

Delaware's Forest Resources, 2008

Research Note NRS-71

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 the last page of this report.

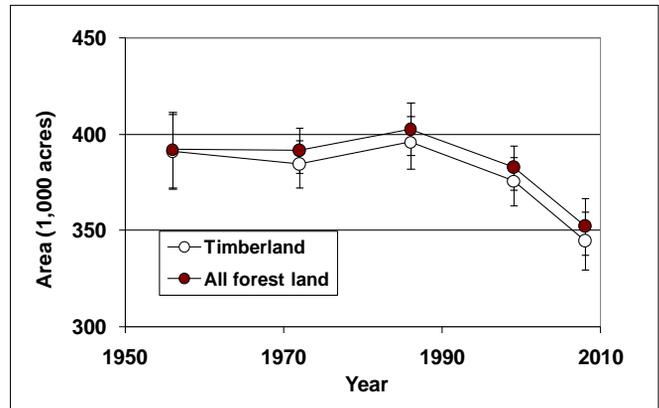


Figure 1. – Area of timberland and forest land by year.

Table 1. – Annual estimates and uncertainty, 2004-2008

| | Estimate | Sampling error (%) |
|--|----------|--------------------|
| Forest Land Estimates | | |
| Area (1,000 acres) | 352 | 4.2 |
| Number of live trees 1-inch diameter or larger (million trees) | 242 | 8.7 |
| Dry biomass of live trees 1-inch diameter or larger (1,000 tons) | 23,612 | 5.1 |
| Net volume in live trees (1,000,000 ft ³) | 863 | 5.5 |
| Annual net growth of live trees (1,000 ft ³ /year) | N/A* | N/A* |
| Annual mortality of live trees (1,000 ft ³ /year) | N/A* | N/A* |
| Annual removals of live trees (1,000 ft ³ /year) | N/A* | N/A* |
| Timberland Estimates | | |
| Area (1,000 acres) | 345 | 4.4 |
| Number of live trees 1-inch diameter or larger (million trees) | 235 | 9.0 |
| Dry biomass of live trees 1-inch diameter or larger (1,000 tons) | 22,953 | 5.4 |
| Net volume in live trees (1,000,000 ft ³) | 838 | 5.8 |
| Net volume of growing-stock trees (1,000,000 ft ³) | 810 | 5.9 |
| Annual net growth of growing-stock trees (1,000 ft ³ /year) | N/A* | N/A* |
| Annual mortality of growing-stock trees (1,000 ft ³ /year) | N/A* | N/A* |
| Annual removals of growing-stock trees (1,000 ft ³ /year) | N/A* | N/A* |

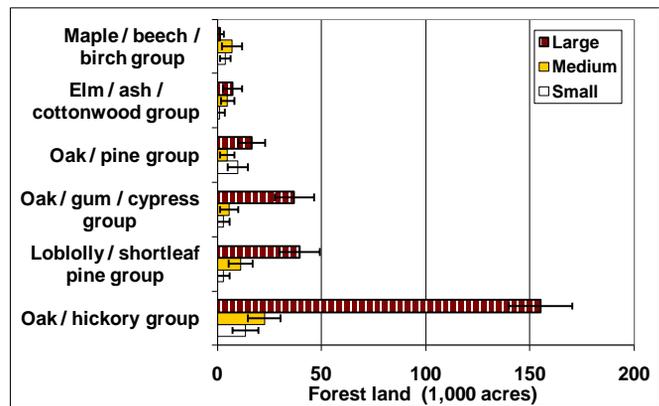


Figure 2. – Area of forest land by forest type group and stand size, Delaware, 2004-2008. (Small diameter = 1 - 4.9 in. d.b.h.; medium diameter = 5 - 9 in. dbh for softwood, 5 - 11 in. d.b.h. for hardwood; and large diameter = tree larger than medium).

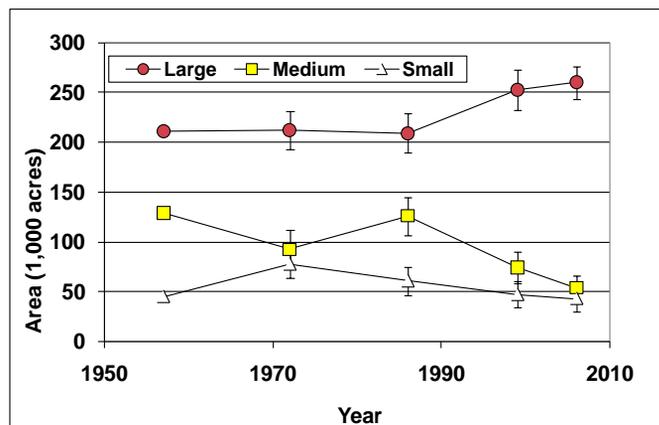


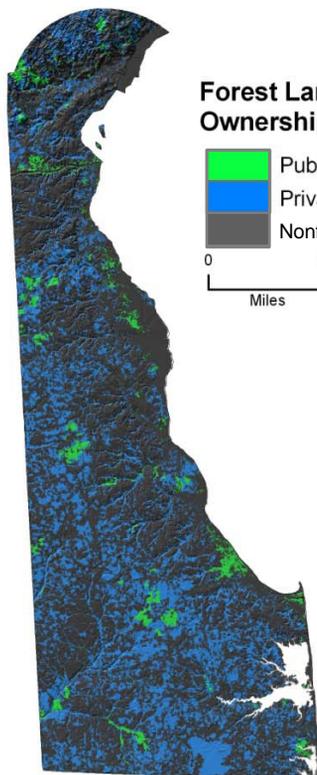
Figure 3. – Area of timberland by diameter stand size class and year.

* Due to a change in data processing systems, growth, removal and mortality data are not available for this report. When these data become available, they will be posted on our website (www.nrs.fs.fed.us/fia).

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

Table 2. – Top 10 tree species by statewide volume estimates, 2004-2008

| Rank | Species | Volume of live trees on forest land (1 million ft ³) | Sampling Error (%) | Volume of sawtimber trees on timberland (1 million bdf ^t) | Sampling error (%) |
|------|--------------------|--|--------------------|---|--------------------|
| 1 | Red maple | 189 | 11.7 | 559 | 16.2 |
| 2 | Sweetgum | 115 | 13.5 | 359 | 17.0 |
| 3 | Loblolly pine | 98 | 17.3 | 326 | 18.6 |
| 4 | Yellow-poplar | 95 | 25.8 | 414 | 33.1 |
| 5 | White oak | 65 | 17.5 | 267 | 20.8 |
| 6 | Willow oak | 40 | 32.2 | 200 | 34.0 |
| 7 | Blackgum | 34 | 17.9 | 90 | 25.7 |
| 8 | Southern red oak | 30 | 21.3 | 104 | 24.3 |
| 9 | Virginia pine | 25 | 28.7 | 92 | 35.0 |
| 10 | Black cherry | 24 | 26.1 | 45 | 48.1 |
| | Other softwoods | 2 | 91.9 | 4 | 122.6 |
| | Other hardwoods | 147 | 11.3 | 440 | 16.3 |
| | All Species | 863 | 5.5 | 2,899 | 7.7 |



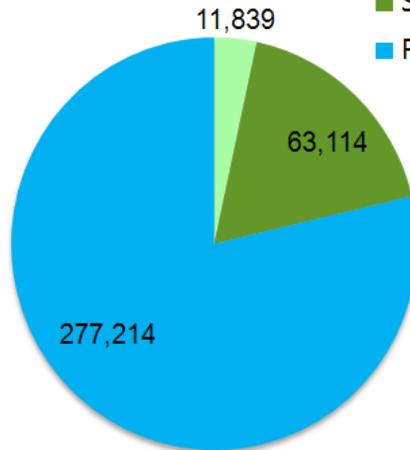
Forest Land Ownership

- Public (21% of all forest land)
- Private (79% of all forest land)
- Nonforest



Acres of forest land

- Federal
- State and local
- Private



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. – Distribution of ownerships and area of forest land (acres) by ownership group.

Family Forest Owners of Delaware and Maryland*

Most of Delaware and Maryland's forests are privately owned and of this private forest land, most is owned by families and individuals. There are an estimated 184,000 family forest owners in Delaware and Maryland who own a total of 1.7 million acres of forest land or 60 percent of the region's total forested area. Thirty-four percent of owners are new and the majority own less than 9 acres of forest land. The ownership demographics and size of forest landholding influence the type of forest management that are practiced in Delaware and Maryland.

Along with an inventory of the biophysical characteristics of the forest, the USDA Forest Service conducts the National Woodland Owner Survey (NWOS) to characterize the people who own these resources. The NWOS collects data on forest holding characteristics, ownership histories, ownership objectives, forest uses, forest management practices, preferred methods for receiving information, concerns, future intentions, and demographics. Below are some of the key findings for this region. For additional information about family forest owners, see Butler (2008) or visit www.fia.fs.fed.us/nwos.

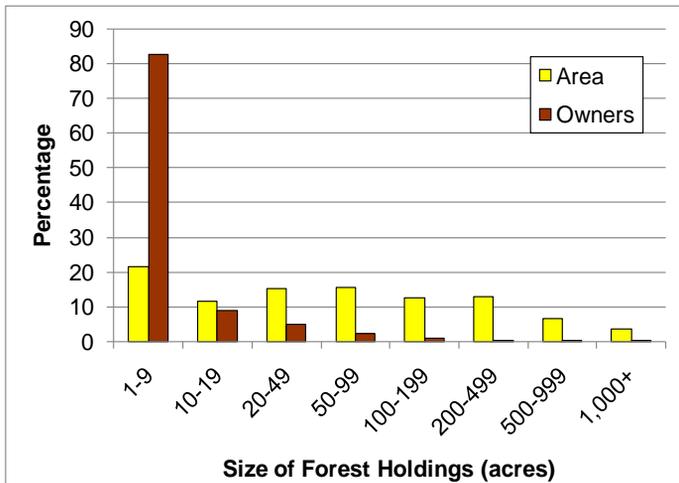


Figure 5. – Area and number of family forests in Delaware and Maryland by size of forest landholdings (2006).

Demographics

Age

- 8% are <45 years old
- 48% are between 45 and 64
- 44% are 65 or older

Education

- 26% have a college degree

Annual Household Income

- 51% under \$50,000
- 27% \$50,000 to \$99,999
- 22% \$100,000 or more

Ownership

New Owners

- 34% have purchased their forest land within last 10 years

Absentee Owners

- 10% do not live on or near (within 1 mile) their land

Farmers

- 9% have a farm associated with their forest land

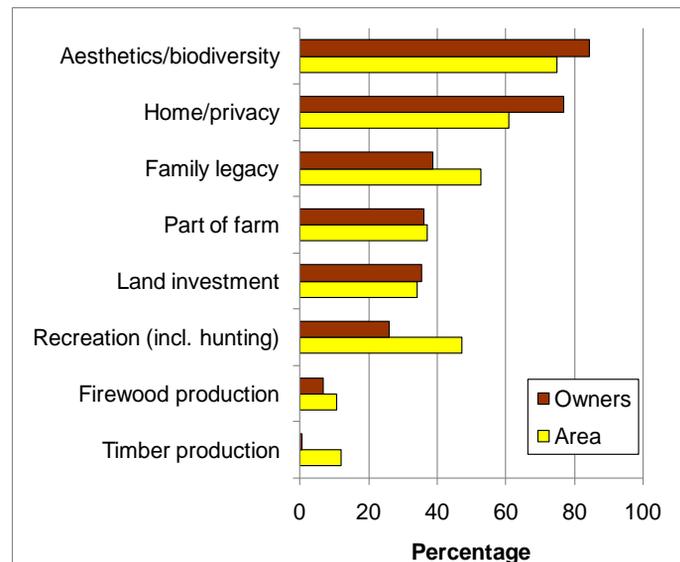


Figure 6. – Area and number of family forests in Delaware and Maryland by reason for owning forest land (2006). Numbers include landowners who ranked each objective as very important or important on a seven-point Likert scale.

* Data are combined for Delaware and Maryland due to the relatively small, statewide sample sizes.

Citation for this Publication

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FIA Program Information

Bechtold, W.A.; Patterson, P.L. 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).

Special Issue Citation

Butler, Brett J. 2008. Family forest owners of the United States, 2006, Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 72 p.

Additional Delaware Inventory Information

Ferguson, R.H. 1959. The timber resources of Delaware. A report on the forest survey made by the U.S. Forest Service. Upper Darby, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 30 p.

Ferguson, R.H.; Mayer, Carl E. 1974. The timber resources of Delaware. Resour. Bull. NE-32. Upper Darby, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 42 p.

Frieswyk, T.S.; DiGiovanni, D.M. 1989. Forest statistics for Delaware-1972 and 1986. Resour. Bull. NE-109. Broomall, PA: U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station. 86 p.

Griffith, D.M.; Widmann, R.H. 2001. Forest statistics for Delaware: 1986 and 1999. Resour. Bull. NE-151. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northeastern Research Station. 58 p.

Lister, T.W.; Gladders, G. 2008. Delaware's forest resources, 2006. Res. Note NRS-27. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 4 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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