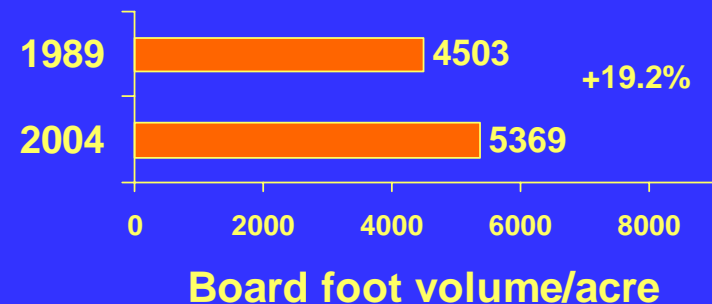
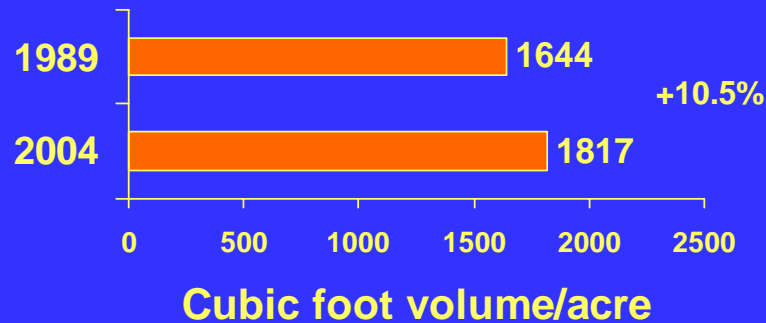


A photograph of a lush forest with tall, slender trees and a dense canopy of bright green leaves. The ground is covered in fallen leaves and small green plants. The text "What's Happening to the Over-story?" is overlaid in yellow in the center of the image.

What's Happening to the
Over-story?

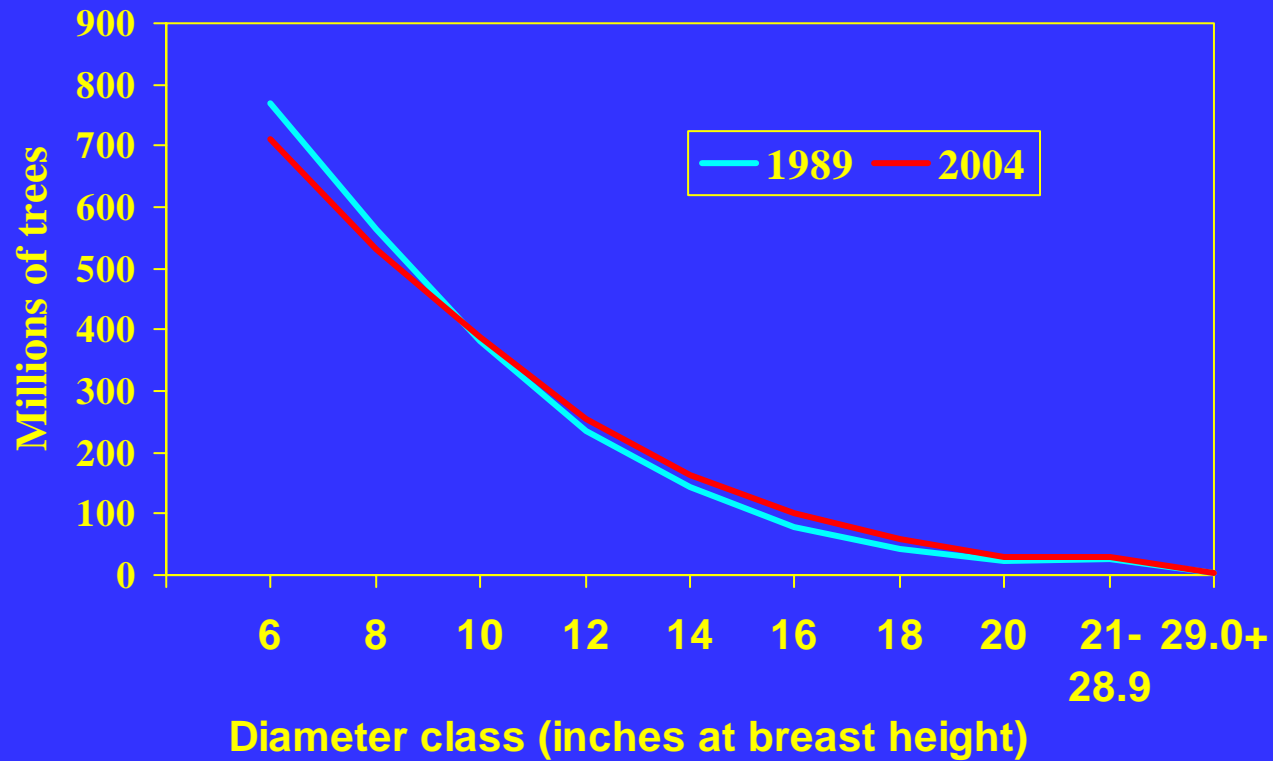
The simple answer is that in Pennsylvania cubic foot volume is up 10.5% and board foot volume is up 19.2%



But the answer gets more complicated when you look at differences in numbers of trees across diameter classes, changes in volume by species, changes in composition, differences between major ownerships, and timber quality.

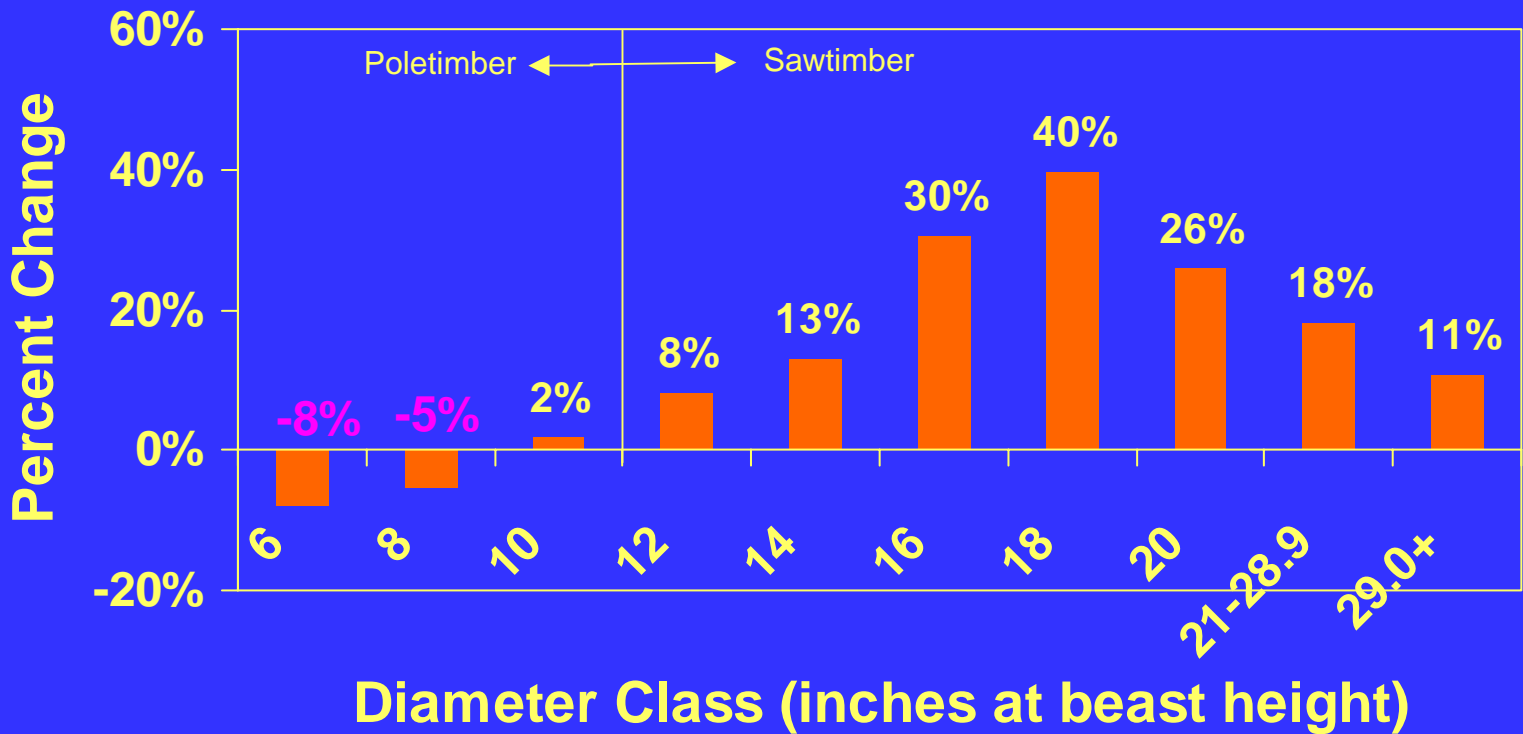
Decrease in numbers of small trees, PA 2004 (is happening across the Northeast)

Numbers of trees by Diameter Class



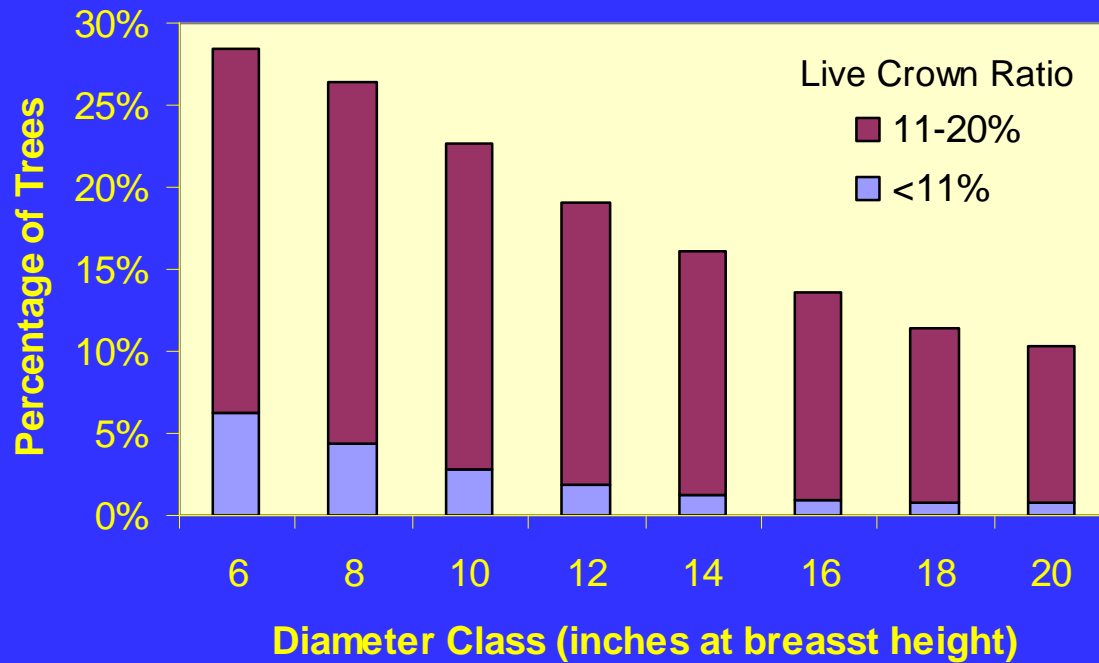
Most of Increase in Sawtimber-size trees

Change in Numbers of Trees



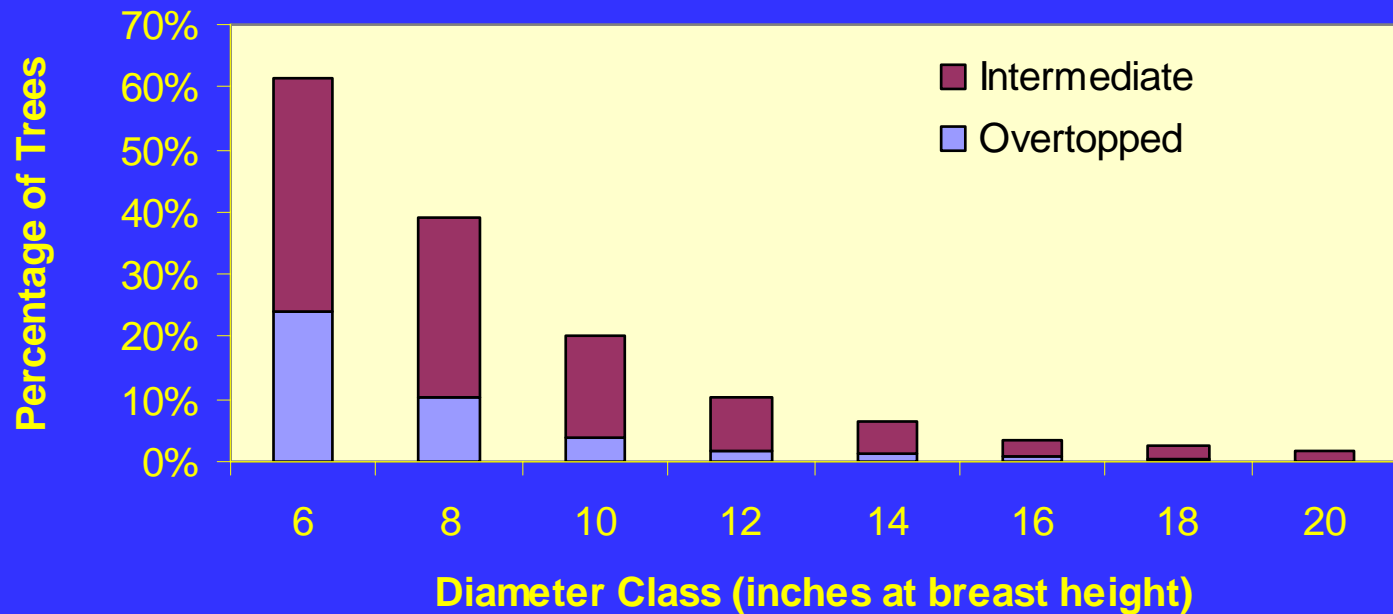
6- and 8- inch Trees Have Poor Live Crown Ratios

Percentage of Growing-stock Trees with Poor Live Crown Ratios



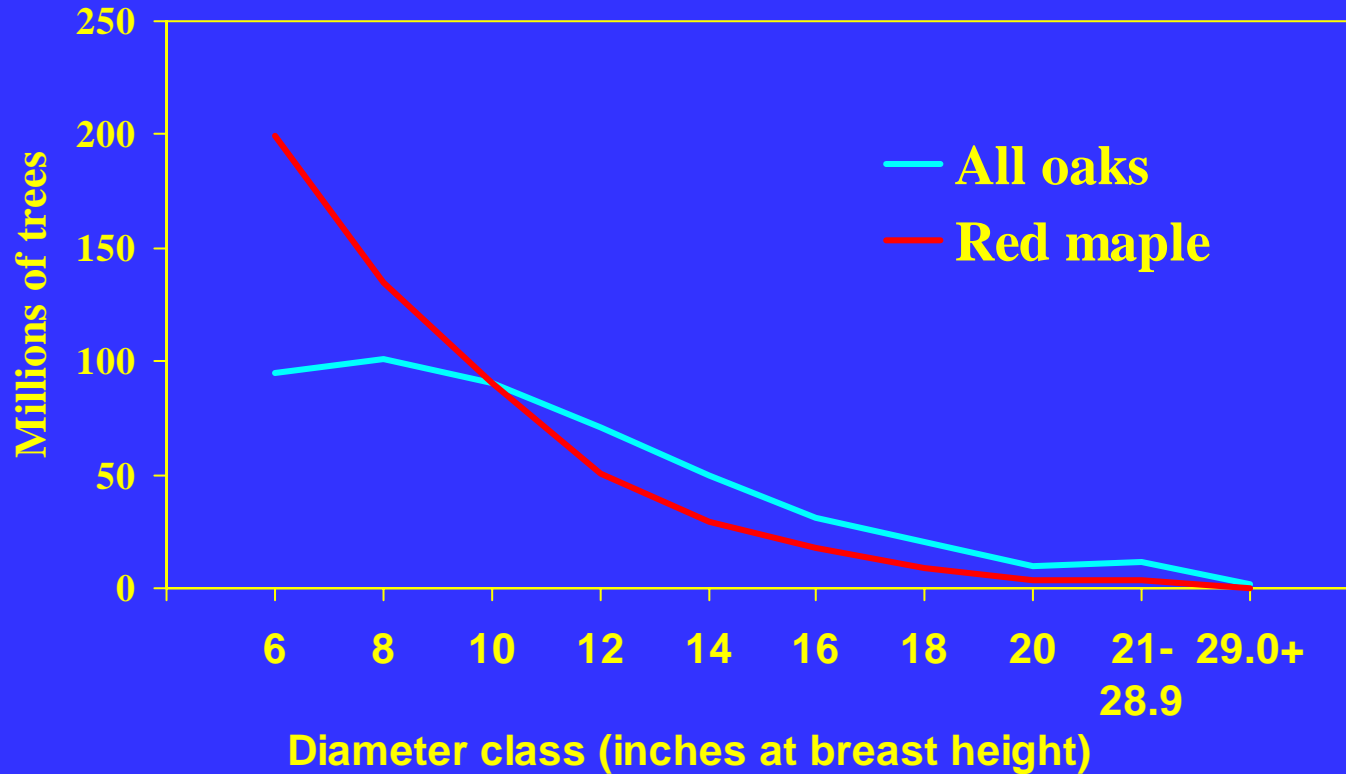
6- and 8- inch Trees Have Poor Crown Position

Percentage of Trees with Crown Positions of Intermediate or Overtopped

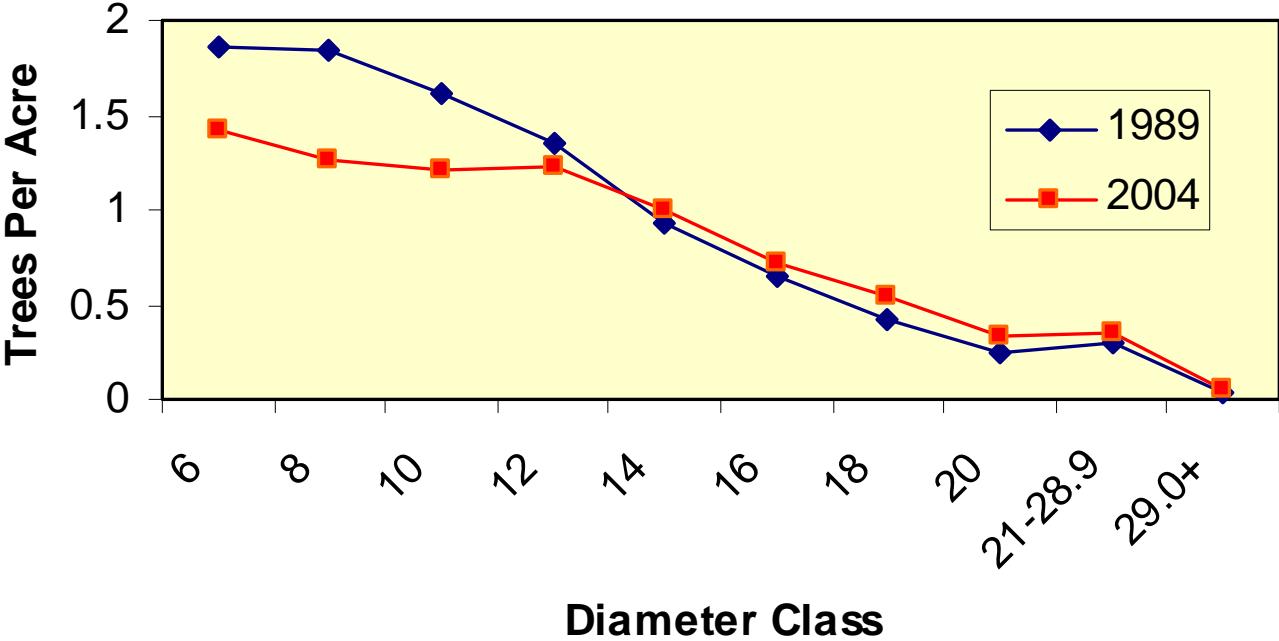


Numbers of Oaks and Red Maple, 2004

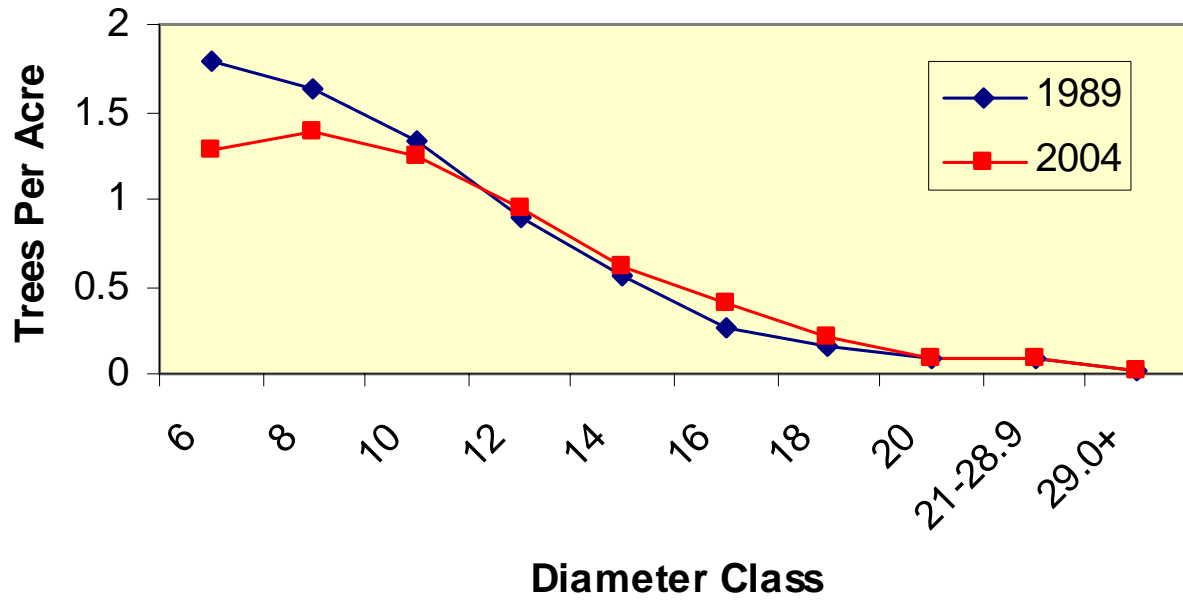
Numbers of trees by Diameter Class



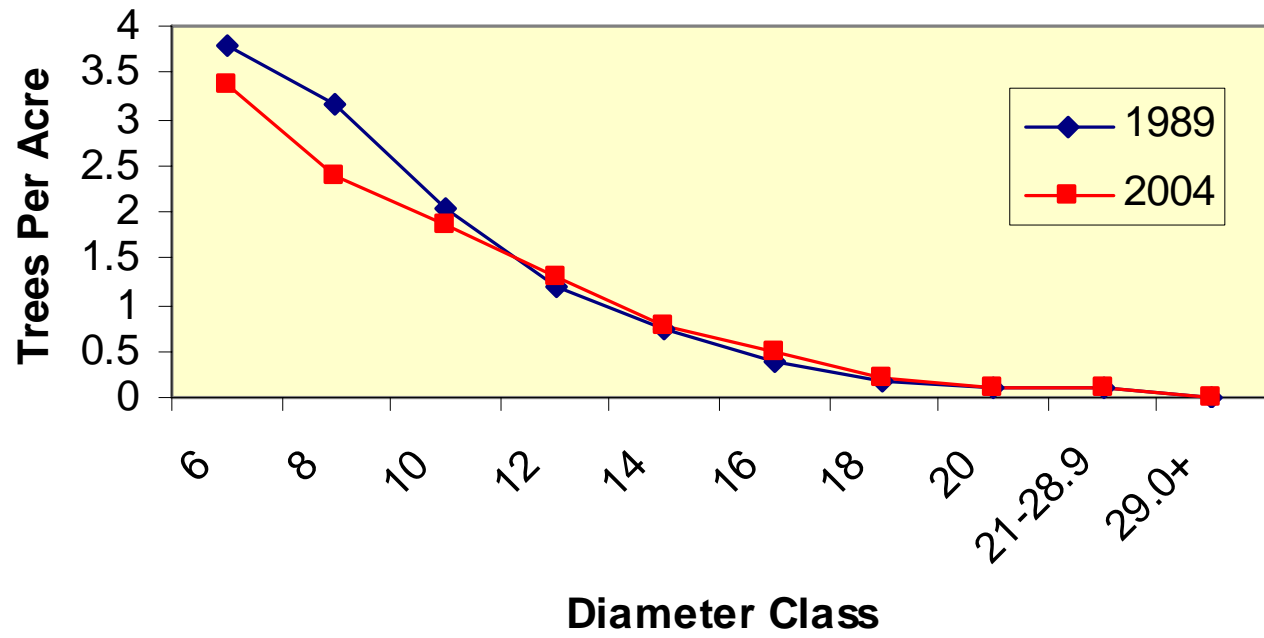
Northern Red Oak



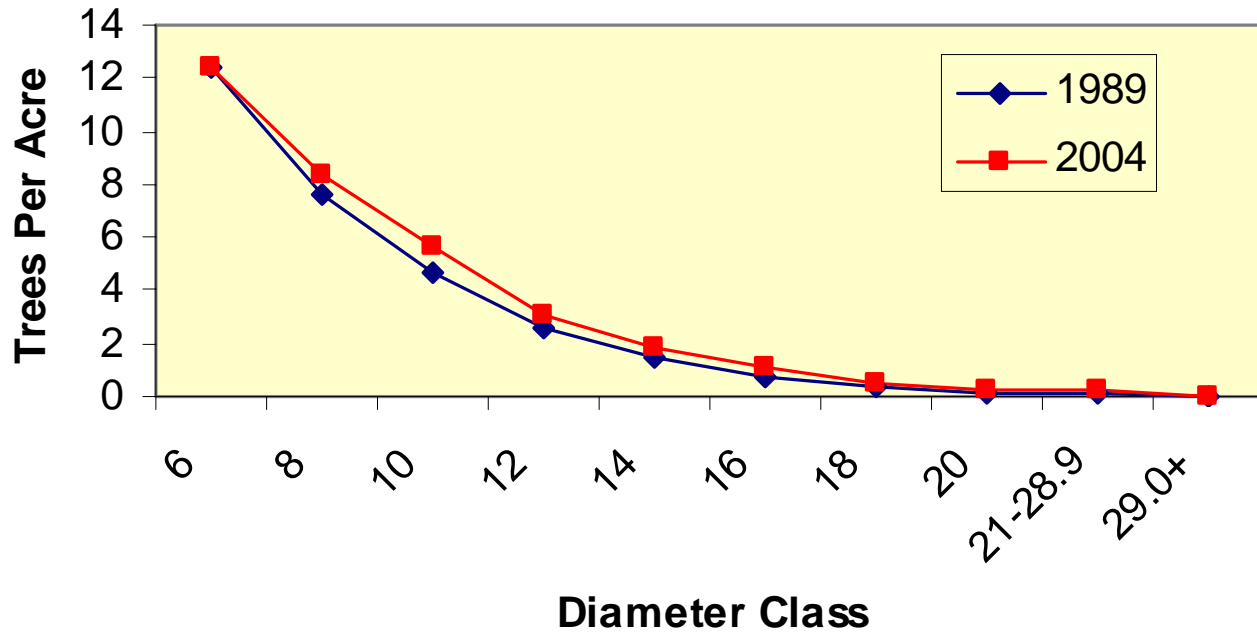
White Oak



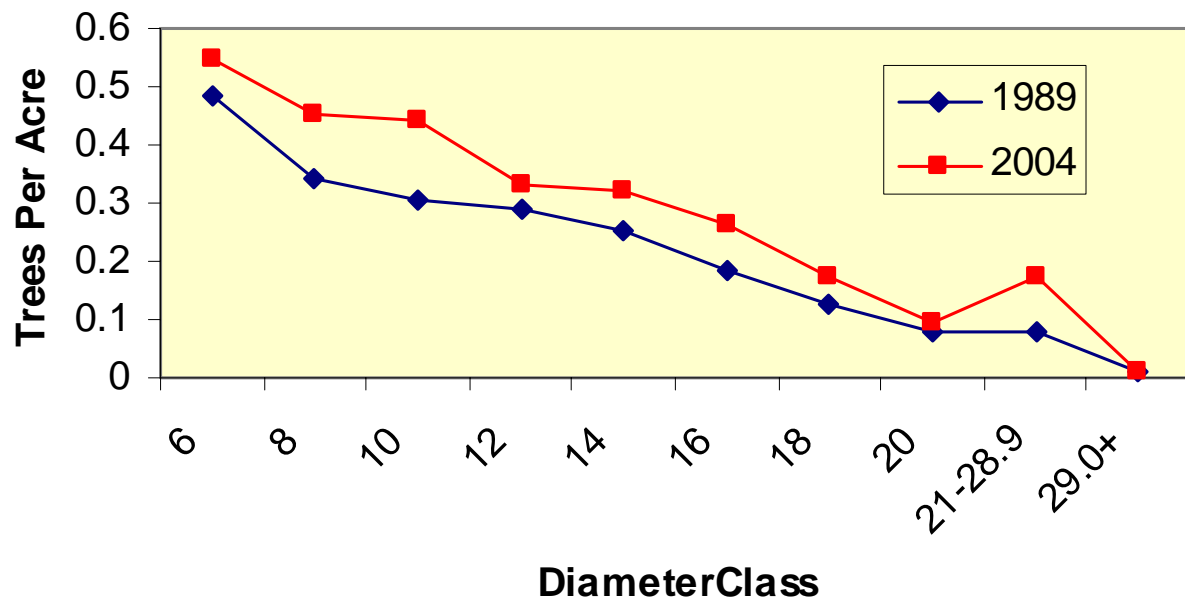
Sugar Maple



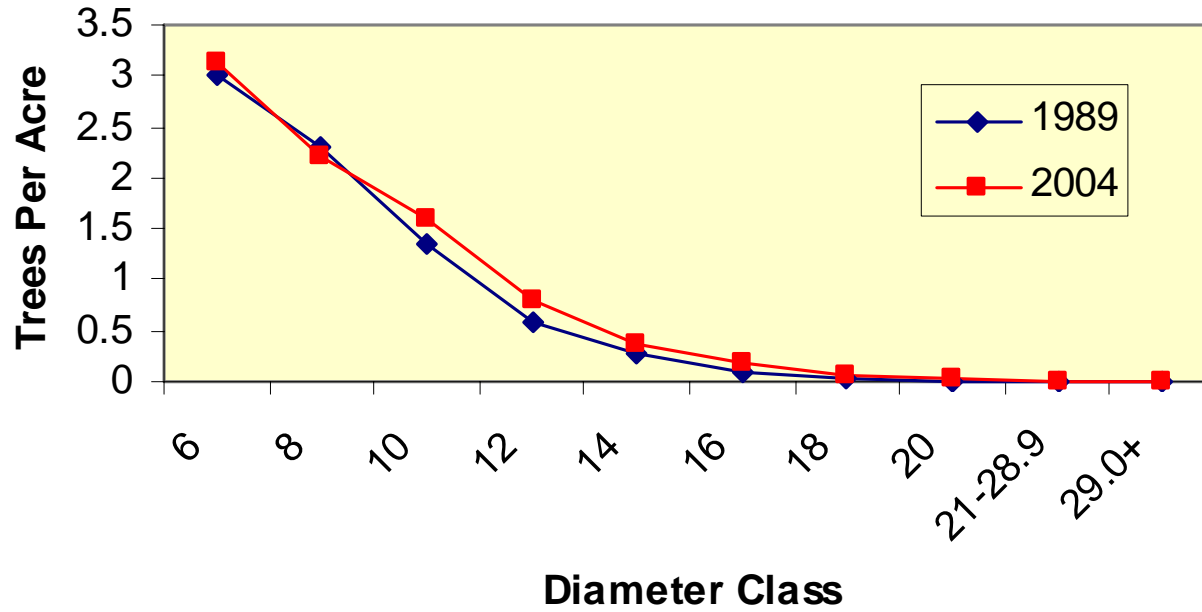
Red Maple



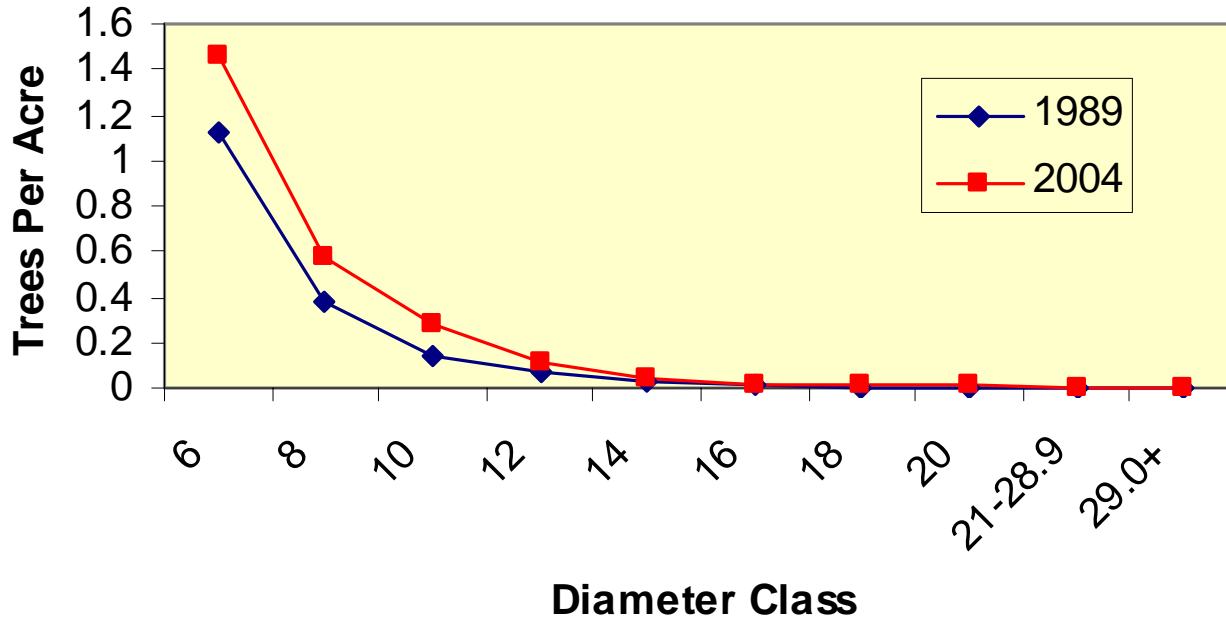
Yellow-poplar



Sweet birch

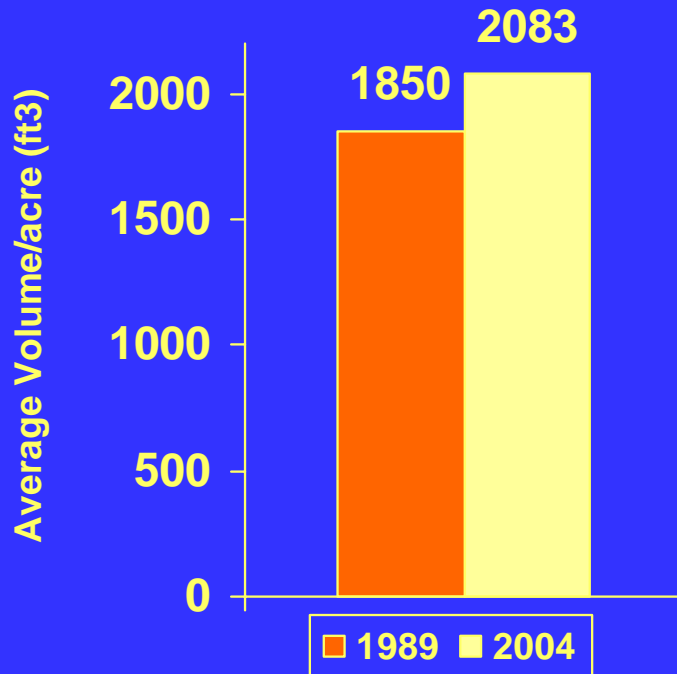


Blackgum

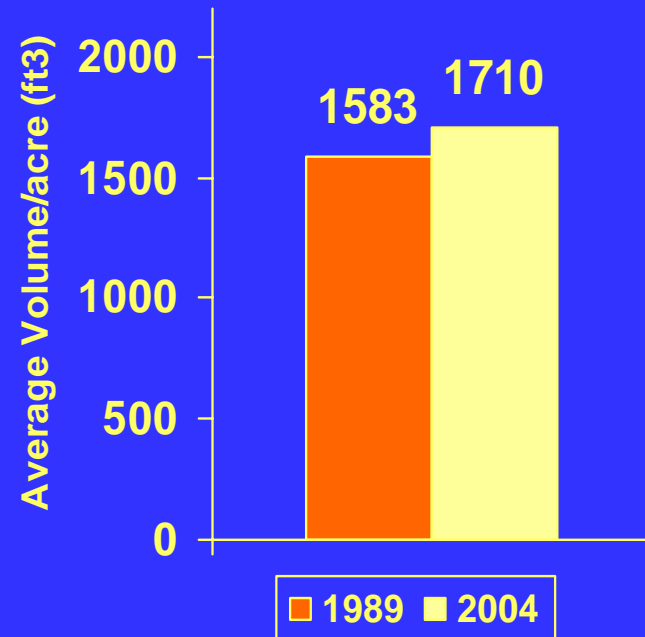


Volume Per Acre Public Vs. Private

Public +12.6%



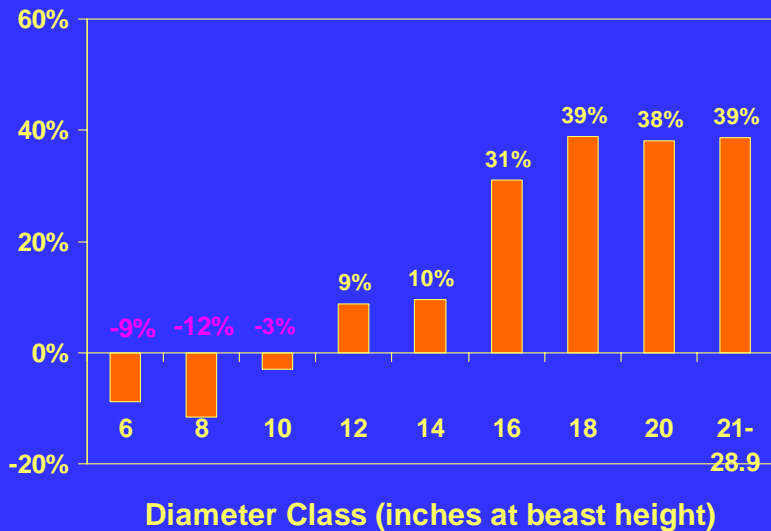
Private +8%



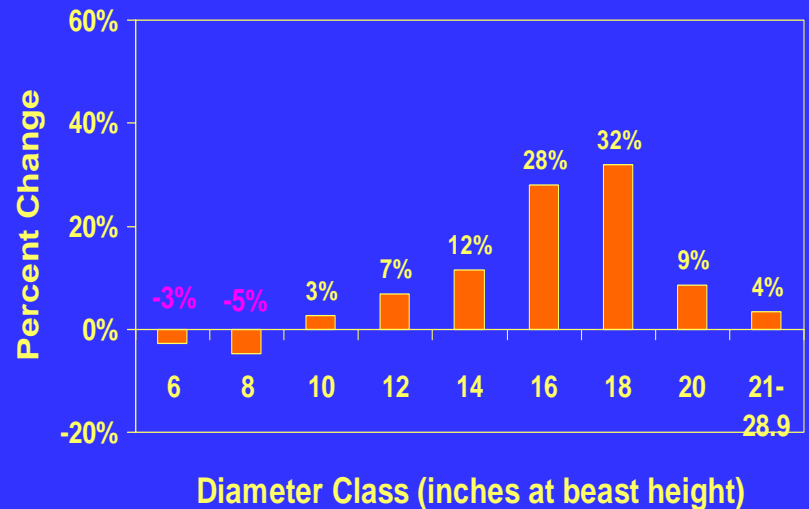
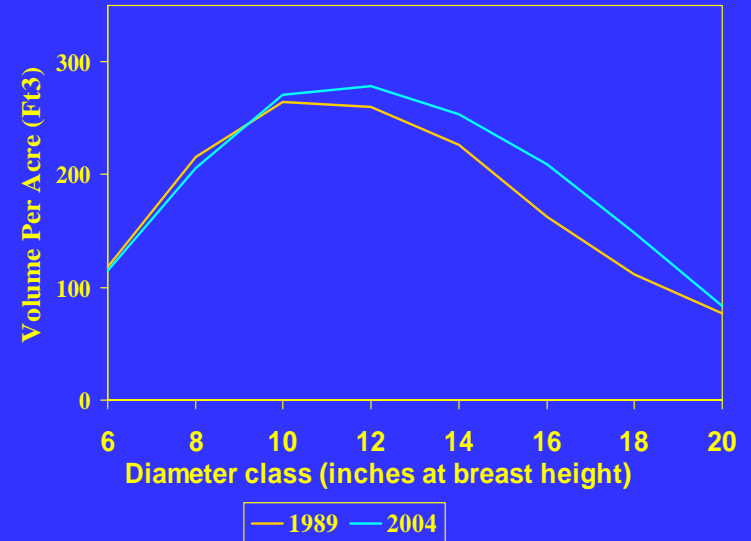
State avg. 1817 ft3/ac. +10.5%

Change in Volume by Diameter Class

Public

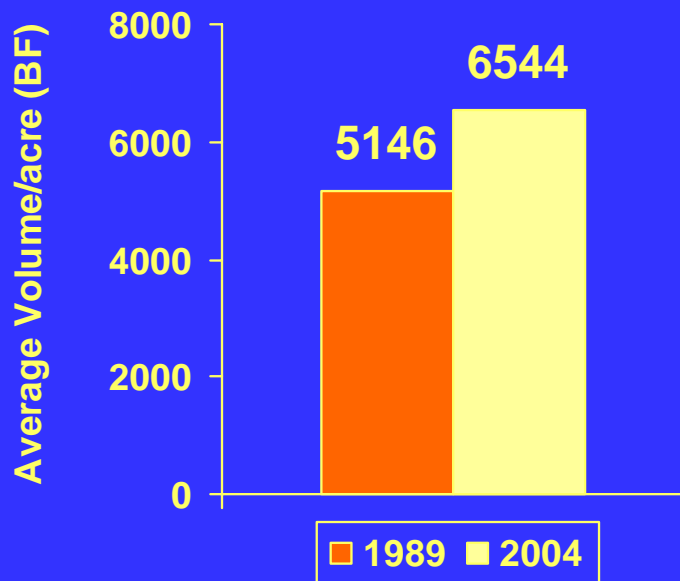


Private

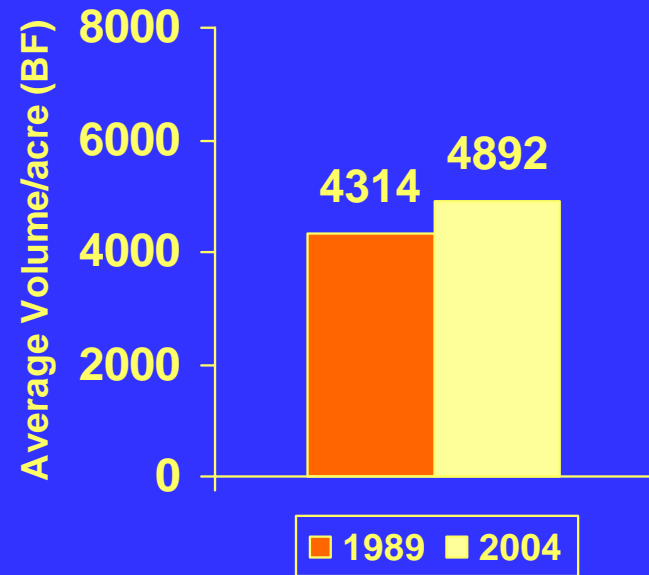


Sawtimber Volume Per Acre Public Vs. Private

Public +27.2%

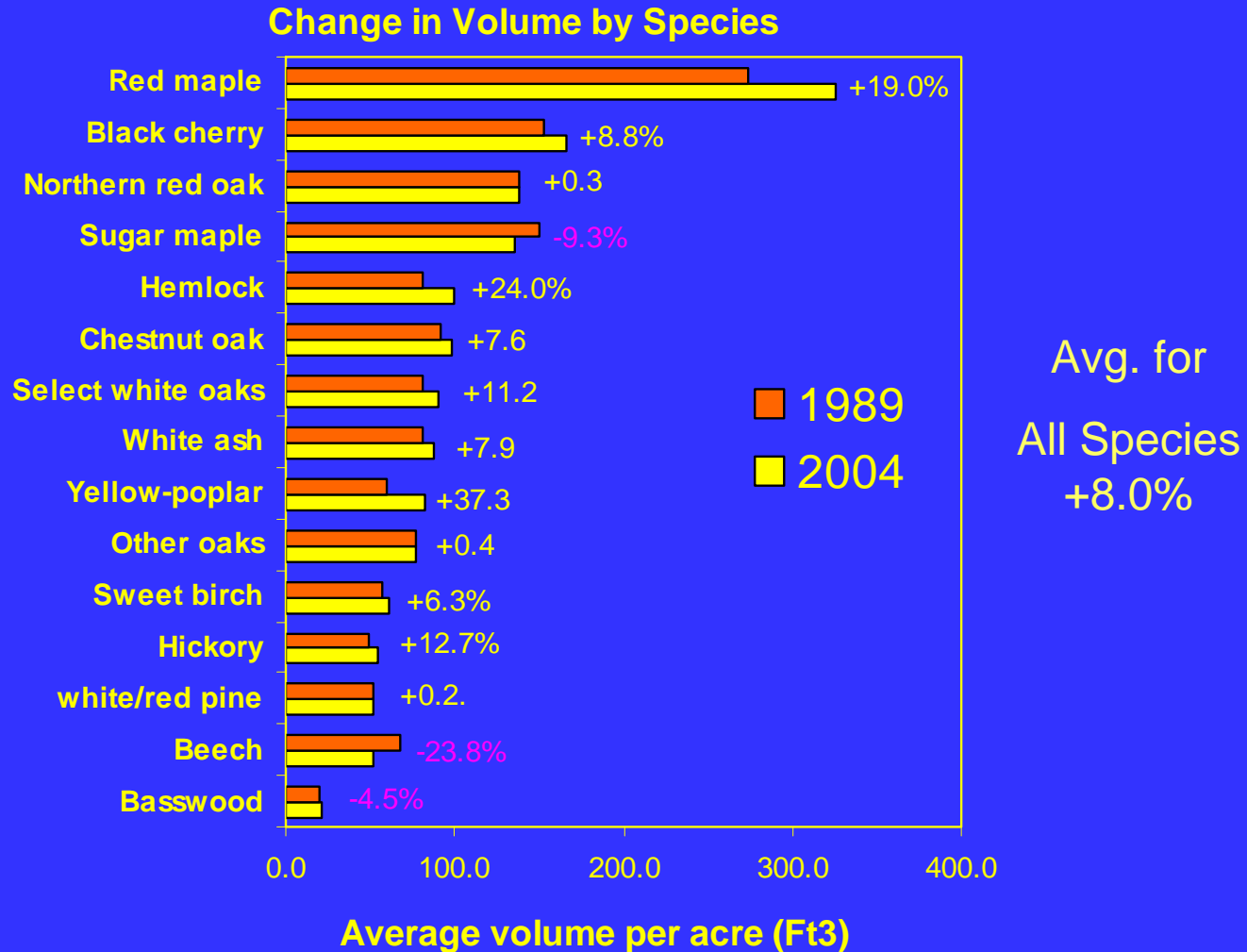


Private +13.4%

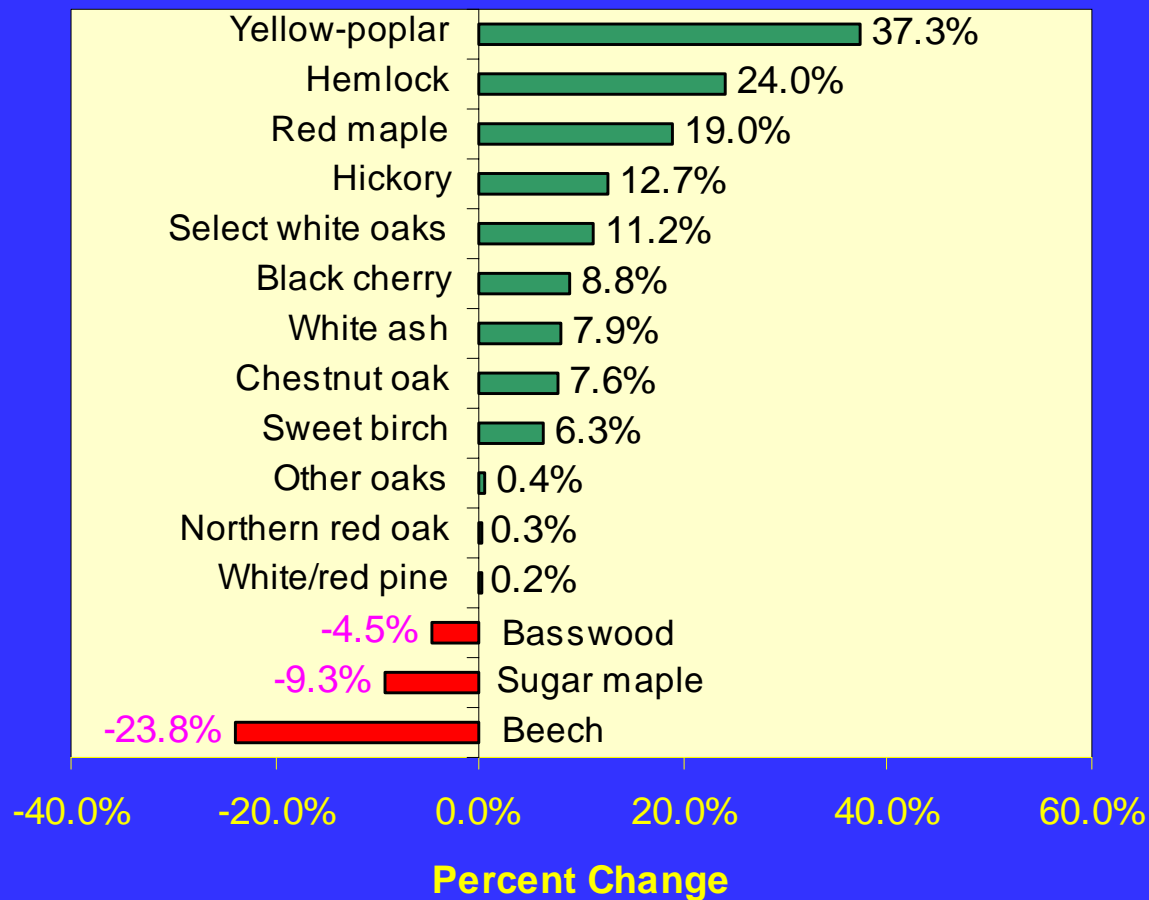


State avg. 5369 BF/ac. +19.2%

Red Maple Increased Lead In Volume On Private Timber Land (top 15 spp.)

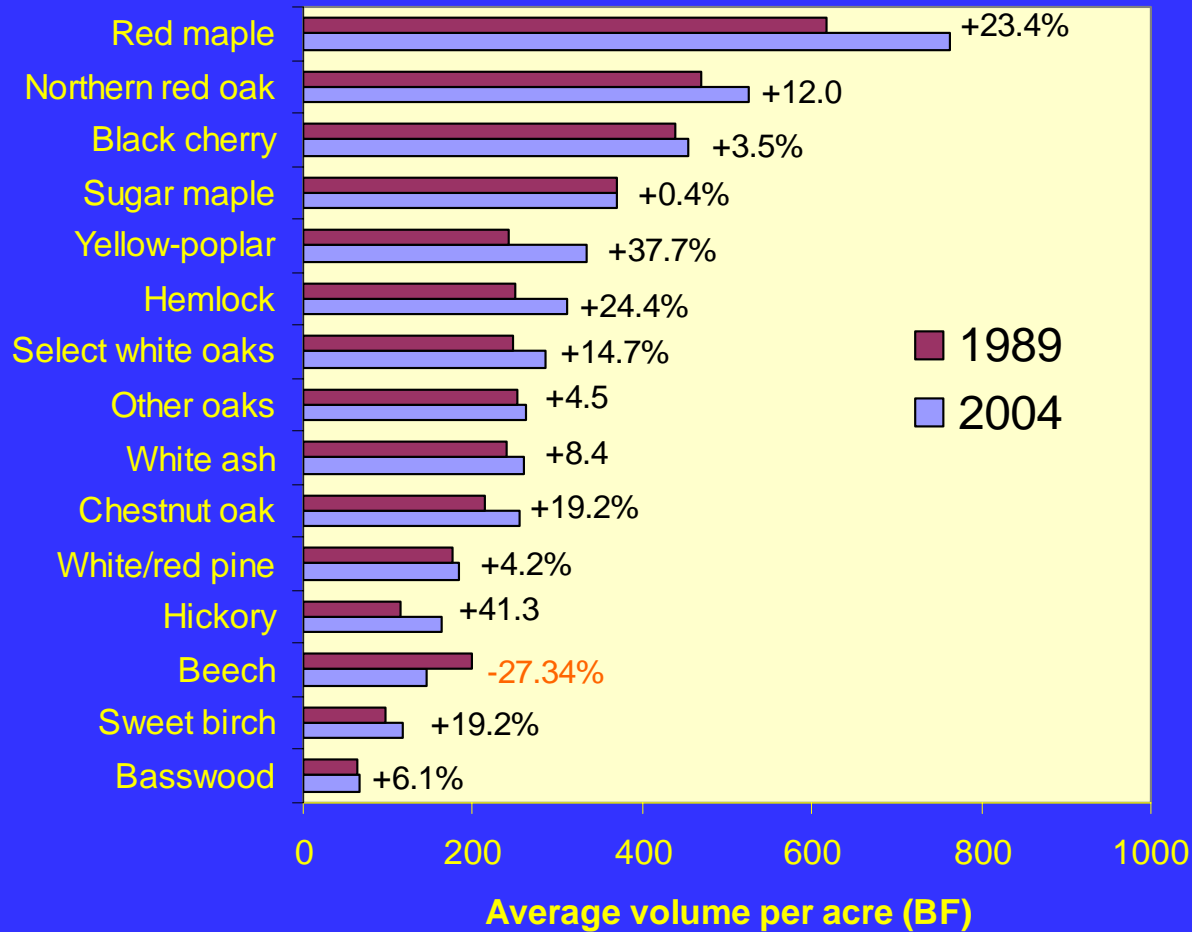


Change in Volume on Private Land, 1989-2004



Avg. for
All Species
+8.0%

Change in Board foot Volume on Private Timberland, 1989-2004 (top 15 spp.)



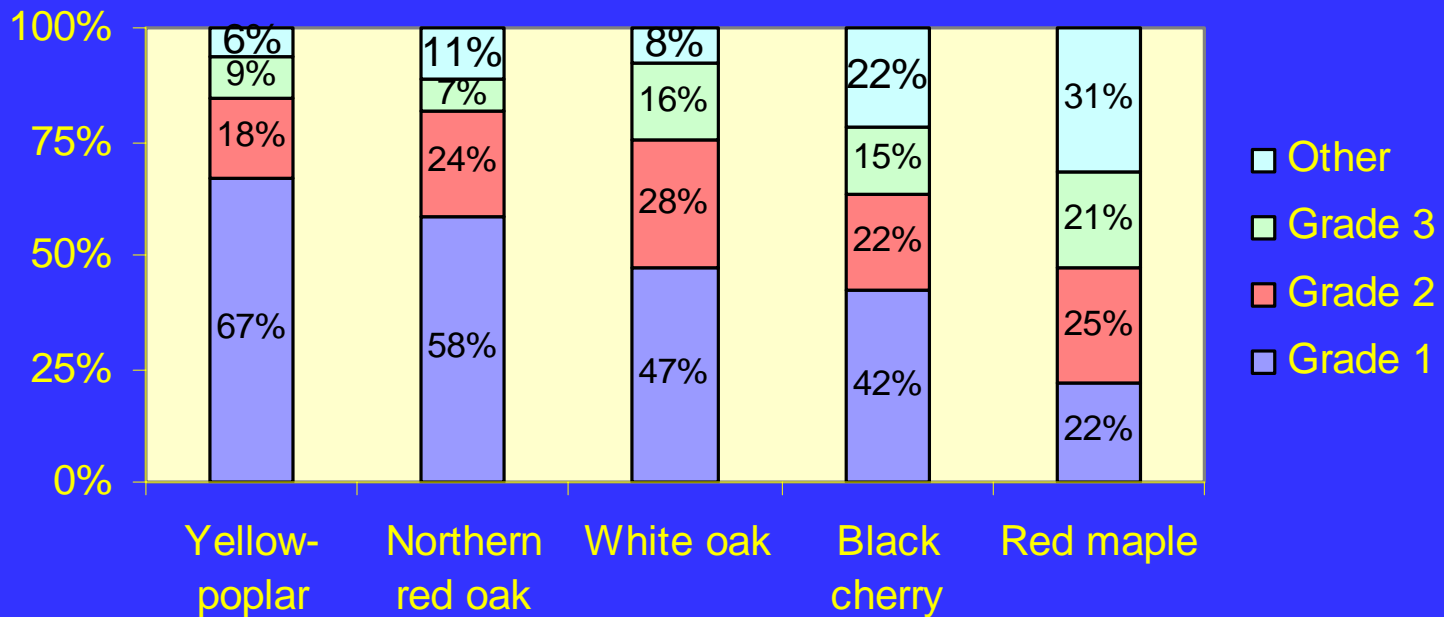
Avg. for
All Species
+13.4%

Composition on Private Timberland, 2004



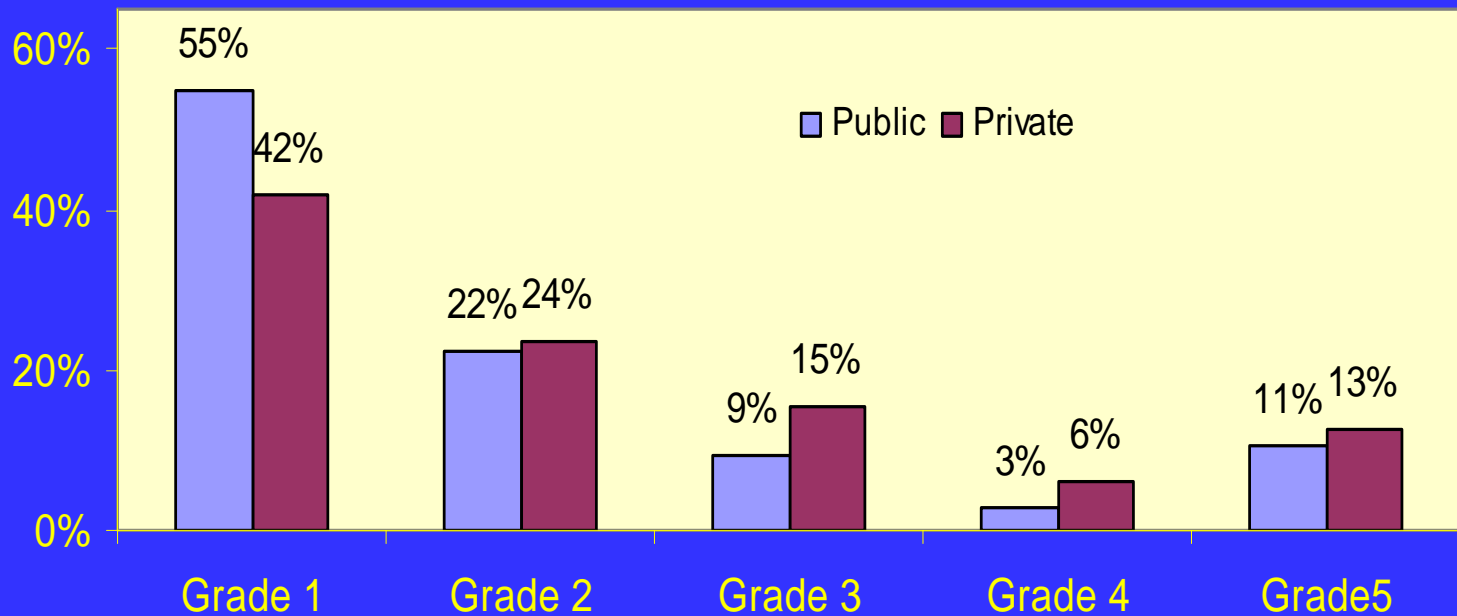
Quality Varies by Species

Percentage of Board Foot Volume by Tree Grade On Private Land Trees 15 + inches dbh

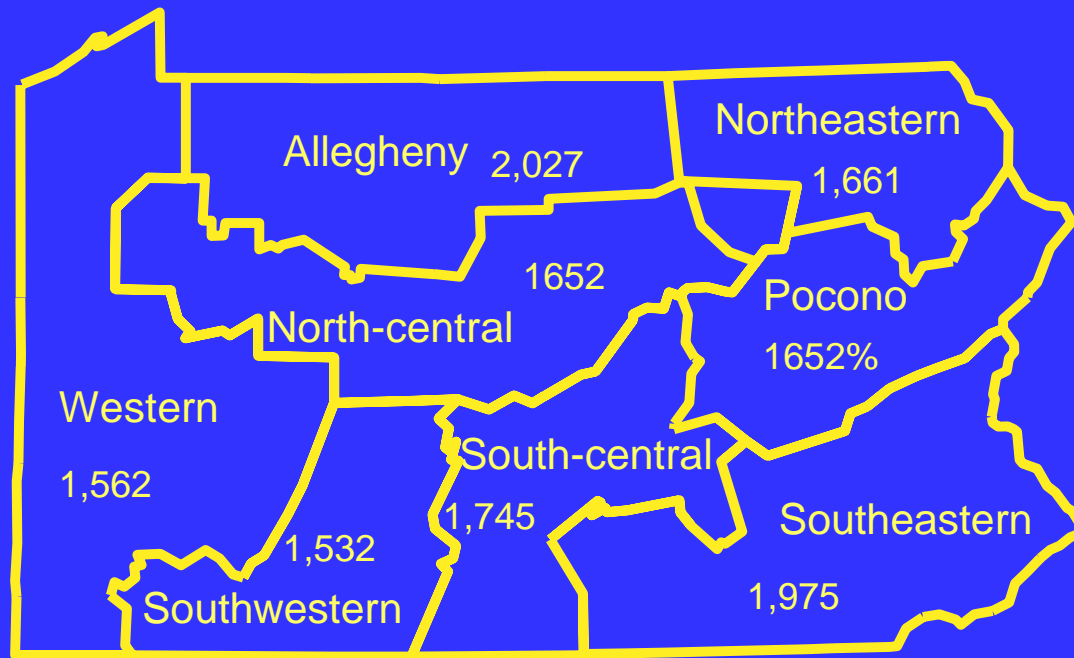


Timber Quality by Ownership

Distribution of Board Foot Volume by Tree Grade
Trees 15+ inches dbh



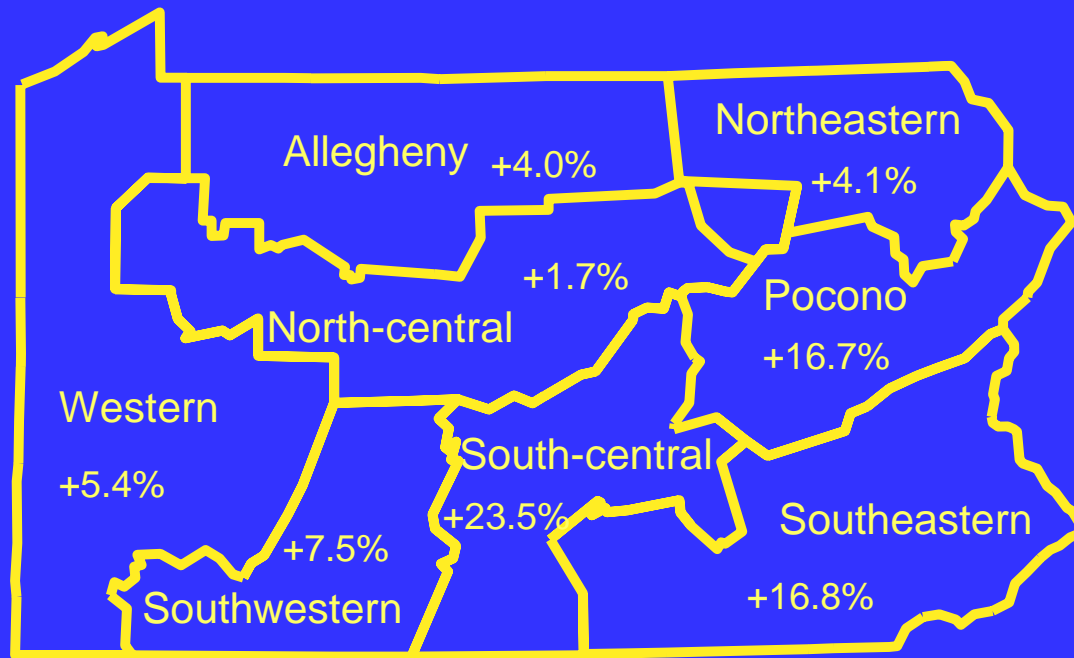
Growing-stock Volume/Acre on Private Timberland by Unit, 1989-2004



State Average

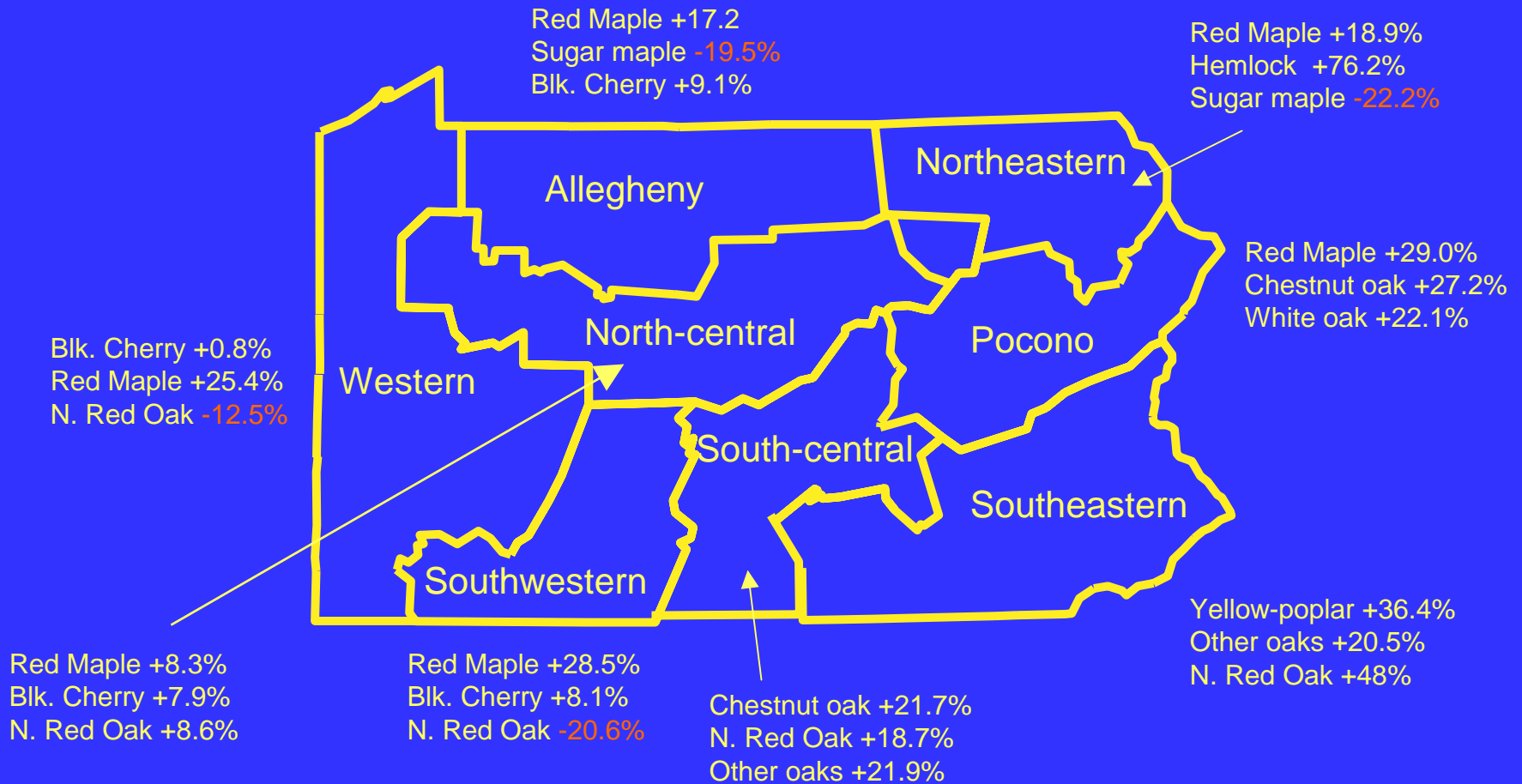
1,710 ft³/ac.

Change in Growing-stock Volume on Private Timberland by Unit, 1989-2004



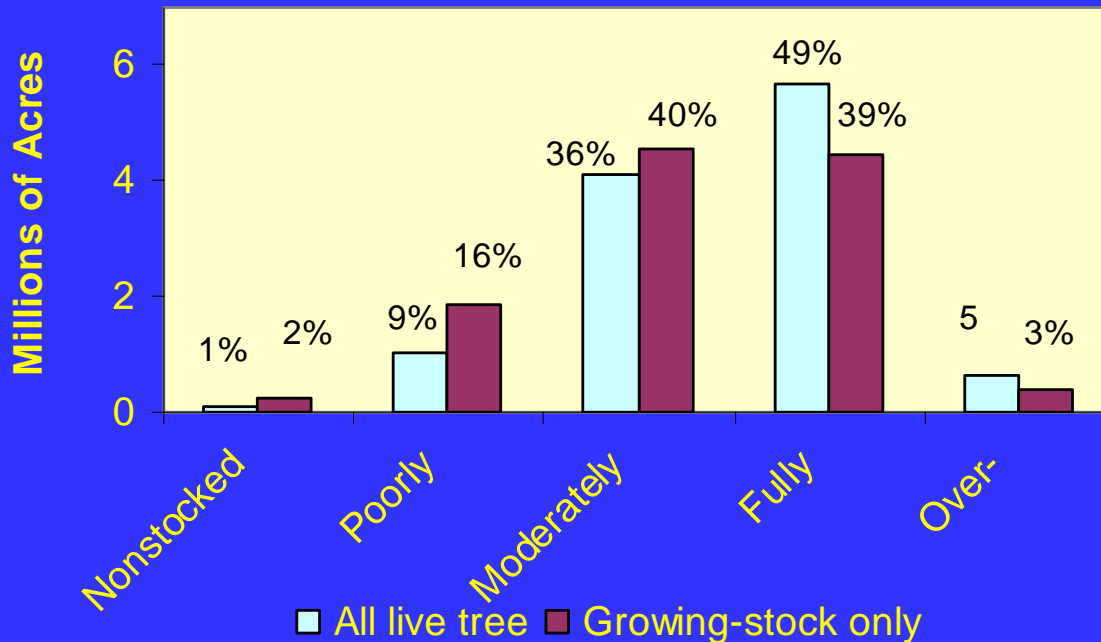
State Average +8.0%

Top Three Species on Private Timberland, by Unit, and Percent Increase 1989-2004



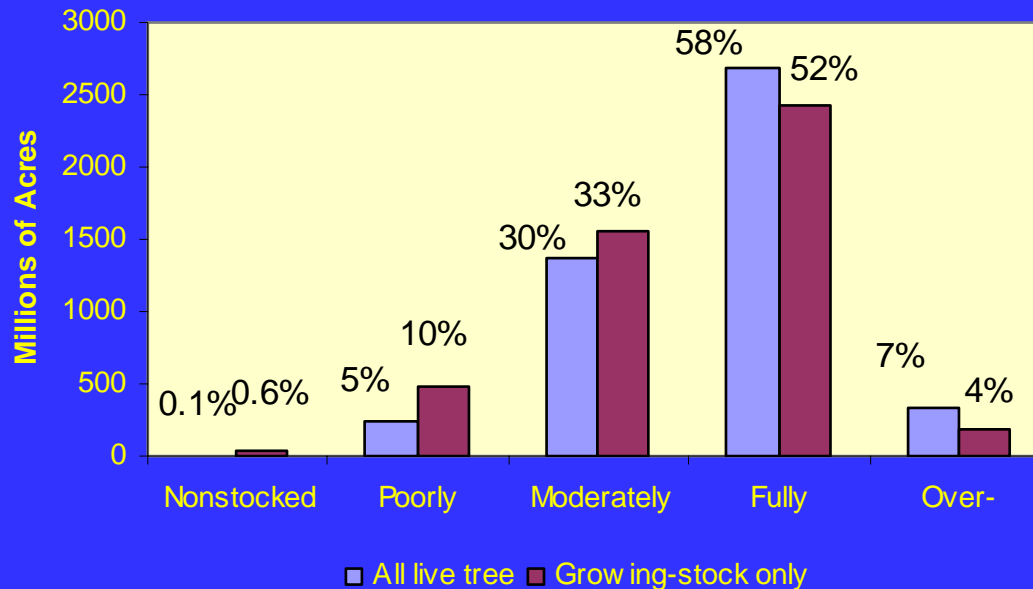
2 Million Acres of Poorly-stocked and Nonstocked Private Timberland

**Stocking Class of Private Timberland
(with percent of total)**



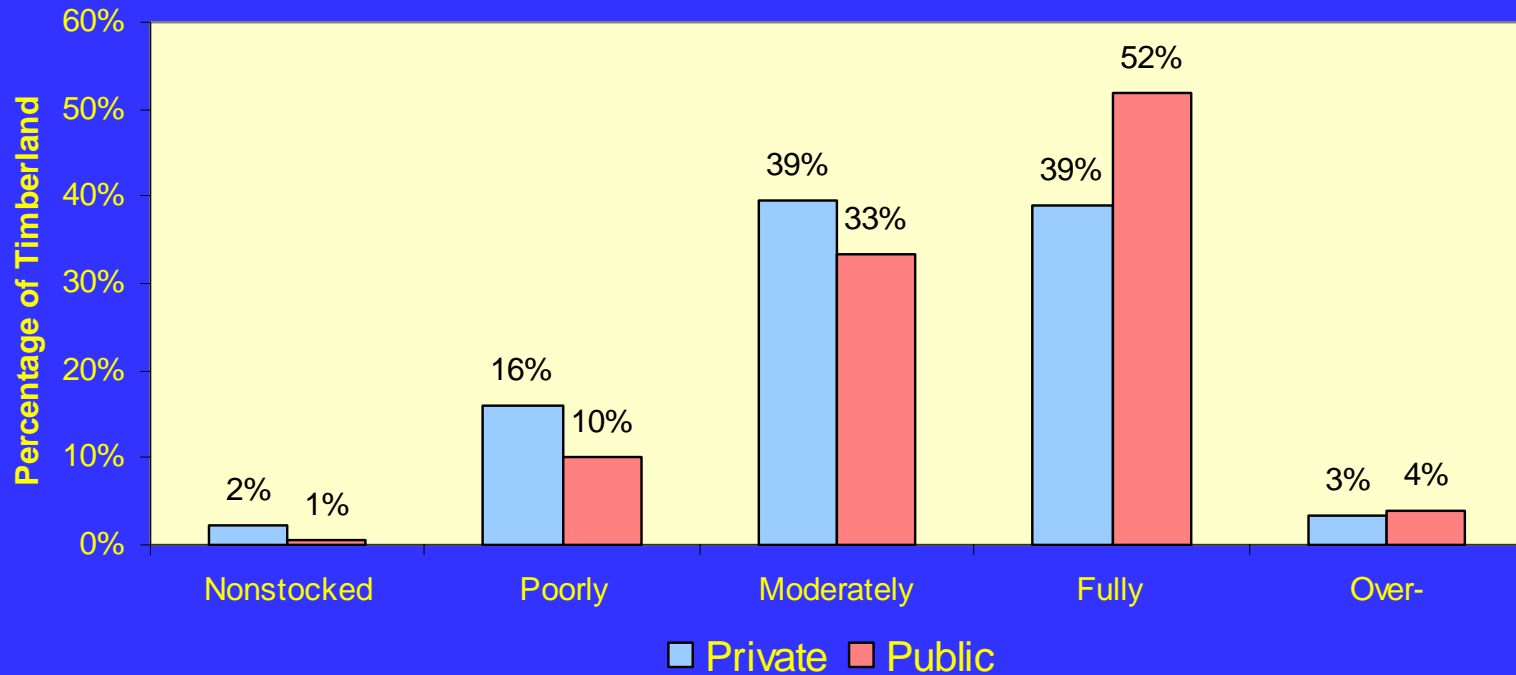
Half a Million Acres of Poorly-stocked and Nonstocked Public Timberland

**Stocking Class of Public Timberland
(with percent of total)**

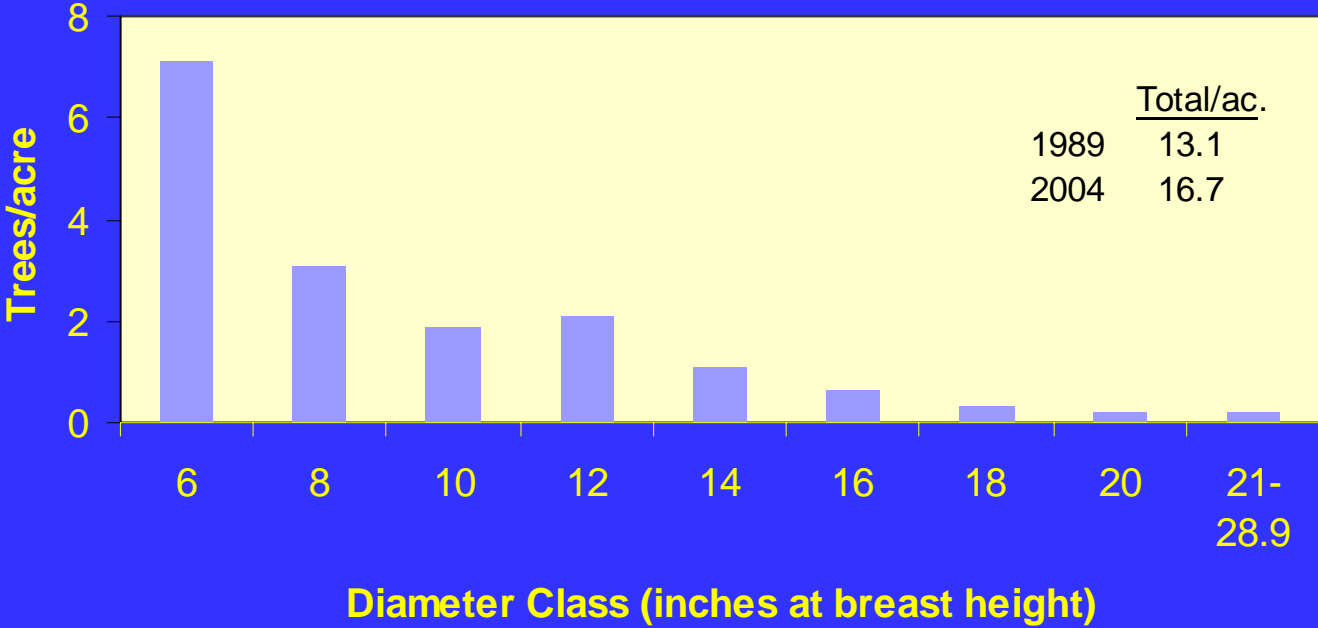


Higher Percentage of Fully Stocked Stands on Public Land.
Larger Percentage of Poorly Stocked Stands on Private Land.

Stocking Class Private VS. Public, 2004
(Stocking based on Growing-stock trees)



Cull Trees Per Acre of Private Timberland, 2004



Conclusion

- Because so much of the growth is on large trees our forests are increasing in value.
- But we're going to see less ingrowth into the sawtimber size class in the future, and much of the ingrowth that we do get has to go through a filtering process of increased competition.
- Up till now, we have been enjoying a wave of ingrowth into the sawtimber-size class. And like a surfer, surfing a wave, that's where all the fun is. But as that wave begins to flatten we're going to have to work harder to maintain desirable species.



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