

Soft maple

Red maple, *Acer rubrum*
Silver maple, *Acer saccharinum*

The **volume of soft maple has increased** significantly since 1983. Soft maple, like many other species groups, is aging. The volume in large trees has more than tripled in the last two decades.

Along with volume, **the rates of growth and mortality have also increased**. But the **ratio of mortality to volume for soft maple is much lower** than the average for all species. Whereas soft maple makes up about 11.3% of volume and 13% of growth of trees in Wisconsin, it accounts for only 4 % of total mortality.

Soft maple is **an important timber species**, making up 7.4% of roundwood production and 12.4% of all biomass.

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“How has the soft maple resource changed?”

Growing stock volume and diameter class distribution by year

The [growing stock volume](#) of soft maple in Wisconsin in 2013 was approximately 2.4 billion cubic feet or about 11.3% of total statewide volume (Chart 1). There is more soft maple than any other species group. Soft maple **volume has doubled since 1983** and increased by 22% since 1996.

The soft maple resource is increasing and maturing in Wisconsin (Chart 2). The volume in small trees (5 to 13 inches) has increased 59% since 1983 but the volume in large trees (over 13 inches) has more than tripled in the same period.

The number of soft maple trees has increased substantially, especially for [sawtimber](#) trees and for silver maple (Chart 3).

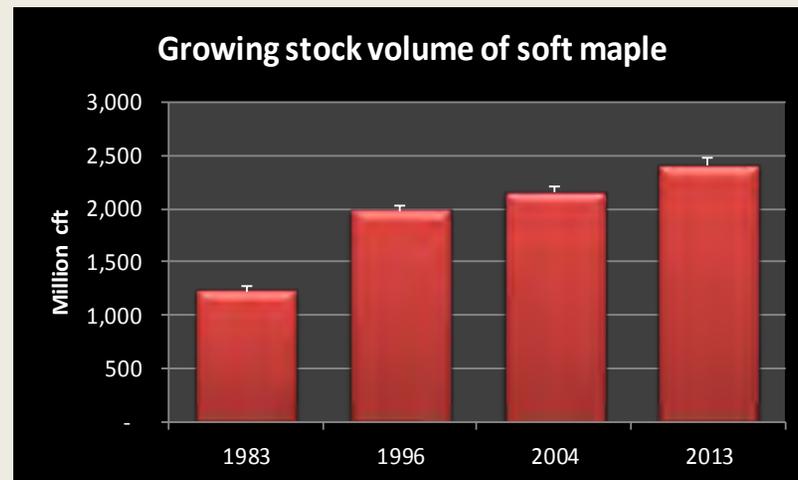


Chart 1. Growing stock volume (million cubic feet) by inventory year.
Source: USDA Forest Inventory and Analysis data

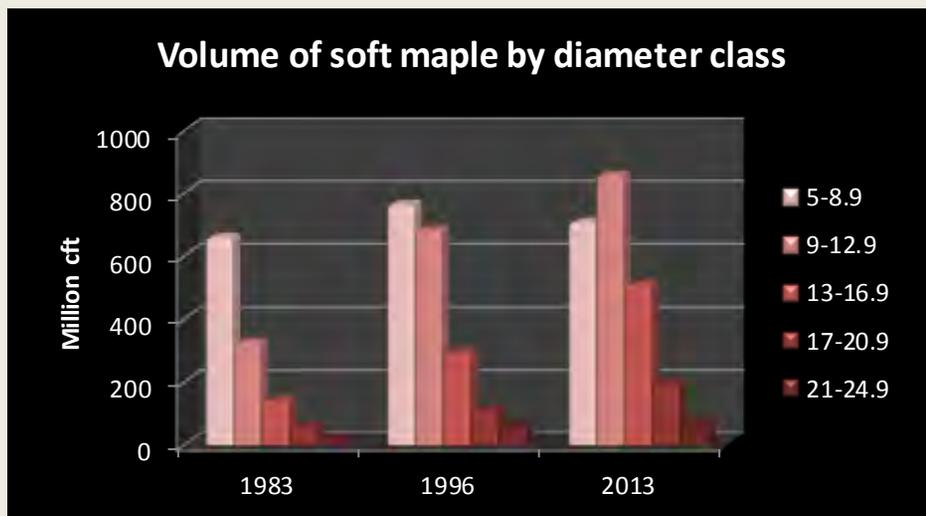


Chart 2. Growing stock volume (trees over 5 inches dbh) by diameter class (inches).
Source: USDA Forest Inventory and Analysis data

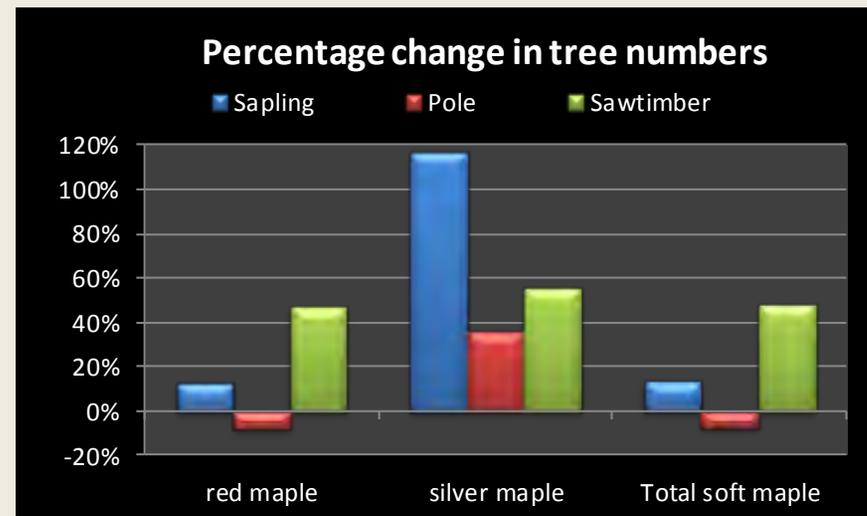
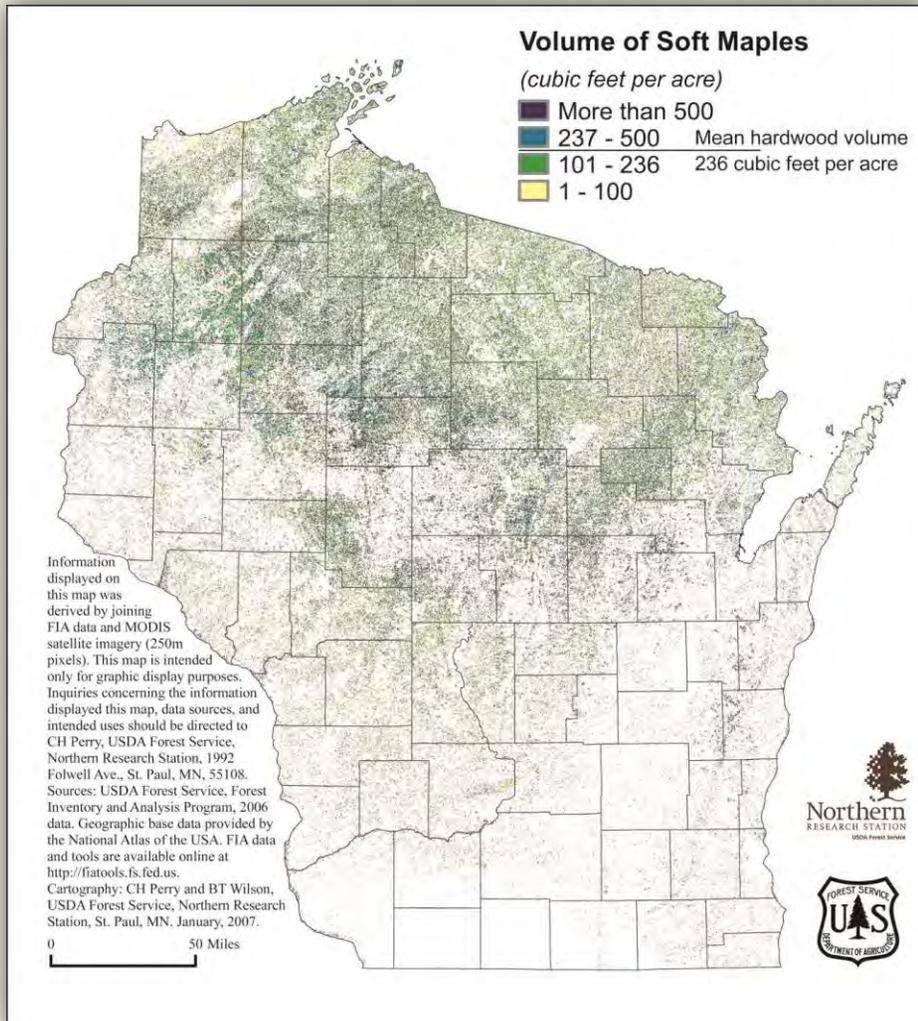


Chart 3. Percentage change in the number of live trees by size class between 1996 and 2013.
Source: USDA Forest Inventory and Analysis data 1996 and 2013.

“Where does soft maple grow in Wisconsin?”

Growing stock volume by region with map



The vast majority of soft maple volume, 91%, is red maple and is found in the northern and central parts of the state (Table 1). Most silver maple occurs in the south and central parts of the state.

In the south, soft maple occurs mainly in the bottomland hardwood [forest type](#) and, to a lesser extent, the oak hickory type. In the north, more than half of the soft maple (mostly red maple) occurs on the maple basswood forest type.

Table 1. Growing stock volume (million cft) by species and region of the state.

Species	Central	North east	North west	South east	South west	Total	Percent of total
Red Maple	581	588	848	82	90	2,189	91%
Silver Maple	60	11	14	70	64	218	9%
Total soft maple	641	598	862	151	154	2,407	100%
Percent of total	27%	25%	36%	6%	6%	100%	

Source: USDA Forest Service, Forest Inventory and Analysis 2013 data

For a table on **Volume by County** go to:

<http://dnr.wi.gov/topic/ForestBusinesses/documents/tables/VolumeCountySpecies.pdf>



“How fast is soft maple growing?”
Average annual net growth and the ratio of growth to volume

Average annual net growth of soft maple is about 73 million cubic feet/year, representing 13% of statewide volume growth (Chart 4). Growth rates have increased 39% since 1983 and 12% since 1996.

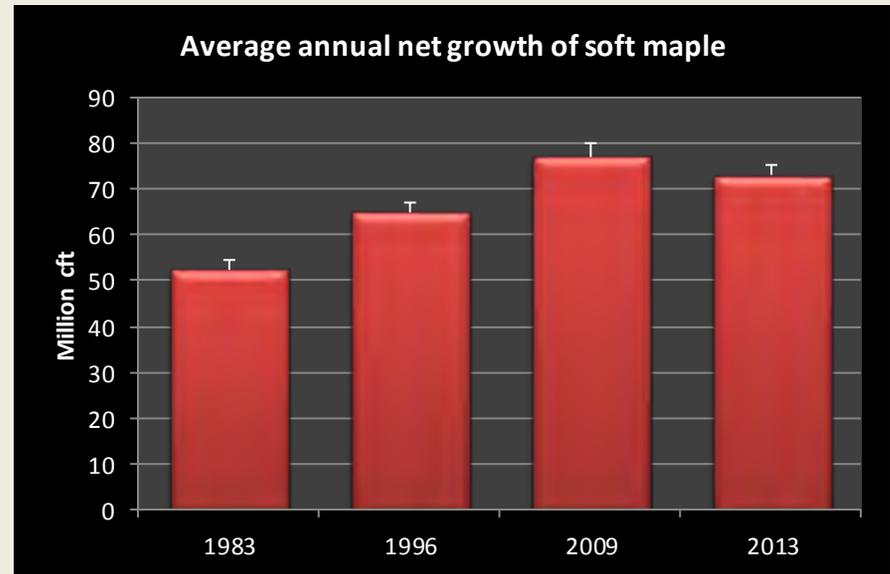


Chart 4. Average annual net growth (million cubic feet).
 Source: USDA Forest Inventory & Analysis data

Table 2. Average annual net growth (million cft/year) of growing stock and the ratio of growth to volume by region of the state.

Region	Net growth	Percent of Total	Ratio of growth to volume
Northeast	17.5	24%	2.9%
Northwest	21.8	30%	2.5%
Central	21.6	30%	3.4%
Southwest	5.3	7%	3.4%
Southeast	6.8	9%	4.5%
Statewide	72.9	100%	3.0%

Source: USDA Forest Inventory and Analysis 2013

The highest volume growth for soft maple occurs in central and northern Wisconsin but the highest growth to volume ratio occurs in the southeast part of the state (Table 2).

The average statewide ratio of net growth to volume for soft maple is 3.0%, slightly higher than the statewide average of 2.6% for all species.

For a table of **Average annual growth, mortality and removals by region** go to:
<http://dnr.wi.gov/topic/ForestBusinesses/documents/tables/GrowthMortalityRemovals.pdf>



“How healthy is soft maple in Wisconsin?”
Average annual mortality: trends and the ratio of mortality to growth

Average annual mortality of soft maple, about 9.4 million cubic feet per year from 2009 to 2013, has increased 89% since 1983 but has remained statistically unchanged since 1996 (Chart 5). Soft maple accounts for about 11.3% of total growing stock volume in the state but only 4% of total mortality.

The ratio of mortality to gross growth is 11.4% for soft maple species, **much lower than the statewide average** of 29.2% (Table 3).

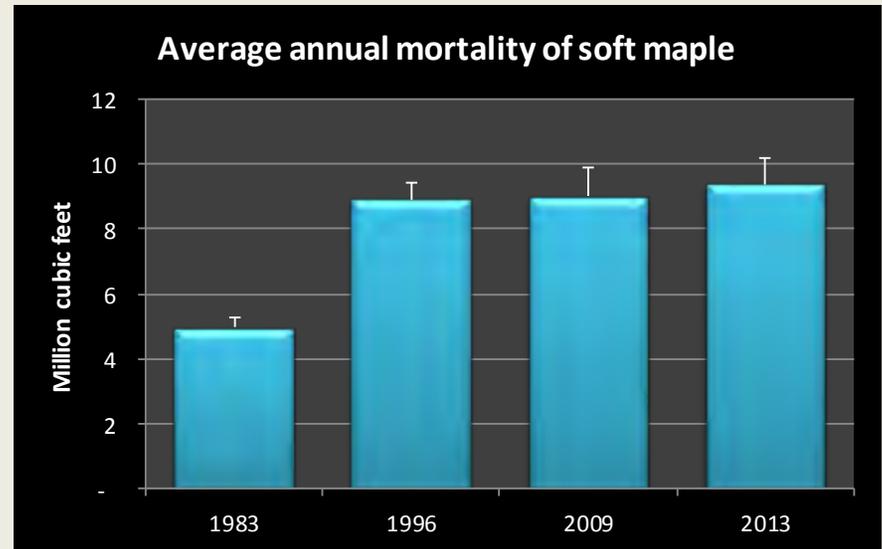


Chart 5. Average annual mortality (million cubic feet) by inventory year.
 Source: USDA Forest Inventory & Analysis data

Table 3. Mortality, gross growth, and the ratio of mortality to gross growth.

Species	Average annual mortality (cft)	Average annual gross growth (cft)	Mortality / growth
Red Maple	8,257,297	75,594,519	10.9%
Silver maple	1,119,760	6,679,367	16.8%
Total Soft Maple	9,377,056	82,273,886	11.4%

Source: USDA Forest Inventory & Analysis data: 2013

For a table of **Average annual growth, mortality and removals by region** go to:
<http://dnr.wi.gov/topic/ForestBusinesses/documents/tables/GrowthMortalityRemovals.pdf>



“How much soft maple do we harvest?”

Roundwood production and the ratio of removals to growth

In 2009, soft maple accounted for 27.2 million cubic feet or about 7.4% of Wisconsin’s total [roundwood](#), down 37% from 2004. Fuelwood which makes up 25% of soft maple roundwood has more than doubled (Chart 6).

From 2004 to 2009, pulpwood decreased by 50%. It now accounts for 59% of soft maple roundwood and 10% of all pulpwood produced.

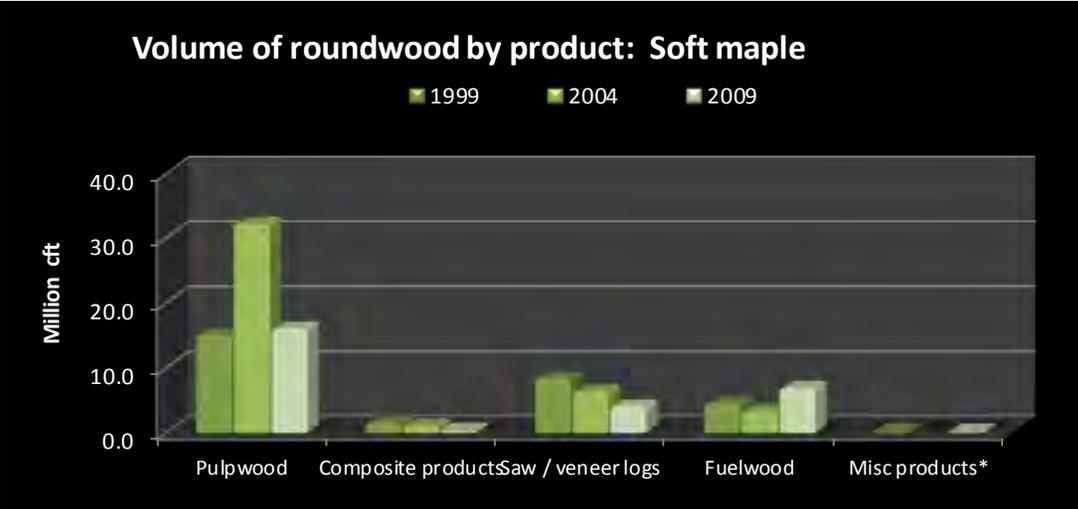


Chart 6. Volume of roundwood products. * Miscellaneous products include poles, posts, and pilings.
Source: Ronald Piva, USDA Forest Service, Northern Research Station, St. Paul MN

Removals of soft maple were 32.7 million cubic feet per year from 2009 to 2013 and 94% of this was red maple.

The ratio of removals to growth for soft maple is 45%, much lower than the average of 56.3% for all species in the state. Removals increased but not as much as growth rates.

For a table of **Average annual growth, mortality and removals by region** go to:
<http://dnr.wi.gov/topic/ForestBusinesses/documents/tables/GrowthMortalityRemovals.pdf>

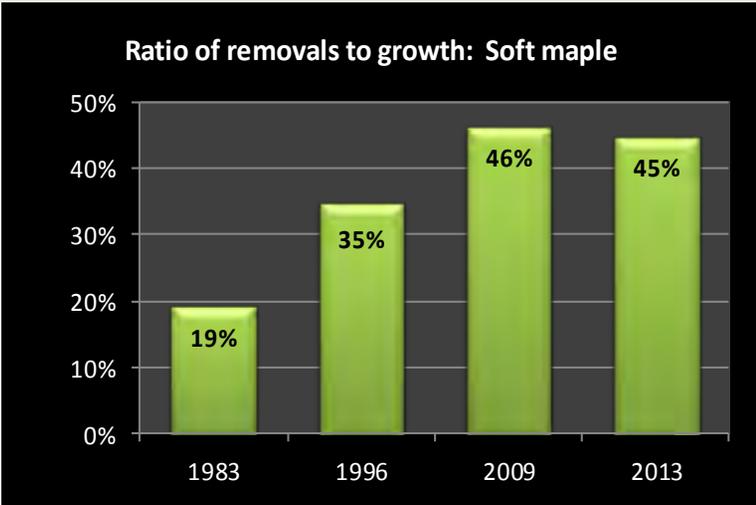


Chart 7. Ratio of volume harvested annually to net growth.
Source: USDA Forest Inventory & Analysis data.



“How much is soft maple selling for?”
Prices for pulpwood & sawtimber: trends

Due to the variability of timber prices from year to year and region to region, two methods of reporting prices are presented here: [Timber Mart North](#) (Chart 8) and [weighted average stumpage prices](#) from Wisconsin Administrative Code Chapter NR 46 (Table 4).

Stumpage sawtimber, as reported both in the Timber Mart North and NR46, has increased significantly since 2012.

Cordwood and log prices according to Chapter NR46, have fallen since 2005.

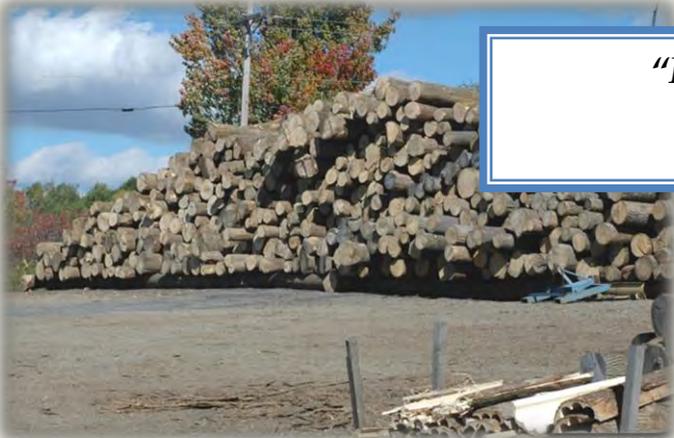


Chart 8. Average prices for cordwood and sawtimber (updated for inflation).
 Source: Timber Mart North, <http://timbermartnorth.com/> accessed December 2014

Table 4. Average weighted stumpage prices (adjusted for inflation to 2014 dollars) by year for Wisconsin.

Product	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average for all hardwoods
Cordwood (per cord)	\$65	\$37	\$58	\$64	\$54	\$68	NA	\$28	\$26	NA	\$22	NA	\$18
Logs (per MBF)	\$379	\$410	\$391	\$449	\$411	\$441	\$369	\$339	\$331	\$167	\$350	\$168	\$211

Source: Wisconsin Administrative Code Chapter NR46, 2002 to 2013. The stumpage values calculated each year are for the sole purpose of assessing MFL yield and FCL severance taxes, not for determining the price that should be received for timber.



“How much soft maple biomass do we have?”
Aboveground biomass by region of the state

There were 77.1 million short tons of aboveground [biomass](#) in live soft maple trees in 2013, an increase of 68% since 1983. This is equivalent to approximately 38.5 million tons of carbon and represents 12.4% of all aboveground biomass statewide. As with volume, most soft maple is located in central and northern Wisconsin (Chart 9).

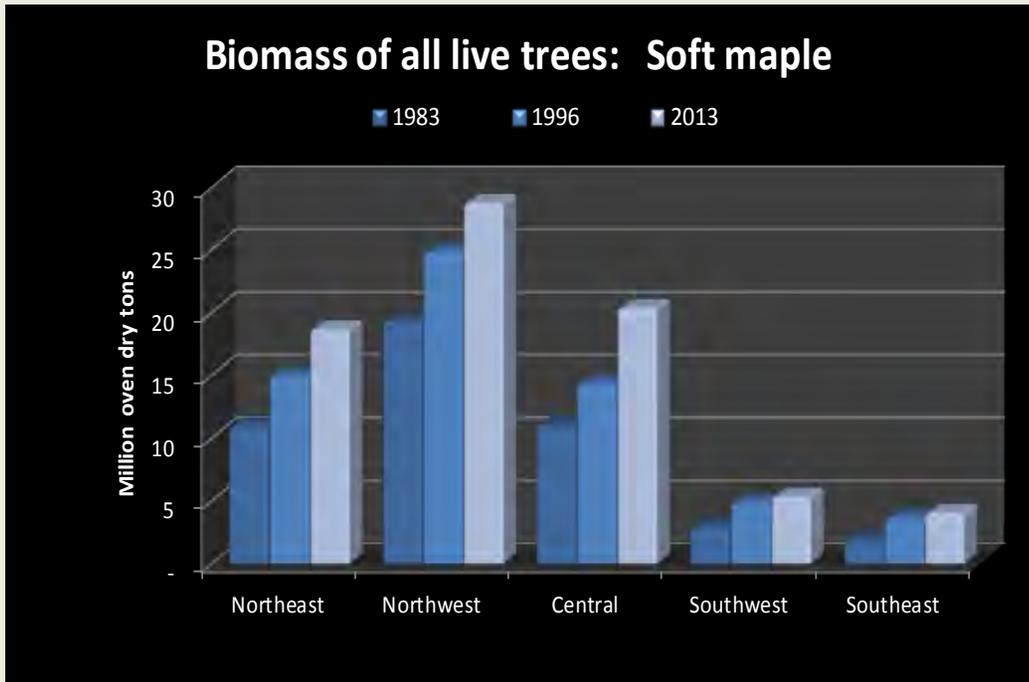


Chart 9. Biomass (above ground dry weight of live trees >1 in dbh, short tons) by year and region of the state.
 Source: USDA Forest Inventory & Analysis data

The density of soft maple wood is slightly lower than average for hardwoods with a ratio of biomass to volume of 34 oven-dry lbs. per cubic foot (ODP/cft). The average for all hardwoods is about 36 ODP/cubic feet and for all species is 33 ODP/cubic feet.

Approximately, 74% of all soft maple biomass is located in the main stem and 22% in the branches.

For a table of **Biomass by County** go to:
<http://dnr.wi.gov/topic/ForestBusinesses/documents/tables/BiomassByCounty.pdf>