

THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

Deja Drought

By Mark D. Schneider

Moisture has been difficult to come by in western and central North Dakota during most of this last year. As of mid April when this article was written, the entire western half of our state was experiencing moderate (D1) to extreme (D3) drought conditions. Snowfall this season is only 35 to 40 percent of normal for areas between Bismarck and Williston. Storm systems brought snow to areas along the southern border of North Dakota, through northern South Dakota, and to the eastern part of the state early in the season, but left most everyone else high and dry.

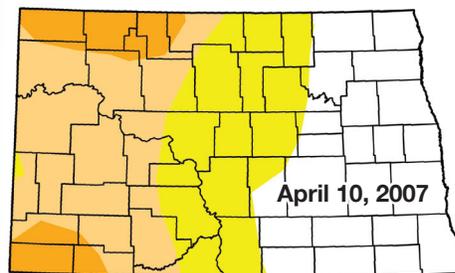
Even the eastern half of North Dakota is feeling the effects of the recent dry spell. In early December conditions were looking good for areas in and around the Red River Valley due to record daily snowfalls. Eastern North Dakota was just recently placed in the abnormally dry (D0) category because of the dry start to spring the state is experiencing.

The two drought maps of North Dakota show some similarity between dry conditions for April 2007 and 2008. The main difference between the two years is the severity of drought in western and north central North Dakota resulting from the much below normal snowfall this season.

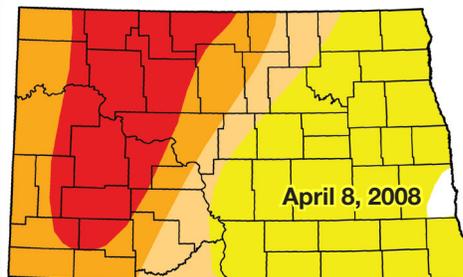
The meteorological explanation for why storm systems have been

missing our state involves a “split flow pattern.” A split flow occurs when the jet stream separates into a distinct polar and subtropical jet. The polar jet typically remains in

DROUGHT MONITOR from the National Drought Mitigation Center



Legend for Drought Severity:
D0 Abnormally Dry (Yellow)
D1 Drought - Moderate (Orange)
D2 Drought - Severe (Dark Orange)
D3 Drought - Extreme (Red)
D4 Drought - Exceptional (Dark Red)



Canada and the subtropical jet typically positions itself in the central plains of the U.S. With a split flow weather regime North Dakota gets bypassed by both Alberta Clippers and Colorado Lows. Storm systems move rapidly through each branch of the jet stream. The area in between these two jet streams, in this case North Dakota, becomes a stagnant zone with little opportunity for precipitation.

That’s not to say that we didn’t receive colder temperatures during the winter though. In fact, according

to the North Dakota State Climate Office Seasonal Summary, the state average air temperature for February was 9.9 degrees Fahrenheit which is below the 1971-2000 normal of 15.4 degrees Fahrenheit. Cold air still migrated southward through our state even though we were missed by most of this winter’s storms.

It’s hard to believe that North Dakota has gone from experiencing drought conditions to normal moisture and back to drought conditions in just under a year. That same scenario could occur this year if above normal growing season moisture is received. At this point, most of us would be happy just to see an average growing season rainfall.

Hopefully, when you are reading this article in May, rains will have already started bringing much-needed relief. Most farmers and ranchers agree that this is an especially important growing season because of crop and commodity prices. Some farmers in western and central North Dakota have begun seeding their crops earlier this season in order to take advantage of what little soil moisture is still available. As the old saying goes, “hope springs eternal.”

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