Agriculture By the Numbers

August 2026

NDSU Extension Agribusiness and Applied Economics

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Market Analyst and Trader Expectations Determine Price Responses from USDA Reports

Frayne Olson, NDSU Extension Crop Economist/Marketing Specialist

The August World Agricultural Supply and Demand Estimates (WASDE) from the U.S. Department of Agriculture (USDA) often results in crop market price volatility. The August WASDE is significant because the USDA collects updated information on planted acres and projected yields for the major U.S. crops.

In August, the USDA Farm Service Agency (FSA) begins reporting planted acreage information collected from farm managers enrolled in federal farm programs. The USDA National Agricultural Statistics Service (NASS) compares this information with the voluntary survey data collected from farm managers for the Acreage report, which is released at the end of June. These two data sources never result in exactly the same values because some U.S. farmers do not enroll in federal farm programs. However, the FSA planted acreage report provides another reference point to refine the planted and harvested acreage estimates in the August WASDE.

In addition, the August WASDE incorporates crop yield estimates collected directly from farm managers, rather than using the historical trendline yield forecasts. The NASS surveys approximately 14,900 farm managers across the U.S., asking for their estimate of crop yields. The survey is conducted during the last week of July and the first week of August. This information is summarized in the August Production report, and the updated national average yield estimates for the major crops are incorporated into the WASDE.

Private market analysts and traders also prepare their own forecasts for what they believe the USDA WASDE and Production reports will show. Major news agencies usually survey these individuals and organizations and report the average trade estimate, as well as the highest and lowest values, to provide a range estimate.

The assumption is that the average trade estimate of yields, crop production and ending stocks is a good estimate of the expectations embedded in futures market prices. In reality, the average trade estimate is a more important reference point for evaluating price shifts than the USDA July WASDE.

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Market Analyst and Trader Expectations Determine Price Responses from USDA Reports — continued from page 1

An example may help explain the logic. Let's assume that spring planting in a key corn-growing region was delayed because of heavy rains and wet field conditions. As a result, private analysts and traders believe the estimated corn planted acreage in the July WASDE is too high and will be reduced in the August WASDE based on the FAS acreage reporting. In addition, a key soybean-growing region has been experiencing hot temperatures and limited rainfall. The analysts believe the national average soybean yield will be reduced below the trendline yield used in the July WASDE. The analysts and traders take positions in the futures market based on their expectations.

If the August WASDE shows lower corn plantings and lower soybean yields, which are similar to analysts' expectations, futures market prices are unlikely to see large increases because these changes were expected and already reflected in the futures market prices. However, if we believe the change in the production estimates between the July and August WASDE reports, we would be wrong. The expectation for lower production was already priced into the futures market.

The USDA is also very transparent about the accuracy of its production and WASDE forecasts. At the end of each major USDA release, the agency reports a historical summary of how well the specific report predicted the final values.

For example, Table 1 shows the difference between the August WASDE forecasts and the final reported values at the end of the marketing year. Table 1 shows the information from the 2025 August WASDE because the 2026 values were not available at the time of writing.

These statistics suggest that the August WASDE forecasts tend to overestimate wheat production, underestimate corn production and have nearly equal under- and overestimation for soybean production. They also suggest that the August WASDE overestimates wheat ending stocks, has nearly equal under- and overestimates for corn ending stocks and overestimates final soybean ending stocks.

There can be many reasons why the August WASDE reliability statistics show a "bias," or tendency to be consistently high or low. In addition, just because last year's estimates were higher or lower than the final values does not mean this year's estimates will follow that trend.

The main takeaway is that the USDA WASDE and production estimates become more accurate over time, and anticipating market price changes due to USDA report releases is very difficult.

Table 1 – Difference Between August World Agricultural Supply and Demand Estimates and Final Estimates

Data Item	Below Final Estimate	Above Final Estimate
U.S. Wheat Production	17	27
U.S. Corn Production	25	19
U.S. Soybean Production	21	23
U.S. Wheat Ending Stocks	28	16
U.S Corn Ending Stocks	21	23
U.S. Soybean Ending Stocks	16	28

USDA World Agricultural Supply and Demand Estimates, Aug. 12, 2025.


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Economic Feasibility of Purchasing, Breeding and Marketing Bred Heifers and/or Pairs

Jon T. Biermacher, NDSU Extension Livestock Development Specialist; Tim Petry, NDSU Extension Livestock Marketing Specialist; and Gavin Eeg, Eeg Cattle Company

The beef cattle herd contraction due to prolonged drought over the past four years has resulted in record-high cattle prices and raised questions about when ranchers will initiate expansion. In anticipation of an expansion, some producers have expressed interest in assessing the potential profitability of purchasing backgrounded (wintered) heifers, breeding them, and selling bred heifers or calving them out and selling pairs.

To address this question, we developed an Excel-based producer decision support tool that allows producers to enter their own estimates of prices and quantity parameters based on their farm's historic records and local markets, and compare their projected sources of revenue, production costs and net returns ($/hd and $/operation) against NDSU's projections. The decision tool was designed to easily allow producers to enter their own values for a set of price and quantity parameters and then view economic projections (revenues, costs, net returns) in a side-by-side comparison with NDSU projections. Once producers enter their parameters into the Producer Set Up sheet, they can easily use the tool to see how sensitive the economic results are to incremental changes to essential prices and quantity parameters.

To illustrate how the economic decision tool works, we created three alternative hypothetical producer scenarios to compare to a base-case NDSU heifer development scenario. Before we discuss the hypothetical producer setups, we first describe the base-case NDSU model for the heifer development enterprise.

The base-case NDSU model setup assumes an enterprise size of 100 purchased heifers initially weighing 750 pounds/head and projected to cost $3.60/lb in January 2026. We included our base-case projections for final market prices of $4,200/bred heifer and $4,300/pair and assume that producers would market bred heifers and pairs in January 2027. We assumed that producers choose to diversify the risk of putting all of their eggs in one basket and, therefore, only market 30% of their bred heifers (27 head) and let the remaining 70% (63 heifers) calve out and market them as pairs. We assumed a 10% industry-average number of open (nonpregnant) heifers that would be marketed as feeder heifers in April 2027.

We assumed heifers would graze unfertilized pasture for 180 days, each requiring eight acres of pasture at a rental rate of $30/acre. We assumed grain-based feed would cost $150/ton and average quality hay would cost $75/ton. We assumed that breeding bulls would cost $6,000/bull and would only be used for six months and then sold at a price 10% less than the initial purchase price. We assumed the distance from the sale barn to purchase and market heifers and pairs was 30 miles, and the transportation cost using a commercial truck/trailer was $3.75/mile. Lastly, we assumed that producers would use an artificial insemination (AI) breeding program with cleanup bulls (the model has been set up to allow producers to choose a natural breeding program as an alternative).

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Economic Feasibility of Purchasing, Breeding and Marketing Bred Heifers and/or Pairs

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For our first scenario, we assumed our hypothetical producer would have the same projections for parameters as the NDSU base model, except (1) they would obtain more optimistic market prices, receiving $4,300 and 4,400 for bred heifers and pairs, respectively; (2) they would receive slightly better prices for feed ($130/ton) and hay ($60/ton); and (3) they would not use an AI program, electing instead to use a natural bull breeding program. The projected economic results for Scenario 1 are reported in Table 1. The results suggest that the hypothetical producer is projected to earn $90/heifer more in revenue, spend $49/heifer less in costs and earn a $139/heifer higher net return ($152 vs. $291/heifer) than the NDSU model. The extra revenue comes from better expected market prices and better feed and hay prices. Not using the AI program saves the producer $50/heifer in added costs compared to natural service.

For Scenario 2, we assumed our hypothetical producer uses the same parameters as the NDSU model in the first scenario, except that the hypothetical producer wishes to purchase and develop only 30 backgrounded heifers instead of 100. As a result, we parameterize both models to 30 head so our hypothetical producer can make a direct comparison. In addition, we assumed our hypothetical producer is willing to take on more risk

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Table 1. Essential Parameters and Projected, Revenues, Costs, and Net Returns

Parameter Assumptions:	Scenario 1 NDSU	Scenario 1 Producer	Scenario 2 NDSU	Scenario 2 Producer	Scenario 3 NDSU	Scenario 3 Producer
Heifers purchased, April Y1 (head)	100	100	30	30	30	30
Heifer purchase price ($/lb)	3.60	3.60	3.6	3.6	3.60	3.60
Percent sold as bred heifers, April Y2 (%)	30%	30%	30%	10%	30%	30%
Sale price of bred heifers ($/heifer)	4,200	4,300	4,200	4,200	4,200	4,200
Sale price of pairs ($/heifer)	4,300	4,400	4,300	4,300	4,300	4,300
Heifer cull price ($/lb)	3.25	3.25	3.25	3.25	3.25	3.25
Pasture rental rate ($/acre)	30	30	30	30	30	30
Stocking rate (acres/heifer)	8	8	8	8	8	4
Days on pasture	180	180	180	180	180	270
Nitrogen rate (lbs actual N/acre)	0	0	0	0	0	100
Price of N (46-0-0) ($/ton)	550	550	550	550	550	550
Price of grain-based feed ($/ton)	150	150	150	175	150	150
Price of hay ($/ton)	75	75	75	90	75	75
Price of breeding bulls ($/bull)	6,000	6,000	6,000	6,000	6,000	6,000
Life of bulls (years)	0.5	0.5	0.5	0.5	0.5	4
Distance to sale barn (miles)	30	30	30	30	30	30
Price of transportation ($/mile)	3.75	3.75	3.75	3.75	3.75	3.75
Interest rate on operating capital (%)	6.50%	6.50%	0.065	0.065	6.50%	6.50%
Using an A.I. breeding program (y/n)?	Yes	No	Yes	Yes	Yes	No
Projected Economics:	**NDSU**	**Producer**	**NDSU**	**Producer**	**NDSU**	**Producer**
Projected revenue ($/heifer)	4,136	4,226	4,136	4,153	4,136	4,136
Projected total cost ($/heifer)	3,984	3,848	4,065	4,163	4,065	3,849
Projected net return ($/heifer)	152	377	71	-11	71	287
Projected net return ($/operation)	15,173	37,748	2,118	-318	2,118	8,616

Economic Feasibility of Purchasing, Breeding and Marketing Bred Heifers and/or Pairs

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and chooses to market only 10% of the group as bred heifers, preferring to market 90% as pairs because they have a better projected price. In contrast to Scenario 1, however, our hypothetical producer has to pay higher prices for feed and hay, costing them $175/ton for feed and $90/ton for hay, respectively. Lastly, our hypothetical producer prefers to utilize an AI synchronization program to breed their heifers. The projected economic results for this scenario indicate that our hypothetical producer would suffer a net return loss of -$81/heifer (-$2,436/operation) compared with the NDSU model's projections (Table 1). The projected loss is due to the added costs ($98/heifer) associated with higher feed and hay, as well as the additional cost of an AI breeding program ($50/heifer in this scenario).

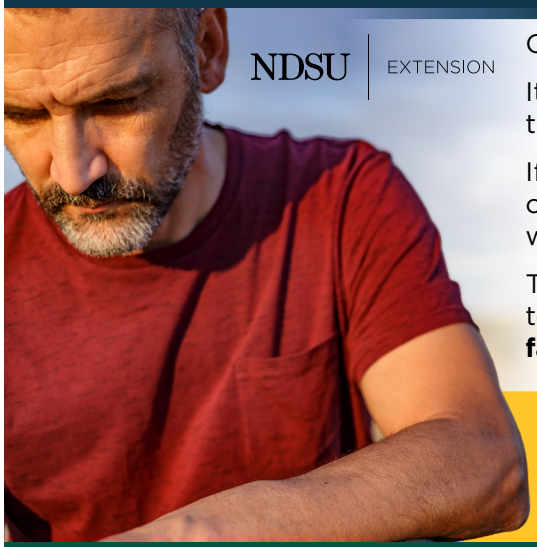
For Scenario 3, we assume that our hypothetical producer operates in Missouri and has a forage base that, when fertilized with 100 pounds per acre of actual nitrogen, can accommodate a stocking rate of four acres per heifer. Also, due to warmer climatic conditions, this producer's pasture can support heifers for 270 days instead of the 180 that is typical in North Dakota. Our hypothetical producer also has access to rested breeding bulls that cost $6,000/bull and are replaced after four years of use. Further, because this would be a new enterprise for this operation, this producer wants to start by purchasing and developing 30 heifers. Because they are unsure about market prices, they will use the base-case market prices in the NDSU model. The results for this hypothetical producer scenario are also reported in Table 1. Overall, the projected results suggest that our hypothetical producer in Missouri would earn a net return of $287/heifer, which is $217/heifer more than our representative producer in North Dakota is projected to earn. The difference is due to lower winter feed costs, lower pasture costs from a higher stocking rate and reduced costs from using a natural breeding program.

Regardless of the individual producer scenario, we encourage producers to use the Producer Set Up sheet to conduct a simple sensitivity analysis to make sure economic projections hold up under small changes to the model's assumed price and quantity parameters.

The decision support tool can be accessed at https://www.ndsu.edu/agriculture/ag-hub/heifer-development-decision-tool.

Send your questions to jon.biermacher@ndsu.edu.

Farming and Ranching are Stressful



Concerns about production, prices and policy can weigh heavily on us.

It is okay not to be okay in times of high stress, whether during harvest time or when dealing with an uncertain farm economy.

If you feel isolated or overwhelmed, talk to someone — family, friends or a professional. Reaching out for help isn't weakness; it's a sign of wisdom and strength. Recognize that you're not alone.

Take time to connect with resources that can support you and help you to be resilient in tough times. **Find stress management tools made for farmers and ranchers at** ndsu.ag/managingstress**.**

If you or someone you know is struggling or in crisis, help is available. **Call or text 988.**

Tax Tips: New Capital Gain Installment Provision for Qualified Farmland

By Ron Haugen, NDSU Extension Farm Management Specialist

A new income tax provision (IRC §1062) under the One Big Beautiful Bill Act allows qualified farmland sellers to elect to pay their resulting federal capital gains taxes in four equal annual installments, providing significant cash-flow relief for farmers and agricultural landlords, rather than a single lump-sum tax bill in the year of sale.

State capital gain provisions still apply. Some states follow the federal code; others do not.

The new provision lets taxpayers selling "qualified farmland" to "qualified farmers" elect a four-year installment plan for the resulting tax. This is an alternative to traditional installment sales (IRC §453) and helps prevent liquidity crunches for landholders who would otherwise owe significant taxes before receiving all their sale proceeds.

The provision applies to sales taking place in tax years beginning after Dec. 31, 2025, with the first qualifying sales completing in calendar year 2026.

Eligibility

Qualified property

To qualify as "qualified farmland property" for this election, the sale must meet several statutory requirements:

- **Real property and location:** The land must be real estate located within the United States.
- **10-year farming history:** The property must have been actively used as a farm by you (or leased to a qualified, active farmer) for substantially all of the 10-year period leading up to the sale.
- **Mandatory use covenant:** The property must be legally restricted, requiring it to remain in agricultural use for at least 10 years after the sale closes.
- **Applicable assets:** The election applies strictly to the real estate and permanent agricultural improvements. It does not cover livestock, machinery or equipment.
- **No reinvestment necessary:** Unlike a 1031 Exchange, the seller can receive full cash proceeds while still electing four annual payments.

Qualified buyer

To use the four-year deferral election (available even if the buyer pays the seller entirely in cash at closing), the purchaser must meet certain criteria:

- **Qualified farmer:** The buyer must be a "qualified farmer" actively engaged in the business of farming.
- **Active use covenant:** The buyer must legally agree to a covenant or restriction that prohibits the purchased land from being used for anything other than agricultural or farming purposes for at least 10 years following the sale.

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Tax Tips: New Capital Gain Installment Provision for Qualified Farmland — continued from page 6

Background: How it differs from traditional installment sales

An installment sale is a real estate transaction where the buyer pays the purchase price over time rather than in a single lump sum at closing. The seller receives at least one payment after the tax year in which the sale occurs, acting as the lender by carrying a promissory note. Capital gains are recognized on a *pro rata* basis as each installment payment is received from the buyer.

- **Tax deferral:** Spreading out capital gains can keep you in a lower tax bracket, preventing a massive, one-time tax hit that could result from a lump-sum payout.
- **Passive income:** It creates a predictable stream of income, which functions similarly to an annuity.
- **Easier sales:** It allows you to offer seller financing, which can help close deals in a tight credit environment.

Considerations

- **Default risk:** Because you are effectively the bank, if the buyer defaults on their payments, you may have to go through the repossession process.
- **Reporting:** You will need to file IRS Form 6252 in the year of the sale and for every year you receive installment payments to properly report your income.
- **Eligibility:** This method cannot be used if you are a real estate dealer selling property as regular inventory, or if the property was sold at a loss
- **State provisions:** State capital gain rules still apply.

Advantages and disadvantages

The new provision does not replace the traditional installment sale rules under IRC §453. Sellers can choose between the two or combine methods depending on individual circumstances.

A traditional installment sale requires the buyer to pay the seller over multiple years, with each year's payment generating proportional recognition of gain. The seller's tax liability tracks the buyer's payment schedule. The advantage is that the seller's tax aligns with the timing of actual cash receipts. The disadvantages are that interest income on the buyer's note is taxed annually at ordinary rates, and the seller bears credit risk on the buyer's future payments.

The new provision allows the seller to receive full cash payment at closing while still spreading the tax liability over four years. The advantages are no buyer credit risk on future payments and full investment of sale proceeds during the installment period. The disadvantages are the strict qualifying conditions (qualified farmer buyer, 10-year farmland history, 10-year covenant) and the fixed four-year installment period.

Triggers

The provision includes acceleration rules that require all unpaid installments to be due immediately upon certain events. Three triggers apply:

1. Failure to pay any installment promptly accelerates the remaining unpaid installments to the date of the missed payment.
2. An individual taxpayer's death accelerates unpaid installments to the due date for the return for the year of death.
3. Corporations, trusts or estate liquidations, asset sales or business cessations accelerate unpaid installments.

Contact a tax professional or the IRS for questions and further information.

Beef Cow Numbers and Calf Crop Continue to Decline, Replacement Heifers Up

Tim Petry, NDSU Extension Livestock Marketing Specialist

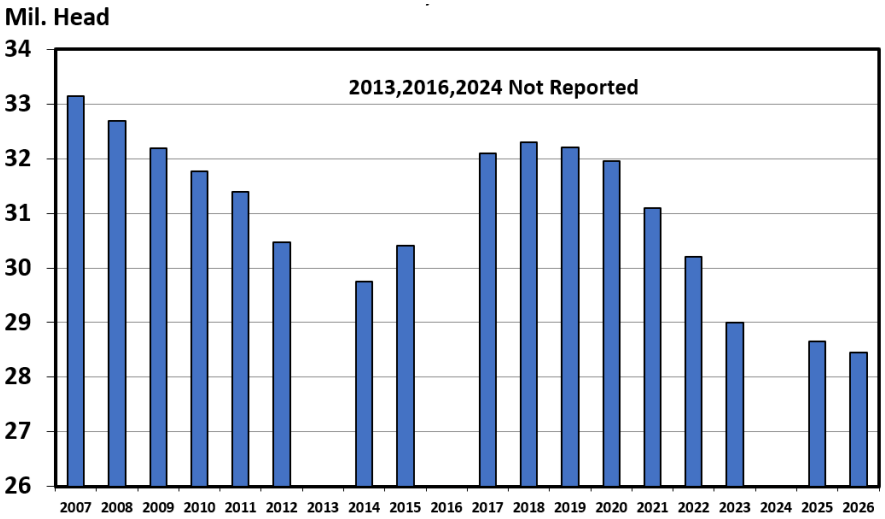
The USDA National Agricultural Statistics Service (NASS) released the semiannual July 1 Cattle Inventory report on July 24. The current and past reports are available online at https://usda.library.cornell.edu/concern/publications/h702q636h.

The July Cattle Inventory report is important because it gives a midyear indication of possible changes in cattle numbers, beef production and potential market price impact. The July report, which provides only total U.S. cattle inventory numbers, is less detailed than the January report, which provides a more detailed state-by-state breakdown, allowing regional comparisons and weather-related changes to be documented.

NASS pegged the July 1 U.S. beef cow herd at 28.45 million head, down 200,000 head from the 28.65 million last year. The eight straight years of July 1 beef cow liquidation resulted in the smallest inventory in the series since records began in 1973. That decline signals a continuation of short cattle supplies for at least another year.

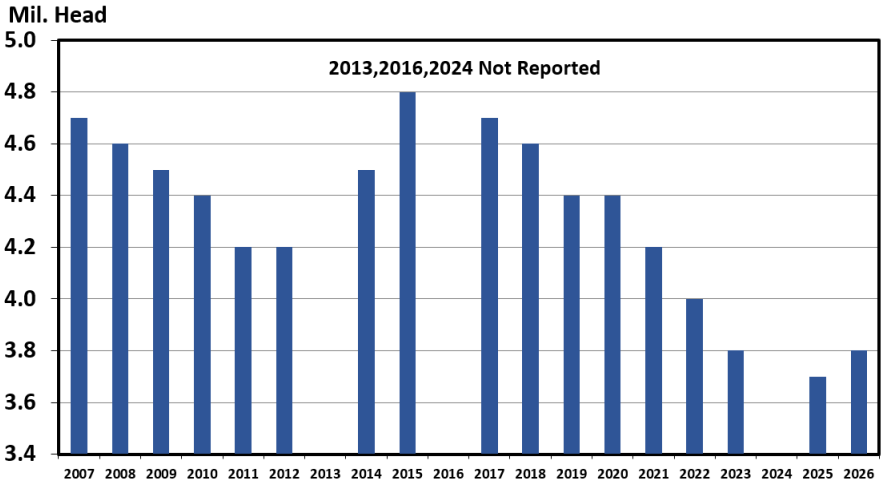
The July 1 beef cow estimate is usually higher than the previous Jan. 1 estimate with the addition of first calf heifers calving, but this year's 3% increase from 27.6 million to 28.45 million has historically indicated expansion. Improved moisture conditions in several important beef cattle-producing regions, record-high cattle prices and a 16% decrease in beef cow slaughter may have contributed to interest in beef herd rebuilding.

July 1 Beef Cow Inventory — U.S., Annual



Source: USDA NASS

Heifers Held as Beef Cow Replacements — July 1, U.S.



Source: USDA NASS

While beef cow numbers declined 200,000 head, milk cow numbers countered with a 200,000 head increase from 9.45 million head on July 1, 2025, to 9.65 million in 2026. That increase may highlight the role of beef-on-dairy genetics in resilient U.S. beef production despite the declining beef cow herd.

Beef replacement heifers were estimated at 3.8 million head – up 2.7%, but still the second-smallest since July 1 records began in 1973.

While some producers are retaining more heifers where moisture conditions allow, there has not yet

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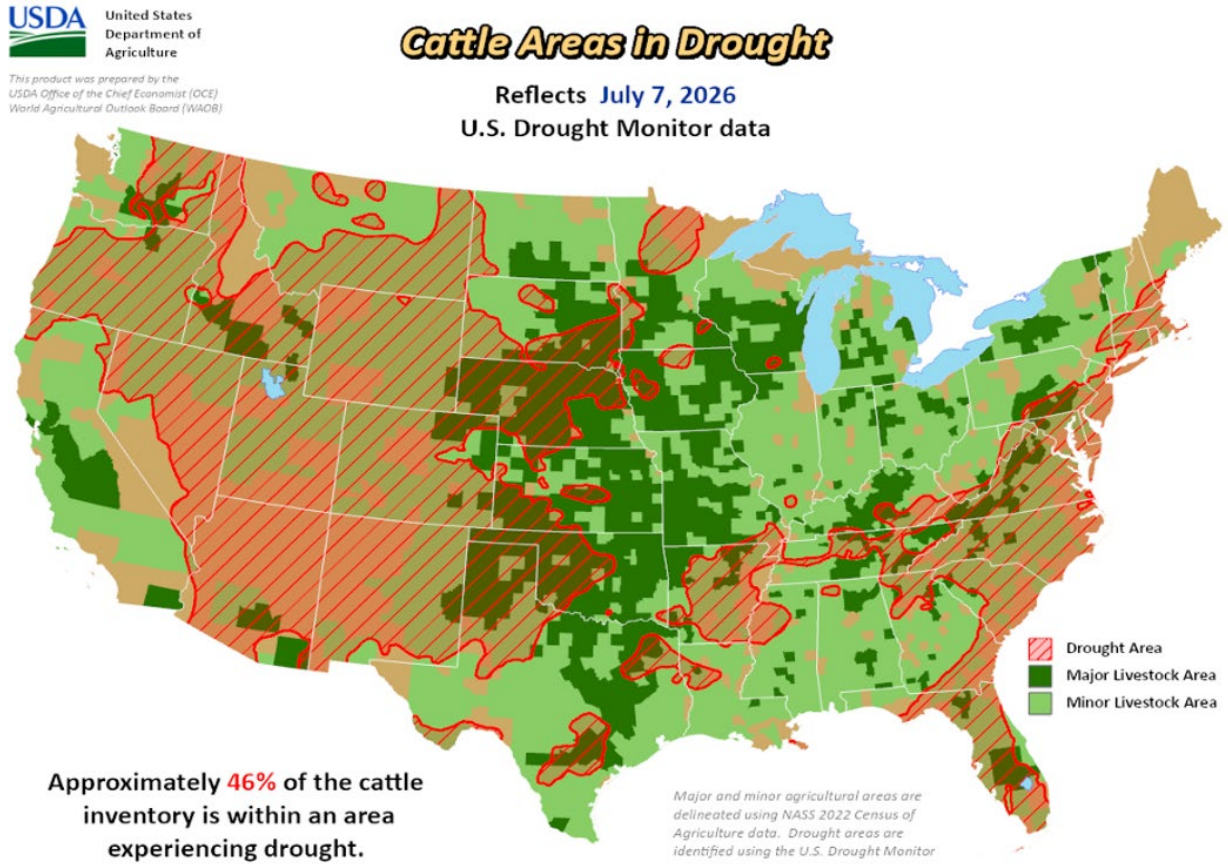
Beef Cow Numbers and Calf Crop Continue to Decline, Replacement Heifers Up — continued from page 8



been significant expansion. The USDA reported that 46% of cattle resided in drought conditions on July 7.

The July Cattle Inventory report provided very important information on potential calf and feeder cattle supplies and future beef production. It was NASS's first estimate of the 2026 calf crop. The calf crop, which includes both beef and dairy calves, is projected to decline 1.5% from just under 33 million head last year to 32.5 million head.

The USDA estimated 23,900 calves were born in the first half of 2026, with another 8,600 to be born in the second half.

July 1 residual feeder cattle supplies outside feedlots were estimated to be 33.6 million head, down from 33.8 million last year and the lowest in many years. Coupled with a potential increase in beef heifer retention, this will cause historically tight supplies.

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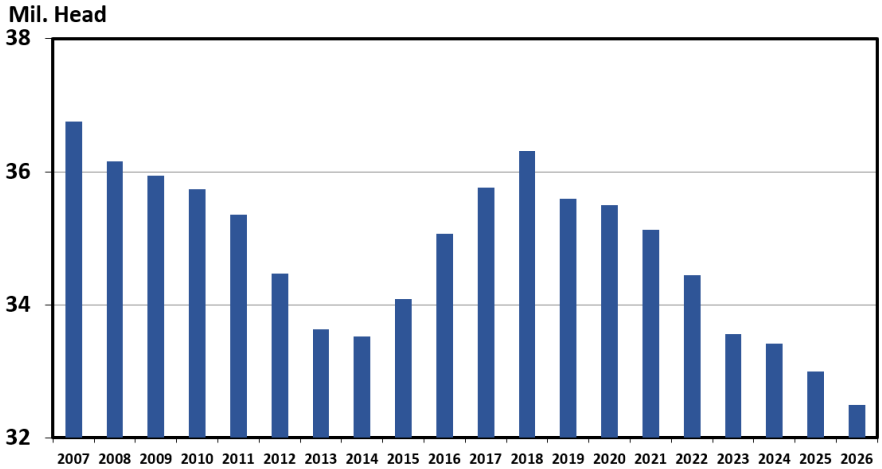
Calf Crop — U.S., Annual



Source: USDA NASS

Beef Cow Numbers and Calf Crop Continue to Decline, Replacement Heifers Up — continued from page 9

The smaller calf crop and tight feeder cattle supplies will mean fewer cattle marketed and a decline in beef production. The USDA predicts that 2026 beef production will fall to 25.36 billion pounds from 26.07 billion pounds in 2025, then decline further to 25.27 billion in 2027.

Fall feeder cattle supplies will likely be impacted by the USDA's July 24 announcement that a phased reopening of the Mexican border for cattle imports would begin on Aug. 24. The initial opening will be the Douglas, Arizona, port, with New Mexico ports at Columbus and Santa Teresa potentially opening later.

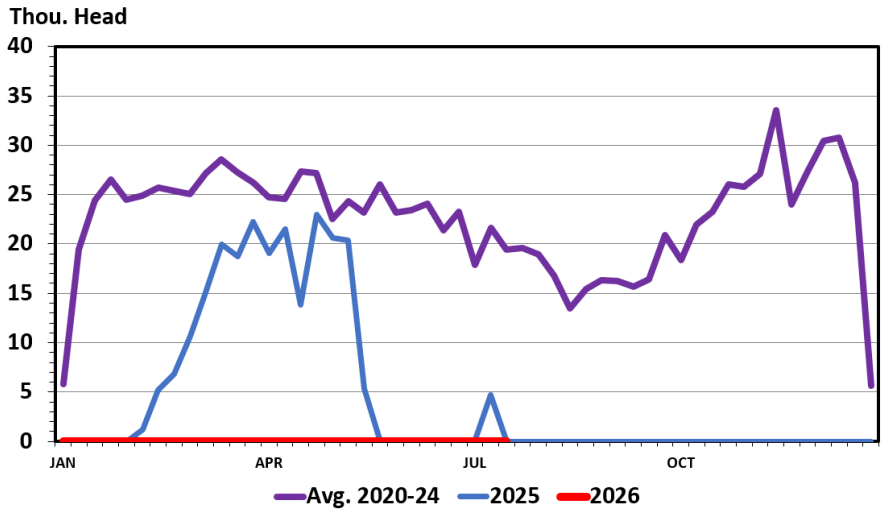
Prior to the ban, Mexican cattle accounted for about 5% of U.S. feedlot placements, but the ban adversely affected feedlot and packing plant capacity in the southern Great Plains. The initial flow of Mexican cattle will likely be slow and well below the levels from before the ban.

Despite lower cattle numbers, cattle on feed in U.S. feedlots on July 1, 2026, increased to 13.2 million head from 13 million in 2025. The increase was due to slow feedlot turnover, which contributed to longer days on feed, higher carcass weights and enhanced beef production.

Tighter cattle supplies will be supportive to fall calf prices. But many uncertain supply-and-demand factors cause the cattle market to be quite volatile: record-high retail beef prices, Iran war uncertainty (especially higher gas prices affecting consumers' budgets), President Trump's comments about lowering retail beef prices with increased beef imports, foreign and U.S. stock market volatility, the Mexican border phased reopening to cattle imports, beef packing plant closures and labor strikes, tariff and trade agreements negotiations, managed money funds entering or exiting cattle futures markets, beef export market headwinds, and weather impacting forage and feed grains production and prices.

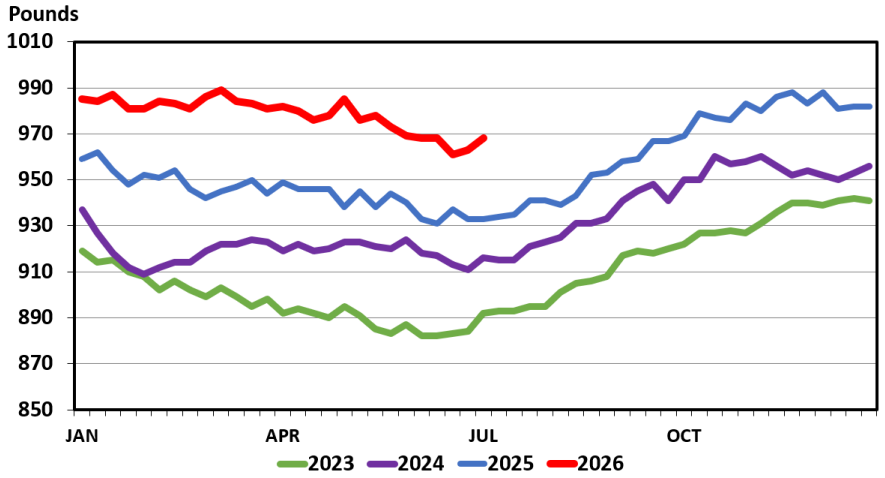
Marketing plans with price risk management strategies that set a floor price, but leave the top side open, should be considered.

Feeder Cattle Imports from Mexico — Weekly



Source: USDA ERS & FAS

Steer Dressed Weight — Federally Inspected, Weekly



Source: USDA NASS & AMS