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How will El Nino alter our winter weather?

By: Bryan Painter / The Oklahoman

El Nino is not just about presence; it's about power.

That's what I took from a tutorial with Gary McManus of the Oklahoma Climatological Survey on a subject I've heard about but never really understood.

After seeing reports that El Nino conditions are expected to strengthen, I asked McManus what this has meant for Oklahoma historically and what it might mean this winter.

"You not only have to pay attention to whether it's an El Nino event, but the strength of it as well," he said. "Because a strong El Nino could mean above-average rainfall, but a weak El Nino could mean drier conditions."

El Nino is an oscillation of the ocean-atmosphere system in the tropical Pacific having important consequences for weather around the globe, according to the National Oceanic and Atmospheric Administration.

Generally speaking, the upper air patterns change, McManus said. And that shifts the storm tracks, or jet streams. For example, many times the jet stream will steer storms from the northwestern United States down to the southeast and across the Rockies and into Oklahoma. However, with El Nino they come into Southern California and take a more southerly path.

"Then central and southern Texas will get those weather patterns," he said. "If it's a strong El Nino, we may see those storms affect us."

The Climate Prediction Center has said a weak El Nino was present in July. Now, a majority of the model forecasts suggest El Nino will continue to strengthen. While there is a disagreement on the eventual strength of El Nino, nearly all models predict a moderate to strong El Nino during the upcoming winter.

What does that mean for Oklahoma? Well, the better way to say that is what might that mean. There is an uncertainty.

The Oklahoma Climatological Survey looked at all El Nino events from 1951 to 2005 during the cool months of October through March. The effects on the different regions of Oklahoma were studied and then compared with classifications used by the Climate Prediction Center.

In the span of 1951 to 2005, there were eight "weak" El Nino events, and during those Oklahoma generally had below-average rainfall.

The study also showed eight "moderate" El Nino events. The results were mixed in terms of rainfall with above average rainfall in the western third of the state, as well as the north central and south central areas, and a tendency for below normal rainfall in the southeast

Also, there were four "strong" El Nino events.

The influence of the four strong events was easily seen, with above- average rainfall in all areas of the state, McManus said. The second-wettest October through March since 1951 occurred in east central and southeastern Oklahoma with the strong El Nino of 1998.

The average departure from normal for the four events included about 3 inches more rain than normal in the Panhandle, in the October through March time period, and more than 9 inches above normal in southeastern Oklahoma.

After providing all that information, McManus returned to where we started.

"Remember, each El Nino is different," he said.