

**Overview:**

This post-harvest inventory was conducted on the ±56 acre Orcutt Hill forest management project that occurred during the fall and winter of 2009 in Wendell State Forest. The purpose of the project was to regenerate a single hemlock/hardwood stand using a seed cut in a shelterwood sequence, removing UGS in all size classes, while maintaining ±80 ft<sup>2</sup>/ac BA of AGS > 11 in. DBH. Species favored for retention included northern red oak and eastern white pine on the south and west facing slopes, and northern hardwoods and eastern hemlock on the north facing slopes. The harvesting was completed using a fully mechanized operation including a tracked harvester and skidders; and whole tree harvesting appears to have been utilized throughout the sale area. Pre-harvest sampling estimated 1,120 TPA of regeneration comprising American beech, eastern white pine, red maple, and northern red oak; and a large shrub component including mountain laurel, black huckleberry, and lowbush blueberry.

A post-harvest inventory was conducted in which 18 points were points systematically located in the harvest area. At each point, overstory trees (≥ 1 in. DBH) were sampled using horizontal point sampling with a BAF 40 angle gauge; understory trees (< 1 in. DBH, ≥ 3 in. tall) were sampled using circular plots of radius 2.625 ft.; and CWD was sampled using line intersect sampling with a single 10 ft. long transect at each point. Field inventory was conducted during October 2019 using standards set forth in the DCR: DSPR Post-management Inventory Protocol. Photographs were taken at 4 of these plots.

**Overstory observations:**

The overstory conditions prior to the most recent timber harvest operations were a result of extensive damage and subsequent salvage operations after the hurricane of 1938; field evidence suggests that another harvest occurred since then removing the larger diameter trees. The current overstory appears to be in good condition. Northern red oak and eastern hemlock compose approximately 79% of the 71 ft<sup>2</sup>/ac BA of live trees ≥ 1 in. DBH. Two snags per acre ≥ 5 in. DBH are present.

**Understory observations:**

Understory conditions vary throughout the stand. Some areas are heavily inundated with American beech and black birch regeneration, with scattered occurrences of eastern white pine, red maple and other assorted hardwoods. Overall, black birch and northern red oak regeneration was most prevalent, composing ±75% of the 10,741 seedlings and saplings per acre recorded through this inventory. The birch outnumbered oak by nearly 4 to 1; and the oak was only observed in the smallest size class. No exotic invasive species were noted during the field inventory.

**Coarse woody debris observations:**

Only individual pieces, not piles, of CWD were selected into the sample, most of which appeared to have been a result of natural mortality and not a direct result of harvesting operations (i.e., logging slash). An estimated 541 ft<sup>3</sup>/ac of CWD is present throughout the harvest area, all of which was recorded as individual pieces.

**Photographs:**



American beech regeneration, with some mountain laurel interspersed and assorted native tree species interspersed.



Scarce regeneration with some mountain laurel in an area where few overstory trees were removed in previous harvesting operations.





Area of dense American beech regeneration with black birch and mountain laurel interspersed.

STANDING LIVE TREES;  
ALL SIZES -  
STAND TABLE

COMMON NAME SPCD HT (FT) / DBH (IN) CLASS	eastern white pine		eastern hemlock		red maple		sweet birch		American beech	
	129 BA	129 TPA	261 BA	261 TPA	316 BA	316 TPA	372 BA	372 TPA	531 BA	531 TPA
3.0 IN ≤ HT < 4.5 FT.	0	112	0	559	0	224	0	1118	0	112
4.5 FT ≤ HT < 10.0 FT.	3	894	0	0	0	0	2	3242	1	783
10.0 FT ≤ HT < 15.0 FT. / < 1.0 IN. DBH	0	0	0	0	0	0	9	1900	1	112
2	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	2	12	0	0	0	0
8	0	0	2	6	4	13	0	0	0	0
10	0	0	4	8	2	4	0	0	0	0
12	0	0	4	6	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	4	3	0	0	0	0	0	0
18	0	0	7	4	0	0	0	0	0	0
20	2	1	0	0	0	0	0	0	0	0
22	0	0	2	1	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0
26	0	0	2	1	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0
≥50	0	0	0	0	0	0	0	0	0	0
TOTALS	5	1007	27	588	9	252	11	6260	1	1006

STANDING LIVE TREES;  
ALL SIZES -  
STAND TABLE

COMMON NAME SPCD HT (FT) / DBH (IN) CLASS	blackgum		black cherry		northern red oak		black oak		TOTAL BA	TOTAL TPA
	693 BA	693 TPA	762 BA	762 TPA	833 BA	833 TPA	837 BA	837 TPA		
3.0 IN ≤ HT < 4.5 FT.	0	0	0	0	0	1574	0	0	0	3698
4.5 FT ≤ HT < 10.0 FT.	0	0	0	0	0	0	0	0	5	4919
10.0 FT ≤ HT < 15.0 FT. / < 1.0 IN. DBH	1	112	0	0	0	0	0	0	10	2124
2	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	2	12
8	0	0	2	6	0	0	0	0	9	26
10	0	0	0	0	0	0	0	0	7	12
12	0	0	0	0	2	3	0	0	7	9
14	0	0	0	0	9	8	2	2	11	10
16	0	0	0	0	11	8	0	0	16	11
18	0	0	0	0	7	4	0	0	13	8
20	0	0	0	0	0	0	0	0	2	1
22	0	0	0	0	0	0	0	0	2	1
24	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	2	1
28	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0
≥50	0	0	0	0	0	0	0	0	0	0
TOTALS	1	112	2	6	29	1597	2	2	87	10831

## STANDING DEAD TREES;

≥ 1 IN. DBH -

## STAND TABLE

COMMON NAME SPCD HT (FT) / DBH (IN) CLASS	eastern white pine		eastern hemlock		red maple		sweet birch		American beech	
	129 BA	129 TPA	261 BA	261 TPA	316 BA	316 TPA	372 BA	372 TPA	531 BA	531 TPA
3.0 IN ≤ HT < 4.5 FT.	0	0	0	0	0	0	0	0	0	0
4.5 FT ≤ HT < 10.0 FT.	0	0	0	0	0	0	0	0	0	0
10.0 FT ≤ HT < 15.0 FT. / < 1.0 IN. DBH	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	2	2
18	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0
≥50	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0	2	2

## STANDING DEAD TREES;

≥ 1 IN. DBH -

## STAND TABLE

COMMON NAME SPCD HT (FT) / DBH (IN) CLASS	blackgum		black cherry		northern red oak		black oak		TOTAL BA	TOTAL TPA
	693 BA	693 TPA	762 BA	762 TPA	833 BA	833 TPA	837 BA	837 TPA		
3.0 IN ≤ HT < 4.5 FT.	0	0	0	0	0	0	0	0	0	0
4.5 FT ≤ HT < 10.0 FT.	0	0	0	0	0	0	0	0	0	0
10.0 FT ≤ HT < 15.0 FT. / < 1.0 IN. DBH	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	2	2
18	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0
≥50	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0	2	2



**COARSE WOODY DEBRIS SUMMARY** (DEAD; >45° FROM VERTICAL; ≥ 3.0 IN DIA; ≥ 3.0 FT LENGTH)

PIECES/ AC	PIECE CF/AC	PILES (DIMENSIONS)/AC	PILE CF/AC	PILE DEPTH CF/AC	TOTAL CWD CF/AC: PIECES + PILE DIMENSIONS	TOTAL CWD CF/AC: PIECES + PILE DEPTH
498.3	541.2	0.0	0.0	0.0	541.2	541.2