

Maine's Forest Resources, 2008

Research Note NRS-53

This publication provides an overview of forest resource attributes for this state based upon an annual inventory conducted by the Forest Inventory and Analysis (FIA) program at the Northern Research Station of the U.S. Forest Service. These annual 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 (2008)	Sampling error (%)	Change (%) since 2003
Forest Land Estimates			
Area (1,000 acres)	17,657.5	0.4	-0.3
Number of live trees > 1-inch diameter (million trees)	23,319.7	1.5	7.9
Dry biomass of live trees > 1-inch diameter (1,000 tons)	664,200.7	1.0	1.5
Net volume in live trees > 5-inch diameter (1,000,000 ft ³)	25,474.3	1.2	-0.4
Annual net growth of live trees > 5-inch diameter (1,000 ft ³ /year)	587,889.2	2.5	3.2
Annual mortality of live trees (1,000 ft ³ /year)	351,152.0	2.8	25.1
Annual harvest removals of live trees (1,000 ft ³ /year)	608,685.0	5.4	20.7
Annual other removals of live trees (1,000 ft ³ /year)	5,150.6	27.0	-83.7
Timberland Estimates			
Area (1,000 acres)	17,148.6	0.5	-0.3
Number of growing-stock trees (million trees)	2,674.8	1.6	-0.6
Biomass of live trees > 1-inch diameter (1,000 tons)	647,400.4	1.0	1.3
Net volume of live trees > 5-inch diameter (1,000,000 ft ³)	24,789.6	1.2	-0.7
Net volume of growing-stock trees (1,000,000 ft ³)	23,148.2	1.3	-0.9
Annual net growth of growing-stock trees (1,000 ft ³ /year)	574,691.0	2.4	12.1
Annual mortality of growing-stock trees (1,000 ft ³ /year)	269,191.0	3.1	9.5
Annual harvest removals of growing-stock trees (1,000 ft ³ /year)	539,298.4	5.4	13.9
Annual other removals of growing-stock trees (1,000 ft ³ /year)	22,931.4	33.0	-56.3

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

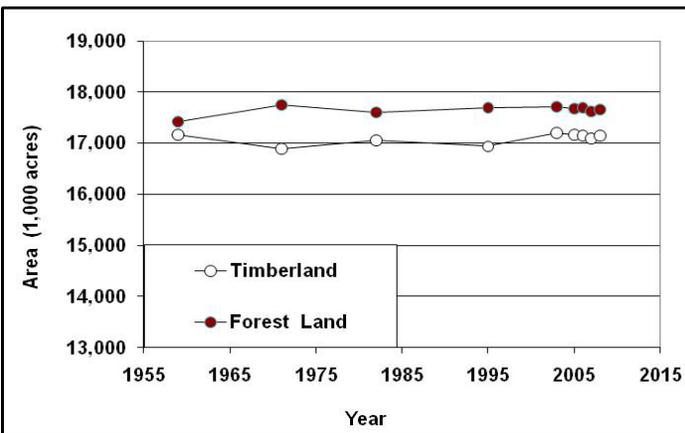


Figure 1. - Area of timberland and forest land by year.

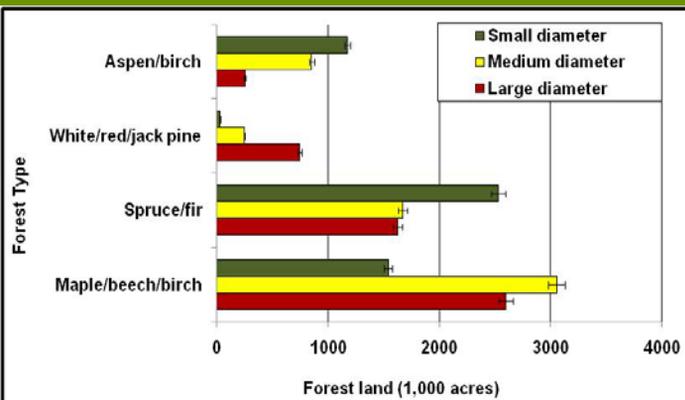


Figure 2. - Area of timberland of the top four forest types by stand-size class.

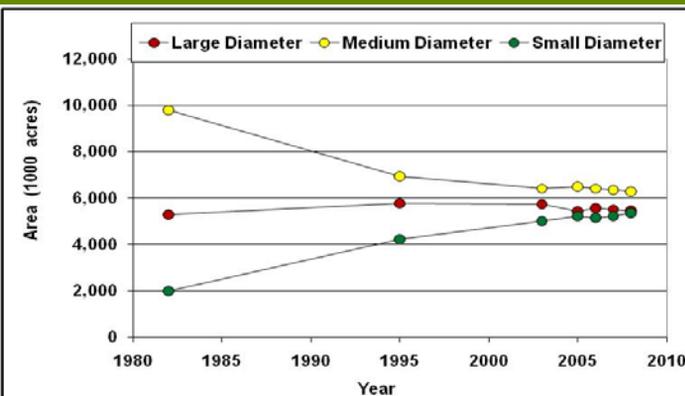


Figure 3. - Area of timberland by stand-size class and year.



Table 2. - Top 10 species by statewide volume estimates 2008

Rank	Species	Volume of live trees on forest land (1,000,000 ft ³)	Sampling error (%)	Change (%) since 2003	Volume of sawtimber trees on timberland (1,000,000 bdf)	Sampling error (%)	Change since 2003 (%)
1	Red maple	3,171.4	2.7	1.5	4,788.1	4.6	0.6
2	Red spruce	3,157.4	3.7	-5.7	8,034.5	4.6	-3.2
3	Eastern white pine	2,680.5	5.3	3.8	9,899.5	5.8	3.2
4	Northern white-cedar	2,188.9	4.8	2.7	4,563.9	5.7	7.8
5	Balsam fir	2,182.3	3.0	0.1	2,600.9	5.3	-9.6
6	Sugar maple	2,083.9	5.4	-5.3	5,673.6	6.8	-6.8
7	Eastern hemlock	1,893.2	5.1	5.1	5,298.1	5.9	10.4
8	Yellow birch	1,619.1	3.9	-0.2	3,852.1	6.0	-0.9
9	Paper birch	1,186.5	4.1	-5.3	1,242.4	7.4	-8.4
10	American beech	922.3	5.6	-14.2	1,204.5	9.2	-22.0
	Other softwoods	1,449.7	4.6	3.2	3,233.4	7.4	7.1
	Other hardwoods	2,939.1	3.6	1.8	6,208.4	5.3	4.3
	All species	25,474.3	1.2	-0.4	56,599.4	1.9	0.4

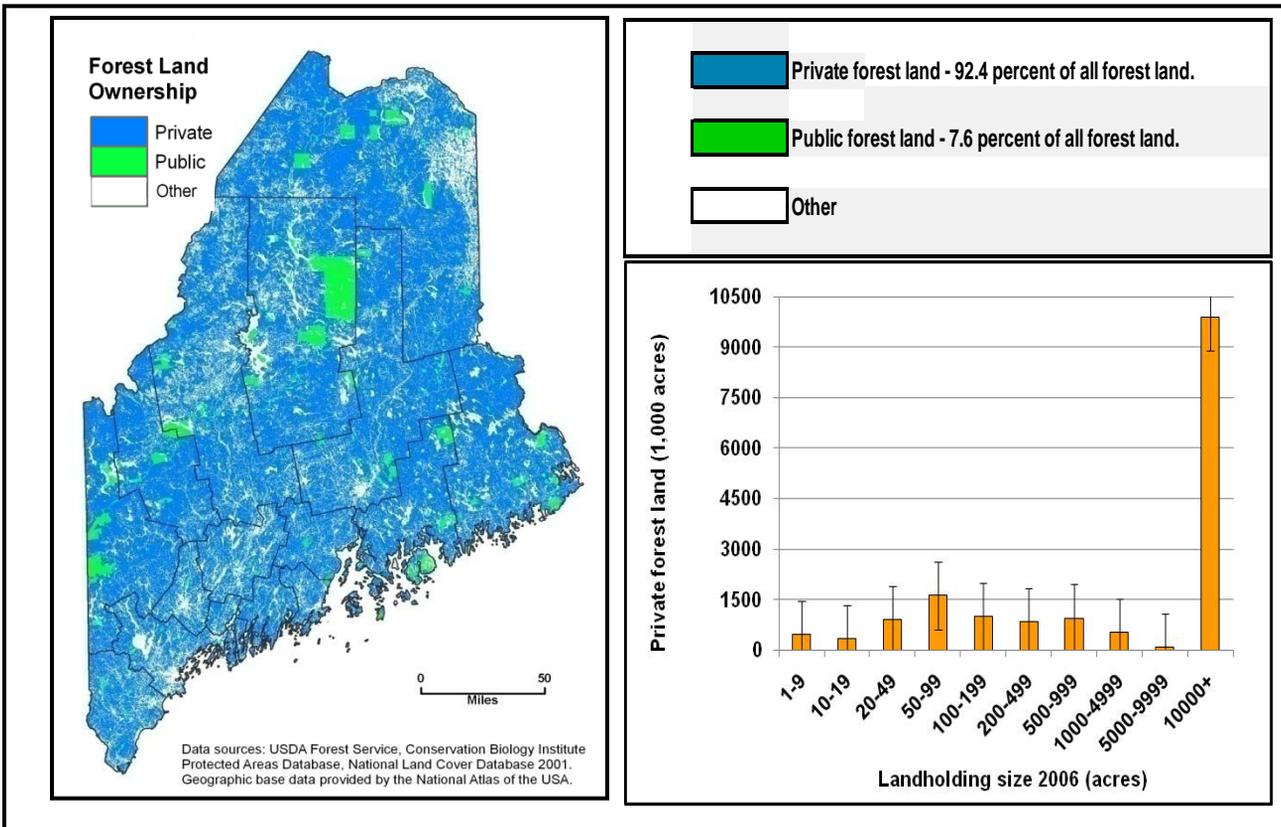


Figure 4. - Area of forest land by major owner group (2007) and size of family forest landholding, 2006.

Maine Issues Update - 2008

Over the past few decades there have been concerns about the comparative harvest levels of hardwoods and softwoods within Maine's forests (Jin and Sader 2006). The 1980-1990s saw accelerated conifer harvest operations brought on by the need to salvage trees as a result of the spruce budworm epidemic (Solomon and Braun 1992). This may have been a partial reason for a reduction of softwoods found across Maine's forested landscape. But there are numerous other negative impacts to conifer forests that continue, including the shift in timberland ownership, residual effects of the spruce budworm epidemic on spruce-fir growth, the localized infestation of the hemlock woolly adelgid, the recently detected northern white-cedar dieback, and various seasonal environmental stressors brought on by bad weather and wild animals. These impacts have reduced the area of softwood forest types and the related net growth of softwoods.

Spruce volumes decreased by 24.8 million ft³ or 18 percent when the 1999-2001 data were compared with the combined 2004-2006 data from the latest mid-cycle report on Maine's forests 2006 (Laustsen 2009). Balsam fir volume increased less than 1 percent using the same analysis. The shift from forest industry ownership to forest land investment firms and other ownership categories reduced the overall area of timberland by nearly 100,000 acres between 2003-2007 (Laustsen 2009). The hemlock woolly adelgid is projected to decrease the basal area of hemlock forests as much as 45 percent in southern Maine (York county) (Maine Forest Service 2007). Northern white-cedar dieback is being monitored within Maine. Initial results are showing widely distributed increases in dieback compared to the neighboring areas (Randolph 2008). Finally, weather and wild animals in the form of deer, hares, and porcupines are negatively impacting 50,000 acres of young conifer stands, annually (Maine Forest Service 2007).

As a result of all of these cumulative effects, removals of hardwood growing-stock have approached levels of softwood removals (Figure 5). Currently, hardwood forest types account for 61 percent of Maine's timberland acreage (Figure 5). Hardwoods also make up 47 percent of the growing-stock volume. Hardwood removals have provided a needed buffer to shortages from reduced softwood removals. Hardwood volumes can be increased by improving the quality of hardwood stocking within Maine's forests through silvicultural treatments and by selecting superior form. Even shade-tolerant hardwood species respond well to cultural treatments designed to improve growth and form (Webster and Lorimer 2003).

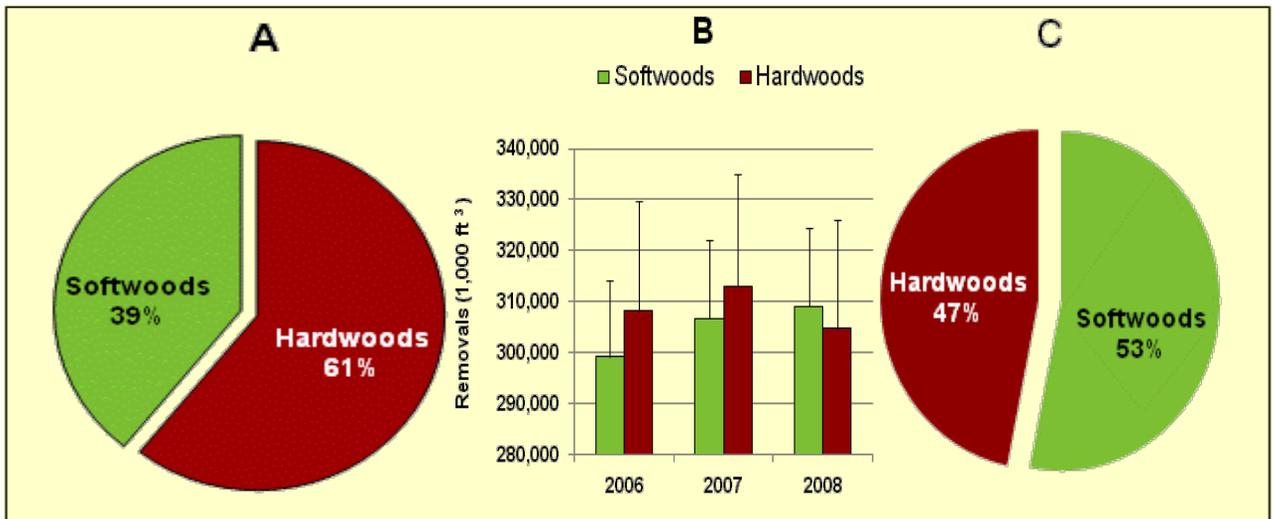


Figure 5. – A) Percent of timberland area in softwood and hardwood forest types, 2008; B) Average annual removals for softwood and hardwood growing stock volume, 2006, 2007, 2008; C) Percent of growing-stock volume on timberlands for softwood and hardwood species, 2008.

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