

New Hampshire's Forest Resources, 2012

Research Note NRS-172

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

	2012 estimate	Sampling error (%)	Change since 2007 (%)
Forest Land Estimates			
Area (1,000 acres)	4,833	1.0	0.9
Number of live trees 1-inch diameter or larger (1,000,000 trees)	4,270	2.6	3.2
Biomass of live trees 1-inch diameter or larger (1,000 tons)	285,084	1.8	4.3
Net volume in live trees 5-inch diameter or larger (1,000,000 ft ³)	11,023	1.9	4.7
Annual net growth of live trees 5-inch diameter or larger (1,000 ft ³ /year)	198,105	5	18.0
Annual mortality of live trees 5-inch diameter or larger (1,000 ft ³ /year)	117,105	5.4	-7.6
Annual harvest removals of live trees 5-inch diameter or larger (1,000 ft ³ /year)	125,449	11.9	-21.5
Annual other removals of live trees 5-inch diameter or larger (1,000 ft ³ /year)	2,535	51.6	-83.4
Timberland Estimates			
Area (1,000 acres)	4,638	1.1	0.8
Number of live trees 1-inch diameter or larger (1,000,000 trees)	4,001	2.8	2.9
Biomass of live trees 1-inch diameter or larger (1,000 tons)	275,981	1.9	3.5
Net volume in live trees 5-inch diameter or larger (1,000,000 ft ³)	10,670	2.0	3.8
Net volume of grow ing-stock trees (1,000,000 ft ³)	9,821	2.1	4.0
Annual net growth of grow ing-stock trees (1,000 ft ³)	195,344	4.3	19.5
Annual mortality of grow ing-stock trees (1,000 ft ³ /year)	83,078	5.8	-15.1
Annual harvest removals of grow ing-stock trees (1,000 ft ³ /year)	105,292	12.1	-24.5
Annual other removals of grow ing-stock trees (1,000 ft ³ /year)	7,631	47.4	-26.0

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

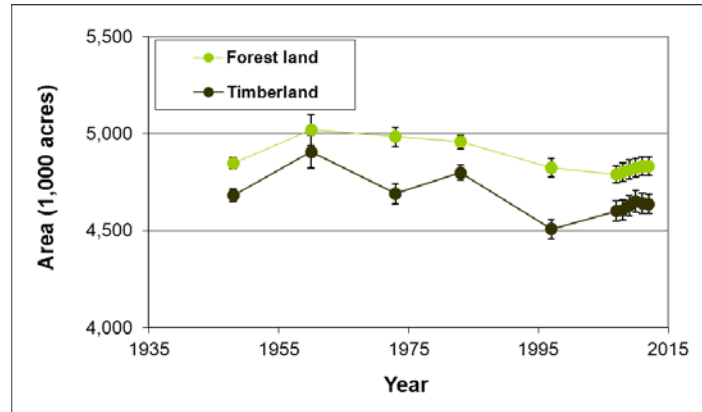


Figure 1. – Area of timberland and forest land by year.

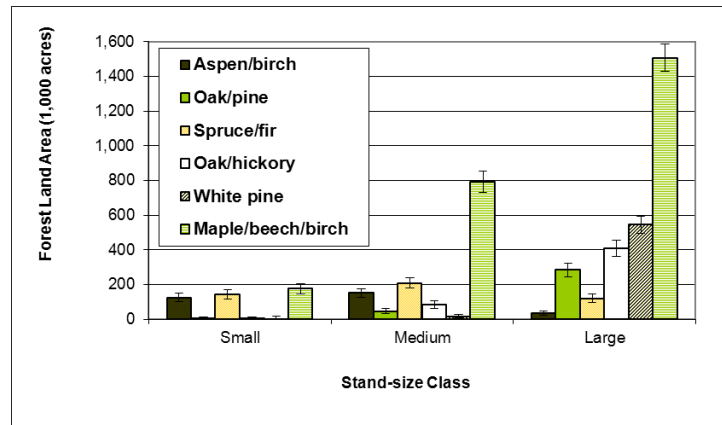


Figure 2. – Area of forest land by top six forest types and stand size class, 2012.

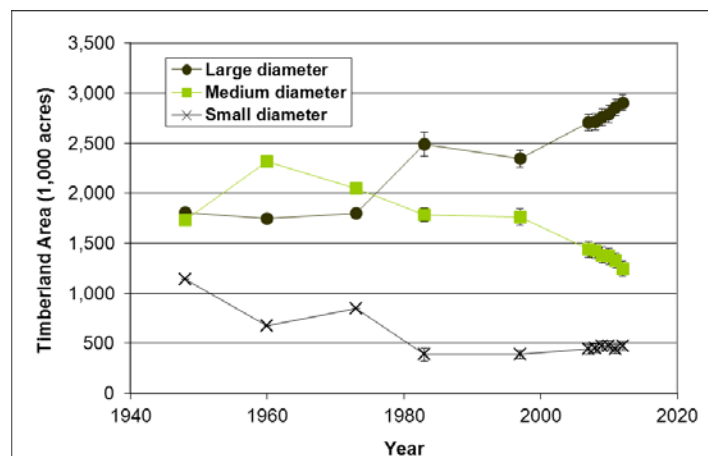


Figure 3. – Area of timberland by stand-size class and year.

Table 2. – Top 10 tree species by statewide volume estimates (5-inch diameter and larger), 2012

Rank	Species	Volume of live trees on forest land (1,000,000 ft ³)	Sampling error (%)	Change since 2007	Volume of sawtimber trees on timberland (1,000,000 bdf)	Sampling error (%)	Change since 2007 (%)
1	Eastern white pine	2,188	6.2	7.6	9,773	6.7	14.0
2	Red maple	1,688	4.1	2.1	3,207	6.7	7.5
3	Northern red oak	1,172	6.7	10.7	3,980	7.6	15.5
4	Eastern hemlock	1,165	7.2	13.2	3,181	8.5	29.7
5	Sugar maple	843	7.6	-0.9	2,157	9.6	1.7
6	Yellow birch	646	6.2	6.0	1,364	9.3	-4.6
7	Red spruce	560	8.3	6.3	1,371	10.4	10.4
8	Balsam fir	525	7.6	2.5	689	11.6	9.0
9	American beech	524	7.6	-0.2	1,040	12.3	-5.9
10	Paper birch	510	5.9	-7.2	759	9.7	-1.8
	Other softwood species	134	23.2	-2.9	362	22.5	3.5
	Other hardwood species	1,069	5.9	2.4	2,766	8.4	12.8
	All species	11,023	1.9	4.7	30,648	2.9	11.2

An Emerging Threat – Emerald Ash Borer

Emerald ash borer (EAB), *Agrilus planipennis* Fairmaire, was discovered in Concord, NH, in March 2013. This exotic beetle was first discovered in the United States in southeastern Michigan near Detroit in the summer of 2002. Since then it has spread into many other states. EAB probably arrived in the United States on solid wood packing material carried in cargo ships or airplanes originating in its native Asia.

The adult beetles feed on ash foliage but cause little damage, but the larvae feed on the inner bark of ash trees which disrupts their ability to transport water and nutrients (Fig. 4) (Cappaert et al. 2005). North American ash (*Fraxinus* spp.) exhibit little or no resistance, and as this insect species expands its range, extensive ash mortality results. Trees typically die within 3-5 years of EAB infestation.

Although ash only comprises about 3 percent of the total volume in the State it is widely distributed geographically (Fig. 5). Over 12 million board feet of ash are harvested each year which represents nearly 4 percent of NH's total saw log harvest. Most of the ash volume is white ash, but green and black ash are present at very low levels.



Figure 4. EAB galleries (Michigan Department of Agriculture, bugwood.com); Inset - Emerald ash borer adult (Debbie Miller, USDA Forest Service, bugwood.com).

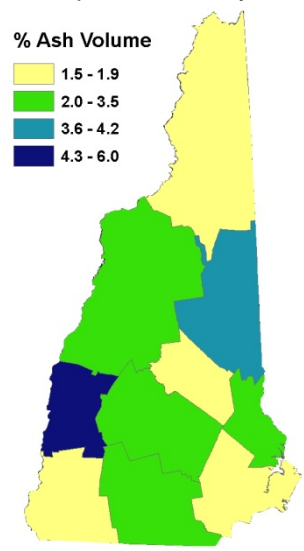


Figure 5. Map of percent ash volume by county.

An Emerging Threat – Emerald Ash Borer - Continued

Ash is a minor component in most forests across New Hampshire (Fig. 6). However, ash is important for biodiversity due to its value as a food source for many insect, bird and small mammal species.

Although the number of ash trees is split nearly evenly between the north and south units, the diameter distribution is quite different. The number of ash trees less than 5 inches in diameter is higher in the northern half of the State and the number in the larger diameters is greater in the southern half (Fig. 7). The crowns of ash trees are generally healthier in the northern unit which may reflect the impact of ash yellows in the southern half of New Hampshire (Table 3).

In order to protect its ash resources, the state of New Hampshire has issued a quarantine for Merrimack County. The quarantine makes it illegal to move any ash material or hardwood firewood out of the area into nonquarantined areas. Merrimack County is located in the south central part of the state in close proximity to the highest densities of ash volume (Fig. 6).

The estimates provided in this report will be important baselines to compare against the potential future impacts of EAB. For the most up to date information about EAB visit www.emeraldashborer.info.

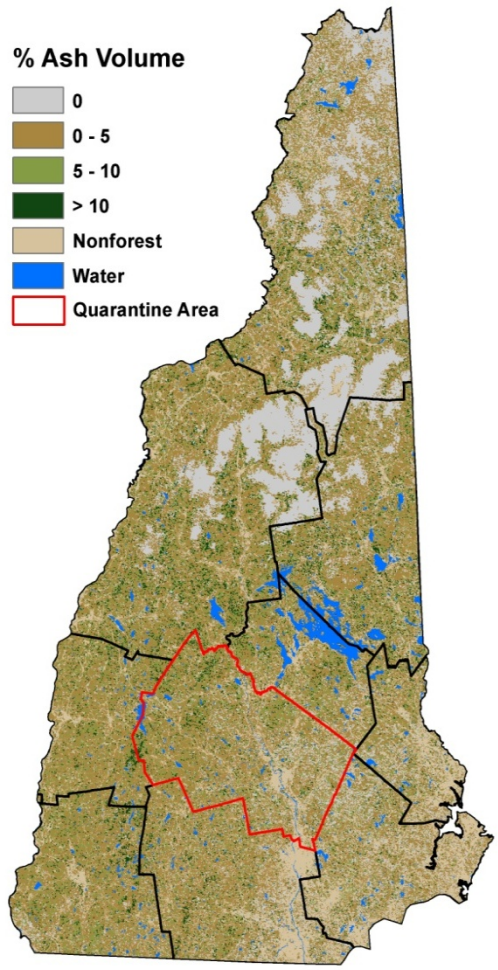


Figure 6. – Map of ash volume with Merrimack County quarantine.

Table 3. – Mean values of crown health variables on ash trees by survey unit.

Survey Unit	N	Mean of Crown Variables		
		Density	Dieback	Transparency
Northern	12	44	4	19
Southern	21	39	6	26

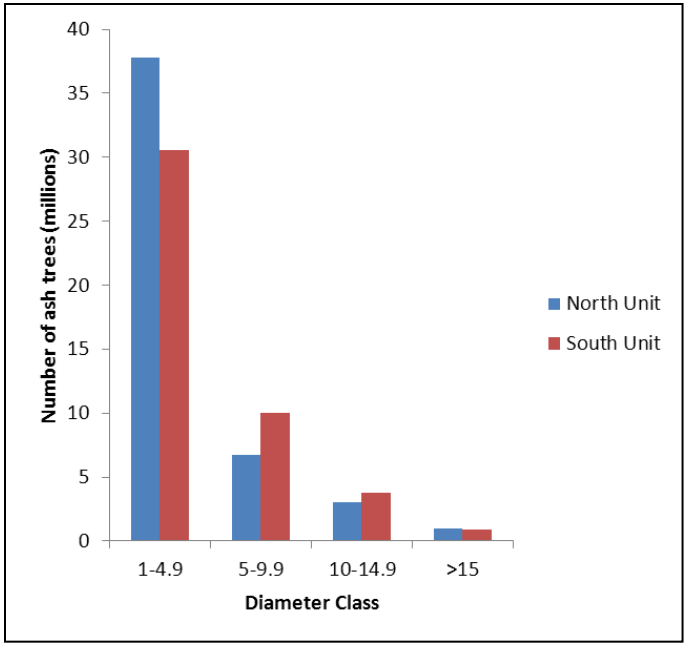


Figure 7. – Number of ash trees by diameter class and survey unit, New Hampshire, 2012.

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FIA Program Information

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Additional Information

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Additional New Hampshire Inventory Information

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Estimates, tabular data, and maps from this report may be generated at: <http://www.fia.fs.fed.us/tools-data/>

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