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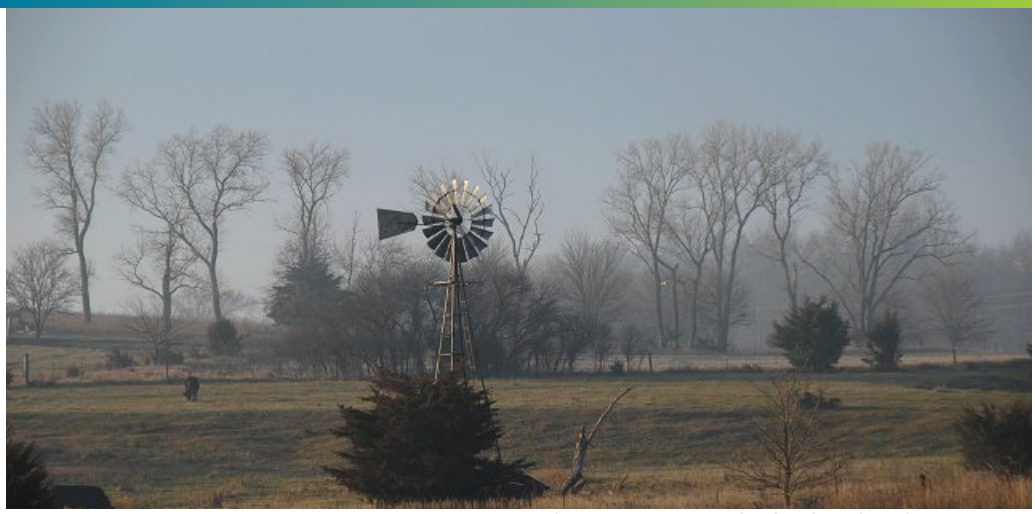


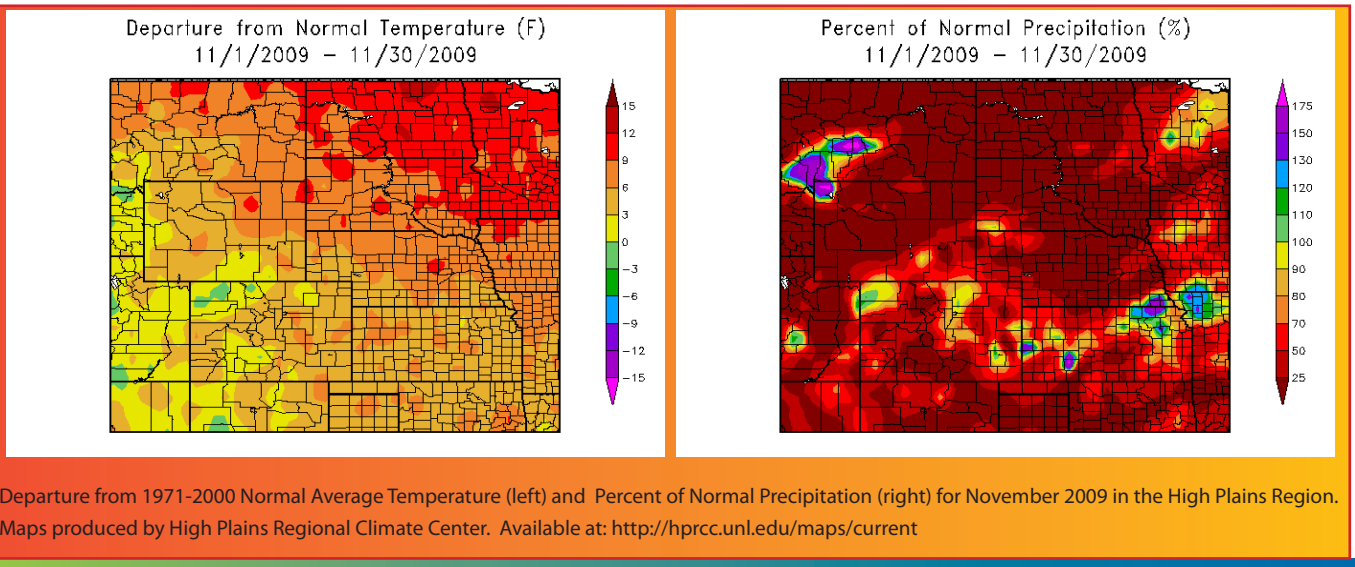
A hazy morning in rural Nebraska - Photo by Ken Dewey
http://www.nebraskaweatherphotos.org

November 2009 Climate Summary

Region Breakdown

November 2009 was warm and dry across the High Plains Region which was in stark contrast to the record setting cold and wet weather of October. Many locations received little to no precipitation this month and average monthly temperature departures ranged from near normal in small portions of Colorado and Wyoming to 3°F to 9°F (1.7°C to 5.0°C) above normal in Kansas, Nebraska, and remaining portions of Colorado and Wyoming. The Dakotas even had average temperature departures of over 12°F (6.7°C). In addition, many of the same locations that ranked in the top 5 coolest Octobers on record ranked in the top 5 warmest Novembers on record.

This month's warm location was Spearfish, South Dakota. After recording its third coolest October on record, Spearfish recorded its warmest November on record (1962-2009) with an average temperature of 47.2°F (8.4°C). This smashed the previous record of 43.0°F (6.1°C) set in 2001. Interestingly, in Spearfish, November was warmer than October which had an average temperature of only 41.1°F (5.2°C).

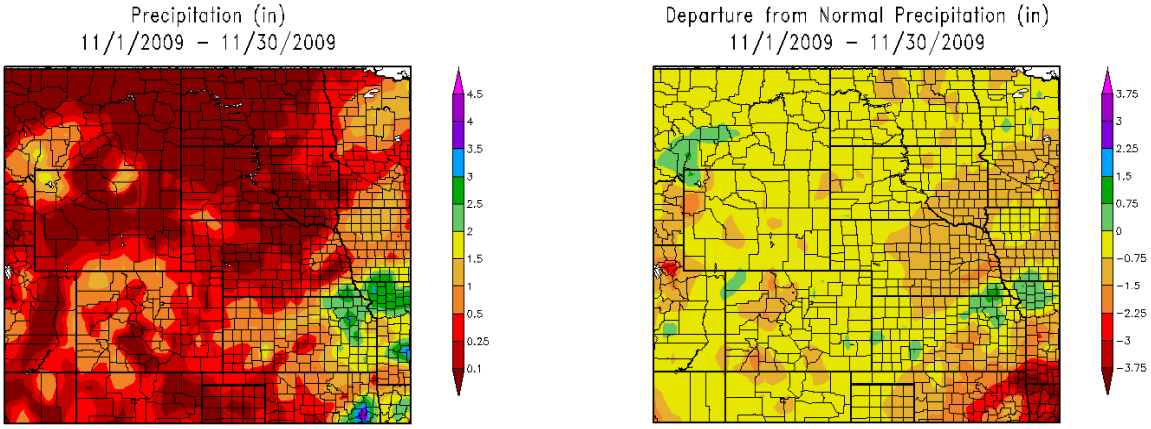


Departure from 1971-2000 Normal Average Temperature (left) and Percent of Normal Precipitation (right) for November 2009 in the High Plains Region.
Maps produced by High Plains Regional Climate Center. Available at: http://hprcc.unl.edu/maps/current

Precipitation Summary

November 2009 was drier than normal for the majority of the Region as many locations received little to no precipitation. Large areas of the Dakotas, Nebraska, and Wyoming received only 25% of normal precipitation. These dry conditions coupled with the warm temperatures allowed for farmers to make good progress towards harvesting of row crops, moving cattle onto stalks, and fall tillage. However, due to the high moisture content, the corn harvest remained delayed as many dryers were running at full capacity and some facilities were limiting the delivery of wet grain.

The few locations that received near to above normal precipitation included pockets of Kansas, southeast Nebraska, and Colorado. A mid-month snow storm brought heavy snow to the Nebraska-Kansas border where snowfall rates of up to 1-2 inches (2.54-5.08 cm) per hour were recorded and the heaviest snowfall totals ranged from 5-10 inches (12.70-25.40 cm). The heavy snow led to reduced visibilities, slick roads, closed schools, and power outages.



Above: Total precipitation (inches) (left) and Departure from Normal Precipitation (inches) (right) for November 2009 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.

November 2009 Records - Highlights

Monthly Records

Precipitation in inches, Temperature in degrees F

Driest	New Record	Old Record/Year	Period of Record
Blanca, CO	0.00	tied/1989*	1909-2009
Alliance, NE	0.00	tied/2002*	1894-2009
O'Neill, NE	0.00	tied/1967*	1893-2009
Garrison 1 NNW, ND	0.00	tied/1963*	1948-2009
Minot Intl AP, ND	0.00	tied/1999*	1948-2009
Lemmon, SD	0.00	tied/2007*	1896-2009
Tyndall, SD	0.00	tied/1939*	1893-2009
Lander Hunt Field AP, WY	0.01	tied/1949*	1948-2009
New Castle, WY	0.00	tied/1963*	1918-2009
Warmest	**New Record**	**Old Record/Year**	**Period of Record**
Greeley, NE	45.0	44.5/1913	1927-2009
Cavalier, ND	35.6	tied/1981*	1934-2009
Wilton, ND	37.2	36.0/1962	1927-2009

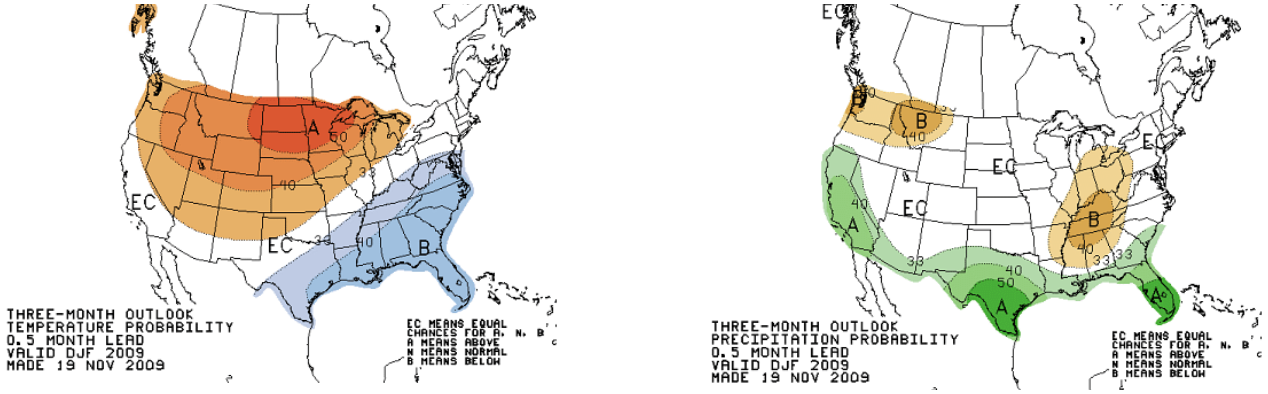
All Data are Preliminary and Subject to Change.
* indicates multiple records, latest year is listed
Source: National Weather Service Cooperative Observation Network Data

The High Plains Regional Climate Center is one of the NOAA 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 - NOAA Regional Climate Centers

Climate Outlook

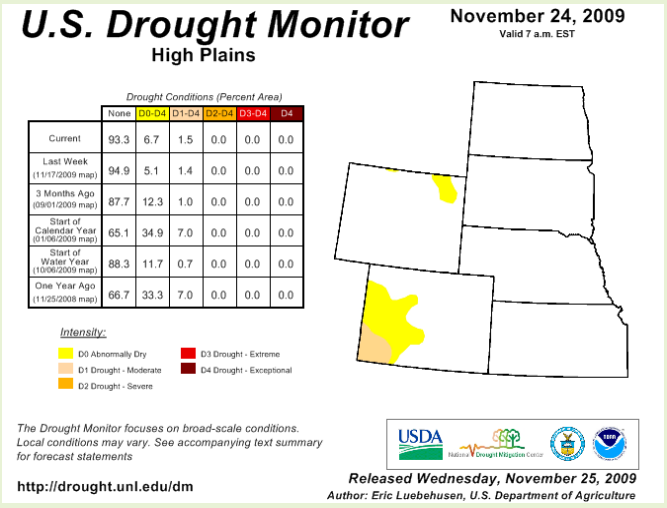
El Niño conditions were present this month and are expected to intensify and continue through winter 2009-10 based on current observations and forecasts. The temperature outlook indicates a higher probability of above normal temperatures for the whole Region. The precipitation outlook indicates that there are equal chances of above, near, or below normal precipitation for the entire Region. The seasonal outlooks combine the effects of long-term trends, soil moisture, and when applicable, the El Niño Southern Oscillation (ENSO) cycle. More information about these forecasts can be found here: http://www.cpc.ncep.noaa.gov/.

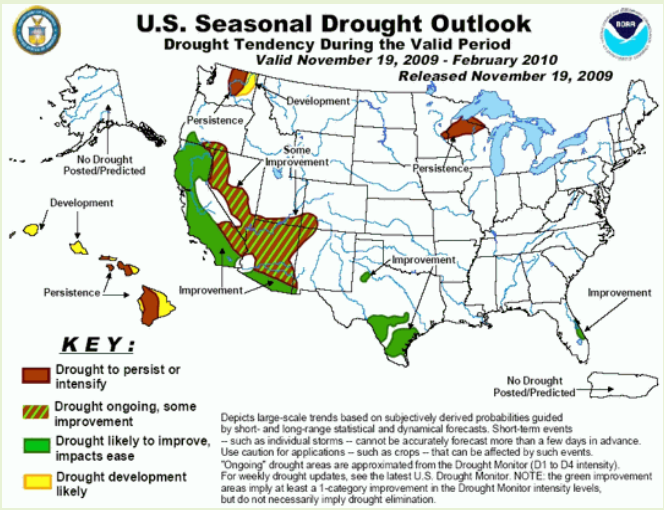


Above: 3-Month Outlook Maps Courtesy the NOAA Climate Prediction Center - http://www.cpc.ncep.noaa.gov
(left) The Three-Month Temperature Probability Outlook, (right) The Three-Month Precipitation Probability Outlook

Drought Watch

This month there was little change to the U.S. Drought Monitor for the High Plains Region. North Dakota, South Dakota, Nebraska, and Kansas remained drought free. In Colorado, the southwest corner continued to have moderate drought (D1) and much of the surrounding area in the western part of the state continued to have abnormally dry conditions (D0). But, according to the U.S. Seasonal Drought Outlook released November 19th, the drought conditions in the southwest corner of Colorado are expected to improve through February 2010.





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 NOAA 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://www.ndmc.unl.edu/dm/monitor.html
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	52.5	14.2	33.4	5.0	69	11/07	-2	11/25	0.11	-0.37	23
Akron Washington County Airport	53.7	28.6	41.1	4.4	75	11/05	14	11/16	0.19	-0.50	28
Colorado Springs Municipal Airport	55.3	27.5	41.4	5.2	74	11/05	12	11/24	0.45	-0.07	87
Grand Junction Walker Field Airport	55.1	27.2	41.2	3.1	70	11/07	17	11/27	0.05	-0.66	7
Pueblo Memorial Airport	60.5	24.7	42.6	4.2	80	11/06+	10	11/24	0.07	-0.51	12

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	57.2	35.9	46.5	5.7	73	11/08+	23	11/26	0.79	-0.66	54
Dodge City Regional Airport	58.9	34.5	46.7	4.3	83	11/06	22	11/18	1.63	0.62	161
Goodland Renner Field	56.6	29.0	42.8	5.4	79	11/06	17	11/17	0.58	-0.24	71
Topeka Municipal Airport	59.9	37.6	48.8	6.1	78	11/01	23	11/30	2.23	-0.08	97
Wichita Mid-Continent Airport	60.8	39.8	50.3	6.1	76	11/07	26	11/26	0.56	-1.26	31

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	57.0	25.1	41.0	7.3	78	11/05	16	11/16	0.37	-0.20	65
Grand Island Airport	56.8	30.6	43.7	7.3	76	11/06	17	11/18	0.17	-1.24	12
Lincoln Municipal Airport	57.6	30.3	44.0	5.9	74	11/08	18	11/30	0.06	-1.52	4
Omaha Eppley Airfield	56.3	35.1	45.7	7.7	75	11/08	24	11/30+	0.36	-1.46	20
Norfolk Karl Stefan Airport	55.7	30.7	43.2	8.1	75	11/06	16	11/18	0.40	-1.04	28
North Platte Regional Airport	55.6	24.4	40.0	5.4	78	11/06	15	11/18+	0.08	-0.68	11
Valentine Miller Field	55.9	24.8	40.4	7.4	81	11/06	11	11/26	0.05	-0.67	7

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	52.3	23.8	38.1	10.1	72	11/06	14	11/26+	0.04	-0.66	6
Fargo International Airport	47.9	29.0	38.4	11.4	60	11/07	18	11/20	0.41	-0.65	39
Grand Forks International Airport	46.9	24.9	35.9	10.1	59	11/11	15	11/20	0.29	-0.70	29
Theodore Roosevelt Airport	51.3	22.3	36.8	7.8	76	11/06	12	11/29	0.02	-0.57	3
Williston International Airport	50.0	21.1	35.5	9.9	72	11/06	10	11/29	0.02	-0.63	3

All Data are Preliminary and Subject to Change.
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.

November 2009 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	50.5	25.9	38.2	8.9	62	11/12+	17	11/26+	0.22	-0.53	29
Huron Regional Airport	52.9	27.9	40.4	9.1	71	11/06	16	11/16	0.07	-0.82	8
Pierre Regional Airport	54.3	27.8	41.1	7.8	75	11/06	15	11/26	0.14	-0.56	20
Rapid City Regional Airport	55.7	25.1	40.4	7.0	77	11/06	15	11/16	0.18	-0.43	30
Sioux Falls Joe Foss Field Airport	52.8	29.7	41.2	9.9	70	11/06	17	11/18	0.17	-1.19	12

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	52.2	24.6	38.4	6.4	71	11/05	8	11/15	0.05	-0.77	6
Cheyenne Municipal Airport	50.2	25.7	37.9	4.6	70	11/05	13	11/15	0.46	-0.18	72
Lander Hunt Field Airport	49.5	22.5	36.0	5.7	65	11/05	15	11/29+	0.01	-0.98	1
Laramie Regional Airport	42.0	14.6	28.3	-0.1	65	11/05	-7	11/19	0.38	-0.26	59
Rawlins Municipal Airport	45.7	20.9	33.3	1.8	64	11/05	7	11/15	0.25	-0.40	38
Sheridan County Airport	52.6	22.4	37.5	6.5	77	11/05	9	11/13	0.26	-0.54	33

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Source: National Weather Service Cooperative Observation Network Data
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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:

November monthly precipitation was far below normal across the state. The eastern edge of the state had less than 50% of normal precipitation. The remainder of the state had less than 25% of normal precipitation (Figure 1. High Plains Regional Climate Center). The monthly total precipitation ranged from less than 0.5 inches along the eastern edge to less than 0.1 inches for the remainder of the state. The state average precipitation was 0.06 inches which figured to 11% of normal precipitation. At Bismarck, the total precipitation tied for the 9th driest November (data since 1874). The dry conditions were a welcomed change after a wet October. Producers were able to harvest crops and prepare fields for the 2010 growing season.

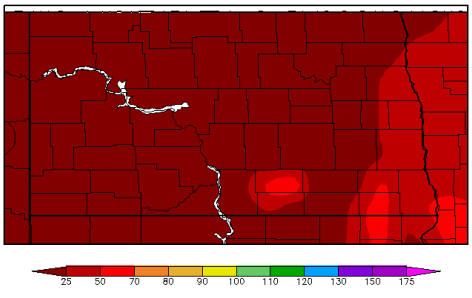

Figure 1. Precipitation Percent of Normal in November 2009 for North Dakota (High Plains Regional Climate Center)

Temperature:

November brought dry conditions and warmer temperatures. The monthly departure from normal air temperatures were above normal across the state with a range of 3°F to 13°F above normal, with the greater departures of 11 to 13 in the east and the smaller departures of 8 to 11 in the west (Figure 2. North Dakota State Climate Office). The monthly average temperatures ranged from 33°F to 40°F where the cooler temperatures were to the north and warmer temperatures to the south. The November average temperatures ranked 5th warmest at Bismarck (data since 1874), 3rd warmest at Williston (data since 1962), 2nd warmest at Fargo (data since 1881), and 3rd warmest at Grand Forks (data since 1893).

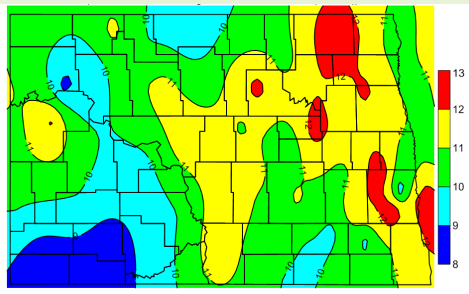

Figure 2. Temperature Departure from Normal in November 2009 for North Dakota (North Dakota Climate Center)

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 operated under the National Oceanic and Atmospheric Administration (NOAA), 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

NOAA 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

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