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: 5261
DCR Forest Cutting Plan File Number: 134-8221-16

Site Information

Watershed: Wachusett	**Town(s)**: Holden
Acres: 82	**Nearest Road: Princeton Street**
Natural Heritage Atlas overlap?: No	**Public Drinking Water Supply Watershed?:** Yes
Forest Types: Mixed oak, red oak	**ACEC?: No**
Soils: The dominant soils are the Hinckley and Merrimac soils. These are excessively drained soils of outwash origin.	
Wetland Resources: Bear Brook and its associated bordering wetland form the western and southwestern boundaries of this area. There is also an isolated wetland that is also a vernal pool in the western-central part of the lot.	
Vernal Pools: There are 5 confirmed vernal pools and 2 potential pools that will be checked repeatedly in the next few years.	

Harvest Information

DWSP Permit Start Date: 7/01/16	**DWSP Permit End Date:** 6/29/18
Number of Wetland Crossings: None	**Number of Stream Crossings:** None

Best Management Practices Applied

Stream Crossings	There are no stream crossings.
Filter Strips	A variable width filter strip has been applied to Bear Brook.
Wetland Crossings	There are no wetland crossings.
Harvesting in Wetlands	No harvesting in wetlands will occur.

DWSP Forester supervising this harvest
Name: Greg Buzzell
Forester License #: 025
Phone #: 508-792-7806 x317

NARRATIVES

General Description/Forest Composition/History:

The forest in this area is overwhelmingly dominated by oaks, primarily black and red oak and some white oak. Such a condition is common where an excessively drained soil is adjacent to an old railroad bed. Forests adjacent to railroads were subjected to both heavy and repeated coppice cutting for fuel for the railroad and frequent fires resulting from sparks from the engines. Both of these disturbances encourage the dominance of oaks species. Along with oak there is red maple, white pine and black birch.

In the eastern half of this area where at most very light cordwood cutting appears to have occurred until MDC acquisition in 1991, there is excellent advance regeneration comprised of white pine, black birch, red and black oak and red maple. The understory shrub layer is dominated by huckleberry along with low-bush blueberry, shadbush and scattered small clumps of mountain laurel.

The western half is very different. It was commercially logged more than 20 years ago with the cutting of white pines scattered throughout. Large, dense patches of mountain laurel dominate the understory with only scattered red oak, red maple, black birch and white pine regeneration.

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 of the lack of age diversity both in these 82 acres as well as in the 2,405 DCR-owned acres from which water flows into the Quinapoxet River. Zero percent of the forest is comprised of trees less than 20 years old with 77% of the forest more than 100 years old. The ideal protection forest would have at least 3 distinct age classes of trees distributed throughout this sale area.

Silvicultural Objectives:

Openings will be made in the overstory taking advantage of areas of good advance regeneration thereby releasing these younger trees from the shade of the older, taller forest. 19 openings will be made that range in size from about 1/3rd to nearly 2 acres in size. These openings total 17.4 acres which represents 21% of the manageable acreage in this area. Given the superior advance regeneration present in the eastern half of this area, these openings are disproportionately located in the eastern half. However, some openings were made in the western half taking advantage of whatever adequate regeneration was present. A few mature trees will be retained within each of these openings, particularly the ones larger than ½ acre. These trees provided important structural diversity within these patches of young trees in the short term and especially in the long term as it is anticipated that these retained trees will never be cut but be allowed to live to their natural lifespan.

Cultural Resources:

There are no known or documented significant historic or archeological resources in this area.

Wildlife/Rare or Endangered Species:

All the vernal pools, whether verified or potential, will be protected using the appropriate Best Management Practices.

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)

MAY 2 0 2016

For DCR Use Only:

File Number	134-2221-16	Case No.	
Date Rec'd	5/20/16	Nat. Hert.	NO
Earliest Start	6/16/16	Nat. Hert. Imp.	NO
River Basin	Assabet	Pub. Dr. Wat.	[redacted]
Gen. Obj.	LT	ACEC	NO

Site Information

Location

Town Holden Lot 5261

Road Princeton Street

Acres 82 Proposed Start Date 06/15/16

Vol. MBF 36.8 Vol. Cds. 308 Vol. Tons

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

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

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				
Existing Structure				
Type of Bottom				
Bank Height (ft)				
Stabilization				

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			

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

* ALL SKID ROADS / TRAILS ARE EXISTING
* PLEASE CONSIDER VERNAL POOL BUFFERS (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		Red Maple	
Red Pine		Sugar Maple	
Pitch Pine		Red Oak	17.9
Hemlock		Black Oak	18.9
Spruce		White Oak	
Other Sftwd.		Other Hdwd.	
White Ash		**Total Mbf**	36.8
Beech		**Cordwood (Cds)**	308
White Birch		**SW Pulp (Tons)**	
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.

Stand Treatment

Cutting Standards

Indicate location on map	ST-1	ST-2	ST-3	ST-4
Forest Type	OM	OR	RM	
Acres	60	14	8	
Landowner Objective	LT	LT	LT	
Designation of Trees	CT	CT	CT	
Type of Cut	SH	SH	SH	
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 of landowner(s) — Date: 5/24/16

Service Forester

Determination and Status

	Approved	Disapproved	Expires
Cutting Plan	☑	☐	5-20-2018

Signature of Service Forester/Director's Agent — Date: 6-2-2016

			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

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 Litoit*; 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

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

Landowner: DCR - DwSP

Town: Holden

File Number: 134-8331-16

BMPs

There are no stream or wetland crossings in this lot. There are 7 (verified or potential) vernal pools that are known within this lot, all of which have filter strips around them.

Silviculture

In order to release advance regeneration, 19 openings in the overstory are being created, covering 17.42 acres. These openings range from 0.3 acres to 2.0 acres in size with an average of .92 acres. They are well distributed throughout the eastern side of the sale area with a focus on releasing pine regeneration which will help convert the site to a more suitable species. The western portion of this sale is characterized by a thick understory of mountain laurel where a few openings have been made.

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. A secondary objective is to target pine regeneration for release.

Other

Because there are no stream or wetland crossings combined with topographical limitations and DCR Forester oversight haul roads have not been flagged.

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

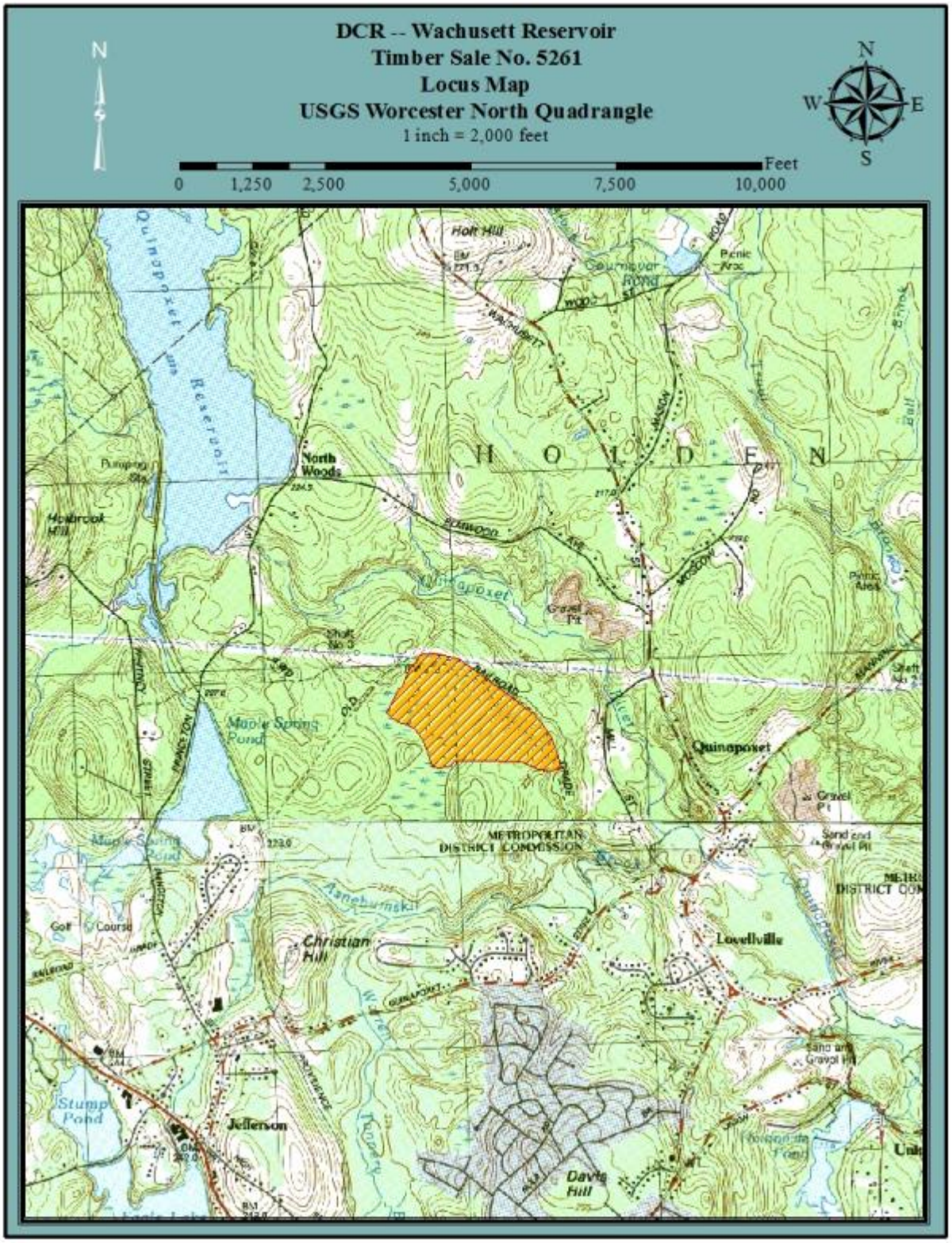

Figure 4. Pre-Harvest Photographs, A-C

A. The landing is located on the left (south) side of the old railroad bed.

B. The overstory in this area is being removed to release the white pine and hardwood saplings. Note the red oak in the foreground which is being retained to provide important structural diversity. It is anticipated that trees such as these will never be cut but will be allowed to live out their natural life-span.

C. The focus of this operation is to release white pine regeneration by removing portions of the oak-dominated overstory. White pine is well adapted to grow vigorously and healthy on these very dry sites.

Figure 5. Post-Harvest Photographs, A-C

A. These young white pine now have the space and light they need with the removal of the overstory which was primarily oaks. The pine trees on the right of the photograph were retained to provide structural diversity.

B. This was the primary landing for this operation. The restoration of this abandoned railroad bed by DCR heavy equipment crews recently now allows good access to this large chunk of DWSP property.

C. This small vernal pool was discovered by DCR Foresters during the marking of this forest management operation. After it was verified by DCR Natural Resource staff to be a functioning vernal pool, steps were taken to protect it from the tree cutting operation including ensuring that it remains in a fully shaded condition.