727 Hardin Hall
3310 Holdrege Street
Lincoln, NE 68583-0997
402 472-6706
Fax 402 472-8763
http://hprcc.unl.edu

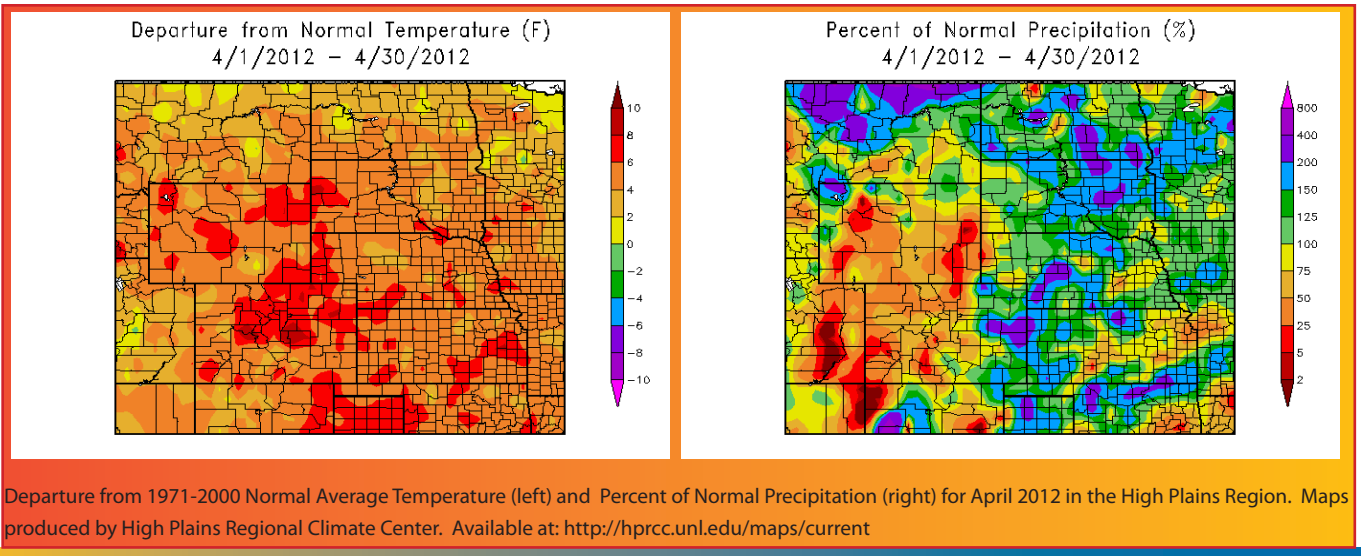
Iris garden in Lincoln, Nebraska - Photo by Holly Lussenden
http://hprcc.unl.edu

April 2012 Climate Summary

Region Breakdown

The High Plains Region was warm again this month. Similar to March, based on preliminary data, every station in the Region had above normal temperatures. Monthly temperature departures of 4.0-6.0 degrees F (1.1-3.3 degrees C) above normal were widespread across the Region and areas where temperature departures were 6.0-8.0 degrees F (3.3-4.4 degrees C) above normal included central and eastern Colorado, central and northeastern Wyoming, western South Dakota, the panhandle of Nebraska, and southeastern Kansas. The warmth caused numerous locations to be ranked in the top 10 warmest Aprils on record. Wichita, Kansas had its 5th warmest April on record with an average temperature of 62.5 degrees F (16.9 degrees C) which was 7.2 degrees F (4.0 degrees C) above normal (period of record 1888-2012). The record from 1981 and 1896 stood at 63.7 degrees F (17.6 degrees C).

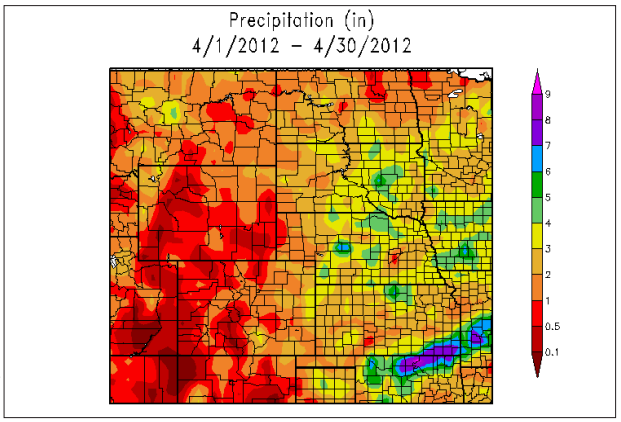
The warm conditions this spring allowed for planting progress, especially of corn, to be ahead of schedule throughout the Region. Going into April, there were concerns in the southern portion of the Region about the possibility of freeze damage as the average last freeze date is around mid-April to early May. While freezing temperatures did occur, only slight freeze damage was reported. Aside from agriculture, plant development in general was ahead of schedule. In southeast Nebraska, for instance, roses and peonies were blooming about 5 weeks ahead of schedule.

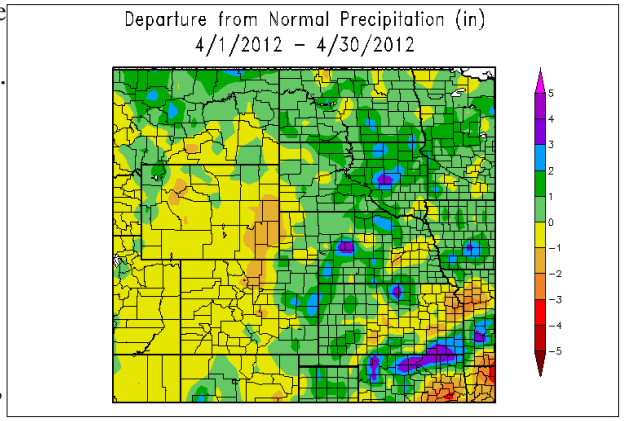


Departure from 1971-2000 Normal Average Temperature (left) and Percent of Normal Precipitation (right) for April 2012 in the High Plains Region. Maps produced by High Plains Regional Climate Center. Available at: http://hprcc.unl.edu/maps/current

Precipitation Summary

Precipitation varied across the Region this month. Much of the eastern half of the Region had precipitation totals which were higher than normal, while lower than normal precipitation areas included most of Wyoming, the western half of Colorado, central and northeastern Kansas, and isolated pockets in Nebraska and the Dakotas. Most of the above normal precipitation locations ranged from 125-200 percent of normal, but there were pockets of 200-400 percent of normal precipitation that occurred in east-central Colorado, west-central Nebraska, east-central South Dakota, and southeastern North Dakota.





Above: Total precipitation (inches) (top) and Departure from Normal Precipitation (inches) (bottom) for April 2012 in the High Plains Region. These maps are produced by HPRCC and can be found on the Current Climate Summary Maps page at: http://hprcc.unl.edu/maps/current.

Although monthly records were not broken, there were some daily precipitation records and most of these occurred in the middle and at the end of the month. The severe storms of April 14th were accompanied by heavy rainfall of 2-3 inches (51-76 mm) across portions of northern Kansas, Nebraska, and eastern South Dakota. April 30th was extremely wet in southern Kansas, near the Oklahoma border. Take, for instance, Parsons 2 NW, Kansas which received 5.35 inches (136 mm) of precipitation on that day. This one-day precipitation total was more than what Parsons usually gets in the entire month of April (normal April precipitation is 3.82 inches (97 mm)). This also completely crushed the old daily record of 2.68 inches (68 mm) which was set in 1954 (period of record 1925-2012).

Snowfall was sparse this month and due to the continued warmth, snow pack has declined in the mountainous portions of the Region. According to the Natural Resources Conservation Service, by the end of the month, the statewide snowpack was 19 percent of average in Colorado and 45 percent of average in Wyoming. The low snowpack has raised concerns about irrigation water availability for the growing season. In addition, according to the *Denver Post*, Independence Pass was scheduled to open two weeks ahead of schedule because of the lack of snow in the mountains. The pass usually opens the Thursday before Memorial Day weekend.

Severe Weather Summary

April was an active severe weather month across the High Plains Region. Severe weather was reported somewhere in the Region on 15 days and resulted in a total of 396 reports (tornadoes, high winds, and large hail). The most notable severe weather day was the April 14th severe weather outbreak which brought high winds, large hail, flash flooding, and tornadoes, some of which were long-tracked, to the Region. The severe weather started in the morning and lasted until the early hours of April 15th. Ultimately, at least 50 tornadoes, ranging in strength from EF0-EF4, were confirmed.

April 2012 - Storm Reports
April 2011 Totals in Parentheses

State	Tornado	Hail	Wind
Colorado	3 (0)	10 (0)	6 (4)
Kansas	90 (3)	125 (114)	46 (54)
Nebraska	25 (0)	58 (17)	20 (0)
North Dakota	0 (0)	0 (0)	0 (0)
South Dakota	1 (0)	6 (5)	3 (1)
Wyoming	0 (0)	1 (0)	2 (2)
Total	119 (3)	200 (136)	77 (61)

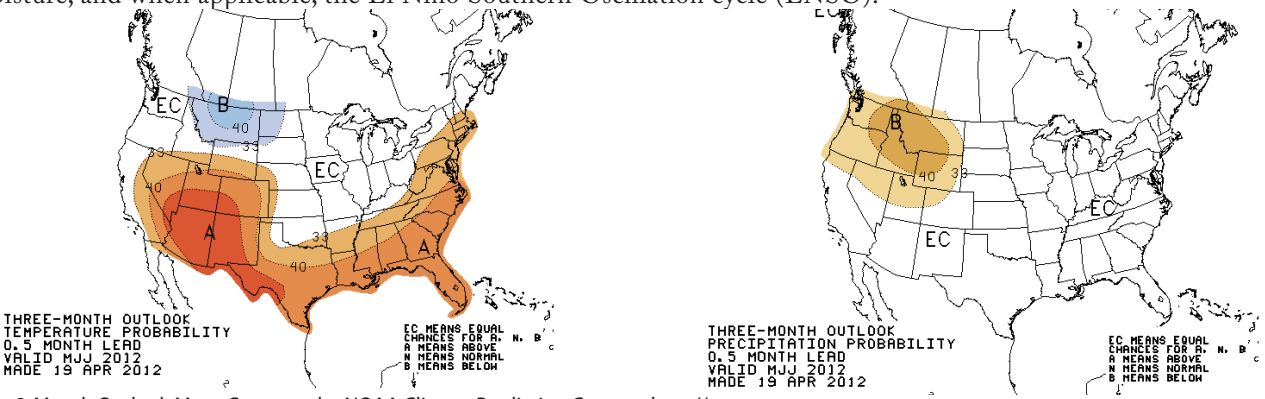
Storm report totals are preliminary and are provided by the NOAA Storm Prediction Center located in Norman, OK. For more information on storm reports and the Storm Prediction Center, please see: http://www.spc.noaa.gov.

The High Plains Regional Climate Center is one of the Regional Climate Centers, and is involved in the Applied Climate Information System (ACIS) development and management effort. Data found throughout this publication were derived using products built on the ACIS framework.

ACIS
Applied Climate Information System - Regional Climate Centers

Climate Outlook

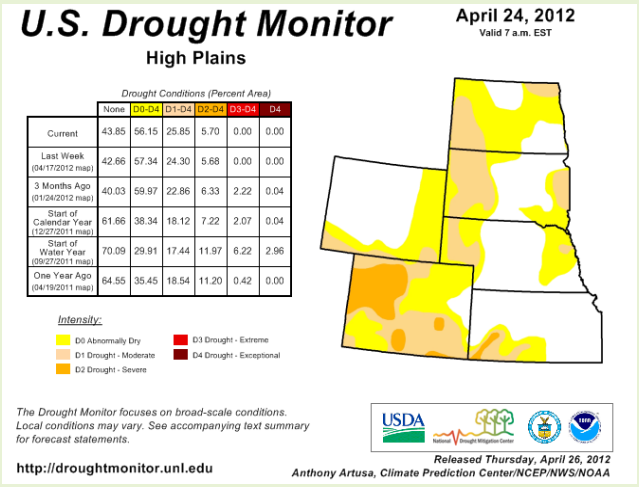
La Niña conditions are currently transitioning to ENSO-neutral conditions. The temperature outlook indicates a higher probability of above normal temperatures for all of Colorado, the southern half of Wyoming, western Kansas, and western Nebraska. There is also a higher probability of below normal temperatures in the western half of North Dakota, northwestern South Dakota, and far northern Wyoming. The precipitation outlook indicates a higher probability of below normal precipitation for the majority of Wyoming and the northwestern corner of Colorado. Equal chances of above, near, or below normal precipitation and temperature are predicted elsewhere in the Region. The seasonal outlooks combine the effects of long-term trends, soil moisture, and when applicable, the El Niño Southern Oscillation cycle (ENSO).

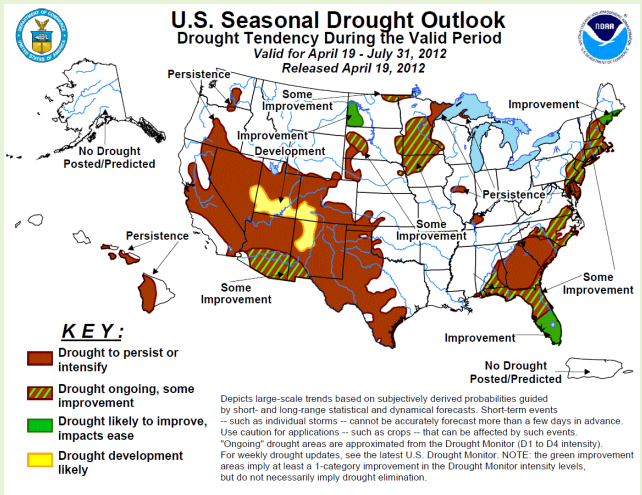


Above: 3-Month Outlook Maps Courtesy the NOAA Climate Prediction Center - http://www.cpc.ncep.noaa.gov
(left) The Three-Month Temperature Probability Outlook, (right) The Three-Month Precipitation Probability Outlook

Drought Watch

There were many changes again to the U.S. Drought Monitor this month. The drought conditions in the areas near the Colorado-Kansas border have continued to improve as all extreme drought conditions (D3) have been erased and only a couple of small areas of severe drought conditions (D2) remain. In eastern South Dakota, D2 was downgraded to moderate drought conditions (D1) and some drought conditions were completely eliminated in the northwest portion of the state. Although recent rains have led to improvements in these areas, others have seen degradation. The small area of D2 in western Colorado has expanded to include much of the west-central portion of the state. A patch of D1 that was in western South Dakota has been extended north into North Dakota and south into the panhandle of Nebraska. Abnormally dry conditions (D0) were also expanded to include eastern Wyoming and small areas of D1 have also crept into southern portions of the state. According to the U.S. Seasonal Drought outlook released on April 19th, drought conditions were expected to improve in areas of the Dakotas and eastern Nebraska. Drought conditions elsewhere in the High Plains Region were expected to persist or develop.





The U.S. Drought Monitor is produced as a joint effort of the U.S. Department of Agriculture (USDA), National Drought Mitigation Center, U.S. Department of Commerce and the National Oceanic and Atmospheric Administration (NOAA). Real-time data provided through ACIS from the Regional Climate Centers are often used by the agencies involved in the U.S. Drought Monitor when determining the area and intensity of drought conditions, although the product itself is not produced by HPRCC. For current Drought Monitor information, please see: http://droughtmonitor.unl.edu/

Portions of this Drought Watch are courtesy the Drought Monitor Text Discussion found on the Drought Monitor webpage.

State Summaries

Colorado	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Alamosa San Luis Airport	66.3	25.7	46.0	5.2	79	04/24	13	04/17	0.20	-0.34	37
Akron Washington County Airport	67.3	39.5	53.4	6.3	90	04/24	28	04/09	1.65	0.07	104
Colorado Springs Municipal Airport	66.5	38.3	52.4	7.1	84	04/24	27	04/07	0.85	-0.77	52
Grand Junction Walker Field Airport	71.1	39.6	55.4	4.5	89	04/24+	25	04/07	0.29	-0.57	34
Pueblo Memorial Airport	71.5	38.9	55.2	5.3	92	04/24	30	04/08	0.80	-0.45	64

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	70.2	45.8	58.0	5.2	94	04/25+	32	04/08	4.37	1.92	178
Dodge City Regional Airport	69.3	45.5	57.4	3.5	93	04/24	34	04/16	3.44	1.19	153
Goodland Renner Field	68.0	41.2	54.6	5.8	93	04/24	30	04/16	2.86	1.35	189
Topeka Municipal Airport	73.1	47.9	60.5	6.0	97	04/25	35	04/21	2.47	-0.67	79
Wichita Mid-Continent Airport	73.0	51.9	62.5	7.2	95	04/25	35	04/08	5.24	2.67	204

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	67.9	34.6	51.3	5.4	92	04/24	18	04/09	1.20	-0.69	63
Grand Island Airport	69.1	43.3	56.2	6.3	96	04/24	30	04/11+	1.41	-1.20	54
Lincoln Municipal Airport	69.7	42.3	56.0	4.8	92	04/25	26	04/11	3.49	0.59	120
Omaha Eppley Airfield	69.0	45.0	57.0	5.6	91	04/25+	31	04/11	3.72	0.78	127
Norfolk Karl Stefan Airport	67.7	41.2	54.5	5.4	92	04/01	25	04/10	3.14	0.55	121
North Platte Regional Airport	66.5	38.0	52.2	4.1	93	04/24	26	04/09	3.68	1.71	187
Valentine Miller Field	65.8	38.3	52.1	6.0	91	04/01	20	04/10	2.99	1.02	152

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	60.1	34.0	47.1	3.8	88	04/24	18	04/11	1.71	0.25	117
Fargo International Airport	60.2	36.1	48.1	4.6	77	04/24	15	04/11	1.10	-0.27	80
Grand Forks International Airport	58.7	33.4	46.0	3.8	77	04/23	19	04/11	1.41	0.18	115
Theodore Roosevelt Airport	60.7	31.9	46.3	3.5	90	04/24	16	04/10	1.65	-0.11	94
Williston International Airport	60.0	32.6	46.3	3.8	90	04/24	11	04/10	1.20	0.15	114

All Data are Preliminary and Subject to Change. + indicates multiple dates, latest date listed.
Source: National Weather Service Cooperative Observation Network Data
Data are retrieved through the Applied Climate Information System (ACIS).
These data are available for the entire period of record through the CLIMOD system. For more information please see http://hprcc.unl.edu/services.

April 2012 Climate Summary

South Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Aberdeen Regional Airport	61.2	36.1	48.6	3.2	87	04/24	15	04/11	3.65	1.82	199
Huron Regional Airport	63.3	39.2	51.3	5.2	91	04/01	20	04/11+	5.44	3.15	238
Pierre Regional Airport	63.9	37.6	50.8	3.5	91	04/01	21	04/10	3.15	1.13	156
Rapid City Regional Airport	64.6	36.2	50.4	5.7	87	04/01	27	04/11+	3.08	1.22	166
Sioux Falls Joe Foss Field Airport	64.2	39.1	51.7	6.0	89	04/01	20	04/11	2.40	-0.25	91

Wyoming	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Casper Natrona County International AP	63.6	30.6	47.1	4.4	83	04/24	16	04/08	1.01	-0.51	66
Cheyenne Municipal Airport	62.2	34.7	48.5	6.9	80	04/24	24	04/09	0.40	-1.15	26
Lander Hunt Field Airport	63.8	35.0	49.4	5.5	83	04/23	25	04/08	1.02	-1.05	49
Laramie Regional Airport	59.3	28.3	43.8	6.6	77	04/24	13	04/07	0.54	-0.52	51
Rawlins Municipal Airport	60.8	30.4	45.6	4.0	79	04/24	20	04/09+	0.70	-0.36	66
Sheridan County Airport	62.1	32.7	47.4	3.5	85	04/23	20	04/08	1.31	-0.46	74

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State Spotlight - North Dakota

F. Adnan Akyüz - State Climatologist, Barb Mullins
North Dakota State Climate Office, North Dakota State University

Precipitation:

The North Dakota Agricultural Weather Network (NDAWN) April percent of normal precipitation was less than 100% in the northeast and northwest. The remaining areas were above normal (Figure 1. North Dakota State Climate Office). The greatest amounts of around 200% of normal fell in the central and southern parts of the state. The first 12 days of April were relatively dry with only a few scattered showers across the state. Rain events were more wide spread for the remainder of the month. NDAWN total monthly rainfall ranged from approximately 0.50 inches in the northwest to 3.60 inches in the southeast. The US Drought Monitor April 24, 2012 report had moderate (D1) drought listed for the northeast corner and the southwest, no drought conditions in the north central and southeast, and abnormally dry (D0) conditions listed elsewhere.

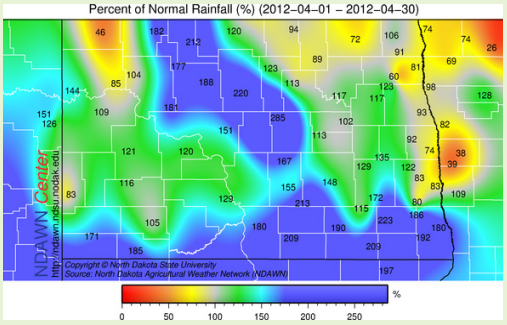

Figure 1. Percent of Normal Precipitation in April 2012 for North Dakota (North Dakota State Climate Office)

Temperature:

NDAWN April monthly average air temperatures ranged from 43 °F to 49 °F. NDAWN departure from normal average temperatures were above normal across the state and ranged from 2 °F to 7 °F (Figure 2. North Dakota State Climate Office). Daily average air temperatures were primarily above normal the first few days of April with the remainder of the month having mostly near normal to above. The National Weather Service reported breaking several high temperature records on the 23rd and 24th in the central and western parts of the state.

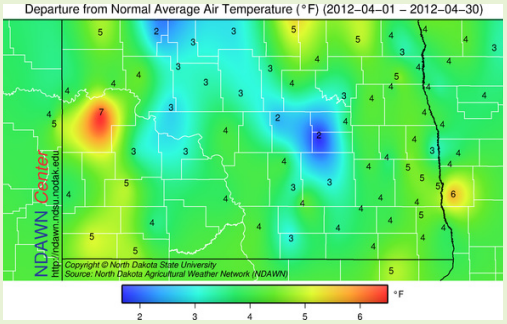

Figure 2. Temperature Departure from Normal in April 2012 for North Dakota (North Dakota State Climate Office)

For more information about the North Dakota State Climate Office: http://www.ndsu.edu/ndsco
For more information on the North Dakota Agricultural Network: http://www.ndawn.ndsu.nodak.edu
The North Dakota Agricultural Network is a part of the Automated Weather Data Network (AWDN).

About the High Plains Regional Climate Center

The High Plains Regional Climate Center (HPRCC) operates out of the University of Nebraska - Lincoln (UNL) in Lincoln, Nebraska. As one of 6 regional climate centers throughout the nation, HPRCC works closely with other organizations such as the National Climatic Data Center (NCDC), Local and Regional National Weather Service (NWS) Offices, and other climate services organizations such as the National Drought Mitigation Center (also located at UNL) to provide climate data services and specialized climate products.

For More Information Online

High Plains Regional Climate Center: http://hprcc.unl.edu

High Plains Regional Climate Services: http://hprcc.unl.edu/services

CLIMOD: http://climod.unl.edu

Regional Climate Centers and ACIS: http://www.rcc-acis.org

National Weather Service: http://www.weather.gov

National Climatic Data Center: http://ncdc.noaa.gov

University of Nebraska - Lincoln: http://www.unl.edu

National Drought Mitigation Center: http://drought.unl.edu

Climate Prediction Center: http://www.cpc.noaa.gov

NOAA Storm Prediction Center: http://www.spc.noaa.gov

Photo of the Nebraska Sandhills by Bill Sorensen - Senior Programmer - HPRCC

Author Information

For questions, comments, or suggestions, please contact:
Natalie Umphlett - Regional Climatologist - High Plains Regional Climate Center
(402) 472-6764 - numphlett2@unl.edu
712 Hardin Hall
3310 Holdrege Street
Lincoln, NE 68583-0997