Timber Harvest in Wisconsin

In 2003, Wisconsin produced 5.2 million cords of roundwood annually, most of which was aspen and maple (hard and soft). Half of this is pulpwood and another quarter is sawlogs and veneer. The state also produced about 550,000 cords of residential fuelwood annually, almost half of which was red oak. In 2006, pulpwood production was down almost 40% from previous levels.

On public lands, 1.3% of county forests, 1.1% of state forests and only 0.6% of national forest timber volumes are harvested each year. Annual volume cut on federal lands has decreased 34% since 1997. Value per acre, however, is highest on federal lands.

- *How much pulpwood do we produce?*
  Pulpwood production by species and region of the state
- *How much fuelwood do we produce?*
  Fuelwood production by species and region of the state
- *How much wood do we produce on state and county lands?*
  Number of sales, acreage, pulpwood and sawtimber volume and value of sales
- *How much wood do we produce on national forest lands?*
  Volume of roundwood by product: 1997, 2002, and 2007
- *What kind of forest products do we harvest?*
  Roundwood production by species group and product: 1997, 2002, and 2007
- *How much woody biomass do we have and where?*
  Biomass (oven-dry tons by species group and region of the state

"How much pulpwood do we produce?"

Pulpwood production by species and region of the state

Table 1. Pulpwood production by species (standard cords) 2003 and 2006.

Species	2005	2006	Change
Aspen	940,353	814,827	-13%
Soft maple	430,805	300,361	-30%
Elm	22,044	239,584	987%
Red pine	249,991	155,639	-38%
Red oak group	169,981	125,521	-26%
Spruce	62,636	90,326	44%
Hickory	1,050	79,976	7,517%
Cottonwood	558	69,046	12,274%
Northern white cedar	33	59,865	181,310%
White pine	63,392	57,574	-9%
White birch	281,895	50,730	-82%
Balsam fir	100,645	47,710	-53%
Ash	91,136	42,387	-53%
Hard maple	479,502	17,963	-96%
White oak group	36,695	16,572	-55%
Yellow birch	33,981	14,218	-58%
Tamarack	15,914	13,005	-18%
Balsam poplar	2,368	12,443	425%
Beech	14,215	3,523	-75%
Hemlock	35,324	673	-98%
Basswood	82,094	481	-99%
Jack pine	186,833	30	-100%
Other hardwoods	9,312	21	-100%
All species	**1,200,289**	**1,354,214**	**-33%**

*Standard cords unpeeled based on 2005 and 2006 data
Source: Ronald Piva, USDA Forest Service, Northern Research Station, St. Paul MN

In 2006, pulpwood production decreased for the first time in the past five years. Having remained relatively steady from 2002 to 2005, production decreased 33% in 2006 (Table 1). Birch volume was down 80%. Production of balsam fir, ash, hard maple, beech, hemlock, basswood and jack pine pulpwood decreased by well over 50% from 2005 levels.

The only species for which pulpwood production had increased in 2006 were elm, spruce, hickory, cottonwood, northern white cedar and balsam poplar (Chart 1).

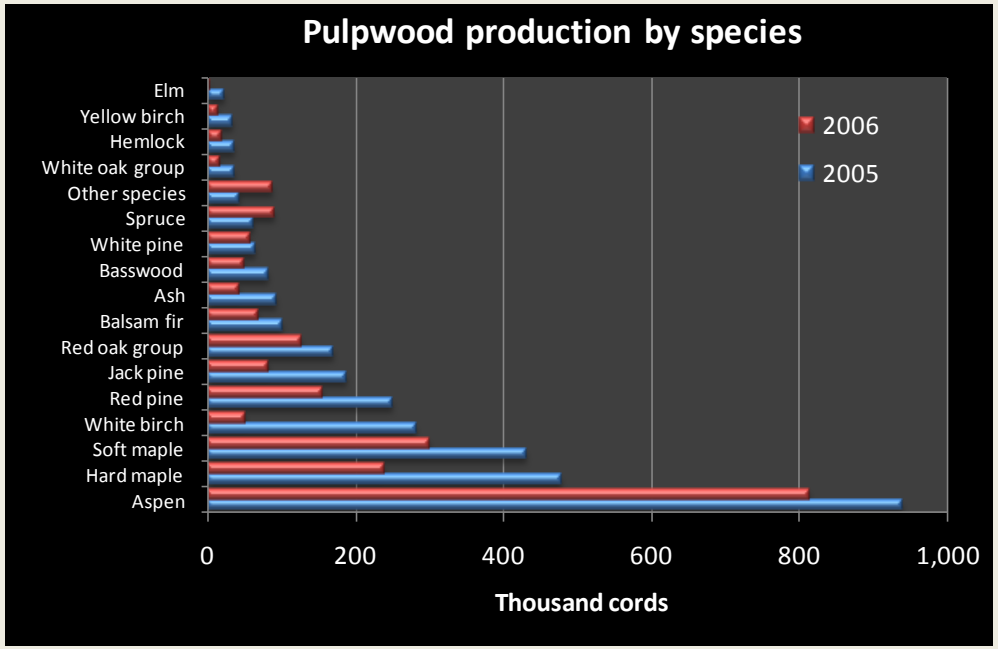


Chart 1. Pulpwood production by species in 2005 and 2006.
Source: Ronald Piva, USDA Forest Service, Northern Research Station, St. Paul MN

"How much fuelwood do we produce?"

Fuelwood production by species and region of the state

Table 2. Residential fuelwood production by region of the state (cords)

Species	North west	Central	South east	North east	South west	Total
Red oaks	48,495	69,184	39,729	25,966	33,985	217,359
Hard maple	24,183	11,828	2,360	22,174	2,674	63,218
Soft maple	14,525	9,095	10,993	9,039	3,703	47,355
White oaks	4,877	17,900	16,221	786	6,545	46,329
Aspen	19,508	9,176	3,430	9,053	1,952	43,120
Paper birch	12,015	749	9,118	9,019	1,263	32,165
Elm	2,160	5,185	9,707	6,274	5,431	28,756
Ash	3,713	1,258	14,352	742	2,263	22,326
White pine	754	1,672	7,094	223	761	10,504
Jack pine	3,974	3,761	9	1,036	380	9,160
Yellow birch	2,928	669	-	2,072	265	5,935
Red pine	201	1,198	3	428	3,615	5,444
Black walnut	-	250	-	-	2,386	2,635
Hickory	0	123	997	886	29	2,035
White cedar		93	1,931	2		2,027
Black cherry	0	6	1,082	11	851	1,950
Basswood	558	18	387	977		1,940
Willow	2	35	1,506	62	16	1,620
Ironwood	1	25	1,264	43	16	1,349
River birch		23	-	-	1,092	1,115
Apple	0	4	309	6	5	323
Beech	-	-	46	219		265
Spruce				116		116
Cottonwood			87			87
Honeylocust			73			73
Balsam fir	17	50	1			68
Total	**137,912**	**132,302**	**120,699**	**89,133**	**67,230**	**547,276**

Source: Ronald Piva, USDA Forest Service, Northern Research Station, St. Paul MN

White and red oaks account for almost half of fuelwood production and maples make up another 20% (Chart 2). Northwest and Central Wisconsin produce about half of all fuelwood (Table 2).

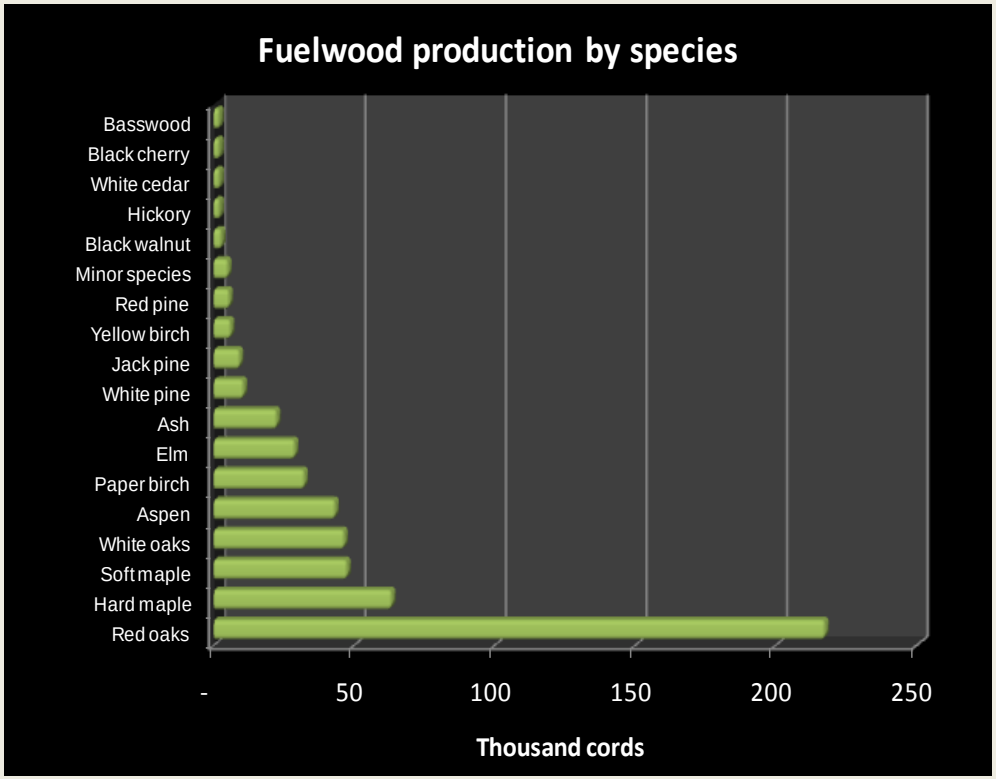


Chart 2. Fuelwood productionby species (thousand cords).
Source: Ronald Piva, USDA Forest Service, Northern Research Station, St. Paul MN

"How much wood do we produce on state and county lands?"

Timber sales on state and county lands in Wisconsin

State and county forestlands generated about $37 million worth of timber revenue in 2008 (Table 3). Although county lands accounted for 77% of total sales, sales on state forests are 30% larger and generate 12% higher revenue per sale.

Of the 2.4 million acres of county forests, 47,472 were harvested in 2008 (2%) and of the approximately one million acres of state land, 4,500 were harvested (0.5%) in 2008.

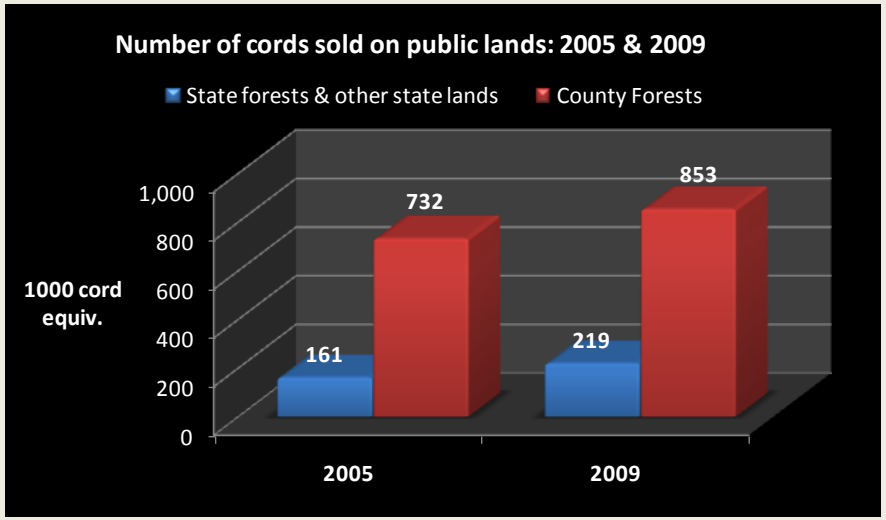


Chart 3. Cord sales on public lands in 2005 and 2009.
Source: Report 36A FY08 by Jeff Barkley, County forest specialist, Dept of Natural Resources, WI

Table 3. 2009 sold sales on public lands ("B" notices)

	# Sales completed	# Acres harvested	# MBF sold	# Cords sold	All products: # Cord Equiv	Stumpage value
State Forests	82	6,422	2,583	104,586	113,107	$3,497,586
Other State Lands	154	5,709	2,641	100,297	106,016	$3,126,522
County Forests	793	47,765	17,509	797,521	852,657	$30,287,089
Total	**1,029**	**59,896**	**22,733**	**1,002,404**	**1,071,780**	**$36,911,197**

Compiled from Report 36A FY08 by Jeff Barkley, County forest specialist, Dept of Natural Resources, Madison WI

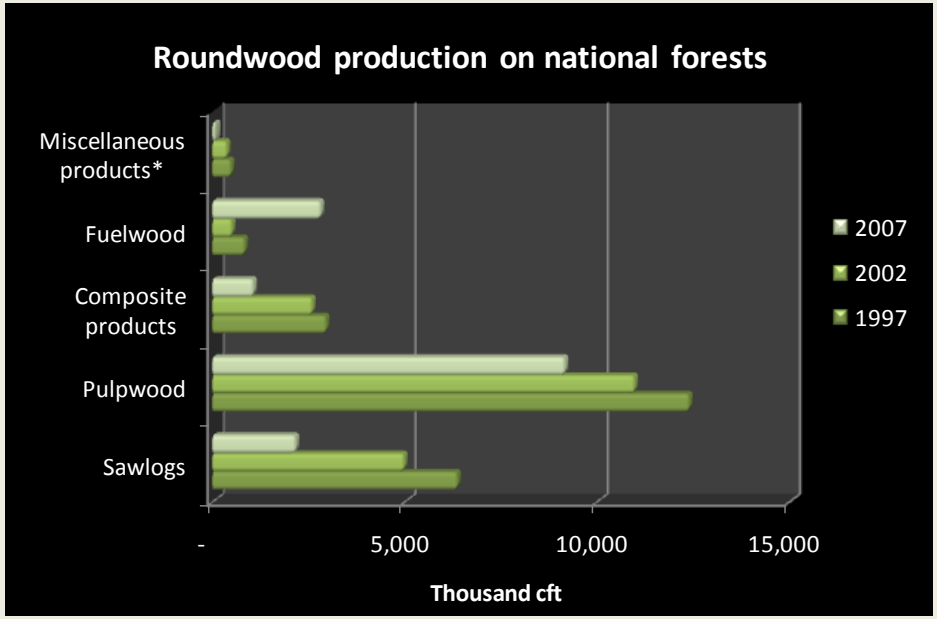
"How much wood do we produce on national forest lands?"

Volume of roundwood by product on federal lands

Only 8,930 acres were harvested on the Chequamegon and Nicolet National Forests in 2009 compared to over 59,000 acres on state and county lands (Table 4). Total stumpage value in 2009 was about $4.6 million on federal lands, compared to a total of $36.9 million on state and county lands.

A comparison between the federal, state, and county shows that while the national forests are harvesting only 0.6% of their forested acreage annually (compared to an average 1.8% for state and county), the average volume per acre is 2% higher on federal lands. On the other hand, sale value is about 4% lower on national forests compared to state and county lands.

Harvest by product in 2007 was: softwood sawtimber – 17,005 MBF, hardwood sawtimber – 1,836 MBF, and pulpwood – 37,052 MBF (Chart 4).



*Miscellaneous products include posts and pilings and veneer.

Chart 4 . Roundwood production on national forest lands by product over time.
Source: USDA Forest Service, Timber Product Output http://ncrs2.fs.fed.us/4801/fiadb/rpa_tpo/wc_rpa_tpo.ASP

Table 4. A comparison of harvest levels on federal, state, and county lands.

Landowner	Total acres forested	Total acres harvested	Percent of forested acres that are harvested	Volume harvested (cft)	Volume per harvested acre (cft/acre)	Total sale value	Sale value per harvested acre
Forest service[1]	1,522,485	8,930	0.59%	13,245,526	1,483	$4,587,197	$514
State[2]	983,886	12,131	0.95%	17,310,717	1,427	$6,624,108	$546
County[2]	2,363,429	47,465	2.01%	67,359,903	1,419	$30,287,089	$638

[1]Tina Smith, Resource specialist, USDA Forest Service, Chequamegon-Nicolet National Forests (2009 data)
[2]Source: Jeffrey Barkley, County forest specialist, Dept of Natural Resources, Madison WI (2009 data)

"What kind of forest products do we harvest?"

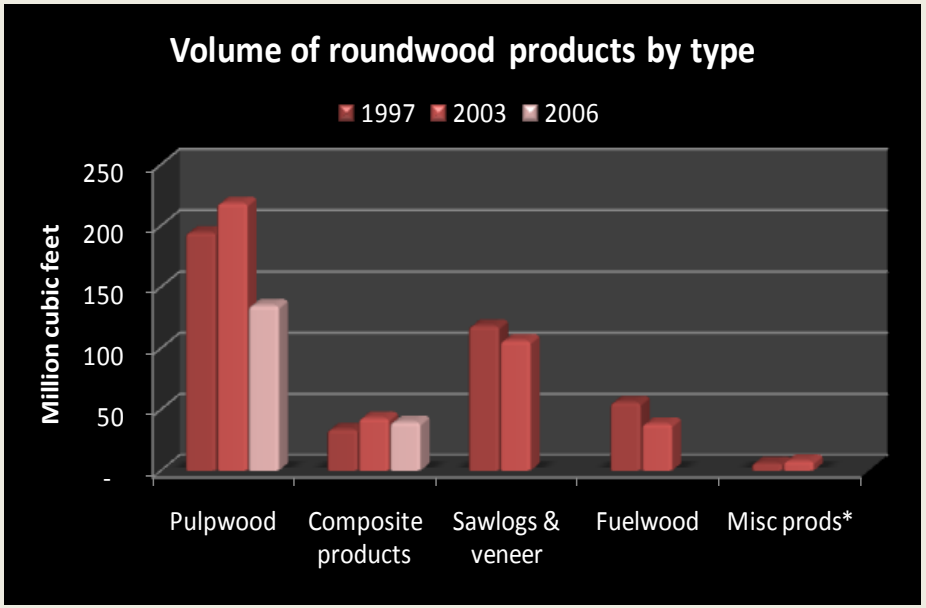
Wisconsin's roundwood production by species group and product

Total roundwood production was approx. 322 billion cft in 2006 (Table 5). Pulpwood accounts for 42% of roundwood (Chart 5). Sawlogs and veneer make up an additional 32% of production.

Table 5. Total roundwood production (thousand cft) by species group and product.

Species	Total Product	Compos prod	Pulp wood	Fuel wood	Misc* products	Saw logs	Veneer logs
Ash	7,710	62	3,287	1,568	-	2,766	27
Aspen	85,492	29,736	34,636	3,022	3,559	12,703	1,836
Basswood	8,598	2,195	1,574	136	158	4,521	14
Elm	2,975		278	2,013	-	684	-
Hard maple	38,684	448	18,479	4,430	95	14,050	1,182
Hemlock	1,617		1,419	-	-	198	-
Jack pine	10,109	559	5,751	641	494	2,659	4
Red oak	49,205		9,926	15,226	82	22,512	1,460
Red pine	30,049	443	11,853	381	1,740	15,434	198
Soft maple	33,431	458	23,300	3,320	-	6,166	188
Spruce	8,266	77	7,040	8	1	1,043	96
White birch	9,306	509	3,503	2,330	16	2,467	481
White oak	10,878		1,311	3,255	259	5,832	221
White pine	10,449	155	4,393	735	1,061	3,946	158
Yellow birch	2,744	1	1,122	415	-	1,075	130
Other species	12,988	5,148	7,126	-	-	587	128
Total	**322,500**	**39,790**	**134,997**	**37,481**	**7,466**	**96,641**	**6,124**

*Miscellaneous products include posts, poles and pilings.
Composite and pulpwood numbers are from 2006 while misc. products, sawlogs, veneer and fuelwood numbers are from 2003.
Source: Ronald Piva. USDA Forest Service. Northern Research Station. St. Paul MN



*Miscellaneous products include posts, poles and pilings.
Chart 5. Composite and pulpwood numbers are from 2006 while misc. products, sawlogs, veneer and fuelwood numbers are from 2003.
Source: Ronald Piva. USDA Forest Service. Northern Research Station. St. Paul MN

"How much woody biomass do we have and where?"

Biomass volume by unit and species group

There were 595.2 million oven-dry tons (ODT) of biomass on timberland in Wisconsin in 2008 (603.8 on all forestland-Table 6). This is an increase of 10.7 million ODT or 1.8%, from 1996. As with volume, most biomass is located in northern Wisconsin (58%) with lesser amounts in southern (24%) and central (19%) parts of the state (Chart 6).

Table 6. All live tree and sapling aboveground biomass on forestland (thousand oven-dry short tons) by species group and region of the state.

Species group	North east	North west	Central	South west	South east	State
Ash	8,873	14,690	5,853	3,763	7,990	41,169
Aspen	18,263	25,687	7,484	4,471	1,945	57,850
Balsam Fir	5,067	5,055	373	-	97	10,592
Basswood	6,077	6,831	2,266	3,203	1,980	20,358
Elm	1,237	1,399	1,879	6,168	2,861	13,544
Hard maple	33,535	31,794	5,024	6,098	3,571	80,023
Hemlock	5,100	2,856	649	-	321	8,926
Jack pine	1,359	2,205	2,641	109	13	6,327
Paper Birch	5,684	7,978	2,393	2,533	1,151	19,739
Red oaks	13,649	22,837	28,770	21,424	5,157	91,837
Red pine	10,002	7,867	8,021	1,047	775	27,711
Soft maple	17,729	27,872	19,009	6,973	4,100	75,683
Spruce	5,065	4,464	494	167	215	10,404
White oaks	842	5,657	10,788	14,778	6,691	38,756
White pine	8,582	6,024	7,658	1,745	959	24,969
Yellow birch	3,762	5,628	1,011	72	395	10,868
Minor species	14,044	10,896	8,121	19,107	12,880	65,049
Grand Total	**158,869**	**189,740**	**112,435**	**91,658**	**51,101**	**603,803**

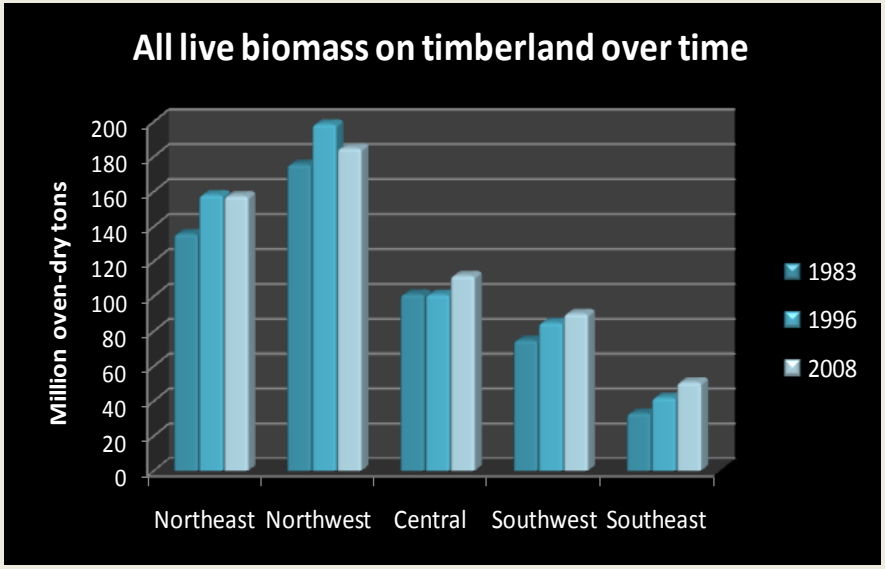


Chart 6. All live biomass on timberland (million oven-dry tons).
Source: USDA Forest Inventory and Analysis data: 1983, 1996, and 2008.

Additional tables: Biomass by county in 2008 (pdf; Excel)