

# Ag Decision Maker

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#### **UPDATES**

The following <u>Information Files</u> have been updated on extension.iastate. edu/agdm:

C2-03 Do I Need a Written Lease?

C2-08 Lease Supplement for Obtaining Conservation Practices to Control Soil and Nutrient Loss

C2-11 Historical County Cropland Rental Rates

The following <u>Video</u> has been updated on extension.iastate.edu/aqdm:

A1-10 Chad Hart's Latest Ag Outlook

The following <u>Profitability Tools</u> have been updated on 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

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D1-15 Biodiesel Profitability



# Poorer crop conditions and weaker export sales

By Chad Hart, extension crop market economist 515-294-9911 | chart@iastate.edu

With planting nearly complete, traders are focused on the weekly crop development and conditions for supply news and the weekly export sales reports for demand news. USDA's Crop Progress reports summarize observer ratings on the condition of the crops. The condition reports for both corn and soybeans have begun with the emergence of the crops. Every Monday morning, roughly 3,600 cropping experts across the nation rate the crops in their region on a "very poor" to "excellent" scale. The early ratings show that while planting occurred at a faster than average pace, the condition of the crops is rated below last year. Based on the data from the June 12, 2023 report, 61% of the nation's corn crop was rated "good" to "excellent", which was three points lower than the rating at the same date for the 2022 crop. For soybeans, the "good" to "excellent" rating stood at 59%, 3 points lower than 2022. In general across the nation, the crop ratings have been reduced due to drier conditions across the majority of the country, from the Rocky

Mountains to the eastern coasts.

This year's crop ratings are also running below the five-year average ratings, which signals the potential for below trendline yields if conditions do not improve.

While the data is limited on the supply side, the weekly export sales reports provide more information on the early signals for international sales and shipments. For example, the export reports are currently tracking sales agreements for the 2022, 2023, and 2024 corn and soybean crops. Figures 1 and 3 show the changes in soybean and corn export sales between the 2021 and 2022 crop years. The bars in the figures highlight the bushel change in sales, along with the percentage change for each country or region listed. These figures show the current pattern in exports from last year's crops. Figures 2 and 4 display the advance export sales patterns for soybeans and corn over the past few years. The graphs contain the data for the 2021 and 2022 crops, along with the sales thus far for the 2023 crop and the five-year average (2018-2022) pattern for



export sales. The lines for each year basically start at the beginning of the calendar year the crop was planted and harvested, so the sales represented are being made either before the crop is planted or during the growing season. These figures signal the expected demand for this year's crops from the international markets.

As Figure 1 shows, the US soybean market has seen a marked slowdown in international purchases. Overall, soybean export sales are down nearly 15% from last year at this time, roughly 320 million bushels. While our top soybean buyer, China, has bought a few soybeans this year, the vast majority of countries have pulled back on soybean purchases from the United States. The largest losses are coming from Middle Eastern and African markets and from sales to unknown destinations. The drop in sales to unknown destinations is likely a signal that even the Chinese demand for US soybeans is lower, despite the higher direct sales, as a majority of sales to unknown destinations are revealed as sales to China. The combination of high US soybean prices and increased production from Brazil has taken its toll on the

US soybean industry.

Figure 1. US soybean export sale shifts. Source: USDA-FAS.

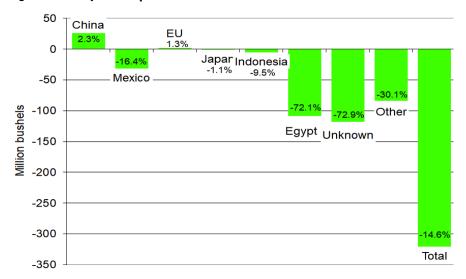
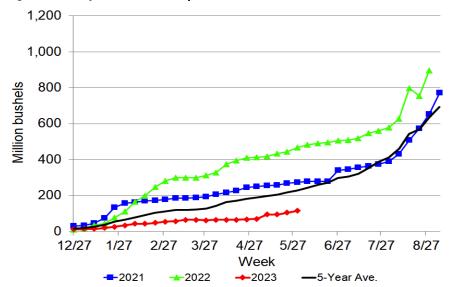


Figure 2. US soybean advance export sales. Source: USDA-FAS.



As Figure 2 shows, despite the decline in soybean prices this spring and early summer, advance soybean export sales are still trailing well behind usual. Advance sales for the 2021 and 2022 crops were at or above the five-year average for most of the pre-plant and growing season. The current state of advance sales for the 2023 soybean crop has not kept up with the previous two years, nor the five-year average. Currently, slightly over 100 million bushels of soybeans are already spoken for as exports out of the 2023 crop. Usually, we have twice as many bushels sold by this time of year. As the figure shows, the pace of advance soybean export sales tends to increase over the coming months. For those looking for factors to support prices going into harvest, we will need to see stronger than usual export sales over the next few months.

The export troubles in soybeans pale in comparison to those for corn. Current corn export sales are down by over 800 million bushels in total (over 36%). The decline is widespread, as sales are lower in all of the major markets and in the rest of the world aggregate (labeled "Other"). Similar to soybeans, export sales have been hurt by high US prices and increased production from Brazil, Corn has also been impacted by larger global production in other feed grains and shifting of international feed grain purchases from US corn to other feed grains.

The advance sales data for the 2023 corn crop shows the export issues are also impacting the outlook for this year's crop. Over the past couple of years, China has been a major corn destination. For the 2021 corn crop, China led a flurry of advance corn purchases in May, adding 500 million bushels to the export sales total. For the 2022 crop, China's initial purchases were smaller, but still put US advance sales ahead of the five-year average. Now, the sales pace is well below last year's pace and the five-year average. Last year at this time, China was the top purchaser in those advance sales with roughly half of the total. This year, China is second, behind Mexico.

Figure 3. US corn export sale shifts. Source: USDA-FAS.

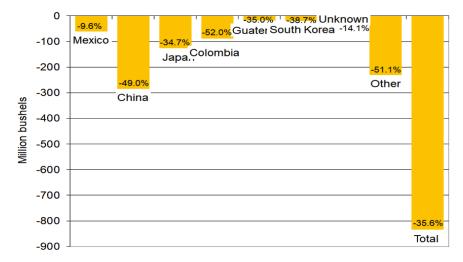
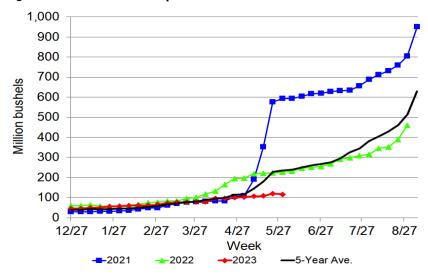


Figure 4. US corn advance export sales. Source: USDA-FAS.



With the June WASDE report, USDA continued a pattern of lowering the export targets for the 2022 corn and soybean crops, taking 50 million bushels out of corn and 15 million bushels out of soybeans. They held the projections for the 2023 crops steady. Those show corn exports rebounding to reach 2.1 billion bushels, while soybean exports continue to retreat. However, the pace of advance sales suggests that the 2023 export projections will likely be reduced, unless the lower crop prices can reignite US sales into a number of markets across the globe.

Listen to the latest **Market Outlook video**, https://go.iastate.edu/AGDMHART, for further insight on outlook for this month.



### Keeping the ground covered

By Catherine DeLong, water quality program manager, 515-294-5963 | crdelong@iastate.edu

One of the best things we can do for our natural resources (especially the soil) is to keep the ground covered and protected throughout the year. This can be accomplished by leaving residue, such as corn stover, undisturbed through practices like reduced tillage. This residue slows water down and absorbs wind energy, decreasing the erosive power of these forces and keeping soil in place. However, it's important to understand that reduced tillage, while a powerful tool for erosion protection, does not help with one of lowa's biggest water quality woes: nitrate pollution.

To protect our waterways and drinking water sources from nitrate, we need **living** roots like cover crops to keep the ground covered throughout the year. Cover crops such as cereal rye protect the landscape for the six-plus months that corn and soybeans are not actively growing; holding nitrate in the soil for future cash crops, rather than allowing it to wash out into our waterways.

One last approach to keeping the ground covered is buffers, areas where the soil is protected with year-round groundcover. Buffers can be within fields, often referred to as grassed waterways, or the edges of

fields such as filter strips or shelterbelts. These living filters slow surface water and help it infiltrate deeper into the soil profile, capturing between 41-100% of sediment. Buffers can also be used for hunting or as an on-farm sanctuary to recreate or simply enjoy time in nature. Buffers can also increase the overall profitability of the farm if placed on areas of low crop productivity, removing those areas that require high amounts of inputs and drag down the overall yield potential of the field. If you're interested in enhancing your farm with reduced tillage, cover crops or buffers then stop

in at your county's USDA Service

Center, https://offices.sc.egov.

usda.gov/locator/app?state=ia.

A June webinar provides further insight on keeping the ground covered, register for future series, https://go.iastate.edu/OJ1JJF, or view past installments of the Women Managing Farmland series, https://go.iastate.edu/2IMUAT.

There, you can talk to conservation professionals from the USDA Natural Resources Conservation Service, the Iowa Department of Agriculture and Land Stewardship, and Pheasants Forever. Also, when you walk in ask, "Does this office have a Watershed Coordinator?" These are individuals who have expertise in conservation and who have additional access to funds to support conservation adoption.







### Iowa Farmland Ownership and Tenure Survey 1982–2022: a forty-year perspective

By Jingyi Tong, Ph.D. student, Department of Economics, Center for Agricultural and Rural Development, Iowa State University, <u>jitong@iastate.edu</u> Wendong Zhang, assistant professor, Dyson School of Applied Economics and Management, Cornell University, <u>wendongz@cornell.edu</u>

Farmland Ownership and Tenure in Iowa 1982-2022: A Forty-Year Perspective provides a critical update to the lowa Farmland Ownership and Tenure survey series and a forty-year, statistically representative perspective (1982 to present) on many aspects of land ownership, tenure, acquisition, and transitions in Iowa, as well as of characteristics of landowners. The purpose of the study is to document the current situation with respect to lowa farmland. In addition, this study compares and contrasts the current situation with that found in earlier studies since 1982.

The Iowa Farmland Ownership and Tenure survey started in the 1940s, and since 1989, it has been conducted every five years as mandated by Iowa Code. This survey series is the first of its kind in the nation and the only consistent information on the ownership, tenure, and transitions of farmland at the state level.

The 2022 survey is based on a random sample of 40-acre tracts of farmland. Landowners of these tracts were interviewed via telephone with a response rate of 45%. The sampling design is such that the survey results presented in this study are statistically representative of all

farmland and all landowners in lowa as of July 1, 2022.

The 2022 survey revealed many policy-relevant trends in the ownership, tenancy, and transition of farmland as well as characteristics of farmland owners. Highlights from the full report, www.card.iastate. edu/products/publications/pdf/23wp651.pdf, include:

- Eighty-four percent of lowa farmland is owned free of debt, which represents a significant increase from 62% in 1982 and a further hike from 82% in 2017.
- Two-thirds of lowa farmland is owned by people 65 years or above and 37% of farmland is owned by people aged 75 and above. In contrast, only 29% percent of lowa farmland was owned by people 65 years or above in 1982.
- Forty-six percent of farmland is owned by women, and 13% is owned by female landowners over 80 of age.
- Fifty-eight percent of farmland is leased (Table 1), with the majority of farmland leases being cash rental arrangements. In particular, the share of lowa farmland rented out via fixed or flexible cash rental contracts is at a record high level of 51%, of which fixed cash rent was the most popular lease

- covering 42% of lowa farmland, and another nine percent via flexible cash rental contracts
- Thirty-seven percent of lowa farmland is primarily owned for family or sentimental reasons, which represents a significant increase from 29% in 2017.
- There is a continuous shift away from sole ownership and joint tenancy to trusts, corporations, and LLCs, which accounted for 23%, 6%, and 9% of the land, respectively, in July 2022.
- Fifty-five percent of lowa farmland is owned by someone who does not currently farm, of which 53% of the non-farming owners do not have farming experience.
- Twenty percent of lowa farmland is owned by someone who is not an lowa resident, which increased from 13% in 2017. Of the non-resident landowners, 70% do not have farming experience.
- Cover crops are grown on seven percent of lowa farmland, which represents a significant jump from four percent of farmland in 2017, and are utilized by seven percent of landowners. The use of no-till inched up to 30% of acres in 2022 from 27% in 2017.

- Two percent of lowa landowners have already participated in a carbon credits program and another three percent are considering carbon opportunities.
- Three of every four landowners in lowa are interested in selling land to beginning farmers when incentivized with federal and state tax credits. At the same time, over half of lowa landowners expressed concerns about difficulty finding quality beginning farmers as well as concerns about beginning farmers' ability to pay top prices.

The results of this survey have significant implications for when and how farmland is intended to be transferred to the next generation. Willing or giving the

land to family remained the most popular method of intended land transfer, accounting for 47% of all acres of Iowa farmland. The second-most popular intended method of land transfer was putting it into a trust or in a business entity, covering 26% or 12% of land, respectively. Only four percent of lowa farmland was intended to be sold to a non-family member. When asked about what factors will prompt a landowner to sell some of their farmland, 80% of the land is owned by someone not planning to sell. In other words, we will continue to see a tight farmland supply.

The agricultural economy in lowa and the Midwest faces exciting opportunities and interesting challenges. On the one hand, higher interest rates,

substantially higher farmland prices, and concerns over investor demand significantly raise barriers to land access. On the other hand, the value of Iowa farmland is increasingly regarded as critical not only for food security, but also for a low-carbon, clean-energy future. This study and previous versions of the Iowa Farmland Ownership and Tenure Surveys provide a unique long-term perspective for us to better understand trends in farmland ownership, tenancy, and transition in Iowa, arguably one of the most important agricultural states in the world.

The **full report**, https://www.card.iastate.edu/products/publications/pdf/23wp651.pdf, is available from the Center for Agriculture and Rural Development website.

Table 1. Distribution of Iowa farmland by control, 2017 and 2022.

	2017		2022	
	Percent	Acres	Percent	Acres
Owner Controlled:	47%	13,851,567	<b>42</b> %	12,887,317
Owner operated	37%	10,819,245	32%	9,662,493
Custom farmed	2%	583,485	3%	951,400
Government programs and other uses	8%	2,448,837	8%	2,313,478
Leased:	53%	16,771,192	<b>58</b> %	17,622,507
Cash rent (fixed)	35%	11,502,256	42%	12,687,933
Cash rent (flexible)	9%	2,354,117	9%	2,676,097
Crop share	9%	2,875,316	7%	2,166,375
Other types of leases	<1%	39,503	<1%	92,101
Total:	100%	30,622,759	100%	30,509,878

Source: Iowa Farmland Ownership and Tenure Survey 1982-2022: a forty-year perspective, Table 3.1.



### The impact of climate change on world agriculture

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.

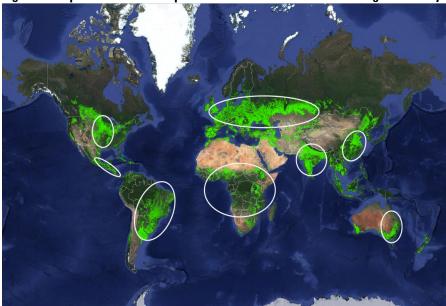
Changing precipitation patterns, rising temperatures, and more extreme weather events will negatively impact the world's ability to produce food. At the same time, demand for food will grow due to an increasing world population and rising incomes in the developing world. Meeting this challenge will depend on agriculture's ability to adapt to a changing climate while developing and adopting the technologies needed to meet the increase in food demand.

World food production relies on regions of the world highly suitable for rain fed agriculture, as shown in Figure 1. These regions of the world include the Midwest United States, portions of Brazil and Argentina, Europe, sub-Saharan Africa, India, portions of Australia, and Eastern China.

A combination of four factors make these regions suitable for productive agriculture. These factors are:

- Temperature levels for optimum reproduction and plant growth,
- Precipitation amounts for maximum production
- Soils suitable for agricultural production, and
- Terrain suitable for modern agricultural production practices.

 ${\bf Figure~1.~Map~of~worldwide~croplands.~Source: United~States~Geological~Survey.}$ 



The areas of the world that have suitable soils and terrain are stationary and do not move.

However, precipitation patterns may change due to the changing climate. Current productive regions of good soils and adequate terrain may become too dry or too wet for optimum agricultural production.

Moreover, the warming of the planet will impact agricultural production. A small rise in temperatures in many prime growing regions may slightly increase yields, but more significant temperature rises will lead to yield declines.

So, these altered precipitation patterns and temperatures may no longer match up with regions of productive soils and adequate terrain.

Regions of the earth in the mid to upper latitudes may benefit from more heat and a longer growing season, such as those in Canada and Russia. But regions at lower latitudes are especially vulnerable because they already suffer from intense heat. This loss is expected to more than offset any advantage in the upper latitudes.

An example of this is research indicating the Corn Belt is moving north due to warmer and longer growing seasons. Conversely, current regions of the Corn Belt may become too hot for optimum corn production.

### Ag Decision Maker

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### **Role of irrigation**

Less precipitation in an area due to climate change will usually lead to a decrease in productivity. An example is droughts. However, receiving more precipitation may not improve agriculture productivity. If the increase in precipitation leads to more water-logged soils and flooding, productivity will decline.

Irrigation can provide a shortterm solution to areas with declining rainfall but often does not provide a permanent or sustainable solution. There are numerous regions of the world where widespread irrigation faces challenges relating to water supply (e.g., aquifer depletion, declining river flow, competing uses for reservoir water) or salinization of land under long-term irrigation. Numerous past civilizations which thrived and expanded based on irrigated agriculture eventually collapsed because of irrigation's long-term unsustainability.

The sustainability of irrigation is of special concern where water from underground aquifers is used. Over half of the world's largest aquifers are being drained faster than they are being refilled. In addition, drained aquifers can rest in the collapse of the aquifer cavern so it can never be refilled.

### **Implications**

We know that climate change will have a significant impact on the world's agriculture. So, we need to focus on the areas of the world that we suspect will be negatively impacted and develop

strategies for adapting to these changes. These strategies must focus on agricultural research and development, including investment in new technologies that can reduce the impact of climate change and help offset the negative impacts of a changing climate.

Because of the global nature of agricultural markets, shifting global agricultural production patterns will impact world markets for grains and other agricultural products. Due to this, US farmers must address both the impact of climate change on their own operations but also respond to these changing market signals.

See the <u>Ag Decision Maker</u> <u>website</u>, extension.iastate.edu/agdm/energy.html#climate, for more from this series.



# Watching "smart money" commodity trading could pay

By Lee Schulz, extension livestock economist, 515-294-3356 | Ischulz@iastate.edu

Fed cattle prices marked record highs in early June. Normally, prices sag seasonally through the third quarter (Figure 1). Some fundamentals suggest prices could continue higher, as happened in 2021 and 2022. Both years the nearby live cattle futures price peak occurred at year end.

The flow of money in and out of the market provides insight on potential price moves. Futures and options positions that traders take, and are holding, provides insight on how money is flowing.

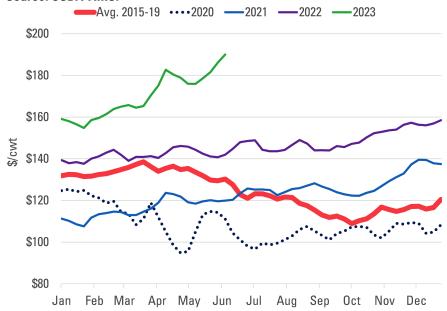
### Watch the smart money

"Smart money" in sports
betting is money wagered
by professional bettors.
Professional bettors have
a better understanding of
teams, and players, than
regular or recreational bettors.
Professional bettors spend
hours reviewing data, statistics,
reports, updates, etc. to get an
edge for their bets.

Recreational bettors can learn from watching where smart money is being bet. Professional bettors focusing attention on one team provides a reason for recreational bettors to also take a closer look, or to perhaps look away from "weaker" teams not getting attention.

Data on where professional sports bettors are putting their

Figure 1. Weekly Negotatiated Total All Grades IA-MN Steer Slaughter Price. Source: USDA-AMS.



money are hard to get. Not so in agriculture. Every Friday the Commodity Futures Trading Commission (CFTC) publishes a Commitment of Traders (COT) report.

## COT reports capture 70% to 90% of the market

COT reports provide the previous Tuesday's open interest for futures, and options on futures, for markets in which 20 or more traders hold positions large enough to meet the CFTC's reporting level. These are large traders. The aggregate of all traders' positions reported to the CFTC usually represents 70% to 90% of the total open interest in any given market.

Open interest is the total of all futures and/or option contracts

entered into and not yet fulfilled by an offsetting transaction, by delivery, by exercise, etc. Open interest is the amount of cash flowing within the market. Net money flowing into futures and options boosts open interest. Money flowing out reduces open interest. Knowing who holds what positions may be useful in predicting price moves.

Traders view COT data as all market participants having access to insider information on positions of big traders. Some say, "If it wasn't for the CFTC requiring it, no trader in their right mind would share this information freely." And, "It offers a whole new level of transparency into the big players!"

Analysts seeking meaning among all of the market "noise" routinely scrutinize positions of traders. COT reports can help participants better understand the psychology of the market.

## Market has hedgers and speculators

Speculators, or non-commercial traders, strive to profit solely from price moves. They anticipate risks and can instantly shift positions based on changes in fundamental and technical outlooks.

Commercial traders deal with the physical commodity. They hedge price risk. In live cattle, the net commercial position is the balance of hedging by cattle feeders, who initiate hedges with short contracts, and hedging by users (e.g., beef packers) who initiate hedges using long contracts.

Like speculators, commercials attempt to anticipate price moves. But they have less flexibility than speculators to shift their buying and selling patterns.

## Four types of traders hold reportable open interest

The disaggregated COT report classifies major traders into four groups. The remaining small positions are classified as non-reportable.

Producer/Merchant/
 Processor/User – Entity that predominantly engages in the production, processing, packing or handling of a physical commodity.

 Commercials use the futures markets to manage or hedge

price risks associated with those activities.

- Swap Dealer Entity that deals primarily in swaps for a commodity and uses the futures markets to manage or hedge the risk associated with those swaps transactions. The swap dealer's counter-parties may be speculative traders, like hedge funds, or traditional commercial clients that are managing risk arising from their dealings in the physical commodity.
- Money Managers Traders engaged in managing and conducting organized futures trading on behalf of clients.
   They include registered commodity trading advisors, commodity pool operators, and unregistered funds.
- Other Reportables All other reportable traders who are not included in one of the three other categories.

## Cattle numbers down, open interest up

USDA's National Agricultural Statistics Service estimated US feedlots with over 1,000 head capacity held 3.4% fewer cattle on May 1, 2023 than a year prior. But recent trading shows open interest in live cattle futures is higher than a year ago. Producers may be hedging more cattle compared to 2022. This would seem prudent as more dollars are certainly at stake.

However, feedlots are not the only market participants. Relative positions of other players, and how they compare to past data, may offer insight into prices going forward.

Open interest held by Producers/ Merchants/Processors/Users has been declining among those with long positions and rising among those with short positions. Long hedgers exiting suggests fewer packers are interested in using live cattle futures contracts to hedge their purchases of live cattle. On one hand, one would think recent high futures prices would be enticing packers to buy futures to establish purchase prices before prices possibly escalate anymore. On the other hand, packers buying cattle in the cash market may think that prices are due to decline and hesitate to lock in high prices on the futures market.

## Now could be a good opportunity for producers

Analysts often view the position of Producers/Merchants/
Processors/Users as the "smart money." Rightfully so, these traders are constantly in these markets. They conduct extensive analysis and understand what's going on better than anyone else. But they aren't the only people that put their money at risk based on their judgment of the market.

While commercials have been becoming *more short*, the opposite has been happening with managed money (Figure 2). Money managers are establishing more long positions and fewer shorts, suggesting more bullish speculation is in the market. When the managed money has an increasing long position and commercials have a growing short position, a top

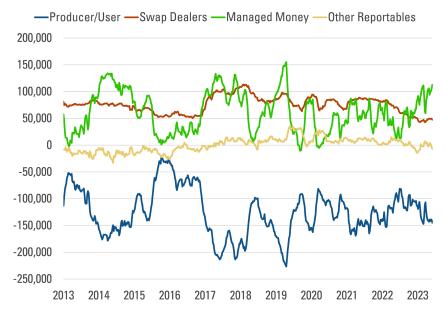
may be near, or has just passed, and would be a good time for producers to place hedges, buy put options, or buy price insurance. Why? At some point the speculative longs will have to offset their positions, which could pressure prices.

## Understand COT report limitations

While COT reports can provide valuable information, they also have limitations. One big limitation is that the CFTC only publishes data once a week, which means the information may be outdated by the time it is released. This complicates using COT reports for real-time trading decisions.

Another challenge is that the CFTC only provides information on futures and options markets, not cash market transactions. Local cash prices and futures market prices are usually positively correlated, but not always. Another limitation is the reports provide no information on the reasons behind the traders' positions. For example, COT reports do not explain why a trader is holding a long position, or why a trader is closing out a short position. This means market participants must use other tools, data, and

Figure 2. CME live cattle futures -disaggregated CFTC net positions. Source: CFTC.



information to gain additional insight into what underlying factors are driving the market.

### A bit about COT report complexities

COT reports give either the futures data or the combined futures and options data. Thus, you must back out the options open interest. In the COT reports, options are on a futures-equivalent basis. Technically the open interest for options is weighted by the delta for specific types of options, their maturities and strike prices. Delta is the change in the option's price or premium due to the change in the underlying futures price. Calls have positive delta between 0 and 1.00, while puts have negative delta between 0 and -1.00. The delta of a futures contract is 1.00. Many analysts use the futures-only data citing the high correlation between the futures-and-options-combined data and futures-only data.

The CME Group has a **Commitment of Traders website**, www.cmegroup.com/tools-information/quikstrike/commitment-of-traders.html, with a tool that provides several breakouts and ways to summarize the data.

**Ag Decision Maker** is written by extension ag economists and compiled by Ann Johanns, extension program specialist, <a href="mailto:aholste@iastate.edu">aholste@iastate.edu</a>.

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