

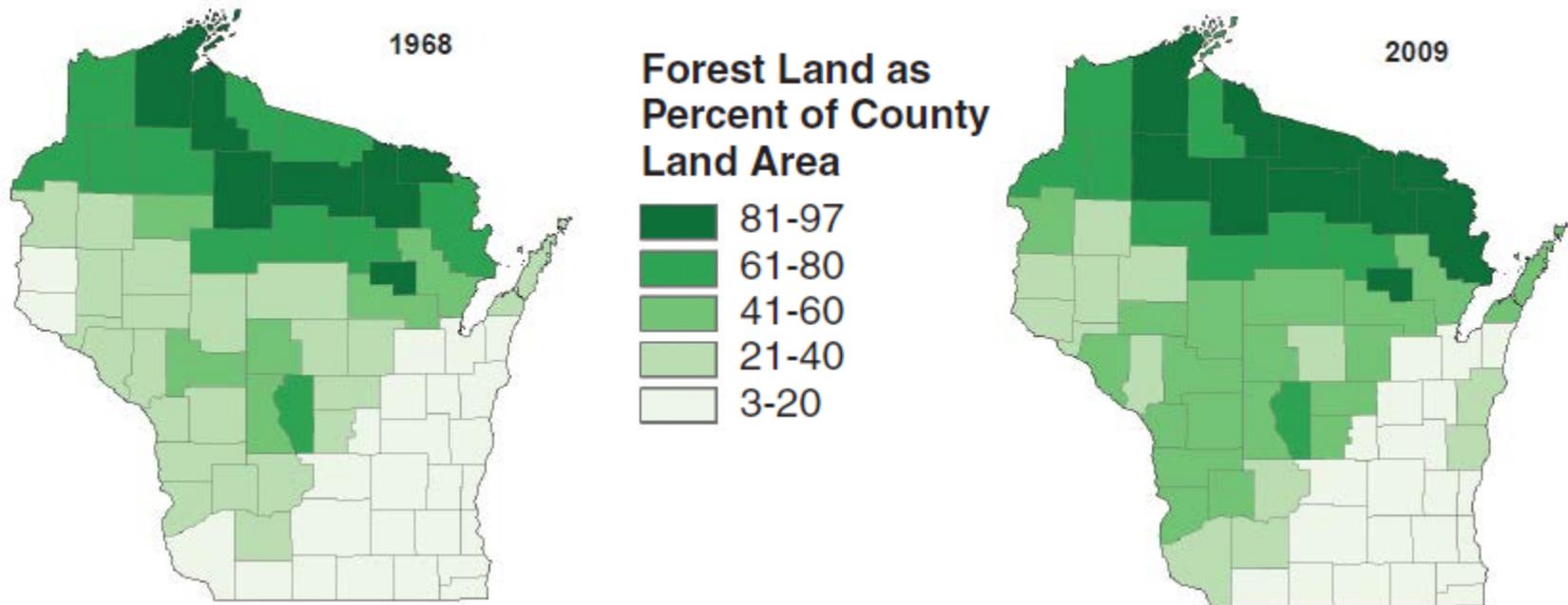
# Forest Management in Wisconsin Status and Trends

Paul DeLong  
Chief State Forester  
Wisconsin DNR

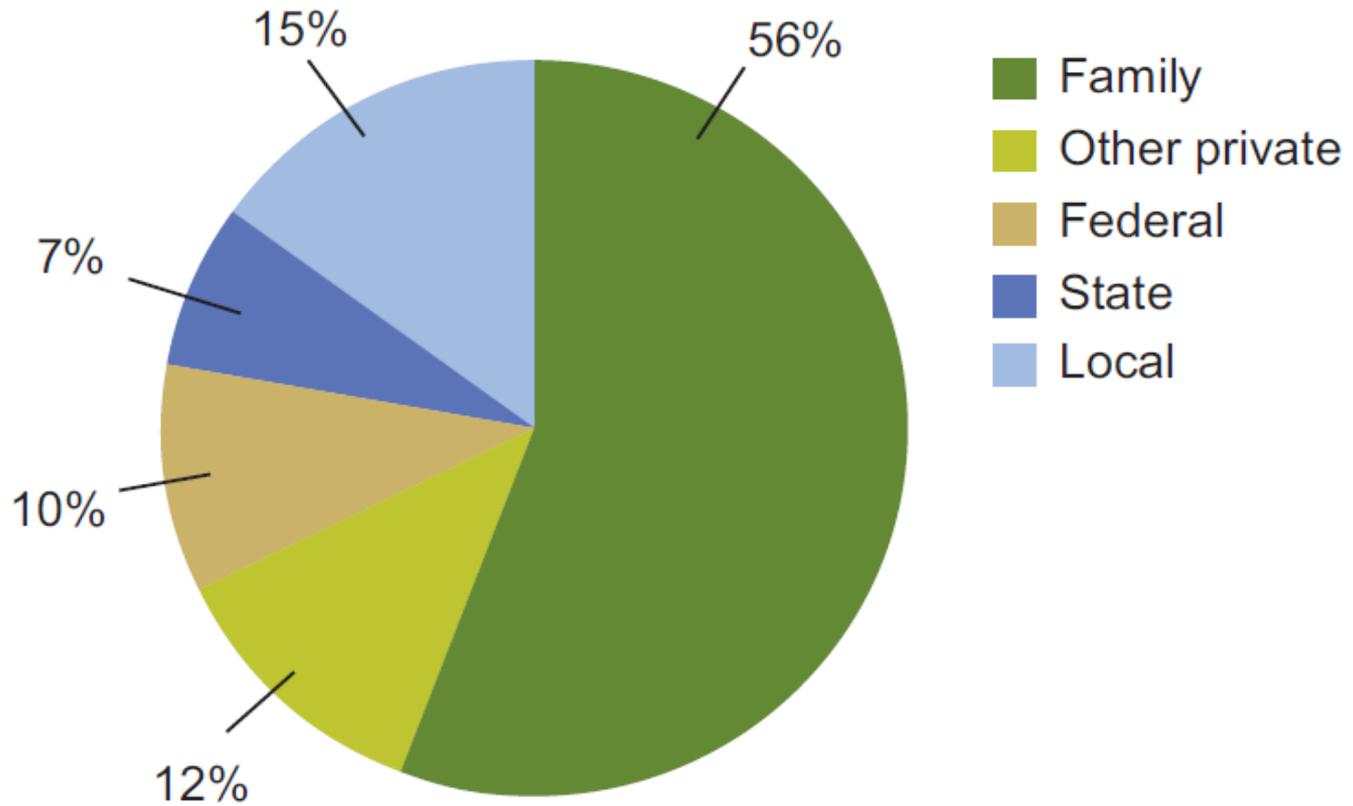


# Forest Area

- Forest land area has been steadily increasing since the 1960s
  - 16.8 million acres timberland
- Significant gains in central and southwestern WI



# Ownership



**Figure 11.**—Forest ownership, Wisconsin, 2006.

# Land-use Change

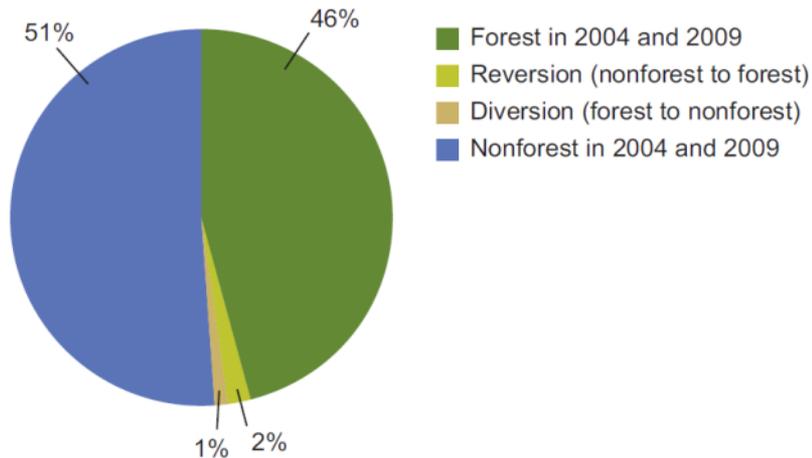


Figure 8.—Land-use change, Wisconsin, 2009.

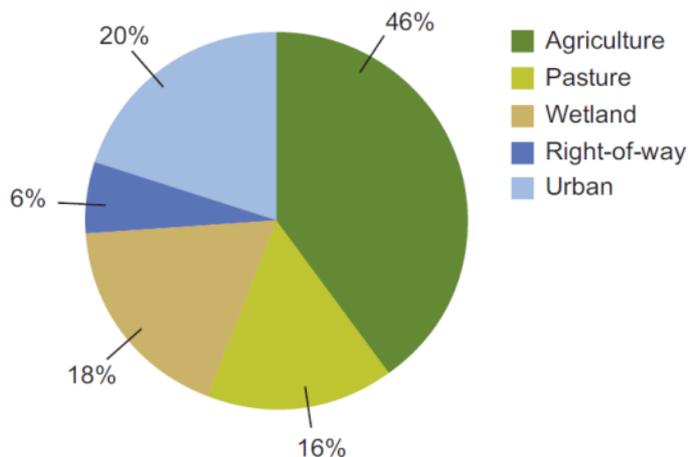
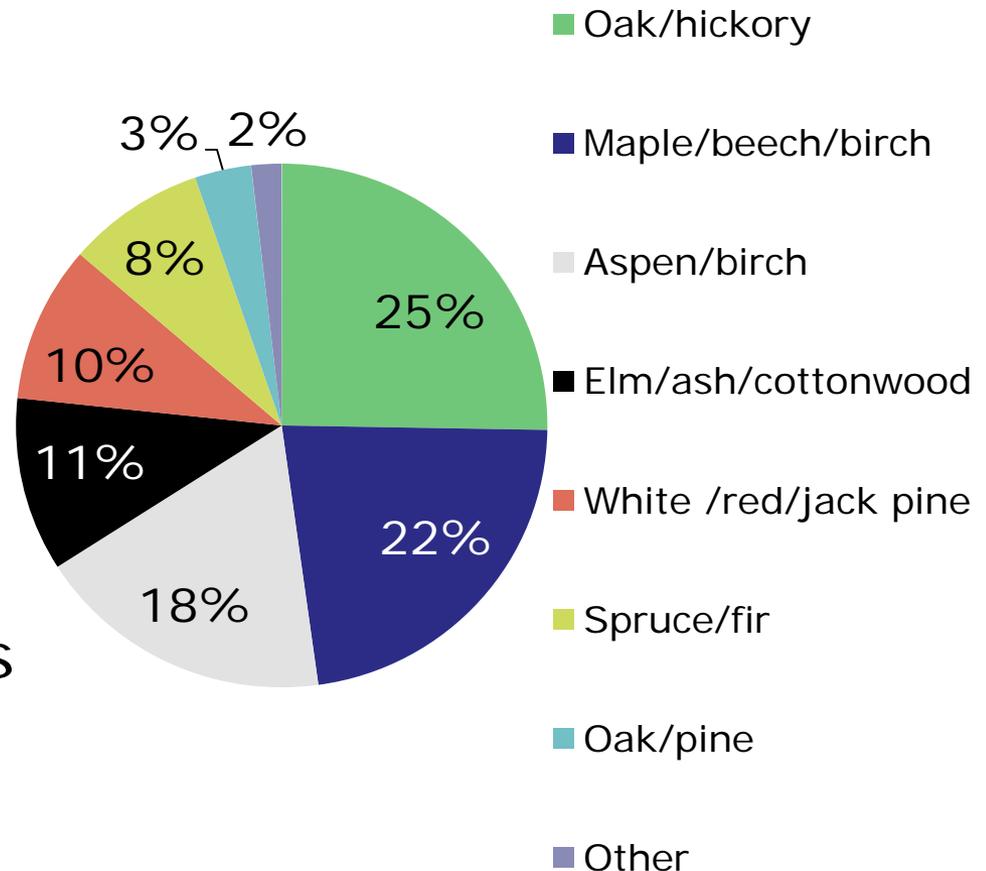


Figure 9.—Forest land reversions by previous land use, Wisconsin, 2009.

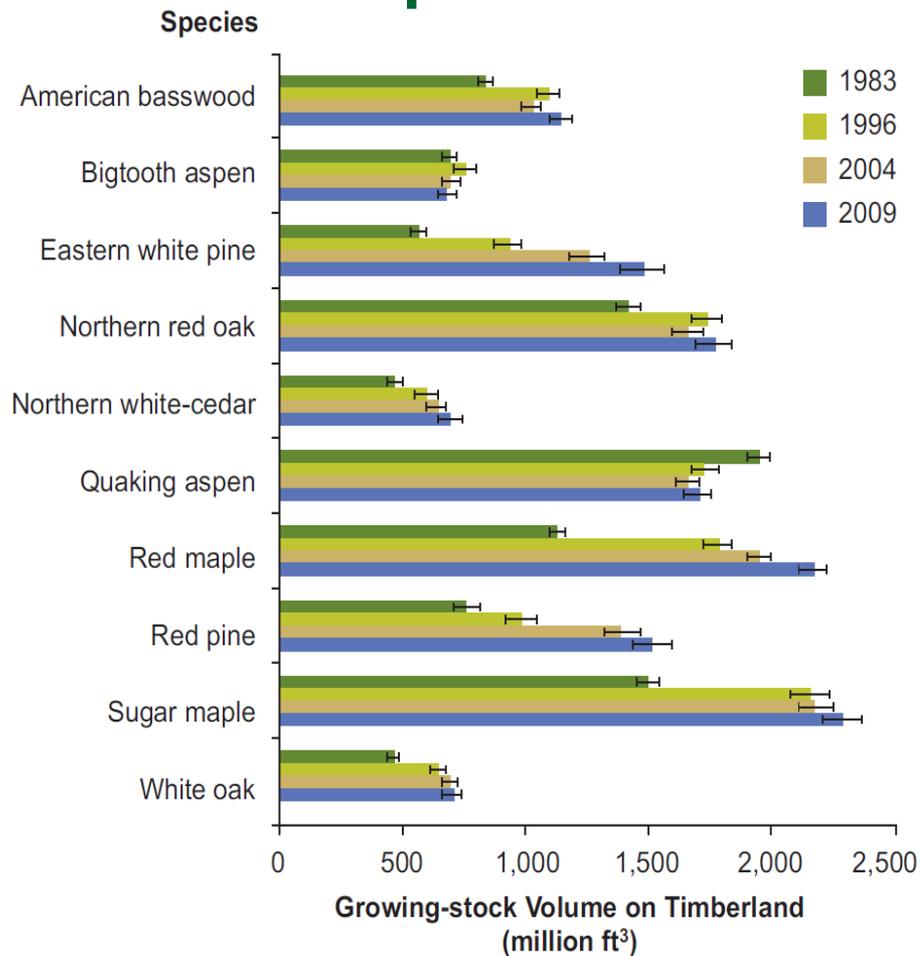
- 98% of forest in 2004 was forest in 2009.
- Diversions of forest land was offset by reversions resulting in 3.3% increase.
- 56% of reversions come from:
  - Ag (40%)
  - Pasture (16%)

# Forest Cover Types

- The acreage of pine and oak types have increased (5.5%) since 2004.
- Northern hardwood types have also increased (4.3%) since 2004.
- Aspen/birch type has decreased (-3.8%) since 2004.



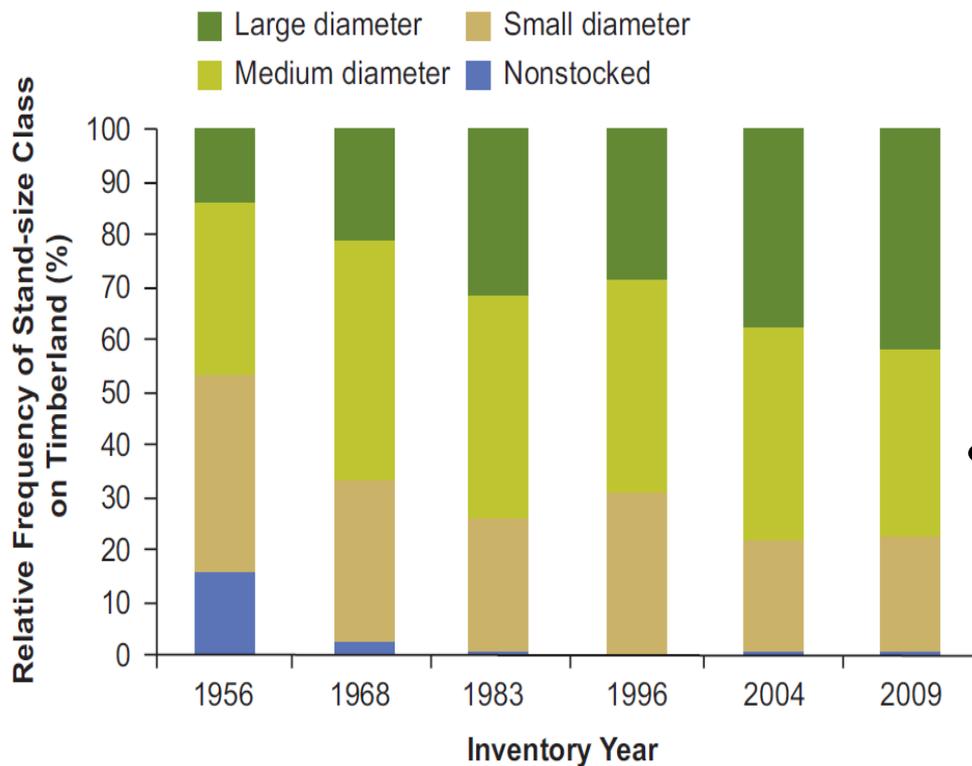
# Tree Species Composition Trends



- Aspen/birch continues to decline
- Maple/basswood continues to increase
- Oaks are slowly increasing but age-class disparity continues

**Figure 20.**—Volume of growing-stock trees on timberland by inventory year, Wisconsin. Error bars show the 68 percent confidence interval.

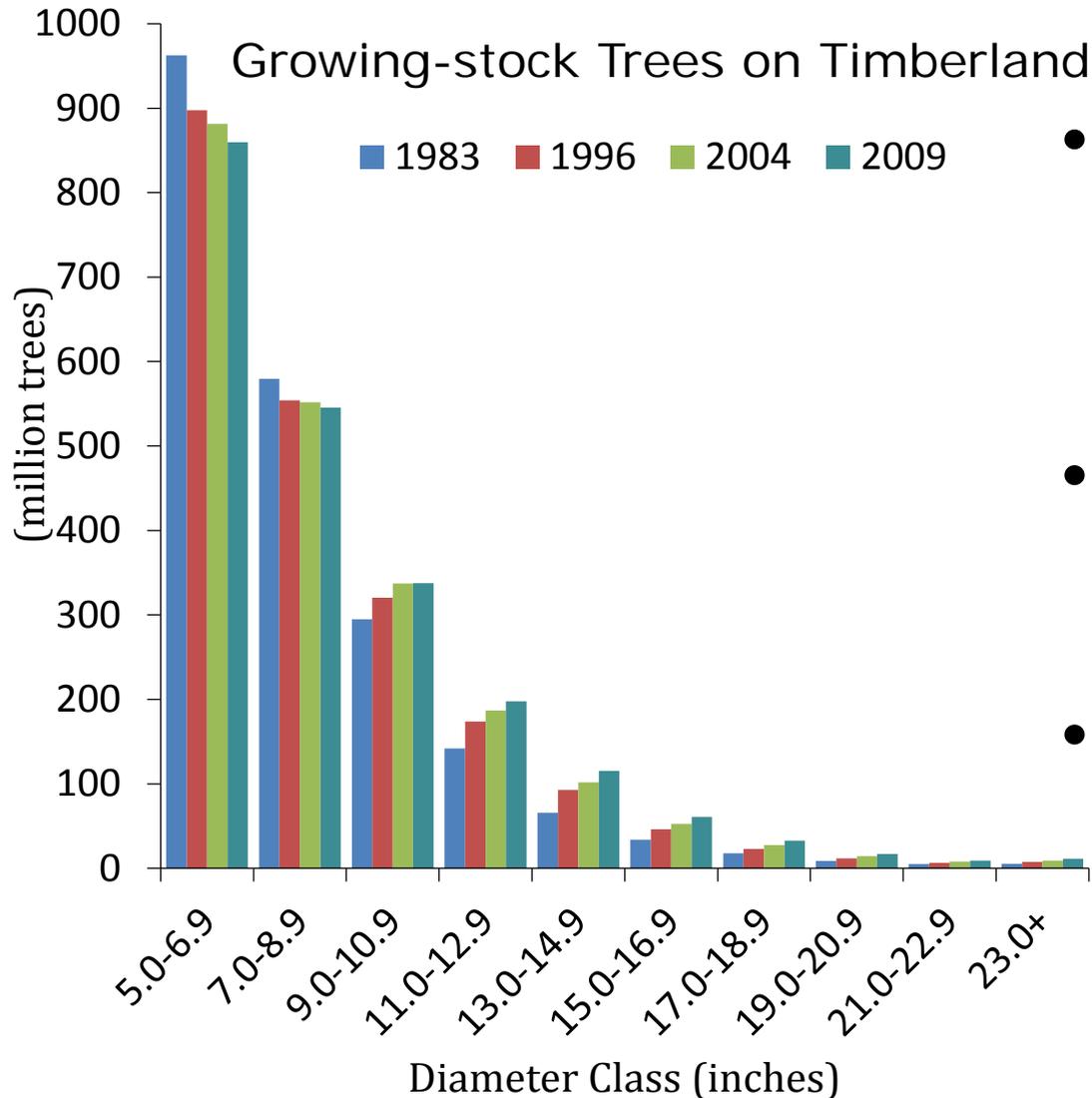
# Growth in Girth



**Figure 42.**—Relative frequency of stand size-class on timberland by inventory year, Wisconsin.

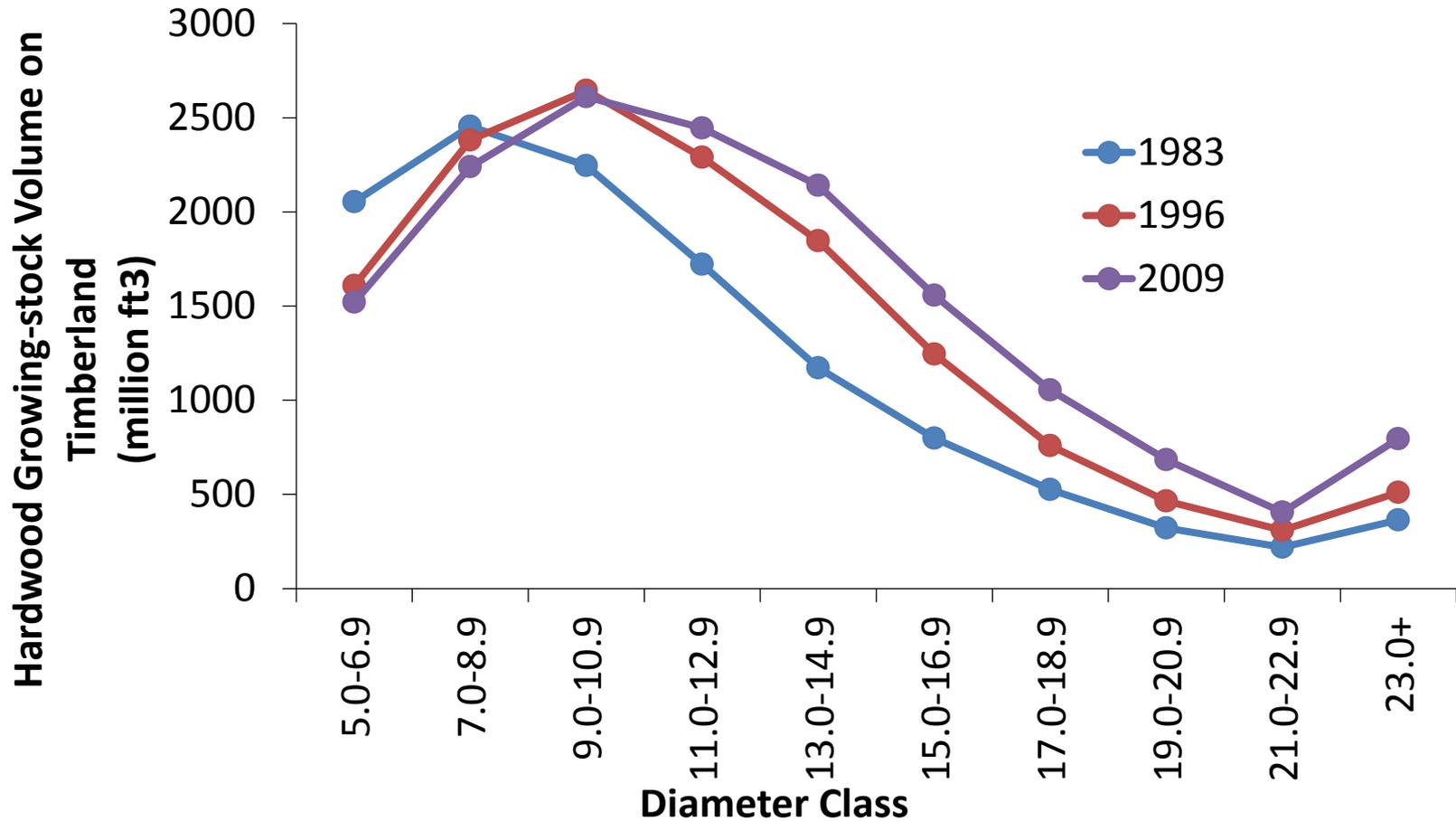
- Amount of small diameter stand-size class is declining
  - 38% in 1956 to 21% in 2009
- Large diameter size class has increased dramatically
  - 14% in 1956 to 42% in 2009

# Size Class Distribution

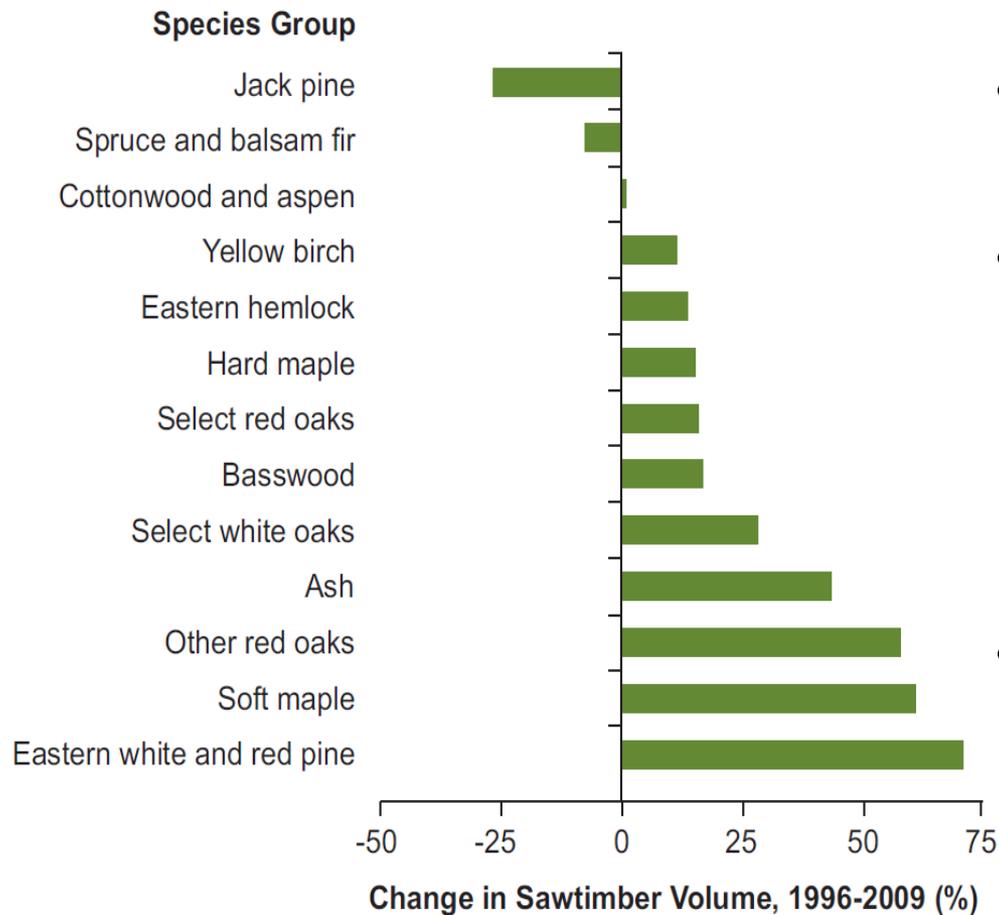


- The number of large trees (over 23" d.b.h.) has increased 115% since 1983
- Smaller growing stock trees (5-9") has decreased by 9%
- $\uparrow$  Volume and  $\downarrow$  Density reflects maturing forest

# Hardwood Growing Stock Volume



# Sawtimber Volume

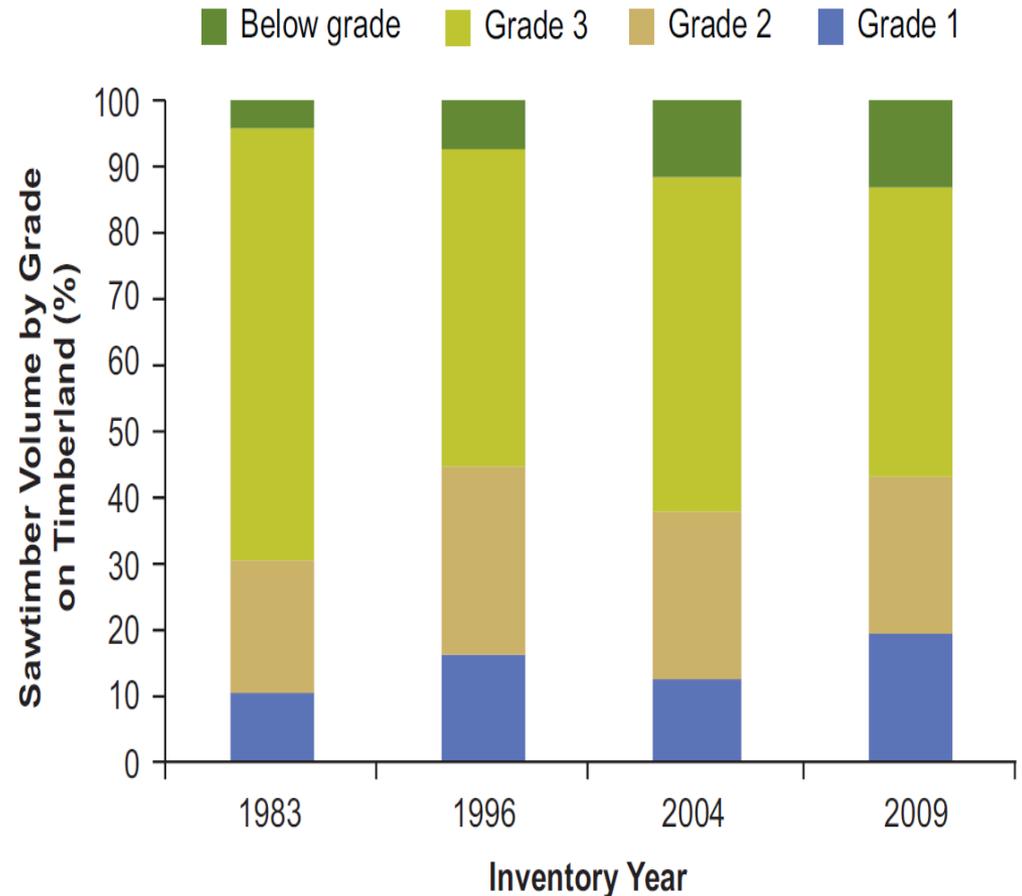


- Sawtimber volume is generally increasing.
- White and red pine showing the largest increase, mostly due to maturing pine forests.
- Increasing soft maple is a trend across the lake states.

**Figure 78.**—Change in sawtimber volume on timberland by species group and inventory year, Wisconsin.

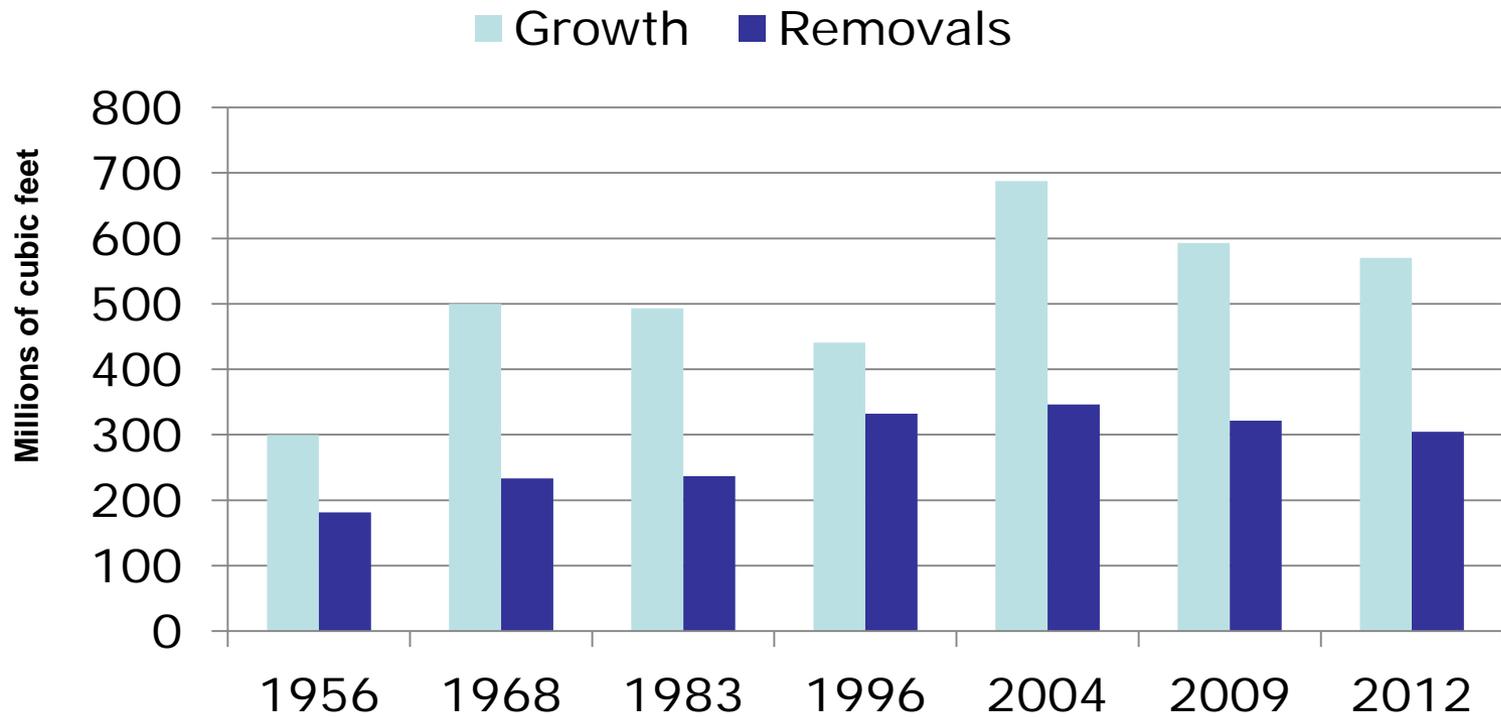
# Sawtimber Quality

- Overall all grades increased in volume.
- However, Below grade and Grade 1 increased more thus “squeezing” Grades 2 and 3.
- There are regional variations, which we are starting to explore.



**Figure 80.**—Distribution of sawtimber volume on timberland by grade and inventory year, Wisconsin.

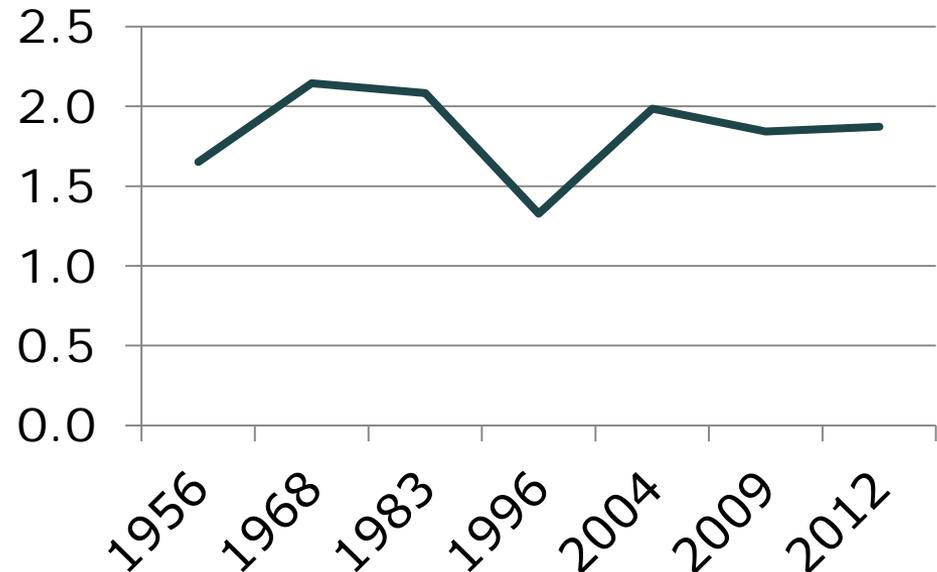
# Growth and Removals



# Growth and Removals Ratio

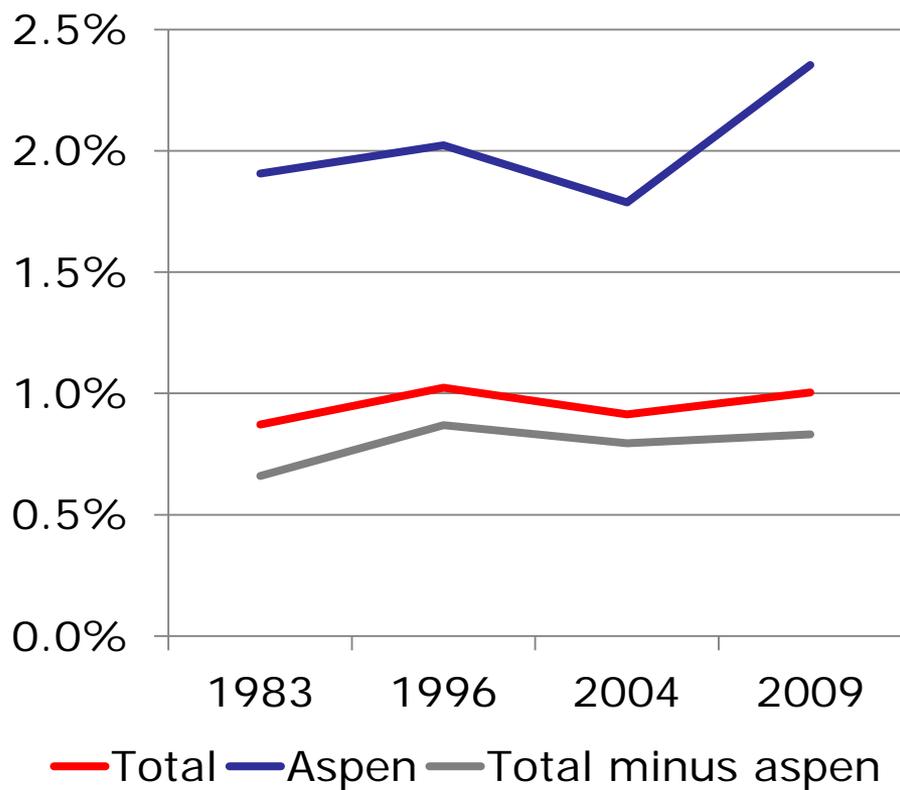
- Annual Growth/Removal ratio of growing-stock trees is relatively stable from 1956-2009.
- Net annual growth exceeds removals
- Varies across ownerships and species

Growth to removal ratio

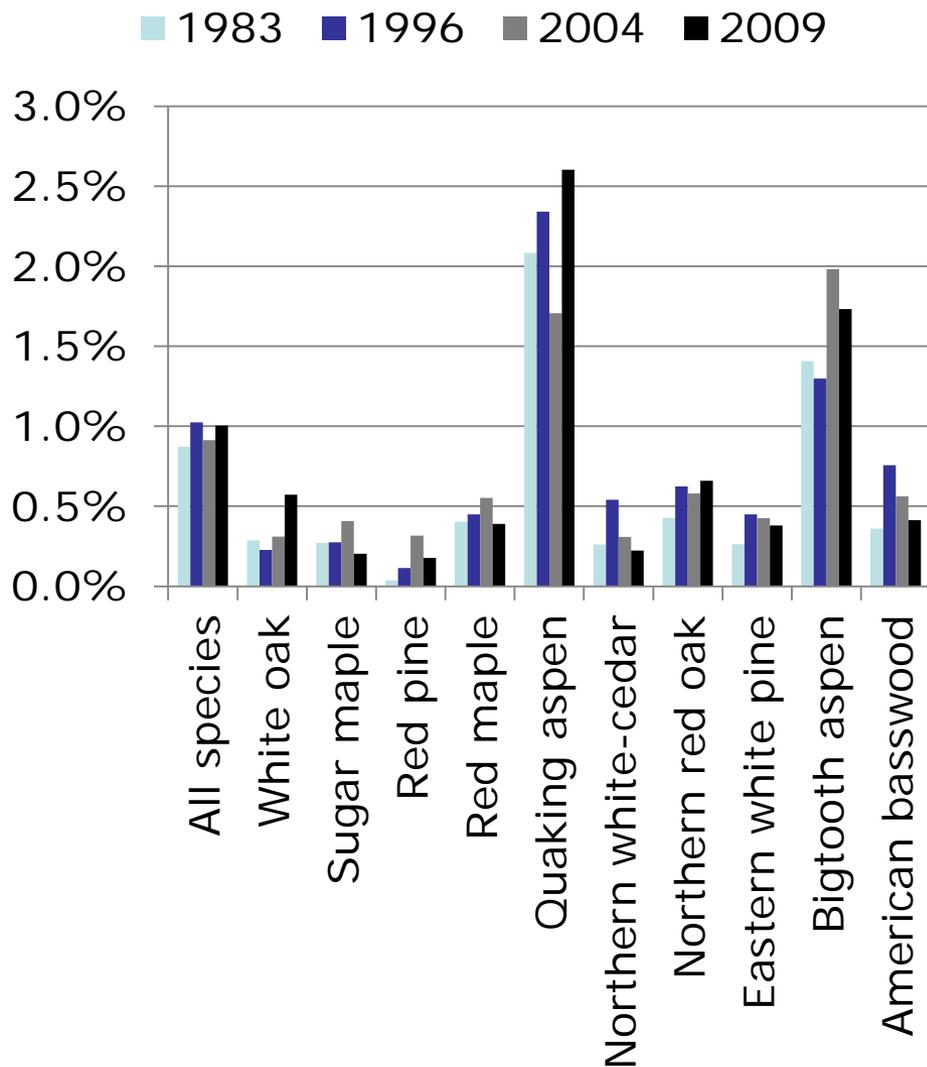


Ownership	Ratio
County	1.5
Private	1.9
State	2.8
National	4.7

# Mortality



Average annual mortality of growing-stock trees (% volume) on timberland by inventory year.



# Forest Management

## Diverse Objectives

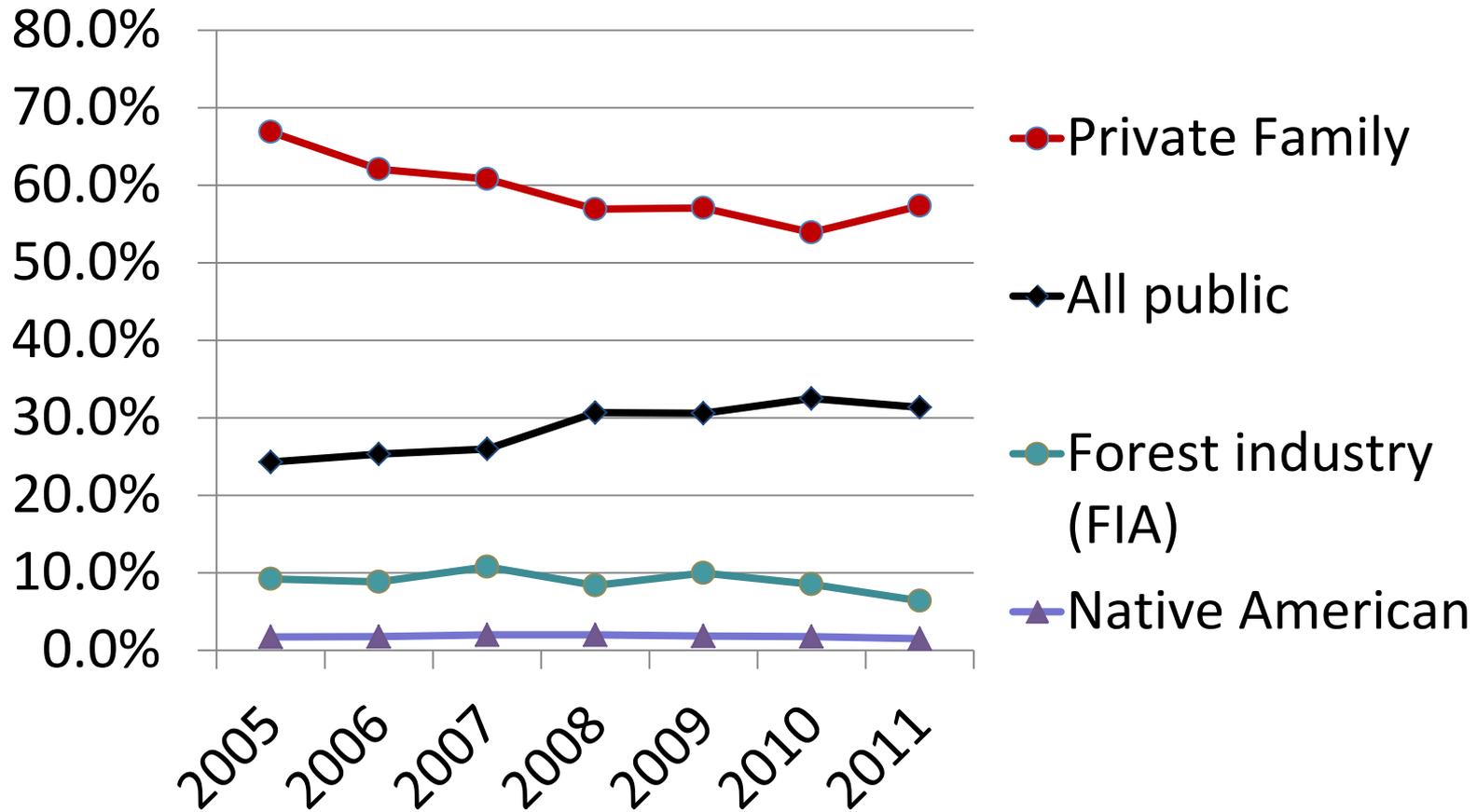


# Management by Ownership

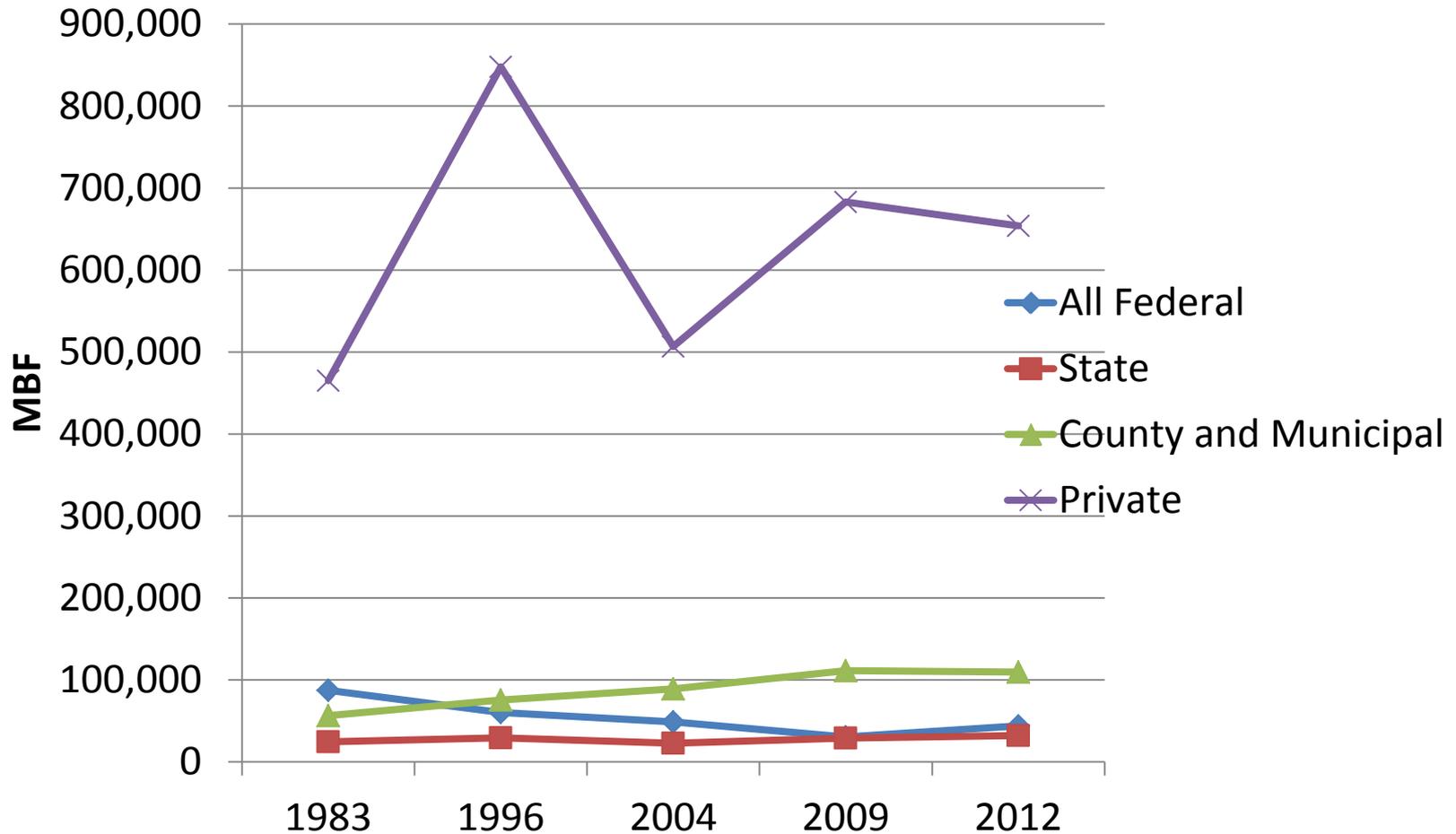
- County Lands
- State Lands
  - Board of Commissioners of Public Lands
  - DNR
- National Forest
- Native American
- Private
  - MFL
  - REITs/TIMOs
  - Family Forests



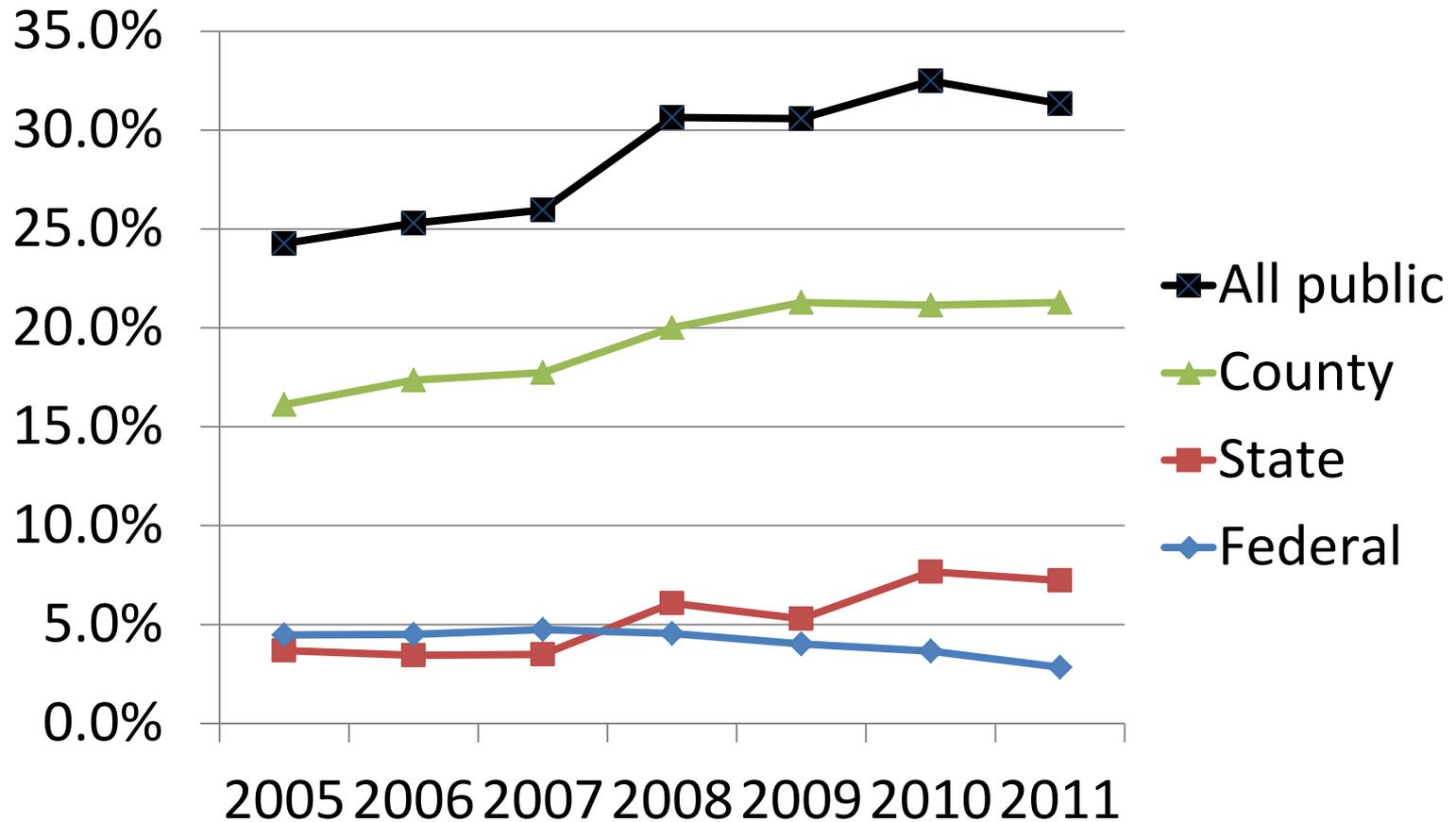
# Removals by Ownership



# Sawlog Removals (FIA)

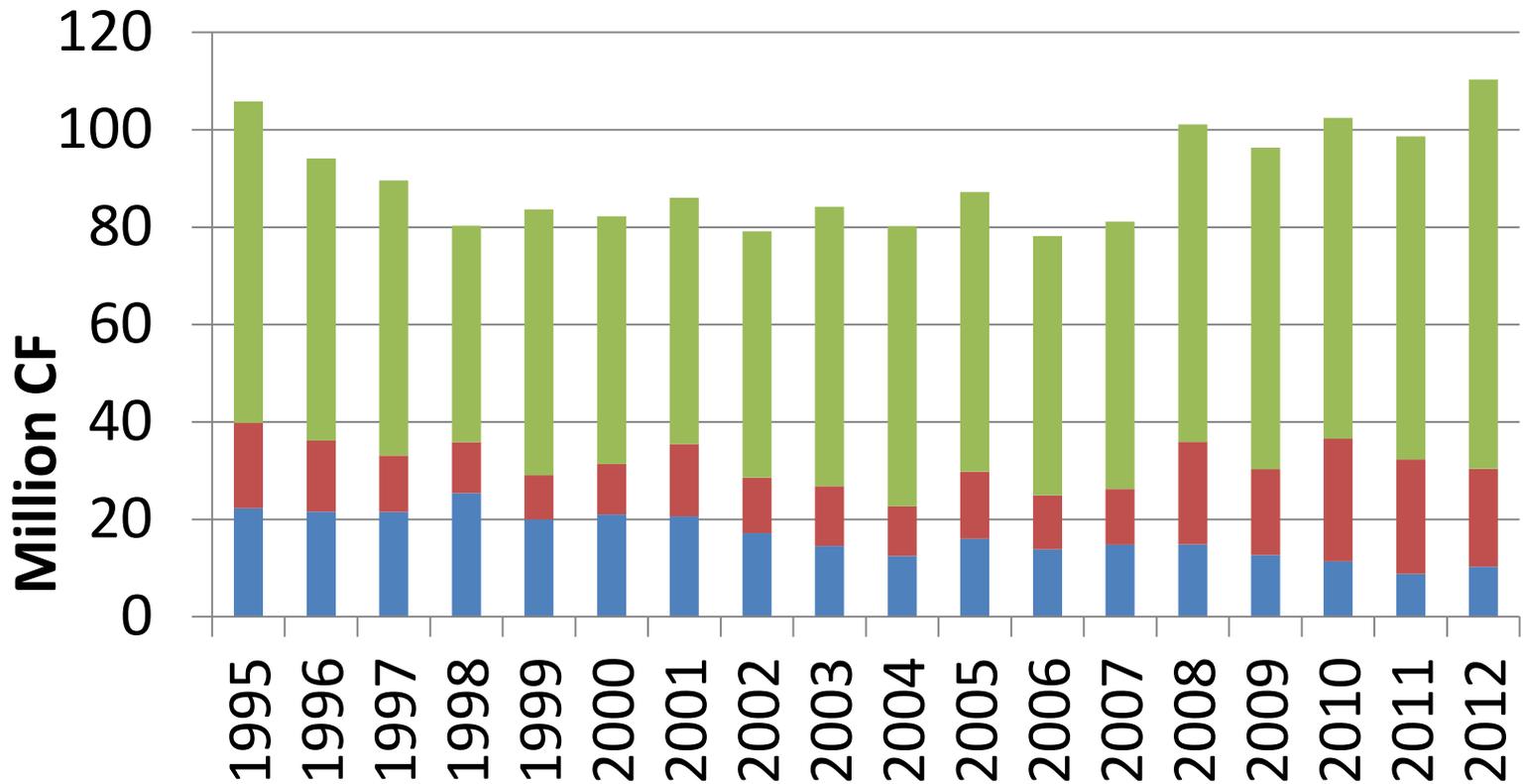


# Public Lands % of Removals



# Public Lands Harvest

Federal State County



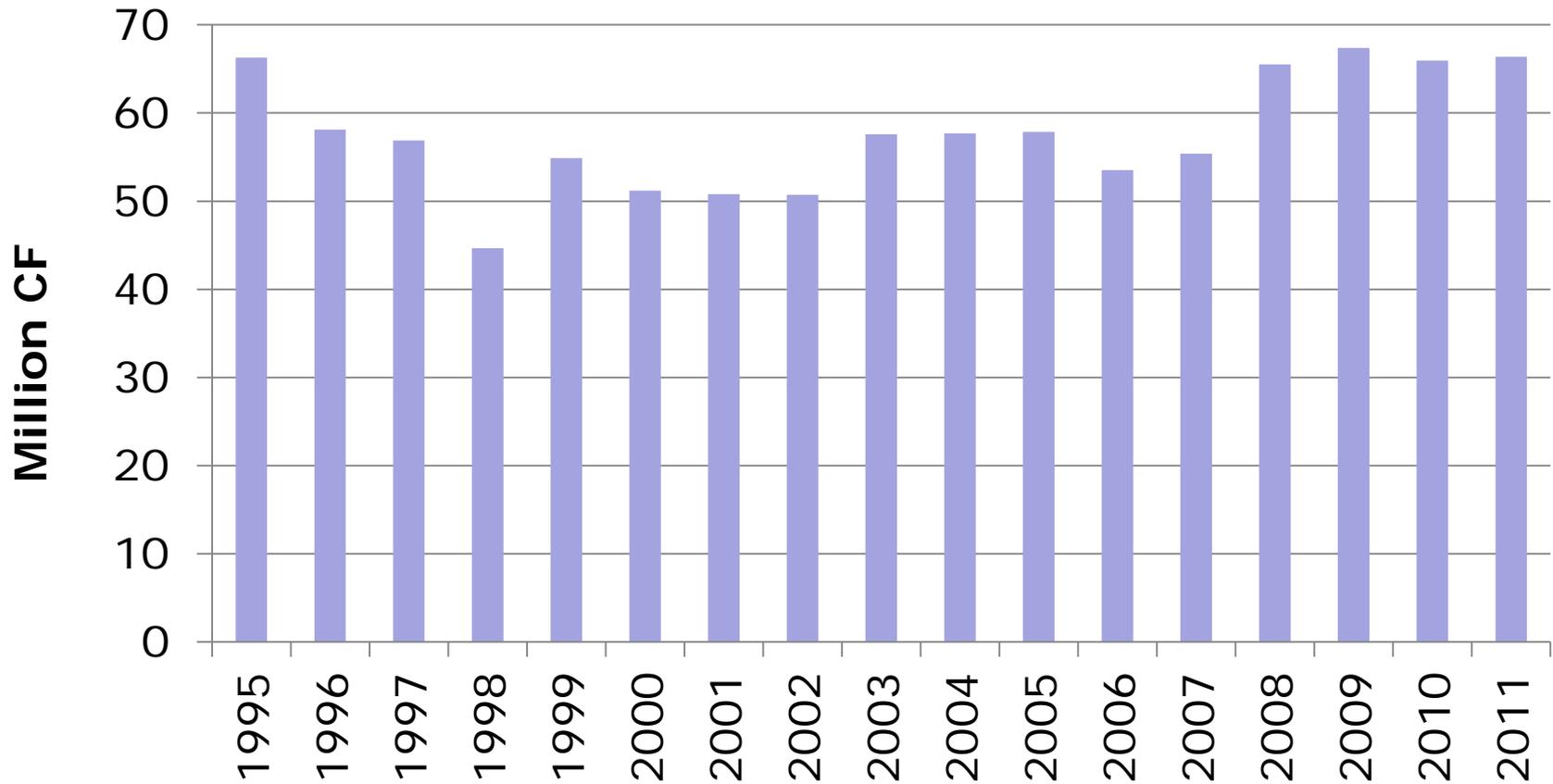


# County Forests

- *County Forest Law State Statute: 28.10*
- PURPOSE. ...management of the county forests for **optimum production of forest products together with recreational opportunities, wildlife, watershed protection and stabilization of stream flow, giving full recognition to the concept of multiple-use to assure maximum public benefits**; to protect the public rights, interests and investments in such lands; and to compensate the counties for the public uses, benefits and privileges these lands provide; all in a manner which will provide a reasonable revenue to the towns in which such lands lie.



# County Harvest Levels



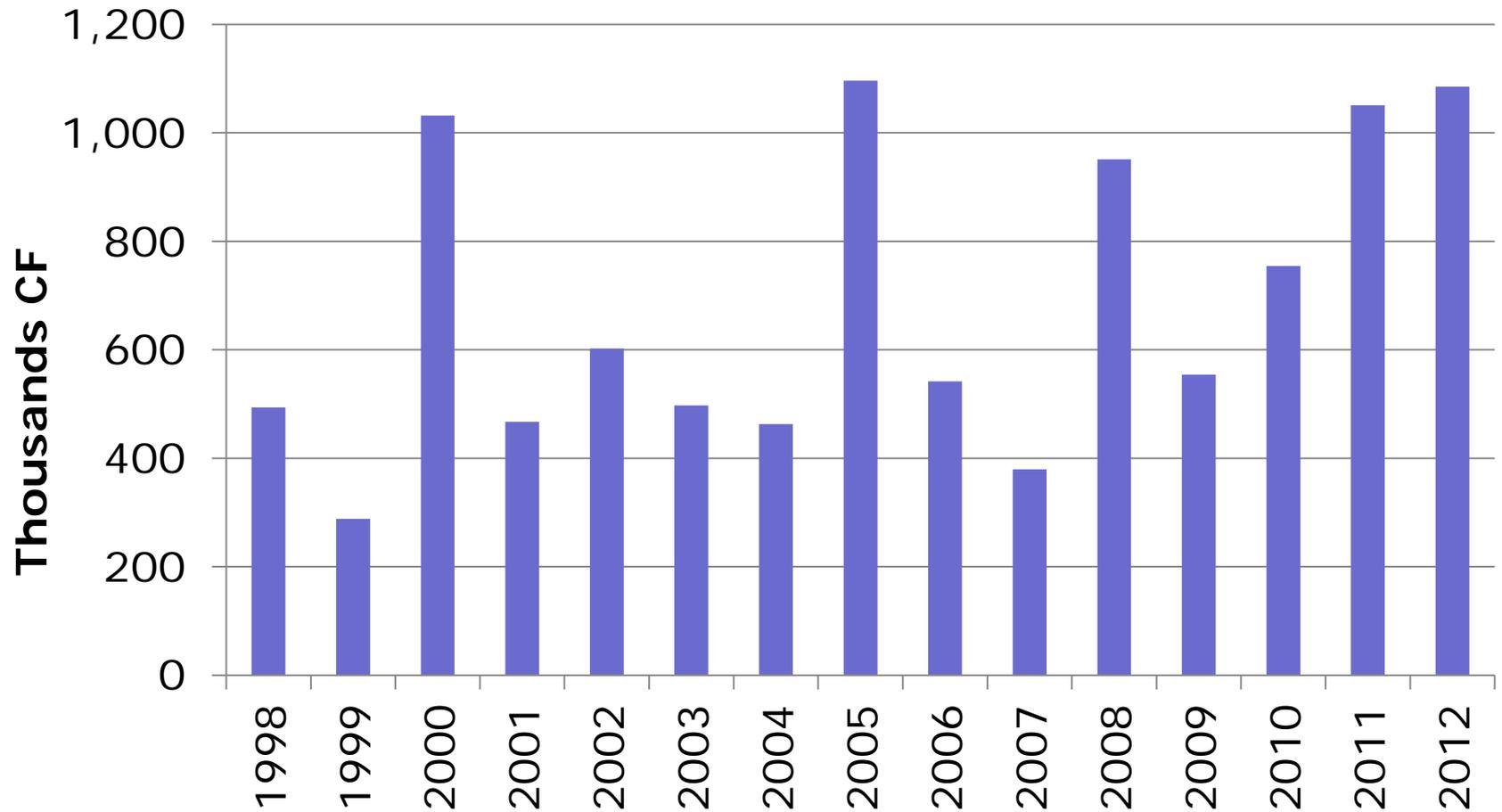


# Board of Commissioners of Public Lands

The School Trust Lands provide revenue through sustainable timber management and are used for hunting, fishing, trapping, protection of water quality and biological diversity, aesthetics and outdoor recreation



# BCPL Harvest Levels



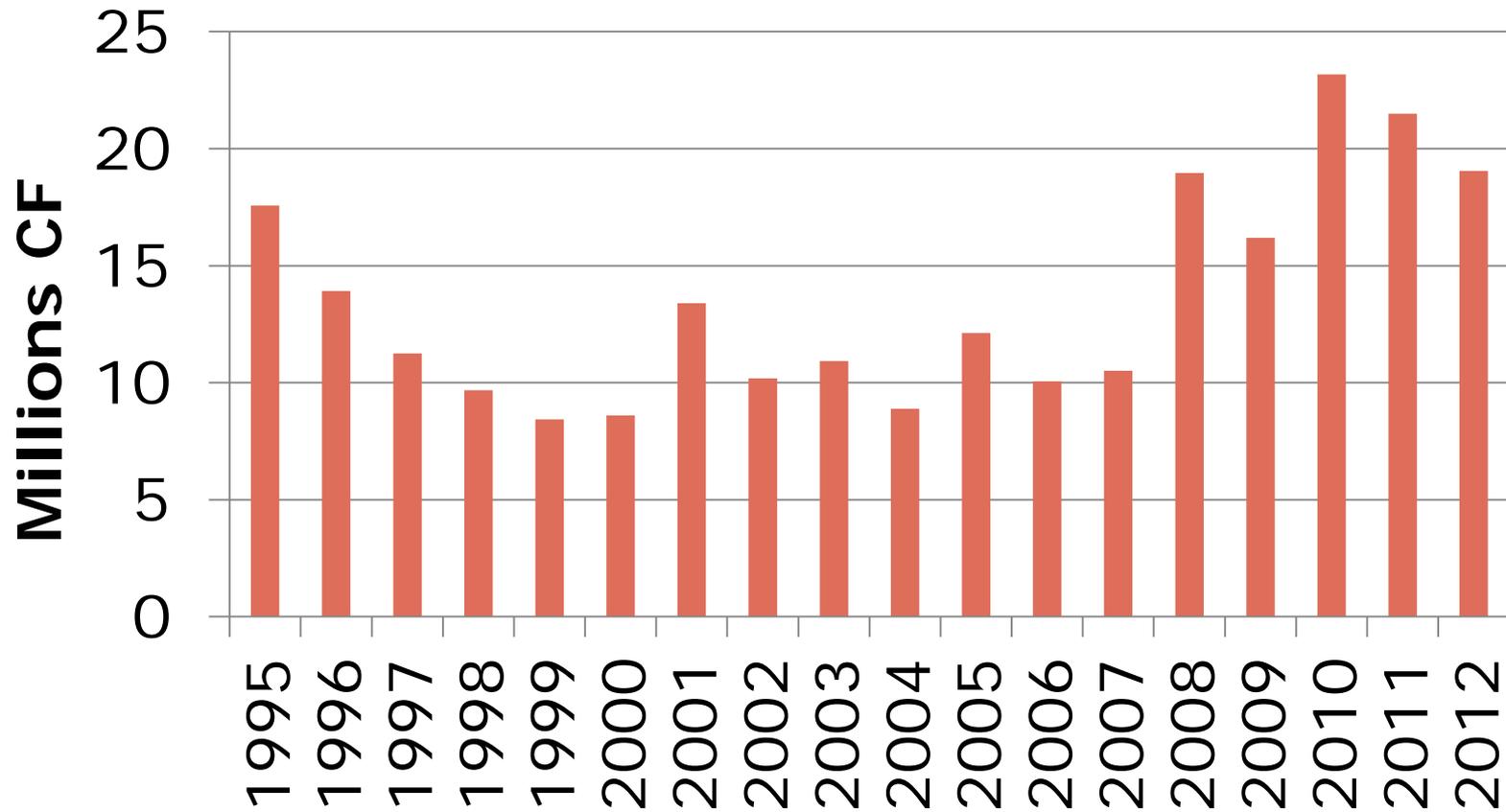


# Wisconsin DNR

The Division of Forestry works in partnership to **protect and sustainably manage Wisconsin's forests** so that they provide a **full array economic, environmental and social benefits for present and future generations.**



# DNR Harvest Levels





# State Land Timber Harvesting

	2005-06	2007-08	2009-10	2011-12
<b>Long Term Harvest Goal</b>	54,250	55,157	47,758	49,117
<b>Actual Establishment Acres</b>	25,818	32,771	35,105	40,949
<b>% of Long Term Harvest Goal</b>	48%	59%	74%	83%

- Timber sale establishment acres have increased 48%
- Stumpage revenues from completed sales have increased 85%

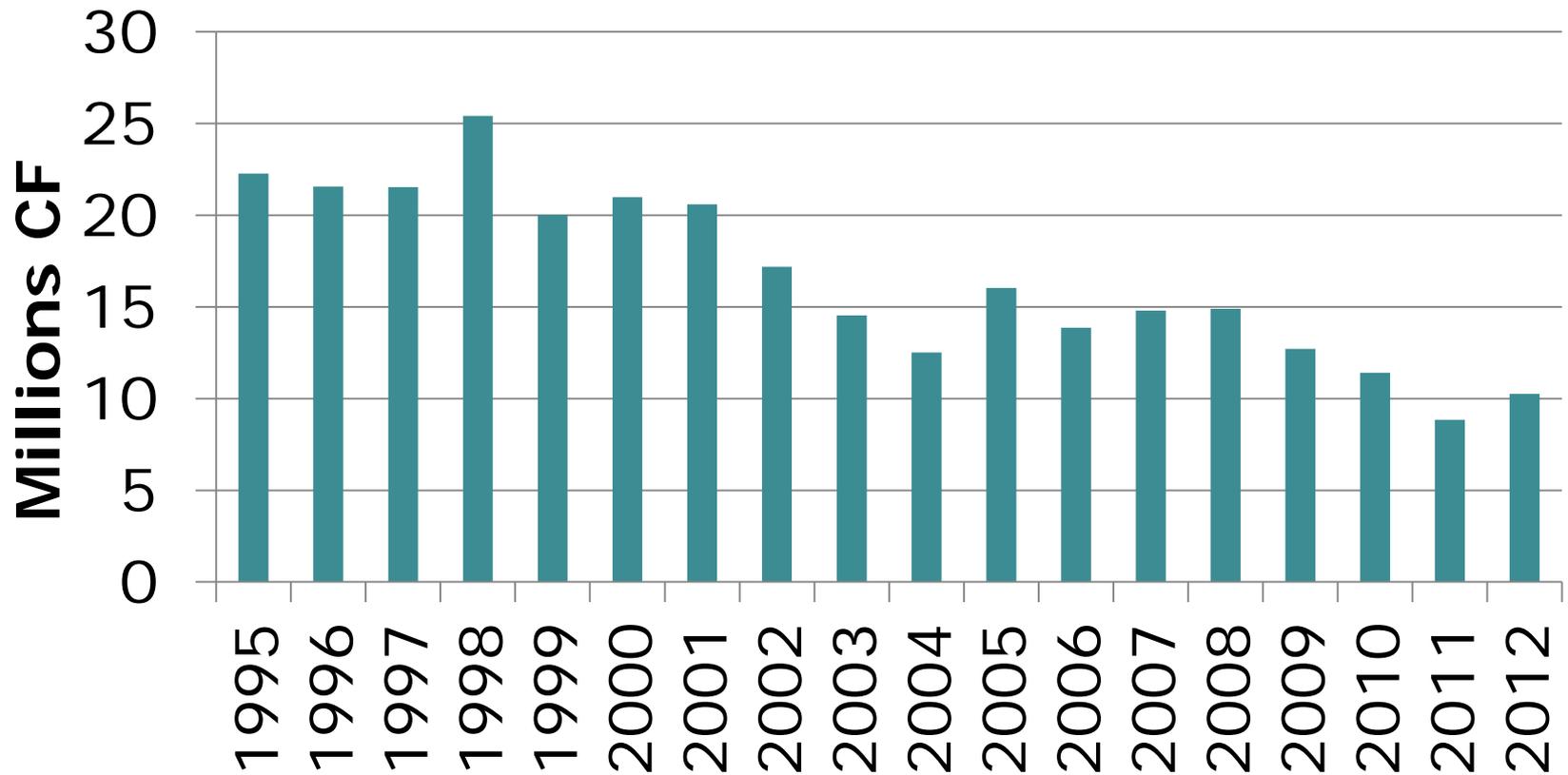


# National Forests

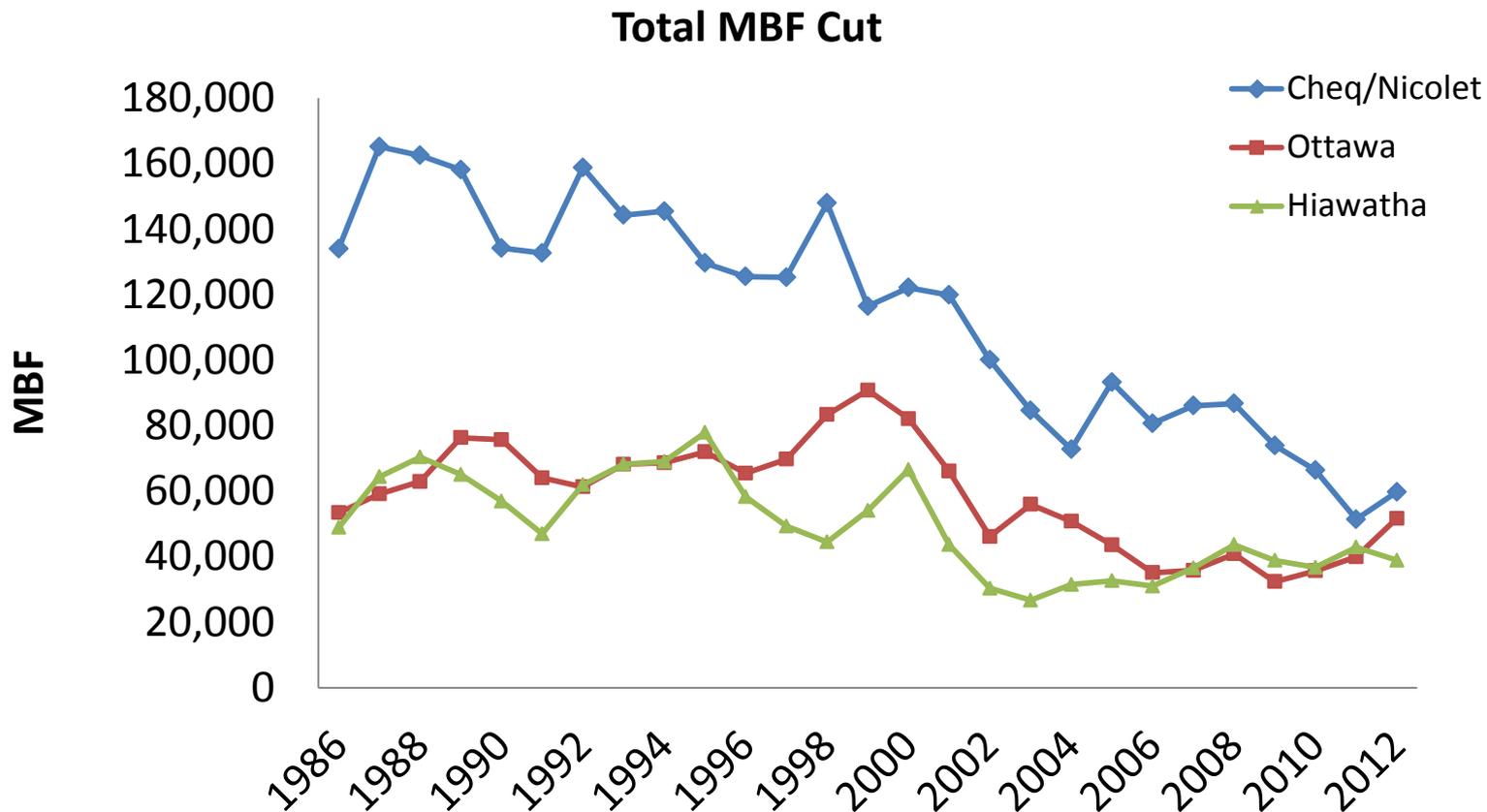
*16 USC § 475 - Purposes for which national forests may be established and administered*

No national forest shall be established, except to improve and protect the forest within the boundaries, or **for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States**; but it is not the purpose or intent of these provisions, or of said section, to authorize the inclusion therein of lands more valuable for the mineral therein, or for agricultural purposes, than for forest purposes.

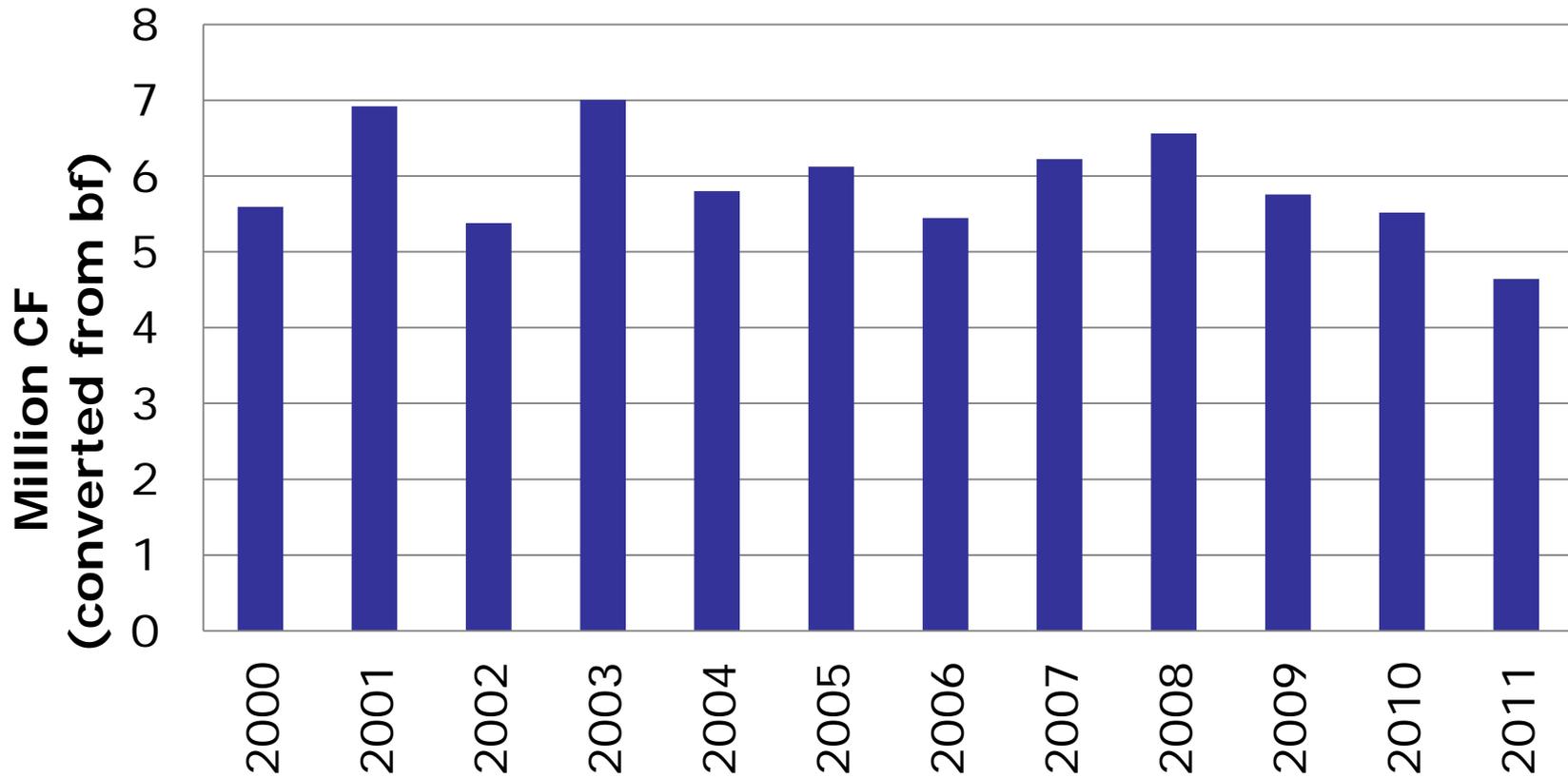
# CNNF Harvest Levels



# National Forest Harvest Levels

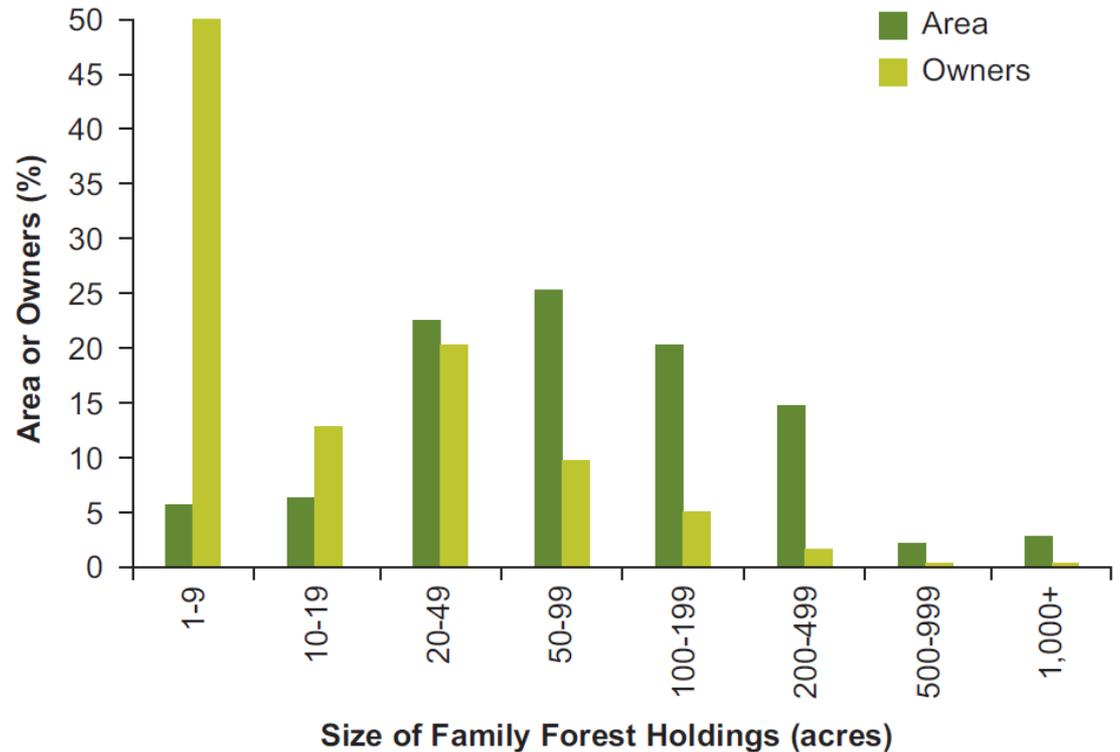


# Tribal Harvest Levels



# Family-owned Forests

- About 352,000 owners own 9.1 million forested acres
- ½ of these owners have between 1 and 9 acres.
- 2/3 of the land is in holdings of 50 acres or more.
- Average holding size is 26 acres.



**Figure 12.**—Size of family forest holdings, Wisconsin, 2006.

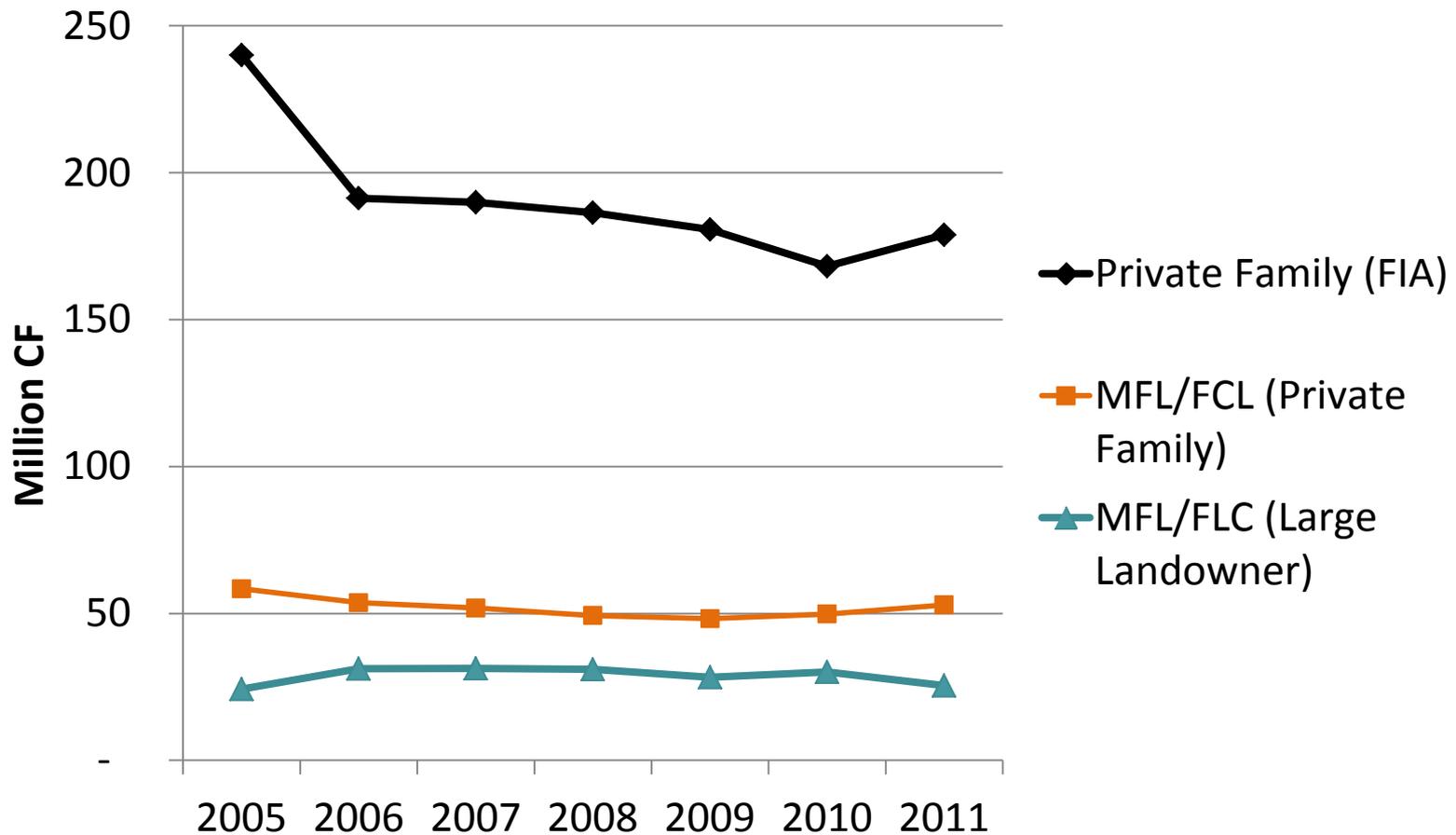
# Reasons for Owning

## Top reasons for land ownership:

- Privacy
- Solitude
- Close to nature
- Retreat
- Hunting
- Quiet recreation
- Family legacy



# Private Growing Stock Removals



# Timber Value

Total Harvest	312,839,581 cu. ft.
Stumpage Value of Harvested Timber	~\$140,000,000
Total Value-added	\$19.8 Billion





# Challenges and Opportunities

- Forest parcelization is increasing
- Access to private timber more challenging as ownerships shrink and landowner objectives change
- Oak forests are regenerating poorly
- Increasing invasive pests and plants
- Logger capacity is shrinking

# Forest Fragmentation

- The forest is becoming more fragmented & parcelized
- Increased values at risk for wildfire
- Taxation of forest land is high





# Private Forestry

- Most landowners harvest timber without professional assistance
- More people are purchasing forest land
- Demographics of forest land owners are changing
- Availability of incentives for managing private forests influences behavior

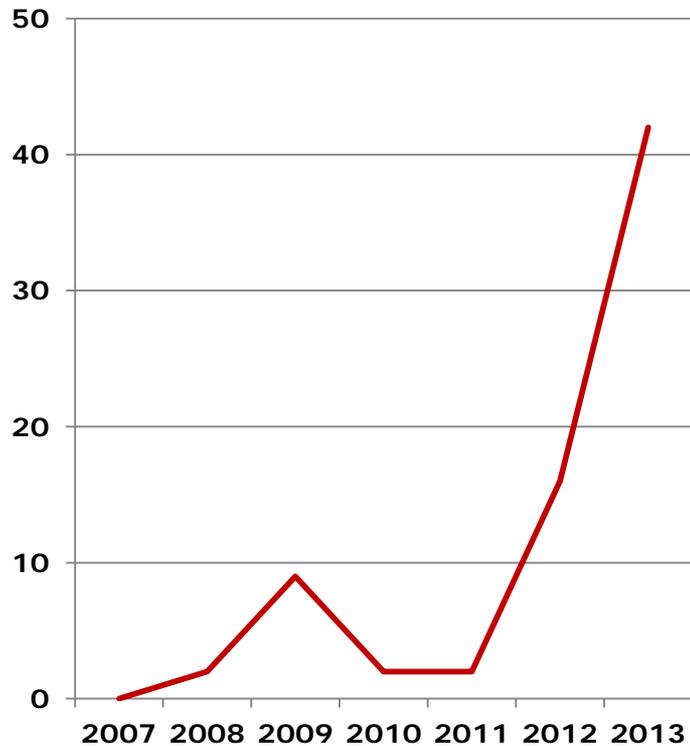
# Invasive Exotic Species

- Invasive exotic species are an increasing threat
- BMPs: Tension between maintaining productive forests and constraining operations

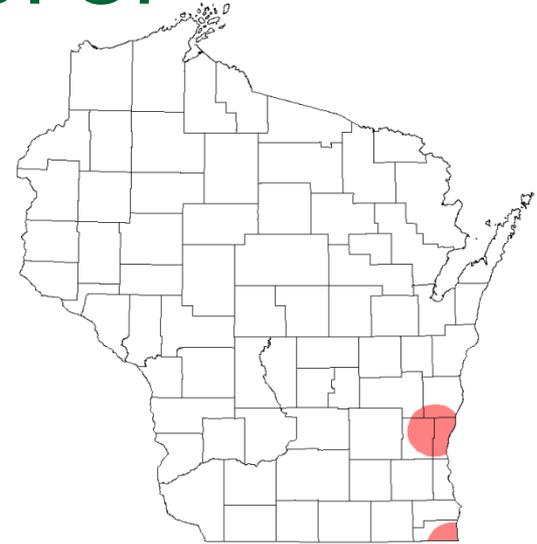


# Emerald Ash borer

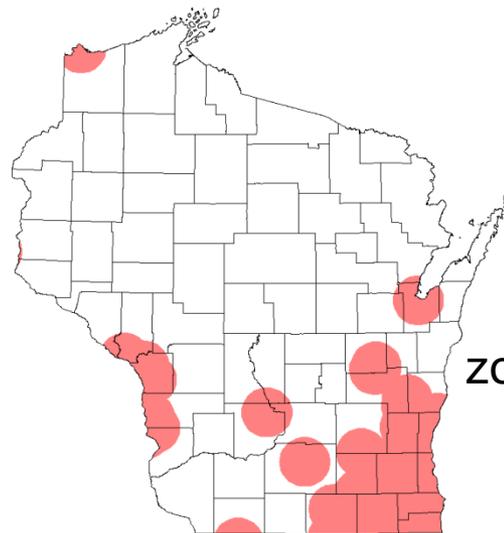
Number of first community detections



15 mile zone, end of 2008



15 mile zone, end of 2013 (almost)





# Logger Capacity

## Constraints:

- Cost of entry
- Seasonal restrictions
- BMPs/guidelines
  - water quality
  - biomass
  - oak wilt
- How do these affect price and availability of timber?
- What forest values are at risk?
- Legislature funding a study

Among others...



# Challenges and Opportunities

- +/- Supply of sawtimber has increased steadily since 1980s but many companies are struggling to get enough logs to meet demand
- +/- Shade tolerant species continue to increase across the region
- +/- Adapting to a changing climate
  - \* Forest adaptation – risk and uncertainty
  - \* Wood for energy
  - \* Carbon sequestration
- +/- Wisconsin's well positioned to provide supply for the increasing demand for certified products but concerns exist about certification.

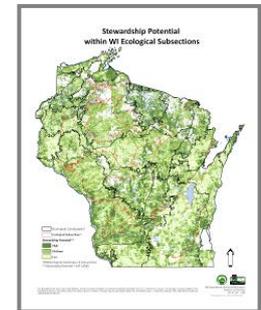
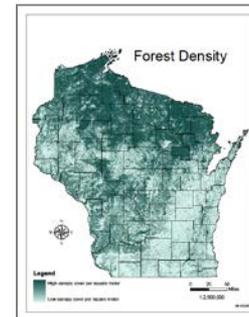
# Forest Certification: DNR Certificates

Certification Standard	FSC	SFI	ATFS	Dual Certified (%)	Total Certified Acres
Total Acreage	6,103,858	4,013,126	2,638,496	77%	7,215,015



# Forest Certification

Wisconsin remains invested in third-party certification of forest lands due to industry demand, however, a review is being undertaken.



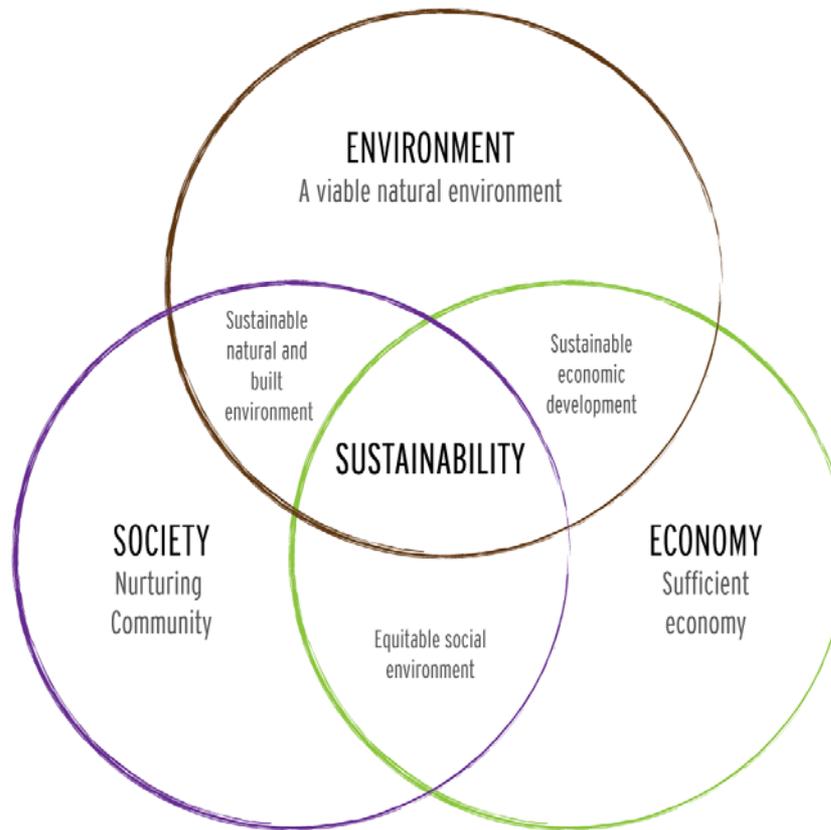


# Challenges and Opportunities

- + Forests are growing and expanding
- + Consumption of wood is increasing
- + Growing-stock volume for several valuable commercial species is increasing
- + Active forest management creates and maintains wildlife habitat desired by many landowners and recreational users
- + We have diverse markets
- + Opportunities exist for expansion globally
- + Social acceptance of timber harvesting is generally high in Wisconsin



# Bottom Line: Wisconsin's Forests are a Strategic Natural Asset





**Thank you for being  
here and helping  
support Wisconsin's  
forest-based economy**