USDA Forest Service, US Department of Agriculture
Northern Research Station

Delaware's Forest Resources, 2012

Research Note NRS-186

This publication provides an overview of forest resource attributes for Delaware 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, uncertainty and change

	2012 estimate	Sampling error (%)	Change since 2008 (%)
Forest Land Estimates			
Forest land--land stocked with, or formally stocked with trees that meet minimum stocking and cover requirements. The treed area must be at least an acre in size, 120 ft or greater in width, and have an undisturbed understory.			
Area (1,000 acres)	348	4.5	-1.3
Number of live trees 1-inch diameter or larger (million trees)	231	10.2	-4.7
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	24,116	5.9	2.1
Net volume in live trees (1,000,000 ft^3)	881	6.3	2.1
Annual net growth of live trees (1,000 ft^3/year)	18,956	12.0	N/A
Annual mortality of all live trees (1,000 ft^3/year)	7,472	21.3	N/A
Annual removals of all live trees (1,000 ft^3/year)	9,091	42.6	N/A
Timberland Estimates			
Timberland--forest land that is not reserved from timber production and is capable of producing 20 ft^3 of wood volume per acre per year.			
Area (1,000 acres)	337	4.8	-2.1
Number of live trees 1-inch diameter or larger (million trees)	225	10.5	-4.0
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	23,056	6.4	0.4
Net volume in live trees (1,000,000 ft^3)	835	6.7	-0.3
Net volume of growing-stock trees (1,000,000 ft^3)	768	6.9	-5.2
Annual net growth of growing-stock trees (1,000 ft^3/year)	15,845	11.7	N/A
Annual mortality of growing-stock trees (1,000 ft^3/year)	5,626	23.1	N/A
Annual removals of growing-stock trees (1,000 ft^3/year)	14,521	49.2	N/A

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

Stand size: **Small**—dominated by trees less than 5.0 inches d.b.h, **Medium**—5.0 to 8.9 inches d.b.h. for softwoods and 5.0 to 10.9 inches d.b.h. for hardwoods, **Large**— ≥9.0 inches d.b.h. for softwoods and ≥11.0 inches d.b.h. for hardwoods.

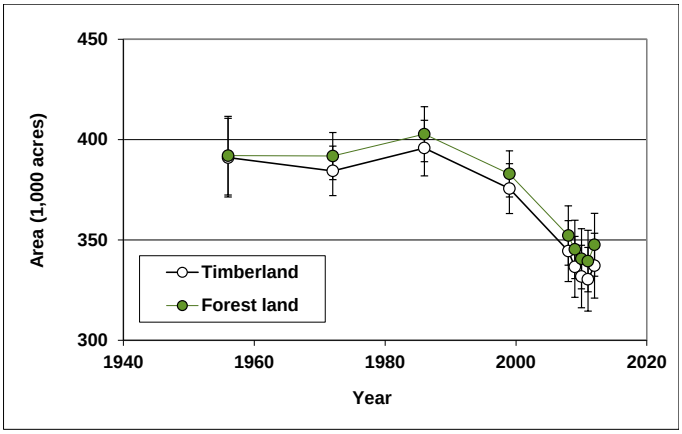

Figure 1. – Area of timberland and forest land by year.

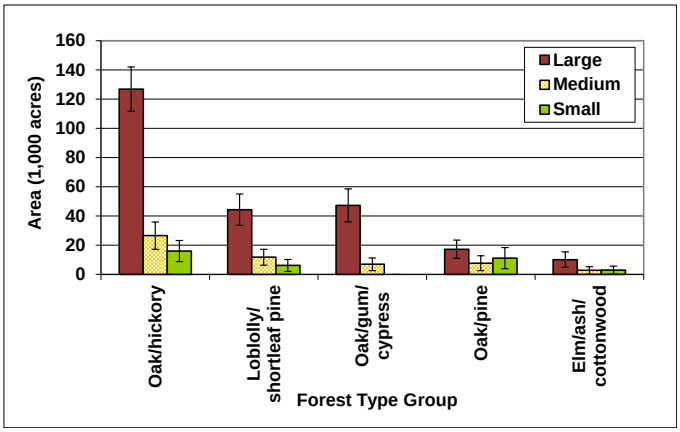

Figure 2. – Area of forest land by top six forest-type groups and stand size class, 2008-2012.

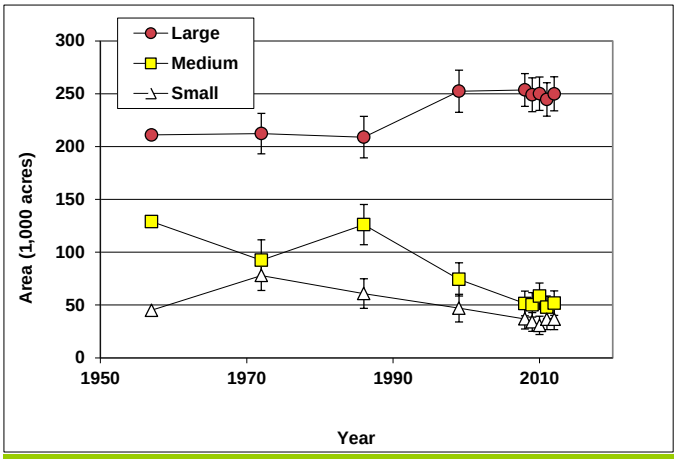

Figure 3. – Area of timberland by stand size class and year.

Table 2. – Top 10 tree species by statewide volume estimates, 2008-2012

Rank	Species	Volume of live trees on forest land (1,000,000 ft^3)	Sampling error (%)	Change since 2008 (%)	Volume of sawtimber trees on timberland (1,000,000 bdft)	Sampling error (%)	Change since 2008 (%)
1	Red maple	192	12.9	1.5	555	17.0	-0.8
2	Loblolly pine	126	18.3	28.2	464	20.3	42.4
3	Yellow-poplar	109	25.2	15.0	355	25.3	-14.3
4	Sweetgum	102	14.4	-10.7	326	17.8	-9.4
5	White oak	63	19.0	-4.1	251	23.4	-5.8
6	Willow oak	46	34.4	13.4	236	35.6	18.0
7	Blackgum	33	20.1	-3.8	86	28.8	-4.6
8	Southern red oak	31	28.9	4.4	104	33.4	-0.1
9	Black cherry	20	27.8	-18.0	30	60.8	-31.9
10	Scarlet oak	17	39.4	-25.1	60	44.1	-31.7
	Other softwoods	15	29.9	-42.0	50	37.9	-47.9
	Other hardwoods	129	14.0	3.2	398	19.2	13.0
	All species	**881**	**6.3**	**2.1**	**2,914**	**8.4**	**0.5**

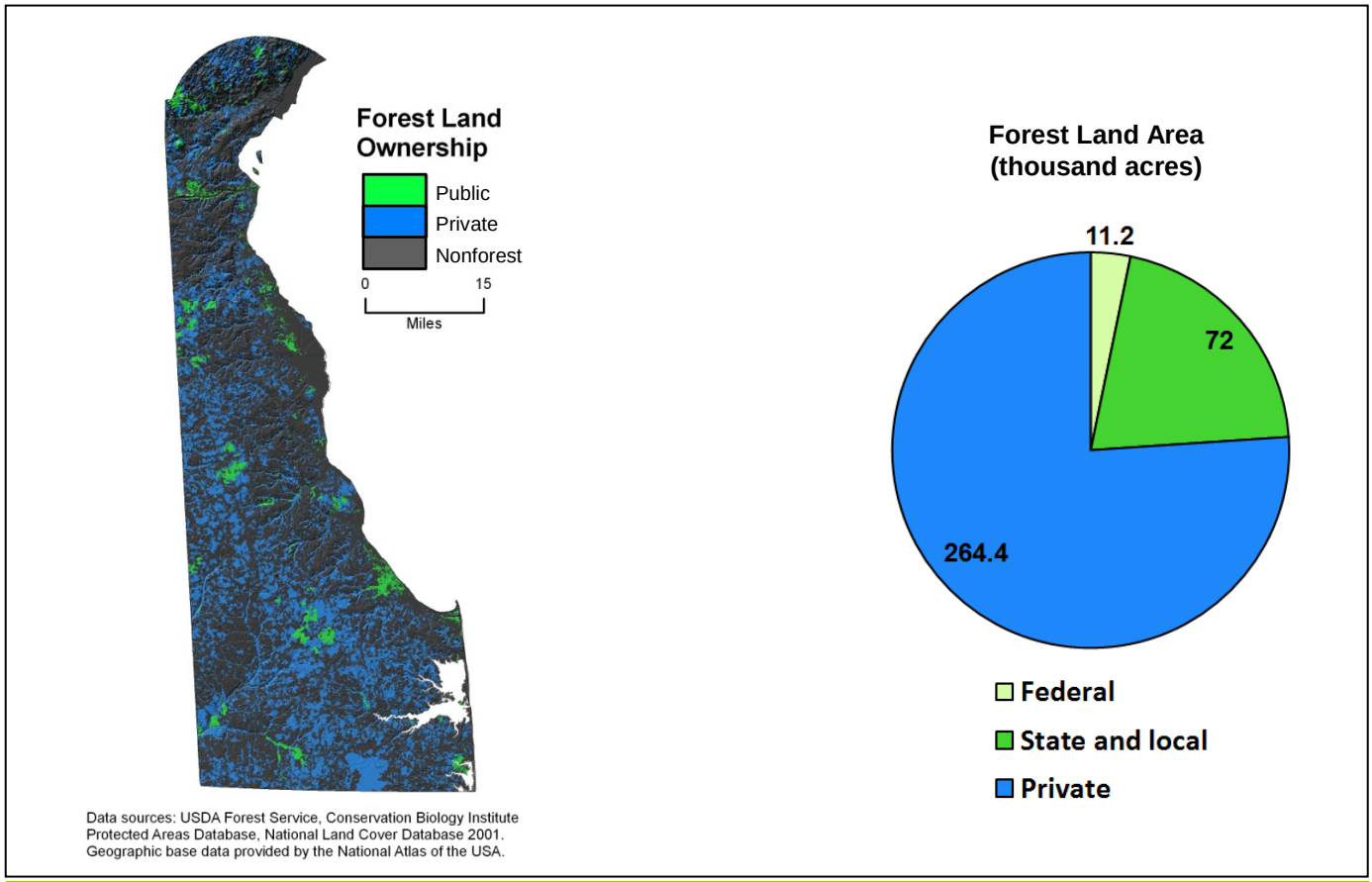

Figure 4. – Distribution of ownerships and area of forest land (thousand acres) by ownership group, Delaware, 2012.

Emerald Ash Borer—a Potential Threat to Delaware's Forests

The emerald ash borer (EAB), (*Agrilus planipennis* Fairmaire) is a wood boring beetle originally from Asia that was first detected in the United States in 2002 near Detroit, Michigan. Since then, this invasive insect has spread to at least 15 other states including Maryland, Delaware's western neighbor, and is responsible for the death of millions of ash trees across the United States. These trees usually die within 3 to 5 years after infestation as the flow of water and nutrients within the tree is cut off by boring EAB larvae that feed on the inner bark.

Currently, EAB has only been detected in Maryland counties west of the Chesapeake Bay and efforts are being made to help prevent the eastward spread of this invasive pest. The Maryland Department of Agriculture has issued an extensive quarantine that prevents the movement of ash and certain hardwood products (including firewood, woodchips, nursery stock, green lumber, etc.) outside of the quarantined area. The Delaware Department of Agriculture (DDA) has also been employing various methods to survey for EAB, including installing EAB traps, conducting visual surveys, and using wasps that prey on EAB as a biosurveillance tool.

According to FIA data, there are over 880,000 ash trees greater than 5 inches diameter at breast height (d.b.h.) growing on forest land in Delaware with a total volume of approximately 16.5 million cubic feet (Table 3). Ash species have a sparse distribution throughout the forested areas of Delaware with the greatest concentrations in western Kent and northern New Castle Counties (Fig. 5). On average, ash volume is 2 percent of the total volume of trees 5 inches or larger in diameter, but the percent varies by county with New Castle county having the highest concentration of ash species as a percent of total tree volume (Table 3). Most of the ash species on forest land in Delaware are sapling and pole-sized trees with the majority having a d.b.h. less than 9 inches (Fig. 6).

Ash species are not only an important part of Delaware's natural forest ecosystem, but they are also valuable landscaping trees and have been planted in many urban and suburban environments. Many of these planted trees are not included in the forest land estimates traditionally produced by FIA. These urban and suburban trees and the natural benefits they provide are also threatened by the EAB if this invasive insect continues to spread eastward.

Table 3. – Summary statistics for ash trees greater than 5 inches d.b.h. on forest land by county in Delaware

	Number of ash (thousand trees)	Volume of ash (million ft^3)	Percent ash (as a percent of total volume)
Kent	408	3.6	1.2
New Castle	148	6.2	3.9
Sussex	325	6.8	1.7

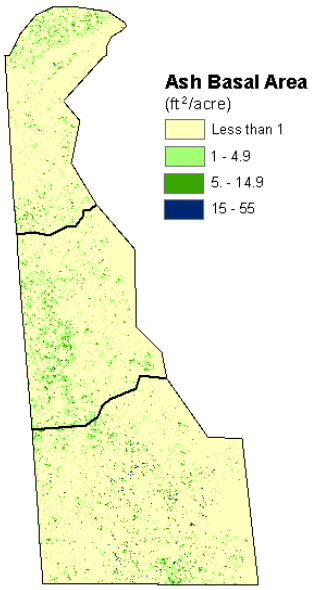

Figure 5. – Distribution of ash species on forest land in Delaware.

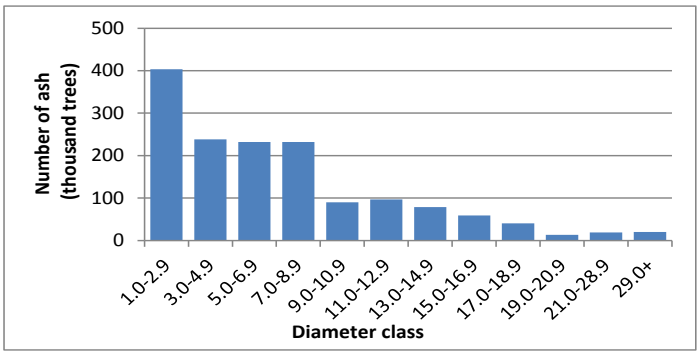

Figure 6. – Diameter size class distribution of ash species on forest land in Delaware.

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