USDA Forest Service, U.S. Department of Agriculture
Northern Research Station
Forest Inventory & Analysis

New Hampshire's Forest Resources, 2009

Research Note NRS-84

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

	2009 estimate	Sampling error (%)
Forest Land Estimates		
Area (1,000 acres)	4,815	0.9
Number of live trees 1-inch diameter or larger (1,000,000 trees)	4,214	2.7
Biomass of live trees 1-inch diameter or larger (1,000 tons)	278,987	1.8
Net volume in live trees 5-inch diameter or larger (1,000,000 ft^3)	10,774	1.9
Annual net growth of live trees 5-inch diameter or larger (1,000 ft^3/year)	176,554	7.9
Annual mortality of live trees 5-inch diameter or larger (1,000 ft^3/year)	120,277	8.2
Annual harvest removals of live trees 5-inch diameter or larger (1,000 ft^3/year)	90,916	21.1
Annual other removals of live trees 5-inch diameter or larger (1,000 ft^3/year)	1,894	97.6
Timberland Estimates		
Area (1,000 acres)	4,630	1.1
Number of live trees 1-inch diameter or larger (1,000,000 trees)	3,963	2.8
Biomass of live trees 1-inch diameter or larger (1,000 tons)	271,816	1.9
Net volume in live trees 5-inch diameter or larger (1,000,000 ft^3)	10,490	2
Net volume of growing-stock trees (1,000,000 ft^3)	9,689	2.1
Annual net growth of growing-stock trees (1,000 ft^3)	173,939	6.6
Annual mortality of growing-stock trees (1,000 ft^3/year)	87,673	9.2
Annual harvest removals of growing-stock trees (1,000 ft^3/year)	78,747	21.3
Annual other removals of growing-stock trees (1,000 ft^3/year)	11,760	60.5

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

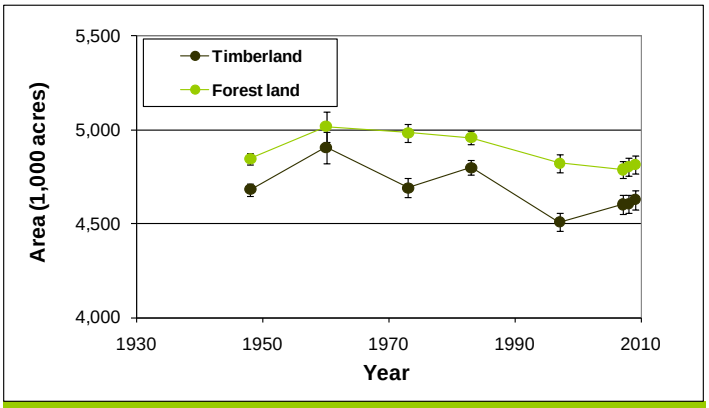


Figure 1. – Area of timberland and forest land by year.

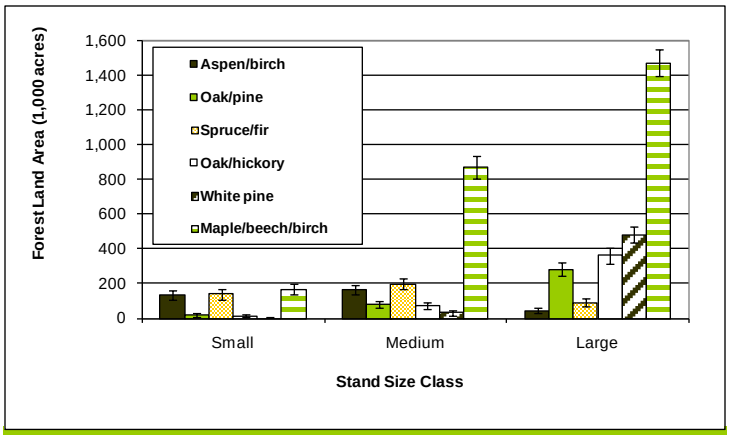


Figure 2. – Area of forest land area by top six forest types and stand size class, 2005-2009.

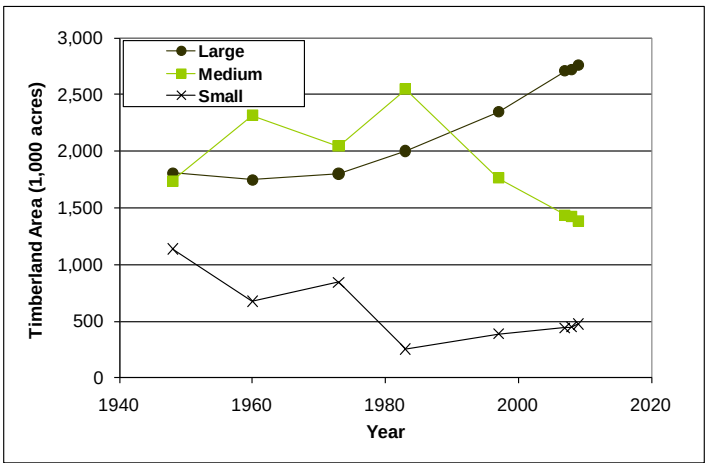
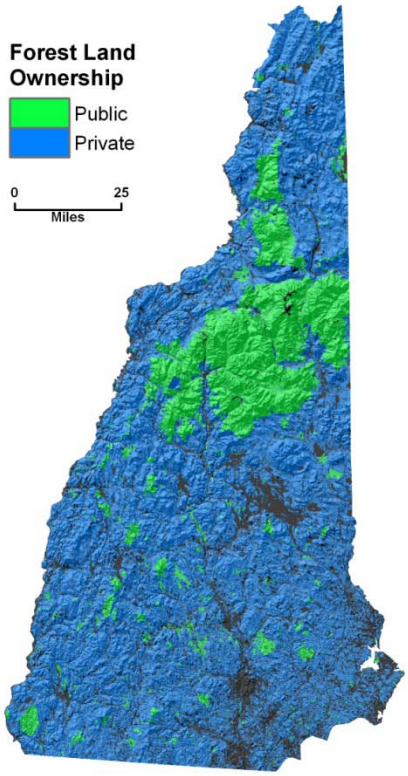


Figure 3. – Area of timberland by stand size class and year.

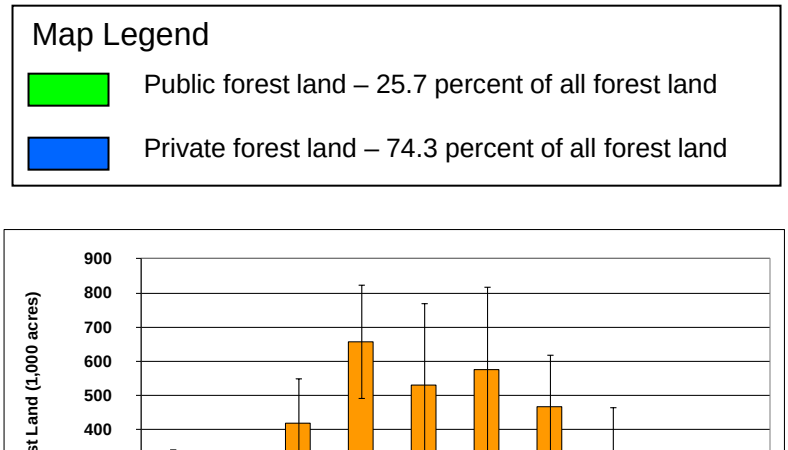
Table 2. – Top 10 tree species by statewide volume estimates (5-inch diameter and larger), 2005-2009

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	2,113	6.1	9,010	6.7
2	Red maple	1,677	4.2	3,202	6.8
3	Northern red oak	1,121	6.7	3,762	7.7
4	Eastern hemlock	1,084	7.3	2,801	8.7
5	Sugar maple	864	8.0	2,220	10.2
6	Yellow birch	614	7.0	1,370	9.9
7	American beech	546	8.1	1,176	12.6
8	Paper birch	527	6.5	796	10.1
9	Red spruce	519	9.1	1,241	11.2
10	Balsam fir	514	9.1	651	11.8
	Other softwoods	140	24.7	347	22.6
	Other hardwoods	1,056	5.8	2,633	8.4
	All Species	**10,774**	**1.9**	**29,209**	**2.9**

***Data may not add to totals due to rounding**



Data sources: USDA Forest Service, Conservation Biology Institute Protected Areas Database, National Land Cover Database 2001. Geographic base data provided by the National Atlas of the USA.



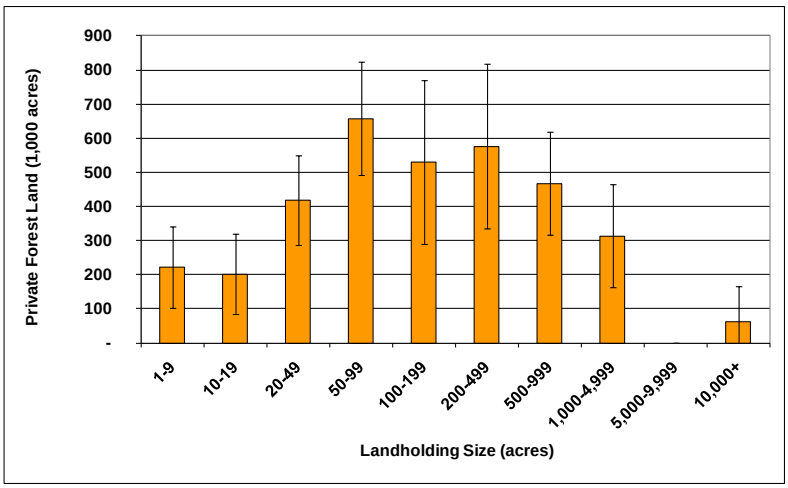


Figure 4. – Area of forest land by major owner group (2009) and size of private family forest landholding (2006).

Characteristics of Fragmented Forests in New Hampshire

New Hampshire has a rapidly expanding population and the associated development is heavy, particularly in the southern part of the State. In addition, New Hampshire's dependence on healthy and accessible forest land for its forest-based economy, tourism industry, and outdoor recreation opportunities, makes it particularly interested in the extent, location, and magnitude of forest fragmentation/urbanization and the characteristics of the forest resource affected. To characterize the level of development pressure on the different forest-type groups and stand sizes in New Hampshire, graphs of mean distance from each FIA plot to an urban land cover pixel were generated (Morin et al. 2009).

Distance to urban land cover from forested FIA plots varied considerably by forest-type group. The six most prevalent forest-type groups in New Hampshire were divided into three distinct groupings when comparing the mean distance from each forested FIA plot to an urban land cover pixel (Fig. 5). The oak/hickory, oak/pine, and white/red/jack pine forest type groups fall into the group with the shortest average distance to urban land cover, four times shorter than for the spruce/fir and aspen/birch forest type groups and twice as short as that of the maple/beech/birch forest type group. Those type groups in the shortest group were in the most fragmented condition because they are predominately located in southern New Hampshire where the rapid growth and development is occurring. In fact, the State's population is growing at twice the rate of the rest of New England, with most of that growth in the southeastern counties (SPNHF 2006). By contrast, the spruce/fir and aspen/birch forest-type groups are generally present in the northern part of the state where less growth and development is occurring. These forest-type groups are generally farther from urban land cover. The forests containing the maple/beech/birch type group are more widely distributed across the State and, therefore fall in the middle of this distance to urban land cover gradient. Distance to urban land cover also varies by stand-size class; the mean distance to urban land cover increases as stand size-class (in diameter) decreases (Fig. 6). The working forests in northern New Hampshire that contain the majority of the spruce/fir and aspen/birch type groups have more small-diameter stands because harvesting on existing and future forest land is occurring. By contrast, the oak and pine type groups to the south are more likely to be harvested in association with land-use change as urban and suburban growth continues. Although the proportions of the forest-type groups are similar across New Hampshire and on the White Mountain National Forest, some results may be impacted by differences between private and public ownerships (e.g., larger forest parcels and less harvest on public land).

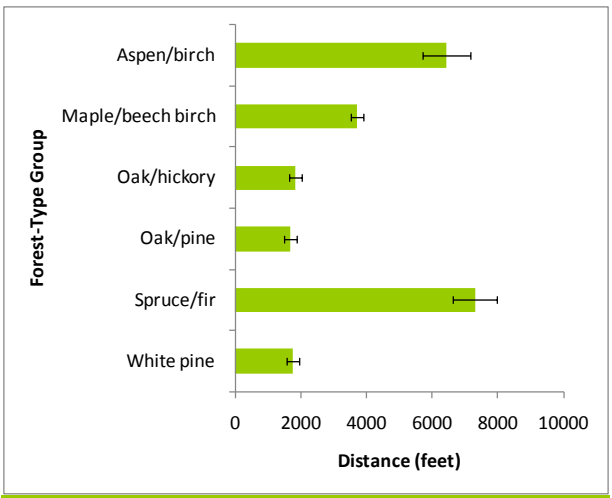


Figure 5. – Mean distance to urban land cover value by forest-type groups (67-percent confidence intervals are shown).

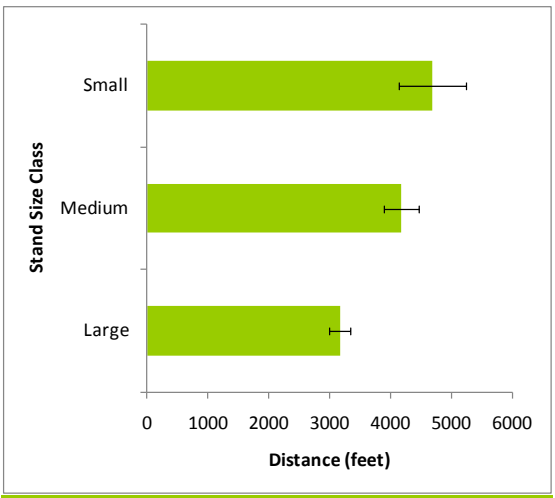


Figure 6. – Mean distance to urban land cover value by stand size-class (67-percent confidence intervals are shown).

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.

Smith, W.B. 2002. **Forest inventory and analysis: a national inventory and monitoring program**. Environmental Pollution. 116: 233-242.

USDA Forest Service. 2005. **Forest inventory and analysis national core field guide, Vol. 1, field data collection procedures for phase 2 plots, Ver. 3.0**. Available at http://www.fia.fs.fed.us/library/field-guides-methods-proc/ (verified Aug. 1, 2008).

Additional Information

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Additional New Hampshire Inventory Information

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Frieswyk, T.; Widmann, R. 2000. **Forest statistics for New Hampshire, 1983 and 1997**. Resour. Bull. NE-146. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 130 p.

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