

Massachusetts' Forest Resources, 2010

Research Note NRS-114

This publication provides an overview of forest resource attributes for Massachusetts 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

	Estimate 2010	Sampling error (%)	Change since 2005 (%)
Forest Land Estimates			
Area (1,000 acres)	3,015	1.7	-4.9
Number of live trees 1-inch diameter or larger (million trees)	1,552	3.0	-7.6
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	207,535	2.4	-1.9
Net volume in live trees (1,000,000 ft ³)	7,993	2.6	-1.9
Annual net growth of live trees (1,000 ft ³ /year)	176,734	9.0	NA
Annual mortality of live trees (1,000 ft ³ /year)	62,848	11.4	NA
Annual harvest removals of live trees (1,000 ft ³ /year)	38,571	31.1	NA
Annual other removals of live trees (1,000 ft ³ /year)	11,647	40.6	NA
Timberland Estimates			
Area (1,000 acres)	2,927	1.9	-1.1
Number of live trees 1-inch diameter or larger (million trees)	1,513	3.1	-4.7
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	204,708	2.5	-0.1
Net volume in live trees (1,000,000 ft ³)	7,896	2.7	-0.2
Net volume of growing-stock trees (1,000,000 ft ³)	7,168	2.8	-1.9
Annual net growth of growing-stock trees (1,000 ft ³ /year)	176,006	9.3	NA
Annual mortality of growing-stock trees (1,000 ft ³ /year)	43,084	12.6	NA
Annual harvest removals of growing-stock trees (1,000 ft ³ /year)	31,818	31.1	NA
Annual other removals of growing-stock trees (1,000 ft ³ /year)	8,347	45.4	NA

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

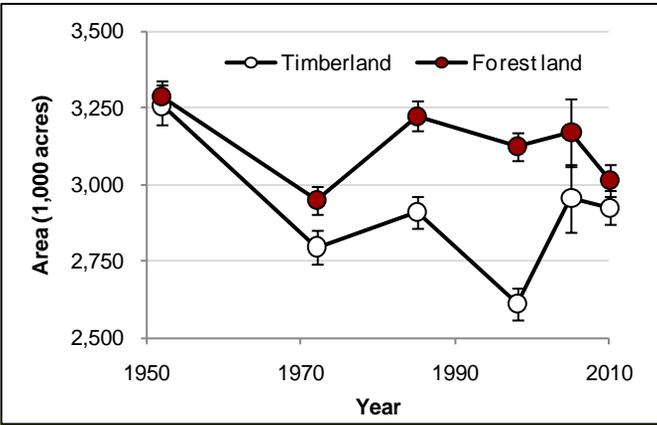


Figure 1. – Area of timberland and forest land by year.

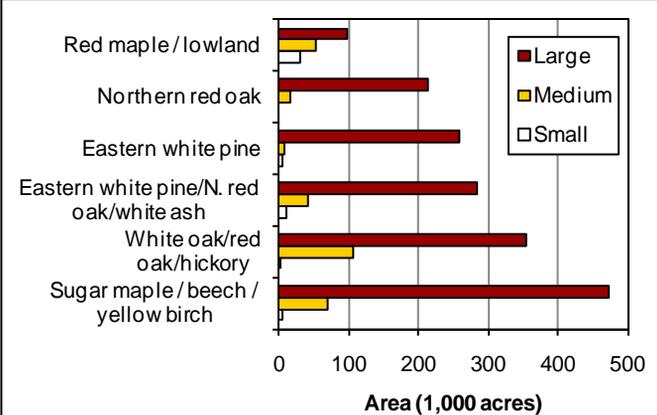


Figure 2. – Area of forest land by top six forest types and stand-size class, 2006-2010.

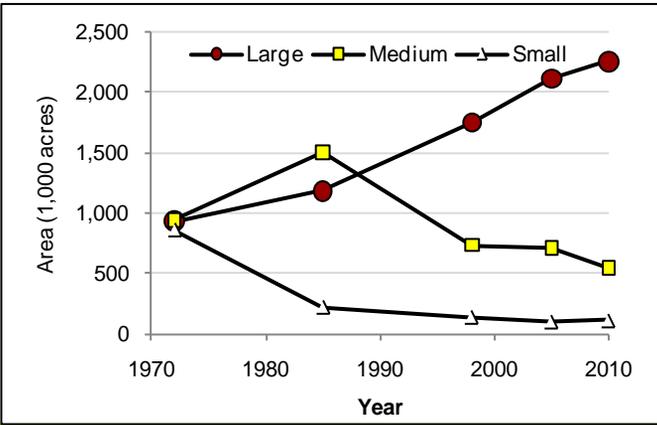


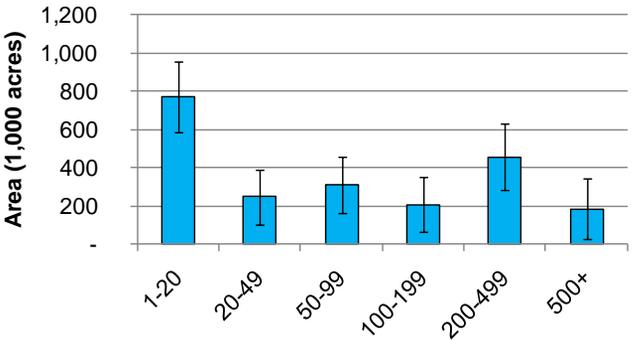
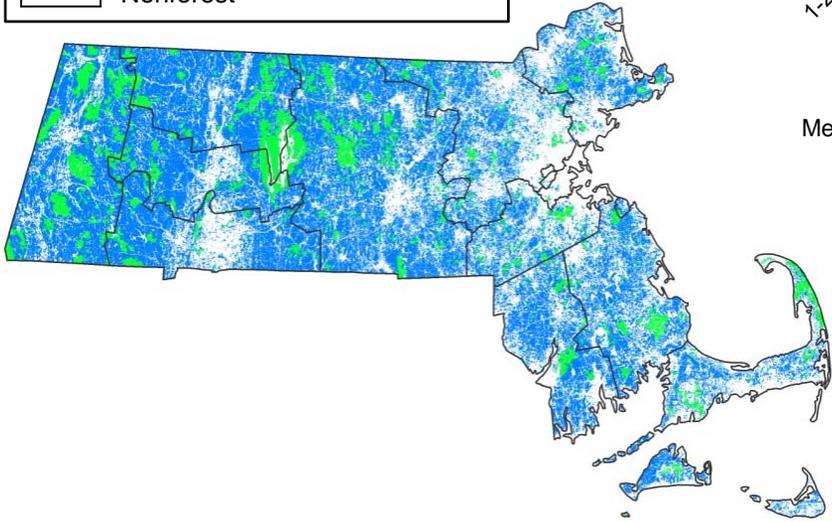
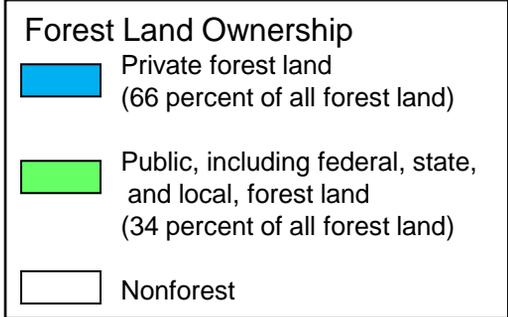
Figure 3. – Area of timberland by stand-size class and year.

* 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 for softwoods and 11.0 d.b.h. for hardwoods.



Table 2. – Top 10 tree species by statewide volume estimates, 2006-2010

Rank	Species	Volume of live trees on forest land			Volume of sawtimber trees on timberland		
		(1,000,000 ft ³)	Sampling error (%)	Change since 2005 (%)	(1,000,000 bdf)	Sampling error (%)	Change since 2005 (%)
1	Eastern white pine	1,926	8.0	-5.6	8,375	8.8	-2.4
2	Red maple	1,402	6.0	4.5	2,977	8.8	16.0
3	Northern red oak	912	8.4	-9.0	3,425	9.2	-4.3
4	Eastern hemlock	833	10.5	1.9	2,330	12.1	2.4
5	Black oak	335	10.8	17.0	1,062	13.7	25.7
6	Sugar maple	325	13.1	5.1	923	15.5	0.8
7	White ash	300	14.2	8.2	986	17.2	24.7
8	Sweet birch	248	12.0	7.6	531	17.4	24.3
9	White oak	219	10.4	-5.7	652	14.5	-6.5
10	Scarlet oak	219	12.9	-2.5	631	15.8	7.8
	Other softwoods	199	15.7	-13.4	473	19.3	-8.5
	Other hardwoods	1,074	6.4	-7.0	2,746	9.3	2.6
	All Species	7,993	2.6	-1.9	25,111	3.6	2.7



Size of private forest holdings (acres)
Mean size of private forest holdings = 7 acres

Figure 4. – Area of forest land by major owner group and size of private forest landholding (2002-2006).



Invasive Plants

Invasive plants are spreading throughout North America by humans, animals, and other vectors such as wind and water. These species are threatening forests by displacing native flora, altering nutrient composition, changing wildlife habitat, and impacting aesthetics. In addition, these plants have economic implications, nationally costing billions of dollars annually through reduced timber yield and the costs of inspection and eradication.

The forests of Rhode Island are likewise threatened by invasive plants. Beginning in 2007, the U.S. Forest Service, Forest Inventory and Analysis program began monitoring a subset of its forest inventory plots for the presence of invasive plants (Table 5). The most commonly observed invasive plants across Southern New England were multiflora rose, Japanese barberry, and oriental bittersweet (Fig. 5). Invasive plants are widespread across the region (Fig. 6). Future remeasurement of Forest Inventory and Analysis vegetation plots will help us to understand the characteristics that facilitate the spread of invasive plants.

Table 5. – Invasive plant species found on Forest Inventory and Analysis invasives monitoring plots in Southern New England, 2007-2009.

Common name	Scientific name
Autumn olive	<i>Elaeagnus umbellata</i>
Black locust	<i>Robinia pseudoacacia</i>
Canada thistle	<i>Cirsium arvense</i>
Common barberry	<i>Berberis vulgaris</i>
Common buckthorn	<i>Rhamnus cathartica</i>
European privet	<i>Ligustrum vulgare</i>
Garlic mustard	<i>Alliaria petiolata</i>
Glossy buckthorn	<i>Frangula alnus</i>
Japanese barberry	<i>Berberis thunbergii</i>
Japanese honeysuckle	<i>Lonicera japonica</i>
Japanese knotweed	<i>Polygonum cuspidatum</i>
Louise's swallow-wort	<i>Cynanchum louiseae</i>
Morrow's honeysuckle	<i>Lonicera morrowii</i>
Multiflora rose	<i>Rosa multiflora</i>
Nepalese browntop	<i>Microstegium vimineum</i>
Norway maple	<i>Acer platanoides</i>
Oriental bittersweet	<i>Celastrus orbiculatus</i>
Russian olive	<i>Elaeagnus angustifolia</i>
Showy fly honeysuckle	<i>Lonicera xbella</i>

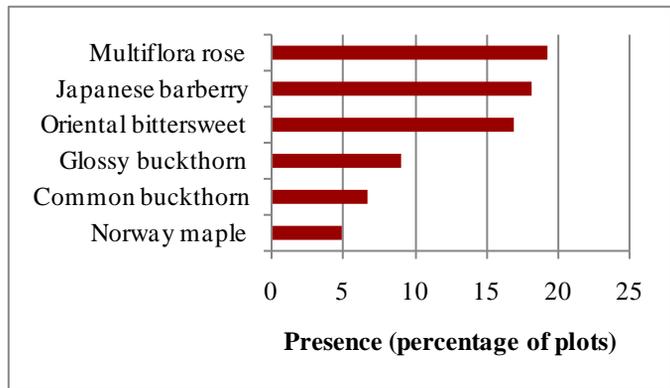


Figure 5. – Presence of the six most common invasive plant species found on invasives monitoring plots, Southern New England, 2007-2009.

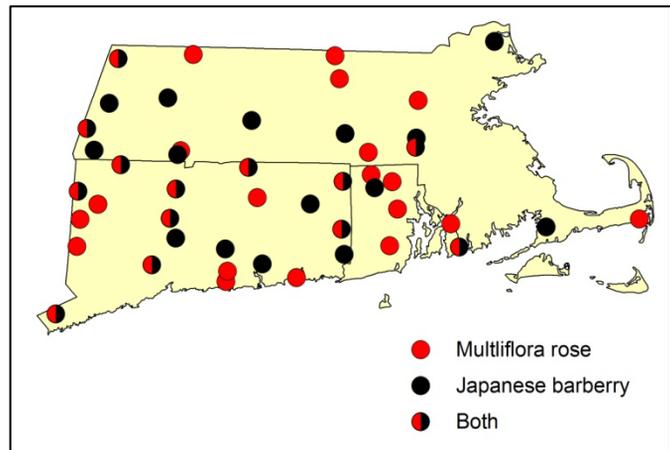


Figure 6. – Approximate location of invasives monitoring plots with multiflora rose and Japanese barberry, Southern New England, 2007-2009.



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FIA Program Information

Bechtold, W.A.; Patterson, P.L., eds. 2005. **The enhanced Forest Inventory and Analysis program: national sampling design and estimation procedures**. Gen. Tech. Rep. SRS-80. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 85 p.

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Additional Massachusetts Inventory Information

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Petersen, Christina M.; Kittredge, David B.; Archey, Warren E. 2000. **Forest resources of Massachusetts**. Boston, MA: Massachusetts, Department of Environmental Management, Bureau of Forestry. 27 p.

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

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