

Trends in Sawtimber Volume and Removals in Wisconsin



The volume of sawtimber has increased in the last 10 years: 45% for grades 1 and 2 and 8% for grades 3, 4 and 5. However, removals of grade 1 and 2 timber have decreased and removals of grades 3, 4 and 5 sawtimber have increased. This is especially true in northern Wisconsin.

The volume of grades 1 and 2 sugar maple and northern red oak has increased since 2003. Prices, however, for high grade timber of both species have fallen since 2005. This trend mirrors developments in home construction during this time period.

Harvesting practices have also changed, increasing removals on more accessible land: nearer to roads and on flatter slopes. This may be a result of the higher costs of extraction in more remote terrain and the lower economic returns for stumpage.

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Trends in volume and removals by grade

In both 2007 (2003-2007) and 2012 (2008-2012), an average of 1.5% of sawtimber volume was harvested each year in Wisconsin, from a low of 0.7% in the Southeast to 1.8% in the Northwest.

However, between the two periods, removals of high grade (grade 1 and 2) sawtimber fell 26% while removals of lower grade timber increased 10% (Figure 1). The available volume of grade 1 and 2 sawtimber increased 27% while the volume of grades 3, 4 and 5 remained unchanged.

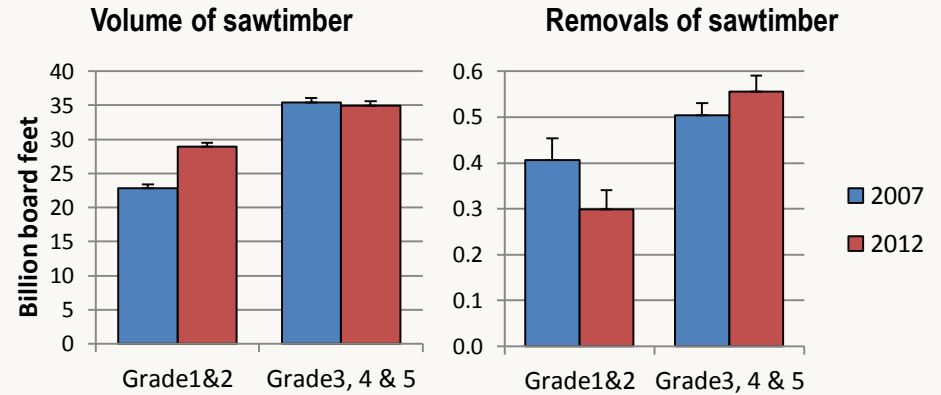


Figure 1. Change in volume and removals of sawtimber between 2007 and 2012 (FIA data)

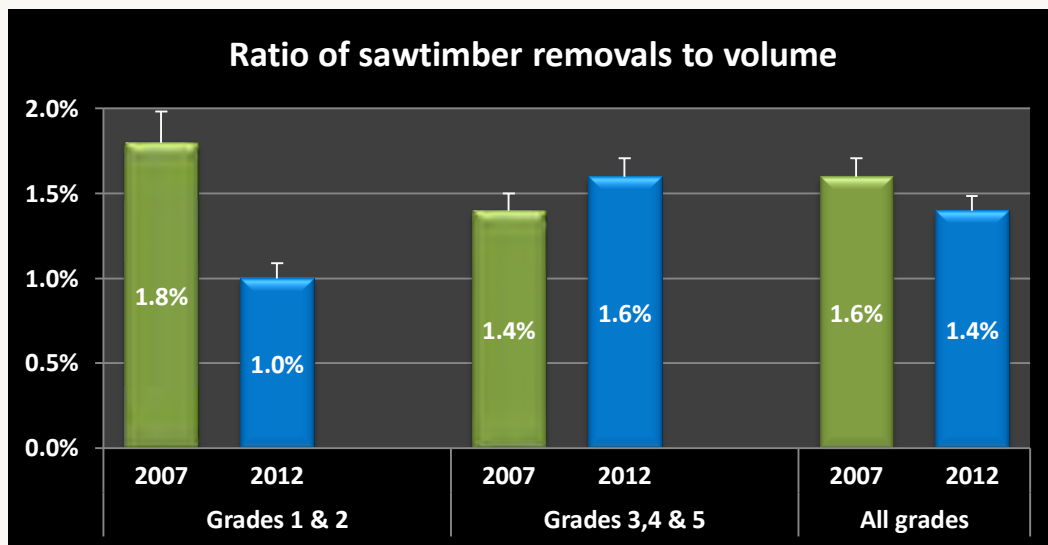


Figure 2. Percentage of sawtimber volume removed: 2007 and 2012 (FIA data)

This difference can also be seen by looking at average annual removals as a percentage of total sawtimber volume. For all grades combined, this ratio remained statistically unchanged between 2007 (2003-2007) and 2012 (2009-2013).

There is a difference however between grade categories. Percentage removals fell for high grade sawtimber (from 1.8% to 1.0%) but increased for lower grades (from 1.4% to 1.6%).



Trends in volume and removals by region

Trends in volume and removals vary not only by grade but also by region (Figure 3). In 2007, the ratio of removals to volume was higher for high grade sawtimber (grades 1 and 2) than for lower grades (3, 4 and 5). But by 2013, the trend had reversed everywhere except southern Wisconsin.

Every region has seen a decrease in the ratio of removals to volume for high quality sawtimber. The percentage of harvested grades 3, 4 and 5 sawtimber increased in northeast and northwest Wisconsin.

The volume of grades 1 and 2 has increased in every region but especially in the north. This is largely due to increases in the volume of high quality northern red oak, hard maple and eastern white pine.

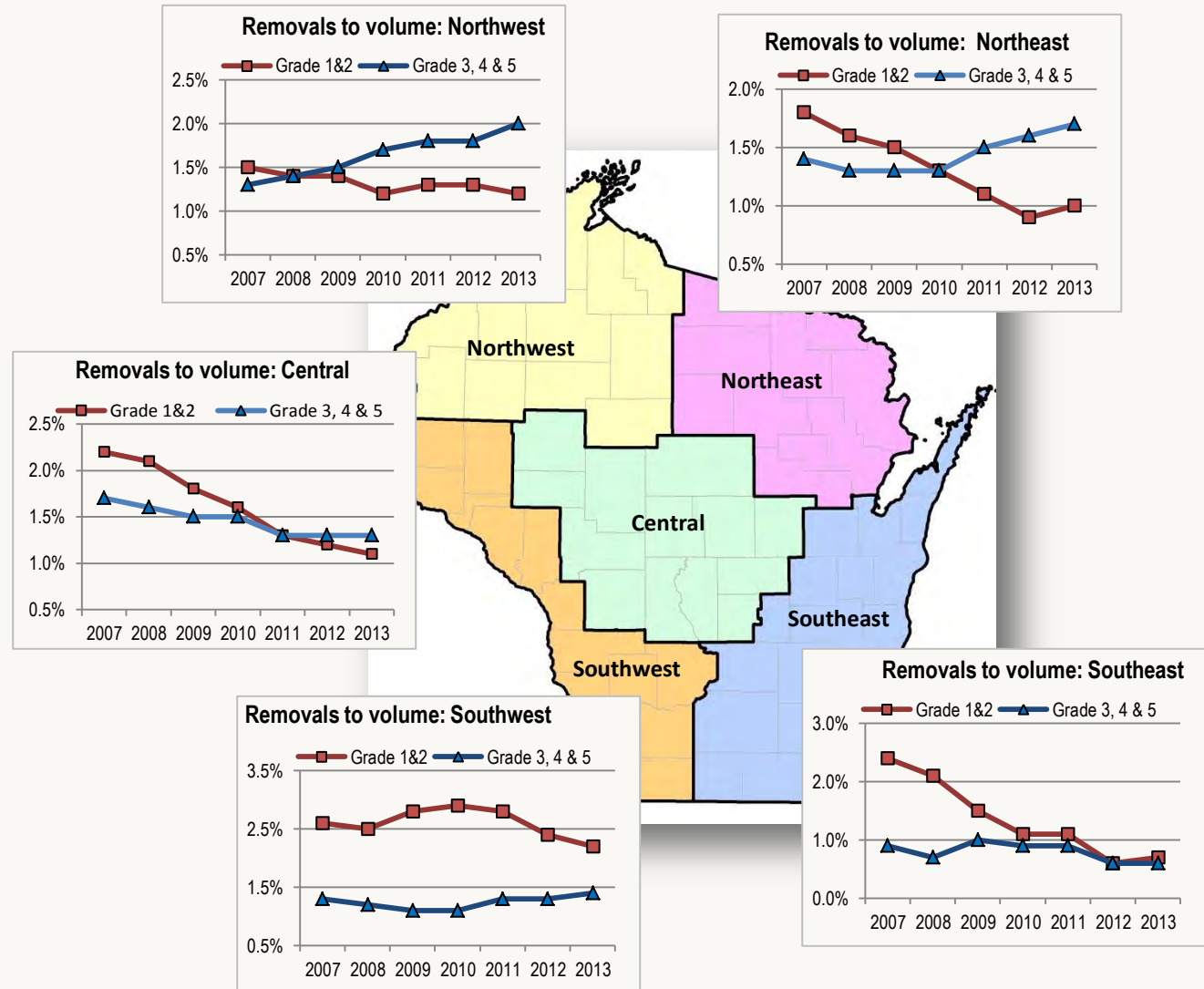


Figure 3. The ratio of removals to volume by region.



Trends in volume and removals by species: Sugar Maple

The volume of sugar maple (*Acer sacarum*) of all grades has increased since 2003, 20% for grades 1 and 2 and 29% for grades 3, 4 and 5 (Figure 4). Removals on the other hand have fallen by 50% since 2003.

Prices for sawlogs and veneer peaked in 2005-2006 at which point grade 1 and 2 hard maple sawlogs were valued at about \$900/MBF and prime veneer was valued at about \$1,500/MBF. After falling to a low in 2009-2011 (\$370/MBF for 1 & 2 sawlogs and \$1,030/MBF for veneer), prices are beginning to recuperate but removals have yet to increase in response.

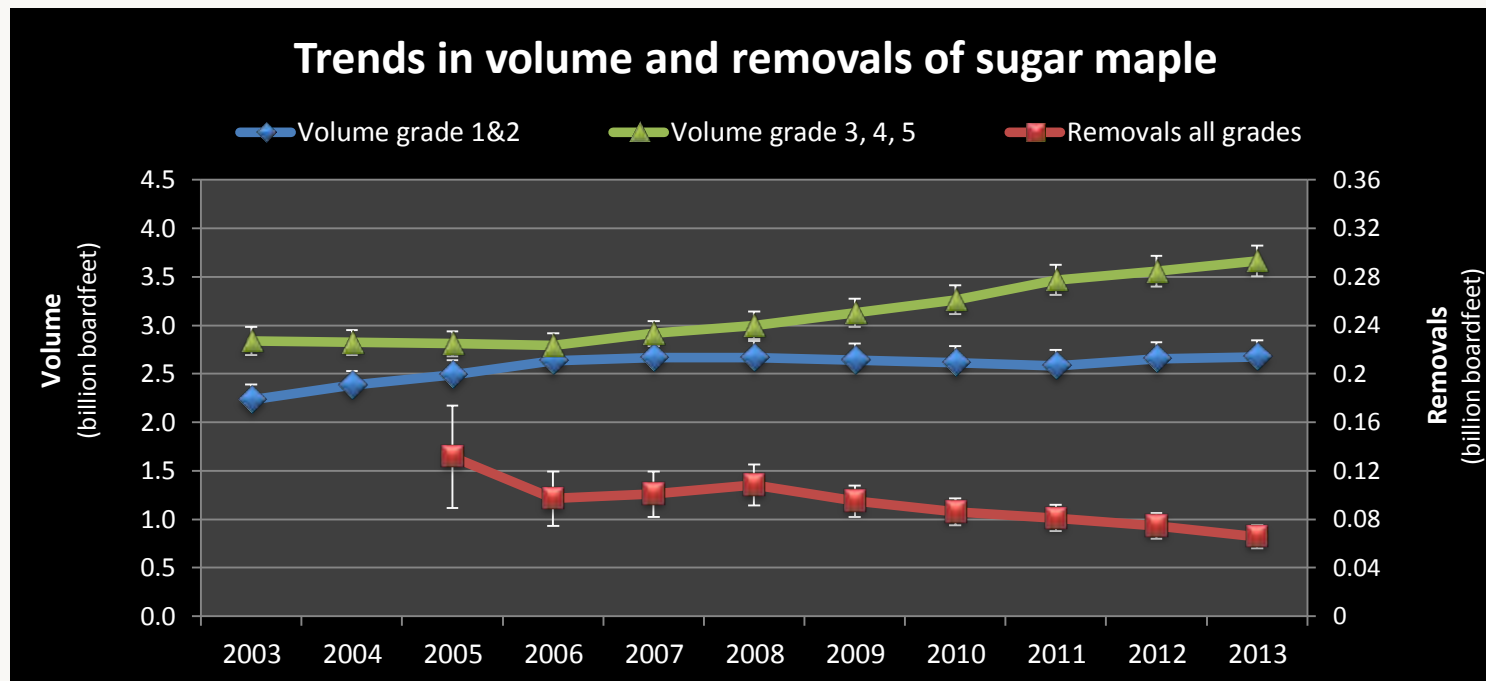


Figure 4. Volume of hard maple by grade (2013 FIA data) and removals for all grades combined (2008-2013 data).



Trends in volume and removals by species: Northern Red Oak

The volume of northern red oak (*Quercus rubra*) of all grades has increased since 2003, 31% for grades 1 and 2 and 14% for grades 3, 4 and 5 (Figure 5). The volume of high grade red oak sawtimber increased in all regions but especially in southwest Wisconsin (46%) and in the Northwest (31%). Removals have fallen 41% since 2003.

Prices for sawlogs and veneer peaked in 2003-2005 at which point grade 1 and 2 red oak sawlogs were valued at about \$720/MBF and veneer was valued at about \$1,400/MBF. After falling to a low in 2009, prices are beginning to recuperate but removals are still low.

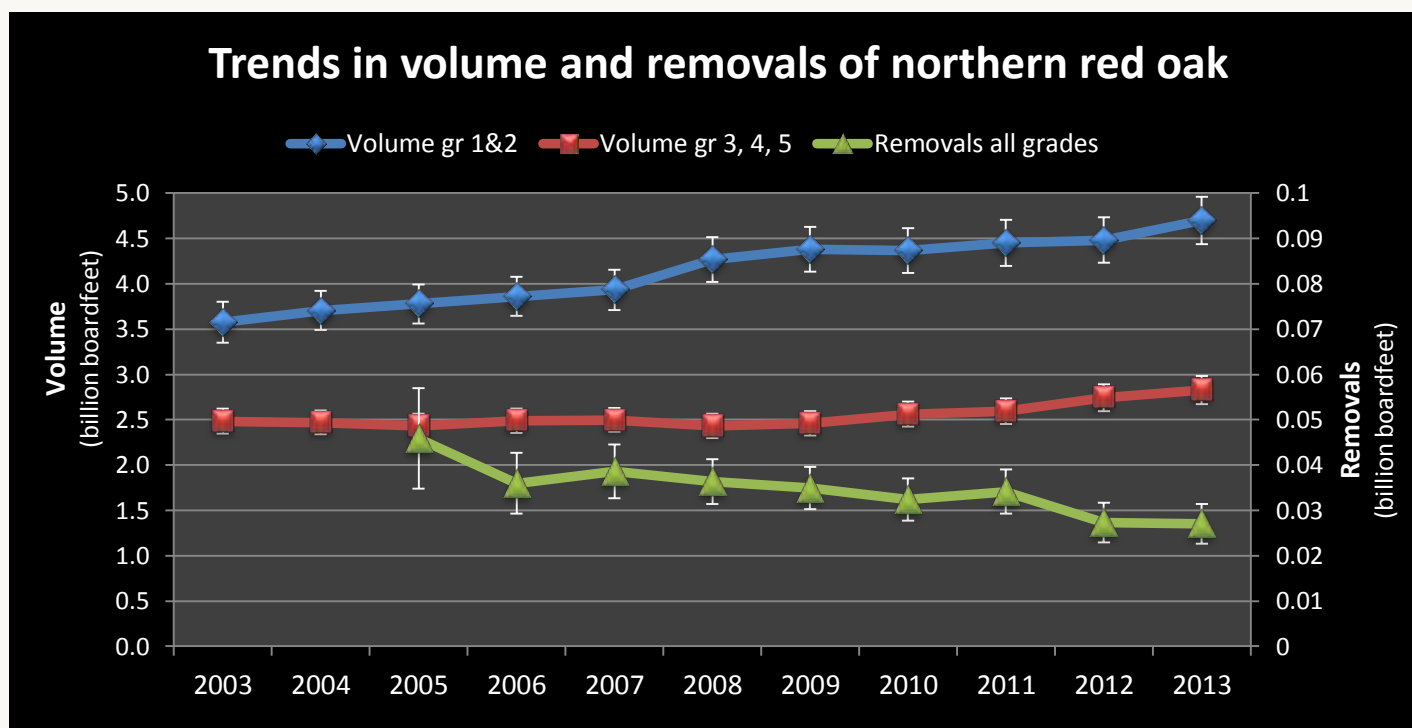


Figure 5. Volume of hard maple by grade (2013 FIA data) and removals for all grades combined (2008-2013 data).



Sawtimber price trends and the housing market

One reason for the decrease in removals of grade 1 and 2 sawtimber despite the availability of volume may have to do with trends in sawtimber prices.

The two major grade 1 and 2 sawtimber species in Wisconsin are hard maple and northern red oak. Both show a decrease of about 45% between the peak in prices in 2005 and the lowest point in 2009 (Figure 6). Both have rebounded about 25% since 2009 but are still well below their peak.

The trend in home construction follows a similar pattern. New building permits for private homes fell 73% between 2005 and 2009 and rebounded 42% between 2009 and 2012 (Figure 7).

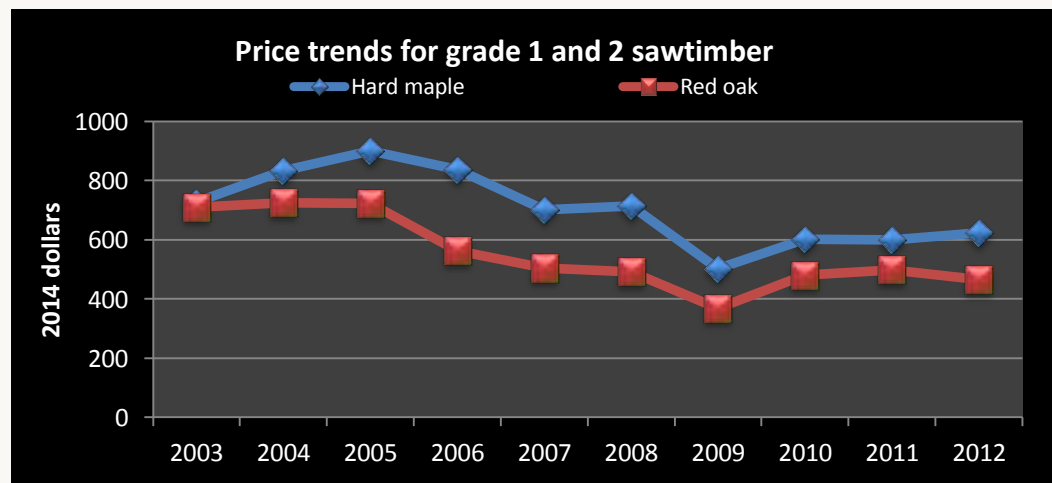


Figure 6. Average prices for grade 1 sawlogs.
Source: Timber Mart North, George Banzhaf & Company, 8301 N. Allen Lane, Milwaukee, WI 53217

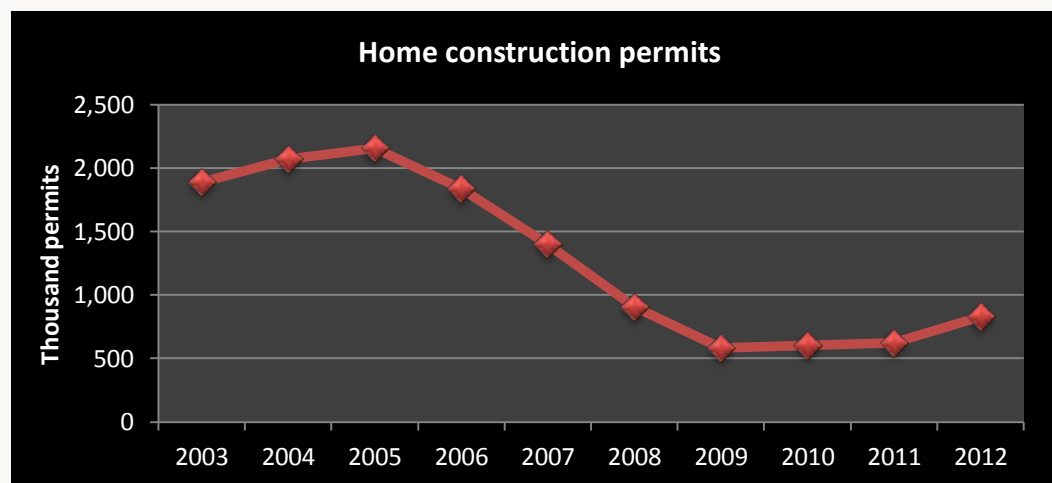


Figure 7. New Privately Owned Housing Units Authorized by Building Permits in Permit-Issuing Places (<https://www.census.gov/construction/pdf/bpann.pdf>)



Trends in harvesting practices: distance to nearest road

Not only did the ratio of removals to volume change between 2007 and 2012 but harvesting practices changed as well.

In 2012, sawtimber volume increased in all forests, both near roads ($\leq 1,000$ ft) and more distant ($>1,000$ ft). Removals, however, increased 22% on forest land located nearer to roads and decreased 26% on forestland located at a greater distance (Figure 8).

This trend was true in all regions of the state (Figure 9). Higher rates of road construction in the southern part of the state may artificially increase numbers there.

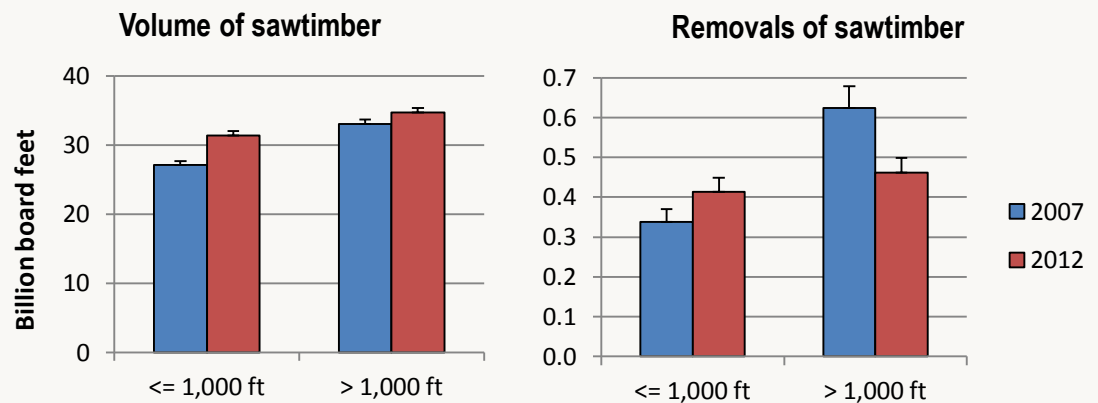


Figure 8. Volume and removals by forest distance from nearest road.

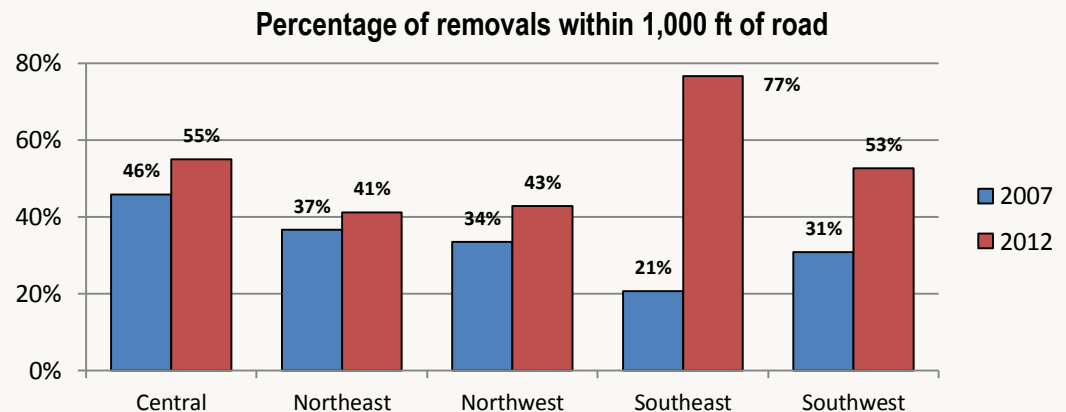


Figure 9. The percentage of all removals that are located within 1,000 ft of the nearest road by FIA region as delineated in Figure 3 .



Trends in harvesting practices: land slope

Harvesting practices also changed with regards to removals on land of differing slope. Again volume increased in all forests, but removals increased 13% on flatter slopes (0-5%) and decreased 25% on forest land with a slope over 5% (Figure 10). This trend does not apply to northwest Wisconsin however (Figure 11).

As with road distance, harvesting seems to have moved to areas of greater accessibility where extraction would be less expensive. Sawtimber volume has increased in both remote as well as easily accessible lands, but when prices are low, loggers may not want to spend the extra money to reach more inaccessible forest.

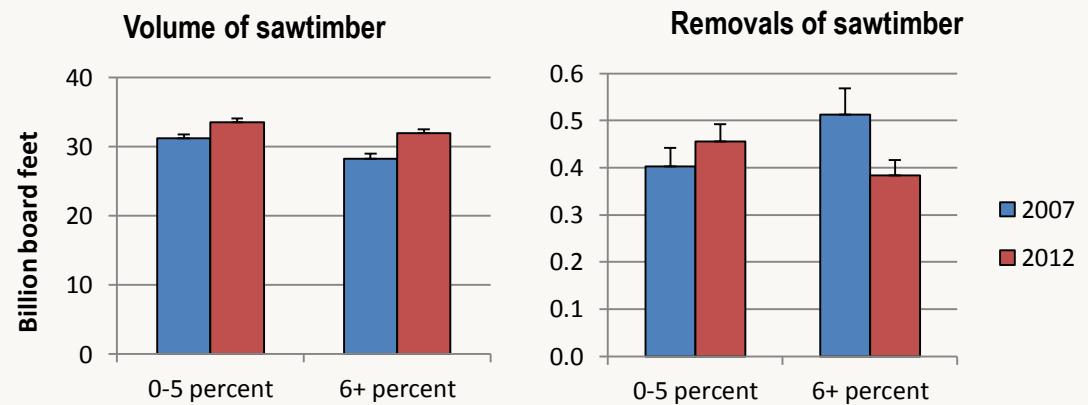


Figure 10. Volume and removals by forest slope category.

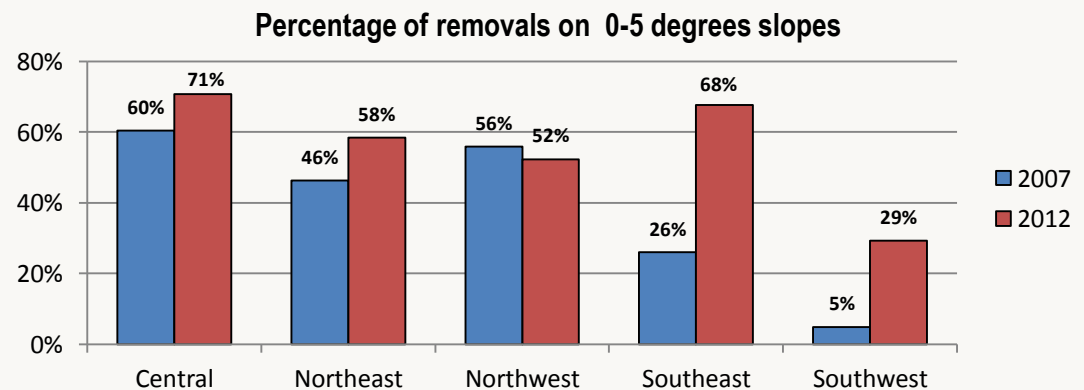


Figure 11. Percentage of removals on lower slopes by region of the state.