

Highlights

Forest-Land Area

The 393,000 acres of forest land in Rhode Island cover 59 percent of the state's total land area (669,000 acres). Forest land decreased by 4.6 percent, while nonforest land showed a 7.4-percent increase. This increase in nonforest land occurred primarily in nonagricultural land classes.

Unit	1985	1998	Percent change
Forest land	411.8	393.0	-4.6
Nonforest land	257.0	275.8	+7.3
State total	668.8	668.8	

Figure 2. Area (in thousand acres) of land area and percent change, Rhode Island, 1985 and 1998 (Source: Table 1).

Timberland, the largest component of forest land, totals 340,000 acres and makes up 86 percent of the forest land and 51 percent of the total land area. This is a decrease from 1985, when timberland acres were 380,000 acres, or 92 percent of the forest land, and 57 percent of the total area.

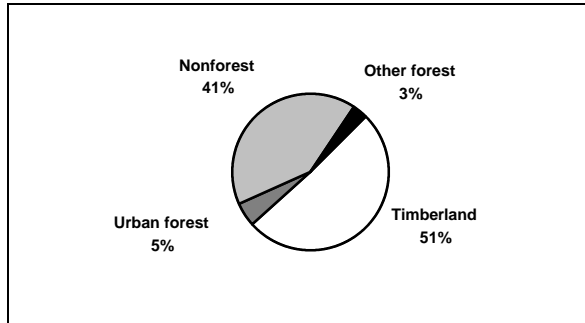


Figure 1. Area by land class, Rhode Island, 1998 (Source: Table 1).

Timberland

When forest type is calculated using stocking that is based on relative stand density (a new standard procedure that was nationally developed and accepted by all FIA projects—see **Comparison Between Inventories** section), the oak/hickory type group dominates in the forests of Rhode Island. This type group makes up 63 percent (213,000 acres) of the timberland area. Northern hardwoods forests, which are characterized by sugar maple, beech, yellow birch, and black cherry, cover 13 percent (44,000 acres); the elm/ash/red maple type

group contributes 9 percent (29,000 acres); and the white/red pine type group contributes 7 percent (25,000 acres). Other type groups combined contribute fewer than 28,000 acres.

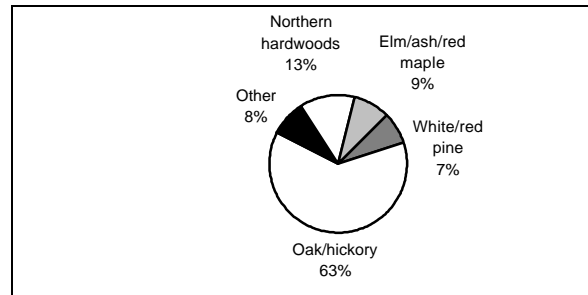


Figure 3. Timberland by forest-type group (based on relative density), Rhode Island, 1998 (Source: Table 4).

When basal area is the basis for calculating stocking from which forest type is derived (the procedure used in 1985), the oak/hickory type is again the predominant forest type with 63 percent, or 209,000 acres, of the timberland area. White/red pine forests are found on 11 percent (37,000 acres); and northern hardwoods and oak/pine types are each found on 8 percent of the timberland acreage. Other type groups contribute fewer than 33,000 acres.

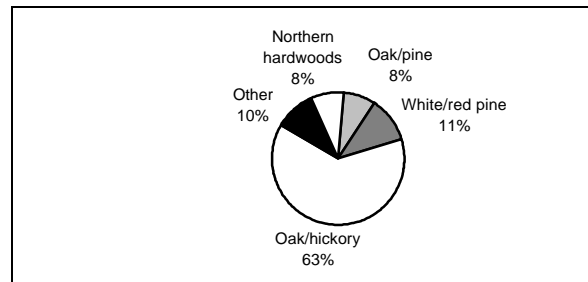


Figure 4. Timberland by forest-type group (based on basal area), Rhode Island, 1998 (Source: Table 6).

When stand density is used to calculate stocking and to determine stand size, sawtimber stands (stands in which the stocking of live sawtimber trees makes up the majority) are found on just over half of the timberland, or 172,000 acres. Poletimber stands cover 43 percent (146,000 acres), and sapling and seedling stands account for 6 percent (21,000 acres). In 1985, poletimber stands accounted for 63 percent, or 238,000 acres, of the timberland. Sawtimber stands covered a third of the timberland acres, or 118,000 acres, and sapling and seedling stands accounted for 20,000 acres, or 5 percent. Poletimber stands showed a 39-percent drop while sawtimber stands increased by 46 percent.

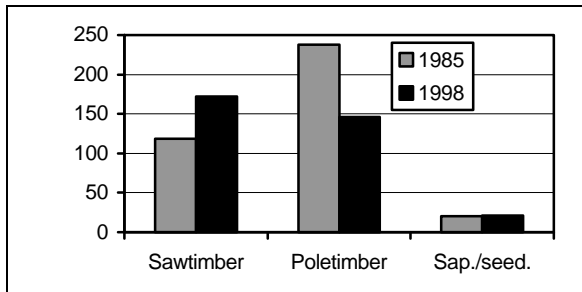


Figure 5. Area of timberland (in thousand acres) by stand-size class (based on relative density), Rhode Island, 1985 and 1998 (Source: Tables 3 and 4).

When stand size is classified using basal area to calculate stocking, sawtimber stands are found on 54 percent of the timberland, or 178,000 acres. Poletimber stands cover 40 percent (134,000 acres), and sapling and seedling stands, 6 percent (19,000 acres). In 1985, poletimber stands covered 193,000 acres (51 percent), sawtimber stands, 164,000 acres (43 percent), and sapling and seedling stands accounted for 24,000 acres, or 6 percent. Poletimber stands showed a 31-percent drop while sawtimber stands increased by 9 percent.

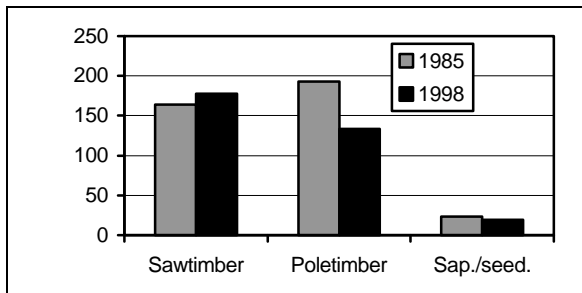


Figure 6. Area of timberland (in thousand acres) by stand-size class (based on basal area), Rhode Island, 1985 and 1998 (Source: Tables 5 and 6).

Numbers of Trees

There are 177 million live trees 1.0 inch or larger in diameter at breast height (d.b.h.) on Rhode Island's timberland, or 522 trees per acre. Of these, 58 million (172 trees per acre) are at least 5.0 inches in d.b.h. Red maple is the most common tree species in Rhode Island, accounting for 38 percent of all saplings and 25 percent of the live trees 5.0 inches and larger in d.b.h. White pine is the second most common tree species, with 14 percent of the saplings and 11 percent of the live trees at least 5.0 inches in diameter. Other red oaks (scarlet and black oaks) round out the top three overall, with 6 percent of the saplings and 24 percent of the live trees 5.0 inches and larger in d.b.h.

Growing-stock trees make up 86 percent of live trees 5.0 inches and larger in d.b.h. Other red oaks are the most common of the trees in this category, with 25 percent of the growing-stock trees. Red maple makes up 23 percent of the total. White pine is third, with 12 percent of all growing-stock trees.

Although there has been a slight decrease in the total number of growing-stock trees since 1985, since the timberland acreage is down, the number of growing-stock trees per acre is basically unchanged, from 143 to 148 trees per acre.

In growing-stock trees 5.0 to 10.9 inches in d.b.h., there has been a decrease of 14 percent versus an increase of 20 percent in trees that are 11.0 inches and larger in diameter.

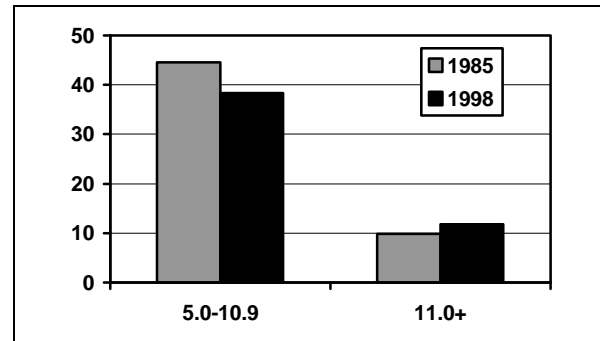


Figure 7. Number of growing-stock trees (in million trees) on timberland by diameter group, Rhode Island, 1985 and 1998 (Source: Tables 22 and 23).

Growing-Stock Volume

The volume of growing-stock trees in Rhode Island is 494 million cubic feet, or 1,454 cubic feet per acre. This is an 11-percent increase since 1985 when the volume totaled 445 million cubic feet, or 1,170 cubic feet per acre. Other red oaks, specifically scarlet and black oaks, are the leading species in growing-stock volume, with 112 million cubic feet, or 23 percent of the total. Red maple growing-stock trees contribute 20 percent of the total volume, or 97 million cubic feet. White pine ranks third with 18 percent of the total (90 million cubic feet). Since 1985, white pine displaced northern red oak as the third-ranked species in growing-stock volume.

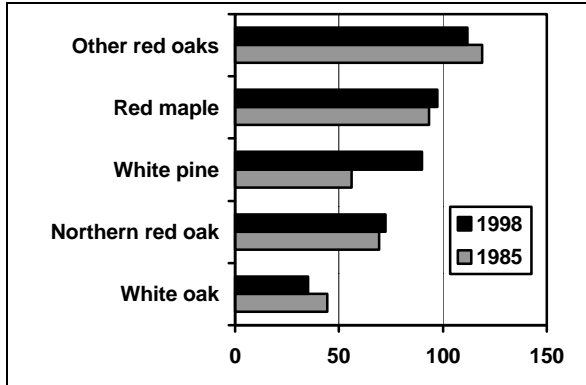


Figure 8. Net volume of growing-stock trees (in million cubic feet) on timberland, top five species, Rhode Island, 1985 and 1998 (Source: Tables 33 and 34).

Sawtimber Volume

With an average of 3,875 board feet per acre, there are 1.3 billion board feet of sawtimber volume in Rhode Island. In 1985, the volume was 1.0 billion board feet, or 2,676 board feet per acre; sawtimber volume has increased by 29 percent since the last inventory. Although the top three species are the same as the top growing-stock volume species, they have a different ranking. White pine is the top species with 366 million board feet, or 28 percent of the total, and a 69-percent increase over its volume in 1985. Other red oaks have 18 percent (233 million board feet) of the total sawtimber volume. Rounding out the top three sawtimber volume species is red maple with 15 percent.

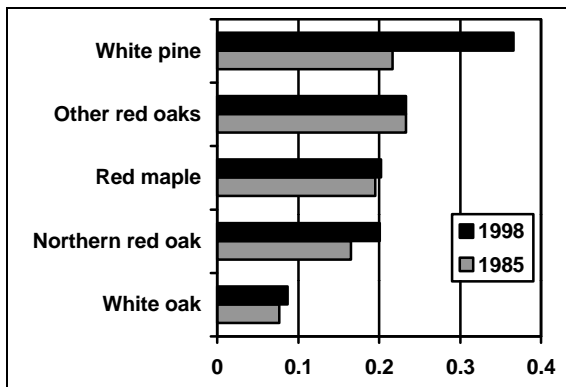


Figure 9. Net volume of sawtimber trees (in billion board feet) on timberland, top five species, Rhode Island, 1985 and 1998 (Source: Tables 36 and 37).

Growth and Removals

Since the last inventory, the average annual net growth of growing stock on timberland is 8 million cubic feet, or 23 cubic feet per acre per year. This represents 1.6 percent of the current inventory. Average annual removals of growing stock total 5.5 million cubic feet, or 16 cubic feet per acre per year. Net change is positive over the period since the last inventory, with an average annual net change of 2.5 million cubic feet.

Rates of growth to removals of growing-stock volume vary with tree species. White pine is growing 9.1 times faster than it is being removed, either by harvest or by land-use change, while other red oaks, the species with the highest amount of total growing-stock removals, has a growth to removals ratio of 0.8. White oak, one of the top five species in growing-stock volume, showed no significant annual change.

Average annual net growth of sawtimber on timberland is 26 million board feet, or 76 board feet per acre per year. The rate of growth to removals of sawtimber volume is 2.4. Annual removals are 10.6 million board feet per year, or 31.2 board feet per acre annually. Removals combined with growth yielded a positive annual change in board-foot volume of 15.3 million board feet.

White pine showed an annual increase of 9.3 million board feet, a growth-to-removals ratio of 16.6. The oak species showed no significant increase in sawtimber volume. A negative growth-to-removals ratio indicates that mortality and cull increment exceeded gross growth, which is composed of ingrowth and accretion.

Species	Growing stock	Species	Saw-timber
Oth. red oaks	.8	White pine	16.6
Red maple	1.5	Oth. red	1.4
White pine	9.1	Red maple	5.8
N. red oak	2.0	N. red oak	1.9
White oak	-0.3	White oak	-1.1

Figure 10. Growth-to-removals ratios of growing-stock and sawtimber volume on timberland, top five species, Rhode Island, 1984-1997 (Source: Tables 40 and 41).