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October 2007 colors in the Colorado Rockies - Photos by Ken Dewey, UNL

October 2007 Climate Summary

Region Breakdown

Several October precipitation records were broken in the eastern High Plains, as rains pummeled parts of eastern South Dakota, Nebraska and Kansas, with many experiencing over 300% of Normal just within the first 2 weeks of October. Several locations in eastern Nebraska, Kansas and South Dakota received more than 3 inches above normal during the month. Above normal precipitation hindered soybean and corn harvests up until the 3rd week of October, at which dry conditions took over and farmers were able to successfully harvest their crops. Dry conditions continue to dominate into early November 2007 across much of the region.

However, dry conditions persisted from September into October for much of the already dry Western High Plains, particularly lacking in far SW Kansas and parts of Southern Colorado and Central North Dakota.

Temperatures remained mild across the region for much of October 2007, with monthly average temperature departures from normal ranging from 2-4 degrees above for almost all of the High Plains region.

Severe Weather Summary

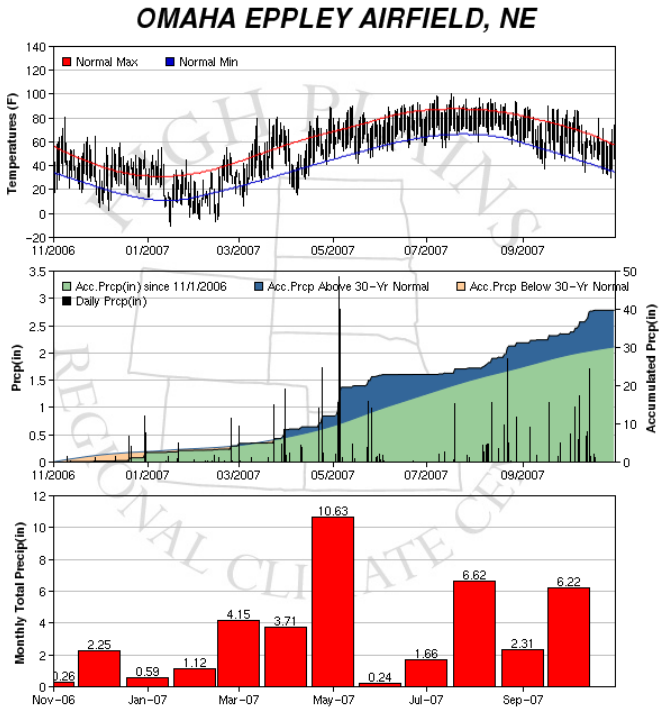
- October 4 - Nickel-Size Hail reported in Smith and Ness County(s) in Kansas
- October 5,6 - Hail, heavy rains and High Winds reported in NE Nebraska, SE South Dakota
- October 12,13 - Hail and Flooding Rains in KS and NE
- October 14 - Hail, Flooding Rains and High Winds across Central NE and Central KS
- October 17 - Large Storm system producing tornadoes in Missouri brings Hail to Central NE and Hail/High Winds to South Central and SW Kansas.

October 2007 - Storm Reports				
State	Total	Tornado	Hail	Wind
CO	6	0	3	3
KS	89	0	55	34
NE	23	0	23	0
ND	4	0	4	0
SD	7	0	7	0
Total	129	0	92	37

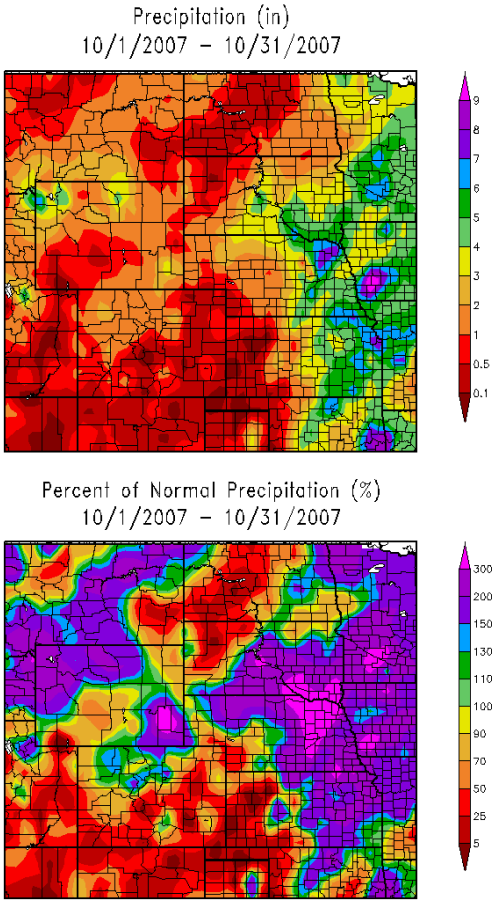
Storm Report Totals are preliminary, and are provided by the NOAA Storm Prediction Center located in Norman, OK. For more information on Storm Reports and the Storm Prediction Center, please see: http://www.spc.noaa.gov.

Precipitation Summary

An unusually warm and moist airmass settled in on the High Plains region during the first half of October 2007. This provided ripe conditions for thunderstorm development, which in itself is not unusual for October, but the amount of rainfall that was produced resulted in several monthly precipitation records in the High Plains region.



Omaha Eppley Airport is featured this month as our "Extreme" station. The months of May, June and October 2007 have been record months in terms of monthly precipitation totals. The month of June being the driest June on record, surrounded by the wettest May and October!



Above: Precipitation Amounts (in inches) and Percent of Normal Precipitation (using 1971-2000 Normals) for October 2007 in the High Plains Region. These maps are produced by HPRCC and can be found on the Current Climate Summary Map page at: http://hprcc.unl.edu/maps/current

Monthly Records Broken during October 2007*

Precipitation Amounts in Inches/Temperature in Degrees F

Record	Location	Old Record	New Record
October Total Precip	Omaha Eppley Airfield, Omaha, NE	5.86/1877	6.22
October Total Precip	Norfolk, NE	4.57/1968	5.53
Wettest October Day	Norfolk, NE	2.12/October 16, 1968	2.60/October 15
Warmest Minimum Temperature	Sioux City, IA	69/October 1, 1971	70/October 6
October Total Precip	Pierre, SD	5.39/1982	5.7
Wettest October Day	Denver, CO	2.11/October 12, 1892	2.48/October 13

*Records are preliminary, and are taken from local National Weather Service Office Record Event Reporter summaries. For records information updated on a daily basis from the National Weather Service, please see: http://www.weather.gov/climate

*Some records may be missing from this report

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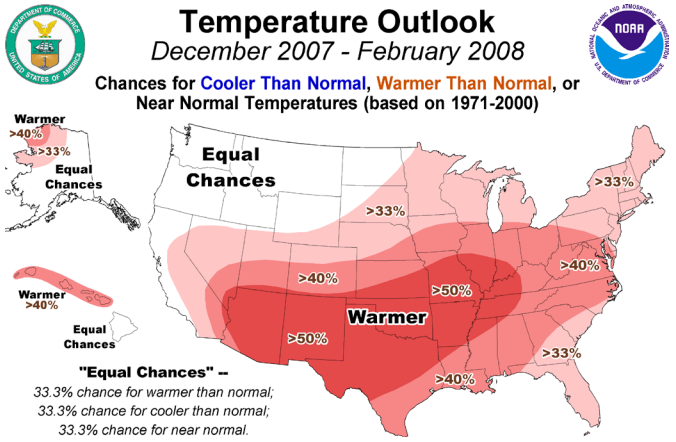
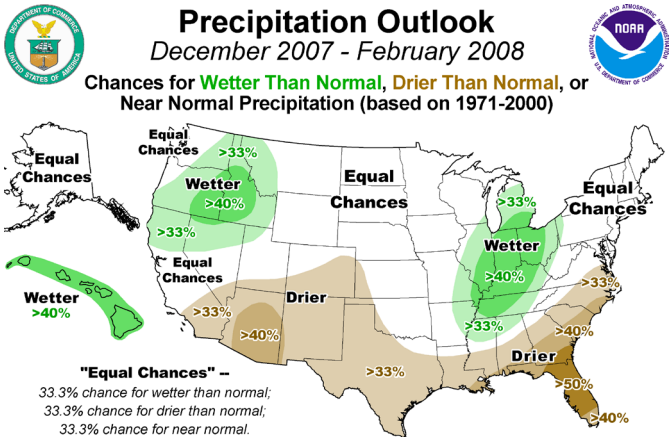
ACIS
Applied Climate Information System - NOAA Regional Climate Centers

Climate Outlook

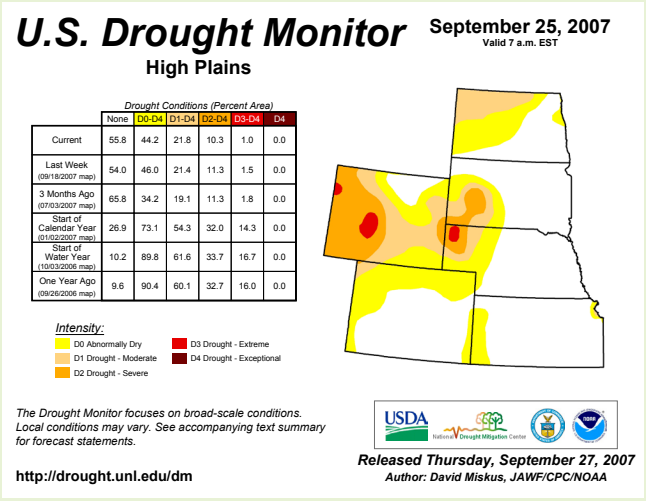
With the expected onset of La Nina ENSO conditions for this winter, NOAA forecasters are calling for above-average temperatures for much of the southern High Plains, and drier than normal conditions for the far-southwest corner of the High Plains Region (Southern to Southwest Colorado and Western Kansas). Equal Chances of both above, near, and below normal precipitation conditions exist for the rest of the region. This winter outlook is produced by scientists at the NOAA Climate Prediction Center. More information can be found here: http://www.cpc.ncep.noaa.gov/.

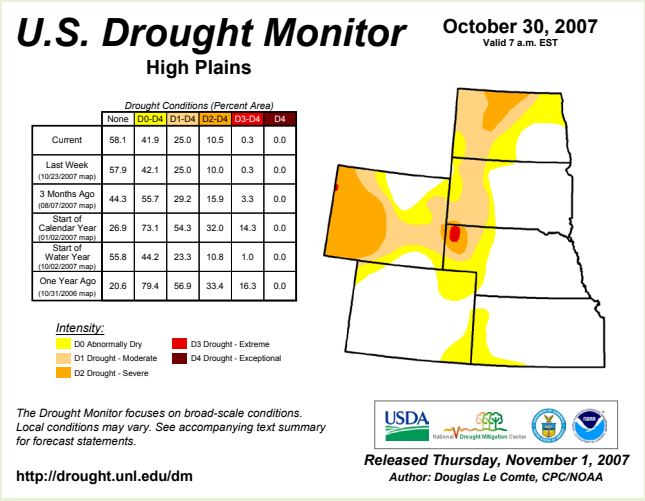




Drought Watch

Extreme drought conditions (D3) have shown signs of improvement over the month of October for portions of Western Wyoming. Areas of severe drought (D2) over the Black Hills region of have been downgraded to a moderate drought, however the moderate drought area now extends all along the western edge of SD into ND, with an upgrade to severe drought conditions over north-central ND, due to a lack of rainfall during the month of October. Areas seeing no change include the eastern portion of the High Plains Region, which continued its bounce-back from drought thanks to another month of much-above normal precipitation (over 300% of normal precipitation at several locations).





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 is 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

State Summaries

Colorado	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Akron Washington County Airport	68.5	36.4	52.5	--	89	10/6	27	10/16	0.16	--	--
Colorado Springs Municipal Airport	67.8	37.4	52.6	3.7	83	10/3	21	10/22	0.25	-0.61	29
Grand Junction Walker Field Airport	66.4	39.3	52.9	0.2	81	10/10	23	10/22	0.46	-0.54	46
Pueblo Memorial Airport	73.9	34.1	54.0	1.6	91	10/6	25	10/31+	0.33	-0.31	52

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	69.4	46.8	58.1	2.1	90	10/5	31	10/26	4.36	2.52	237
Dodge City Regional Airport	75.5	44.9	60.2	3.1	94	10/5	31	10/26	1.47	0.02	101
Goodland Renner Field	70.0	38.9	54.5	2.6	93	10/5	28	10/27+	0.63	-0.42	60
Medicine Lodge	76.5	47.3	61.9	--	93	10/5+	31	10/26	1.64	--	--
Topeka Municipal Airport	71.6	48.4	60.0	3.4	89	10/5	32	10/31+	6.61	3.62	221
Wichita Mid-Continent Airport	73.8	48.9	61.4	2.7	91	10/7+	34	10/23+	4.21	1.76	172

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Grand Island Airport	67.8	44.4	56.1	4.1	89	10/5	32	10/26	3.91	2.40	259
Lincoln Municipal Airport	69.3	45.5	57.4	3.9	89	10/5	26	10/28	4.54	2.60	234
Omaha Eppley International Airport	67.8	45.9	56.8	3.6	86	10/6+	30	10/28	6.22	4.01	281
Norfolk Karl Stefan Airport	65.7	43.3	54.5	3.5	87	10/6+	28	10/28	6.82	5.10	397
North Platte Regional Airport	68.0	36.8	52.4	2.7	91	10/6	22	10/22	1.17	-0.07	94
Scotts Bluff Heilig Airport	67.7	35.0	51.4	3.6	90	10/1	24	10/28+	0.71	-0.30	70
Valentine Miller Field	65.4	36.7	51.1	2.8	93	10/6	24	10/27	2.79	1.57	229

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	59.1	34.8	47.0	1.8	77	10/1	24	10/28+	0.84	-0.44	66
Dickinson Municipal Airport	59.2	34.1	46.6	1.3	79	10/24+	17	10/27	0.31	-1.03	23
Fargo International Airport	59.9	40.1	50.0	4.7	87	10/6	28	10/31+	1.76	-0.21	89
Grand Forks International Airport	57.8	36.1	47.0	2.7	75	10/3	21	10/27	3.09	1.39	182
Williston International Airport	58.5	33.1	45.8	2.2	79	10/1	20	10/27	1.07	0.20	123

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

October 2007 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	61.5	36.6	49.0	2.2	89	10/6	19	10/28	1.48	-0.15	91
Huron Regional Airport	64.2	38.6	51.4	3.5	90	10/6	25	10/28+	3.12	1.53	196
Rapid City Regional Airport	64.3	36.2	50.3	2.1	89	10/1	23	10/28	0.61	-0.76	45
Sioux Falls Joe Foss Field Airport	64.4	42.5	53.4	5.4	88	10/6	26	10/28	5.98	4.05	310

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	62.0	33.4	47.7	2.0	78	10/10+	23	10/31+	1.08	-0.06	95
Cheyenne Airport	62.3	35.6	48.9	3.5	80	10/1	23	10/22	1.28	0.53	171
Lander Hunt Field Airport	61.5	34.1	47.8	1.4	76	10/10	22	10/22	0.94	-0.43	69
Laramie Regional Airport	58.2	29.2	43.7	1.8	73	10/10+	6	10/22	1.42	0.62	178
Rawlins Municipal Airport	57.6	32.0	44.8	-0.7	72	10/10+	19	10/21	0.78	-0.08	91
Sheridan County Airport	62.6	34.2	48.4	3.3	84	10/24	22	10/31	2.47	1.06	175
Worland	61.0	34.2	47.6	-0.3	78	10/10+	25	10/31	1.39	0.66	190

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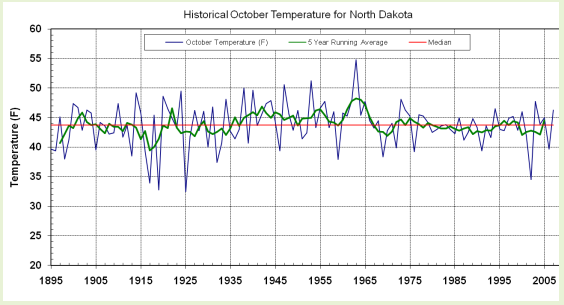
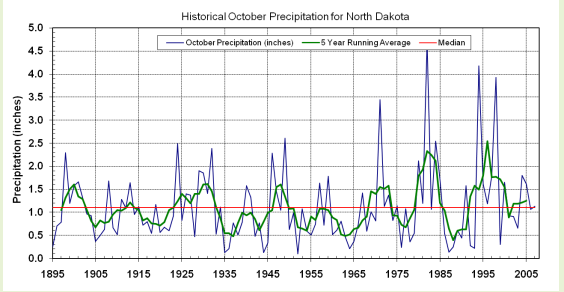
State Spotlight - North Dakota

Barb Mullins
North Dakota State Climate Office, North Dakota State University





Central, west central, south western and east central parts of North Dakota had below normal precipitation. Most of these areas were 50% and less of normal precipitation. A few areas in the far upper northeast corner, south central, and northwest had 100 to 200% of normal rainfall. Rainfall events occurred mainly on the 1st through the 9th, the 17th through the 19th, and on the 31st. The rainfall on the 18th and 19th of October in the Red River Valley, temporarily hampered sugarbeet and potato harvest. However, by month's end, nearly all edible beans, potatoes and sugarbeets were harvested. The October state average precipitation was 1.13 inches which was below the 1971-2000 normal state average of 1.41 inches. October precipitation ranked 42nd wettest (72nd driest) in the past 113 years. The maximum precipitation was 4.71 inches in 1982 and the minimum was 0.10 inches in 1952.

The October average air temperatures across the state all ended 1 to 5 degrees above normal. A state wide freeze did not occur until late October. Some areas in the eastern part of the state had long growing season. Fargo with 187 consecutive days of greater than 32 ˚F had its longest growing season in the past 113 years. The state average October air temperature was 46.3 ˚F which is above the 1971-2000 normal state average temperature of 43.62 ˚F. October 2007 ranked the 24th warmest (90th coolest) in the past 113 years. The maximum state average was 54.8 ˚F in 1963 and the minimum was 32.5 ˚F in 1925.

All graphs in this section courtesy the 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).

Ag Watch

Grain arrives at a Scottsbluff, NE grain elevator in October
Photo by Ken Dewey, UNL

The rains in early October put a hold on row-crop harvests of dry beans, corn and sunflowers for much of the eastern high plains.

For Wyoming, corn harvest was the farthest behind of all the states for the week ending October 28, with only 30% harvested. However, dry beans were well on their way out, with 98% harvested in Wyoming. Winter wheat conditions were at 93% good or better for the state, and likewise this was reflected in SD, NE and KS as well. 99% of Corn and Winter Wheat were in the Good to Excellent crop conditions for Wyoming.

Soil Moisture Conditions varied from east to west across the region for the week of November 5, with more than adequate moisture still clinging on from early-to-mid October precipitation across the eastern half of the plains, and short to very-short conditions present across portions of SW Kansas, Colorado, Wyoming, and Western North Dakota. For much of the high plains, these soil moisture conditions are an improvement upon last-years conditions.

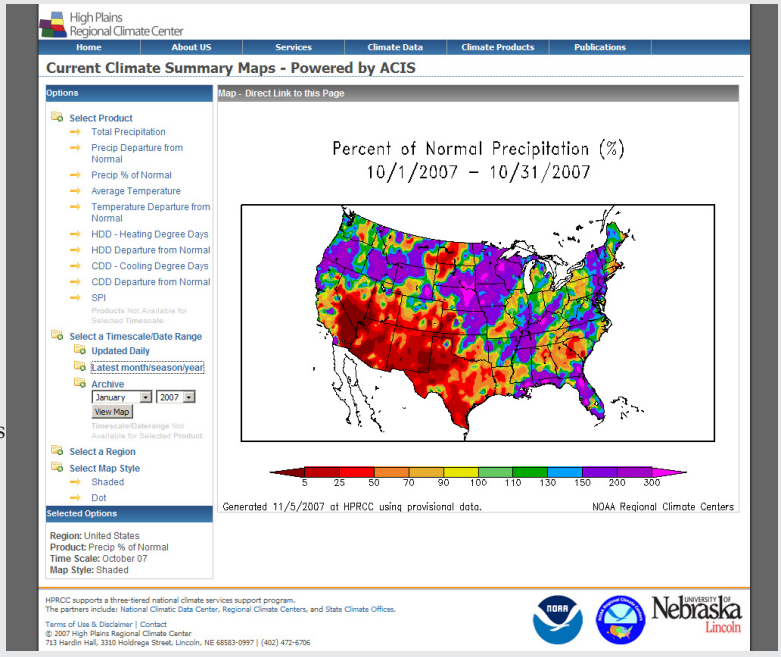
Pasture conditions were rated 91% good to excellent for South Dakota for the week of November 5, but only 39% were rated as good in Kansas.

Crop statistics and condition information is compiled and published by the National Agricultural Statistics Service (NASS), United States Department of Agriculture. For more information, please see the NASS website at: http://www.nass.usda.gov.

Climate Tools

Current Climate Summary Maps

This months featured tool is the Current Climate Summary Maps. The High Plains Regional Climate Center produces over 2000 maps on a daily basis depicting items such as Precipitation (% of 1971-2000 Normal, Amount), Temperature, and calculated indicies such as the Standardized Precipitation Index (SPI). Thanks to HPRCC's daily map production, clients in industries that rely on timely information can be updated on a near-real-time basis rather than waiting until monthly products come out.



At the Current Climate Summary Maps page, users can select different time scales, regions, products, and even map types (dot representations, or shaded contours). Users can easily flip between products at the same time scale, or different time scales for a product.

Using the Applied Climate Information System as the framework for data transfer and GrADS for mapping, the Current Climate Summary Maps are among the best sources for daily updated climate information on the web.

http://hprcc.unl.edu/maps/current

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ACIS
Applied Climate Information System - NOAA Regional Climate Centers

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

North Dakota State Climate Office: http://www.ndsu.edu/ndsco

North Dakota Agricultural Network: http://www.ndawn.ndsu.nodak.edu

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

National Agricultural Statistics Service (USDA): http://www.nass.usda.gov

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

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