

THE ATMOSPHERIC RESERVOIR

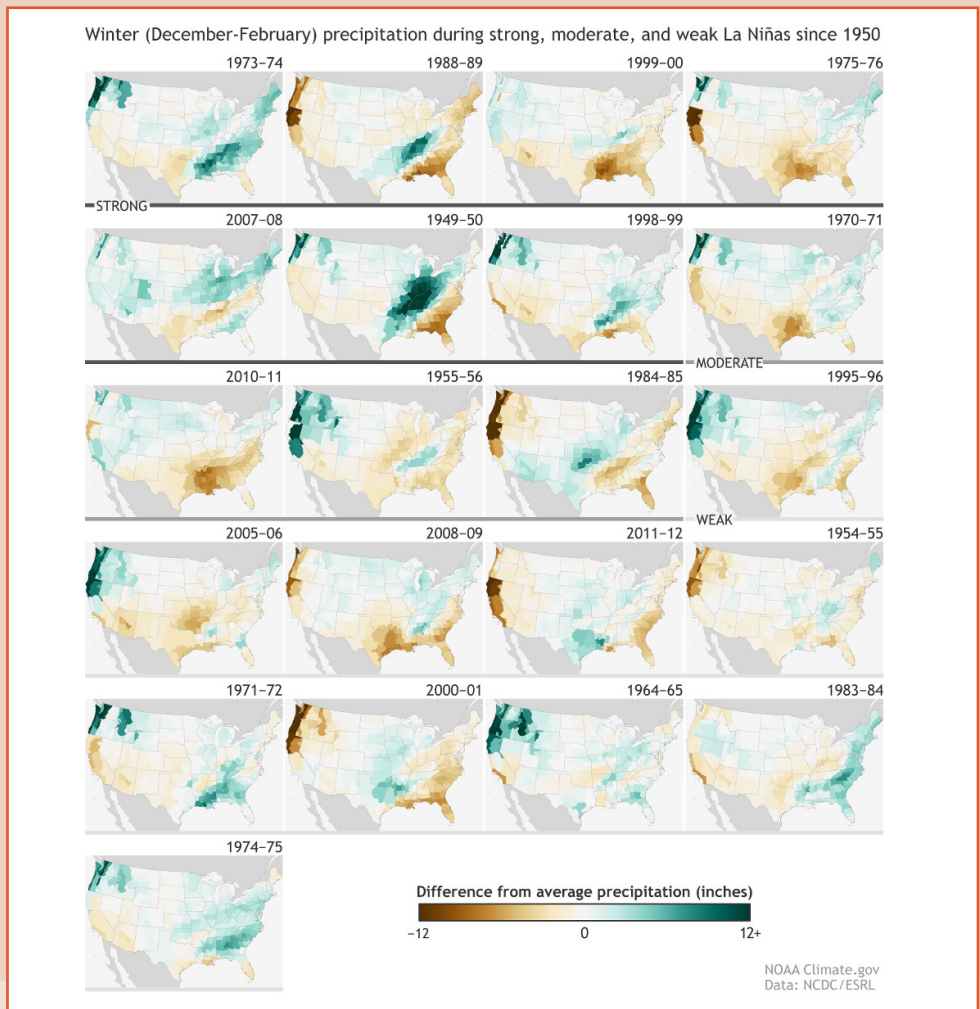
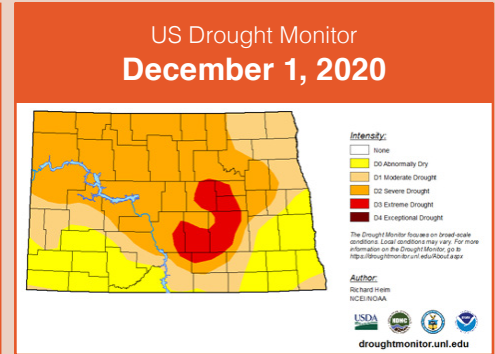
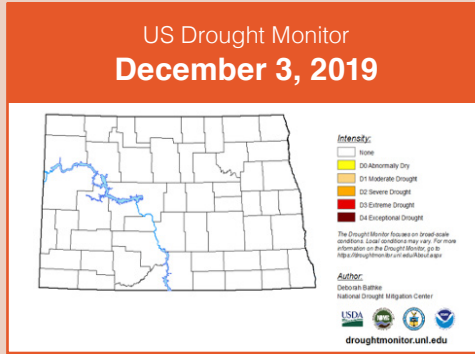
Examining the Atmosphere and Atmospheric Resource Management

WINTERING A DROUGHT

By Mark D. Schneider

A sharp contrast in moisture conditions across North Dakota is seen by comparing the drought monitor maps from December 2019 and 2020. Unfortunately, moderate to extreme drought conditions have established themselves over much of our state. A warm, dry 2020 translated into below normal soil moisture conditions and hope for a long-term change in our weather pattern. In November, less than one quarter inch of precipitation was recorded in Bismarck, Dickinson, Grand Forks, Jamestown, Minot, and Williston. Along with these dry conditions, Bismarck, Dickinson, Jamestown, and Minot all finished with a top twenty warmest November on record. Average monthly temperatures for these locations were five to seven degrees above normal for the month.

La Niña made news headlines again recently and a moderate to strong event is forecasted for North Dakota through at least winter and possibly spring. For review, La Niña is an oceanic-atmospheric connection that exists when cooler water temperatures over the eastern Pacific Ocean cause a dip in the jet stream over the northern tier of the U.S. This weather pattern can be favorable for below normal temperatures and a slight increase in precipitation over our state. There's a large variability in the actual precipitation that North Dakota receives during La Niña years though. Looking at the thumbnail images of previous La Niña winters, notice that strong La Niña winters tend to have a more consistent increase in precipitation than moderate or weak years. Let's hope for a strong La Niña or at least plentiful spring rains to help alleviate North Dakota's drought!



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