

## Economic Impact of Devils Lake Area Flooding

Production data for the most recent five-year period, as reported by North Dakota Agricultural Statistics Service, were used in this analysis. Lost production due to increased water levels in the Devils Lake basin was assumed to be acreage not planted and therefore would have no agricultural production and would not contribute to the economic activity in the region.

Acreage and yield data for 16 major crops grown in Benson and Ramsey counties for the years 2004 through 2008 were summarized. Average yields for the region are shown in Table 1. These yields were weighted based on the production from each county. The average percentage of acreage devoted to each crop is shown in Table 2. This crop mix is based on the sum of all acres produced over this 5-year period.

**Table 1.** Weighted Average Yields for Benson and Ramsey Counties, 2004-2008.

Crop	Average Yield/Acre
Barley	59.4
Corn Grain	98.4
Alfalfa Hay	1.9
Other Hay	1.6
Winter Wheat	49.2
Durum	38.6
Spring Wheat	37.4
Canola	1427.9
Flaxseed	18.5
Soybeans	24.6
Oil Sunflowers	1328.4
Conf Sunflowers	1082.7
Edible Beans	13.1
Dry Edible Peas	17.7

**Table 2.** Major Crops Grown in Benson and Ramsey Counties, 2004-2008.

Crop	Percent of Total Acre
Barley	13.9%
Corn Grain	8.3%
Alfalfa Hay	1.9%
Other Hay	3.7%
Winter Wheat	3.0%
Durum	1.3%
Spring Wheat	27.9%
Canola	7.3%
Flaxseed	1.9%
Soybeans	17.2%
Oil Sunflowers	2.7%
Conf Sunflowers	2.1%
Edible Beans	7.9%
Dry Edible Peas	0.9%

The estimated area that is currently inundated or in jeopardy, 100,000 acres, was provided by Charon Johnson. The potential lost production per year is summarized in Table 3. This table includes the average acreage of each crop, the estimated market price, and the total value for each crop. The estimated lost value of production per year is \$22,716,124. This is an estimate of the direct losses that would incur each year.

**Table 3.** Potential Lost Production Per Year in the Devils Lake Basin with 100,000 Acres of Cropland Inundated.

Crop	Average Yield	Average Acreage	Estimated Price	Value Per Year
Barley	56.8	13,900	3.54	2,794,671
Corn Grain	94.5	8,335	3.58	2,820,314
Alfalfa Hay	1.8	1,938	69.80	247,061
Other Hay	1.6	3,661	49.80	291,587
Winter Wheat	46.9	2,961	4.80	667,100
Durum	35.2	1,325	7.12	331,861
Spring Wheat	36.3	27,917	5.48	5,548,553
Canola	1318.2	7,260	0.1666	1,594,313
Flaxseed	18.5	1,872	8.57	296,921
Soybeans	25.7	17,192	9.00	3,983,660
Oil Sunflowers	1325.5	2,735	0.1723	624,744
Conf				
Sunflowers	1021.7	2,138	0.2481	542,048
Edible Beans	13.3	7,877	26.99	2,823,575
Dry Edible Peas	17.8	888	9.45	149,714
<b>Total Lost Revenue Per Year</b>				<b>22,716,124</b>

## Economic Impact Assessment Report

Year: 2009

Sector	Business Activity (In Millions)
Ag Livestock	\$1,757
Ag Crops	\$24,791
Nonmetal Mining	\$154
Construction	\$1,802
Transportation	\$257
Commercial & Public Utilities	\$1,898
Ag Processing & Misc Mfg	\$3,659
Retail Trade	\$18,455
Finance, Insurance & Real Estate	\$3,807
Business & Personal Service	\$1,553
Professional & Social Service	\$1,460
Households	\$21,887
Government	\$2,172
Coal Mining	\$0
Electrical Generation	\$0
Petroleum Exploration & Extraction	\$0
Petroleum Refining	\$0
Total Business Activity	\$83,652
Secondary Employment	530

Total impact on business activity in the region from both direct and indirect losses is estimated at \$83,652,000. The major losses are \$24.8 million to the crop sector, \$21.9 million to the households sector (personal income), and \$18.5 million to the retail trade sector. The remainder of the \$83.6 million loss is distributed among several other sectors of the economy.

This loss of business activity ultimately is reflected in lost jobs in the region. Employment loss is estimated at 530 jobs for the region.

These estimates were prepared by Dwight Aakre and Randal Coon, Department Agribusiness and Applied Economics, North Dakota State University. December 2009.