

THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

OCTOBER Relief & A Look Ahead

By Mark D. Schneider

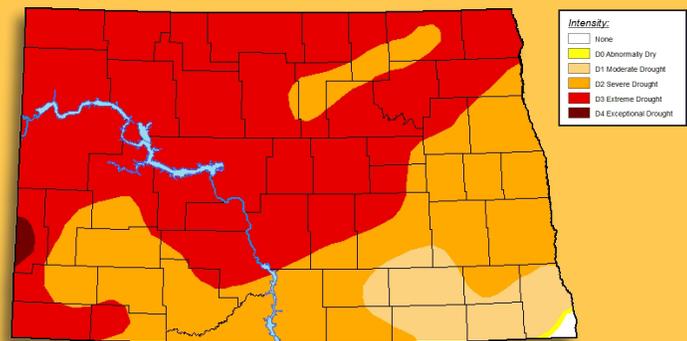
After more than a year of drought conditions affecting most of North Dakota, some locations experienced a "Top 10" wettest October and the latest first freeze on record. Bismarck recorded 3.35 inches of rain during October, making it the seventh wettest on record. Statewide, a "normal" October equates to only one to two inches of precipitation and ranks among the drier months of the year. However, this October's rains were double or in some cases triple the monthly averages leading to some replenishment of soil moisture and improvement in the overall drought conditions (see drought monitor images for comparison). Above normal temperatures were observed throughout our state during October as well. Monthly average temperatures were five to seven degrees Fahrenheit above normal. Bismarck had its latest first freeze on October 15, just topping the previous record of October 14 set in 2008.

In early November when this article was written, Megan Jones, Climate Program Leader for the National Weather Service Bismarck said that "we're expecting the mild fall to continue, with December as a transition month before normal to below normal temperatures in the January through March period. At this point, all outcomes are possible for winter precipitation, as there are no strong signals in the data. Right now we have an equal chance of seeing above, below, or near normal precipitation."

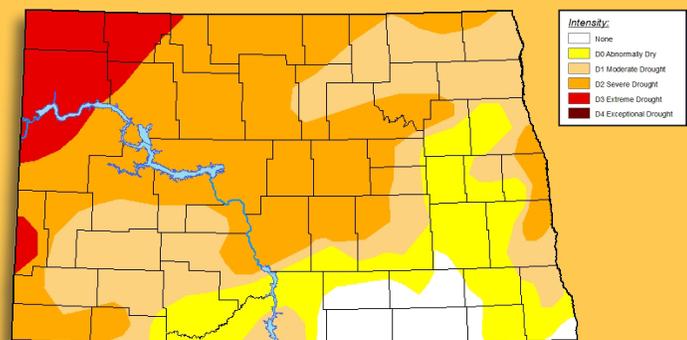
There are currently La Niña conditions in the central and east-central equatorial Pacific Ocean and Jones mentioned that "a La Niña Advisory is in effect for the upcoming winter, which will be the second winter in a row with a La Niña. This favors much of North Dakota for below average temperatures, due to a more variable polar jet stream that can bring cold Arctic air down from the high latitudes. No two La Niña events are the same, and there are many climate features that emerge on a shorter time scale

U.S. DROUGHT MONITOR

September 28, 2021



October 26, 2021



that can influence our weather. La Niña on its own does not have much influence on precipitation, although there is some indication that the second of back-to-back La Niñas is slightly skewed towards above average precipitation in the winter."

North Dakota will need the help of winter snows and spring rains to end drought conditions before next year's growing season. Megan Jones added, "as far as drought goes, the main thing we're hoping for is a modest snowpack heading into the spring. Any precipitation this winter will be beneficial, but a late season normal to above normal snowpack would help provide much-needed runoff and replenish soil moisture."

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