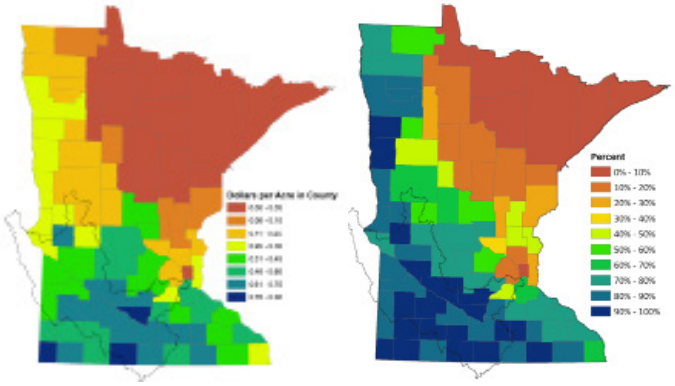
AGRICULTURE

ASK an EXPERT
ABOUT THE MINNESOTA RIVER

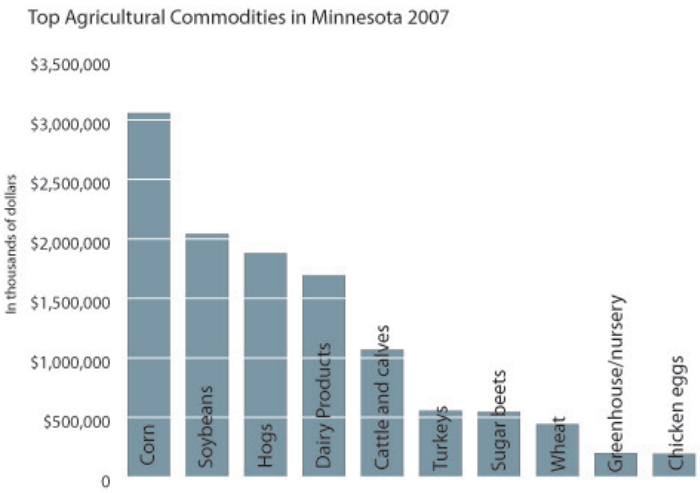
Land Use

Today row crop agriculture is the predominant land use in the basin. The Minnesota River Basin consists of 10.85 million acres (9.5 million acres within Minnesota). In 1992, there were 8.52 million acres of agricultural land (78.6%). In 2001, there were 8.46 million acres of agricultural land (78%). Other land uses include grassland/shrub, urban, wetlands, open water, forest, and barren land. Notable changes in land use from 1992-2001 include a slight decrease in agricultural lands and an increase in wetlands, open water, and urban lands. The amount of land in crops remained relatively stable over the same time period.

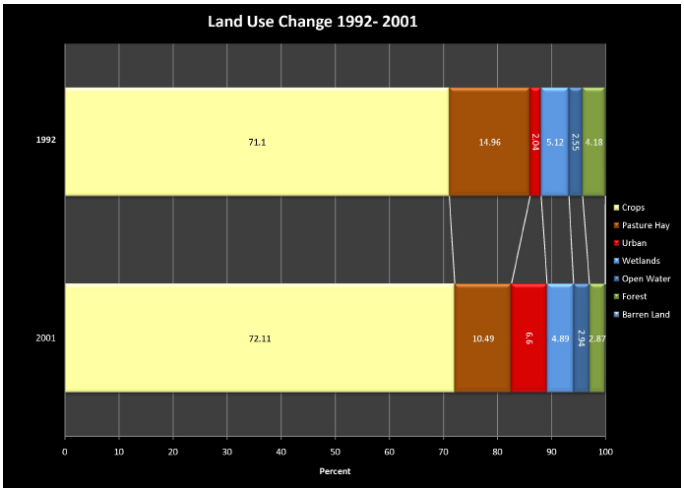
Market Value of
Agricultural Commodities 2007 Land in Farms 2007



The Minnesota River Basin is one of the most productive agricultural regions in the state. The basin stands out statewide as a region with a higher percentage of land in farms.



According to the 2007 U.S. Census of Agriculture, Minnesota Farms generated $13.2 billion (market value) in agricultural products, with 53 percent in crops, vegetables, nursery crops and other related crops, and 47 percent in livestock, livestock products and poultry. Together these farms help Minnesota rank as the seventh top agricultural producing state in the nation. As the "Market Value" map at right shows, the Minnesota River Basin is a top-producing region.



FARM SIZE & NUMBER

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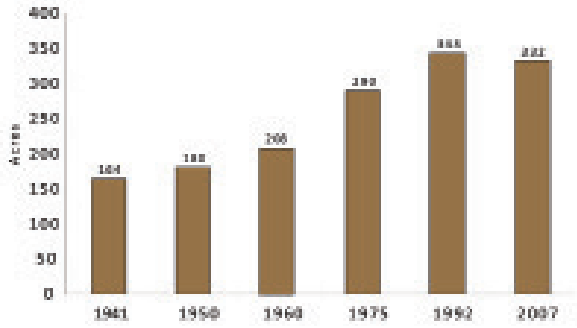
Fewer and Larger Farms

Over the last two decades, there have been two distinct trends—a rapid decrease in the number of small farms and production concentrated in fewer farms with increased level of production. New technology have lead to significant changes in agriculture. Each producer now raises more crops and livestock than ever before. These changes have effected people directly involved in agriculture but also rural communities across the basin (EQB, 1999).

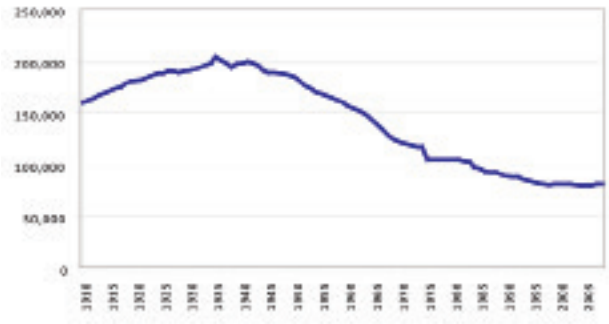
Average Size of Farms Increasing

Average Farm Size in Minnesota 1941-2007



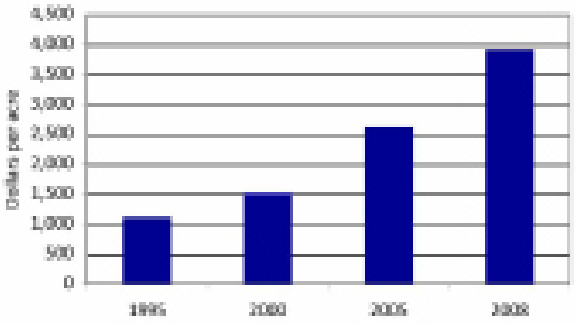
Number of Farms in Minnesota Decreasing

Number of Farms in Minnesota 1910-2006



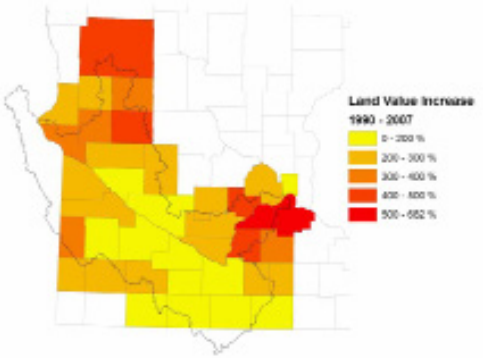
In the Minnesota River Basin, farm size has increased while the number of farms has decreased over time (see graphs above). This has resulted in people leaving rural areas in some parts of the Minnesota River Basin (see demographics section).

Farmland Land Values 1995-2008
in the Minnesota River Basin



Source: UM Minnesota Land Economics

Land Value Increasing



The map above illustrates the change in land values from 1990 to 2007 across the Minnesota River Basin. In recent years, demand for farmland for residential and commercial development has driven up values, as can be seen in the urban and suburban counties of the Twin Cities and the lake-rich counties in the north. The graph below shows the average farmland land values in the Minnesota River Basin. The average value for Minnesota farm land in 2008 was $3,923 per acre, compared to $2,619 in 2005 and $1,114 in 1995 (Minnesota Land Economics, 2009).

How many people do average farmers feed?

Today, the average American farmer feeds 130 people. In 1960 a farmer fed just 26 people. In 1919, a farmer could feed his family and 12 others (NAWG, 2008).

Microtrend: Farmer's Markets

In the last few years there has been an increase in the number of farmer's markets throughout the state. The number of farmer's markets in the Minnesota has tripled in the past five years with close to 130 operating in both rural communities and metro areas. In the Minnesota River Basin there are around 35 farmer's markets from Ortonville to the Twin Cities who offer their products directly to the consumer.

CROPS & FARMING PRACTICES

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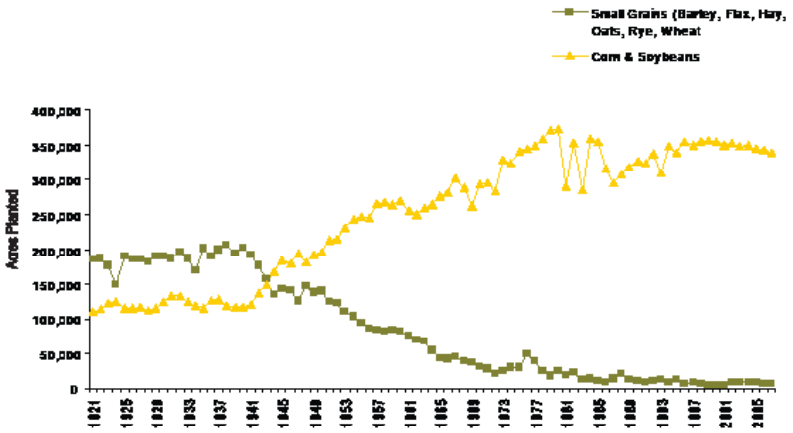
Types of crops have changes over time - from mixed to predominantly corn and soybean

Crops, Blue Earth County

The types of crops grown throughout the Minnesota River Basin have changed over time from a diverse array of crops to predominantly corn and soybean. A farm-scale case study in Mapleton Township in Blue Earth County illustrates these changes over time (Burns, 1954). The graph at left shows the shift from small grains (barley, flax, hay, oats, wheat) to corn and soybeans that occurred in the 1940s. This post-WWII shift to corn and soybean dominance echoes the trend across the basin and the broader midwest US.



Types of Crops, Blue Earth County

1937
This 400-acre farm is on flat land with poorly drained soils. Diverse crops include oats, alfalfa, pasture, wild hay, barley, and corn. Note depressional sloughs or "potholes" dotting the landscape.

1948
The tile system was installed in 1948. It was estimated that 38,000 feet of tile were laid on this 400-acre farm.

1952
By 1952 soybeans and corn are planted on a larger portion of the farm along with pasture, peas, winter wheat, alfalfa, oats and flax.

2005
Aerial photos of the farm from the 1960s to present shows the farm predominantly in corn and soybean rotations.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Minnesota Soybean

CORN & SOYBEANS

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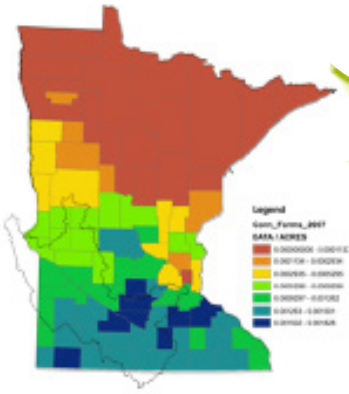
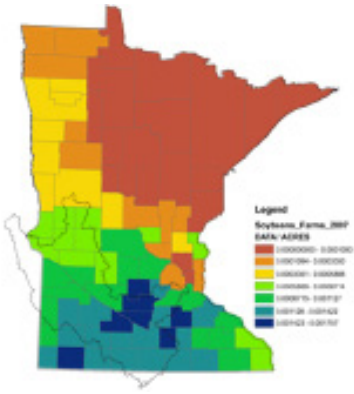
Corn and soybean crops predomninate

Farms in Corn 2007



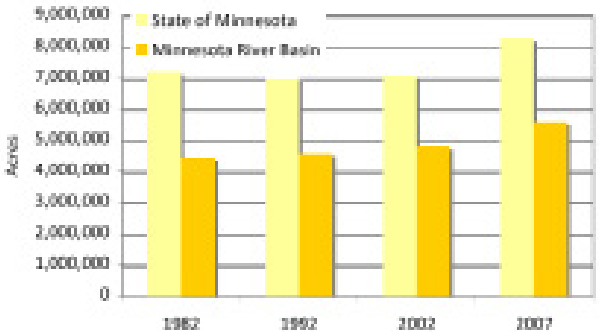
University of Minnesota Extension

Farms in Soybean 2007

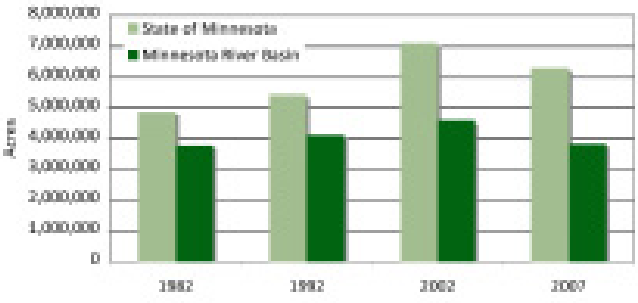


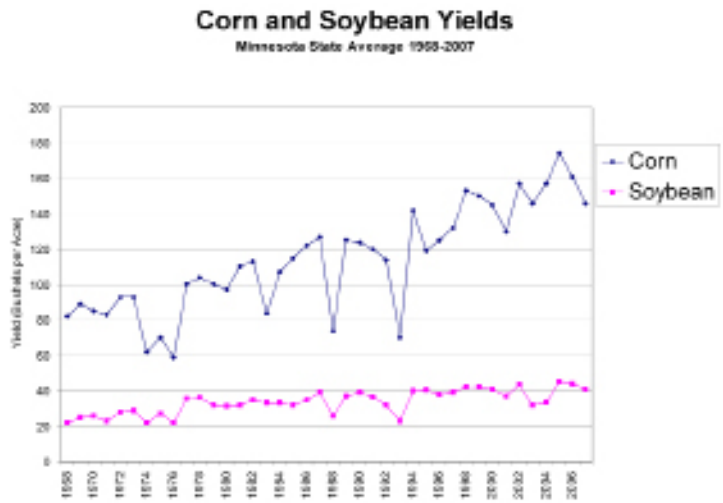
Minnesota Soybean

Corn Acres Harvested



Soybean Acres Harvested





Corn Density and Yield

1920s 8,000 plants per acre
Yield: 20 bushels per acre

Late 1930s Hybrid seed comes on the market that is bred to produce thicker stalks and stronger root systems to stand better upright in a crowd and withstand mechanical harvesting.

1950s 12,000 plants per acre (LeBaron, 2008)
Yield: 70-80 bushels per acre

Today 30,000 plants per acre
Yield: 200+ bushels per acre (Pollan, 2006)

Corn Yields Show Dramatic Increases

The graph below illustrates the dramatic increase in corn yields from 1968-2007. According to University of Minnesota agronomist D.R. Hicks, increased corn yields are due to the combination of higher yielding hybrids, good weed control, good fertility programs, higher plant populations, earlier planting, and weather factors (Hicks, 2006).