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TEXAS ALLIANCE FOR WATER CONSERVATION



TEXAS TECH UNIVERSITY
Agricultural Sciences & Natural Resources
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The Texas Alliance for Water Conservation strives to conserve water and soil for future generations in collaboration with producers to identify agricultural production practices and technologies that, when integrated across farms and landscapes, will reduce the depletion of ground water while maintaining or improving agricultural production and economic opportunities.

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Frontier Family

by Peyton Brown

At its core, Frontier Market of Plainview, Texas, is community, family and farming. With that, sustainability for each of those things takes priority. Glenn, Dina, Layton and Jessi Schur are committed to their growing family's legacy and sustainable farming practices to care for their community.

Frontier Market offers direct-to-consumer beef, dairy and produce. The Schur family has been in the bull business for years. Layton said originally, they wanted to explore direct beef sales, which he predicted to be a great opportunity. With his firsthand

knowledge of his family's quality of genetics, Layton said he questioned why he was not seizing the opportunity to market the good quality of cattle he knew his herd produced. In 2019, the family operation kept three steers from the sale barn and the beef sold in fifteen minutes. The next time, they kept six back. The next time, they kept twelve back. The pandemic that hit in 2020 may or may not have propelled the direct beef sales even more. Either way, it was a hit.

With beef sales excelling, Layton said the Schur family was ready to look

into growing vegetables to offer for sale as well. With water conservation and stewardship at the forefront of his mind, Layton wanted to explore every option for growing a garden large enough to feed the community. The Frontier Market website states: "The produce side of our operation began in response to the troubling water situation in our area of Texas. With the Ogallala Aquifer not replenishing the way that it used to, we knew we needed a new plan to sustain our produce. We decided to concentrate our water supply on only a few acres of land to make a smaller amount of high-quality produce instead of spreading ourselves too thin, causing us to neglect certain acres."

Layton and his father, Glenn, took a trip to Colorado to investigate hydroponics. Layton said they considered all options and asked themselves how they could best maximize water efficiency. Ultimately, they decided for the garden to be grown in the ground.

In 2022, the Schurs purchased high tunnels. They had unprecedented



Direct-to-consumer: Frontier Market Beef



A Family Affair: Glenn and Dina Schur harvesting vegetables

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demand as they started selling vegetables on the side and the eyes of their community were opened to the advantages of locally grown produce. Thus, the Frontier Market building was purchased.

For the in-ground garden, they use drip irrigation along with overhead irrigation. The dual-irrigation method is



Layton Schur harvesting vegetables

necessary due to the fierce West Texas wind. A lot of the seeds for the produce are very small, like coarse black pepper. Water usage for produce is very efficient compared to the Schur family's cotton crop water usage.

Layton said there has never been a hugely strong Farmer's Market presence

in the area in his lifetime. He knew of no one doing small batch vegetables. He said with people not having the opportunity to have truly fresh produce besides growing it themselves, there was a vast eye-opening with their offering. Lettuce and spinach are the top-selling vegetables from Frontier Market.

While the community's eyes were opened, Layton's were, too. He said he had a somewhat negative attitude toward Farmer's Markets as he had never seen a very good one. With over-producing the needs of the store, the Schurs decided to participate in Farmer's Markets in Wolfforth and Canyon. With that, they had more success. They continue to grow produce and expand on which vegetables they're growing. They are up to 45 varieties, and research best practices and how to grow all the different crops. Vegetables are grown year round for Frontier Market with fresh harvests each week.

Layton said the Schurs were set on a farm-to-table-style restaurant, but after assessing all angles of that kind of operation, the family has decided pre-made and prepared foods is the better

option for them. Now, they are looking to take their product offering even further to casseroles, canned foods, jams, frozen foods, and pre-cut crop. They are working on a commercial kitchen to expand on their operation offering fresh, locally-grown food year round. A salad bar is likely in Frontier Market's future, too.

Frontier Market's winter crop includes spinach, iceberg, romaine, cabbage, broccoli, collard greens, swiss chard, carrots, beets, radishes, and turnips this year. Layton said a challenge they have had to work through is knowing how much to plant as demands vary week to week. He is proud to say they have hardly any waste.

The Frontier Market website states: "Working with fewer acres has been eye-opening for us! With just a few acres, we are able to feed not only our family but also a lot of our community, which is such a necessity to have in the food desert of Texas where so many families don't have access to truly fresh produce."



JAN 24 :: WATER COLLEGE SAVE THE DATE

The 10th Annual Texas Alliance for Water Conservation Water College will be held on Wednesday, January 24, 2024, at the Lubbock Memorial Civic Center. There is no cost for attendees. Certified Crop Advisor Continuing Education Units will be available. The program will start at 9:00 a.m. and will last until about 3:00 p.m. Lunch will be provided. For information to reserve booth space for your company contact Samantha Borgstedt via email: samantha.borgstedt@ttu.edu.



Farmers' Almanac Winter 2024 Extended Weather Forecast

copied from <https://www.farmersalmanac.com/extended-forecast>

Wondering what the extended weather forecast is for the winter ahead? Will there be a snowstorm or three—enough snow to plow and play in? Will cold temperatures bring shivers to your backyard? Here's [a shortened version of] the Farmers' Almanac Winter 2024 Extended Weather Forecast.

Winter weather is making a comeback. After a warm winter anomaly last year, traditional cool temperatures and snowy weather conditions will return to the contiguous United States.

Winter officially starts on Thursday, Dec. 21, but that doesn't mean the cold conditions and snow will wait until

then. Did you know that meteorological winter starts on Dec. 1? December 2023 is forecast to start out quite stormy. Our extended weather forecast calls for some blizzard conditions blowing snow into areas over northern New England, the North Central States, and northern and central areas of New Mexico, Oklahoma, and Arkansas.

There are indications that an El Niño (an unusually high-water temperature off the Pacific Coast of South America), will be brewing in the latter half of 2023, lasting into the winter of 2024. If we consider that alongside our tried-and-true forecast formula, it means that cold

temperatures should prevail throughout the country and bring snow, sleet, and ice.

[The forecast says] Texans will need to bundle up, as unseasonably cold weather is forecast throughout January and February, with a possible major winter storm in mid-January.

The following are a few winter weather advisory times that our extended weather forecast is suggesting you might want to bundle up, buy some extra hot chocolate, make plans to stay home, or plan a skiing trip.



READ THE FULL EXTENDED FORECAST ONLINE AT
farmersalmanac.com/extended-forecast



Cattle Market: An Analysis & Forecast

While areas of Texas have seen some rain, Texas Cattle Feeders Association (TCFA) Director of Market, Membership & Education Brady Miller says we're not officially out of drought. Climatologists say we're entering an El Niño winter, contrary to the hot and dry La Niña we've experienced.

In terms of what this means for the cattle market — currently, and as we look forward — we can reference previous similar seasons like what we saw in 2011. One doesn't have to reach too far back in memory to recall the last major drought that hit Texas. The severity of these droughts has effects on the cattle market's natural cycle.

At this point in time, cattlemen are not retaining heifers. A large number of heifers are still going to town, to auction or feedyards. Miller says we're nearing the point when folks will start retaining heifers.

When we talk about the cattle market's "cycle," there are naturally occurring highs and lows.

Other market analysts and experts agree: Sometime in the beginning of 2024, probably between January and March, we'll finally start to see the cattle market cycle reach the next low — when ranchers can start to retain some heifers. The drought drove us into the cycle quicker and faster than when it would have naturally occurred.

Similarly to the market effects we saw in the drought during 2011, 2012 and

2013, this drought will extend the tail of the market than it would have for a longer cycle. The market should have peaked sooner than it will.

For an example of an outside factor making an effect like this, we can think back to the fire at the Tyson plant in Holcomb, Kansas, in 2019. That plant harvests about 5500-6000 head of cattle per day — about 5-6% of beef processed in the United States (farmaction.us). The fire occurred when the cattle market was peaked in its cycle.

Rather than the cycle taking its natural course, the event expanded the bottom side. There were more cattle on feed and coming from the ranch than what both packers could harvest and consumers would buy. That's why cow/calf pairs were so cheap and ranchers and feedyards were making no money.

Next, was the Covid pandemic in 2020 to effect the market's cycle. Packers made more money, but another million head of cattle were backed up due to employee issues around being sick and not coming to work out of fear of getting sick. This occurred for nearly a year, making a significant impact on the market. Yet again, another extension in the natural cycle.

When the more recent drought started to set in, as early as the end of 2021 in the Western United States and then into Texas and South and East, we were harvesting cows that shouldn't have been harvested.

Looking at today, we're still harvesting cows, but not at the rapid pace that we were. As we move forward, we unfortunately haven't seen ranchers hit the bottom yet. We have lots of cattle on feed right now, but we're at the beginning edge of finding the bottom of this.

We should start to see retainment of heifers in 2024. We will likely see feedyard inventories get tight. Beef prices will spike, as well as prices for fat cattle coming out of feedyard. We should see these things come to fruition for sure at the end of 2024 and in the beginning of 2025.

When we think about the cattle market and how water conservation pertains to the industry. Our water conservation efforts can make great impacts on drought. We've seen two severe droughts in 12 years. Anything and everything we can do to reserve water is important. From turning the water off while you brush your teeth to clearing out unwanted brush that uses water, there are efforts to be made in all areas of life.

In the panhandle, if you draw a 150-mile radius around Amarillo, 85 percent of cattle fed in Texas are in that circle. Those ranchers are feeding 5.5 to 6 million head of cattle each year, which represents about 28 percent of the fed-cattle supply of the U.S. Water is

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important, because most all the water used in the area comes from Ogallala Aquifer. It's important to take any pressure off the aquifer that we can.

Water is a concern when we look at weather patterns, too. We have a foreseeable water problem coming; how soon is hard to say. The Ogallala Aquifer was predicted to be down 50 percent by 2050; it decreases by about a foot per year. It's important for everyone everywhere to be conscious about water usage and conservation.

In summary and conclusion, we peaked with numbers in terms of head of cattle, and we were at the bottom of cycle when it comes to profitability. In 24 to 36 months, cow/calf will be in the market's driver seat. It's a good time to feed cattle.

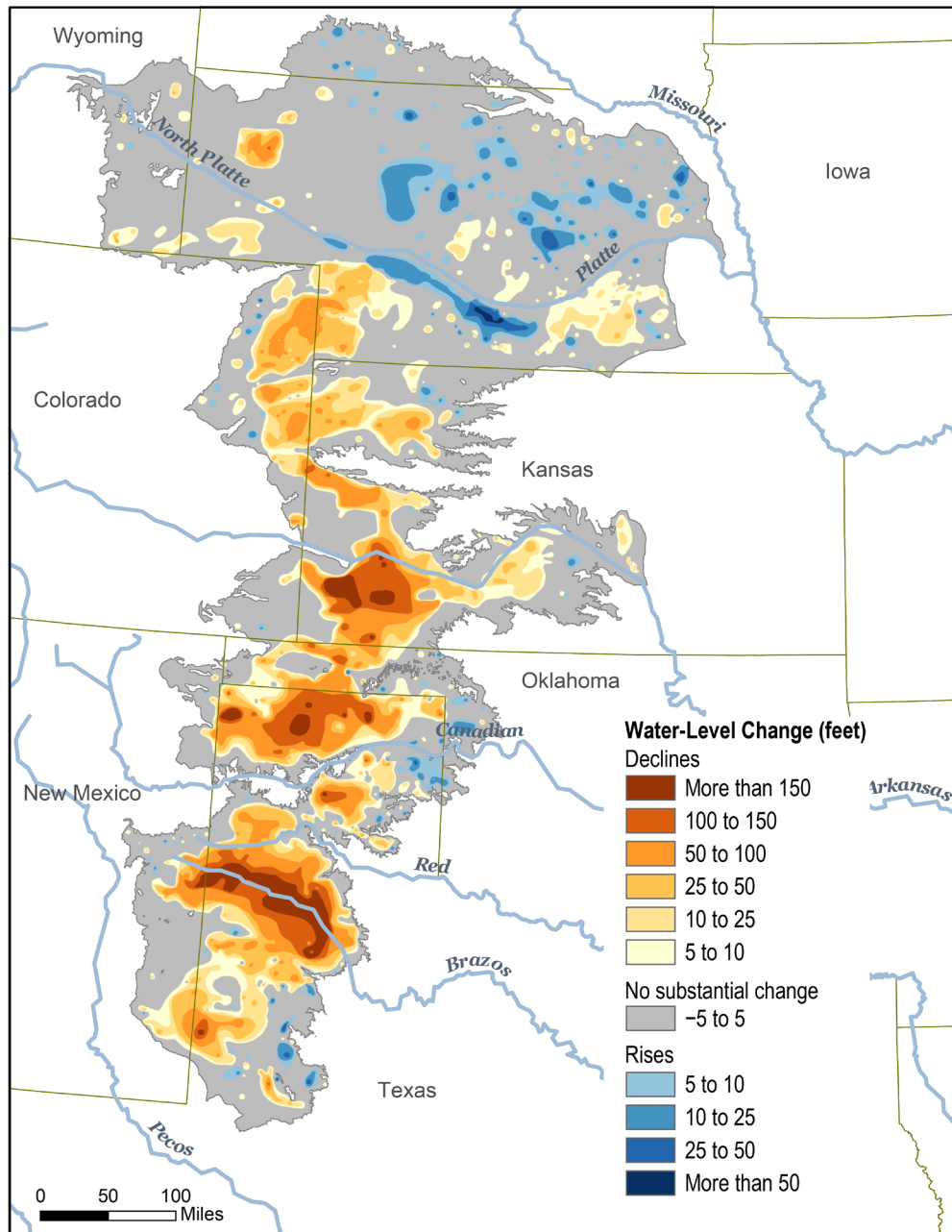
For now, the cattle market forecast is that prices are high, and they're going to get higher. Despite the issues the market faces today, and the issues it will inevitably face in the future, Miller's final word is that feeding cattle is an endeavor worthy of pursuit.

National Climate Assessment: Great Plains' Ogallala Aquifer drying out

The Ogallala Aquifer underlies parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming. From wheat and cows to corn and cotton, the regional economy depends almost exclusively on agriculture irrigated by Ogallala groundwater. But according to the Fourth National Climate Assessment (NCA4), producers are extracting water faster than it is being replenished, which means that parts of the Ogallala Aquifer should be considered a nonrenewable resource.

This map shows changes in Ogallala water levels from the period before the aquifer was tapped to 2015. Declining levels appear in red and orange, and rising levels appear in shades of blue. The darker the color, the greater the change. Gray indicates no significant change. Although water levels have actually risen in some areas, especially Nebraska, water levels are mostly in decline, namely from Kansas southward.

In the early twentieth century, farmers converted large stretches of the Great Plains from grassland to cropland. Drought and stress on the soils led to the 1930s Dust Bowl. Better soil conservation and irrigation techniques tamed the dust and boosted the regional economy. In 2007, the market value from the Ogallala region's agricultural products totaled roughly \$35 billion.



Map above and accompanying article from climate.gov; published February 2019.

However, well outputs in the central and southern parts of the aquifer are declining due to excessive pumping, and prolonged droughts have parched the area, bringing back Dust Bowl-style storms, according to the NCA4. Global warming is likely to make droughts across the Ogallala region longer lasting and more intense over the next 50 years.

The Agriculture chapter of NCA4 describes the risks and opportunities for resilience across the Ogallala region:

Recent advances in precision irrigation technologies, improved understanding of the impacts of different dryland and irrigation management strategies on crop productivity, and the adoption of weather-based irrigation scheduling tools as well as drought-tolerant crop varieties have increased the ability to cope with projected heat stress and drought

conditions under climate change. However, current extraction for irrigation far exceeds recharge in this aquifer, and climate change places additional pressure on this critical water resource.

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