

# Massachusetts Division of Fisheries & Wildlife

## Forest Cutting Plan Summary

<b>DCR File Number:</b> 058-3221-7	<b>DFW Contract Number:</b> W-SH-UP-1
<b>Natural Heritage Atlas:</b> No overlap with Priority Habitats for rare species	
<b>Public Drinking Water Supply:</b> No	
<b>ACEC:</b> No	

### **Site Information:**

<b>Property:</b> Stafford Hill WMA	<b>Town(s):</b> Cheshire
<b>Acres:</b> 22	<b>Road:</b> Stafford Hill Road
<b>Forest Management Zone:</b> Berkshire Highlands	<b>Wildlife District:</b> Western District
<b>Ecoregion:</b> Berkshire-Vermont Upland	<b>Watershed:</b> Hoosic
<b>Stand(s) Treated:</b> WE371	<b>Land Type:</b> Upland Forest
<b>Adjacent Land Types:</b> Abandoned Field, Wetland Forest, and Upland Forest	<b>Stand Type:</b> Northern hardwood
<b>Stand Condition 2007:</b> Open-canopied, large-pole size (6"-12" DBH) mixed hardwoods with scattered wild apple trees in the understory.	<b>Stand History:</b> Original forest cleared for agricultural pastureland ca.1830, abandoned ca.1960, early-successional northern hardwood (birch/aspens) forest established by 1970 and has matured to large-pole stage.
<b>Soils:</b> Primarily Tunbridge and Lyman soils, with small areas of Pittsfield and Nellis loams and Amenia silt loams on western edge of project area.	<b>Acquired:</b> 1967
<b>Wetland Resources:</b> The 22 ac harvest area surrounds a 3.3 acre un-harvested forested wetland dominated by red maple trees.	<b>Vernal Pools:</b> None

### **Harvest Information:**

**Objectives:** (1) Regenerate northern hardwood forest with a large component of mature (40-50 year-old) aspen to create dense young forest habitat dominated by aspen; and (2) Increase structural diversity and mast production by retaining small patches of mixed hardwood (primarily black cherry and white ash), scattered wild apple and hawthorne trees, and native shrubs (e.g., cherry species and pagoda dogwood).

<b>Harvest Start Date:</b> January 2009	<b>Harvest End Date:</b> February 2009
<b>Wetland Crossings:</b> 1 (Fig. 1)	<b>Stream Crossings:</b> 2 (Fig. 1)

### **Forest Products Harvested**

Species	Board Foot Volume	Cords Firewood	Cords Pulpwood
Aspen spp.	-	-	374
Black cherry	-	12	-
Red maple	-	11	-
Sugar maple	-	24	-
White ash	-	34	-
<b>TOTAL</b>	<b>0 MBF</b>	<b>81 cords</b>	<b>374 cords</b>

**Site Selection:** Based on local knowledge (Western District and DFW Upland Habitat Program), this northern hardwood stand was known to contain a substantial, relatively mature (40-50 years old) aspen component. It was selected for treatment because aspen is a relatively short-lived tree species and if left unmanaged the aspen component tends to fall out of the landscape over time as it is replaced by more common tree species. Aspen-dominated stands are relatively uncommon in Southern New England, and young aspen stands provide excellent wildlife habitat for ruffed grouse and other native species (<http://www.ruffedgrousesociety.org/Managing-Aspen>). Accordingly, mature aspen stands on DFW lands are high priority sites for regeneration

**Silviculture:** Aspen is a “clonal” tree species (many stems grow from one root system) that thrives in full sunlight, and stands of this habitat type are best maintained on the landscape by cutting nearly all stems when they reach 30-40 years of age. The root system then vigorously re-sprouts to provide a unique, high quality wildlife habitat. This cutting technique is technically referred to as a coppice regeneration harvest and to the casual observer initially appears as a clearcut. At this Stafford Hill site, the coppice regeneration cut was designed to establish a dense aspen-dominated stand with a mix of northern hardwood species, such as black cherry dispersed throughout. Several small patches of mixed hardwoods (primarily black cherry and white ash) and occasional snag trees were retained for structural diversity, cavity habitat, seed source, and soft mast wildlife food resources. As of August 2009, the harvest has resulted in an abundance of aspen root sprouts and black cherry seedlings amidst the 6-12” dbh retained cherry and ash trees. Beyond 2010, DFW expects this two-aged stand to become a dense thicket of sapling trees including aspen, black cherry, red maple, sugar maple, and white ash surrounding the scattered reserve trees.

**Rare Species & Wetlands Considerations:** No Priority Habitat for rare species occurs within the harvest area. One forested wetland crossing was used and was mitigated by harvesting during the winter season, and by removal of slash and planting to native sedges during the following spring season. No vernal pools were located within the harvest area.

**Plan Preparer:**

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**Best Management Practices:**

**Stream Crossings:** SC-1 and SC-2 cross intermittent streams with low banks and a bottom that varies from gravel to mud (Fig. 1). Poles were cut from ST-1 to provide corduroy on the approaches to SC-1, and a poled ford at SC-2. All poles removed following harvest.

**Filter Strips:** FS-1 and FS-2 protect intermittent streams draining a wetland. Less than 10% of tree basal area was cut within these 50' filter strips.

**Wetland Crossings:** WC-1 is approximately 70' long. The area of the crossing is not identified as a wetland on DEP wetland maps, but during the pre-harvest monitoring at this site DFW personnel determined that a forested wetland of about 3.3 acres occurred at this site. Mitigation was by crossing during frozen conditions only, with poles cut from ST-1 used as corduroy for stabilization. After completion of the harvesting operation, poles used as corduroy were removed from the wetland crossing, and the crossing was seeded with a native wetland seed mix.

**Harvesting in Wetlands:** None

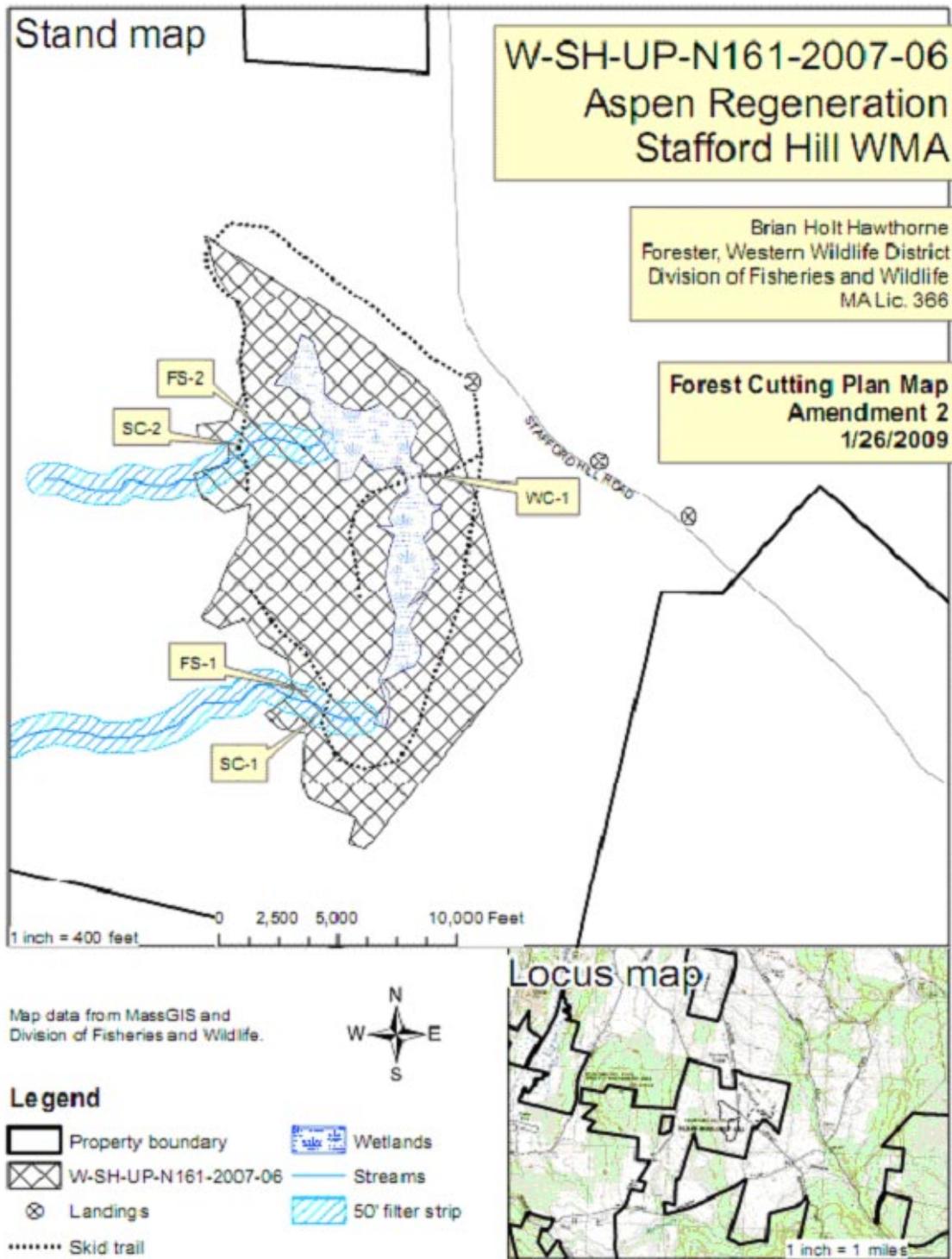
### **Cutting & Retention Standards:**

<b>Feature (see Fig. 1)</b>	<b>Stand 1</b>
Forest Type:	Northern Hardwood
Acres:	22
Landowner Objective:	Long Term
Designation of Trees:	Mark to Leave
Type of Cut:	Other (Coppice/Clearcut)
Source of Regeneration:	Coppice/Seed
Small Woody Debris:	Retain >30% of tops <4" diameter
Large Woody Debris:	Retain >1 cord/acre >4" diameter

### **Determination of Status:**

This Forest Cutting Plan was approved by DCR on July 13, 2007, with amendments approved in August 2008 and January 2009. Harvesting activities were completed during February of 2009. A final inspection by the DCR Service Forester was requested February 27, 2009. Regeneration status was checked by DFW in June, August, and September 2009 (favorable for aspen, pin cherry, and black cherry with some evidence of minor deer/moose browsing, and with successful germination of native wetland seed mix). Initial post-harvest vegetation monitoring of all vascular plant species was completed at the conclusion of the first growing season in September 2009.

Figure 1. Forest Cutting Plan Map.



**Figure 2. Pre-Harvest Photographs, A-C (Winter 2007-2008).**



MassWildlife Photo by Brian Hawthorne

A. Abandoned pastureland with 40-50 year-old mixed hardwood stand dominated by aspen, red maple and birch, with scattered black cherry and white ash.



MassWildlife Photo by Brian Hawthorne

B. Multiple-stem (open grown) black cherry marked for retention and growing amongst low-grade red maple (black cherry is toward the right of the photo).



MassWildlife Photo by Brian Hawthorne

C. Apple tree that has been overtopped by red maple, birch, and ash trees.

**Figure 3. Harvest Photographs, A-B (February 2009).**



MassWildlife Photo by Brian Hawthorne

A. Grapple skidder transports whole trees from harvest area to landing. After processing wood products at the landing, 30% of tops are returned to the harvest area for biomass retention of small woody debris. At least 256 cubic feet (>2 cords) per acre of coarse woody material >4” in diameter was also retained on the ground within the harvest area.



MassWildlife Photos by Brian Hawthorne

B. Landing operations. From right to left: skidder brings trees to landing, loader moves trees to adjacent cutoff saw, then stacks merchantable tree boles in pile just visible in rear of photo (boles were processed for local firewood production and pulpwood manufacturing), then feeds tops and other un-merchantable wood into an industrial chipper (grinder), which feeds chips into a tractor-trailer truck (visible immediately above top of truck trailer) for delivery to local processors for use in landscape chips and other products.

**Figure 4. Post-Harvest Photographs, A-F (August and September 2009).**



MassWildlife Photo by Brian Hawthorne

A. Parking area that was utilized as a landing in Figure 3B shown in August 2009.



MassWildlife Photo by Brian Hawthorne

B. Foreground area was cleared of poor quality old-field white pine, mid-ground shows a dense thicket of aspen root sprouts resulting from harvest, and background shows the adjacent, un-harvested hardwood stand (August 2009).



MassWildlife Photo by Brian Hawthorne

C. Aspen seedlings growing through retained coarse woody material (August 2009).



MassWildlife Photo by Brian Hawthorne

D. Residual apple (upper middle of picture) and black cherry trees (upper right of picture) released to produce more soft mast. Note dense aspen sprouts in lower right of picture and dense grasses & sedges in lower middle of picture that have responded to full sunlight (August 2009).



MassWildlife Photo by Brian Hawthorne

E. Aspen root sprouts next to a 1.5 meter long shovel halfway through the first growing season (August 11, 2009) – note adjacent, un-cut birch trees in the background.



F

MassWildlife Photo by Brian Hawthorne

F. One month after previous photos, aspen sprouts are well over 2 meters in height in most of the treatment area. (September 14, 2009)