

A Report on the Agriculture Industry in Wisconsin

By Patrick Laws

NATIONAL

According to the USDA Family Farm Report, as recently as 2011, family farms accounted for 97% of all farms in the U.S. That figure is down from 98% in 2004. The same report indicated that 90% of all farms reported farm income of less than \$350,000, and operate 52% of the nation's farmland. These farms, however, only account for 26% of agricultural production nationwide.

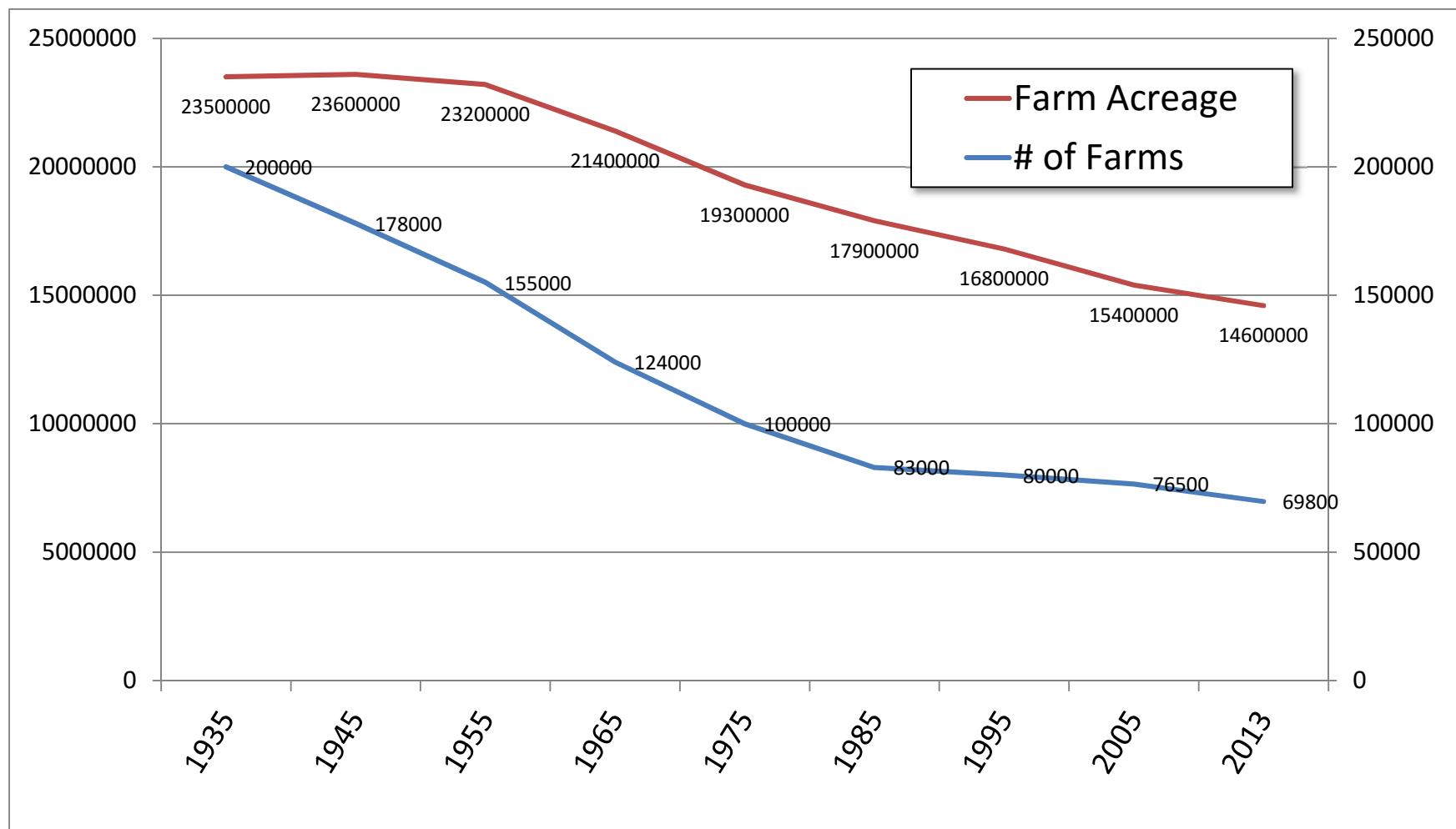
The USDA report also determined that mid and large sized family farms comprise 8% of all U.S. farms, but account for 60% of the value of U.S. agricultural production. Mid-sized farms are defined as having a gross cash farm income of between \$350,000 and \$999,999. Large sized family farms are defined as have a gross cash farm income of in excess of \$1,000,000.

The 2014 report indicates real net farm income has risen, on average, 60% over the past three years. The average farm income from the period 2001 to 2010 was \$74.3 billion. Farm income for the past three years has been \$118, \$111.9, and \$126.5 billion, respectively. The report also indicates that the number of farms decreased dramatically between 1934 and 1990, but has since levelled out. Farm acreage, on the other hand, has remained relatively stable over the past century.

WISCONSIN

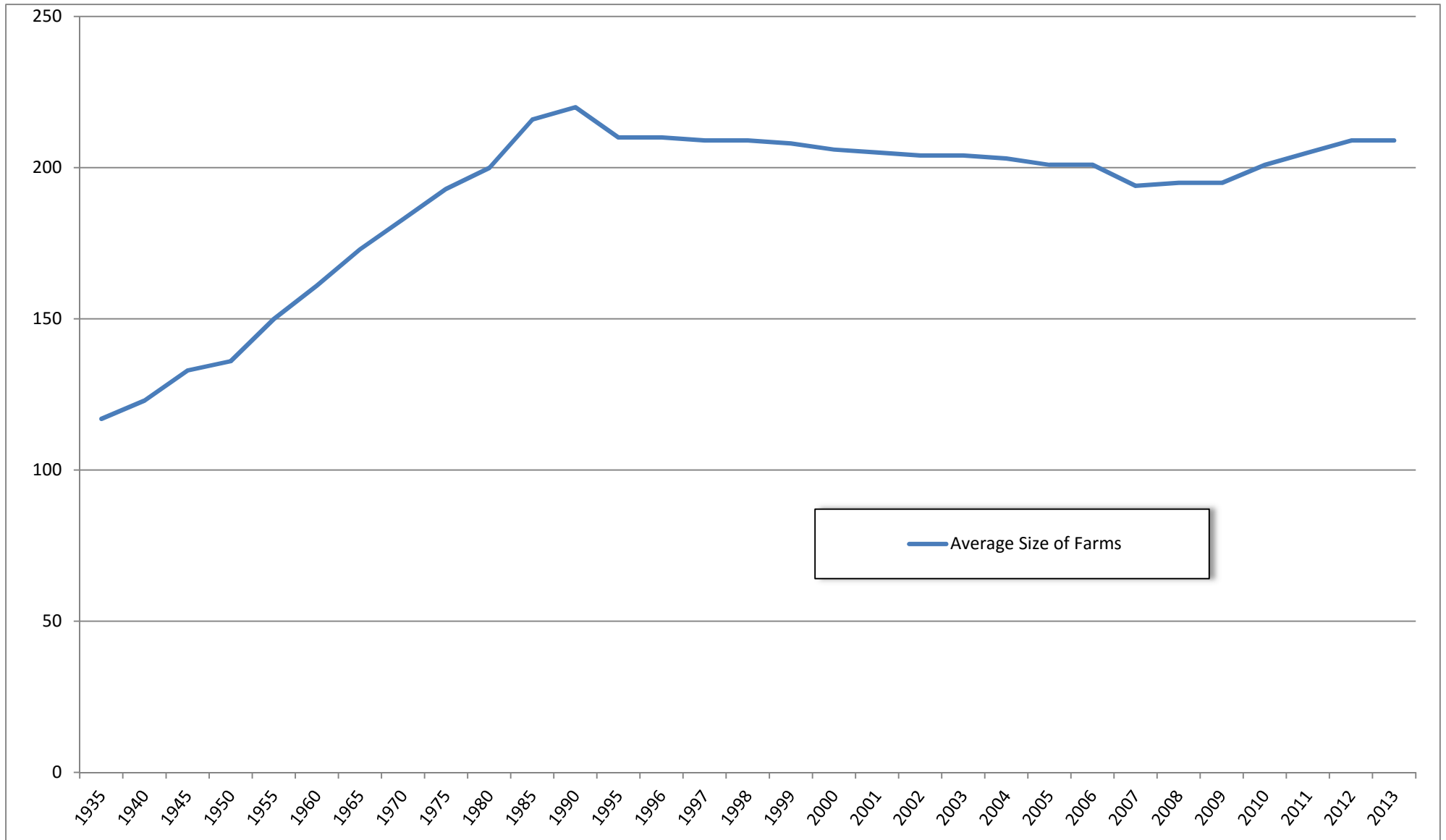
Wisconsin ranks 9th in the nation for agricultural production. Wisconsin ranks 1st in cheese, corn for silage, cranberry, carrots, and snap bean production. Wisconsin ranks 2nd in milk and oats production. Wisconsin ranks third in potato, sweet corn, and green pea production. Agriculture contributes \$88.3 billion to the state economy.

Sales of agricultural land jumped in 2012 by 8%. Ag land sold to be used for purposes other than agriculture increased by 24% in that same period. The number of farms in Wisconsin decreased less than 1% in 2012.



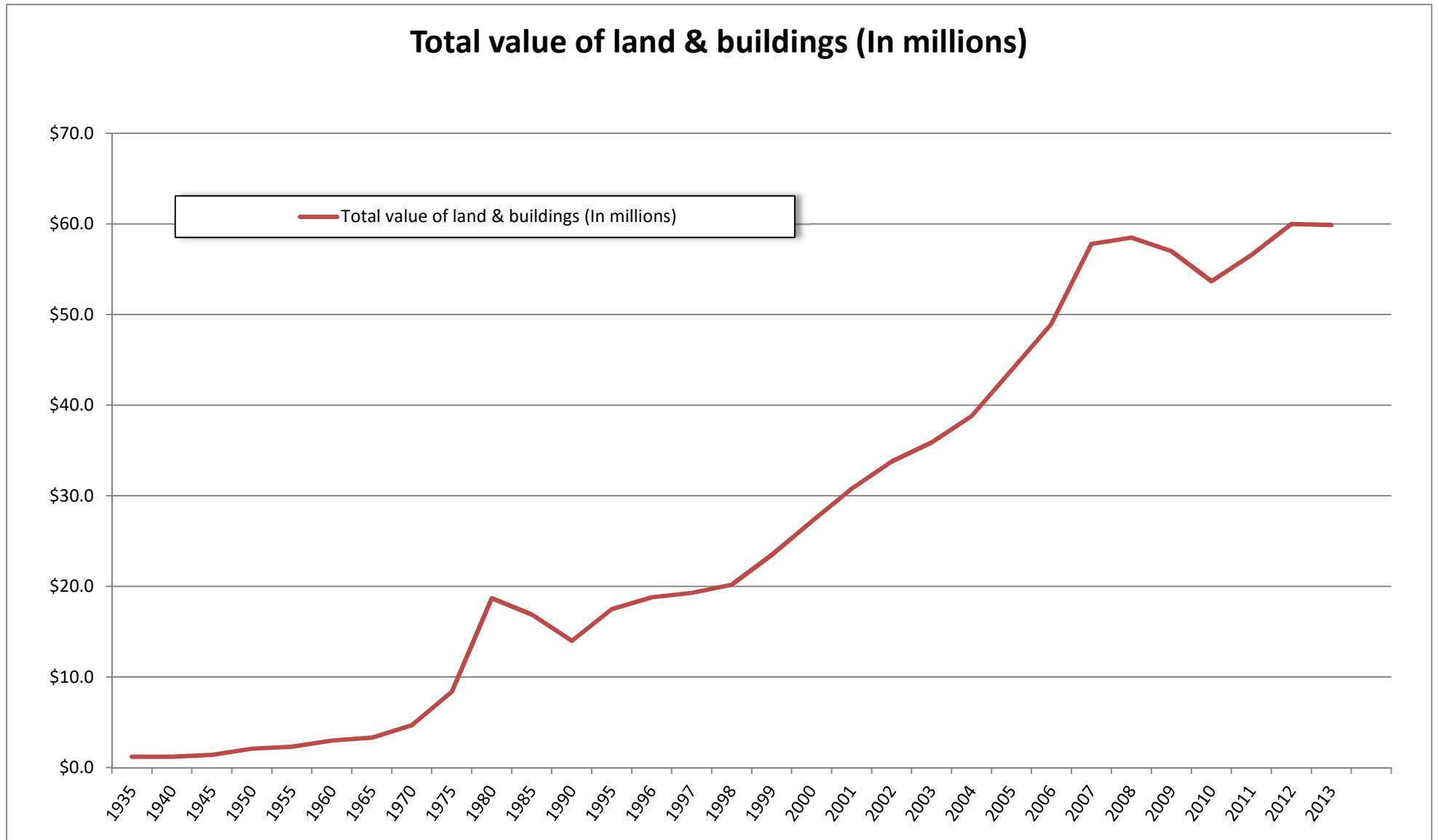
AVERAGE SIZE OF FARMS

Since 1935 there has been a steady decline in both the number of farms and the amount of farmland in Wisconsin. The decrease in number of farms continues, but, as the graph below indicates, has moderated over the past 30 years. The average size of Wisconsin farms increased dramatically between 1935 and 1995, however, it has moderated significantly with minor fluctuations in the past twenty years.



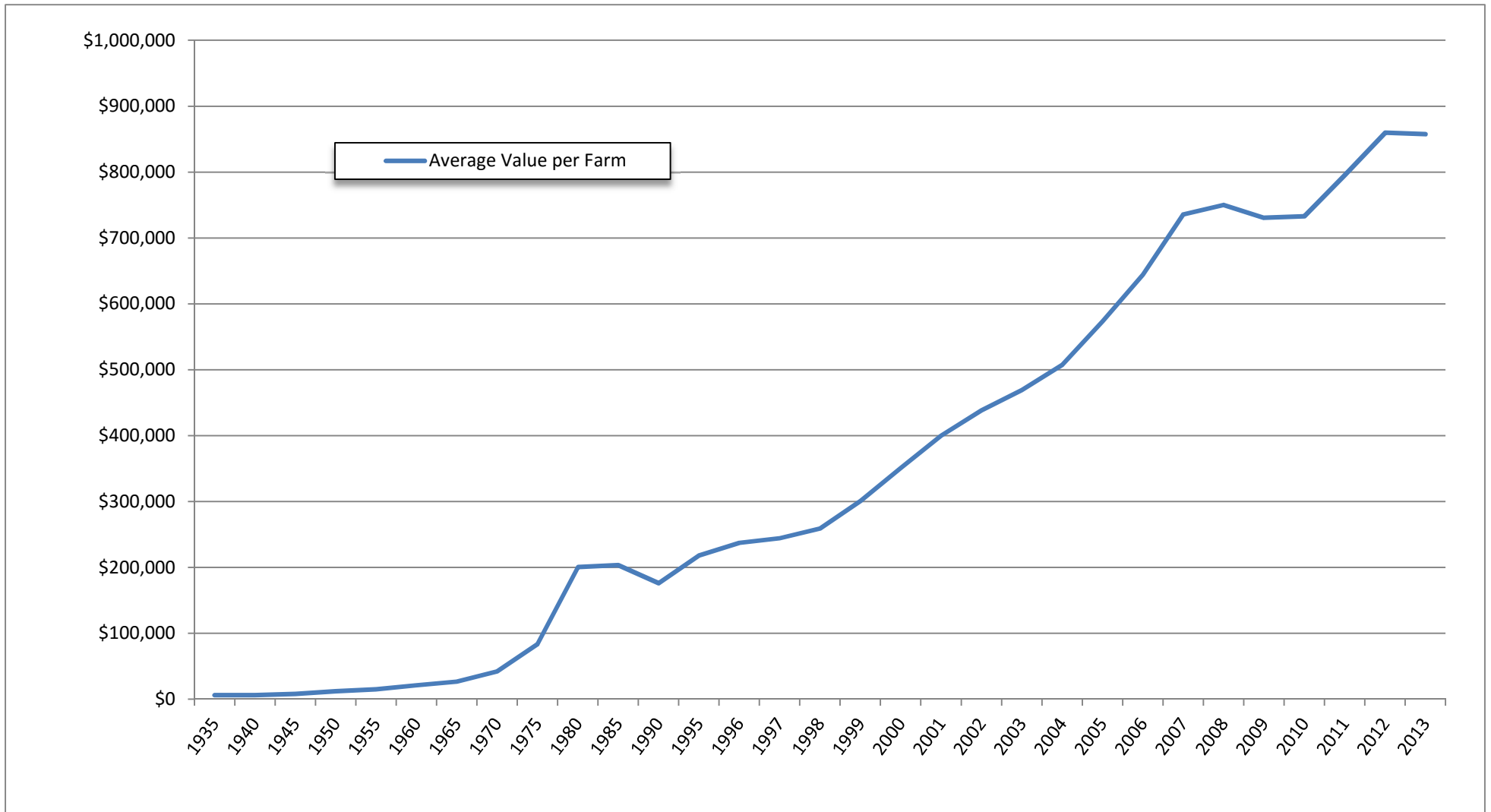
TOTAL VALUE OF LAND AND BUILDINGS

The total value of land and buildings on Wisconsin farms increased gradually from 1935 until about 1970. There was a sharp spike between 1970 and 1985, and sharp decrease from 1985 to 1995. Since that time the value has increased considerably except for a sharp drop in 2010. Values recovered nicely from that drop, and have increased since then.



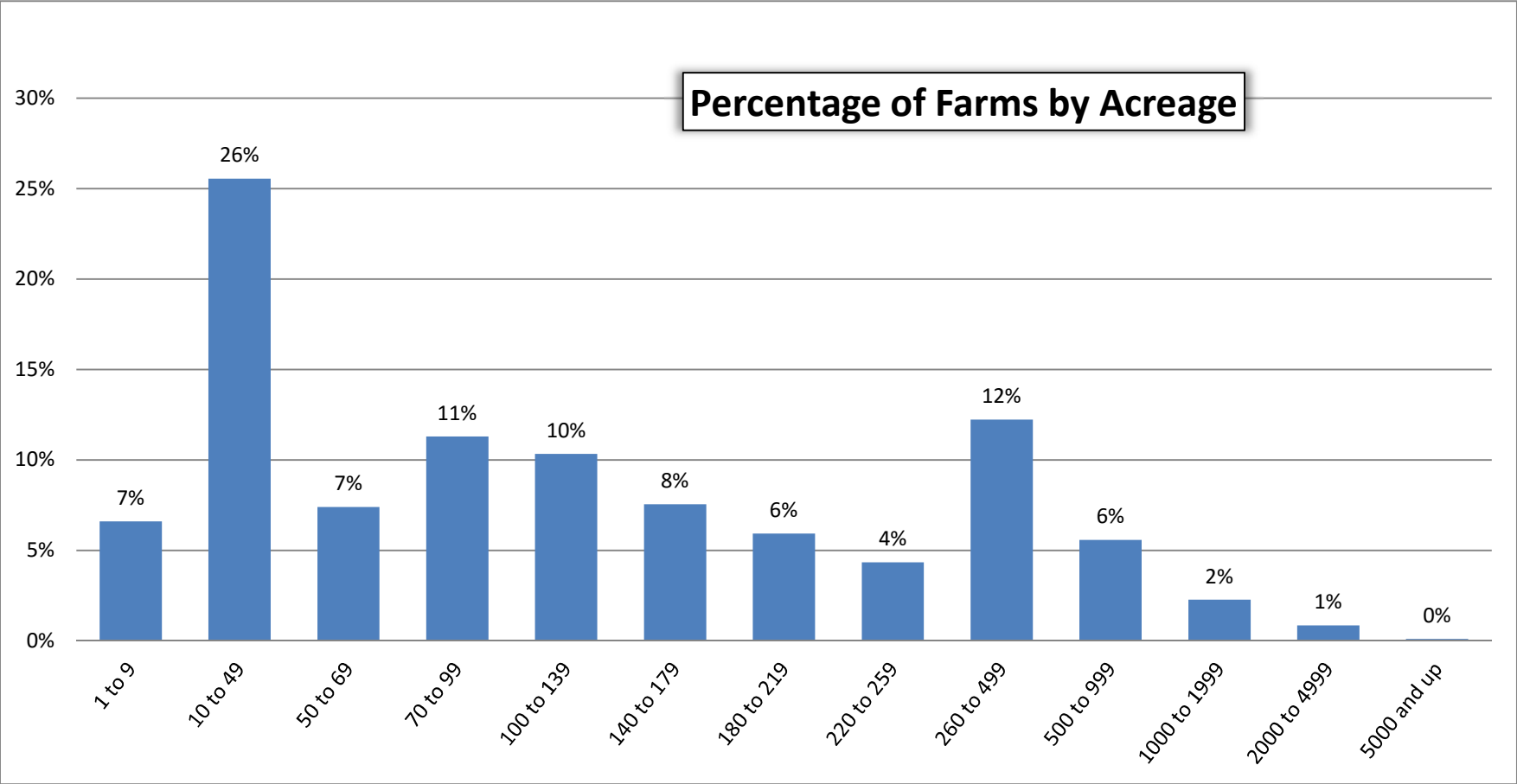
AVERAGE VALUE OF LAND AND BUILDINGS PER FARM

As the total value of land and buildings has increased, so too has the average value of land and buildings per farm.

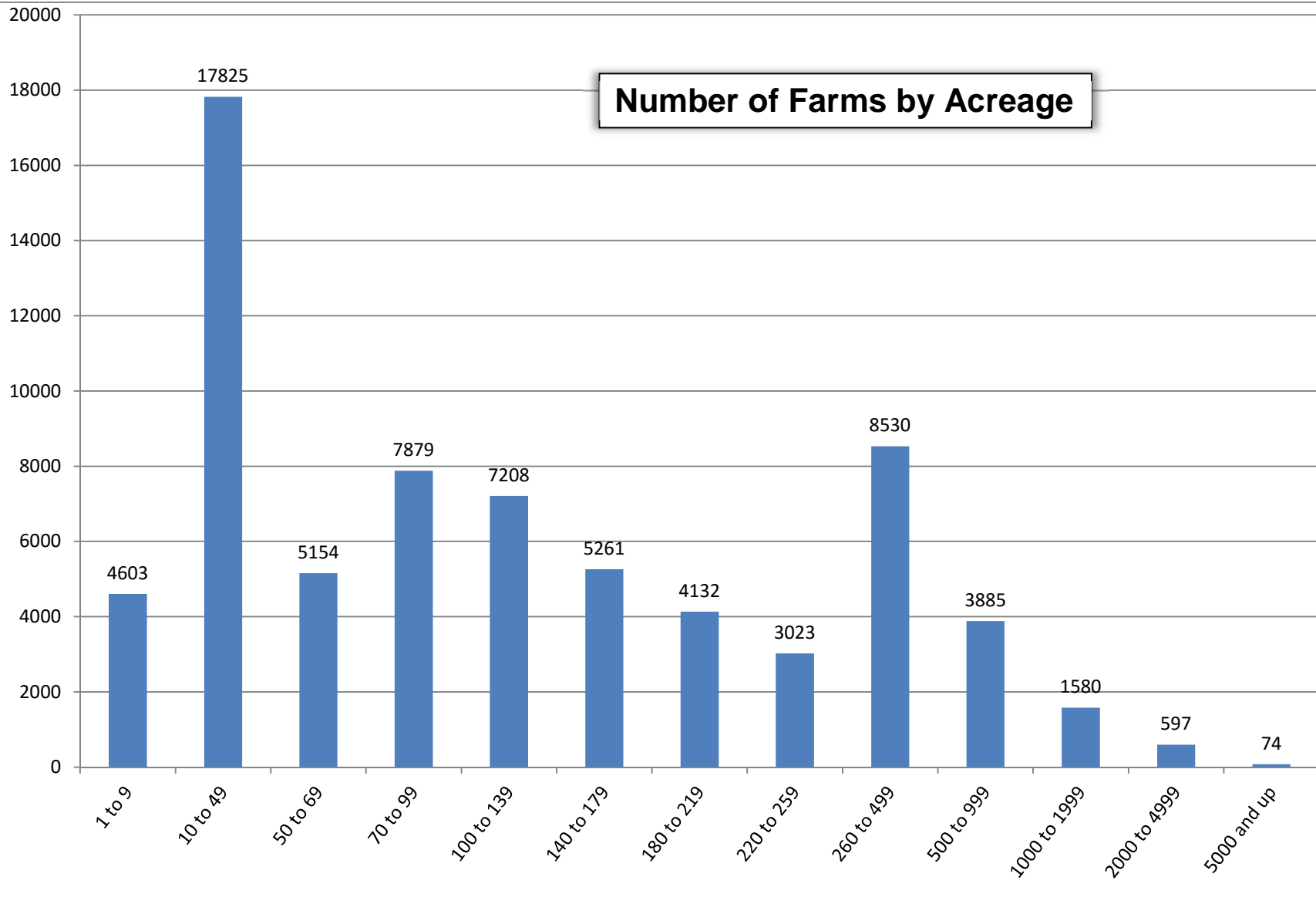


FARMS BY ACREAGE

The number of Wisconsin farms broken down by acreage is reflected on the charts below.

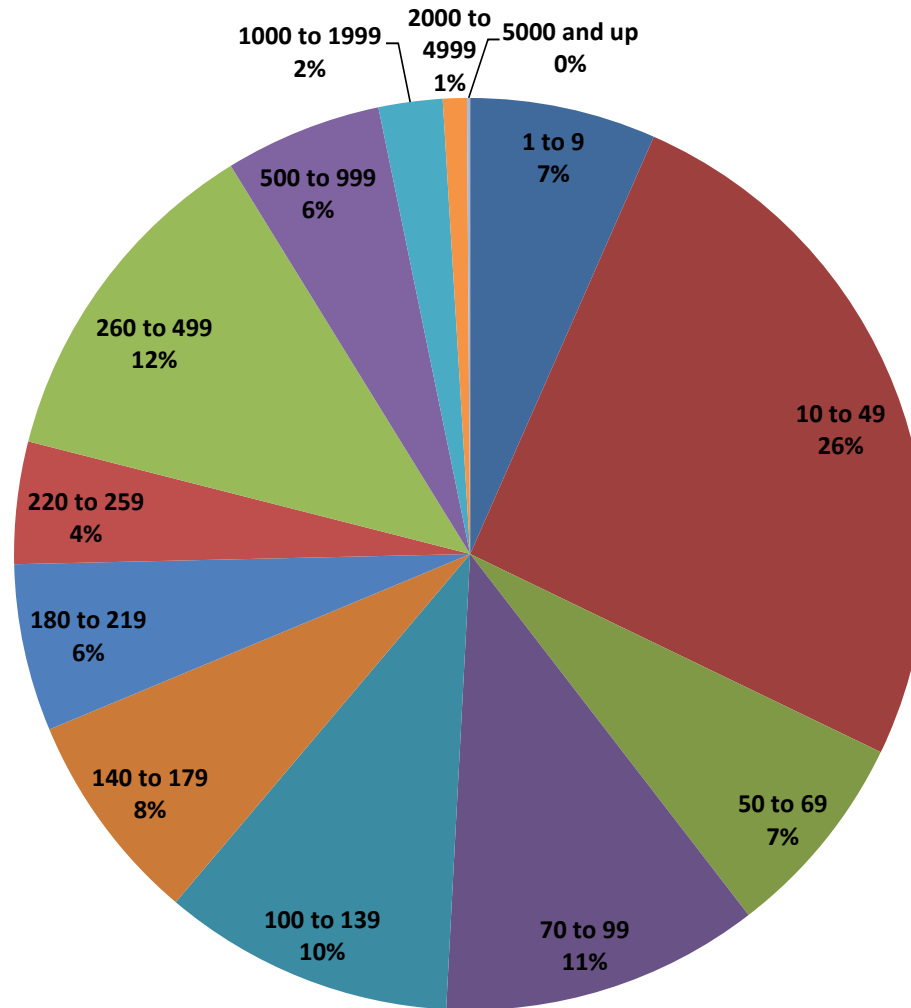


Number of Farms by Acreage



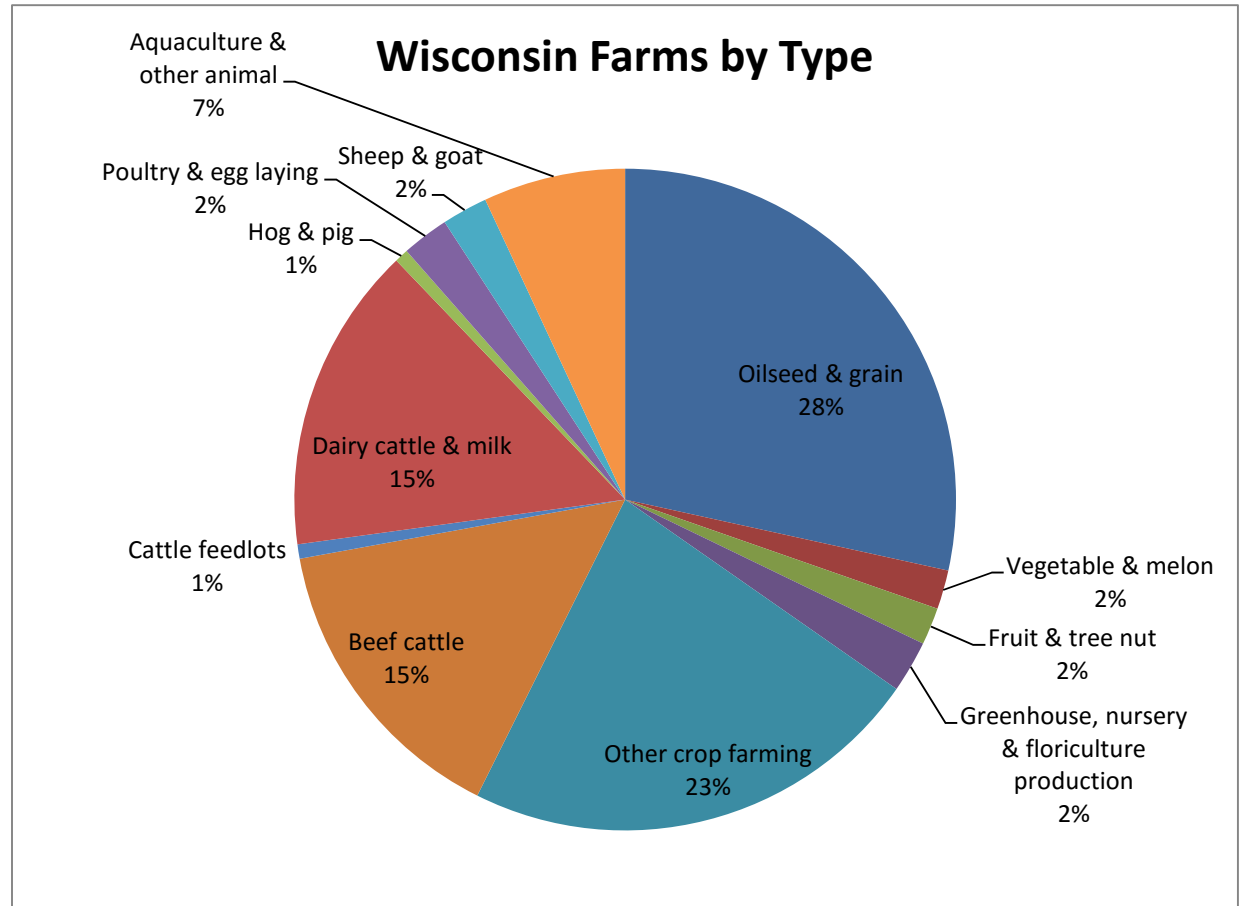
The size of farms is as diverse as Wisconsin, however, the largest percentage of farms (26%) is between 10 and 49 acres. 60% of all farms are sized below 100 acres, and over 78% are below 200 acres.

Percentage of Farms by Acreage



FARM BY TYPE

Oilseed & grain	19730	28%
Vegetable & melon	1318	2%
Fruit & tree nut	1264	2%
Greenhouse, nursery & floriculture production	1754	3%
Other crop farming	15719	23%
Beef cattle	10241	15%
Cattle feedlots	492	1%
Dairy cattle & milk	10401	15%
Hog & pig	475	1%
Poultry & egg laying	1591	2%
Sheep & goat	1555	2%
Aquaculture & other animal	4814	7%



These graphs represent the number of farms in each category. *Oilseed and grain farming* represent the largest number of farms, followed by *Other crop farming* at 23%, and then *Dairy Cattle & milk* and *Beef cattle* both at 15%.

ORGANIC FARMING

Organic farming in the United States began as a movement in the 1940s when J.I. Rodale founded the Rodale Research Institute and *Organic Farming and Gardening* magazine. The movement increased in intensity and popularity during the 1970s, but a lack of centralized and consistent standards meant that the definition of “organic” and practice of organic farming was vastly different state to state. In 1990, Congress passed the Organic Foods Production Act, which established a national standard for organic agriculture. However, farms with less than \$5,000 a year in organic farm production are exempt from certification.

Organic farming is defined by the USDA as “a production system that is managed to respond to site-specific conditions by integrating cultural, biological and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.” The organic farm industry accounts for \$35 billion dollars in agricultural production. Organic production is increasing at a rate of 12% per year. 81% of U.S. families opt for organic products at least part of the time. There are 1,180 organic farms in Wisconsin. Wisconsin leads the Midwest in the number of organic farms, and is second to California nationwide. The number of organic farms in Wisconsin has grown 77% in the last ten years. The typical organic farmer is female, and 29% of them are under 45 contrasted with only 17% of standard farmers younger than 45.

Even with that impressive number, domestic organic production is insufficient to meet the demand. The U.S. imported over \$150 million worth of organic grain during 2012 - 2013. The market for both organic and conventional grain has been extremely volatile in the last several years, and that has translated into less domestic production. Additionally, the transition from conventional to organic grain production is difficult. There is a three-year transition period during which no chemicals can be used, and the crops cannot be sold as organic. This presents a significant period where yields are lower, and the crops cannot be sold at organic prices. The high cost of renting or purchasing farm land means that farmers absolutely must get the most out of every acre. This is a challenge for organic farmers as the complicated crop rotations required of a well-managed organic operation will result in years with less profitable crops like alfalfa and small grains. Finally, Wisconsin has a limited number of organic grain buyers who are distributed unevenly across the state.

Smaller organic farmers tend to network their operations in order to leverage the benefits of bulk purchasing. Unlike conventional crops, there is no organic equivalent to the Chicago Board of Trade or the USDA Agricultural Marketing Service, so organic crops are all privately traded. The federal government only offers a few agricultural subsidy programs for organic farms, and they are minimal compared to the programs offered for conventional farms.

COMMUNITY SUPPORTED AGRICULTURE

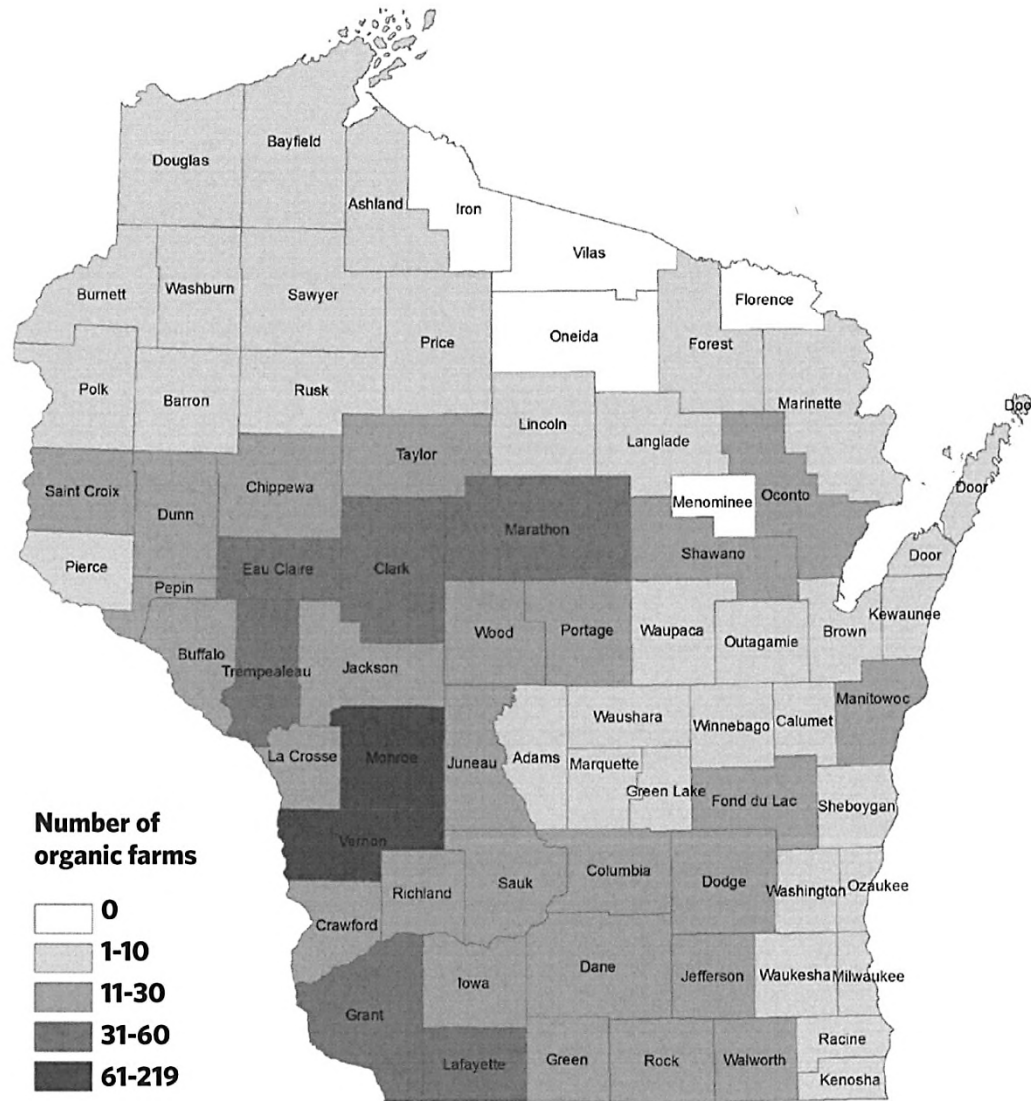
A subdivision of organic farming is Community Supported Agriculture or CSAs. CSAs are touted as a method for consumers to be more in touch with the farmers who actually grow the food. The benefit to farmers is that they are able to eliminate the middle-man thereby increasing profits.

CSAs were begun on the East Coast in the 1980s. CSAs are estimated to have between 30,000 and 50,000 members nationwide. CSAs have members who purchase shares of the farm. The average membership or share averages \$208, and can reach as high as \$415 over 22 weeks. For this fee, members receive a weekly box of produce from the farm. A UW-Madison study from 2001 indicated that the average member paid more for the produce than if it had been bought from a supermarket or grocery store, but much less than if the produce had been bought at a farmers' market, co-op, or natural foods store.

Fees are calculated based on the number of CSA members, and total operational expenses of the farm. CSAs encourage members to visit the farm, and often hold events such as a potluck or harvest celebration. Some CSAs require or allow members to actually work the farm. This increases the liability risk of the farmer, often substantially depending on the number of members.

As indicated by the average CSA membership numbers, the average consumer will not benefit much, if at all, financially speaking from membership. The goal of CSAs is not necessarily to provide agricultural products for less money, but rather to connect the consumer to the farmer. In this respect, the consumer needs to buy in to the concept of the CSA.

Distribution of certified organic farms in Wisconsin, 2013



Map by Larry Cutforth, DATCP, 1/9/2015

Figure 3. Distribution of certified organic farms in Wisconsin, 2013

Source: USDA 2013 NOP data, <http://apps.ams.usda.gov/nop/>

GINSENG FARMS

Ginseng is a root crop grown and marketed as a natural medicinal herb. Ginseng usage began in China, migrated to Korea, and has grown significantly in recent years. In traditional Chinese medicine, American Ginseng is considered cool or “Yin”, as opposed to Chinese or Korean ginseng which is considered hot or “Yang”. American Ginseng is believed to be better for treating patients and the elderly. Hong Kong and China are the largest importers of U.S. grown ginseng product.

Ginseng farming began in Wisconsin in 1904 with the Fromm brothers. Production increased in the early 1900s, and remained steady throughout the Second World War. Today, Wisconsin ranks first in both ginseng production and acreage producing more than 90% of all U.S. ginseng.

Ginseng farmers increased tenfold between 1970 and 1983, and the number doubled between 1983 and 1997. However, the number decreased 84% between 1997 and 2006 due to falling ginseng prices which resulted from a worldwide increase in ginseng production. Additionally, ginseng acreage plummeted 50% from 1996 to 2002. The number of ginseng farmers dropped from 1,468 in 1995 to only 190 in 2006.

In 1986 the Ginseng Board of Wisconsin was established. In 1990, the Ginseng Board created the Wisconsin Ginseng Seal. Products labelled with the seal are supposed to be guaranteed to have 100% pure Wisconsin ginseng. However, some members were able to join the Board for a year to get access to the seal, import cheaper Chinese ginseng, and fraudulently continue to use the seal. This resulted in a loss of confidence among ginseng consumers in the seal. Since that time the Board has entered into an exclusive agreement with Eu Yan Sang as the sole supplier of Wisconsin ginseng to the Orient.

Marathon County is top ginseng producing county in Wisconsin with as much as 80% of all ginseng production in the state. As of 2007, 76% of ginseng farms in Wisconsin have less than 10 acres of ginseng, and 71% harvested less than 5,000 pounds. Significantly increased competition from Chinese and Canadian ginseng farms is a tangible threat to the industry in Wisconsin.

CHEESE PRODUCTION

Cheese prices are the primary driver of milk prices as 85% of all milk produced in Wisconsin and 33% of all milk produced domestically is used for cheese production. Cheese manufacturing began in the 1840s in Wisconsin and New York. By 1870 dairy boards had been established, and they eventually evolved into the National Cheese Exchange, which is headquartered in Green Bay. While only 0.2% of all cheese transactions occur in the NCE, these transactions are the primary drivers of cheese prices in the industry.

Wisconsin ranks first or second in production of most varieties of cheese in the U.S. including Limburger (100%), Romano (57%), and Provolone (52%). Wisconsin ranks 4th in the world in cheese production:

1. United States (excluding Wisconsin)
2. Germany
3. France
- 4. Wisconsin**
5. Italy
6. Netherlands
7. Poland
8. Russia
9. Egypt
10. Argentina

Dairy comprises \$43 billion dollars, or nearly half of all Wisconsin agriculture. Wisconsin has over 10,000 dairy farms housing nearly 1.27 million cows. Each cow contributes an average of \$34,000 to the economy annually.

According to the Wisconsin Milk Marketing Board, Wisconsin produces over 1/4th of all the cheese in the United States. There are 138 cheese plants, 13 butter plants, and 15 yogurt plants in Wisconsin.

CRANBERRY

Cranberries were first cultivated and harvested in mid-1860's near Berlin, Wisconsin. Production spread from there to the natural wetland areas of the state. The first cranberry marketing cooperative, the Wisconsin Sales Company, was established in 1906 by A.U. Chaney and Judge Gaynor. By 1910, the WSC merged with New England Cranberry Sales Company and the New Jersey Cranberry Sales Company to form the National Fruit Exchange. The NFE, in turn, merged with the Grower's Cranberry Company to form the powerful American Cranberry Exchange (ACE).

At this time, cranberries were sold as a fresh fruit that was consumed primarily at Thanksgiving and Christmas. In 1912, Marcus Urann, a member of the ACE board invented cranberry sauce, which he marketed under the name "Ocean Spray". Now that cranberries could be preserved, competition in the industry increased. Cranberry Cannery, Inc. would be formed in 1930 as a result. Following World War II, the cranberry industry developed other cranberry products including frozen cranberries, cranberry relish, and cranberry cocktail beverages.

The industry has consistently suffered from overproduction. Cranberries are perennials. This means that the bogs will continue to produce forever. Some productive bogs are over 100 years old. When new products were developed, this was not an issue as the overproduction of cranberries could be funneled into sauce, juice, and other products. However, by the late 1990s the overproduction of the crop caught up with the industry.

Between 1990 and 2000 several factors combined to collapse the cranberry market. Northland, the largest member of Ocean Spray, departed the cooperative. Initially Northland contracted with other companies to provide processing, but during this time the company built its own processing center. Another large grower, Jeffords, also left the Ocean Spray coop. Once Northland brought all its processing in-house, the two companies who had previously provided processing for Northland, Cliffstar and Pappas, scrambled to find suppliers. The price of cranberries topped \$65 a barrel in 1996. 1997 and 1998 brought record crops, and the entire industry collapsed under the weight of overproduction and artificially inflated pricing. By 1998 the price per barrel had fallen to \$38.80. 1999 brought yet another crop production record, and the price fell again to \$17.20 per barrel. In response to this collapse of the market, the industry implemented production constraints for two years while the excessive inventory of cranberries was used and prices stabilized. Ocean Spray bought Northland in 2005 ending a decade of competition and struggles in an industry that continues to be dominated by Ocean Spray. This has stabilized the industry.

Cranberries are produced primarily in five states: Massachusetts, Wisconsin, Oregon, Washington, and New Jersey. Wisconsin ranks second in cranberry farms with 237, and first in acreage at 17,494 acres. Wisconsin ranks first in cranberry production in the U.S. at 60%. Cranberry acreage in Wisconsin increased to 19,700 acres in 2011, and yield increased to by 420,000 barrels. Wisconsin remains the center of national cranberry production.

FARM TYPE ANALYSIS

Below is a breakdown of farms by type and by county from the 2012 USDA farm census.

	Total Farms	Dairy Farms	Beef Farms	Hog & pig farming	Poultry production	Egg production	Sheep farming	Corn (for grain)	Wheat (for grain)	Oats (for grain)	Soybeans	Vegetable	Tobacco
Adams	313	17	78	14	4	46	14	123	12	18	106	30	0
Ashland	187	15	82	5	4	24	4	12	1	7	6	7	0
Barron	1322	264	366	41	30	116	68	592	38	91	355	88	0
Bayfield	352	35	118	11	16	44	17	21	12	14	5	25	0
Brown	1111	194	157	54	14	73	31	346	166	119	224	38	1
Buffalo	1061	143	243	24	56	79	32	568	4	95	270	14	0
Burnett	406	35	131	9	8	57	5	121	1	11	83	11	0
Calumet	719	144	79	23	11	57	19	311	181	37	274	60	0
Chippewa	1757	365	376	46	31	184	44	730	13	194	380	32	4
Clark	2317	948	374	96	90	468	83	1164	98	391	676	66	0
Columbia	1564	143	212	50	23	160	87	706	176	97	412	98	0
Crawford	1105	121	341	23	12	77	20	399	16	105	184	15	0
Dane	2749	304	316	85	50	262	109	1043	292	118	765	145	93
Dodge	2012	308	220	52	37	180	61	1003	380	157	762	135	4
Door	803	72	100	9	3	60	23	201	161	111	130	124	0

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Douglas	364	11	119	18	13	61	19	5	4	5	4	5	0
Dunn	1404	199	356	28	18	132	55	579	13	135	375	44	0
Eau Claire	1313	169	248	59	42	172	38	492	5	124	261	38	0
Florence	90	6	26	3	3	14	3	1	0	1	0	0	0
Fond du Lac	1399	290	111	43	13	89	50	696	373	96	568	131	0
Forest	127	2	59	2	4	16	5	3	2	11	1	2	0
Grant	2436	464	656	78	31	178	83	1141	58	336	642	28	9
Green	1545	285	203	51	31	191	59	581	153	108	402	21	0
Green Lake	608	93	47	31	13	85	25	320	114	68	153	107	0
Iowa	1588	224	383	39	24	111	57	542	63	111	322	22	0
Iron	61	6	14	0	0	6	0	0	0	1	0	3	0
Jackson	864	160	153	37	13	102	53	356	11	103	204	20	0
Jefferson	1225	112	144	47	33	123	41	567	199	70	498	31	3
Juneau	827	81	156	28	3	65	23	339	48	50	196	20	0
Kenosha	359	31	37	18	7	45	25	118	65	6	108	16	0
Kewaunee	734	196	94	17	8	35	7	264	185	154	196	33	0
La Crosse	748	107	165	12	11	71	32	370	13	53	191	23	0
Lafayette	1252	263	302	50	10	92	51	557	42	122	349	11	34
Langlade	396	59	78	8	7	32	13	103	22	80	53	42	0
Lincoln	449	55	124	12	13	53	7	67	11	37	47	15	0
Manitowoc	1224	268	143	31	16	100	33	431	294	130	349	56	0
Marathon	2266	677	407	55	51	221	55	1030	76	340	678	93	0
Marinette	535	75	120	31	10	62	16	185	37	51	57	26	0
Marquette	478	48	88	25	9	64	16	172	19	37	94	19	0
Menominee	5	0	2	2	0	2	0	0	0	0	0	0	0
Milwaukee	82	0	3	0	2	10	1	11	5	2	11	36	0
Monroe	1926	362	418	88	65	271	108	793	17	265	329	47	0

	Total Farms	Dairy Farms	Beef Farms	Hog & pig farming	Poultry production	Egg production	Sheep farming	Corn (for grain)	Wheat (for grain)	Oats (for grain)	Soybeans	Vegetable	Tobacco
Oconto	929	154	156	32	19	109	31	357	66	64	178	61	0
Oneida	150	0	28	7	7	23	10	1	5	5	1	11	0
Outagamie	1170	222	146	49	24	89	21	511	142	74	449	27	0
Ozaukee	416	66	42	6	9	45	22	143	82	48	126	54	0
Pepin	459	70	81	12	9	62	9	237	2	52	144	9	0
Pierce	1259	175	270	30	15	134	53	582	4	165	296	39	0
Polk	1313	154	333	36	44	186	73	464	25	66	222	61	1
Portage	969	133	207	33	42	118	24	379	7	106	148	71	0
Price	472	60	116	20	10	59	17	67	2	36	13	7	0
Racine	575	32	56	19	18	59	27	192	112	16	207	48	0
Richland	1260	159	326	40	18	103	40	399	20	59	187	27	0
Rock	1509	103	207	47	27	142	76	603	157	30	531	62	31
Rusk	529	157	168	27	7	62	19	196	2	52	70	8	0
St. Croix	1417	167	353	35	32	144	82	537	14	132	314	30	0
Sauk	1665	233	317	66	48	203	73	720	106	154	466	43	0
Sawyer	172	18	52	8	9	23	11	30	3	6	16	5	0
Shawano	1278	341	190	36	20	101	23	601	76	176	303	21	0
Sheboygan	986	167	138	43	12	102	49	430	270	86	375	81	0
Taylor	967	256	239	35	13	122	23	287	14	138	203	14	0
Trempealeau	1436	195	278	32	76	94	25	683	10	99	321	21	0
Vernon	2228	482	552	87	58	343	143	953	63	302	342	146	1
Vilas	47	0	7	1	5	3	5	0	0	1	0	2	0
Walworth	870	84	120	48	21	95	62	364	128	16	260	46	0
Washburn	405	32	114	17	4	54	18	76	9	14	36	15	0
Washington	712	105	74	19	17	69	26	286	131	117	244	37	0

	Total Farms	Dairy Farms	Beef Farms	Hog & pig farming	Poultry production	Egg production	Sheep farming	Corn (for grain)	Wheat (for grain)	Oats (for grain)	Soybeans	Vegetable	Tobacco
Waukesha	557	32	58	13	13	67	24	156	46	20	135	37	0
Waupaca	1145	199	161	41	22	136	37	483	60	114	252	23	0
Waushara	592	52	92	16	9	70	17	236	33	32	159	51	0
Winnebago	1117	95	86	24	26	99	27	341	218	48	402	22	0
Wood	1067	249	204	36	26	142	31	432	24	114	271	17	0
Totals	4478	627	601	130	96	514	2590	1648	381	328	1219	150	0

MARKET ANALYSIS (PEER REVIEW)

Below is OCI's 2014 Market report, indicating the top 20 farm insurers in Wisconsin by market share. Please note that six of them are WAMIC members.

	Insurer	% of Market	Premiums Written	Losses Incurred	Loss Ratio
1	Rural Mutual Ins Co	35.1	\$57,986,848	\$24,412,792	42%
2	American Family Mutual Ins Co	13.3	\$21,976,462	\$8,758,525	40%
3	Hastings Mutual Ins Co	9.1	\$14,958,355	\$6,664,359	45%
4	Secura Insurance A Mutual Co	7.1	\$11,661,156	\$7,485,965	64%
5	Mt. Morris Mutual Ins Co	5.3	\$8,737,002	\$5,486,880	63%
6	Wilson Mutual Ins Co	4.0	\$6,562,436	\$6,809,896	104%
7	State Farm Fire & Casualty Co	3.9	\$6,477,393	\$2,970,221	46%
8	McMillian Warner Mutual Ins Co	3.8	\$6,286,318	\$3,204,578	51%
9	Wisconsin Mutual Ins Co	3.0	\$4,965,306	\$2,593,746	52%
10	Auto Owners Ins Co	2.8	\$4,583,755	\$2,456,315	54%
11	Mutual of Wausau Ins Corp	2.4	\$3,985,774	\$2,713,081	68%
12	Nationwide Mutual Ins Co	1.9	\$3,108,720	\$4,546,072	146%
13	Maple Valley Mutual Ins Co	1.7	\$2,876,239	\$1,489,792	52%
14	Nationwide Agribusiness Ins Co	1.1	\$1,843,287	\$468,782	25%
15	Germantown Mutual Ins Co	1.1	\$1,819,707	\$723,180	40%
16	Little Black Mutual Ins Co	0.8	\$1,269,342	\$596,341	47%
17	Ellington Mutual Ins Co	0.6	\$1,050,988	\$495,725	47%
18	Farmington Mutual Ins Co	0.6	\$930,268	\$406,726	44%
19	State Automobile Mutual Ins Co	0.4	\$681,154	\$285,737	42%
20	Indemnity Insurance Co of North America	0.4	\$659,443	\$755,602	115%

If all the WAMIC members in the top 20 were combined, they would be the second largest farm insurer in the state.

Insurer	% of Market	Premiums Written	Losses Incurred
1 Mt. Morris Mutual Ins Co	5.3	\$8,737,002	\$5,486,880
2 McMillian Warner Mutual Ins Co	3.8	\$6,286,318	\$3,204,578
3 Mutual of Wausau Ins Corp	2.4	\$3,985,774	\$2,713,081
4 Maple Valley Mutual Ins Co	1.7	\$2,876,239	\$1,489,792
5 Little Black Mutual Ins Co	0.8	\$1,269,342	\$596,341
6 Ellington Mutual Ins Co	0.6	\$1,050,988	\$495,725
7 Farmington Mutual Ins Co	0.6	\$930,268	\$406,726
Combined		\$25,135,931	\$14,393,123

SUMMARY

The farm industry in Wisconsin declined steadily throughout 20th century, but is still among the largest industries in the state. There has been a lot of consolidation among farms throughout this period, and that consolidation continues at a moderated pace. Agriculture still comprises a significant part of the state economy, and the farms that remain seem to be larger and stronger financially. WAMIC companies are significant players in the Wisconsin farm market.