WHERE HAVE ALL THE CROP ACRES GONE?

Bryce Larson, Calumet County UW-Extension Agriculture Educator
Special thank you to Connie Leonhard our program assistant for her talents and assistance with this project

October 21, 2010
How this project began

- Mary Kohrell, Calumet County UW-Extension Resource Development Educator, invited me to attend a Calumet County Working Lands Committee Meeting, and that is the event that triggered my interest in researching information and data that resulted in the following presentation.
Farm Land Disappearance
Nationwide 1964-2007

• From 1964 to 2007 the United States lost 188,092,000 acres of land in farms or the equivalent of 5.3 states the size of Wisconsin. During that time the US also lost 27,808,000 acres of crop land but showed an increase of 22,716,000 acres of the crop land available that was harvested.
Time Line and Selected States

• I will be using data and information from the 1987-2007 Ag Census data for the remainder of this summary on the disappearance of farm land, crop land, and harvested crop land from the IA, IL, IN, MI, MN, and WI and the selected counties I have chosen to highlight.
Animal Unit Statistics

- I am also using Ag Census data to calculate the 1,000 lbs. animal units (AU) in each state and the changes in numbers from 1987-2007. For these calculations I have included dairy and beef cows, heifers and feed lot animals, swine inventory herd, hogs fed and slaughtered, laying hens, and broilers or meat birds. I am using the NRCS animal unit conversion numbers to equate the various animal units to 1,000 lbs. unit increments that are used for converting varying animal species to a standardized number.
US and Selected States Population

- I am using the April 2008 US, state, and county population data to calculate the human populations and the per capita calculations on land lost from farms, crop land, and harvested crop land.
- The United States in 2008 was estimated to have 304 million citizens which translates into 80 persons per square mile.
Farm Land Loss Trends

• As one reviews the data from the US and the six states including Wisconsin, there are some trends that become very evident.
• The majority of land in farms lost in the US occurred from 1964 to 1987.
• Good quality crop land in the US and in most states is continuing to disappear and at faster rates than land in farms is disappearing. This would indicate that good crop land is being utilized for other types of developments and usage. Land in farms that is unsuitable for cropping is in many cases unsuitable for many other uses.
• Harvested crop land continues to increase in the five states with the exception of Wisconsin. To me this means that our remaining crop land is being utilized more intensively and to grow either wheat or row crops such as corn and soybeans.
USA Farmland loss (continued)

- Wisconsin has had the largest loss of land in farms, crop land and is the only state of the 6 that has lost harvested crop land over the last 20 years.
- Not only have we lost the highest percentage of farm land and crop land we have lost the most absolute acres of crop land. Only Michigan has fewer crop acres than Wisconsin yet we lost 1.5 million acres of crop land over the last 20 years. Some our neighboring states have twice as many crop acres as does Wisconsin and yet lost less total crop land.
- On a per capita basis Wisconsin consumes land in farms and crop land at many fold the rate of our neighboring 5 states.
Wisconsin

Total % gain or loss over 20 years

Land in farms
Loss of 1,416,000 acres -8.51%

Crop land
Loss of 1,502,000 -13%

Harvested crop land
Loss of 454,000 acres -4.84%

April 2008 population estimate
5.63 million
99 persons per square mile
Minnesota

Total % gain or loss over 20 years

Land in farms
Gain of 344,000 acres +1%

Crop land
Gain of 72,000 acres +0.003%

Harvested crop land
Gain of 2,632,000 acres +15.8%

April 2008 population estimate
5.2 million
62 persons per square mile
Iowa

Total % gain or loss over 20 years

Land in farms
Loss of 891,000 acres -2.82%

Crop land
Loss of 974,000 acres -3.57%

Harvested crop land
Gain of 3,315,000 acres +16%

April 2008 population estimate
3,002,000
52 persons per square mile
Illinois

Total % gain or loss over 20 years

Land in farms
Loss of 1,751,000 acres -3.3%

Crop land
Loss of 1,395,000 acres -5.56%

Harvested crop land
Gain of 2,509,000 acres +12.5%

April 2008 population estimate
12,904,000
223 persons per square mile
Michigan

Total % gain or loss over 20 years

Land in farms
Loss of 285,000 acres -2.8%

Crop land
Loss of 378,000 acres -4.6%

Harvested crop land
Gain of 687,000 acres +11%

April 2008 population estimate
10,003,000
175 persons per square mile
Indiana

Total % gain or loss over 20 years

Land in farms
Loss of 1,397,000 acres -8.7%

Crop land
Loss of 650,000 acres -6.5%

Harvested crop acres
Gain of 1,402,000 acres +9.4%

April 2008 population estimate
6,376,000
170 persons per square mile
Brown County, Wisconsin

Total % gain or loss over 20 years

Land in farms
- 35,000 acres lost -15.8%

Crop Land
- 47,000 acres lost -22.8%

Harvested crop land
- 34,000 acres lost -19.7%

Population 245,000
Per square mile 429
Calumet County, Wisconsin

Total % gain or loss over 20 years

Land in farms
18,000 acres lost -10.7%

Crop Land
15,000 acres lost -10.4%

Harvested crop land
9,000 acres lost -7%

Population 45,000
Per square mile 127
Clark County, Wisconsin

Total % gain or loss over 20 years

Land in farms
5,000 acres lost -1.2%

Crop Land
16,000 acres lost -5.2%

Harvested crop land
15,000 acres gained +6%

Population 34,000
Per square mile 28
Dane County, Wisconsin

Total % gain or loss over 20 years

Land in farms
34,000 acres lost -6%

Crop Land
58,000 acres lost -12%

Harvested crop land
2,000 acres lost -1%

Population 483,000
Per square mile 355
Dodge County, Wisconsin

Total % gain or loss over 20 years

Land in farms
54,000 acres lost -12.4%

Crop Land
25,000 acres lost -6.9%

Harvested crop land
4,000 acres gained +1.2%

Population 88,000
Per square mile 77
Dunn County, Wisconsin

Total % gain or loss over 20 years

Land in farms
17,000 acres lost -4.25%

Crop Land
20,000 acres lost -7.4%

Harvested crop land
3,000 acres lost -1.5%

Population 43,000
Per square mile 47
Fond du Lac County, Wisconsin

Total % gain or loss over 20 years

Land in farms
23,000 acres lost -6.4%

Crop Land
21,000 acres lost -9.1%

Harvested crop land
13,000 acres lost -4.9

Population 109,000
Per square mile 135
Jefferson County, Wisconsin

Total % gain or loss over 20 years

Land in farms
12,000 acres lost -4.7%

Crop land
17,000 acres lost -8.2%

Harvested crop land
3,000 acres gained +1.7

Population 81,000
Per square mile 133
Lafayette County, Wisconsin

Total % gain or loss over 20 years

Land in farms
30,000 acres lost -9.1%

Crop land
44,000 acres lost -15%

Harvested crop acres
8,000 acres lost -2.3%

Population 16,000
Per square mile 26
Manitowoc County, Wisconsin

Total % gain or loss over 20 years

Land in farms
29,000 acres lost -10.5%

Crop land
36,000 acres lost -15.3%

Harvested crop land
29,000 acres lost -13.3%

Population 81,000
Per square mile 140
Marathon County, Wisconsin

Total % gain or loss over 20 years

Land in farms
91,000 acres lost -15.7%

Crop land
43,000 acres lost -11.8%

Harvested crop land
13,000 acres lost -4.3%

Population 131,000
Per square mile 81
Outagamie County, Wisconsin

Total % gain or loss over 20 years

Land in farms
35,000 acres lost -12.5%

Crop land
33,000 acres lost -13.7%

Harvested crop land
19,000 acres lost -9.9%

Population 175,000
Per square mile 252

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Polk County, Wisconsin

Total % gain or loss over 20 years

Land in farms
26,000 acres lost -8.3%

Crop land
29,000 acres lost -14.5%

Harvested crop acres
11,000 acres lost -7.9%

Population 44,000
Per square mile 45
Rock County, Wisconsin

Total % gain or loss over 20 years

**Land in farms**
- 14,000 acres lost -4%

**Crop land**
- 22,000 acres lost -6.9%

**Harvested crop land**
- 21,000 acres gained +8%

**Population** 160,000
- Per square mile 212

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Legend:
- Blue: Land in farms
- Red: Crop land
- Green: Harvested crop land
Shawano County, Wisconsin

Total % gain or loss over 20 years

Land in farms
54,000 acres lost -16.6%

Crop land
34,000 acres lost -15.25%

Harvested crop land
19,000 acres lost -9.1%

Population 41,000
Per square mile 46

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Sheboygan County, Wisconsin

Total % gain or loss over 20 years

Land in farms
18,000 acres lost -8.6%

Crop land
22,000 acres lost -12.3%

Harvested crop land
11,000 acres lost -7.1%

Population 115,000
Per square mile 219
Taylor County, Wisconsin

Total % gain or loss over 20 years

Land in farms
22,000 acres lost -8.4%

Crop land
12,000 acres lost -8.5%

Harvested crop land
4,000 acres lost -3.4%

Population 19,000
Per square mile 20

[Graph showing land in farms, crop land, and harvested crop land from 1987 to 2007]
Trempealeau County, Wisconsin

Total % gain or loss over 20 years

Land in farms
25,000 acres lost -6.9%

Crop land
41,000 acres lost -17.6%

Harvested crop land
27,000 acres lost -15.3%

Population 28,000
Per square mile 37
Washington County, Wisconsin

Total % gain or loss over 20 years

Land in farms
26,000 acres lost -16.7%

Crop land
28,000 acres lost -21.2%

Harvested crop land
19,000 acres lost -16.7%

Population 130,000
Per square mile 273

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Milwaukee County, Wisconsin (Milwaukee Metro Area)

Total % gain or loss over 20 years

Land in farms
4,300 acres lost -44%

Crop land
3,100 acres lost -50%

Harvested crop land
3,192 acres lost -45.5%

Population 959,421
Per square mile 3,885
Waukesha County, Wisconsin
(Milwaukee Metro Area)

Total % gain or loss over 20 years

Land in farms
30,100 acres lost -31.7%

Crop land
37,100 acres lost -23.8%

Harvested crop land
19,500 acres lost -23.8%

Population 383,000
Per square mile 649
Kenosha County, Wisconsin (Milwaukee Metro Area)

Total % gain or loss over 20 years

Land in farms -16.3%
Crop land -19.2%
Harvested crop land -7.5%

Population 165,382
Per square mile 548
Racine County, Wisconsin (Milwaukee Metro Area)

Total % gain or loss over 20 years

Land in farms -9.5%

Crop land -10.7%

Harvested crop land 0%

Population 201,000
Per square mile 567
Blue Earth County, Minnesota

Total % gain or loss over 20 years

Land in farms
13,000 acres gained +.5%

Crop Land
0 acres gained or lost

Harvested crop land
65,000 acres gained +21.5%

Population 60,000
Per square mile 75
Dakota County, Minnesota

Total % gain or loss over 20 years

Land in farms
26,000 acres gained +11.8%

Crop Land
23,000 acres gained +11.8%

Harvested crop land
50,000 acres gained +32%

Population 642,000
Per square mile 624

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Faribault County, Minnesota

Total % gain or loss over 20 years

Land in farms
26,000 acres gained +6%

Crop Land
28,000 acres gained +7%

Harvested crop land
88,000 acres gained +26.7%

Population 14,000
Per square mile 23
Houston County, Minnesota

Total % gain or loss over 20 years

Land in farms
41,000 acres lost -14.5%

Crop Land
36,000 acres lost -20%

Harvested crop land
16,000 acres lost -13.3%

Population 19,000
Per square mile 35
Olmstead County, Minnesota

Total % gain or loss over 20 years

Land in farms
23,000 acres lost -7.2%

Crop Land
30,000 acres lost -10.6%

Harvested crop land
23,000 acres gained +12.5%

Population 141,000
Per square mile 190
Ottertail County, Minnesota

Total % gain or loss over 20 years

Land in farms
23,000 acres gained +2.6%

Crop Land
33,000 acres lost -5.3%

Harvested crop land
7,000 acres gained +1.5%

Population 51,000
Per square mile 29
Pipestone County, Minnesota

Total % gain or loss over 20 years

Land in farms
2,000 acres lost -1%

Crop Land
4,000 acres lost -2.0%

Harvested crop land
22,000 acres gained +13.4%

Population 9,400
Per square mile 21
Polk County, Minnesota

Total % gain or loss over 20 years

Land in farms
22,000 acres gained +2.3%

Crop Land
15,000 acres gained +1.6%

Harvested crop land
85,000 acres gained +12.0 %

Population 31,000
Per square mile 16
Stearns County, Minnesota

Total % gain or loss over 20 years

Land in farms
36,000 acres gained +5.4%

Crop Land
6,000 acres gained +1%

Harvested crop land
52,000 acres gained +12.5%

Population 147,000
Per square mile 99
Iowa Counties Map
Boone County, Iowa

Total % gain or loss over 20 years

Land in farms
5,000 acres lost -1.5%

Crop Land
40,000 acres lost -13.3%

Harvested crop land
8,000 acres gained +3.2%

Population 26,000
Per square mile 47
Butler County, Iowa

Total % gain or loss over 20 years

Land in farms
48,000 acres gained +14.6%

Crop Land
47,000 acres gained +15.1%

Harvested crop land
96,000 acres gained +42%

Population 15,000
Per square mile 26

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Clinton County, Iowa

Total % gain or loss over 20 years

Land in farms
19,000 acres gained +5%

Crop land
19,000 acres gained +5.6%

Harvested crop land
75,000 acres gained +29%

Population 49,000
Per square mile 72
Dallas County, Iowa

Total % gain or loss over 20 years

Land in farms
31,000 acres lost -9.5%

Crop land
25,000 acres lost -8.7%

Harvested crop land
21,000 acres gained +8.0%

Population 60,000
Per square mile 70
Dubuque County
Iowa

Total % gain or loss over 20 years

Land in farms
23,000 acres lost -6.9%

Crop land
39,000 acres lost -11.2%

Harvested crop land
3,000 acres gained +1.0%

Population 93,000
Per square mile 147
Harrison County, Iowa

Total % gain or loss over 20 years

Land in farms
22,000 acres lost -5.7%

Crop land
15,000 acres lost -4.6%

Harvested crop land
33,000 acres gained +17.3%

Population 15,350
Per square mile 23
Sioux County, Iowa

Total % gain or loss over 20 years

Land in farms
7,000 acres gained +1.3%

Crop land
3,000 acres gained +1.0%

Harvested crop land
78,000 acres gained +22.0%

Population 32,000
Per square mile 41
Tama County, Iowa

Total % gain or loss over 20 years

Land in farms
14,000 acres gained +3.3%

Crop land
13,000 acres gained +3.5%

Harvested crop land
69,000 acres gained +25%

Population 18,000
Per square mile 25
Warren County, Iowa

Total % gain or loss over 20 years

Land in farms
62,000 acres lost -20.4

Crop land
95,000 acres lost -33.0%

Harvested crop land
26,000 acres lost -16.7%

Population 45,000
Per square mile 71
Wayne County, Iowa

Total % gain or loss over 20 years

Land in farms
8,000 acres lost -2.9%

Crop land
51,000 acres gained +23.4%

Harvested crop land
6,000 acres gained +5.0%

Population 6,000
Per square mile 13
Illinois Counties Map
Henry County, Illinois

Total % gain or loss over 20 years

Land in farms
34,000 acres gained +7.4%

Crop land
34,000 acres gained +8.25%

Harvested crop land
42,000 acres gained +10.9%

Population 50,000
Per square mile 62
Iroquois County, Illinois

Total % gain or loss over 20 years

Land in farms
1,000 acres lost -0.2%

Crop land
13,000 acres gained +2.0%

Harvested crop land
12,000 acres gained +1.2%

Population 30,000
Per square mile 28

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Kane County, Illinois

Total % gain or loss over 20 years

Land in farms
15,000 acres lost -7.25%

Crop land
15,000 acres lost -7.4%

Harvested crop land
17,000 acres lost -8.2%

Population 506,000
Per square mile 777
LaSalle County, Illinois

Total % gain or loss over 20 years

Land in farms
56,000 acres gained +9.5%

Crop land
61,000 acres gained +11.1%

Harvested crop land
64,000 acres gained +11.9%

Population 113,000
Per square mile 98
McLean County, Illinois

Total % gain or loss over 20 years

Land in farms
21,000 acres lost -3.4%

Crop land
19,000 acres lost -2.9%

Harvested crop land
16,000 acres lost -2.5%

Population 165,000
Per square mile 127
Madison County, Illinois

Total % gain or loss over 20 years

Land in farms
29,000 acres gained +10.2%

Crop land
37,000 acres gained +14.9%

Harvested crop land
56,000 acres gained +19.8%

Population 268,000
Per square mile 357
St. Clair County, Illinois

Total % gain or loss over 20 years

Land in farms
48,000 acres gained +18%

Crop land
46,000 acres gained +19.2%

Harvested crop land
48,000 acres gained +20.8%

Population 263,000
Per square mile 386
Stephenson County, Illinois

Total % gain or loss over 20 years

Land in farms
29,000 acres gained +9.3%

Crop land
33,000 acres gained +10.4%

Harvested crop land
42,000 acres gained +16.6%

Population 46,000
Per square mile 87
Wayne County, Illinois

Total % gain or loss over 20 years

Land in farms
11,000 acres gained +3.7%

Crop land
10,000 acres gained +3.6%

Harvested crop land
23,000 acres gained +10.2%

Population 16,000
Per square mile 24
Allen County, Indiana

Total % gain or loss over 20 years

Land in farms
37,000 acres lost -12.7%

Crop land
27,000 acres lost -10.5%

Harvested crop land
3,000 acres lost -1.4%

Population 350,000
Per square mile 505
Clinton County, Indiana

Total % gain or loss over 20 years

Land in farms
8,000 acres gained +3.2%

Crop land
16,000 acres gained +6.9%

Harvested crop land
45,000 acres gained +12.3%

Population 34,000
Per square mile 84
Elkhart County, Indiana

Total % gain or loss over 20 years

Land in farms
42,000 acres lost -20.5%

Crop land
37,000 acres lost -20.7%

Harvested crop land
11,000 acres lost -7.5%

Population 200,000
Per square mile 394
Greene County, Indiana

Total % gain or loss over 20 years

Land in farms
32,000 acres lost -15.4%

Crop land
25,000 acres lost -17.4%

Harvested crop land
6,000 acres gained +5.7%

Population 33,000
Per square mile 61
Harrison County, Indiana

Total % gain or loss over 20 years

Land in farms
30,000 acres lost -16.2%

Crop land
23,000 acres lost -19.9%

Harvested crop land
11,000 acres gained +14.8%

Population 37,000
Per square mile 71
Jackson County, Indiana

Total % gain or loss over 20 years

Land in farms
7,000 acres lost -3.25%

Crop land
2,000 acres lost -1.2%

Harvested crop land
37,000 acres gained +21.0%

Population 42,000
Per square mile 81
Knox County, Indiana

Total % gain or loss over 20 years

Land in farms
18,000 acres gained +5.8%

Crop land
24,000 acres gained +12.4%

Harvested crop land
80,000 acres gained +35.8%

Population 38,000
Per square mile 76
Lake County, Indiana

Total % gain or loss over 20 years

Land in farms
17,000 acres lost -11.8%

Crop land
16,000 acres lost -13.0%

Harvested crop land
15,000 acres lost -11.3%

Population 493,000
Per square mile 975
Marion County, Indiana

Total % gain or loss over 20 years

Land in farms
40,000 acres lost -70.2%

Crop land
34,000 acres lost -69.2%

Harvested crop land
28,000 acres lost -68.3%

Population 880,000
Per square mile 2,173
Michigan Counties Map
Alpena County, Michigan

Total % gain or loss over 20 years

Land in farms
14,000 acres lost -17.1%

Crop land
5,000 acres gained +9.0%

Harvested crop land
11,000 acres gained +31.0%

Population 34,000
Per square mile 55
Calhoun County, Michigan

Total % gain or loss over 20 years

Land in farms
25,000 acres lost -9.9%

Crop land
19,000 acres lost -9.8%

Harvested crop land
25,000 acres gained +18.9%

Population 136,000
Per square mile 195
Claire County, Michigan

Total % gain or loss over 20 years

Land in farms
0 acres gained or lost 0%

Crop land
10,000 acres lost -20.8%

Harvested crop land
1,000 acres lost -3.6%

Population 30,000
Per square mile 55
Clinton County, Michigan

Total % gain or loss over 20 years

Land in farms
15,000 acres gained +5.8%

Crop land
13,000 acres gained +5.9%

Harvested crop land
41,000 acres gained +23.1%

Population 70,000
Per square mile 113
Kent County, Michigan

Total % gain or loss over 20 years

Land in farms
34,000 acres lost -16.7%

Crop land
31,000 acres lost -19.1%

Harvested crop land
4,000 acres lost -3.3%

Population 605,000
Per square mile 671
Lapeer County, Michigan

Total % gain or loss over 20 years

Land in farms
43,000 acres lost -19.7%

Crop land
20,000 acres lost -11.4%

Harvested crop land
10,000 acres lost -8.0%

Population 91,000
Per square mile 134
Lenawee County, Michigan

Total % gain or loss over 20 years

Land in farms
4,000 acres gained +1%

Crop land
5,000 acres lost -1.7%

Harvested crop land
8,000 acres gained +3.1%

Population 101,000
Per square mile 130
Menominee County, Michigan

Total % gain or loss over 20 years

Land in farms
14,000 acres lost -11.9%

Crop land
4,000 acres lost -6.25%

Harvested crop land
10,000 acres gained +20%

Population 24,000
Per square mile 24
Muskegon County, Michigan

Total % gain or loss over 20 years

Land in farms
2,000 acres lost -2.5%

Crop land
1,000 acres gained +1.3%

Harvested crop land
8,000 acres gained +18.2%

Population 174,000
Per square mile 334

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Oakland County, Michigan

Total % gain or loss over 20 years

Land in farms
27,000 acres lost -55%

Crop land
28,000 acres lost -58.4%

Harvested crop land
19,000 acres lost -57.6%

Population 1,202,000
Per square mile 1,368
Saginaw County, Michigan

Total % gain or loss over 20 years

Land in farms
16,000 acres gained +5.2%

Crop land
9,000 acres lost -3.25%

Harvested crop land
20,000 acres gained +8.1%

Population 205,000
Per square mile 260
Sanilac County, Michigan

Total % gain or loss over 20 years

Land in farms
14,000 acres lost -3.25%

Crop land
23,000 acres lost -5.9%

Harvested crop land
32,000 acres gained +10.5%

Population 42,064
Per square mile 46
Possible reasons Wisconsin may be losing farm land more quickly

• Wisconsin was logged earlier and more quickly than most neighboring states due to our southern flowing rivers. That encouraged softwood harvest and the creation of several cities and towns throughout our rural northern portion of Wisconsin.
Wisconsin River Map
Michigan Rivers
Possible reasons Wisconsin may be losing farm land more quickly (continued)

• The second wave of logging came with the advent of the railroad that allowed the harvest of the heavier hardwoods. Those millions of acres of cut over land created opportunities for immigrant farmers to settle and homestead many sections of northern Wisconsin. Transportation routes were created to move people and goods to and from these communities.
Wisconsin’s faster crop land loss (continued)

- During the late 1800s and early 1900s, Wisconsin agriculture under the guidance of W. D. Hoard moved from a wheat crop grain agriculture to a dairy and forage agriculture.

- The number of farms and dairy cows continued to grow until the early 1950s when there were roughly 180,000 dairy farms in Wisconsin with 2.2 million dairy cows scattered throughout Wisconsin.

- The need to transport a highly perishable product such as milk necessitated a dependable and expansive highway and road system.

- Dairy, the manufacturing of dairy products, and the related industries require large amounts of labor; thus, many people and workers were needed to support the dairy industry.
Wisconsin’s faster crop land loss
(continued)

• Wisconsin has many more residents more recently tied to farm and rural life than our neighboring states do.

• Wisconsin has a very strong local government governance system. How much more politically active and powerful our local township government is than our neighboring states, I do not know; but, we do have a very strong township form of government in Wisconsin.
Wisconsin’s faster crop land loss (continued)

- Wisconsin residents have German as their major ancestry (43%) as compared to 15% for the USA. How much influence does national origin and culture have on our land use issues? The other states have the following rates of German as their major ancestry:
  - MN 37%
  - IA 36%
  - ILL 20%
  - IN 23%
  - MI 20%
Wisconsin’s faster crop land loss  
(continued)

• Due to many large rivers with dependable water supplies and the creation of many large reservoirs for managed water release and the reduction of spring flooding, electricity through hydro electric systems came quite quickly to rural Wisconsin.

• The existing road ways for transporting dairy products created easements for power line systems to be installed. With good roads and electricity, rural life in Wisconsin was attractive even prior to World War II.
Wisconsin’s faster crop land loss
(continued)

• Many of the major manufacturing firms located in Eastern Wisconsin were seasonal companies for decades. The manufacturing of farm equipment was the major product and many dairy farmers worked in those plants during the winter and then the plants shut down major portions of their production during the summer. As the firms grew and their product lines developed, the need for year round production created good manufacturing jobs for many citizens.
Wisconsin’s faster crop land loss (continued)

• Firms such as Kohler, Brillion Iron Works, the Manitowoc Company, Tecumseh, Ariens, etc. are just a few firms that grew with our dairy and rural agriculture sector.
Wisconsin’s faster crop land loss (continued)

• Many of the acres farmed and cropped by dairy farmers have production limitations for row crops and large equipment. Much of our cut over dairy land, rolling glaciated farm land, and our bluff and coulee, drift less area does not allow for large expansive row crop agriculture; thus, as the dairy industry has been shrinking in some of these areas, so has the crop land and the harvested crop land.
Wisconsin’s faster crop land loss (continued)

• With modern day agriculture utilizing more capital investment to farm more acres with less labor, many of our smaller fields with slope limitations etc. do not allow the efficient use of equipment that has high capacity and also high ownership and operational costs. No-till, conservation tillage, and grazing have become more common place in many of these areas and is keeping these lands in agriculture production.
Wisconsin’s faster crop land loss (continued)

- With modern day agriculture utilizing more capital investment to farm more acres with less labor, many of our smaller fields with slope limitations etc. do not allow the efficient use of equipment that has high capacity and also high ownership and operational costs. No-till, conservation tillage, and grazing have become more common place in many of these areas and is keeping these lands in agriculture production.
Bed Rock Map of Wisconsin

BEDROCK GEOLOGY OF WISCONSIN

Cooperative Extension
YourCountyExtensionOffice.org
Agriculture & Natural Resources
Glacial Till and Terminal Moraines of Wisconsin
Soil Regions of Wisconsin

Soils of northern and eastern Wisconsin
- Forested, red, sandy, and loamy soils
- Forested, red, sandy, and loamy soils over dolomite
- Forested, silt soils
- Forested, loamy soils
- Forested, sandy soils
- Forested, clayey or heavy soils

Soils of central Wisconsin
- Forested, sandy soils
- Prairie, sandy soils
- Forested, silty soils over igneous/metamorphic rocks

Soils of southwestern and western Wisconsin
- Forested, silty soils
- Prairie, silty soils
- Forested soils over sandstone

Soils of southeastern Wisconsin
- Forested, silty soils

Statewide
- Streambottom and major wetland soils
- Water

Adapted from Heil, F.D., et al., 1963, Soils of Wisconsin; Wisconsin Geological and Natural History Survey. scale: 1:716,000.
Potential Prime Farm Land in Wisconsin
Ecological Tension Zone in Wisconsin
Early Vegetation Map of Wisconsin
Wisconsin’s faster crop land loss
(continued)

• Dairy cows require a large land base per cow and replacement to be able to raise enough forage and grain to produce the large volumes of milk, maintain themselves, and grow replacements.

• Considerable land is also needed to land-apply large volumes of semi-solid and liquid manure.

• The fact that dairy cows utilize very bulky, wet feeds increases the need for significant storage capacity and also the need to transport bulky and wet feeds from growing sites to storage sites.
Wisconsin’s faster crop land loss
(continued)

• Even though large dairy complexes can be built to take advantage of efficiencies of scale, the feed production area and the manure distribution area need to be large to adequately supply the dairy complex with sufficient feed and other land based resources.

• This means that cows can be concentrated, but their feed, fiber, and manure distribution footprint is still very large.
Wisconsin’s faster crop land loss (continued)

• The Wisconsin legislature has passed several laws that have created credits or tax relief for land that remains in agriculture production.

• Up until the most recent law on land taxed based on use, most of these programs, although beneficial to farmers, did not stop Wisconsin from being the state in this report that lost the most crop land over the last 20 years.
Wisconsin’s faster crop land loss
(continued)

• The dairy industry in Wisconsin manufactures about 90 plus percent of the milk produced in the state.
• The dairy manufacturing industry, along with the many other dairy-related businesses, creates a strong link between the rural farm, rural non farm, and even our suburban and urban citizens.
• These close ties are great in making a 20 billion dollar per year industry work well, but the close relationship can and does also create use and space issues and constraints.
Agricultural Land Use Change

This map shows agricultural land conversion between 2000 and 2009. The values represent the number of acres of agricultural land lost or gained in each county. The shading shows percent change.

Percent Agricultural Land Conversion

Gain
10.1% - 15%
5.1% - 10%
0% - 5%
-4.6% - 0.5%
-9.7% - 4.7%
-30.3% - 9.8%

Loss
-30.4%
-30.4% - 9.8%
-14.7% - 9.8%
-0.5% - 9.7%
-0.5% - 4.6%
-5.1% - 0%
-10.1% - 5%

Map created by Dan McFarlane, Center for Land Use Education, 2010.

YourCountyExtensionOffice.org
Agriculture & Natural Resources
Figure 3: Premium Paid for Agricultural Land

This map shows the difference in 2008 sales prices for agricultural land continuing in agriculture versus agricultural land being converted to another use. Positive values indicate a premium was paid for land converted out of agriculture. Negative values indicate a premium was paid for land remaining in agriculture.
# Cows per crop acre 1987-2007

## Selected Counties

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Brown</td>
<td>37,630</td>
<td>192,000</td>
<td>5.1</td>
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<td>160,561</td>
<td>4.1</td>
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<td>Calumet</td>
<td>29,544</td>
<td>144,800</td>
<td>4.9</td>
<td>28,222</td>
<td>128,524</td>
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<td>Clark</td>
<td>64,571</td>
<td>308,557</td>
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<td>64,438</td>
<td>291,609</td>
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<td>Dane</td>
<td>65,246</td>
<td>474,688</td>
<td>7.2</td>
<td>51,454</td>
<td>417,244</td>
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<td>Dodge</td>
<td>61,361</td>
<td>366,503</td>
<td>5.9</td>
<td>40,639</td>
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<td>Dunn</td>
<td>40,174</td>
<td>271,106</td>
<td>6.7</td>
<td>23,143</td>
<td>250,765</td>
<td>10.8</td>
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<td>Fond du Lac</td>
<td>51,742</td>
<td>307,598</td>
<td>5.9</td>
<td>47,256</td>
<td>279,922</td>
<td>5.9</td>
</tr>
<tr>
<td>Jefferson</td>
<td>24,532</td>
<td>207,051</td>
<td>8.4</td>
<td>14,669</td>
<td>190,189</td>
<td>12.9</td>
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<td>Lafayette</td>
<td>44,054</td>
<td>294,200</td>
<td>6.69</td>
<td>30,737</td>
<td>249,866</td>
<td>8.12</td>
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<td>Manitowoc</td>
<td>47,283</td>
<td>245,558</td>
<td>5.19</td>
<td>45,704</td>
<td>199,725</td>
<td>4.36</td>
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<td>Marathon</td>
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<td>356,789</td>
<td>4.56</td>
<td>62,840</td>
<td>323,614</td>
<td>5.14</td>
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<tr>
<td>Outagamie</td>
<td>43,504</td>
<td>240,719</td>
<td>5.5</td>
<td>37,681</td>
<td>207,537</td>
<td>5.5</td>
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<td>Polk</td>
<td>29,643</td>
<td>201,026</td>
<td>8.1</td>
<td>16,540</td>
<td>172,203</td>
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<td>Rock</td>
<td>23,165</td>
<td>320,063</td>
<td>13.75</td>
<td>11,862</td>
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<td>25</td>
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<td>Shawano</td>
<td>48,094</td>
<td>222,877</td>
<td>4.6</td>
<td>36,453</td>
<td>189,064</td>
<td>5.18</td>
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<td>179,257</td>
<td>6.15</td>
<td>26,022</td>
<td>157,607</td>
<td>6.0</td>
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<td>Taylor</td>
<td>28,857</td>
<td>141,699</td>
<td>4.9</td>
<td>16,609</td>
<td>129,825</td>
<td>7.8</td>
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<td>Trempealeau</td>
<td>33,144</td>
<td>233,334</td>
<td>7.0</td>
<td>21,811</td>
<td>192,305</td>
<td>8.8</td>
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<td>Washington</td>
<td>23,753</td>
<td>131,753</td>
<td>5.5</td>
<td>14,772</td>
<td>104,273</td>
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<td><strong>WI average</strong></td>
<td><strong>1,743,427</strong></td>
<td><strong>11,618,876</strong></td>
<td><strong>6.8</strong></td>
<td><strong>1,249,309</strong></td>
<td><strong>10,116,279</strong></td>
<td><strong>8.1</strong></td>
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## Animal Units /1,000 lbs. Equivalent

<table>
<thead>
<tr>
<th>State</th>
<th>1987 (millions)</th>
<th>2007 (millions)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Illinois</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle and calves</td>
<td>1.9</td>
<td>1.2</td>
<td>-37</td>
</tr>
<tr>
<td>Swine herd</td>
<td>2.2</td>
<td>1.72</td>
<td>-22</td>
</tr>
<tr>
<td>Market hogs</td>
<td>1.3</td>
<td>2.67</td>
<td>+205</td>
</tr>
<tr>
<td>Laying hens</td>
<td>NA</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Broilers</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Total AU</strong></td>
<td><strong>5.52</strong></td>
<td><strong>5.6</strong></td>
<td>+1.4</td>
</tr>
</tbody>
</table>

| **Indiana**   |                 |                 |          |
| Cattle and calves | 1.3            | 0.9             | -30      |
| Swine herd | 1.7             | 1.5             | -12      |
| Market hogs | 1.2             | 2.0             | +66      |
| Laying hens | N/A             | 0.24            |          |
| Broilers   | 0.11            | 0.185           | +68      |
| **Total AU** | **4.11**        | **4.8**         | +17      |
### Animal Units /1,000 lbs. Equivalent

<table>
<thead>
<tr>
<th>State</th>
<th>1987 (millions)</th>
<th>2007 (millions)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa</td>
<td></td>
<td></td>
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<tr>
<td>Cattle and calves</td>
<td>4.3</td>
<td>4.0</td>
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<tr>
<td>Swine herd</td>
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<tr>
<td>Market hogs</td>
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<tr>
<td>Laying hens</td>
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<tr>
<td>Broilers</td>
<td>0.02</td>
<td>0.04</td>
<td>+200</td>
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<tr>
<td><strong>Total AU</strong></td>
<td><strong>13.61</strong></td>
<td><strong>21.59</strong></td>
<td>+59</td>
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<tr>
<td>Michigan</td>
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<tr>
<td>Cattle and calves</td>
<td>1.1</td>
<td>1</td>
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<tr>
<td>Swine herd</td>
<td>0.5</td>
<td>0.4</td>
<td>-20</td>
</tr>
<tr>
<td>Market hogs</td>
<td>0.6</td>
<td>0.6</td>
<td>0</td>
</tr>
<tr>
<td>Laying hens</td>
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<td>0.09</td>
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<tr>
<td>Broilers</td>
<td>0.01</td>
<td>0.02</td>
<td>+200</td>
</tr>
<tr>
<td><strong>Total AU</strong></td>
<td><strong>2.1</strong></td>
<td><strong>2.1</strong></td>
<td>0</td>
</tr>
</tbody>
</table>
## Animal Units /1,000 lbs. Equivalent

<table>
<thead>
<tr>
<th>State</th>
<th>1987 (millions)</th>
<th>2007 (millions)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cattle and calves</td>
<td>2.7</td>
<td>2.4</td>
<td>-12</td>
</tr>
<tr>
<td>Swine herd</td>
<td>1.7</td>
<td>3.0</td>
<td>+76</td>
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<tr>
<td>Market hogs</td>
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<td>5.0</td>
<td>+417</td>
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<tr>
<td>Laying hens</td>
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<tr>
<td>Broilers</td>
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<td>0.24</td>
<td>+460</td>
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<tr>
<td><strong>Total AU</strong></td>
<td><strong>5.75</strong></td>
<td><strong>10.75</strong></td>
<td><strong>+87</strong></td>
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<tr>
<td>Wisconsin</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Cattle and calves</td>
<td>4.1</td>
<td>3.4</td>
<td>-17</td>
</tr>
<tr>
<td>Swine herd</td>
<td>.17</td>
<td>.6</td>
<td>-71</td>
</tr>
<tr>
<td>Market hogs</td>
<td>.3</td>
<td>.2</td>
<td>-33</td>
</tr>
<tr>
<td>Laying hens</td>
<td>N/A</td>
<td>.05</td>
<td>0</td>
</tr>
<tr>
<td>Broilers</td>
<td>.05</td>
<td>.23</td>
<td>+46</td>
</tr>
<tr>
<td><strong>Total AU</strong></td>
<td><strong>4.95</strong></td>
<td><strong>4.03</strong></td>
<td><strong>-18</strong></td>
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</tbody>
</table>
# Rural Population Stats

<table>
<thead>
<tr>
<th>State</th>
<th>Total Population</th>
<th>Total Rural Population</th>
<th>Rural Population (as a % of state)</th>
<th>% of State Ranking</th>
<th>Total Farm Population</th>
<th>Farm Population (as a % of state total)</th>
<th>Non Farm Rural Population</th>
<th>Non Farm Rural Population (as a % of state total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>12,419,293</td>
<td>1,508,961</td>
<td>12.2</td>
<td>41</td>
<td>127,879</td>
<td>1.0</td>
<td>1,381,082</td>
<td>11.1</td>
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<tr>
<td>Indiana</td>
<td>6,080,485</td>
<td>1,777,305</td>
<td>29.2</td>
<td>23</td>
<td>125,698</td>
<td>2.1</td>
<td>1,651,607</td>
<td>27.2</td>
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<tr>
<td>Iowa</td>
<td>2,926,324</td>
<td>1,139,641</td>
<td>38.9</td>
<td>14</td>
<td>171,374</td>
<td>5.9</td>
<td>968,267</td>
<td>33.1</td>
</tr>
<tr>
<td>Michigan</td>
<td>9,938,444</td>
<td>2,518,920</td>
<td>25.3</td>
<td>29</td>
<td>94,192</td>
<td>0.9</td>
<td>2,424,728</td>
<td>24.4</td>
</tr>
<tr>
<td>Minnesota</td>
<td>4,919,479</td>
<td>1,430,160</td>
<td>29.1</td>
<td>24</td>
<td>149,204</td>
<td>3.0</td>
<td>1,280,956</td>
<td>26.0</td>
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<td>Wisconsin</td>
<td>5,363,675</td>
<td>1,698,538</td>
<td>31.7</td>
<td>20</td>
<td>137,115</td>
<td>2.6</td>
<td>1,561,423</td>
<td>29.1</td>
</tr>
<tr>
<td>USA</td>
<td>281,421,906</td>
<td>59,063,597</td>
<td>21.0</td>
<td>20</td>
<td>2,987,531</td>
<td>1.1</td>
<td>56,076,066</td>
<td>19.9</td>
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</table>
# Acres of crop land per rural resident

<table>
<thead>
<tr>
<th>State/Nation</th>
<th>Crop acres per resident using 2002 USDA crop acres and 2000 USA Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>7.3 crop acres per rural resident</td>
</tr>
<tr>
<td>Illinois</td>
<td>16 crop acres per rural resident</td>
</tr>
<tr>
<td>Indiana</td>
<td>7.3 crop acres per rural resident</td>
</tr>
<tr>
<td>Iowa</td>
<td>24 crop acres per rural resident</td>
</tr>
<tr>
<td>Michigan</td>
<td>3.2 crop acres per rural resident</td>
</tr>
<tr>
<td>Minnesota</td>
<td>16 crop acres per rural resident</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>6.3 crop acres per rural resident</td>
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## Income figures for each state

<table>
<thead>
<tr>
<th>State/Nation</th>
<th>1990</th>
<th>2006</th>
<th>Percent change</th>
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<tbody>
<tr>
<td>USA</td>
<td>$18,667</td>
<td>$36,714</td>
<td>+196</td>
</tr>
<tr>
<td>Illinois</td>
<td>$20,159</td>
<td>$38,409</td>
<td>+190</td>
</tr>
<tr>
<td>Indiana</td>
<td>$16,815</td>
<td>$32,288</td>
<td>+192</td>
</tr>
<tr>
<td>Iowa</td>
<td>$16,683</td>
<td>$33,038</td>
<td>+198</td>
</tr>
<tr>
<td>Michigan</td>
<td>$18,239</td>
<td>$33,788</td>
<td>+185</td>
</tr>
<tr>
<td>Minnesota</td>
<td>$18,784</td>
<td>$38,859</td>
<td>+207</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>$17,399</td>
<td>$34,405</td>
<td>+198</td>
</tr>
</tbody>
</table>
Average Agriculture land prices for 2009 (per acre)

- **Illinois**
  - Average Ag land value $4,330
  - Southern Illinois $3,400
  - Central and Northern Illinois $5,500-$6,000

- **Indiana**
  - Average Ag land value $4,198
  - 118 bu. corn average $3,238
  - 150 bu. corn average $4,188
  - 182 bu. corn average $5,169

- **Iowa**
  - Average Ag land value $4,371
  - South Central lowest average value $2,537
  - Northwest highest average value $5,364
  - Central Iowa (3 districts 25 counties) $4,775
Average Agriculture land prices for 2009 (per acre)

• **Michigan**
  - Average $3,750 per acre
  - Poorer land average- $2,800 per acre
  - Better land average- $4,101 (not including fruit tree acres)

• **Minnesota**
  - Average land price $2,870
  - Poorer land averages $1,150
  - Good crop land averages $4,750

• **Wisconsin**
  - Average of all agriculture land, all parcels $3,750 per acre
  - Bare land, parcels more than 35 acres not sold to relatives $3,190 per acre with average parcel size of 79-80 acres
  - North central average price is $1,856 per acre
  - South East average price is $5,376 per acre.
Farm land legislation to protect farm land acres

- Iowa
- First Ag land protection bill 1939
- The states that have passed the most farm land protection or credit legislation are IA, MN and WI.
- These are also states with the most cattle, the most German and Scandinavian ancestries.
- As you can see however that in two out of the three states farm land loss has been minimal while in Wisconsin our historical farm land legislation has not been successful in saving farm land.
- The latest taxation for use legislation is probably the most effective in saving farm land. The real question is who are the real beneficiaries of that legislation?
Farm land legislation to protect farm land acres

- The other three states III, IN an MI have passed less legislation on tax savings, tax credits but have been very pro active in working with right to farm legislation and thus in particular in southern MI which still has a significant dairy industry you see sizable livestock farm operations surrounded by developed land. This is also quite common in northern III and northern IN.
What are my thoughts on our rapid and continuous loss of farm land and in particular our crop land?

• Have we as a state grew faster in population than our neighbors? **NO**
• Have we as a state had faster income gains than our neighbors? **NO**
• Have we as a state grown our GDP faster than our neighbors? **NO**
• Have we increased our business sector or manufacturing and service economies faster than our neighbors? **NO**
If the answer to all these questions is NO, then what has Wisconsin gained by our extensive farm land and crop land losses?