

# Forest Inventory & Analysis

Increasing Our Understanding of the North's Forests

## The Forest Resources of Massachusetts, 2005 A USDA Forest Inventory & Analysis Update

### Introduction

Massachusetts' forested landscape is integral to the Commonwealth's ecological and social character. Forests cover an estimated 63 percent of the land (Figure 1 and Table 1). The trees and other biotic and abiotic components provide the State's citizens clean water and air, places to recreate and seek serenity, backdrops for their homes and everyday lives, and raw materials for forest products and firewood.

### The FIA Program

To make informed decisions about forest resources, it is imperative to have accurate and timely forest resource information. The USDA Forest Service's Forest Inventory and Analysis (FIA) program was created to provide broad-scale forest resource information to Federal, State, and local policy makers, public and private forest managers, and everyone interested in the current and future state of the forest. FIA is the nation's forest census.

On a recurring basis, specially trained foresters visit a set of randomly selected plots—roughly, one per 6,000 ac. For the forested plots, information is recorded on tree species, size, and quality, in addition to other biophysical attributes. Previous

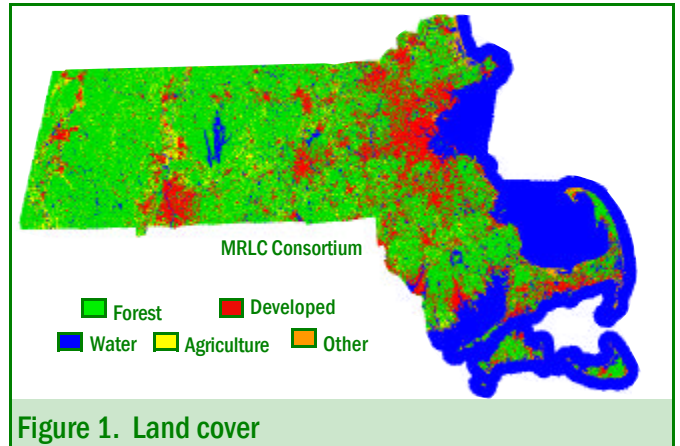


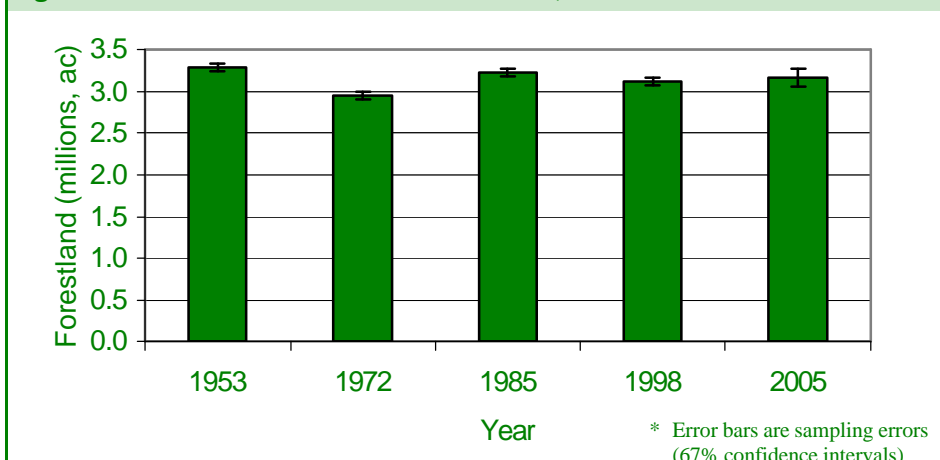
Figure 1. Land cover

FIA forest inventories were conducted in Massachusetts in 1953, 1972, 1985, and 1998.

The current inventory, initiated in 2003, is being implemented on an annual basis. Every year, 15 percent of the plots, equally dispersed across the Commonwealth, are inventoried. This update includes information from 363 plots—the first 40 percent of the plots inventoried. As the sample size increases, so too will the precision of the estimates. We strongly encourage all FIA data users to examine the sampling errors accompanying the estimates to assess data reliability.

After the full set of plots is inventoried, FIA will immediately begin to remeasure plots and provide trend data that are detailed, accurate, and timely.

Figure 2. Trends in Massachusetts' forest area, 1952 to 2005\*



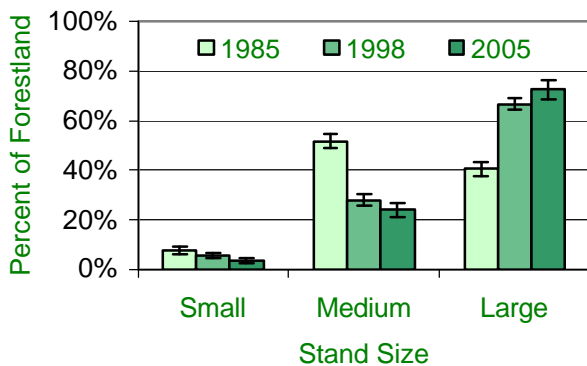
## Forest Area

There are between 3.1 and 3.3 million acres of forestland in Massachusetts (Table 1). This represents a slight increase of forestland since 1998, but statistically, the difference is only marginal and more samples are needed to fully quantify this trend. Forestland is not evenly distributed across the Commonwealth (Figure 1). Private owners control two-thirds of the forestland (Table 1).

## Stand Size and Volume Per Acre

Forest stands were classified as large (sawtimber), medium (poletimber), small (seedlings and saplings), or non-stocked based on the diameter of the plurality of trees sampled. Most of Massachusetts' forests are composed of large or mature stands, and there are relatively few small or young stands (Figure 3).

**Figure 3. Stand size distribution in Massachusetts, 1985, 1998, and 2005\***



\* Error bars are sampling errors (67% confidence intervals)

The average stand volume is 2,284 ft<sup>3</sup> per acre of forestland in Massachusetts (Tables 1 and 4). This is the sixth highest level in the United States.

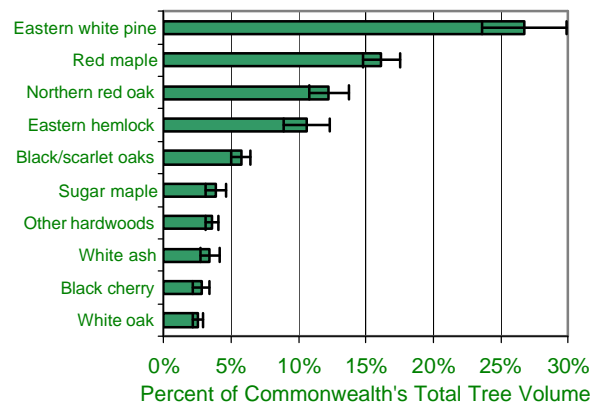
## Species Composition

Seventy-five species of trees were encountered on the 268 forested plots inventoried. Eastern white pine is the most common tree species in Massachusetts—accounting for 27 percent of the Commonwealth's total tree volume (Figure 4 and Table 4). The 10 most common species/species groups account for 88 percent of the volume of trees in the Commonwealth.

### Massachusetts forest facts

- Forest area: 3,166,400 acres
- Number of live trees: 1,583,395,000
- Volume of trees: 7,233 million ft<sup>3</sup>

**Figure 4. Most common tree species and species groups in Massachusetts, 2005\***



\* Error bars are sampling errors (67% confidence intervals)

## The Future

The fate of Massachusetts' forests lies largely in the hands of the 285,000 families and individuals who own 56% of the forestland in the Commonwealth. Land use and population pressures, landowners' ownership objectives, the value of environmental services, timber markets, and social norms and values will influence much of the future forest's characteristics. Continued monitoring of the Commonwealth's forest resources will help policy makers and others formulate more informed opinions and help foster sound forest and environmental stewardship.



### USDA FOREST SERVICE NORTHERN RESEARCH STATION FOREST INVENTORY & ANALYSIS

11 Campus Boulevard, Suite 200  
Newtown Square, PA 19073  
Phone: 610-557-4075  
Fax: 610-557-4250  
Internet: [www.fs.fed.us/ne/fia/](http://www.fs.fed.us/ne/fia/)

### The FIA Massachusetts Team

Field crew: Bryan Tirrell, Ashley Zickefoose, Erika Mattson, Brian Rudd, Todd Bixby, John Higham, Ann Quinion, Aarron Clark, Jeff Wazenegger, and Keith Raymond.

Data compiler: Barbara O'Connell  
Analyst: Brett J. Butler