

# La Nina is over — what it means for Iowa

A return to more average conditions

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Dr. Dennis Todey, director of the USDA Midwest Climate Hub and Ag Climatologist, held a presentation earlier this month through the Iowa Farm Bureau, hot on the coattails of the National Oceanic and Atmospheric Association's (NOAA) declaration that La Nina had ended and climate conditions would be entering a neutral state.

Most of his larger talking points were centralized on the El Nino Southern Oscillation (ENSO) — or El Nino and La Nina as it's more commonly known, and Todey started with a climate outlook now that La Nina has waned away. The outlook was broken down into categories based on the current conditions in Iowa, ENSO, other oscillations, trends, and computerized models and used to project the rest of 2023's chances of seeing ENSO's shift toward El Nino.

So earlier in March, NOAA announced that La Nina was over, but understanding the significance might require some explanation of the discrete factors that interact and cause the ENSO in the first place.

In layman's terms, the ENSO event is the cyclical warming and cooling of sea surface temperatures in the central Pacific Ocean driven by Earth's trade winds. Those trade winds are easterly winds that blow in toward the equator in both hemispheres.

The enhanced strength of the trade winds essentially churns the ocean surface toward the west. Stronger winds push more ocean, and as the ocean water is dredged toward Australia, Polynesia, and southeast Asia, a cooler body of deeper ocean water rises up higher than usual. As the colder water rises from the deep, it lowers the sea surface's temperature.

With that, if the sea surface is colder, there's less warm, buoyant air forming into parcels and rising into the atmosphere. Less warm air ascending upward means less condensation and precipitation.

The countries across the ocean gain additional rainfall as the warmer Pacific waters are continuously being shifted in that direction. But as the trade winds weaken, the atmospheric and oceanic conditions equilibrate by returning to closer-to-average temperatures and subsequent condensation and precipitation.

ENSO's ripple effects are often felt in North, South, and Central America, while the inverse effects manifest in Polynesia, southeast Asia, and Australia.

But back to Todey's presentation, he started with how those trade winds had finally died down after a few years' worth of a La Nina event. "The development today and what's happening with El Nino-La Nina is that we've had, if you've been listening, La Nina has been in play for the last three years. And as of today [March 9],

NOAA has declared that the La Nina is gone. There is no longer a La Nina. The area we're talking about here is the sea surface temperatures in the central Pacific, in the eastern and central Pacific Ocean," he began.

But now that the La Nina effects have concluded, Todey added that it means a return to more average conditions. "So La Nina is going away and finally gone now... So we are going to be in what we call neutral conditions as we go on into the spring and early summer. That's the area between La Nina and El Nino," he explained.

But worth noting, the El Nino stage is already on the way; it's still being determined how long it'll take to get there, but it's coming.

"We're actually going to be shifting toward El Nino. It's just a matter of how quickly we get there," Todey stated. He did quickly predict that El Nino would be in play for next year, though.

But that prediction, and regarding the United States and Iowa, it means more precipitation is on its way. Typically, southern states receive the lion's share of added precipitation, but the El Nino's shockwaves reach Iowa, as well.

Todey then broke down an ENSO probability forecast. He used climate data from the three-month period of February, March and April 2023 to predict the chances of still being in a neutral phase versus an El Nino event for other three-month periods later this year. There's an outside chance that El Nino begins in May, but it jumps to about a 15 percent probability once in June. Then from there, the chances go up to about 35 percent in July and nearly 50 percent in August. The probability of El Nino's arrival by September is close to 60 percent. And then it jumps to about 62-63 percent in October through December.

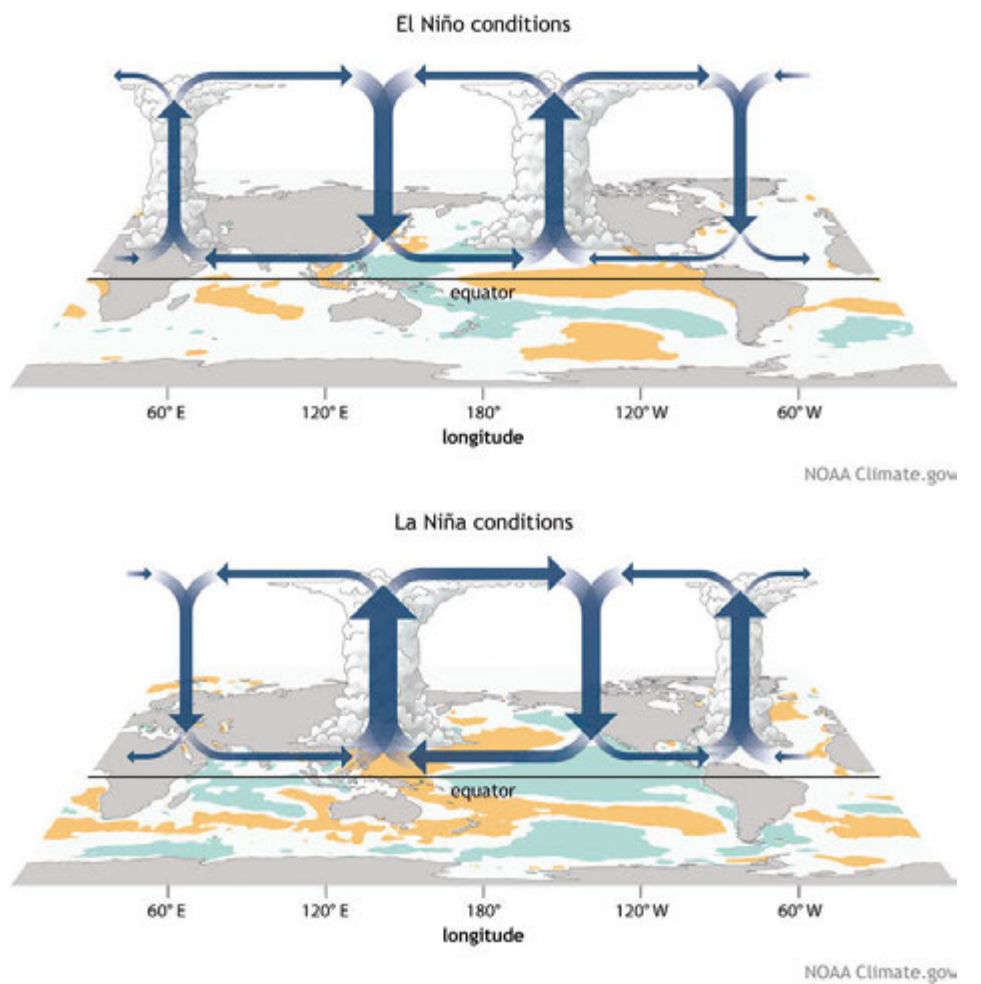
"So we are in a situation where we are headed toward El Nino; looks like we're probably going to end up being in El Nino by early winter or fall. We could even be there by late summer," Todey revealed.

For Iowa, he noted, El Nino is good — but historically not great — news. "And that typically, for us, is a good thing. El Nino growing seasons tend not to be bad. They may not be great, but they tend not to be bad... So heading toward El Nino is probably a good thing for nearly all the corn belt," he said.

It stands to reason that the next couple of months will likely be in neutral conditions as planting season begins, but Todey revisited the concept that — maybe counter-intuitively — those intermediate, neutral phases have had greater precipitation levels on average compared to El Nino and La Nina, especially in the spring.

"And you actually see the neutral, the average precipitation in spring is higher during neutral conditions than it is El Nino or [La Nina]."

So as he continued, this could pose a problem for Iowan regions that are already wetter than average and a boon to those that are drier.



"So, the areas that are in wet eastern Iowa, Illinois may not want to see this. Areas [like] Western Iowa, Nebraska, and north actually may want to see this because this would give us [Iowa] the soil moisture recovery.

Additionally, the temperatures tend to be a little cooler during El Nino summer months, as well, which bodes well for yields. "So that's why we have a little better chances for our growing season, more moderate in the way of precipitation, unlikely to be too

warm," Todey added. "So overall, it tends to be, if we can get into El Nino by that point, we would improve our situation."

NOAA's website offers a climate prediction tool that can be broken down into various time frames. Todey suggested that it could be beneficial for farms' decision-making. Those "ag interpretations" outlooks are updated on a regular basis. The USDA website offers numerous digital climate tools as well. ■

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Times Citizen (USPS 235-180) is published semi-weekly by Times Citizen Communications, Inc., 406 Stevens Street, Iowa Falls, Iowa 50126. Periodicals postage paid at Iowa Falls, Iowa and additional entry offices. Subscription: \$75.00 per year in Hardin and surrounding counties; \$90.00 in all other Iowa counties and outside Iowa (U.S.).  
Postmaster: Send address changes to Times Citizen, Co., Box 640, Iowa Falls, Iowa 50126-0640.

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