



# Rhode Island's Forest Resources, 2009

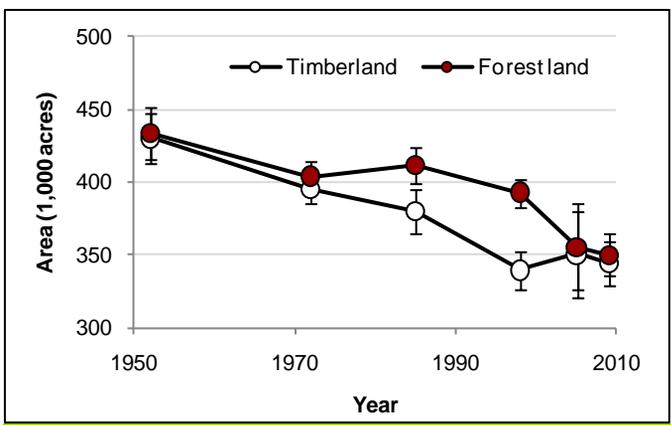
Research Note NRS-96

This publication provides an overview of forest resource attributes for Rhode Island 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.

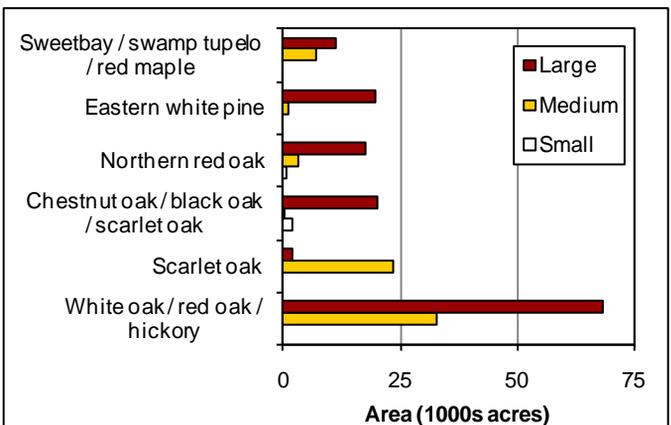
**Table 1. – Annual estimates, uncertainty, and change**

	Estimate 2009	Sampling error (%)	Change since 2005 (%)
<b>Forest Land Estimates</b>			
Area (1,000 acres)	350	4.1	-1.6
Number of live trees 1-inch diameter or larger (million trees)	181	8.0	-1.5
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	22,531	5.3	1.1
Net volume in live trees (1,000,000 ft <sup>3</sup> )	794	6.0	3.4
Annual net growth of live trees (1,000 ft <sup>3</sup> /year)	16,072	17.3	NA
Annual mortality of live trees (1,000 ft <sup>3</sup> /year)	5,067	24.5	NA
Annual harvest removals of live trees (1,000 ft <sup>3</sup> /year)	1,073	69.3	NA
Annual other removals of live trees (1,000 ft <sup>3</sup> /year)	3,438	86.1	NA
<b>Timberland Estimates</b>			
Area (1,000 acres)	345	4.3	-1.7
Number of live trees 1-inch diameter or larger (million trees)	180	8.1	-1.7
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	22,253	5.4	1.0
Net volume in live trees (1,000,000 ft <sup>3</sup> )	784	6.1	3.4
Net volume of growing-stock trees (1,000,000 ft <sup>3</sup> )	721	6.6	-0.2
Annual net growth of growing-stock trees (1,000 ft <sup>3</sup> /year)	15,194	17.8	NA
Annual mortality of growing-stock trees (1,000 ft <sup>3</sup> /year)	3,883	27.1	NA
Annual harvest removals of growing-stock trees (1,000 ft <sup>3</sup> /year)	956	69.1	NA
Annual other removals of growing-stock trees (1,000 ft <sup>3</sup> /year)	2,311	82.2	NA

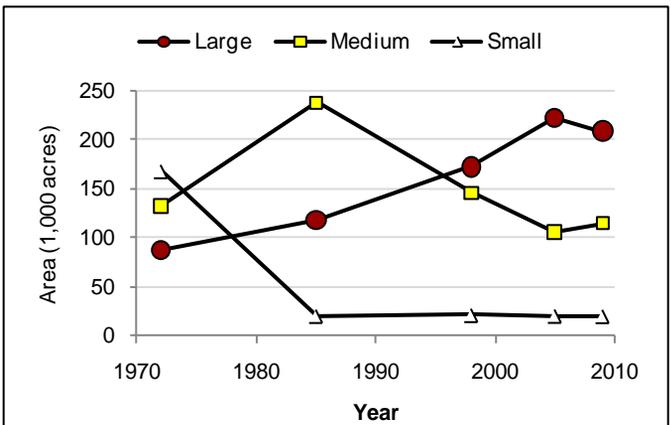
Note: When available, sampling errors/bars provided in figures and tables represent 68 percent confidence intervals.



**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, 2005-2009.**

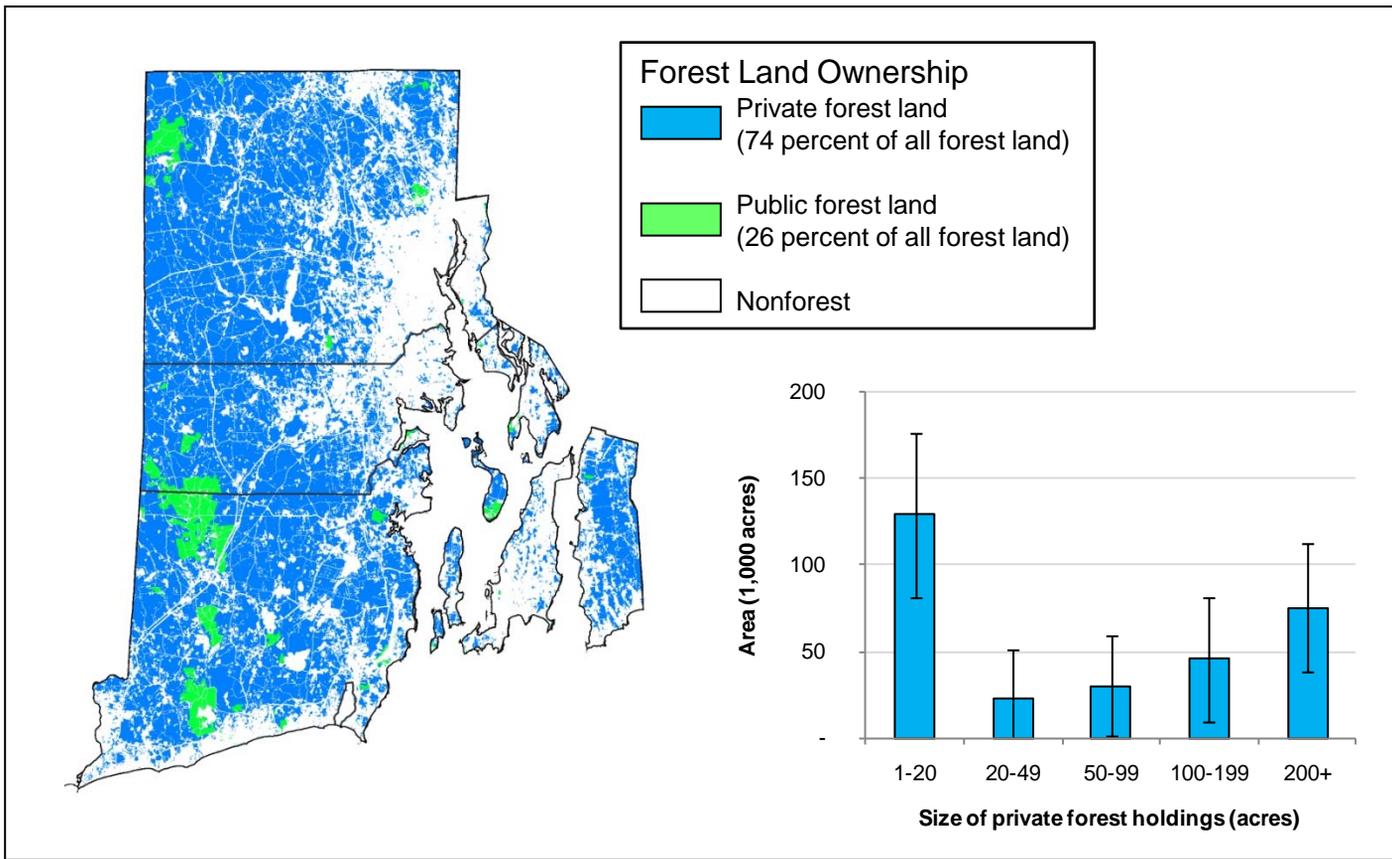


**Figure 3. – Area of timberland by stand-size class and year.**



**Table 2. – Top 10 tree species by statewide volume estimates, 2005-2009**

Rank	Species	Volume of live trees on forest land			Volume of sawtimber trees on timberland		
		(1,000,000 ft <sup>3</sup> )	Sampling error (%)	Change since 2005 (%)	(1,000,000 bdf)	Sampling error (%)	Change since 2005 (%)
1	Red maple	192	11.9	14.6	363	18.2	34.2
2	Eastern white pine	136	22.1	34.5	598	23.5	38.5
3	Northern red oak	96	17.4	-11.5	328	23.2	-11.1
4	Black oak	89	17.9	10.2	307	20.5	22.5
5	Scarlet oak	79	16.2	35.5	186	17.8	42.1
6	White oak	53	16.9	-7.3	177	22.5	-5.4
7	Sweet birch	20	29.5	-27.8	26	46.1	-50.8
8	Pitch pine	19	51.7	-38.8	67	59.7	-42.7
9	Atlantic white-cedar	14	89.8	2283.3	35	92.4	4885.7
10	Blackgum	11	42.2	-16.9	32	57.1	-22.2
	Other softwoods	12	51.2	-40.4	32	62.2	-43.6
	Other hardwoods	72	15.3	-29.1	158	24.0	-31.6
	<b>All Species</b>	<b>794</b>	<b>6.0</b>	<b>3.4</b>	<b>2,309</b>	<b>9.0</b>	<b>7.9</b>

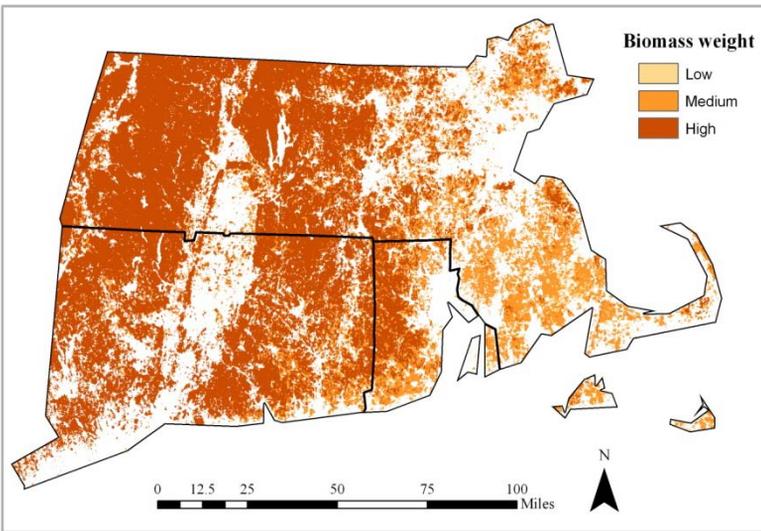


**Figure 4. – Area of forest land by major owner group and size of private forest landholding (2002-2006).**



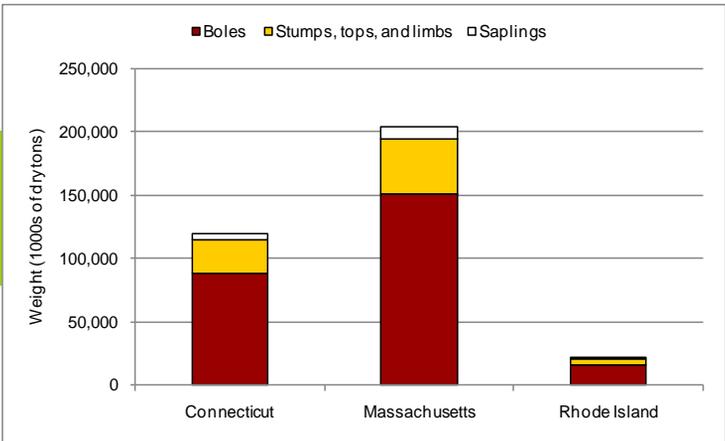
## Woody Biomass across Southern New England

Harvesting woody biomass for energy production is a topic of lively discussion across the region (Manomet 2010). As part of the FIA inventory, estimates of the amount of woody biomass can be calculated (Table 1). Across Connecticut, Massachusetts, and Rhode Island there are 347 million dry tons of woody biomass (Fig. 5). This estimate includes the boles, stumps, tops, and limbs of all trees with a diameter at breast height of one inch or greater (Fig. 6); it does not include foliage, seedlings, downed woody material, belowground material, or any nontree species. Just because the biomass is on the landscape does not mean that it is available for energy production. We know that some of the trees are already used for solid wood products, such as boards, and some of the residual materials, such wood chips generated as a by-product of sawmills, are fully utilized. Of the remaining biomass, it is important to consider the social and biophysical availability of the resource. The biophysical characteristics describe the quantity, quality, and composition of the resource and the natural setting in which it exists. The social factors determine the desirability of the potential goods and services and the propensity for those who control a resource, such as wood, to utilize it themselves, allow others to do so, or do nothing with it. Examining just the family forest lands, the biophysical constraints reduce the availability by 6 to 9 percent while the social availability, particularly owner attitudes, reduce the availability by 68 to 79 percent (Butler et al. 2010). Then additional factors, such as harvesting costs, haul distances, and other economics factors must also be considered. Knowing the total amount of biomass across the landscape is useful, but it is only part of a complex set of factors to be considered when making decisions regarding woody biomass use.



**Figure 5. – Distribution of woody biomass across southern New England (Blackard et al. 2008).**

**Figure 6. – Distribution of woody biomass by tree component and state.**



### Citation for this Publication

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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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### Special Issue Citation

Blackard, J.A.; Finco, M.V.; Helmer, E.H.; et al. 2008. **Mapping U.S. forest biomass using nationwide forest inventory data and moderate resolution information**. *Remote Sensing of Environment*. 112: 1658-1677.

Butler, Brett J.; Ma, Zhao; Kittredge, David B.; Catanzaro, Paul. 2010. **Social versus biological availability of woody biomass in the northern United States**. *Northern Journal of Applied Forestry*. 27(4): 151-159.

Manomet Center for Conservation Sciences. 2010. **Massachusetts biomass sustainability and carbon policy study: Report to the Commonwealth of Massachusetts Department of Energy Resources**. Natural Capital Initiative Report NCI-2010-03. Brunswick, ME: Manomet Center for Conservation Sciences. 182 p.

### Additional Rhode Island Inventory Information

Alerich, Carol L. 2000. **Forest statistics for Rhode Island: 1985 and 1998**. Resour. Bull. NE-149. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 104 p.

Butler, Brett J.; Barnett, Charles H.; Dolan, Paul; et al. 2002. **The forests of Rhode Island**. NE-INF-155-02. Newtown Square: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 28 p.

Dickson, David R.; McAfee, Carol L. 1988. **Forest statistics for Rhode Island--1972 and 1985**. Resour. Bull. NE-104. Broomall, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 96 p.

Ferguson, Roland H.; McGuire, John R. 1957. **The timber resources of Rhode Island**. Upper Darby, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 38 p.

Peters, John R.; Bowers, Theresa M. 1977. **Forest statistics for Rhode Island**. Resour. Bull. NE-49. Upper Darby, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 38 p.

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Estimates, tabular data, and maps from this report may be generated at: [www.fiatools.fs.fed.us](http://www.fiatools.fs.fed.us)

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