

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

**Project Title: Lot 5246**

DWSP Harvest Permit Number: 5246

DWSP Proposal ID: WA-13-175

DCR Forest Cutting Plan File Number: 282-8106-16

***Site Information***

Watershed: Wachusett

Town(s): Sterling

Acres: 52

Nearest Road: Redemption Rock Trail (Rt. 140)

Natural Heritage Atlas overlap?: No

Public Drinking Water Supply Watershed?: Yes

Forest Types: Oak-Hardwood, Mixed Oak, White pine-Oak, White pine-Hardwood

Area of Critical Environmental Concern (ACEC)?: No

Soils: The Paxton fine sandy loam, a soil of till origin, is the dominant soil on this site.

Wetland Resources: There's a small intermittent stream in the far north end of this area that drains into a small wetland associated with the vernal pool. There's also a small wetland mapped in the field to the west of the large barn.

Vernal Pools: There is a vernal pool in the northeast corner of this property.

***Harvest Information***

Harvest Start Date: 4/8/2016

Harvest End Date: 6/10/2016

Number of Wetland Crossings: None

Number of Stream Crossings: None

***Best Management Practices Applied***

Stream Crossings: There are no stream crossings.

Filter Strips: Equipment will not be allowed in the filter strip.

Wetland Crossings: There are no wetland crossings.

Harvesting in Wetlands: There is no harvesting in wetlands.

***DWSP Forester supervising this harvest***

Name: Greg Buzzell

Forester License number: 025

Phone number: 774-261-1841

Email: greg.buzzell@mass.gov

## **Narrative**

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

The Stillwater Farm was one of the earliest purchases in the current era of watershed land acquisition, bought from the Wronski family in 1990. Those 34 acres make up the southern portion of this working unit. The other 24 acres was purchased from the May family in 1999. This property was heavily impacted by the Hurricane of 1938 and the subsequent salvage and burning of the slash. The result is a forest of decent quality red oak along with black oak, white oak, poplar, black and paper birch, red maple and scattered large white pines. An MDC timber sale was performed in 1995 on about 16 acres of the Stillwater Farm property (the Metropolitan District Commission was the predecessor of the Division of Water Supply Protection within the DCR). The sale was generally a thinning, but included two patch cuts (1.9 and 0.8 acres) intended for wildlife habitat improvement. These patches were placed in areas where large poplars grew, with the hope that cutting would stimulate root suckers of the poplar and sprouting of the birches. This was successful; there is now a vigorous coppice/sprout growth of poplar and birch. Throughout the rest of the working unit, including the May property, which was privately harvested in the early 1990s, there are patches of good advance regeneration made up of white pine and hardwoods.

### ***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.

Only 5% of the forest is under 20 years old, and only 6% is less than 40 years old. A combination regeneration and terrestrial invasive plant sampling scheme found no invasive species present in this working unit, while advance regeneration was detected at 88% of the plots taken; oak regeneration was present at 17% of the plots. Given the general lack of young, free-to-grow forest, now is the perfect time to capitalize on the well-distributed regeneration present and begin to increase the age diversity here.

### ***Silvicultural Objectives***

There is ample advance regeneration of a species mix appropriate to the site to warrant release of a new age cohort by the removal of the overstory in patches. To that end, 24 openings in the overstory are being created. These openings range in size from 0.2 to 0.5 acres in size with an average of about 0.4 acres. These have been well distributed throughout the working unit with adequate spacing between the patches to allow for future patches of a similar range of sizes. Standards regarding green retention (live trees left within patches for structure and seed) have been followed.

A second goal is to further condition the overstory trees in the matrix forest surrounding the new patches. Partial cutting where not more than 1/3rd of the stocking of live trees is removed will occur on 7.6 acres. Individual trees of poorest vigor and form will be targeted to reduce competition for healthier trees.

### ***Cultural Resources***

This farm was built by Zebedee Redding in 1790, and the history since is well documented; this was a working dairy operation into the 1970s. Local people remember the blown down pines on the hill after the hurricane of 1938, and the subsequent fires. Old stone walls served as property lines and fences to keep livestock out of tilled lands and orchards. A self-guided interpretive trail was developed by the DCR to educate the public about the history of this property and the general history of New England forest development, both natural and human-directed; the farmhouse also serves as a visitor/educational center.

Given the level slope and proximity of the lower land to the Stillwater River, the archeological sensitivity for pre-Contact sites is higher around the farm and across the highway; less so up on the rocky hillside.

Following the harvest, DCR interpretive staff will assess the property for new opportunities for educational purposes. This may include an expanded interpretive trail system into the former May property which was not owned by the Commonwealth when the existing interpretive trail system was established. No doubt new educational opportunities will also be evident, taking advantage of the recently completed forest management operation.

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

A vernal pond sits on the former-May property a short distance from the former-Wronski line, about 400 feet west of the farmhouse. Restrictions around vernal pools include: a 15-foot no-cut buffer from the edge of the pool; a 100-foot 'shaded condition' buffer from the edge of the pool; and a 200-foot zone where disturbance to the ground, including ruts >6" deep, must be avoided. So, although DCR possesses no internal documentation regarding species presence, including any state-listed species, this pool will be protected.

### **Figures**

- Figure 1. Forest Cutting Plan
- Figure 2. Maps 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-D

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)

MAR 04 2016

### For DCR Use Only:

File Number 282-8106-16 Case No. \_\_\_\_\_  
 Date Rec'd 3/4/16 Nat. Hert. NO /  
 Earliest Start 3/18/16 Nat. Hert. Imp. NO  
 River Basin WACHUSA Pub. Dr. Wat. YES - WACHSETT  
 Gen. Obj. CT ACEC NO

Site Information

### Location

Town Sterling  
 Road Redemption Rock Trail (Rt. 140)  
 Acres 52 Proposed Start Date 04/16  
 Vol. MBF 45.1 Vol. Cds. 141 Vol. Tons 46

### Plan Preparer

Name Gregory S. Buzzell  
 Address 180 Beaman Rd.  
 Town, State, Zip West Boylston, MA, 01583  
 Phone 508-792-7806 Ext 317  
 Type of Preparer Mass. Licensed Forester  
 \*Mass. Forester License # 25  
 \*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 Chad Blackbird  
 Address 1220 Petersham Rd  
 Town, State, Zip Athol, MA 01331  
 Phone 978-249-8494  
 Mass. Lic. Harvester # 2016-962  
 \*\*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	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

\* ALL SILVIO ROADS / TRAILS ARE EXISTING  
 \* SEE ATTACHED VEGETAL POOL BMPs

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.

Forest Products

**Products to be Harvested\***

Species	Mbf/Cds		Mbf/Cds
White Pine	29.9	Red Maple	
Red Pine		Sugar Maple	
Pitch Pine		Red Oak	12.3
Hemlock		Black Oak	2.9
Spruce		White Oak	
Other Sftwd.		Other Hdwd.	
White Ash		<b>Total Mbf</b>	45.1
Beech		<b>Cordwood (Cds)</b>	141
White Birch		<b>SW Pulp (Tons)</b>	46
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	MO	WH	WO5
Acres	28.8	10.5	5.5	7.2
Landowner Objective	LT	LT	LT	LT
Designation of Trees	CT	CT	CT	CT
Type of Cut	SE	SE	SE	SE
Source of Regeneration	AD/SE	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)

3/2/16  
Date

Service Forester

**Determination and Status**

Approved  Disapproved  Expires 3-4-2018

3-4-2016  
Signature of Service Forester/Director's Agent Date

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

Codes

<u>Forest Types</u>	<u>Designation of Trees</u>	<u>Type of Cut</u>	<u>Source of Regeneration</u>
WP White Pine	CT Cut Tree	SH Shelterwood	AD Advanced
WK WP/Hem	LT Leave Tree	ST Seed Tree	SE Natural Seed
WH WP/Hdwd	SB Stand Boundary	CC Clear Cut	PL Plant
WO WP/Oak	OT Other	SE Selection	CO Coppice
RP Red Pine	<u>Landowner Objective</u>	SA Salvage	DS Direct Seed
SR Red Spruce	LT Long-term Mgt.	SN Sanitation	OT Other
	ST Short-term Har.		
		<u>Intermediate Harvests:</u>	
		CT Commercial Thin	
		NT Non Com Thin	
		<u>Non-Standard Systems:*</u>	
		HG Highgrade*	
		DL Diameter Limit*	
		OT Other*	

# 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.

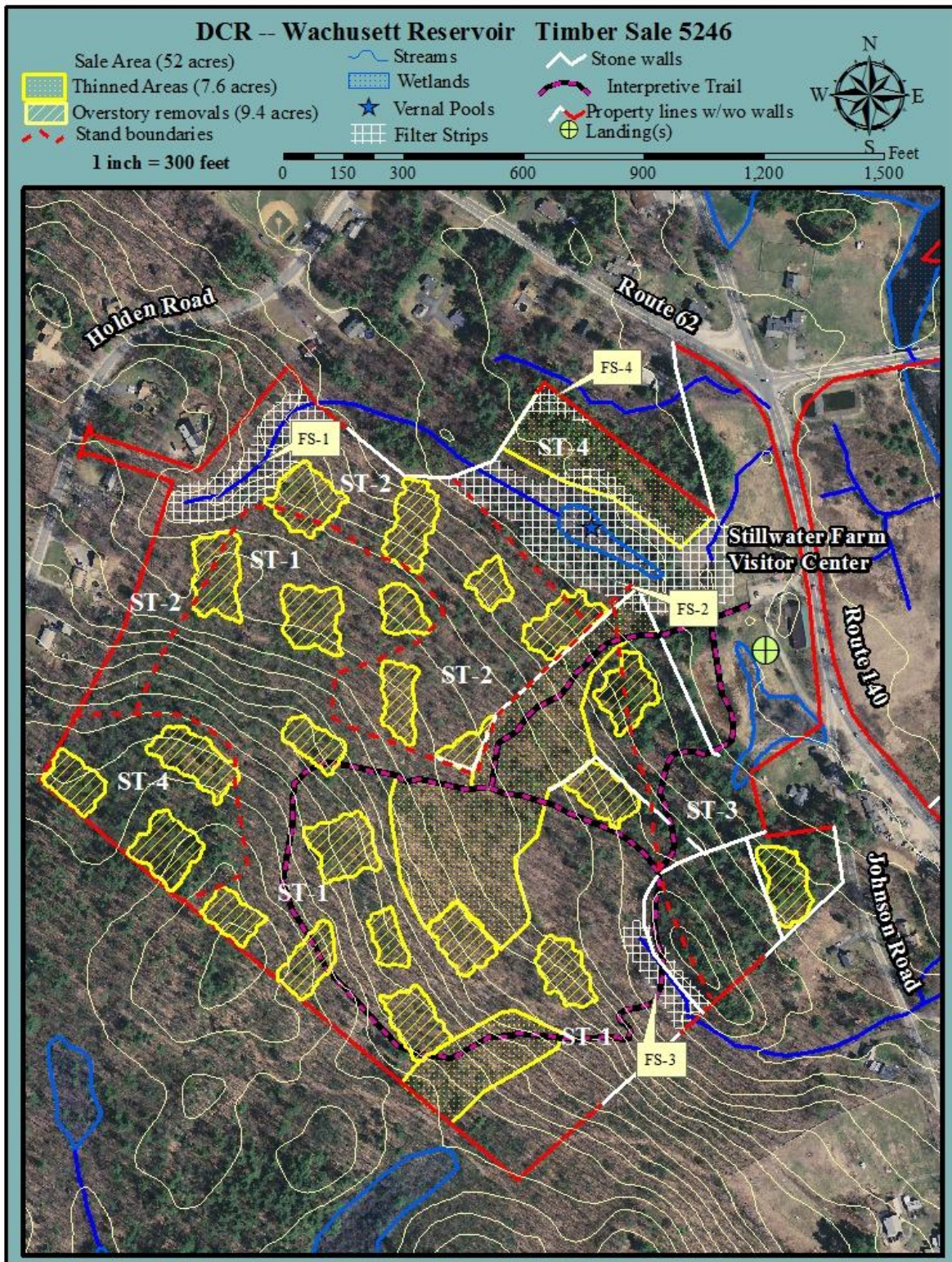
Landowner: DOR Wachusett

Town: Sterling

File Number: 282-8106-16

BMPs	<p><u>The landing will be located along the driveway behind the large old barn. While there is a DEP wetland mapped in the field, it is upslope from the landing area. Regardless, precautions will be taken during the job to prevent soil erosion and the accidental release of hydraulic fluid or fuels from impacting this wetland. Oil-absorbant mats will be required at the landing and in all logging equipment at all times. Regular inspection of the logging equipment for leaks will occur.</u></p>
Silviculture	<p><u>In order to release advance regeneration, 24 openings in the overstory are being created. These openings range from 0.2 to 0.5 acres in size with an average of 0.4 acres. They are well distributed throughout the area taking advantage of the advance regeneration comprised of white pine, oaks, red maple and black birch. A thinning will occur on an additional 7.6 acres where 25-30% of the stocking will be removed. The goal of this partial cutting is to remove the trees of poorest vigor while benefiting the better quality red oaks and occasional hickory while maintaining enough stocking to inhibit the development of an excessively thick mountain laurel layer.</u></p>
Objectives	<p><u>The objective of this operation is to diversify the age structure of the forest in this 52 acre working unit by removing the overstory in patches thereby releasing the advance regeneration. There is currently very little diversity in age structure as 94% of the forest is more than 60 years old with most of it originating following the 1938 hurricane.</u></p>
Other	<p><u>The Stillwater Farm interpretive site will be closed at least during the hours of operation of this lot. Following completion of the work, new opportunities for public education resulting from the timber sale will be explored including the expansion of the interpretive trail network.</u></p>

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





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



**A.** The landing area looking north towards Stillwater Farm.



**B.** Thinning will occur in this 70 year-old oak-hardwood stand favoring the trees of best vigor and form, primarily red oaks in this stand.



C. Good advance regeneration of white pine and hardwoods (white oak, red oak, red maple, etc.) where the overstory will be removed in a small patch.

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



A. The landing area behind the parking lot at Stillwater Farm. Wood was piled in the brown patch on the left.



B. A patch where white pine and hardwood regeneration was protected during the removal of the overstory. A red oak and white pines were retained to provide structural diversity.



C. Diverse regeneration was protected from damage in the middle of this opening. The majority of the disturbance took place around the perimeter of the approximately 1/2 acre area.



D. Small trees and the branches of larger trees were used to protect the soil from rutting in areas where the ground was soft at the time of harvest operation.