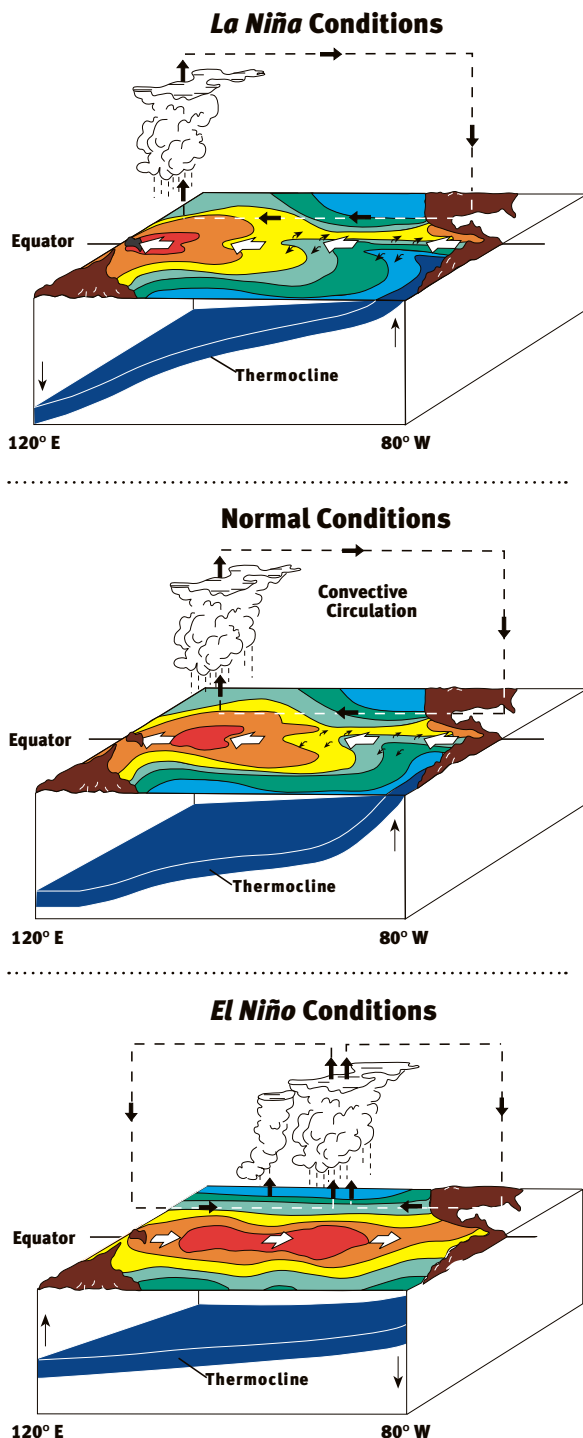


El Niño vs. La Niña

Climatologist says current *El Niño* could mean more favorable weather for Midwest crops now, but watch out for 2025.

by Mary Lou Peter, Kansas State University

Fig 1: Comparison of conditions between *La Niña* and *El Niño*



Much-needed precipitation through the U.S. heartland this year has replenished soil moisture, refilled ponds and promises to boost crop yields, thanks to the weather phenomenon known as *El Niño*, according to Iowa State University ag climatologist Elwynn Taylor. The benefits for the Midwest may continue into 2016.

El Niño is associated with a warming of Pacific Ocean water and tends to bring warmer, drier conditions to the northwest United States and cooler, wetter conditions to the Plains.

The conditions are a far cry from the recent *La Niña*, *El Niño*'s opposite, which brought drought to the central United States, said Taylor, who spoke at the recent Kansas State University (K-State) Risk and Profit Conference.

"We've just come out of the second strongest *La Niña* in recorded history, about 200 years, and that brought us a disastrous drought.

That's the drought we had in the Corn Belt in 2012. That's the first widespread drought that we've had in the Corn Belt since 1988."

He likened the *El Niño-La Niña* phenomenon to a pendulum that swings from one extreme direction for a 14-month period and then to the extreme in the opposite direction.

"Because of the rainfall and mild temperatures in the central U.S., an *El Niño* gives a 70% chance of an above-trend-line yield for corn and soybeans in the Corn Belt, if other factors don't come into play," he said, adding that when corn yields are high in the Midwest, wheat yields in northwest states tend to be below average, because *El Niño* tends to bring drought to those states.

Hard to predict

It's unclear how long the current *El Niño* will last, but in similar situations where one has followed a strong *La Niña*, the *El Niño* has lasted a full two years rather than 14 months, which is average.

"If it goes 14 months, that gets us well into 2016. It could get us off to a good start with the crop, but it could go bad after that," Taylor said, noting that *El Niño* has sometimes gone on for 24 months — even 36 months, but that's rare. "In ancient history, they've gone on for four or five years, but we don't expect to see that this time around," he said.

"With *El Niño*, we tend to have closer-to-average conditions than extremes. That is, the summer's not oppressively hot, the winter's not bitterly cold, and that is good news for people with cattle outside and people with winter wheat," he said.

Scientists who study *El Niño* and *La Niña* have a good record for knowing four or five months in advance what conditions are coming,

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says Taylor. “That’s good news, but it doesn’t get you all the way through a growing season.”

That’s why people should pay attention, he said, adding, “We don’t get a sudden change from *La Niña* to *El Niño*. That’s a gradual one over months — a gentle change. But, when a strong *El Niño* ends, it can suddenly go to a *La Niña* condition, such as the major drought we had in 1988 that began just weeks after we went into *La Niña*.”

That’s why risk management is so important, he said, adding that after *El Niño*, growers have to be ready for yields and prices to change quickly.

Clues in Gulf of Alaska

In an *Agriculture Today* radio interview during the conference, Taylor said that once an *El Niño* ends, there is often talk of high-pressure ridges forming that block precipitation. The weather forecasts reporting those are typically focused on urban areas, especially in the New England states.

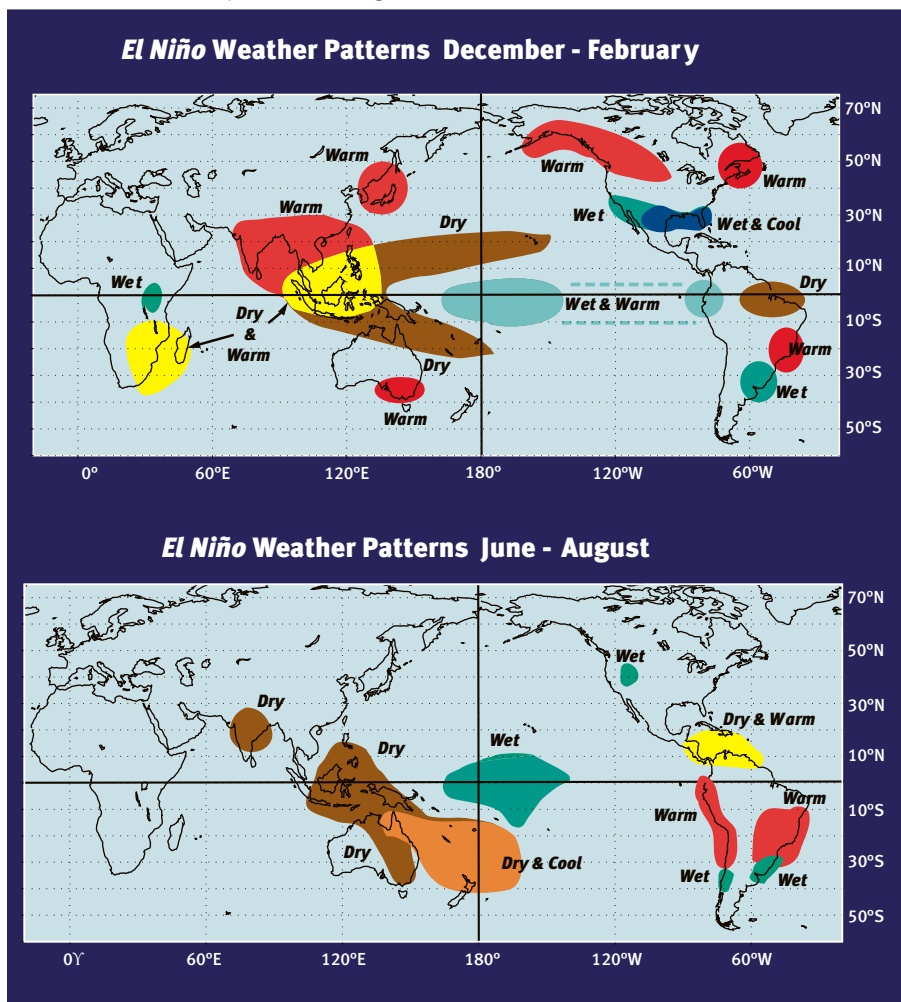
“We need to pay attention to what’s going on in the Gulf of Alaska. If we have a high-pressure system in the Gulf of Alaska, we’ve just cut off the rain in a line from Kansas City to Chicago and everything north of that. That’s a good chunk of Nebraska and Kansas,” he said.



► The current *El Niño* weather phenomenon brought more rain than usual to the country’s midsection this year, and that pattern could continue into 2016, said Elwynn Taylor, Iowa State University climatologist. The moisture should help soil moisture for the early winter wheat crop and possibly help soil conditions for 2016 row-crop planting. To listen to an interview with Taylor, click on the picture above or turn your browser to <http://bit.ly/1LJNUIV>.

but it would be typical. The harshest years for weather for Midwest crops tend to be separated by 89 years. The worst year for the 1800s in Illinois and Iowa was 1847. Records were not kept that far back for Kansas and Nebraska. In the next century, the harshest weather year for crops was 1936. Tree rings indicate the 89-year tendency has existed for several centuries.”

Fig 2: *El Niño* weather patterns during winter and summer



Source: NOAA / PMEL / TAO Project Office.

El Niño is the friend of the Midwest farmer, as well as the Argentine farmer, and those in southern Brazil and Uruguay and adjacent areas, he added. It is not the friend of the extreme northwest United States or the adjacent Canadian farmer, or farmers in northern Brazil.

“In fact some Brazilian farmers try to cover this by owning as many acres in northern Brazil as in southern Brazil,” Taylor said. While one is suffering from *El Niño*, the other is benefiting from *El Niño*. That’s a form of risk management, by having farms in two locations.”

“Also, if the Australian farmer has an enemy, it’s *El Niño*,” he added.

Watch out for 2025

Based on studies going back hundreds of years, the upcoming year 2025 bears watching, said Taylor. “2025 isn’t necessarily the year we expect a ‘Dust Bowl’ to peak,

Taylor believes this means that weather will get increasingly volatile until we hit the extremes. “Remember, volatility goes both ways,” he said, “years with record-high yields or yields with half of that, and that’s a disaster. During the 18 years before 2010, we had consistent yields.”

“This is an advantage the farmer has, to look at what is the year’s volatility, what are the likely prices I can sell my grain at or buy my feed at this year, and what the likely low will be and the likely high,” he continued. “You’re not going to hit it exactly. Just realize this is likely to be a year that will have above-trend-line yields, and so we’re going to have prices that go along with a higher yield. You don’t know exactly how low they’ll go, but as long as you’re working on the correct side of the picture, you’ll make a profit. It’s hard to go bankrupt when you’re making a profit.”

Taylor said weather conditions through the 2020s may be much like the volatile years during the 1980s.

Farmers will always deal with risk, but Taylor said U.S. farmers have good government support. “The federal government does not want farmers to take such a beating one year that they’re not in business the next, as happened back during the Dust Bowl of the ’30s. That’s why we have crop insurance. That is for most people their No. 1 risk management tool.”

Editor’s Note: Mary Lou Peter is a communications specialist with K-State Research and Extension, which provided this article.