

# Ag Decision Maker

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## UPDATES

The following [Information Files](#) have been updated on [extension.iastate.edu/agdm](http://extension.iastate.edu/agdm):

A1-76 How to Grow and Sell Carbon Credits in US Agriculture

B1-15 Deductible Livestock Costs for Adjusting 2022 Income Tax Returns

C1-40 Suggested Closing Inventory Prices for 2022 Records

C2-70 2022 Iowa State University Farmland Value Survey

The following [Video and Decision Tool](#) have been updated on [extension.iastate.edu/agdm](http://extension.iastate.edu/agdm):

A1-10 Chad Hart's Latest Ag Outlook

C2-70 Historical Farmland Value Survey

The following [Profitability Tools](#) have been updated on [extension.iastate.edu/agdm/outlook.html](http://extension.iastate.edu/agdm/outlook.html):

A1-85 Corn Profitability

A1-86 Soybean Profitability

A2-11 Iowa Cash Corn and Soybean Prices

A2-15 Season Average Price Calculator

D1-10 Ethanol Profitability

D1-15 Biodiesel Profitability



## Record Iowa farmland values despite concerns about higher inflation, interest rates

By Wendong Zhang, extension economist,

[wdzhang@iastate.edu](mailto:wdzhang@iastate.edu); assistant professor, Dyson School of Applied Economics and Management, Cornell University, [wendongz@cornell.edu](mailto:wendongz@cornell.edu)

Average land values in Iowa rose 17% nominally, 9% after adjusting for inflation.

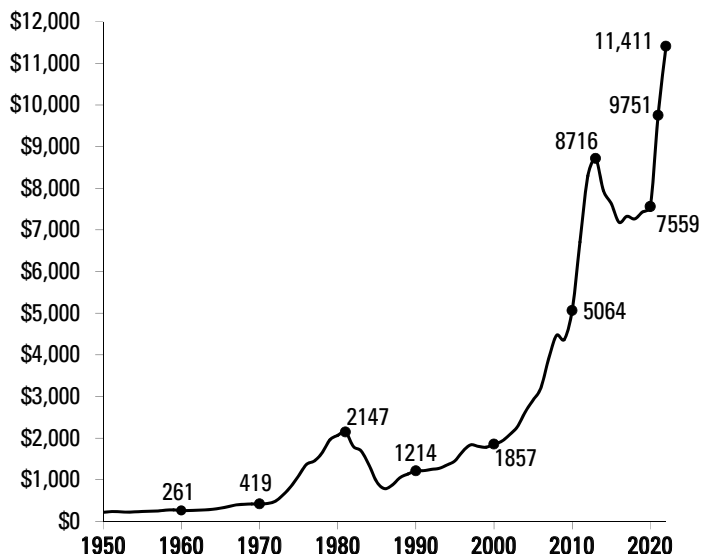
One year after skyrocketing 29%, the average value of an acre of Iowa farmland jumped another 17%, or \$1,660, to \$11,411 per acre (Figure 1). The nominal value of an acre of farmland is again higher this year than at any point since Iowa State University began surveying values in 1941. When adjusting for inflation, the 2022 average value surpasses the previous inflation-adjusted record value set in 2013 for the first time.

Farmland values in Iowa have increased more than 15% in a year a handful of times since 1941, most notably in 2011, when values rose 32.5%, and last year, when values rose 29%.

While inflation was a major factor that drove the increase last year, it did not play as much of a factor as commodity prices, limited land supply, and low interest rates through summer 2022 did this year.

Inflation rates this year are similar to those from last year, but the Federal Reserve has

Figure 1. Average value per acre of Iowa farmland. Source: Iowa State University Land Value Survey.



used aggressive rate hikes since this summer to curb the problem. The Federal Reserve seems to be determined to keep raising interest rates until they get a firm control on inflation. This is a tricky balance because larger and quicker interest rate hikes run the risk of slowing down the economy, potentially to a recession. While higher interest rates put downward pressure on the land market, the effects typically don't show up in land prices for one or two years.

While the Federal Reserve has been raising interest rates, 81% of Iowa farmland is fully paid for, so the higher interest rates don't always affect farmers' mortgage rates. Furthermore, a significant portion of respondents said that cash on hand was a positive factor influencing land values. Farmers have a lot more cash on hand and supply chain issues led to a shortage of equipment, so the money that farmers normally spend on equipment is now devoted to land.

Commodity prices have been strong this year and yields have been higher than expected, despite the weather challenges. Not only are crop prices are much higher, livestock and poultry prices are also significantly higher, translating into higher farm income and profits.

For the first time, this year's survey asked respondents' views of current farmland values. Seventy percent of respondents feel that current land values are "too high" or "way too high." Higher land values create

an even higher entry barrier for beginning farmers, and the following increase in cash rents along with higher input costs could negatively affect producers, especially those with a lot of rented ground.

Forty-eight percent of respondents forecasted an increase in farmland values one year from now, while 24% forecasted no change and 28% expected lower values. Most respondents expect the one-year value to either be the same or increase roughly 5–10%.

Looking five years ahead, 60% of respondents believe land values will increase 10–20% from current values, while about 24% forecast a decline in prices.

### Land values by county

For the second year in a row, all 99 of Iowa's counties showed an increase in land values. However, for the first time in almost a decade, Scott County did not report the highest overall value. O'Brien County topped the list this year, reporting a 20.6% increase, or \$2,818 per acre, to \$16,531. Decatur County again reported the lowest value, though land values there increased 10%, or \$505 per acre, to \$5,566.

Mills, Fremont, Page, and Montgomery Counties reported the largest percentage increase, 21.6%, while O'Brien County saw the largest dollar increase, \$2,818 per acre. Wayne, Lucas, Appanoose, and Decatur Counties saw the smallest percentage increase, 10%, while Decatur County saw the smallest dollar increase, \$505 per acre.

### Land values by district

Land values increased across all crop reporting districts. The Northwest district reported the highest overall value, \$14,878 per acre, the largest percentage increase, 22.3%, and the largest dollar increase, \$2,714 per acre.

The South Central district reported the lowest values, \$6,824 per acre, and the lowest dollar change, \$790 per acre, while the Southeast district saw the smallest percentage increase, 9.8%.

### Land values by quality

Statewide, low-quality land now averages \$7,369 per acre, an increase of 15.2% or \$972 per acre. Medium-quality land now averages \$10,673 per acre, an increase of 17.7% or \$1,602 per acre. High-quality land now averages \$13,817 per acre, an increase of 16.8% or \$1,983 per acre.

The Northwest district reported the highest values for low-, medium-, and high-quality land at \$9,569, \$13,710, and \$17,121 per acre, respectively. The South Central district reported the lowest values for low-, medium-, and high-quality land at \$4,379, \$6,872, and \$9,478 per acre, respectively.

Low-quality land saw the largest percent increase in the Northeast district, 19.8%, while the Northwest district saw the largest dollar increase, \$1,481 per acre. Low-quality land saw the smallest percent increase, 7.9%, and the lowest dollar increase, \$321 per acre, in the South Central district.

Medium-quality land saw increases of more than 20% in the West Central, Northeast, Southwest, and Northwest districts, which respectively showed increases of 20.1%, 21.9%, 22.7%, and 24.2%. The Northwest district also saw the largest dollar increase in medium-quality land, \$2,688 per acre. The Southeast district showed the lowest percent increase in medium-quality land, 6.2%, and the lowest dollar increase, \$508 per acre.

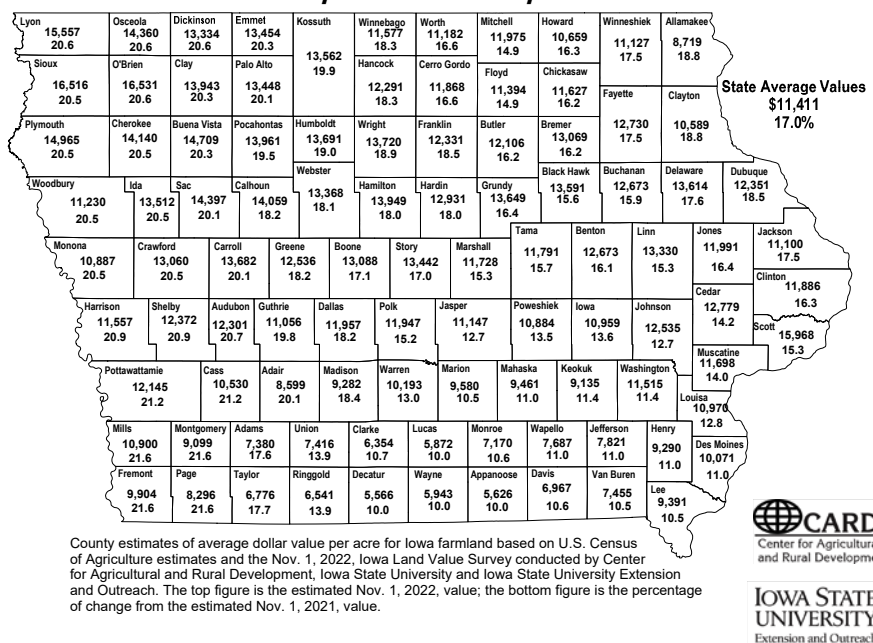
High-quality land in the West Central, Southwest, and Northwest districts all saw increases of more than 20%: 20.6%, 21.2%, and 22.3%, respectively. The Northwest district reported the largest dollar increase in high-quality land at \$3,124 per acre. The Southeast district reported the smallest percent change in high-quality land, 10.3%, and the smallest dollar increase, \$1,201 per acre.

### Factors influencing the land market

The most frequently mentioned positive factor influencing the land market was higher commodity prices. Limited land supply and low interest rates through summer 2022 were the second- and third-most frequently mentioned factors. Other frequently mentioned factors included cash on hand and high credit availability, strong yields, a good farm economy, and strong demand.

The most frequently mentioned negative factor affecting land values was interest rate hikes. Other noted factors included

**Figure 2. Percentage change in Iowa land values, 2021 to 2022.**  
**Source: Iowa State University Land Value Survey.**



concerns about higher input costs and stock market volatility and economic uncertainty were the second- and third-most frequently mentioned negative factors.

Land values were determined by the 2022 Iowa State University Land Value Survey, conducted in November by the Center for Agricultural and Rural Development at Iowa State and Iowa State University Extension and Outreach. Results from the survey are consistent with results by the Federal Reserve Bank of Chicago, the REALTORS® Land Institute, and the US Department of Agriculture.

The Iowa State Land Value Survey is based on reports by agricultural professionals knowledgeable of land market conditions, such as appraisers, farm managers, agricultural lenders, and actual land sales, and is intended to provide information on general land value trends, geographical land price relationships, and factors influencing the Iowa land market. The 2022 survey is based on 668 usable responses from 443 agricultural professionals. Seventy-one percent of the 443 respondents answered the survey online.

The Iowa State Land Value Survey was initiated in 1941, the first in the nation, and is sponsored annually by Iowa State. The survey is typically conducted every November and the results are released mid-December. Only the state average and the district averages are based directly on the Iowa State survey data. County estimates are derived using a procedure that combines the Iowa State survey and results with data from the US Census of Agriculture.

CARD offers a [web portal](https://www.card.iastate.edu/farmland/), <https://www.card.iastate.edu/farmland/>, that includes visualization tools, such as charts and interactive county maps, allowing users to examine land value trends over time at the county, district, and state level.



## Position in cattle cycle impacts replacement prices

By Lee Schulz, extension livestock economist, 515-294-3356 | [lschulz@iastate.edu](mailto:lschulz@iastate.edu)

Escalating calf prices fuel interest in retaining, or purchasing, replacement females to grow the cow herd. Calf prices are up 16% from late-2021 and up 30% from late-2020. Buying interest turning into action can boost replacement prices. Replacement supply also matters.

The amount a producer can afford to pay for a replacement heifer or cow may differ from auction bids or private treaty sale prices. A producer's buying power relates to the expected break-even, which considers covering variable costs, total costs and maybe even allowing some room for profit. Buyers and sellers start with the open market price. Then they negotiate based on quality and quantity of replacements at a given time and place.

Differing profit expectations drive price fluctuations above and below some market price level. Some producers may put the greatest weight on the current or most recent market. Others may consider the calf or replacement market one or two years down the road when the first calves will be ready to sell. Some may have an even longer horizon and consider expected value of the calves produced over the life of the cow.

### Market reporting of replacements

USDA's Agricultural Marketing Service Market News Service reporters gather data on replacement female prices at auctions. Unfortunately, these thinly traded markets may not provide the most representative prices. Nebraska or Missouri auctions provide the closest replacement data to Iowa. Still market data are somewhat limited.

No official standards for replacement cattle exist. The physical presence of a market reporter at an auction is crucial. Being there allows reporters to not only have a better opportunity to evaluate the replacements, but also allows reporters to witness and converse with the trade to gain a better understanding of the market that day. Sometimes market reporters use terms such as fancy or plain to describe the quality of replacements sold (cattle are assumed to be of average quality unless otherwise stated). Selling conditions may also involve a herd sell-out or reputation cattle.

Market News Service reporters evaluate replacement cattle for frame size and muscling which is the same basis as evaluating feeder cattle.

Reporters incorporate other factors such as the number of months pregnant and animal age into reports to explain prices. Pregnancy stage is either open or listed by trimester. Young cows are four years old or less and have had at least one calf, middle aged cows are five to eight years old and aged cows are over eight years old.

In November 2022, the Nebraska auction price of medium & large no. 1 bred heifers, less than two years of age and four to six months pregnant, averaged \$1,744. Prices are in \$/head. The same type of heifers but seven to nine months pregnant averaged \$1,811.

Medium & large no. 1 bred cows, one to three months pregnant, averaged \$1,531, \$1,454, and \$1,138 for two to four year old, five to eight year old, and greater than eight year old cows, respectively. Bred cows, four to six months pregnant, averaged \$2,004, \$1,668, and \$1,186 for two to four year old, five to eight year old, and greater than eight year old cows, respectively. Bred cows, seven to eight months pregnant, averaged \$2,071 for two to four year old cows while five to eight year old cows averaged \$1,864. Replacement female prices were roughly 25% higher in November 2022 than in November 2021.



USDA-AMS Market News Service also reports on the Superior Livestock Video/Internet Auction. For the sale on December 1, 2022 and for transactions from the North Central region (CO, IA, MT, ND, NE, SD, WY), medium & large no. 1 bred heifers that were less than two years old and four-six months pregnant brought \$2,035 on average with a range of \$1,875 to \$2,100. Bred cows, two to four years old and seven to nine months pregnant, averaged \$1,975.

In general, bred heifers and two to four year old cows have the highest value. Middle-aged bred cows hold their value fairly well. Bred heifer and bred cow values typically rise the further along they are in pregnancy.

### Bred heifer and heifer calf values highly correlated

In November 2022, heifers bred to calve in spring 2023 sold at 1.71 times the value of 500-600 pound heifers. This is the lowest this ratio has been in the last four Novembers. The ratio can spike during expansion years.

In November 2014, bred heifers reached \$3,250. Some sold for even higher, usually based on genetics. In November 2014, the combined Nebraska auction price of 500-600 pound, medium & large no. 1 heifers averaged \$270 per cwt. Thus, bred heifers were worth 2.19 times the value of heifer calves. Given where bred heifer values are currently at, and where they could be going, they may be presently undervalued a bit.

### Position in cattle cycle matters

The cattle inventory cycle has three phases—expansion, liquidation, and turn-around (Figure 1). Each phase has unique price relationships and profit opportunities. The optimum production strategy differs among phases.

Producers respond to profits, not prices. Once producers get the profit signal to expand (like in 2014), it takes two years (one year, if buying bred heifers) from the time producers hold back additional heifer calves or buy heifer calves to produce calves to market.

Due to the nature of price cycles, heifers born during the low-price period produce calves during the following high-price period. Heifers born during the high-price period produce calves during the next low-price period. Take, for example, 2014 heifer calves, they were born in 2014, bred in 2015, and calved

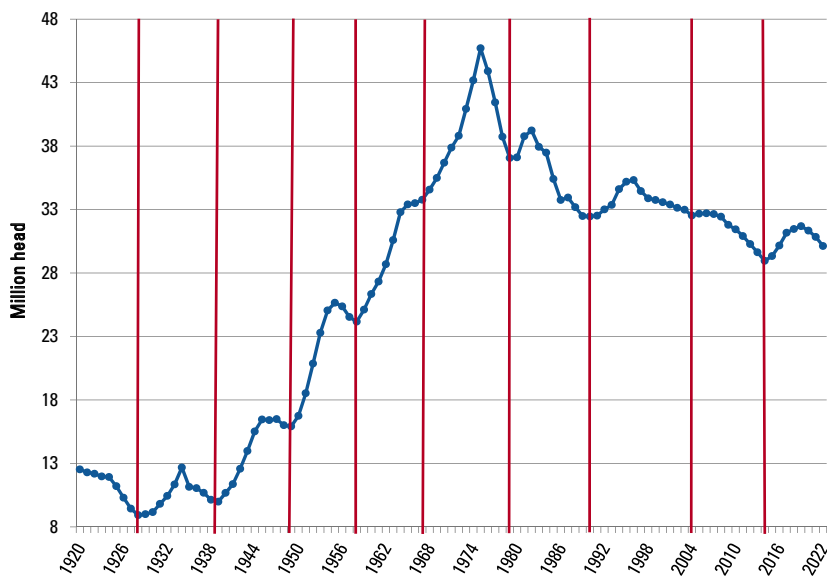
in 2016, 2017, 2018, 2019, 2020, etc., during the bottom of the price cycle. Heifer calves born in 2021 and bred in 2022 will calve during cyclically higher prices.

Investing in older cows can sometimes earn a quicker payoff. Producers should be asking themselves if an opportunity exists to get ahead of the imminent major run on replacement females. Open market availability and price can be issues when the full-fledged longs are in the market looking to rapidly build their cow herds.

### Cow-calf sector profits surged in 2014

By 2014, one of the longest and most severe liquidation phases on record had slashed the US beef cow herd to its lowest level since 1962. Fewer cows cut calf crops, which tightened cattle and beef supplies. The combination of tight supplies and strong beef demand initiated a period of unprecedented profitability for the cow-calf

Figure 1. January 1 US beef cow inventory. Data source: USDA-NASS.



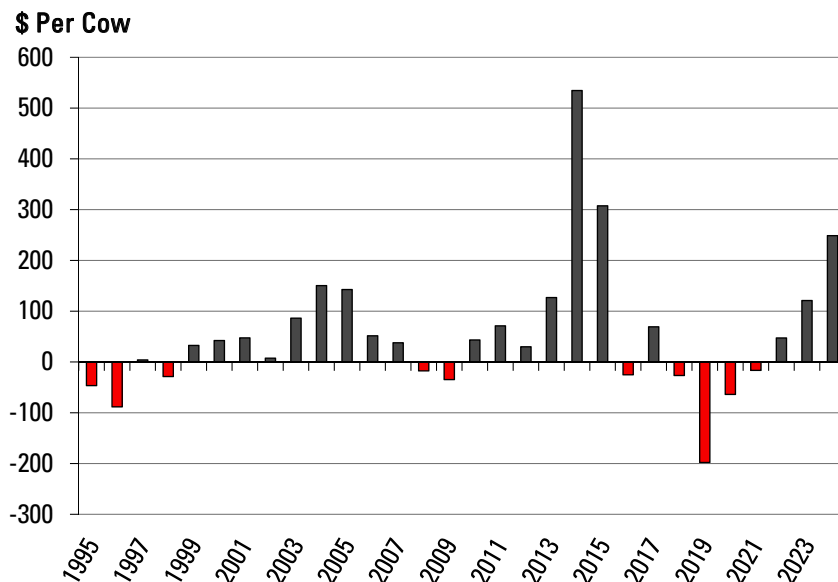
industry. Cow-calf returns for 2014 and 2015 exceeded \$500 per cow and \$300 per cow, respectively, according to the Livestock Marketing Information Center (Figure 2). Prior to this, annual returns over cash costs greater than \$100 per cow were characterized as very favorable years.

In 2014, producers were holding back or buying heifers which should have probably gone onto the feedlot. Profit levels led to producers feeling like they needed to grow the cow herd overnight. Heifer quality was an afterthought. The current situation is the opposite.

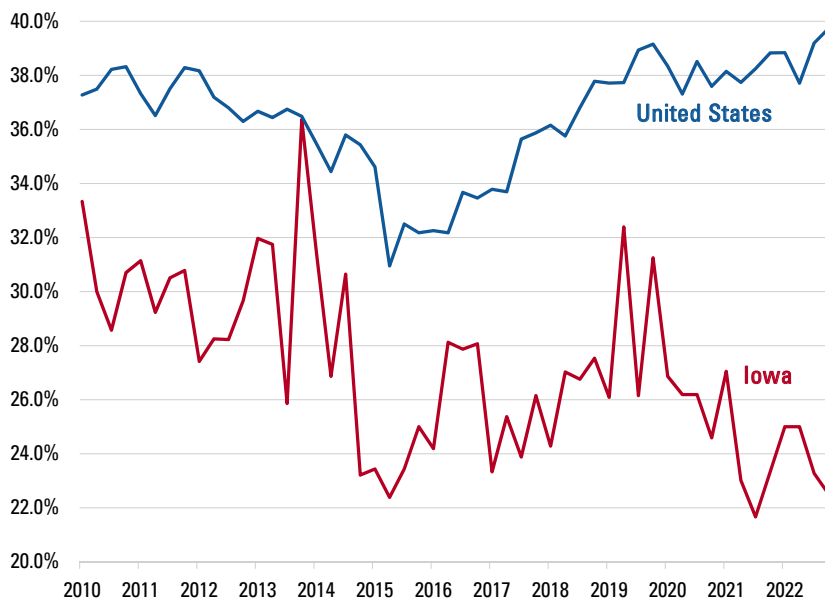
Through the first ten months of 2022, heifer slaughter is up 5.1% over the same period in 2021. Several relative measures show 2022 heifer slaughter is at the highest level since 2003.

The USDA National Agricultural Statistic Service Cattle on Feed report, showing October 1, 2022 inventories, included the quarterly estimate of cattle on feed by class. The number of heifers and heifer calves in 1,000+ head capacity feedlots was up 1.4% year over year. Heifers on feed as a percentage of all steers and heifers on feed was 39.7% nationally (Figure 3). This is the highest percentage since October 1, 2001. Interestingly, in Iowa, the number of heifers on feed was down 3.6% compared to the year prior and the 22.5% of heifers on feed as a percentage of all steers and heifers on feed is the third lowest since 1992 when the data series began.

**Figure 2. Estimated average cow calf returns. Returns over cash cost (includes pasture rent), annual. Data source: USDA & LMIC, Compiled by LMIC.**



**Figure 3. Heifers on feed as percent of total cattle on feed. 1,000+ head capacity feedlots, quarterly. Data source: USDA-NASS.**



Remember, Iowa started increasing the beef cow herd in 2021 and it looks like 2022 was much of the same.

Replacement cattle are sometimes quoted on feeder cattle market reports. Heifers advertised as “replacement quality” and selling at an obvious premium to other similar heifers are omitted from the weighted average for a particular weight and reported strictly as “replacements”. Replacement heifer calves bring more than comparable feeder heifers. For example, recent Iowa auction summary reports included 600-700 pound medium & large no. 1 replacement heifers valued at \$175 per cwt., some \$15 per cwt. more than comparable feeder heifers. This translates to about \$100 more per head.



## Cover crops in Iowa: New survey results

By Alejandro Plastina, extension economist, 515-294-6160 | [plastina@iastate.edu](mailto:plastina@iastate.edu); Sriramjee Singh, CARD post-doctoral researcher, J. Arbuckle, professor of rural sociology, [arbuckle@iastate.edu](mailto:arbuckle@iastate.edu)

A new Staff Report published by the Iowa State University Center for Agricultural and Rural Development (CARD) summarizes data collected by the Iowa Department of Agriculture and Land Stewardship (IDALS) through five annual waves (2015-2020) of a survey on Iowa farmers' use of cover crops.

The survey was administered to farmers who visited local conservation field offices and who had received technical assistance and/or cost share related to cover crops. The 3,039 responses shed light on Iowa farmers' rationale and motivations to use cover crops, the timing of planting and termination, the types and extent of varieties used, and farmers' preferred information sources. The main findings include the following highlights:

- The most prevalent types of operations using cover crops were farms producing row crops and cattle, and farms producing row crops but no livestock.
- On average, 60% of the respondents were owner-operators of the acres in cover crops.
- Most respondents seeded cover crops on erodible land, and only on a portion of their fields.
- About a third of the respondents used cover crops as supplemental feed for their livestock.
- Eighty-one percent of the respondents planted winter-hardy cover crops.
- Drill planting after harvest was the most prevalent planting method (56%).
- Seventy-two percent of the respondents terminated the cover crops with herbicides and no-till planted the next crop.
- The stated motivations to use cover crops reported by at least two-thirds of the respondents include preventing soil erosion, building soil organic matter, improving soil health, and improving/protecting water quality.
- The most common source of information on cover crop management among respondents was some type of government agency, although the preferred method of receiving information was through discussions with other farmers.

Since the survey methodology did not follow a scientific design, results cannot be extrapolated beyond the sample. However, stakeholders who work with farmers and other interested groups can use these data to inform their understanding of Iowa farmers' management of cover crops.

The complete CARD Staff Report 22-SR 119, December 2022, is available on the [Center for Agricultural and Rural Development website](http://www.card.iastate.edu/products/publications/synopsis/?p=1359), [www.card.iastate.edu/products/publications/synopsis/?p=1359](http://www.card.iastate.edu/products/publications/synopsis/?p=1359)



## Oceans are becoming acidic

By Don Hofstrand, retired agricultural business specialist

Reviewed by Eugene Takle, retired professor emeritus, Iowa State University

**This article is part of our series focused on the causes and consequences of a warming planet.**

As Midwesterners, we may not pay much attention to news about the oceans. But Midwesterners are greatly affected by the impact that oceans have on our climate.

About a quarter of the world's greenhouse gas emissions don't remain in the atmosphere but are absorbed by the oceans. This reduces the amount of atmospheric heat created.

The absorption occurs because carbon dioxide is water soluble and easily absorbed by water. It is estimated that 30 million tons of carbon dioxide are absorbed by our oceans every day, forming weak carbonic acid.

This increase in acidity impacts life in the oceans. For example, as the acidity increases, the availability of calcium carbonate declines, which is an important building block for sea life with shells and skeletons. This increasing acidity has a dramatic negative impact on shelled species such as oysters, shrimp, lobsters, clams, sea urchins, and calcareous plankton.

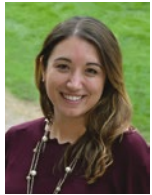


A measure of acidity is the pH scale, which runs from 0 to 14. Low numbers are acidic and high numbers are basic. Seven, the halfway mark, is neutral. Ocean pH has been slightly basic over the last 300 million years, averaging about 8.2. The current ocean pH is around 8.1. This small drop represents a 25% increase in acidity. By the end of the century with continued carbon dioxide emissions, ocean pH could drop to 7.6, a substantial reduction in the survival of sea life. This would be an acidity level not experienced for more than 20 million years.

Unless we control greenhouse gas emissions, ocean organisms may need to find a way to adapt to these substantial and rapid changes in the oceans or perish. However, recent research indicates the capacity of the oceans to absorb more carbon dioxide in the future seems to be diminishing. Although good news for the oceans, this will result in a larger buildup of carbon dioxide in the atmosphere, resulting in faster atmospheric warming and climate change.

See the [Ag Decision Maker website](https://www.extension.iastate.edu/agdm/energy.html#climate), [extension.iastate.edu/agdm/energy.html#climate](https://www.extension.iastate.edu/agdm/energy.html#climate), for more from this series.





## Farm Transitions Conference to be held in Ames February 9-10, 2023

By Kitt Tovar Jensen, Beginning Farmer Center Coordinator  
515-294-5608 | [kwtovar@iastate.edu](mailto:kwtovar@iastate.edu)

The two-day Farm Transitions Conference will return to the Gateway Hotel in Ames Feb. 9-10, 2023. Whether you want to begin farming, are looking to transition your farm business to the next generation or simply want to know more about farm estate planning, this conference will provide expert answers and insight.

Hosted by the [Beginning Farmer Center at Iowa State University](http://beginningfarmer.iastate.edu/), [beginningfarmer.iastate.edu/](http://beginningfarmer.iastate.edu/), and Iowa State University Extension and Outreach, participants will hear from more than a dozen professionals including attorneys, farmland owners and managers, financial experts and mediators.

This two-day conference is full of practical resources to help farmers make educated farm transition and succession planning decisions. Students, individuals and families will all learn how to identify next steps in the planning process and how to work more effectively with their professional advisors. The opening day includes an overview of the current farm economy with Chad Hart and Alejandro Plastina, economists with ISU Extension and Outreach, and a presentation by Chris Cornelius, a native Iowan and co-owner of Cornelius Seed.



In her presentation called “Succession Tips from the Field,” Cornelius will share practical experiences and lessons learned from her family’s fifth-generation seed business, which started in 1935. She co-owns and manages Cornelius Seed, alongside her husband, Chuck, and their two sons, Will and James, and daughter-in-law, Janie. She also just completed her term as president of the Independent Professional Seed Association and is an active partner in their farming entity, Cornelius Land & Cattle.

In-person attendees will have networking opportunities, including an optional tour of Jack Trice Stadium (limited to 50). Both in-person and online attendees can interact with speakers and ask questions. All attendees will receive a free Farm Transitions workbook.

In-person registration is \$175 per person and webinar-only registration is \$150. [Participants can register online](https://www.calt.iastate.edu/seminar/2023-02-09/farm-transitions-entering-expanding-or-exiting-business), <https://www.calt.iastate.edu/seminar/2023-02-09/farm-transitions-entering-expanding-or-exiting-business>.

Groups of two or more can use code GROUP50 to receive \$50 off each in-person registration (does not apply to student registration).

University or college students can register in-person or online for \$100. To apply for student scholarships, contact Tovar Jensen at [kwtovar@iastate.edu](mailto:kwtovar@iastate.edu).

The Gateway Hotel & Conference Center is located at 2100 Green Hills Drive, Ames, Iowa. A room rate of \$114 has been reserved. Reserve your room online or call 515-292-8600.



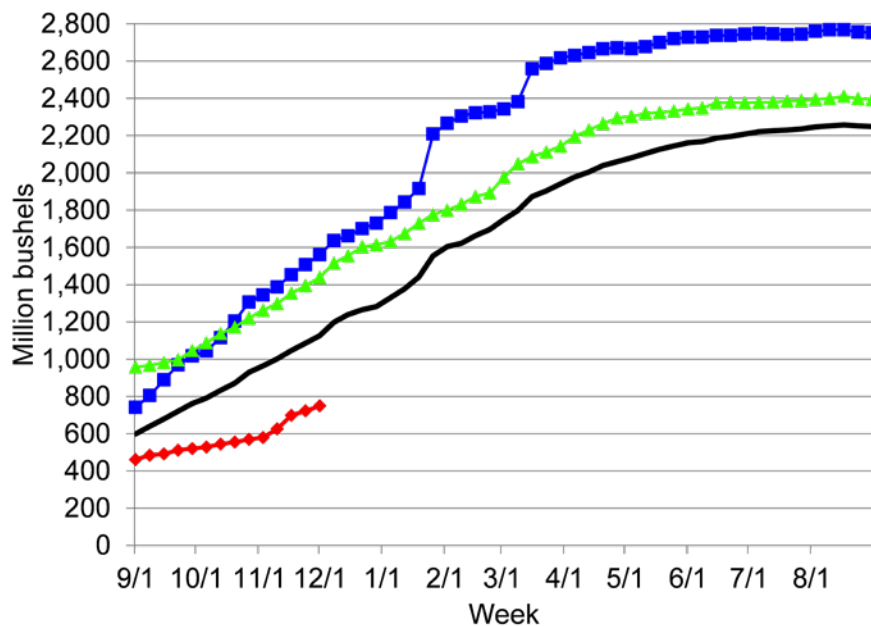
## The struggles in international trade

By Chad Hart, extension crop market economist, 515-294-9911 | [chart@iastate.edu](mailto:chart@iastate.edu)

The December release of USDA's World Ag Supply and Demand Estimates (WASDE) report made minimal changes to the US corn and soybean supply and use tables, but the one substantive change that was made highlights a major challenge for the markets in 2023. That change was a reduction in 2022-23 corn exports by 75 million bushels, lowering projected international sales to 2.075 billion bushels. The strength in international demand had been one of the strongest pillars supporting crop prices over the past couple of years. In the 2020-21 marketing year (Sept. 1, 2020 to Aug. 31, 2021), both corn and soybean exports hit record levels in terms of the number of bushels shipped internationally. In 2021-22, for both crops, the number of bushels dropped, but the prices captured on those exported bushels rose more than enough to cover the losses. But the outlook for 2022-23 is for even fewer bushels leaving the country at lower prices. So what was a strength last year is now a weakness within the crop markets.

While this outlook is generally across the agricultural markets, the corn market is a good example of the erosion of international sales. Figure 1 shows the highs and lows of export sales for corn.

Figure 1. US corn export sales pace. Source: USDA-FAS.



International corn sales for the 2020-21 marketing year set the record for the most bushels shipped out to the rest of the world. The surge in sales was tied to the rebound in the global economy following the initial COVID wave and the implementation of the US-China Phase 1 trade deal. The two large jumps in the 2020 line, occurring in late January and early March of 2021, were driven by large purchases by China. In fact, China, for a short while, became the top market for US corn exports. Beyond the surge in Chinese purchases, US corn sales were also growing in many of our traditional markets. Sales into Mexico and Japan grew by roughly 10%. Purchases by South Korea increased by 31%, while purchases by Taiwan rose

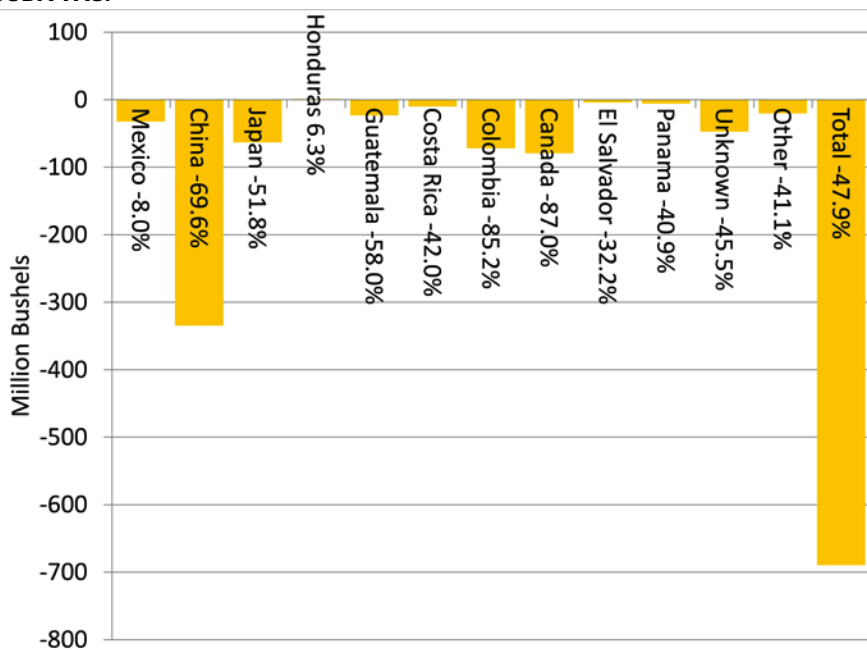
by 83%. Overall, corn exports expanded by roughly a billion bushels.

The 2021-22 marketing year started strong, with early sales exceeding the 2020 pace, but exports fell back below the 2020 pace and approached the 5-year average as the marketing year continued. The biggest reduction originated from China, as the burst of sales that occurred the previous year did not repeat and China slipped back behind Mexico in corn purchases. But China wasn't the only market purchasing fewer bushels, as Japan, South Korea, and several other countries reduced their trade.

Thus far, during the 2022-23 marketing year, corn sales are well below the past couple of

years and are also well below the five-year average pace. Figure 2 details the year-over-year change in US corn export sales by country, specifically highlighting the current top 10 markets for US corn (listed in order from left to right across the graph). The Chinese pullback continues and is still the largest component of the export loss, but it is hardly the only market in decline. Out of the top 10 markets, nine of the 10 are smaller currently, with only Honduras providing a very small boost in corn purchases. South Korea and Taiwan fell out of the top 10. The decline is broad-based and sizable, with many countries reducing US corn purchases by 30% or more. Some of the major factors steering this downturn are high US corn prices (especially relative to corn prices in other competing export countries), the strengthening of the US dollar over the past couple of years, the relative increase in corn production outside the US, and the availability of other feed grains to balance out livestock rations around the globe. The problem looking forward into 2023 is that many of these factors will continue to challenge US corn exports for the rest of the marketing year. This set the stage for USDA's downward adjustment in projected exports. By the end of the marketing year, USDA's current projection puts corn exports roughly 150 million bushels below the five-year average.

**Figure 2. Year-over-year change in US corn export sales by country. Source: USDA-FAS.**



While the corn market is already feeling the effects of a significant withdrawal of export demand, the soybean market has maintained the pace of sales set last year. However, as the calendar shifts to 2023, the projections show that a similar fade is expected for soybeans. The general trade story for soybeans over the past couple of years is similar to that of corn. The 2020-21 marketing year was one for the record books, with China leading the purchases. However, a major difference is the sheer size of the Chinese trade relative to other export markets. Corn exports are much more evenly distributed than soybean exports, as China represents over half of all US soybean sales. Thus, the shifts in Chinese purchases tend to crowd out and overwhelm shifts in other markets. For example, during the 2020-21 marketing

year, soybean sales to three of our top five markets were lower than the previous year. But because Chinese sales were higher, US soybean exports set a record.

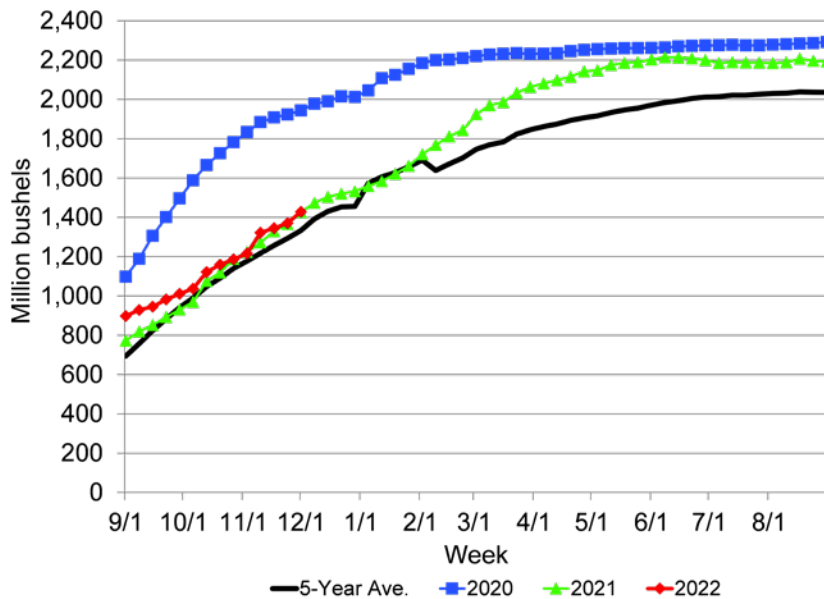
That sort of see-saw effect reversed itself in 2021-22, as Chinese purchases declined and sales to the rest of our top five markets increased. However, given China's dominant position in the trade, US soybean exports fell. The growth in Mexico, the European Union, Egypt, and Japan were not enough to offset the Chinese losses.

The current export sales pace is holding closely to last year and that is thanks, mostly, to a rebound in Chinese demand. As Figure 4 shows, Chinese purchases are up 80 million bushels this year. Without that growth, soybean exports would be well off of last year,

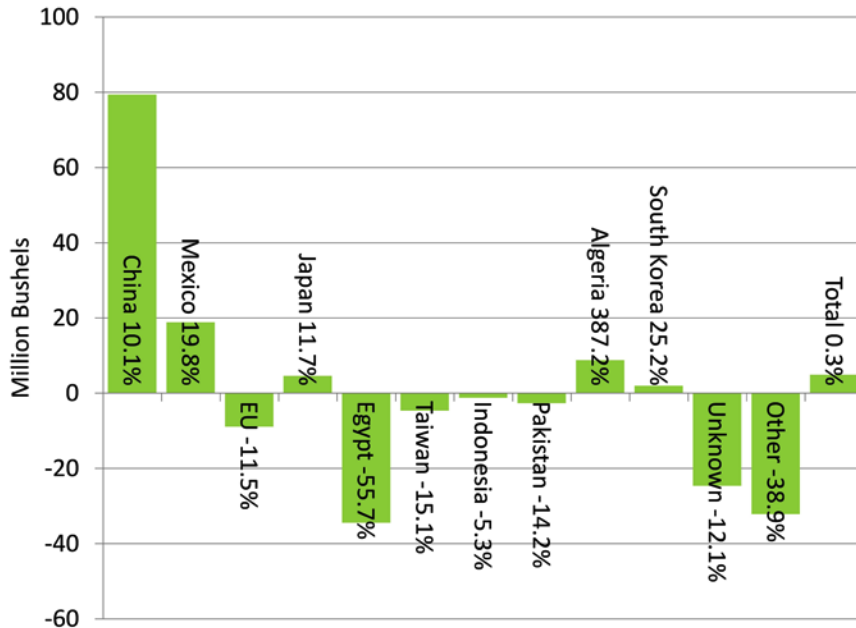
as total export sales are only 5 million bushels above last year. While the general pullback in soybean export sales is not as widespread as it is in corn, there are a number of countries and regions purchasing fewer US soybeans, including the European Union, Egypt, Taiwan, Indonesia, and Pakistan. The factors limiting soybean exports parallel those hampering corn: high US prices (especially relative to prices in other competing export countries), the strengthening of the US dollar over the past couple of years, and the increase in production outside the US. USDA's projections have the 2022-23 exports following the five-year average pace for the remainder of the marketing year. Thus, we'll likely fall behind the pace of soybean export sales from last year sometime in February.

From a marketing perspective, the timing of the export challenges is actually fairly good, as the export changes have closely paralleled the production shifts over the past year. The drought this year reduced soybean production slightly and had a larger impact on corn production. Thus, the demand changes have roughly been in the same direction and of the same magnitude as the supply changes. And this has allowed prices to hold steady even as export sales have been lackluster. One concern for the 2023 crops will be the ability

**Figure 3. US soybean export sales pace. Source: USDA-FAS.**



**Figure 4. Year-over-year change in US soybean export sales by country. Source: USDA-FAS.**



of the international markets to bounce back, especially if US corn and soybean production increases next year. The current sales data shows that an international rebound might not be in the cards until US crop prices retreat enough to compete with other exporting countries.

View the [December 2022 Crop Market Outlook video](https://youtu.be/-HrmuwUh0ts), <https://youtu.be/-HrmuwUh0ts>, for further insight on outlook for this month.



## A sample of upcoming events from Iowa State University Extension and Outreach

[Women in Ag: Annie's Project and More](https://www.extension.iastate.edu/womeninag/), <https://www.extension.iastate.edu/womeninag/>

[Beginning Farmer Center: Farm Transitions Conference](https://www.calt.iastate.edu/seminar/2023-02-09/farm-transitions-entering-expanding-or-exiting-business), <https://www.calt.iastate.edu/seminar/2023-02-09/farm-transitions-entering-expanding-or-exiting-business>

[Crop Advantage Series](https://www.aep.iastate.edu/cas/), <https://www.aep.iastate.edu/cas/>

[CropsTV Season 3](https://www.aep.iastate.edu/cropstv/), <https://www.aep.iastate.edu/cropstv/>

[Planter University](https://www.aep.iastate.edu/planter/index.html), <https://www.aep.iastate.edu/planter/index.html>

[Agronomy in the Field](https://www.extension.iastate.edu/news/agronomy-field-program-be-offered-winter), <https://www.extension.iastate.edu/news/agronomy-field-program-be-offered-winter>

[Private Pesticide Applicator Continuing Instruction Courses \(P-CIC\)](https://www.extension.iastate.edu/psep/private-pesticide-applicator-information), <https://www.extension.iastate.edu/psep/private-pesticide-applicator-information>

[Master Gardener](https://www.extension.iastate.edu/mastergardener/become-master-gardener), <https://www.extension.iastate.edu/mastergardener/become-master-gardener>

[Land Stewardship Leadership Academy](https://naturalresources.extension.iastate.edu/programs/land-stewardship-leadership-academy), <https://naturalresources.extension.iastate.edu/programs/land-stewardship-leadership-academy>

[Driftless Region Beef Conference](https://www.aep.iastate.edu/beef/index.html), <https://www.aep.iastate.edu/beef/index.html>

[Three-State Beef Conference](https://iowabeefcenter.org/events/Threestatebrochure2023.pdf), <https://iowabeefcenter.org/events/Threestatebrochure2023.pdf>

[Farm Couple Getaways](https://www.extension.iastate.edu/news/farm-couple-getaways-return-iowa), <https://www.extension.iastate.edu/news/farm-couple-getaways-return-iowa>

[Dairy Days](https://www.extension.iastate.edu/news/dairy-days-feature-profitable-dairy-practices), <https://www.extension.iastate.edu/news/dairy-days-feature-profitable-dairy-practices>

Find additional local events on the [Iowa State University Extension and Outreach website](https://www.extension.iastate.edu/), <https://www.extension.iastate.edu/> or by contacting your [local county Extension Office](https://www.extension.iastate.edu/), <https://www.extension.iastate.edu/countyservices/>.

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**Ag Decision Maker** is written by extension ag economists and compiled by Ann Johanns, extension program specialist, [aholste@iastate.edu](mailto:aholste@iastate.edu).

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