USDA Forest Service, US Department of Agriculture
Northern Research Station

New Hampshire's Forest Resources, 2010

Research Note NRS-109

This publication provides an overview of forest resource attributes for New Hampshire based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) program at the Northern Research Station of the U.S. Forest Service. These estimates, along with web-posted core tables, will be updated annually. For more information, please refer to page 4 of this report.

Table 1. – Annual estimates and uncertainty

	2010 estimate	Sampling error (%)
Forest Land Estimates		
Area (1,000 acres)	4,826	1.0
Number of live trees 1-inch diameter or larger (1,000,000 trees)	4,293	2.7
Biomass of live trees 1-inch diameter or larger (1,000 tons)	281,089	1.8
Net volume in live trees 5-inch diameter or larger (1,000,000 ft^3)	10,840	1.9
Annual net growth of live trees 5-inch diameter or larger (1,000 ft^3/year)	191,214	6.2
Annual mortality of live trees 5-inch diameter or larger (1,000 ft^3/year)	115,916	6.6
Annual harvest removals of live trees 5-inch diameter or larger (1,000 ft^3/year)	113,308	16.1
Annual other removals of live trees 5-inch diameter or larger (1,000 ft^3/year)	2,038	74.7
Timberland Estimates		
Area (1,000 acres)	4,651	1.2
Number of live trees 1-inch diameter or larger (1,000,000 trees)	4,035	2.9
Biomass of live trees 1-inch diameter or larger (1,000 tons)	274,077	1.9
Net volume in live trees 5-inch diameter or larger (1,000,000 ft^3)	10,565	2
Net volume of growing-stock trees (1,000,000 ft^3)	9,780	2.1
Annual net growth of growing-stock trees (1,000 ft^3)	185,830	5.2
Annual mortality of growing-stock trees (1,000 ft^3/year)	84,576	7.2
Annual harvest removals of growing-stock trees (1,000 ft^3/year)	92,470	16.4
Annual other removals of growing-stock trees (1,000 ft^3/year)	7,489	61.6

Note: When available, sampling errors/bars provided in figures and tables represent 68 percent confidence intervals

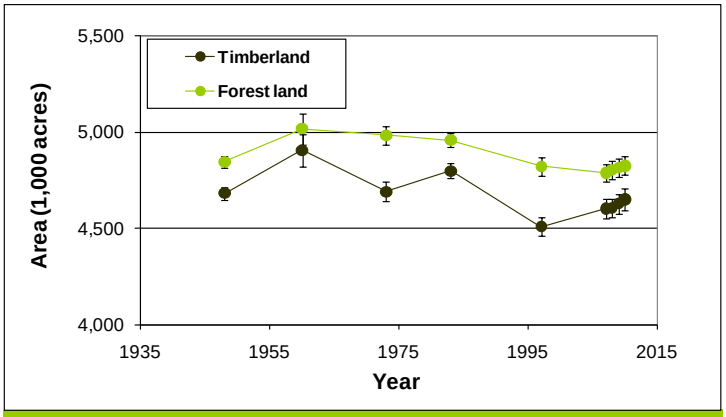

Figure 1. – Area of timberland and forest land by year.

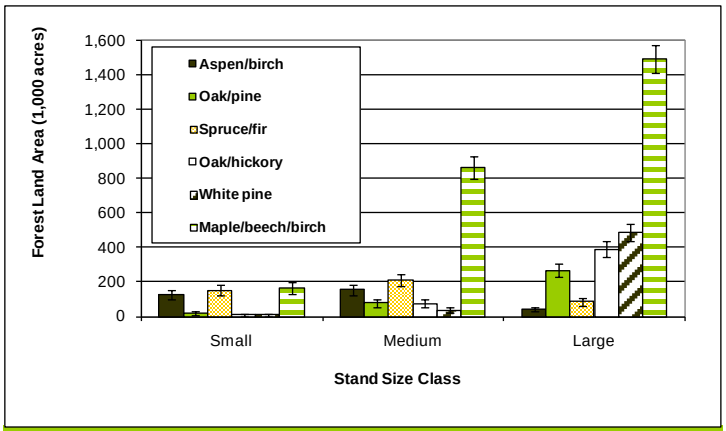

Figure 2. – Area of forest land by top six forest types and stand size class, 2006-2010.

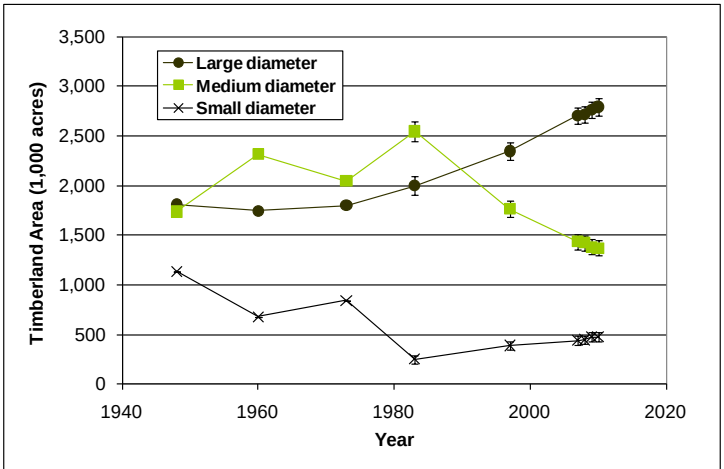

Figure 3. – Area of timberland by stand size class and year.

Table 2. – Top 10 tree species by statewide volume estimates (5-inch diameter and larger), 2006-2010

Rank	Species	Volume of live trees on forest land (1,000,000 ft^3)	Sampling error (%)	Volume of sawtimber trees on timberland (1,000,000 bdft)	Sampling error (%)
1	Eastern white pine	2,136	6.2	9,326	6.7
2	Red maple	1,685	4.3	3,269	6.8
3	Northern red oak	1,153	6.8	3,883	7.8
4	Eastern hemlock	1,108	7.3	2,955	8.7
5	Sugar maple	880	8.1	2,297	10.2
6	Yellow birch	613	7.0	1,353	10.0
7	American beech	547	8.0	1,164	12.5
8	Paper birch	508	9.1	635	11.8
9	Red spruce	507	9.4	1,217	11.6
10	Balsam fir	507	6.7	769	10.5
	Other softwoods	140	23.5	362	22.9
	Other hardwoods	1,058	6.0	2,682	8.7
	All Species	**10,840**	**1.9**	**29,911**	**3.0**

Standing Dead Trees

Specific features, like nesting cavities in standing dead trees, provide critical habitat components for many forest-associated wildlife species, with standing dead trees containing significantly more cavities than occur in live trees (Fan et al. 2003). Standing dead trees serve as important indicators not only of wildlife habitat, but also for past mortality events and carbon storage. The standing dead tree resource across New Hampshire's forests is defined by the number and density by decay classes, species, and sizes.

Between 2006 and 2010, FIA collected data on standing dead trees of numerous species and sizes in varying stages of decay. According to the current inventory data, more than 140 million standing dead trees are present on New Hampshire forest land, with a density of 29.1 standing dead trees per acre of forest land.

Thirteen species groups each contributed more than 1 million standing dead trees, with the top group, spruce and balsam fir, at 43 million (Fig. 4). Tree species are grouped into species groups which are defined in FIA's database documentation (Woudenberg et al. 2010).

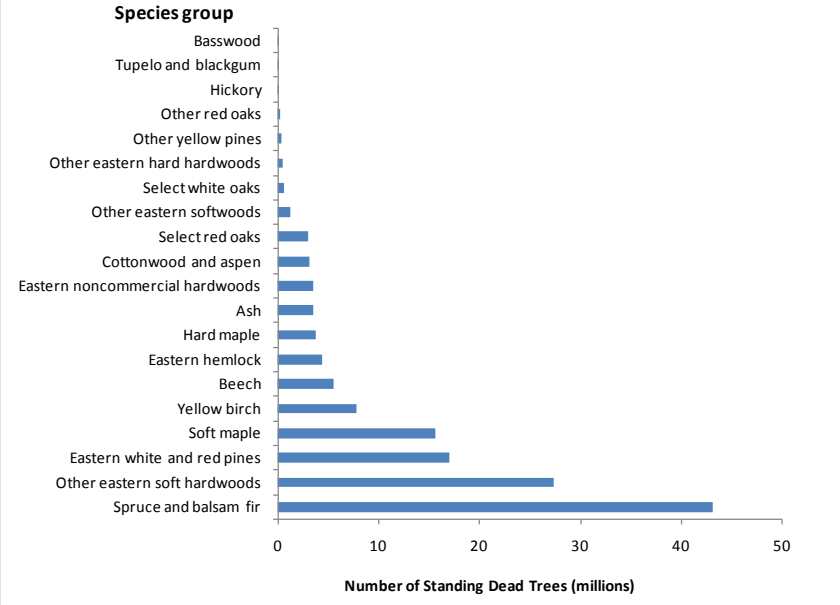

Figure 4. – Number of standing dead trees by species group, New Hampshire, 2006-2010.

Standing Dead Trees

Relative to the total number of live trees in each species group, four species groups exceeded 5 standing dead trees per 100 live trees, with 'other eastern softwoods' leading all groups with 11.1 standing dead trees per 100 live trees (Fig. 5). Almost 45 percent of standing dead trees were smaller than 7.0 inches d.b.h., with the great majority (85 percent) smaller than 11 inches d.b.h. (Fig. 6). The greatest number (76 percent) of standing dead trees was estimated for the two intermediate decay classes where only limb stubs persist, with the fewest number (1.6 percent) in the class of most decay. This pattern was consistent across all decay classes (Fig. 6).

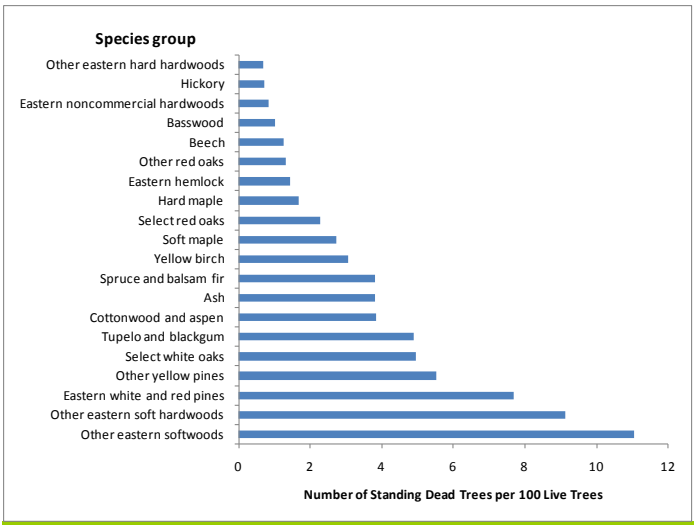

Figure 5. – Number of standing dead trees per 100 live trees by species group, New Hampshire, 2006-2010.

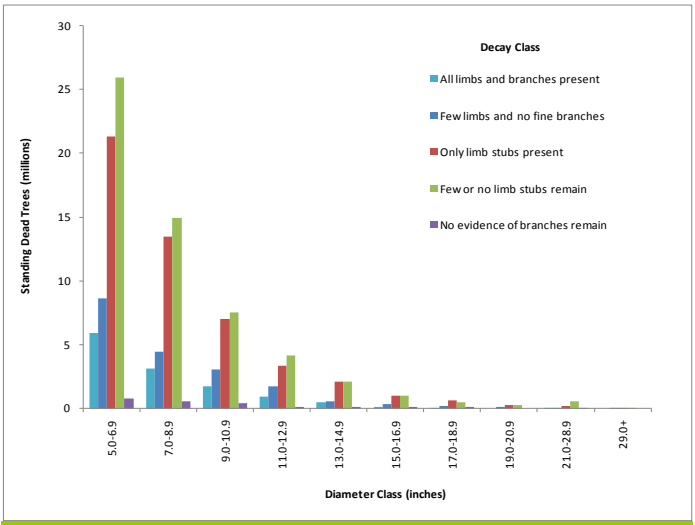

Figure 6. – Distribution of standing dead trees by decay and diameter classes, New Hampshire, 2006-2010.

Standing dead trees result from a variety of causes, including diseases and insects, weather damage, fire, flooding, drought, and competition, and other factors. The spruce and balsam fir species group had the highest total number of standing dead trees. Within this group, balsam fir comprises the majority of both all live and standing dead trees. The 'other eastern softwoods' species group comprised less than 1 percent of all standing dead trees, but had the highest density of standing dead trees per 100 live trees, mostly attributable to tamarack. These standing dead trees provide areas for foraging, nesting, roosting, hunting perches, and cavity excavation for wildlife, from primary colonizers such as insects, bacteria, and fungi to birds, mammals, and reptiles. Most cavity nesting birds are insectivores which help to control insect populations. However, the size distribution suggests that many snags may be too small to support nesting or roosting for those species requiring larger cavities. Providing a variety of forest structural stages and retaining specific features, such as snags on both private and public lands, are ways that forest managers maintain the abundance and quality of habitat for forest-associated wildlife species in New Hampshire.

Citation for this Publication

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FIA Program Information

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Additional Information

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Estimates, tabular data, and maps from this report may be generated at: fiatools.fs.fed.us