Cds		Mbf/Cds
White Pine	10.8	Red Maple	
Red Pine	111.7	Sugar Maple	
Pitch Pine		Red Oak	3.3
Hemlock		Black Oak	2.3
Spruce		White Oak	0.5
Other Sftwd.	2.4	Other Hdwd.	2.9
White Ash		<b>Total Mbf</b>	<b>133.9</b>
Beech		<b>Cordwood (Cds)</b>	<b>36</b>
White Birch		<b>SW Pulp (Tons)</b>	<b>108</b>
B & Y Birch		<b>HW Pulp (Tons)</b>	
Black Cherry		<b>Chips (Tons)</b>	

\*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	OH	RP	WH	
Acres	17.0	15.0	4.0	
Landowner Objective	LT	LT	LT	
Designation of Trees	CT	CT	CT	
Type of Cut	SE	SE	SE	
Source of Regeneration	AD/SE	AD/SE	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 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)

8/4/15  
 Date

**Determination and Status**

Approved  Disapproved  Expires 8-4-2017

*[Signature]*  
 Signature of Service Forester/Director's Agent Date 8-5-2015

Extension 1  2  Expires 1 Ser. For. Ints. 1

Amendment App 1  Dis 1  App 2  Dis 2  NO  
9-28-15

**Final Report and Comments**

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

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

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

# Forest Cutting Plan

## Narrative Page

Use only if further explanation is required of information on pages one or two or if "other" was used in any category.

Landowner: DCR/DNR/OWM

Town: Spring

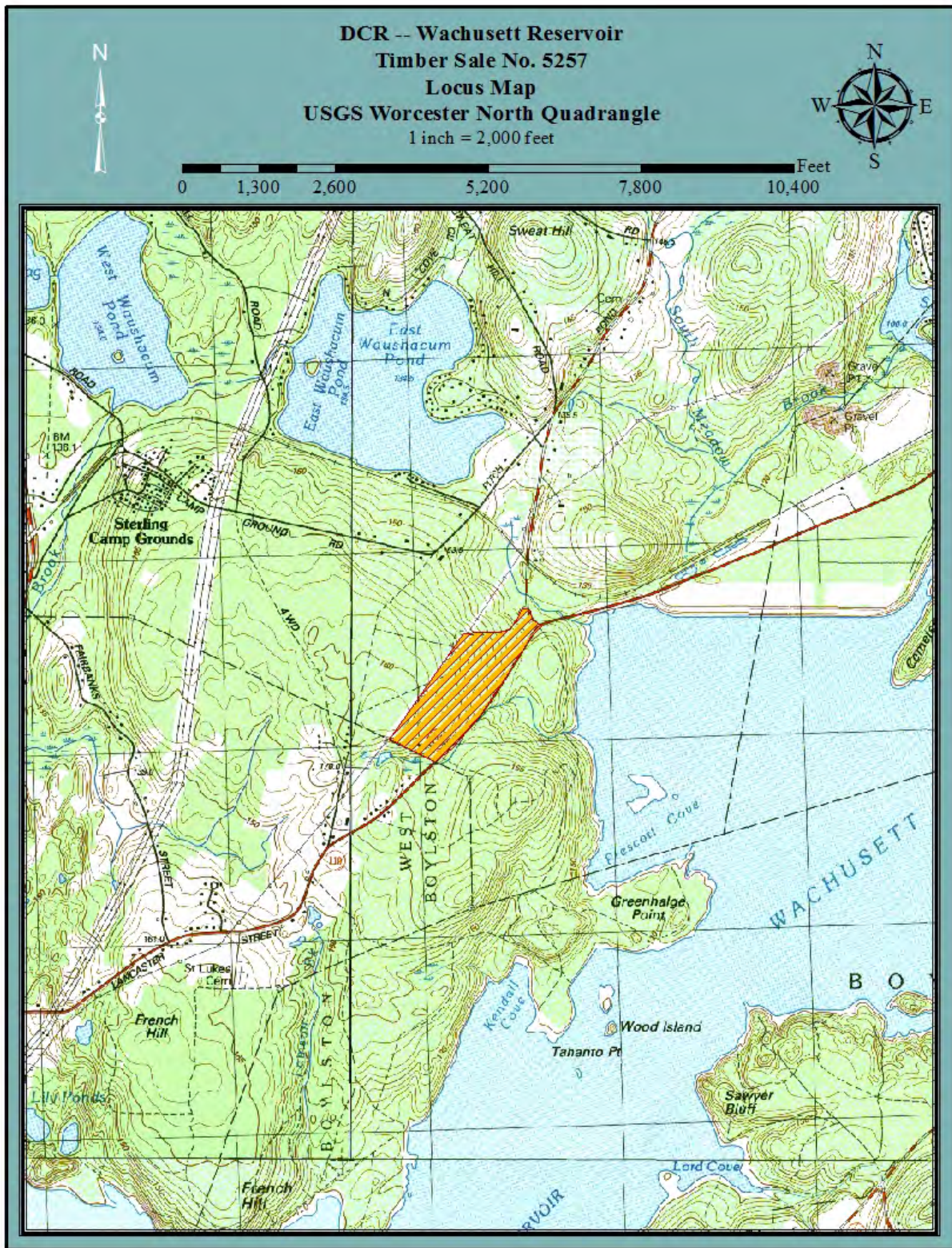
File Number: 282-7736-16

BMPs	<p><u>There is a seep that seasonally flows south easterly through the sale for approximately 700 feet. There is an old fire road that is heavily graveled where the seep passes through. This will be the only <del>wetland</del> <sup>STREAM</sup> crossing on the site. Every opening that is harvested south of this forest road (with exception to the opening right next to the landing) will have to come north (on the western side of the seep) and cross on the preexisting fire road. There is one small opening north of the fire road along the power line that will also use the same crossing.</u></p>
Silviculture	<p><u>In order to release advance regeneration, 12 openings in the overstory are being created, covering 12.03 acres. These openings range from less than a 0.32 acres to 2.34 acres in size with an average of 1.0 acre. They are well distributed throughout the area taking advantage of the advance regeneration comprised of oaks, hickories, other hardwoods and some pine.</u></p>
Objectives	<p><u>The main objective of this operation is to diversify the age structure of the forest by removing the overstory in patches thereby releasing the advance regeneration. The current age structure is limited with an insufficient component of young forest. A second objective is to remove as much red pine from along the road frontage as possible which will reduce future road hazards.</u></p>
Other	<p><u>The largest opening (2.34 acres) is a red pine stand that runs along chase hill road and route 110 for approximately 1,040 feet. This area is targeted because of the declining state of the stand, which will create road hazards in the future if not addressed. Both the State DOT (for Route 110) and Town DPW (for Chase Hill Road) have approved this opening for the above reason in writing.</u></p> <p><u>There are some pockets of invasive plants on this site. Multiflora rose, Japanese Barberry, Buckthorn, Japanese knotweed, etc. exist here mainly in the north easterly section of the sale area. In order to minimize the possibility of spreading invasives, the openings near these areas will be harvested last.</u></p>

Figure 2. Map of harvest area showing approximate boundary, proposed openings and other features



Figure 3. General locus map showing the location of the proposed timber harvest





**Figure 4. Pre-Harvest Photographs, A-C**



A. The landing will be just inside Gate S2 off Rt. 110 in Sterling.



B. Most of remaining overstory white pine and red pine are being removed to fully release the diverse, young hardwood understory.



C. A view of the dead and dying red pine along Rt. 110 with a dense hardwood understory.

**Figure 5. Post-Harvest Photograph, A-C (November, 2015)**



A. Most of the overstory has been removed in this patch to release the advance regeneration. A dead pine snag has been retained along with live trees retained within the opening.



B. Another patch where advance regeneration (i.e., young trees) have been released. The two larger white pines are green retention within the opening.



C. A portion of the strip of dead and dying red pine adjacent to Rt. 110.