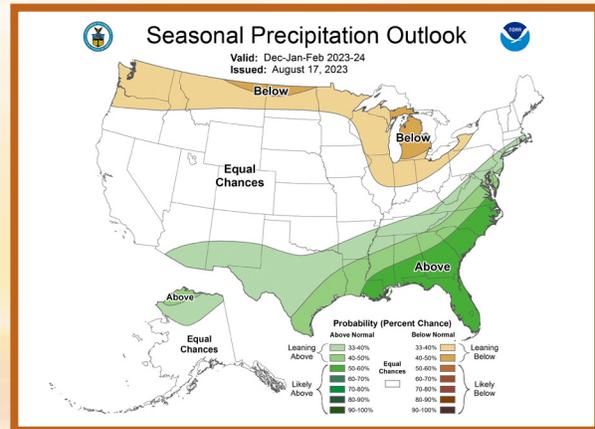
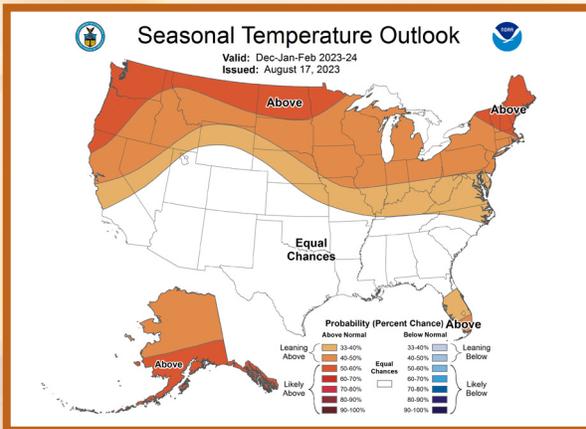




# THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

## GOODBYE LA NIÑA, HELLO EL NIÑO



By Mark D. Schneider

After three consecutive years of La Niña, many North Dakotans are ready for a change. The Climate Prediction Center’s (CPC) latest forecast predicts a greater than 95% chance that the current El Niño will continue through the upcoming winter months. There is also a 56% chance for a strong El Niño this winter, and during strong events North Dakota typically experiences milder winters.

For review, the American Meteorological Society Glossary defines El Niño as “a significant increase in sea surface temperature over the eastern and central equatorial Pacific that occurs at irregular intervals, generally ranging between two and seven years.” In Spanish, El Niño means “the (boy) child” and its name originated when fishermen in northern Peru noticed a warm coastal current that developed close to Christmas and began referring to it as “the Christ Child.” The warmer waters in the eastern Pacific can have a marked effect on strengthening the subtropical jet stream and pushing the polar jet stream northward. The two jet streams can remain in a “split” pattern for much of the winter season, resulting in milder temperatures and less snowfall for the northern tier of the U.S. The graphics show the CPC’s three-month temperature and precipitation outlooks for this December through February. Notice North Dakota’s above average chance for warmer temperatures and less precipitation during this period.

The last strong El Niño event occurred during the 2015-16 winter season. If you remember February of 2016, Bismarck had its second warmest on record, and Dickinson, Jamestown, Minot, and Williston all had a top ten warmest February. Also of note were the months of December and January when most major weather stations recorded monthly average temperatures between five and ten degrees above normal. Another strong El Niño event of significance occurred in 1997-98 when Bismarck reached a record high temperature of 56 degrees on January 1, 1998!

During an El Niño event, other oceanic cycles such as the Pacific Decadal Oscillation (PDO) are coinciding with it to either strengthen or weaken its signal. For example, in 2009-2010 the PDO was in a negative phase and worked to help cancel out El Niño’s effects. PDO phases typically last 20 to 30 years and in 2014 the PDO shifted to a positive phase which can act to enhance El Niño’s effects.

North Dakotans could be in store for a milder than normal winter and reap some of El Niño’s warming benefits. Because snowfall is so variable across our state, the differences during an El Niño winter are sometimes unnoticeable. So, keep your winter coats and shovels handy this winter, even though you might not need them quite as often.

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