



THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

A November to Remember

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After an abnormally cold and wet October, many North Dakotans believed that winter had made an early arrival. November turned out to be a welcome surprise. The majority of farmers who were unable to harvest their crops earlier this fall were provided ideal late-season harvest conditions during the month. Grasses remained green and plants and vegetation actually began blooming again in some parts of the state where conditions were exceptionally mild!

According to National Weather Service (NWS) data, Bismarck, Minot, and Fargo had their second warmest Novembers on record with only 0.04 inches of precipitation at Bismarck, a trace at Minot, and 0.41 inches at Fargo for the month. Similar conditions were seen across the state with Dickinson, Jamestown, and Grand Forks experiencing their third warmest Novembers with 0.02, 0.15, and 0.29 inches of precipitation and Williston receiving its fifth warmest November and only 0.02 inches.

From Nov. 2008 to Dec. 2009, there were only two months when temperatures averaged above normal. Those months were September and November of this year. During the month of November Bismarck had 20 days when the mercury topped 50 degrees. This is an historic occurrence and happened only once before—in Nov. 2001!

As this article was being written in early December, cold air was migrating southward into our state, resulting in below normal temperatures. Dec. 1st marked the beginning of meteorological winter,

adequate subsoil moisture supply. Most producers should be pleased with these conditions and with the rapid freeze that occurred in early December, trapping moisture in the ground for next season's crops.



which continues until the end of February, so it's appropriate that cold temperatures and snow made a reappearance on that date. The El Nino forecast for this winter should bring above average temperatures and, according to NWS data, snowfall over our region will likely be 67 to 85 percent of normal.

If dry conditions continue through the winter, limited agricultural consequences should be observed. A wet October provided much needed subsoil moisture to our state. According to the USDA National Agricultural Statistics Service (NASS) Nov. 30th report, 71 percent of North Dakota had an

Eastern North Dakota has been struggling to dry out its well-saturated soils and the rest of the state will possibly benefit more from a wet spring than a wet winter. A recent study by Texas A&M University and the University of Delaware points to a link between spring snowfall and summer moisture conditions in the Northern Great Plains. Spring snowfall and rains tend to promote more moisture during the summer because of evaporation from soils and vegetation.

As mentioned in previous articles, this evapotranspiration can prove an essential ingredient to convective cloud development and rainfall during the growing season.

In any case, we can look back at November with gratitude and ahead at the next growing season with promise.

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