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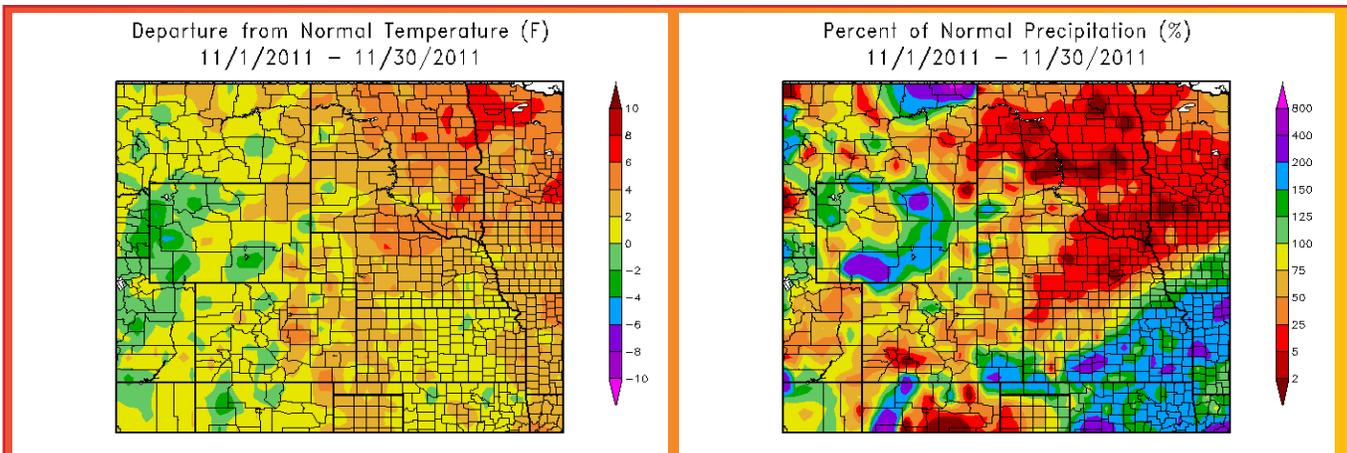


Iridescent Clouds in Colorado - Photo by Holly Lussenden
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November 2011 Climate Summary

Region Breakdown

Overall, the High Plains Region experienced a warm and dry November. These conditions were favorable for crop producers and allowed most of the remaining harvesting activities across the Region to be completed. The largest temperature departures were in the Dakotas, northern Nebraska, and pockets of eastern Colorado. In these areas, temperatures were generally 4-6 degrees F (2.2-3.3 degrees C) above normal. Although a few locations had temperature departures which were 6-8 degrees F (3.3-4.4 degrees C) above normal, monthly temperature records were not set this month. Below normal temperatures were confined to western Wyoming and a few isolated locations throughout the Region. While monthly temperature records were not set this month, many locations set new daily temperature records on or near Thanksgiving. Interestingly, for many locations across the Dakotas the warmest and coldest temperatures of the month occurred near Thanksgiving. For instance, Bismarck, North Dakota had its lowest temperature of the month, 0 degrees F (-17.8 degrees C), on November 20th and just three days later set a new record high of 62 degrees F (16.7 degrees C) on November 23rd. Thanksgiving was unusually warm across the Region this year and many locations set new record highs for the day. Omaha, Nebraska recorded its warmest Thanksgiving on record with a high temperature of 73 degrees F (22.8 degrees C). This was also the warmest temperature ever recorded this late in the autumn season in Omaha (period of record 1871-2011). On average, October 27th is the last day of the season that is at least that warm in Omaha.



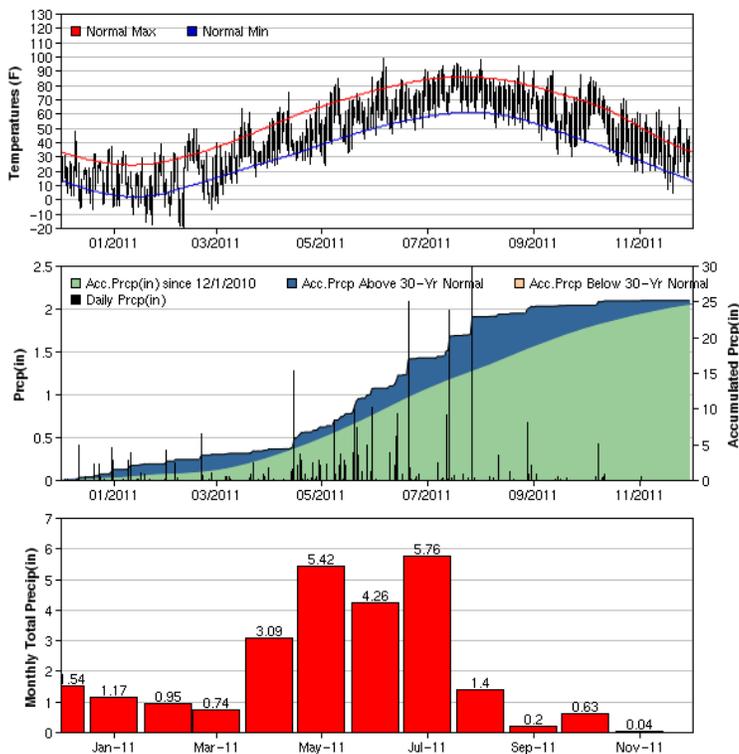
Departure from 1971-2000 Normal Average Temperature (left) and Percent of Normal Precipitation (right) for November 2011 in the High Plains Region. Maps produced by High Plains Regional Climate Center. Available at: <http://hprcc.unl.edu/maps/current>

Precipitation Summary

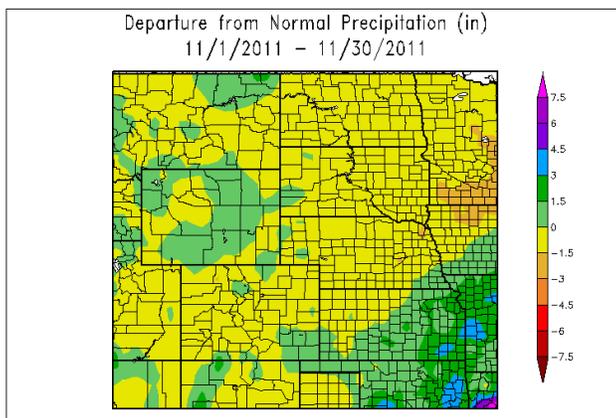
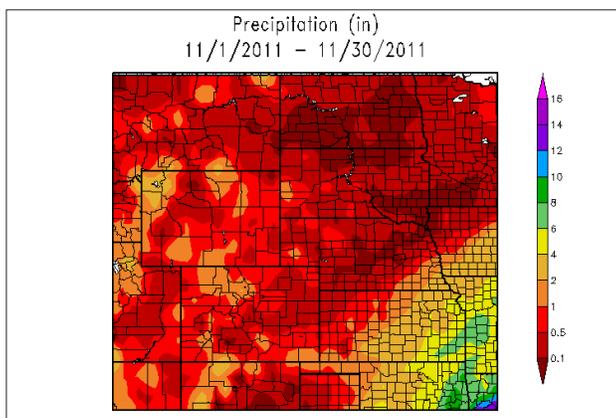
November 2011 was drier than normal for most of the Region. Many locations in North Dakota, South Dakota, and a swath running from southwest to northeast Nebraska received less than 25 percent of normal precipitation. According to the U.S. Drought Monitor, the ongoing lack of precipitation caused moderate drought conditions to spread into eastern North Dakota, eastern South Dakota, and northern Nebraska. Additionally, abnormally dry conditions spread across North Dakota and into parts of western South Dakota. For many locations, this autumn (September, October, and November) was one of the driest on record. One of the many locations to set records this autumn was Sioux Falls, South Dakota which only received 0.87 inches (22 mm) over the three month period. To put this amount into perspective, the normal precipitation for autumn in Sioux Falls is 6.30 inches (160 mm). The old record for driest autumn occurred in 1952 with 1.02 inches (26 mm) of precipitation (period of record 1893-2011).

There were some exceptions to the dryness this month. Central Wyoming, southern and eastern Kansas, and the southeastern corner of Colorado all received at least 150 percent of normal precipitation. The precipitation was a welcome sight in the drought impacted areas of Kansas and Colorado. Heavy rains occurred November 7-8 in southern and eastern Kansas. During this time many daily precipitation records were set and, when combined with the rest of the month, the precipitation helped many locations to be ranked in the top 10 wettest Novembers on record. Topeka, Kansas received 2.98 inches (76 mm) over the two day period, which included 2.05 inches (52 mm) on the 7th alone. This amount crushed a long-standing daily precipitation record of 1.43 inches (36 mm) set in 1918 (period of record 1887-2011). By the end of the month, Topeka had received 4.66 inches (118 mm) of precipitation which was the 8th wettest November on record. It is interesting to note that on average, November is usually one of the driest months of the year; however this November was the second wettest month of 2011 in Topeka.

SIoux FALLS FOSS FLD, SD



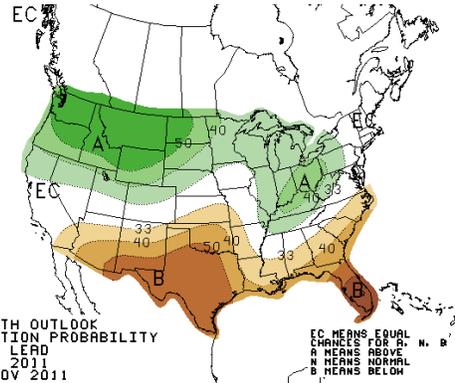
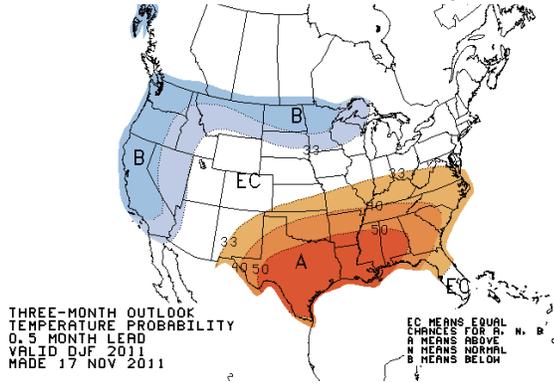
Normals based up 1971-2000 Normals, if available
 Grey Shading indicates where data are flagged as "Missing"
 Accumulated Precip (where available) may not reflect actual deviations from normal if data are missing
 "Experimental" May Contain Preliminary Data
 High Plains Regional Climate Center
<http://hprcc.unl.edu>



Above: Maximum, minimum, and normal temperatures, accumulated precipitation, and monthly total precipitation for Sioux Falls, South Dakota over the past year (top left). Total precipitation (inches) (top right) and Departure from Normal Precipitation (inches) (bottom right) for November 2011 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>.

Climate Outlook

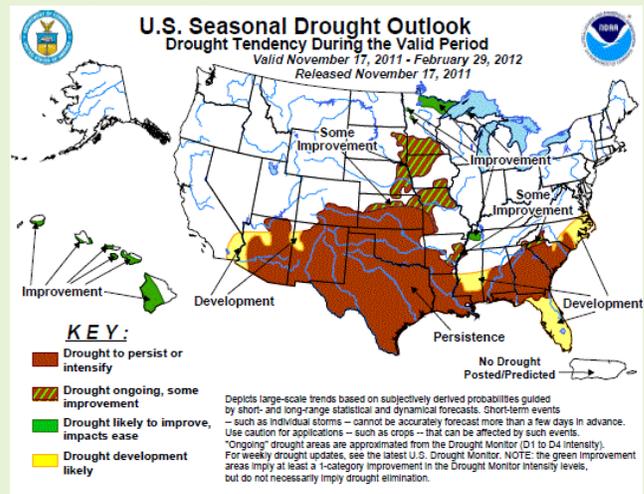
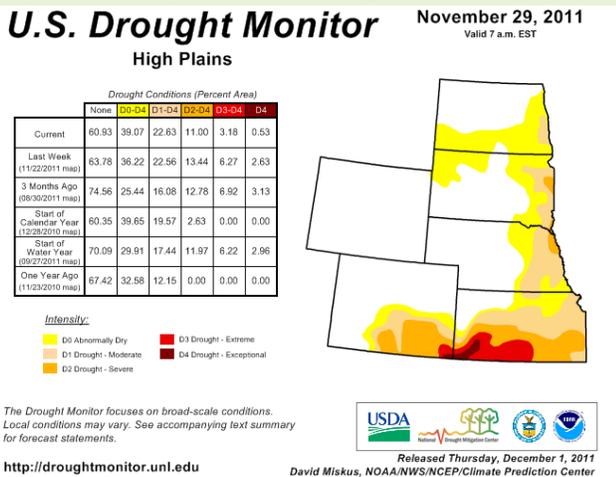
La Niña conditions are present in the equatorial Pacific and are expected to continue through winter. The temperature outlook indicates a higher probability of above normal temperatures for southern Kansas and the far southeast corner of Colorado. A higher probability for below normal temperature exists for North Dakota and the northern half of South Dakota. The precipitation outlook indicates a higher probability of above normal precipitation across the Dakotas, Wyoming, western and central Nebraska, and northern Colorado. Meanwhile, southern Kansas and the southeastern corner of Colorado have a higher probability of below normal precipitation. 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

The U.S. Drought Monitor had many changes this month. Beneficial rains across southern and eastern Kansas led to one category improvements for much of the drought stricken area. Additional improvements were made in south-central Colorado as two areas of extreme drought (D3) were downgraded to severe drought (D2). Only a small area of exceptional drought remained in southwest Kansas and the far southeast corner of Colorado. Nebraska and the Dakotas all had degradations, as precipitation totals were well below normal. Abnormally dry conditions (D0) spread across southern North Dakota and into northwestern South Dakota. Moderate drought (D1) spread south through eastern Nebraska and also developed in eastern North Dakota. According to the North Dakota State Climate Office, before the introduction of D1 this month, the state had gone 115 consecutive weeks with no drought. D2 spread into northeastern Nebraska and east-central South Dakota as well. According to the U.S. Seasonal Drought Outlook conditions in portions of South Dakota, Nebraska, and northern Kansas were expected to improve, while drought conditions in other areas were expected to persist.



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	47.1	10.8	29.0	0.6	63	11/01	-2	11/10	0.51	0.03	106
Akron Washington County Airport	52.9	24.2	38.5	1.8	68	11/24+	13	11/20	0.26	-0.43	38
Colorado Springs Municipal Airport	54.1	27.0	40.5	4.3	70	11/24	15	11/17+	0.19	-0.33	37
Grand Junction Walker Field Airport	51.2	28.4	39.8	1.7	65	11/04	20	11/27	0.55	-0.16	77
Pueblo Memorial Airport	57.2	24.7	41.0	2.6	74	11/24	11	11/27	0.38	-0.20	66

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	54.3	31.7	43.0	2.2	73	11/24	18	11/28	1.26	-0.19	87
Dodge City Regional Airport	56.0	30.6	43.3	0.9	73	11/12	18	11/20	1.90	0.89	188
Goodland Renner Field	55.0	25.0	40.0	2.6	72	11/24	13	11/21	0.31	-0.51	38
Topeka Municipal Airport	57.0	33.2	45.1	2.5	77	11/01	20	11/28	4.66	2.35	202
Wichita Mid-Continent Airport	57.1	33.1	45.1	0.9	75	11/01	21	11/17	3.32	1.50	182

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	51.4	19.5	35.5	1.8	73	11/24	4	11/19	0.52	-0.05	91
Grand Island Airport	52.7	26.4	39.6	3.2	68	11/11	13	11/21+	0.21	-1.20	15
Lincoln Municipal Airport	52.6	27.2	39.9	1.8	72	11/24	12	11/28	1.66	0.08	105
Omaha Eppley Airfield	51.9	31.1	41.5	3.5	73	11/24	18	11/21	1.31	-0.51	72
Norfolk Karl Stefan Airport	51.3	25.5	38.4	3.3	68	11/11	12	11/21+	0.10	-1.34	7
North Platte Regional Airport	54.4	19.8	37.1	2.5	70	11/24	10	11/27+	0.13	-0.63	17
Valentine Miller Field	52.5	21.3	36.9	3.9	75	11/24	6	11/17	0.44	-0.28	61

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	44.3	18.4	31.4	3.4	62	11/23	0	11/20	0.06	-0.64	9
Fargo International Airport	43.9	23.6	33.8	6.8	59	11/05	1	11/20	0.26	-0.80	25
Grand Forks International Airport	42.3	20.6	31.5	5.7	59	11/04	3	11/17	0.12	-0.87	12
Theodore Roosevelt Airport	45.0	17.9	31.4	2.4	61	11/23	-5	11/19	0.06	-0.53	10
Williston International Airport	41.5	16.4	29.0	3.4	56	11/23+	-3	11/21	0.39	-0.26	60

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>.

November 2011 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	44.3	18.7	31.5	2.2	59	11/11+	-2	11/20	0.03	-0.72	4
Huron Regional Airport	47.4	21.7	34.5	3.2	66	11/24	-6	11/20	0.43	-0.46	48
Pierre Regional Airport	46.5	22.0	34.3	1.0	64	11/11	4	11/20	0.61	-0.09	87
Rapid City Regional Airport	47.7	19.8	33.8	0.4	69	11/04	-7	11/19	0.71	0.10	116
Sioux Falls Joe Foss Field Airport	48.5	24.0	36.2	4.9	65	11/24	5	11/20	0.04	-1.32	3

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	44.0	21.2	32.6	0.6	59	11/04	-14	11/20+	1.24	0.42	151
Cheyenne Municipal Airport	46.5	23.3	34.9	1.6	62	11/23	9	11/03+	0.80	0.16	125
Lander Hunt Field Airport	44.5	20.0	32.3	2.0	62	11/24	5	11/20	0.99	0.00	100
Laramie Regional Airport	41.7	17.9	29.8	1.4	55	11/24	-13	11/02	0.29	-0.35	45
Rawlins Municipal Airport	39.1	19.7	29.4	-2.1	51	11/04	1	11/03	0.98	0.33	151
Sheridan County Airport	43.6	18.9	31.2	0.2	65	11/11	-10	11/20+	1.14	0.34	143

All Data are Preliminary and Subject to Change. + indicates multiple dates, latest date listed.

Source: National Weather Service Cooperative Observation Network Data

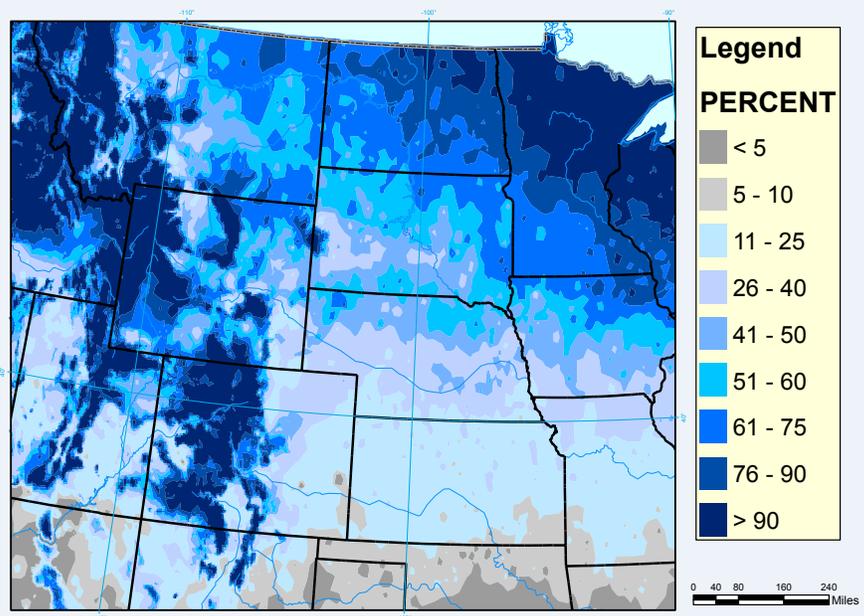
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These data are available for the entire period of record through the CLIMOD system. For more information please see <http://hprcc.unl.edu/services>.

Probability of a White Christmas

This time of year many people wonder what the chances are for a White Christmas.

NOAA's National Climatic Data Center has calculated and mapped out the chances of a White Christmas from a climatological perspective. The probabilities are based upon historical snowfall and snow depth data.



Climate Data: National Climatic Data Center
Map: High Plains Regional Climate Center

State Spotlight - North Dakota

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



Precipitation:

The High Plains Regional Climate Center (HPRCC) November percent of normal rainfall ranged from approximately 1% to 50%. (Figure 1. High Plains Regional Climate Center). The northwest corner had the most precipitation ranging from 25% to 50% of normal. Williston ranked 54th driest November since 1895 with 0.39 inches. Minot ranked 17th driest November since 1948 with 0.23 inches. Bismarck ranked 13th driest November with 0.06 inches. Fargo ranked 31st driest November since 1881 with 0.26 inches. Grand Forks ranked 13th driest November since 1893 with 0.12 inches. HPRCC total November precipitation ranged from roughly a trace to 0.4 inches with the higher amounts falling in the northwest and northern regions and amounts of less than 0.2 inches falling most elsewhere. As of December 1st, moderate drought spread into eastern North Dakota after 115 consecutive weeks of no drought conditions any place in North Dakota. It was the longest stretch with no drought in North Dakota's recorded history since the inception of the Drought Monitor in 2000.

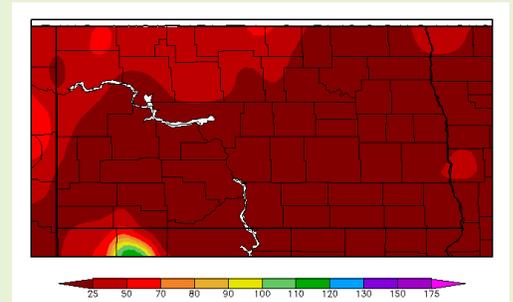


Figure 1. Percent of Normal Precipitation in November 2011 for North Dakota (High Plains Regional Climate Center)

Temperature:

NDAWN November average air temperatures ranged from 26 °F to 33 °F. NDAWN departure from normal temperatures were above normal across the state and ranged from 3 °F to 7 °F (Figure 2. North Dakota State Climate Office). The 1st through the 15th had near normal to above normal temperatures across the state. From the 16th through the 21st temperatures dropped significantly below normal. Temperatures again rebounded to near and above normal temperatures for the remainder of the month. Williston ranked 53rd warmest November since 1895 with 29.0 °F. Minot ranked 17th warmest November since 1948 with 31.2 °F. Bismarck ranked 38th warmest November with 31.4 °F. Fargo ranked 20th warmest November since 1881 with 33.8 °F. Grand Forks ranked 20th warmest November since 1893 with 31.5 °F. Lack of permanent snow pack for many areas contributed to the warm temperatures.

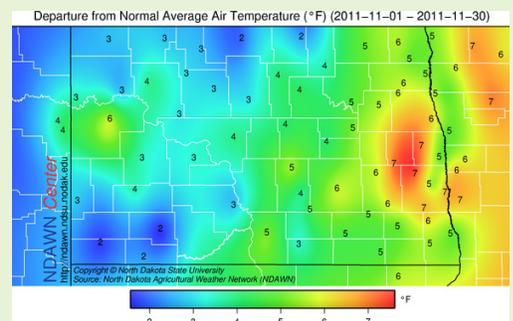


Figure 2. Temperature Departure from Normal in November 2011 for North Dakota (North Dakota State Climate Office)

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

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