

# Agriculture By the Numbers

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**NDSU Extension Agribusiness and Applied Economics**

Ripple Effects of Ukraine-Russia War on the Grain Markets

Emergency Livestock Relief Benefits and Compensation for 2021 Forage Losses

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## Ripple Effects of Ukraine-Russia War on the Grain Markets

Frayne Olson, NDSU Extension crop economist/marketing specialist

There is an old saying in grain marketing: “The cure for high prices, is high prices.” In general, there are two reasons why this statement holds true. First, high prices provide an incentive for those who have surplus inventory to sell now rather than continue to store and for producers to increase output. Second, high prices provide an incentive for buyers to use less and/or switch to products that are close substitutes.

Agriculture has a set of unique characteristics that can make the previous statement more complicated. For example, many agricultural products have seasonal production, product quality is important for many users, the logistics systems that get products from production areas to consumers are complex, and international trade policies can influence trade flows.

Commodity futures market, domestic and international cash market, and changing transportation prices provide information to farm managers, grain merchandizers and end users about supply, demand and desired flow of different grains. Russia’s invasion of Ukraine, and the resulting war, was a major disruption to all of these markets and they continue to shift, attempting to find a new balance.

### Current Conditions:

In the past, Ukrainian and Russian grain supplies have often been grouped together and viewed as “Black Sea” wheat, corn or feed barley. However, moving forward, there will likely be a stark difference between supplies from these two countries. Grain availability, distribution networks and prices will likely be different.

Grain movement for current inventories have been disrupted. In Ukraine, the port city of Mariupol has been severely damaged and the government has closed all ports until the war ends. Floating mines have been laid along the coast, significantly increasing the risks for grain vessels moving in the Black Sea. Different railroad gauges are complicating grain shipments by rail to Western Europe. And, alternative port facilities in Moldova and Romania have limited capacity.

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# Ripple Effects of Ukraine-Russia War on the Grain Markets — continued from page 1

In Russia, export sales have slowed due to less buying interest, but grain loading and logistical disruptions have been minor. Initially, after the war first began, some companies refused to purchase Russian grain to protest the invasion. Other buyers were concerned about Russia's ability to remain a reliable supplier and deliver the correct quantity and quality on time. However, rising global grain prices, the falling value of the Russian ruble and decreasing domestic grain inventories have enticed some countries, like Egypt, to begin purchasing Russian grain again.

## Where do we go from here?

Moving forward, there is a high level of uncertainty regarding the total grain production capacity of both Ukraine and Russia. Private analysts are projecting a 30% to 60% reduction in Ukraine's 2022-23 grain output. The Ukrainian government is asking farmers to prioritize crop planting to focus on crops that can be used for human food rather than feed crops for livestock. It is too early to estimate total production levels by crop.

In Russia, farmer's access to credit from commercial banks to purchase crop inputs is becoming an issue. The Russian government recently announced \$160 billion rubles, approximately \$1.2 billion dollars, of short-term loans for planting season expenses. It is unclear when these funds will become available.

Domestic and global buyers are adjusting. The European Union has become an alternative source for many grain importing countries that normally buy from the Black Sea region. The European Commission is projecting a 14% increase in grain exports during the current marketing year. While the EU may be a short-term supplier, it is unlikely that the EU can compensate for the lower grain volumes being sold by Ukraine and Russia.

Two of the major variables that grain traders and analysts will be watching during the next several months are expected U.S. crop production levels and Chinese grain and oilseed purchases. U.S. planted areas, growing season weather and crop development are always hot topics, but the 2022 production season will be watched especially closely.

Chinese grain and oilseed imports also grab the attention of global grain traders. The volume purchased, source of the grain or oilseed, and delivery window can give insights into the China's supply and demand conditions as well as possible policy changes.

Trying to anticipate all of the possible grain market changes and adjustments resulting from the Ukraine-Russia war is impossible. However, a small amount of time spent each day monitoring the market news and price levels can pay big dividends.



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# Emergency Livestock Relief Benefits and Compensation for 2021 Forage Losses

By Ron Haugen, NDSU Extension farm management specialist

April 2022. The United States Department of Agriculture announced that ranchers who have approved applications through the 2021 Livestock Forage Disaster Program (LFP) for forage losses due to severe drought or wildfire in 2021 will soon begin receiving emergency relief payments for increases in supplemental feed costs in 2021 through the Farm Service Agency's new Emergency Livestock Relief Program (ELRP).

Livestock producers that experienced catastrophic losses of available forage as well as higher costs for supplemental feed in 2021 are eligible. The conditions driving these losses have not improved for many and have worsened for others. Phase one of the ELRP will use data from the LFP, allowing the USDA to distribute payments quickly to livestock producers.

## Background

Part of the Extending Government Funding and Delivering Emergency Assistance Act (P.L. 117-43) specifically targets \$750 million to assist livestock producers for losses incurred due to drought or wildfires in calendar year 2021. The ELRP is part of the FSA's implementation of the act.

For impacted ranchers, USDA will use LFP data to deliver immediate relief for increases in supplemental feed costs incurred in 2021. The LFP is an important tool that provides up to 60% of the estimated replacement feed cost when an eligible drought adversely impacts grazing lands or 50% of the monthly feed cost for the number of days a rancher is prohibited from grazing the managed rangeland because of a qualifying wildfire.

The FSA received more than 100,000 applications totaling nearly \$670 million in payments to livestock producers under the LFP for the 2021 program year.

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# Emergency Livestock Relief Benefits and Compensation for 2021 Forage Losses — continued from page 3

## Emergency Livestock Relief Program Eligibility — Phase One

To be eligible for an ELRP payment under phase one of program delivery, livestock producers must have suffered grazing losses in a county rated by the U.S. Drought Monitor as D2 (severe drought) for eight consecutive weeks or D3 (extreme drought) or higher during the 2021 calendar year, and have applied and been approved for 2021 LFP. Additionally, ranchers whose permission to graze on federally-managed lands was revoked due to wildfire are also eligible for ELRP payments, if they applied and were approved for 2021 LFP.

As part of FSA's efforts to streamline and simplify the delivery of ELRP phase one benefits, producers are **not** required to submit an application for payment.

## Emergency Livestock Relief Program Payment Calculation — Phase One

To further expedite payments to eligible livestock producers, determine eligibility, and calculate an ELRP phase one payment, the FSA will utilize livestock inventories and drought-affected forage acreage or restricted animal units and grazing days due to wildfire already reported by the producer when they submitted a 2021 CCC-853, Livestock Forage Disaster Program Application form.

Phase one ELRP payments will be equal to the eligible livestock producer's gross 2021 LFP-calculated payment multiplied by a payment percentage, to reach a reasonable approximation of increased supplemental feed costs for eligible livestock producers in 2021.

The ELRP payment percentage will be 90% for historically underserved producers, including beginning, limited resource, and veteran farmers and ranchers, and 75% for all other producers. These payments will be subject to a payment limitation.

Payments to eligible producers through phase one of ELRP are estimated to total more than \$577 million.

## Emergency Livestock Relief Program — Phase Two

This is only phase one of relief for livestock producers, the FSA continues to evaluate and identify impacts of the 2021 drought and wildfires on livestock producers to ensure equitable and inclusive distribution of much-needed emergency relief program benefits.

## Emergency Relief Program (ERP) Assistance for Crop Producers

The FSA is developing a two-phased process to assist diversified, row crop and specialty crop operations that were impacted by an eligible natural disaster event in calendar years 2020 or 2021.

This program will assist crop producers and will follow a two-phased process similar to that of the livestock assistance program with implementation of the first phase in the coming weeks. Phase one of the crop assistance program will leverage existing crop insurance and Noninsured Crop Disaster Assistance Program (NAP) data as the basis for calculating initial payments.

The second phase of the crop program will be intended to fill additional assistance gaps and cover eligible producers who did not participate in existing risk management programs.

Through proactive communication and outreach, the USDA will keep producers and stakeholders informed as ERP implementation details are made available.

## Additional Livestock Drought Assistance

Due to the persistent drought conditions, the FSA will be offering additional relief through the Emergency Assistance for Livestock, Honeybees and Farm-raised Fish Program (ELAP) to help ranchers cover above normal costs of hauling livestock to forage. This policy enhancement complements previously announced ELAP compensation for hauling feed to livestock.

It is important to note that unlike ELRP emergency relief benefits which are only applicable for eligible losses incurred in the 2021 calendar year, this ELAP livestock and feed hauling compensation will not only be retroactive for 2021 but will also be available for losses in 2022 and subsequent years.

Additional USDA disaster assistance information can be found at [farmers.gov](https://farmers.gov) or [usda.gov](https://usda.gov).

Source: USDA



# Drought Forces U.S. Sheep Numbers Lower

By Tim Petry, Extension livestock marketing economist

On Jan. 31, the United States Department of Agriculture National Agricultural Statistics Service (NASS) released the annual sheep inventory report.

The U.S. sheep and lamb inventory continued its downward trend, falling 2.0% (105,000 head) to 5.065 million head as of Jan. 1, the lowest on record.

Drought in the western U.S. was certainly a major contributing factor to the decline with about two-thirds of the sheep flock in areas experiencing drought.

The states with the most breeding-age ewes are Texas, California, Wyoming, Utah, Colorado, South Dakota and Wyoming. All those states experienced drought conditions.

Breeding sheep and lambs were 3.71 million head, down 1.9% or 70,000 head from the prior year. Ewes one year and older decreased 50,000 head (-1.7%) to 2.91 million.

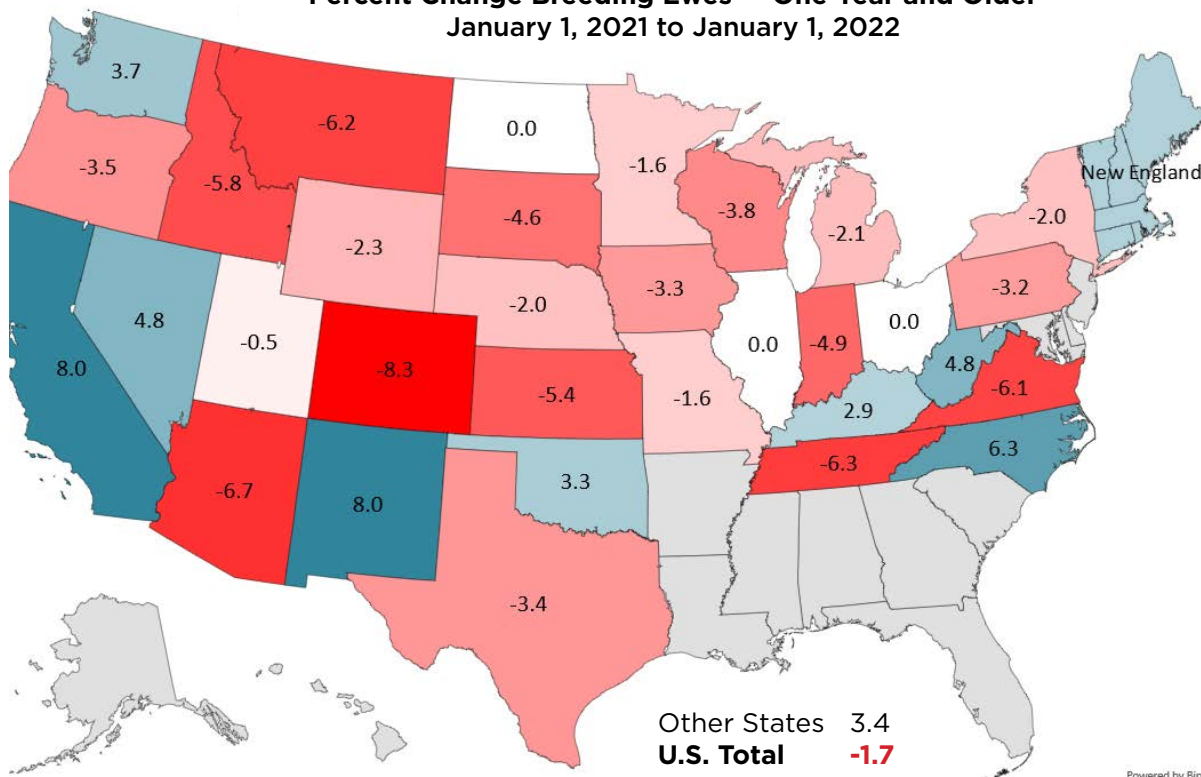
Even though severe drought conditions persisted in North Dakota, breeding ewe numbers were unchanged from last year. Ewe numbers in North Dakota have bucked the U.S. downtrend and actually increased since 2019.

The lower number of U.S. ewes led to a 1.6% (50,000 head) decline in the lamb crop from a year ago to 3.16 million head, the lowest on record. Lower lamb crop levels in Montana (-6.5%), Colorado (-5.3%), Texas (-4.1%) and Utah (-2.2%) more than offset increases in California and Wyoming, which both rose 4.3%.

Total market sheep and lambs fell 35,000 head (2.5%) to 1.355 million head. The last time total market sheep and lambs were lower was 2014 and 2015 when inventory levels were 1.345 million head for both years. Market lambs fell 2.4% to 1.277 million head with declines in the 65-84-pound (-4.1%),

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**Percent Change Breeding Ewes — One Year and Older**  
January 1, 2021 to January 1, 2022



Source: USDA-NASS

# Drought Forces U.S. Sheep Numbers Lower

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85-105-pound (-8.6%), and 105 pounds and over (-1.2%) categories while lambs under 65 pounds rose 2.1% from a year earlier.

The smaller lamb crop along with strong consumer demand for lamb, especially from the ethnic sector, has buoyed fed lamb prices.

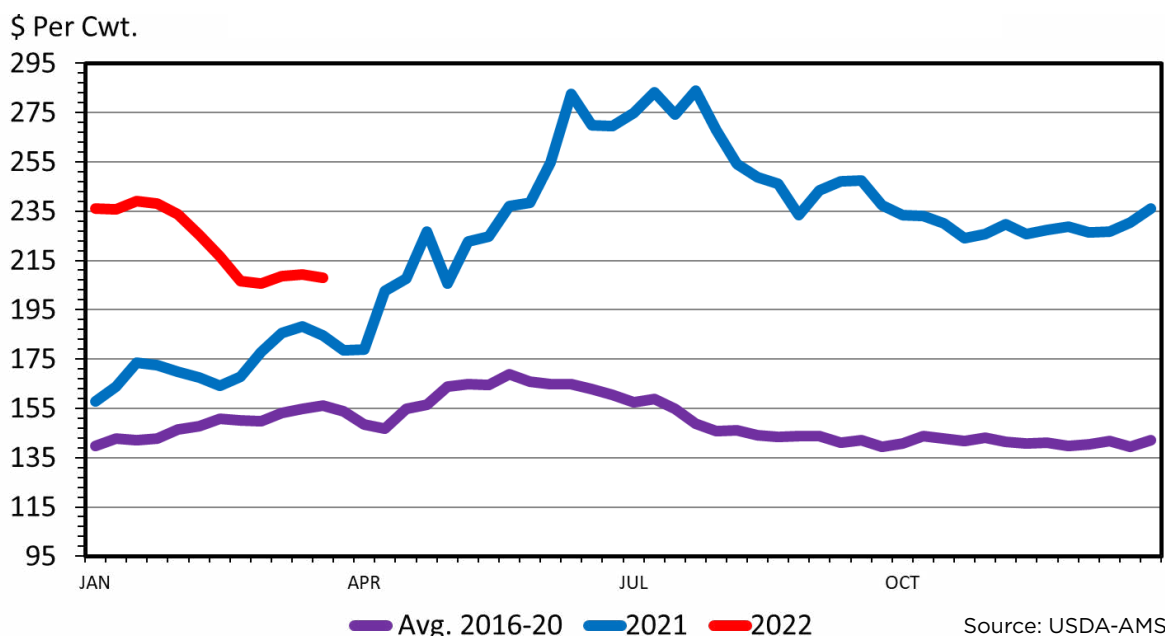
The shorter supply is expected to support lamb prices in 2022, but seasonal weakness is likely to occur again in the fall months.

Furthermore, supply chain issues with inflationary impacts on the U.S. economy caused by COVID-19,

now coupled with the Russian-Ukrainian war, have created uncertainty for U.S. consumers. Lamb demand could be negatively impacted, which would pressure fed lamb prices.

Potentially lower fed lamb prices along with higher feed costs would pressure feeder lamb prices. Feed prices are likely to stay elevated with the USDA predicting a 4% decline in 2022 corn planted acres, and persisting drought conditions will continue to cause high hay prices.

**Fed Lamb Prices — Northern Plains, Weekly**



# Beef Cow Herd Liquidation Will Support Cattle Prices

By Tim Petry, Extension livestock marketing economist

The United States Department of Agriculture National Agricultural Statistics Service (NASS) released the annual *CATTLE* inventory report on Jan. 31. It is available at <https://usda.library.cornell.edu/concern/publications/h702q636h>.

Given the severe drought in the northern Plains and western states along with high beef cow slaughter, the big question wasn't if, but how much the beef cow herd declined.

On Jan. 1, 2022, U.S. beef cows were at 30.13 million head, down 718,500 from the 30.84 million on Jan. 1, 2021. That was the fewest beef cows since 2015.

2021 marked the third straight year of U.S. beef cow cyclical liquidation. Numbers peaked on Jan. 1, 2019, at 31.7 million head with the three-year decline at 1.6 million head (5%).

A number of factors likely led to the decline in beef cows during 2019 even with generally favorable grazing conditions. The rapid expansion from 2014 through 2018 meant many cow-calf operations were near fully stocked. Beef production reached record high levels in 2019 with the increasing herd. Harsh winter weather conditions and flooding, particularly in some northern Plains states, some reports of more-than-normal open cows, and narrowing margins likely contributed to increased beef cow slaughter.

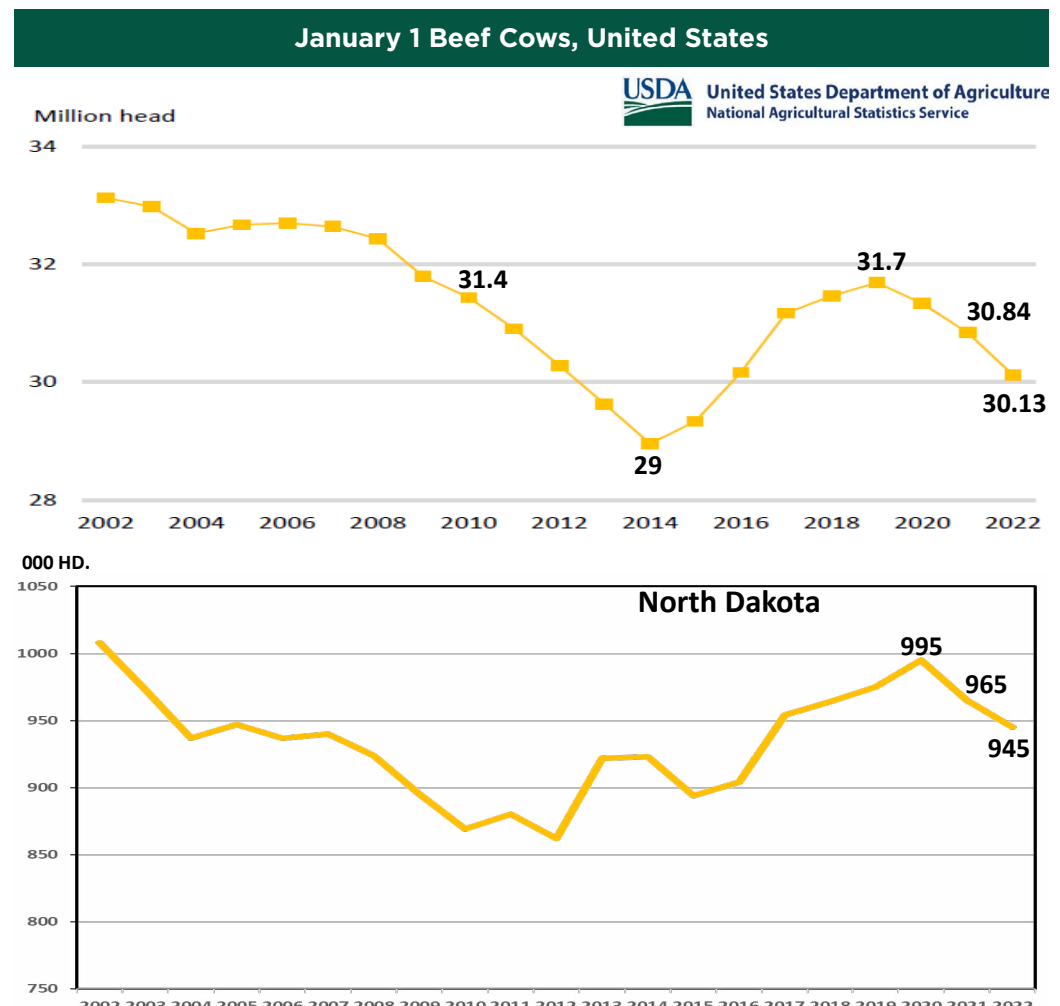
The COVID-19 pandemic in 2020 disrupted cattle slaughter capacity and caused volatile and lower cattle prices. Drought also started the year in the Four Corners and Pacific Northwest regions, and expanded throughout the year into much of the Western U.S.

Expanding and intensifying drought conditions in 2021 with over 50% of the beef cow herd in areas with at least some drought certainly contributed to continued beef cow liquidation.

The top 10 beef cow states in order of importance are Texas, Oklahoma, Missouri, Nebraska, South Dakota, Kansas, Montana, Kentucky, North Dakota and Iowa. All of those states except Iowa saw declining beef cow numbers.

South Dakota experienced the largest decline in beef cow numbers at 189,000 head (10.5%). Following were Texas down 160,000 (3%), Missouri losing 94,000 (5%), and Montana close behind declining 90,000 head (6%).

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# Beef Cow Herd Liquidation Will Support Cattle Prices – continued from page 7

North Dakota beef cow numbers declined 20,000 head (2%) to 945,000 head.

Iowa recorded the largest increase up 65,000 head (8%). Idaho increased 34,000 (7%) and Minnesota followed with a 25,000 head (7.5%) increase.

The northern Plains states Montana, North and South Dakota, and Wyoming experienced severe drought conditions in 2021. About 15% of the U.S. beef cow herd resides in that area where numbers declined 320,000 head. Some improvement in drought conditions has occurred in southeast North Dakota and northeast South Dakota, but much of the region remains very dry. Significant moisture will be necessary to prevent further liquidation.

Drought moved into the important southern Plains beef cow states late in 2021 and dry conditions linger there, so that area is also a concern.

The U.S. beef replacement heifer inventory at 5.6 million head declined 191,600 head (3.3%). That was the lowest number since 2014. The number of bred beef heifers expected to calve in 2022 was 3.4 million, down 3% from last year. North Dakota beef replacement heifers decreased 8,000 head (4%), Montana declined 50,000 (13%), Wyoming is down 5,000 (3%), but South Dakota increased 5,000 head (1%).

The 2021 U.S. calf crop (including beef and dairy calves) declined 1% at 35.1 million head and will decline again in 2022.

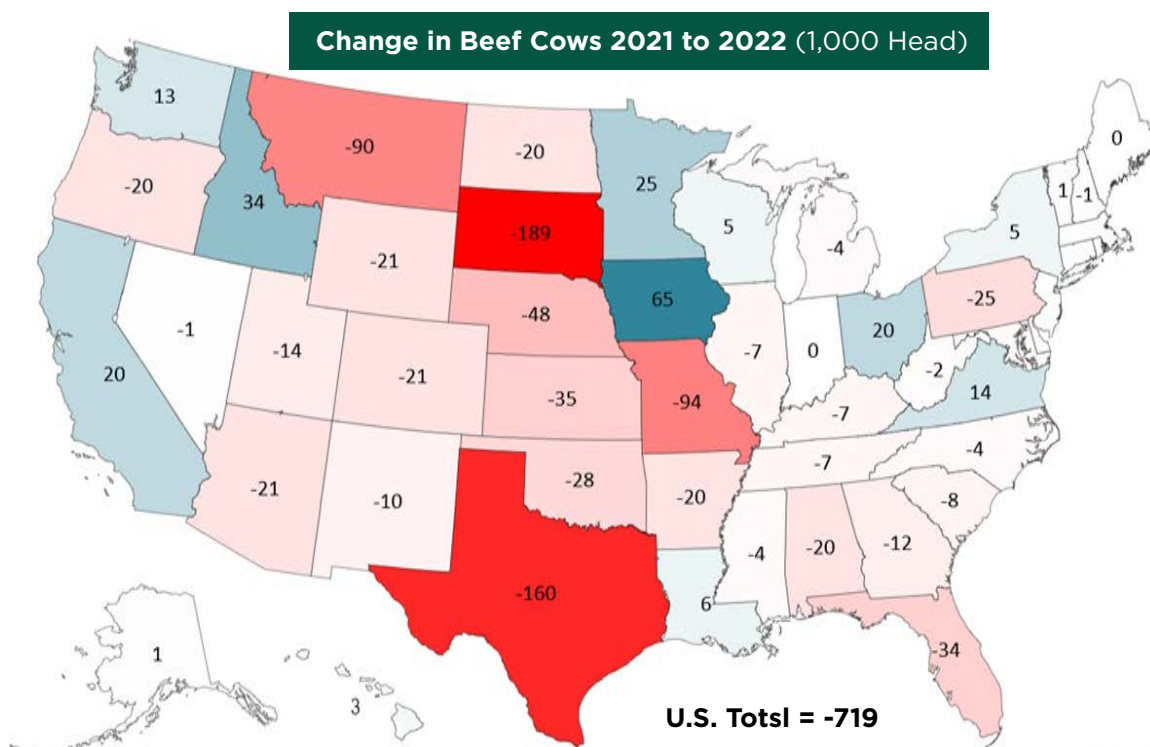
The declining beef cow herd and calf crops will mean fewer cattle marketed and declining beef production in 2022 and likely in future years. That will be supportive to cattle prices.

Current cattle prices are above last year, near 2015 levels, and are expected to continue to increase. However, increased price volatility and risk will likely continue, especially on a seasonal basis.

Drought conditions are at the forefront, with 65% of the beef cow herd in drought.

The potential size of the 2022 corn crop is unknown with high input costs, and the USDA is predicting corn acres will be down 4%.

COVID-19 pandemic impacts linger, inflation is a concern, and the Russian-Ukrainian war is causing chaos in world markets and unprecedented uncertainty.





# Fertilizer Prices Increasing Again as North Dakota Focuses on Spring Planting

By Bryon Parman, NDSU Extension agricultural finance specialist

Fertilizer prices in early 2022 were already high relative to early 2021, having increased sharply over the 12-month period from January 2021 to January 2022. There are many reasons prices have been high for fertilizer, including supply chain issues with clogged ports, difficulty finding truck drivers, plants making key ingredients in China suspending or slowing production, and storms that halted production in the U.S. for days or weeks. But early in 2022, some key fertilizer products had stopped increasing in cost. Most major products including potash, urea, monoammonium phosphate (MAP) and diammonium phosphate (DAP), and to some extent anhydrous ammonia, had halted their upward trajectory.

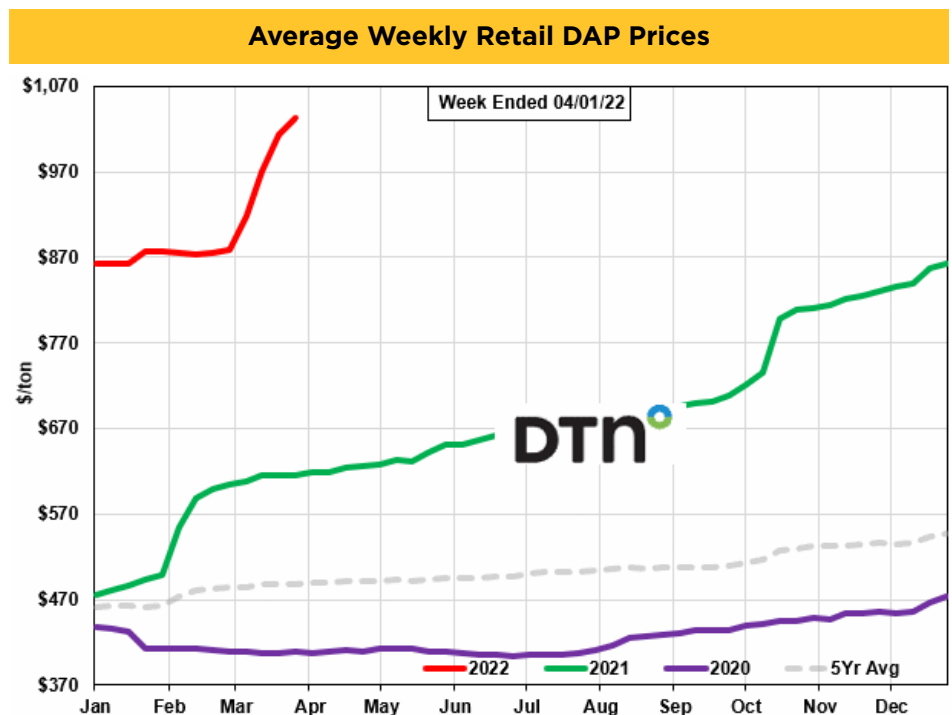
Over the last several weeks, however, fertilizer prices have begun increasing again, perhaps partially due to spring planting beginning in the southern U.S., but also due to the war between Russia and Ukraine. In early March, Russia suspended fertilizer exports to ensure supplies for their own farmers, and Belarus reported issues shipping fertilizer products abroad. Additionally, many countries, including the U.S., have imposed steep tariffs or banned many products exported from Russia and Belarus (a major Russian ally).

In a typical year, Russia produces 11% of the world's phosphates, 11% of the world's ammonia (nitrogen fertilizer) and about 20% of the global potash supply. Belarus produces nearly as much of the world's potash as Russia. While the U.S. does not rely much on imports for phosphate fertilizers or nitrogen fertilizers, it does import nearly all of its potash. Around 75% of the U.S. yearly potash comes from Canada while 10% typically comes from Russia and 8% from Belarus. Thus, increased imports from Canada and at greatly elevated price will be needed to fill the gap.

While the U.S. doesn't count much on imports for phosphates and nitrogen, a major reduction of Russian and Belarusian exports will drive up prices domestically as fertilizers are globally-traded commodities. U.S. suppliers and farmers will be competing for products at prevailing world prices with the likes of Brazil and countries in the European Union, who are generally major net importers of fertilizer products.

DTN, who tracks state and national fertilizer prices closely, provides the following charts showing fertilizer prices for DAP, Urea and Potash for the last two and a half years as well as a five-year average line. DTN tracks other fertilizer products as well including MAP, anhydrous ammonia, and UAN 28 and 32. The charts show the steady climb in prices during 2021 as well as the brief period from January to early March 2022 where prices held mostly steady. However, in the latter weeks of March, mainly due to the war in Ukraine, these as well as other products began moving sharply upwards again.

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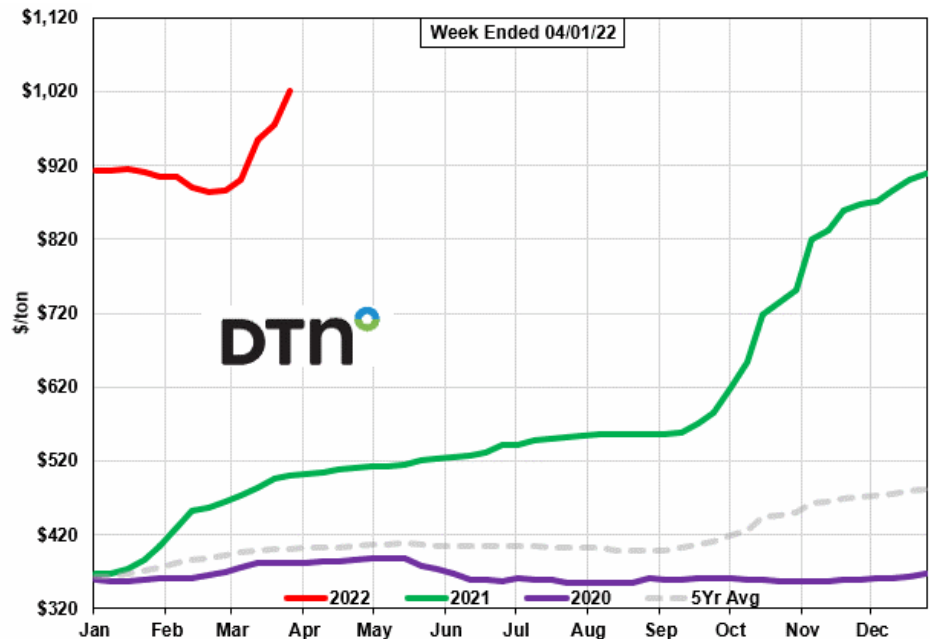


# Fertilizer Prices Increasing Again as North Dakota Focuses on Spring Planting

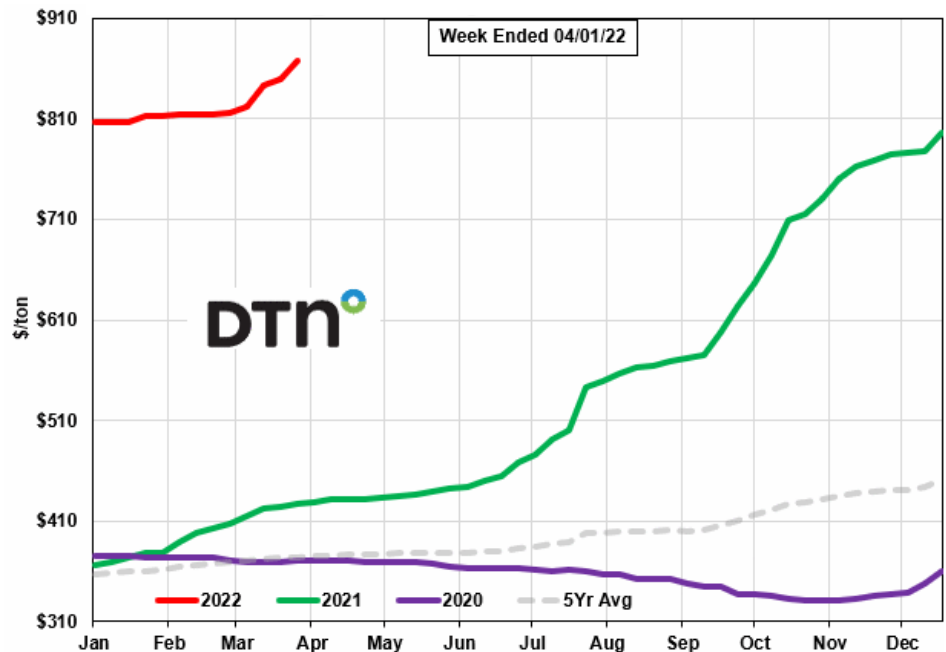
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It remains to be seen how high prices will go. This likely depends upon the resolution of the supply chain issues that made fertilizer reach the highs that it did in the first place, the war in Ukraine and any economic sanctions that may linger after it is over. In any case, it is highly unlikely there will be any major decline in fertilizer prices as the U.S. puts the spring crop in the ground in 2022.

**Average Weekly Retail Urea Prices**



**Average Weekly Retail Potash Prices**



<https://www.dtn.com/>