

2016 Farmland Value Survey

The survey was initiated in 1941 and is sponsored annually by Iowa State University. Only the state average and the district averages are based directly on ISU survey data. County estimates are derived using a procedure that combines ISU survey results with data from the US Census of Agriculture. Since 2014, the survey has been conducted by the Center for Agricultural and Rural Development in the Department of Economics at Iowa State University and Iowa State University Extension and Outreach.

The survey is intended to provide information on general land value trends, geographical land price relationships, and factors influencing the Iowa land market. The survey is not intended to provide a direct estimate for any particular piece of property.

The survey is based on reports by licensed real estate brokers, farm managers, appraisers, agricultural lenders, county assessors, and selected individuals considered to be knowledgeable of land market conditions. Respondents were asked to report for more than one county if they were knowledgeable about the land markets. The 2016 survey is based on 518 usable respondents providing 711 county land values estimates.

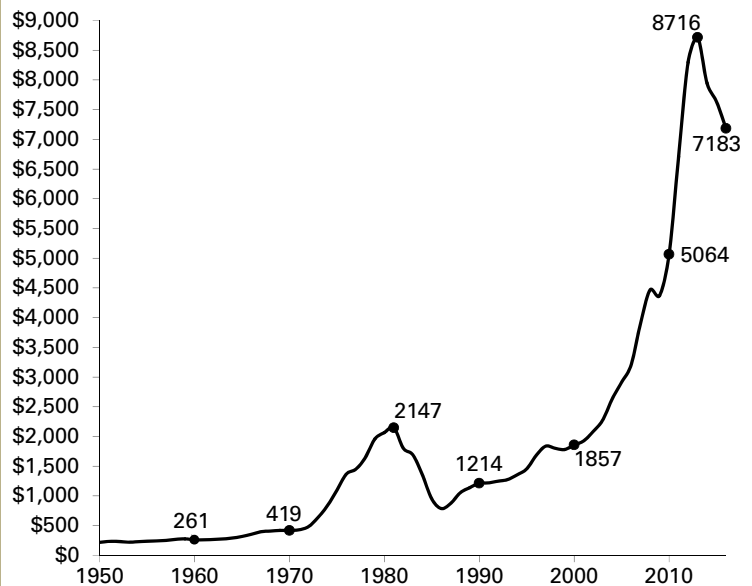
Of the 518 respondents, 252 (49 percent) completed the survey online. Online responses allow participants to provide estimates for up to 15 counties. A new web portal has been developed this year to facilitate the visualization and analysis of Iowa farmland values by pooling data from ISU, USDA, Chicago Fed, and the Realtor Land Institute, as well as by making use of charts over time

and interactive county maps. The portal can be accessed at www.card.iastate.edu/farmland/.

Participants in the survey are asked to estimate the value of high-, medium-, and low-quality land in their county. Comparative sales and other factors are taken into account by the respondents in making these value estimates. This survey is the only data source that provides an annual land value estimate at the county level for each of the 99 counties in Iowa. In addition, this survey provides estimates of high-, medium-, and low-quality land at the crop reporting districts and state level.

The 2016 state average for all quality of land was estimated to be \$7,183 per acre as of November 2016. This is a decrease of \$450 per acre from November 2015, and a 5.9 percent decline.

Figure 1. Average value per acre of Iowa farmland



Source: Iowa State University Land Value Survey

Major Factors Influencing the Farmland Market

Most survey respondents listed positive and/or negative factors influencing the land market. Of these respondents, 90 percent listed at least one positive factor, and 92 percent listed at least one negative factor. In most cases, respondents listed multiple factors.

There were three positive factors listed by over 10 percent of respondents who provided at least one positive factor. The most frequently mentioned factor was low interest rates, mentioned by 23 percent of the respondents. Strong yields were the second-most frequently mentioned positive factor, mentioned by 17 percent of the respondents. Other frequently mentioned positive factors included limited land supply (17 percent) and strong demand (4 percent).

There was only one negative factor listed by more than 10 percent of respondents who identified at least one negative factor. The most frequently mentioned negative factor affecting land values was lower commodity prices, mentioned by 40 percent of respondents. High input prices were the second-most frequently mentioned negative factor (8 percent). Livestock losses, weak cash rental rates, and weakening global economy and stock market returns was mentioned by 7, 5, and 4 percent of the respondents, respectively.

Number of Sales Compared to Previous Year

Over half, (61 percent) of respondents reported lower sales in 2016 relative to 2015. On the other end of the spectrum, just 10 percent reported more sales, and 29 percent reported the same level of sales in 2016 relative to 2015.

Land Sales by Buyer Category

Respondents were asked what percent of the land was sold to the following five categories of buyers.

- Existing farmers represented 74 percent of the sales, with local farmers making of 72 percent and 2 percent to relocating farmers.

Table 1. Recent changes in Iowa farmland values

Year	Value per acre	Dollar change	Percentage change
1981	\$ 2147	\$ 81	3.9
1982	1801	-346	-16.1
1983	1691	-110	-6.1
1984	1357	-334	-19.8
1985	948	-409	-30.1
1986	787	-161	-17.0
1987	875	88	11.2
1988	1054	179	20.5
1989	1139	85	8.1
1990	1214	75	6.6
1991	1219	5	0.4
1992	1249	30	2.5
1993	1275	26	2.1
1994	1356	81	6.4
1995	1455	99	7.3
1996	1682	227	15.6
1997	1837	155	9.2
1998	1801	-36	-2.0
1999	1781	-20	-1.1
2000	1857	76	4.3
2001	1926	69	3.7
2002	2083	157	8.2
2003	2275	192	9.2
2004	2629	354	15.6
2005	2914	285	10.8
2006	3204	290	10.0
2007	3908	704	22.0
2008	4468	560	14.3
2009	4371	-97	-2.2
2010	5064	693	15.9
2011	6708	1644	32.5
2012	8296	1588	23.7
2013	8716	420	5.1
2014	7943	-773	-8.9
2015	7633	-310	-3.9
2016	7183	-450	-5.9

- Investors represented 22 percent.
- New farmers represented 3 percent.
- Other purchasers represented 1 percent.

Sales to existing farmers by Crop Reporting Districts ranged from 79 percent in Northwest to 57 percent in South Central.

Sales to investors were highest in South Central (33 percent). Northeast reported the lowest investor activity (15 percent).

Respondents by Occupation

The 2016 Iowa land value survey asked a new question regarding the main occupation of the respondent: farm managers, appraisers, agricultural lenders, brokers/realtors, government, farmers/landowners, and other. This year's survey also asked about the number of years' experience of respondents and number of counties they offer services in. Additionally, the land value survey was available online in addition to using the traditional mail copy.

In total, 518 agricultural professional completed the survey, providing 711 county land value estimates. Of these 518 respondents, agricultural lenders represented the largest group, accounting for 34 percent of all respondents. Realtors/brokers, farm managers, and appraisers were the other three largest groups exceeding 10 percent of all respondents, representing 19, 15, and 11 percent of respondents, respectively.

Agricultural professionals on average have over 20 years of experience in their current profession and offer service to an average of 10 counties.

Land Quality and Corn

Suitability Ratings

To gauge how each respondent defined high-, medium-, and low-quality land for their county, we asked for estimated average CSR2 (Corn Suitability Rating 2) and crop yields for high-, medium-, and low-quality land.

Results in Table 2 show that agricultural professionals have adapted to CSR2. Approximately 89 percent of participants provided at least one CSR2 estimate for the corresponding land quality classes. The estimated average CSR2 statewide for high-, medium-, and low-quality land is 81, 69, and 55 points respectively, while the statewide average corn yields for these three land quality classes are 208, 182, and 155 bushels per acre, respectively.

In addition, respondents ranked high-, medium-, and low-quality land based on relative conditions in their region. For example, the average CSR2 for high-quality land in the South Central district is 68, comparable to the CSR2 for low-quality land in Northwest district at 66. Similarly, corn yields for medium-quality land range from above 190 bushels per acre in the East Central and Northwest districts to 154 bushels per acre in the South Central district.

Outlook for Land Values

The decline revealed by the 2016 ISU land value survey didn't come as a surprise for some— in November 2015, over 75 percent of 2015 ISU survey respondents thought land values in their territory would continue to decline in 2016. The majority predicted the decline would be either less than 5 percent or between 5 and 10 percent, which is consistent with the 5.9 percent decrease reported by the 2016 ISU survey.

Although modest, the 5.9 percent decline represents a three-year streak where average Iowa farmland values have shown a decline, which is the

Table 2. Estimated average CSR2 and corn yields by land quality, 2016

	Reported Average CSR2			Reported Average Corn Yields		
	High Quality	Medium Quality	Low Quality	High Quality	Medium Quality	Low Quality
Northwest	87	79	66	214	191	165
North Central	84	74	62	208	187	163
Northeast	82	68	54	213	188	157
West Central	80	67	55	212	186	160
Central	85	73	61	209	182	155
East Central	84	70	54	219	193	161
Southwest	78	65	51	205	179	153
South Central	68	53	38	186	154	127
Southeast	81	65	47	201	175	145
STATE	81	69	55	208	182	155

first time this has happened since the 1980s. For a pessimist, there are plenty of legitimate reasons to worry:

- 1) according to USDA, net farm income dropped another 17.2 percent to \$66.9 billion in August 2016, and this represents the lowest since 2009 in both real and nominal terms.
- 2) financial stress in the agricultural sector shows slow but steady increase, with continued declines in loan repayment rates and uptakes in farm real estate and working capital debt.
- 3) while corn and soybean prices continue to fall short of production costs, livestock producers faced a tougher environment in 2016 with hog, cattle, and dairy prices all down by at least 30 percent compared to two years ago.

However, this decline is not a doomsday scenario. First, the 5.9 percent decline is still modest and actually lower than the rate many expected to see. Average farmland values hit a historic peak of \$8,716 per acre in 2013, but declined 8.9 percent in 2014, 3.9 percent in 2015, and have now fallen an additional 5.9 percent. While they have declined three years in a row now, current Iowa farmland values are still more than double what they were 10 years ago, 64 percent higher than the 2009 values and 7 percent higher than the 2011 values. From the landowner's perspective, with land values at the county level dropping 2 to 9 percent across Iowa, landowners could still potentially make money with cash rent payments, which typically account for about 2 to 4 percent of land values.

Second, it was widely accepted among farmers and landowners at the start of 2016 that commodity prices, farm income, and profit margin probably wouldn't improve much over the year, and arguably the farmland market has already capitalized these expectations. Therefore, the downward pressures did not cause a panic market reaction. To some extent, this farm downturn, although continuing, is slowing down in its downslide. Over the past few years, the Iowa farmland market first slowed down in the growth rate, from over 20 percent in 2011 and 2012, to

merely a 5 percent increase in 2013, and then transitioned to modest losses in 2014 to 2016. In addition, the declines over the last three years are all below 10 percent.

Third, there are still many positive factors bolstering the farmland market, including favorable interest rates, strong balance sheets, and substantial working capital accumulated from the golden 2000s; and, at least for some producers, rising recreational demand and strong conservation payments from programs like CRP.

Put simply, land value is the net present value of all discounted future income flows. With certain assumptions imposed, one could think of land value being net income divided by interest (discount) rate. To understand the changes in land value over time and across space, it is useful to examine how net income and interest rates will change over the next few years. In particular, trends in net income for a particular region will be reflected in the farmland market, which tends to be localized. For example, even for a predominantly agricultural state like Iowa, the primary reason for the drop, or slowdown, in land values is the drop in net farm income, and this is likely to continue. Net farm income has been at record high levels the past few years and interest rates have been at record low levels. This combination produced record high farmland values over the past decade. In August, the USDA forecasted net farm income dropped another 17.2 percent to \$66.9 billion, which is a direct result of the sharp decline in corn and soybean prices, and this represents the lowest since 2009 in both real and nominal terms.

Interest rates are also an important determinant of farmland values. The Federal Reserve Board had long discussed the end of the low-interest era, and likely will finally raise the interest rate in December 2016. However, given the uncertainty with the global economy and new presidential administration, the change will likely raise the current historically low interest rates to low-yet-favorable levels. Some people feel that interest rates are more important than net income in

determining farmland values; putting these arguments aside, the Fed will likely raise interest at a slow rate as opposed to an immediate increase.

With the decline in farm income, and a highly probable increase in interest rates, we might see farmland values continue to recede if the forecasts for low commodity prices and the global stock recovery for grains and oilseeds are realized next year and beyond. The Iowa farmland market appears to have peaked for the foreseeable future, and we may expect to see the Iowa farmland market drifting sideways.

Commodity prices appear to have moved to a new plateau, and the high-profit-margin era for row crop production has ended. This is a result of over-production on the global scale chasing the phenomenal profits in the late 2000s. It appears prices will stabilize somewhere in the mid- to upper-\$3 range for corn and the upper-\$8 to lower-\$9 range for soybeans. Obviously the prices will move with supply and demand changes; however, based on current futures prices, these appear to be the likely long-term ranges.

Unfortunately, current projections show a loss at these prices. Preliminary Iowa State University cost of production estimates for 2017 indicate a 50 cents per bushel loss for corn and possibly break-even for soybean production with average costs and yields. Additionally, the hog, cattle, and dairy producers are embracing low-to-negative margins in the months ahead. A historical analysis of corn and soybean margins seems to suggest that it takes roughly 6 to 8 years to move from the negative-margin eras to positive profits again for the industry.

Costs of production, especially rents, have increased considerably over the past several years. Higher commodity prices led to higher incomes, which led to increases in rents. Under low-to-negative profit margins, farmers are trying to lower costs in a variety of ways. Rents will change with income, but they will decline slower as incomes drop. In other words, the rent tends to be sticky when facing downward pressure. How long it will

take for rents to adjust to the lower commodity prices remains to be seen.

However, until they adjust, profitable production is unlikely and land values will continue to be under downward pressure.

Iowa farmers made record income over the past several years, and a major question is what they did with that income. Some farmers appear to have saved it or paid down existing debt, but other farmers appear to have parlayed the income into more debt with additional land, machinery, and buildings, etc. There is a concern for some producers over possible financial difficulties due to continually declining income and accumulation of debt from banks and other sources. It appears most farmers will be able to weather the storm as the market prices find a new equilibrium, but farmers and land owners who bet on the high commodity prices lasting and aggressively expanded or borrowed heavily will face significant problems in the months ahead.

Some of the survey respondents reported strong auction sales where existing farmers were aggressively bidding for neighboring properties or some other particularly desirable parcel. These buyers appeared to have the money and to that extent they will provide support for the land market. As the survey indicated, existing farmers still account for the majority of the land purchased in Iowa and they mainly obtained land from estate sales.

Farmland sale activities tend to be correlated with changes in land values: with the current farm downturn, landowners tend to continue to hold to land parcels and postpone their land sales, which results in a continuation of less farmland sales. With the continued decline in farm income and profitability, some existing landowners may consider retirement and sell their land eventually. According to the 2012 Iowa Farmland Ownership and Tenure Survey, half of Iowa's farmland has been held for more than 20 years. As a result, a large influx of farmland supply is not likely, but this potential rise in farmland sale activity

and continued decline in farmland values might present opportunities for beginning farmers and ranchers to enter the market.

Many people are concerned about a potential farmland bubble burst, or a replay of the 1920s economic depression or the 1980s farm crisis. There are legitimate reasons to be cautious, especially with the rising uncertainty in agricultural exports and likely rise in interest rates. However, Iowa farmland values do not appear to be in a speculative bubble that caused the dramatic declines in the 1980s farmland values or the urban real estate market in the mid-2000s. A comparison between this third golden era and the previous two reveal that farmers accumulated much more income, especially cash, during the most recent decade than what they did in the 1910s and 1970s before the farm crisis: inflation-adjusted net farm income increased by more than 8 percent every year from 2003 to 2013, while the same measure dropped by 3 percent annually 1973–1981 due to high inflation. In addition, the agricultural sector was much more leveraged and vulnerable in the 1970 and 1980s compared to now: farmers used to be able to borrow up to 85 percent of inflated, market-based land value in the 1970s, while now they can only get less than half of cash-flow based land values. Finally, the safety net now is much stronger: in the 1980s, the total acres insured in the Federal Crop Insurance program was only 50 million acres for the entire U.S., and now just corn and soybean acres insured in Iowa almost exceed 25 million acres, representing 93 percent of all production acres.

The demand for U.S. crop and livestock products is still very strong. The downward pressures on farmland values likely will continue and play out next year and beyond, but it will more than likely be a rational and modest correction as opposed to a sudden change.

It is not possible to say where the farmland values will stabilize; however, the odds of commodity prices collapsing, a sudden stoppage of the Chinese economy, interest rates rapidly increasing,

and/or land values collapsing are not high. The odds are not zero, but it doesn't appear these events will occur in the foreseeable future.

A more likely scenario is that farmland values will return to more normal changes experienced over the past century. Since 1942 nominal and inflation-adjusted Iowa farmland values have averaged a 6.7 percent and 2.7 percent increase per year, respectively. Farmland values have increased 73 percent of the years, decreased 26 percent of the years, and remained unchanged for three years between 1910 and 2016. Farmland has historically been a fairly robust investment that generates relatively stable returns, and the Iowa farmland market seems to continue drifting sideways to slightly lower.

There are several unique uncertainties worth watching over the next year or two: first, it remains unclear how quickly and by how much the Fed will raise interest rates; second, it is uncertain how the new Secretary of Agriculture and trade agreement negotiations will affect agricultural exports and farm income; and third, the agricultural sector is closely watching possible policy changes, especially the 2018 Farm Bill discussions, stepped-up basis, and estate tax, as well as conservation.

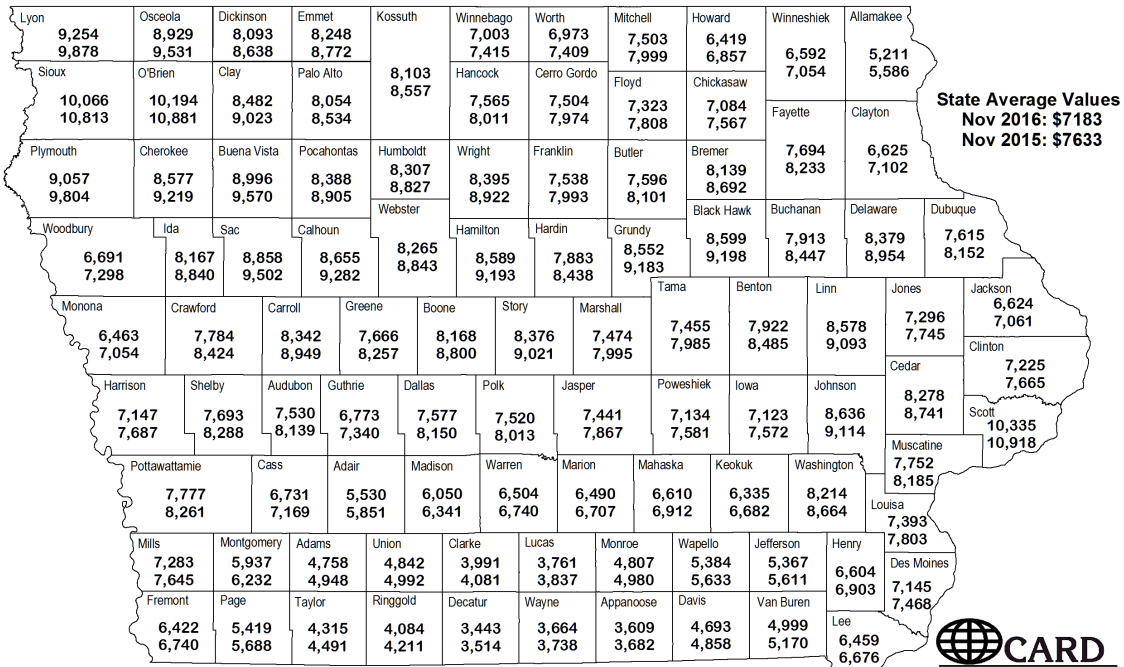
There have been three 'golden' eras for Iowa land values over the past 100 years. The first one ended in a long, drawn-out decline in land values from 1921 to 1933, the second golden era ended with a sudden collapse from 1981 to 1986. The third golden era appears to be ending with an orderly adjustment as opposed to a sudden collapse. As opposed to the dramatic collapse of the agricultural sector in the mid-1980s, we might see this farm downturn resemble the trajectory of the 1920s farm crisis in the sense that there might be a long, drawn-out decline in the farmland market.

For more details and the author's interpretation of the survey results, visit the [ISU CARD Land Values website](#).

Table 3. Average value per acre of Iowa farmland listed by crop reporting districts and grades of land

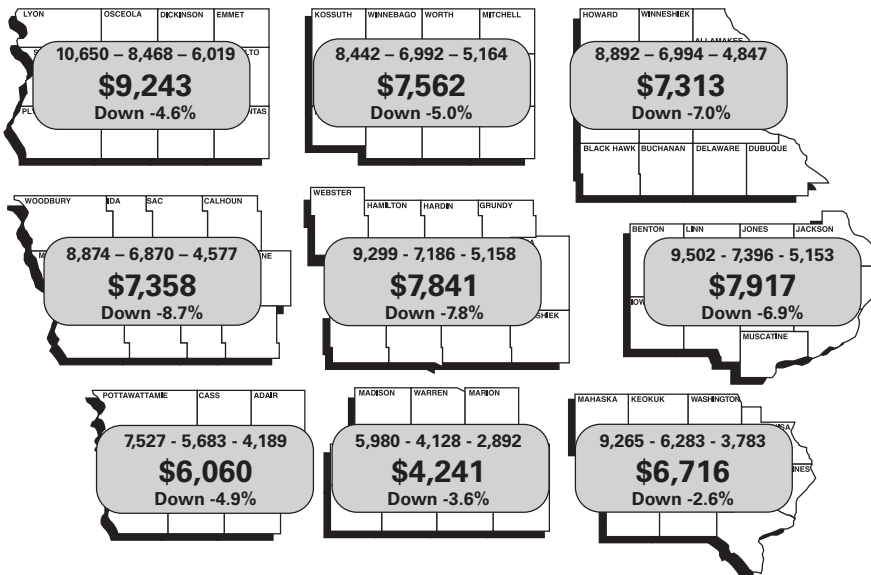
Year	State Avg	North-west	North Central	North-east	West Central	Central	East Central	South-west	South Central	South-east
All grades										
2002	2083	2434	2367	2149	2101	2392	2547	1632	1211	1808
2003	2275	2683	2514	2347	2329	2652	2715	1774	1354	1979
2004	2629	3118	2913	2665	2728	3101	3054	2088	1547	2286
2005	2914	3393	3222	2963	3048	3415	3396	2350	1793	2483
2006	3204	3783	3478	3187	3410	3716	3725	2580	1927	2849
2007	3908	4699	4356	4055	4033	4529	4272	3209	2325	3463
2008	4468	5395	4950	4590	4823	5280	4743	3626	2573	3913
2009	4371	5364	4827	4464	4652	5026	4796	3559	2537	3832
2010	5064	6356	5746	5022	5466	5901	5447	4325	2690	4296
2011	6708	8338	7356	6602	7419	7781	7110	5905	3407	5705
2012	8296	11404	9560	8523	9216	9365	8420	7015	4308	6172
2013	8716	10960	9818	9161	9449	9877	9327	7531	4791	6994
2014	7943	9615	8536	8151	8424	9087	9008	6513	4475	7215
2015	7633	9685	7962	7861	8061	8505	8506	6372	4397	6892
2016	7183	9243	7562	7313	7358	7841	7917	6060	4241	6716
High grade										
2002	2576	2776	2676	2625	2583	2848	3105	2117	1931	2539
2003	2790	3040	2817	2857	2820	3121	3263	2285	2121	2783
2004	3193	3537	3265	3189	3264	3621	3659	2657	2358	3174
2005	3511	3813	3588	3522	3691	3935	4069	2925	2659	3385
2006	3835	4261	3834	3816	4072	4263	4443	3209	2663	3793
2007	4686	5313	4807	4859	4804	5261	5073	3989	3231	4625
2008	5381	6150	5514	5415	5752	6076	5674	4642	3586	5346
2009	5321	6129	5371	5349	5552	5939	5738	4539	3710	5306
2010	6109	7283	6397	6076	6585	7026	6152	5335	3892	5862
2011	8198	9649	8601	7994	8889	9332	8675	7418	5109	7721
2012	10181	12890	10765	10708	11128	11139	10201	8818	6437	8879
2013	10828	12824	11159	11423	11591	11803	11631	9591	7150	9785
2014	9854	11201	9630	10083	10275	10780	11034	8482	6663	10150
2015	9364	11229	8976	9575	9684	10087	10289	8031	6445	9536
2016	8758	10650	8442	8892	8874	9299	9502	7527	5980	9265
Medium grade										
2002	1924	2278	2142	2010	1930	2175	2358	1522	1152	1659
2003	2123	2507	2309	2221	2167	2438	2543	1659	1307	1834
2004	2457	2930	2669	2515	2564	2858	2863	1956	1492	2118
2005	2736	3199	2982	2834	2833	3165	3172	2217	1725	2347
2006	3011	3561	3223	2987	3213	3458	3501	2442	1866	2679
2007	3667	4385	4026	3777	3796	4194	4005	3047	2296	3270
2008	4195	5023	4568	4339	4537	4919	4405	3425	2527	3721
2009	4076	4977	4450	4193	4371	4615	4465	3386	2443	3535
2010	4758	5883	5300	4664	5111	5386	5445	4140	2596	4053
2011	6256	7708	6713	6290	6981	7029	6510	5553	3353	5468
2012	7773	11011	8691	7815	8619	8466	8128	6732	4219	5685
2013	8047	9918	8824	8573	8725	8930	8567	7137	4715	6605
2014	7359	8698	7874	7591	7827	8327	8388	6108	4318	6715
2015	7127	8834	7352	7460	7581	7758	7934	6038	4282	6525
2016	6705	8468	6992	6994	6870	7186	7396	5683	4128	6283
Low grade										
2002	1322	1571	1568	1448	1332	1516	1628	996	760	997
2003	1463	1808	1682	1512	1500	1707	1811	1130	858	1063
2004	1713	2087	1976	1816	1746	2028	1998	1354	1029	1272
2005	1961	2382	2252	2032	1970	2353	2237	1614	1252	1438
2006	2195	2566	2500	2248	2293	2615	2505	1729	1373	1786
2007	2656	3210	3125	2853	2738	3004	2928	2175	1583	2131
2008	2967	3580	3408	3296	3187	3469	3214	2298	1757	2271
2009	2884	3490	3281	3177	3134	3203	3240	2286	1685	2281
2010	3357	4161	3976	3517	3542	3724	3840	2868	1794	2620
2011	4257	5196	4900	4352	4766	4848	4671	3824	1984	3335
2012	5119	7162	6303	5288	5877	5718	5013	4484	2562	3226
2013	5298	6845	6421	5670	5926	5918	5449	4592	2843	3651
2014	4878	6091	5428	5256	5173	5582	5479	3860	2808	3891
2015	4834	6252	5372	5242	5082	5292	5366	4070	2750	3797
2016	4665	6019	5164	4847	4577	5158	5153	4189	2892	3783

Figure 2. 2016 and 2015 Iowa land values by county



County estimates of average dollar value per acre for Iowa farmland based on U.S. Census of Agriculture estimates and the Nov. 1, 2016, Iowa Land Value Survey conducted by Center for Agricultural and Rural Development, Iowa State University and Iowa State University Extension and Outreach. The top figure is the estimated Nov. 1, 2016, value; the bottom figure is the estimated Nov. 1, 2015, value.

Figure 3. 2016 Iowa land values by crop reporting district



Estimates of average dollar value per acre for high-, medium-, and low-grade farmland (top row) on Nov. 1, 2016, by Iowa Crop Reporting District; (middle row) the Crop Reporting District average; and (bottom row) the average percentage change from Nov. 1, 2015. The estimates are based on a survey conducted by Iowa State University, Center for Agricultural and Rural Development, and Iowa State University Extension and Outreach.

... and justice for all

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