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Rural Lancaster County, NE just east of Lincoln - Photo by Ken Dewey
<http://www.nebraskaweatherphotos.org>

August 2008 Climate Summary

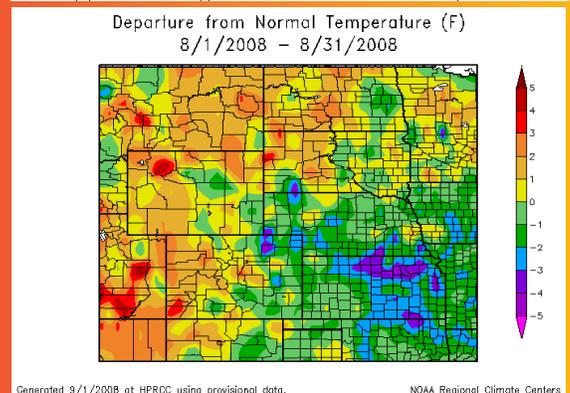
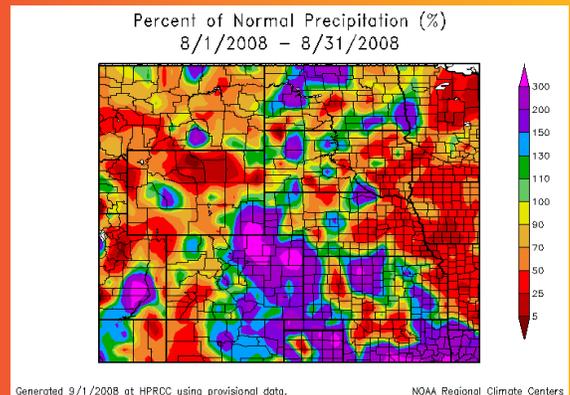
Region Breakdown

Much of the region experienced the hottest days at the beginning of the month with many stations setting records and reporting temperatures above 100°F (37.8°C). North Dakota and South Dakota, however, had their warmest days at the end of the month.

Generally, much of the region had average temperatures within 2°F (1.1°C) of their August normals. Widespread areas of below normal temperatures in Nebraska and Kansas occurred this August. The coolest areas were in northern and central Kansas where temperatures ranged from 3-5°F (1.7-2.8°C) below normal. Pockets of warmer than normal temperatures occurred in southwestern Colorado, northwestern Wyoming, western South Dakota, and western North Dakota.

While much of Wyoming, southeastern Nebraska, and central North Dakota were extremely dry and only received less than half of their normal precipitation, there were some notable wet spots. Above normal locations included eastern Colorado, southeastern Wyoming, western and central Kansas, portions of the panhandle of Nebraska, and southeastern and northwestern North Dakota. These areas all received 150-300% of their normal precipitation for the month of August.

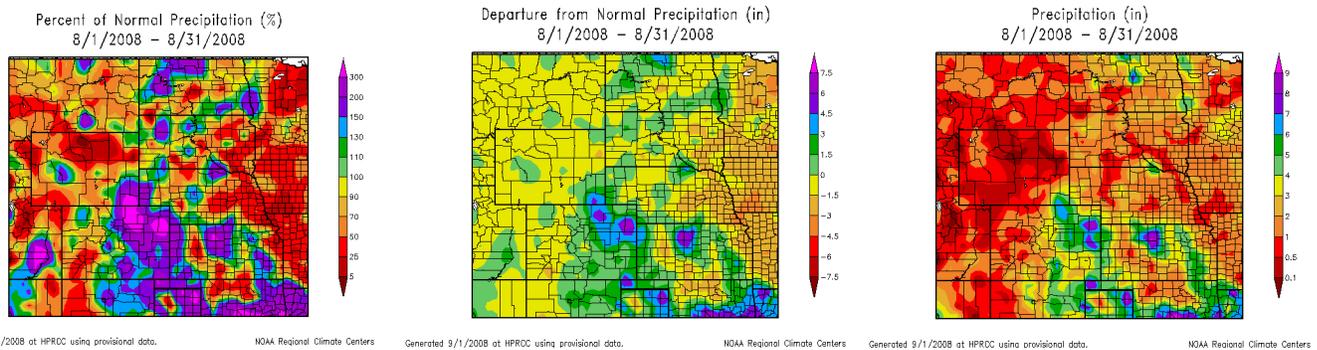
Departure from 1971-2000 Normal Mean Average Temperature (bottom) and Percent of Normal Total Precipitation (top) for August 2008 in the High Plains Region. Map by High Plains Regional Climate Center. Available at: <http://hprcc.unl.edu/maps/current>



Precipitation Summary

August 2008 was dry for portions of central/eastern Nebraska, western Colorado, northern Wyoming, and the Dakotas. As drought conditions continue in Wyoming, the paucity of precipitation in eastern Nebraska and South Dakota helped contribute to the development of abnormally dry and moderate drought conditions. However, heavy rains in eastern Colorado and western Kansas helped alleviate drought conditions there, with many locations receiving 150-300% of normal precipitation.

Highlights of the precipitation totals include Greeley UNC, CO which received 7.02 inches (178.3 mm) and Alton, KS which received 9.36 inches (237.7 mm) of precipitation throughout the month. This resulted in Greeley UNC, CO receiving 595% and Alton, KS receiving 300% of normal precipitation for the month of August. Far southeastern Wyoming also saw precipitation that was above 300% of normal. Cheyenne, WY saw an impressive 6.55 inches (166.4 mm) of precipitation or 360% of normal.



From left: Percent of Normal Precipitation (using 1971-2000 Normals), Departure from Normal Precipitation (in inches), and Precipitation Amounts (in inches) for August 2008 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>.

Severe Weather Summary

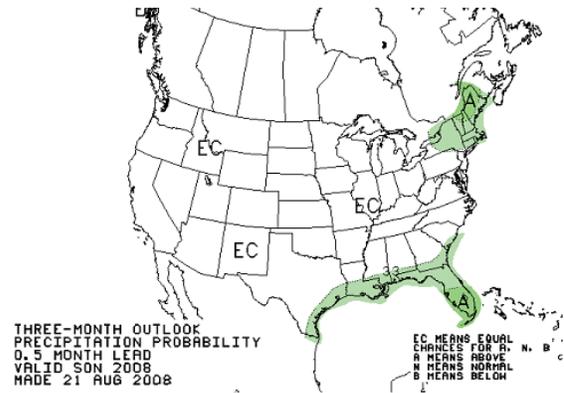
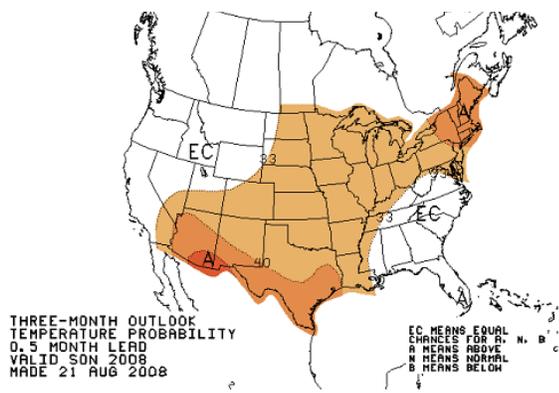
August Totals - 2008 *				
State	Total	Tornado	Hail	Wind
CO	118	21	79	18
KS	58	0	29	29
NE	68	2	58	8
ND	82	7	62	13
SD	124	2	89	33
WY	33	0	22	11
Total	483	32	339	112

Year to Date Totals - 2008 *				
State	Total	Tornado	Hail	Wind
CO	415	61	294	59
KS	2028	187	1193	648
NE	1194	75	816	273
ND	431	36	290	105
SD	881	28	605	248
WY	257	24	174	59
Total	5206	411	3372	1392

* Through 09/02 - August and Year to Date Totals are preliminary, and are provided by the NOAA Storm Prediction Center located in Norman, OK. For more statistics, please see: <http://www.spc.noaa.gov>.

Climate Outlook

ENSO conditions remain neutral and are expected to persist through the fall. NOAA forecasters are predicting chances of above normal temperatures for the majority of the High Plains region during the months of September – November. Equal chances of above, near, or below normal precipitation conditions exist for the entire region. This outlook is produced by scientists at the NOAA Climate Prediction Center. More information can be found here: <http://www.cpc.ncep.noaa.gov/>.



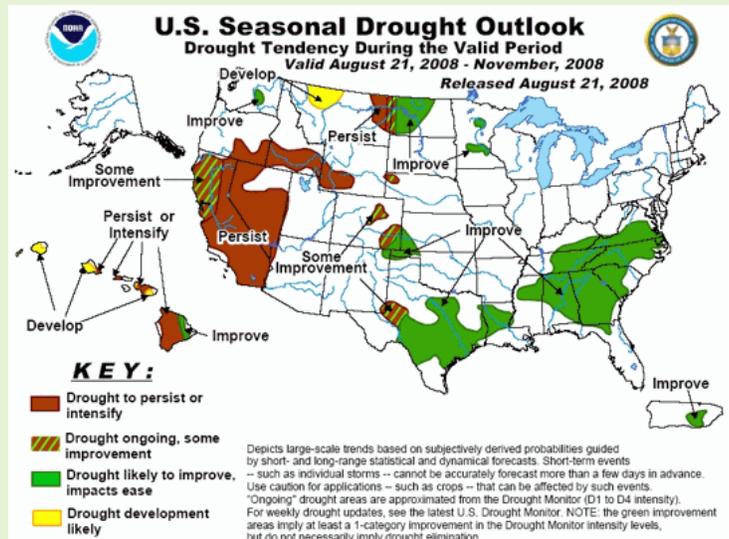
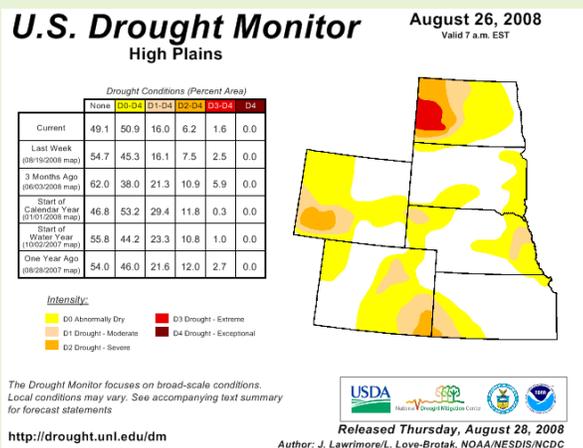
Above: 3-Month Outlook Maps Courtesy the NOAA Climate Prediction Center - <http://www.cpc.ncep.noaa.gov>

(left) The Three-Month Temperature Probability Outlook showing a higher probability of above normal temperatures for the majority of the High Plains region.

(right) The Three-Month Precipitation Probability Outlook showing equal chances of above, near, or below normal precipitation for all of the High Plains region.

Drought Watch

Since last month, drought conditions have improved across the Colorado-Kansas border as extreme (D3) to exceptional (D4) drought conditions have changed to moderate (D1) to severe (D2) drought conditions. According to the U.S. Seasonal Drought Outlook released August 21, categorical improvement is expected across the Colorado-Kansas border and also in western portions of North Dakota through November 2008. Drought conditions are expected to persist in southwestern Wyoming.



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 of 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	80.5	46.6	63.5	1.5	89	8/2	38	8/18	1.23	0.04	103
Akron Washington County Airport	81.4	58.5	70.0	-2.3	105	8/2	51	8/18	6.39	4.39	320
Colorado Springs Municipal Airport	81.2	55.7	68.5	0.8	99	8/1	48	8/18	4.31	0.83	124
Grand Junction Walker Field Airport	91.0	62.4	76.7	2.0	102	8/1	51	8/17	1.19	0.35	142
Pueblo Memorial Airport	87.4	58.1	72.8	-0.7	105	8/2	49	8/18	2.77	0.5	122

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	84.3	62.6	73.5	-3.5	100	8/4	52	8/30	2.99	-0.25	92
Dodge City Regional Airport	89.7	65.6	77.7	-0.5	108	8/4	58	8/16	1.94	-0.79	71
Goodland Renner Field	83.2	60.9	72.0	-1.2	105	8/2+	54	8/29+	6.01	3.52	241
Topeka Municipal Airport	87.0	65.4	76.2	-0.5	101	8/4	55	8/30	1.48	-2.33	39
Wichita Mid-Continent Airport	87.4	68.3	77.8	-2.0	103	8/4	62	8/25+	3.17	0.23	108

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	88.0	58.1	73	0.0	103	8/2	41	8/23	1.1	-0.57	66
Grand Island Airport	85.4	61.6	73.5	-0.1	103	8/3	52	8/29	1.07	-2.01	35
Lincoln Municipal Airport	88.2	62.7	75.4	0.0	102	8/3	50	8/29	1.78	-1.57	53
Omaha Eppley International Airport	87.6	64.0	75.8	1.3	101	8/3	52	8/29	1.32	-1.89	41
Norfolk Karl Stefan Airport	85.2	59.9	72.5	-0.2	99	8/3	45	8/29	0.97	-1.83	35
North Platte Regional Airport	83.9	59.0	71.5	-1.1	108	8/2	45	8/29	2.75	0.60	128
Valentine Miller Field	86.5	59.2	72.9	0.8	101	8/2	43	8/23	1.07	-1.13	49

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	85.7	57.4	71.5	2.5	100	8/30	44	8/24	1.13	-1.02	53
Dickinson Municipal Airport	85.4	54.2	69.8	1.1	101	8/30	39	8/23	1.17	-0.34	77
Fargo International Airport	81.3	57.6	69.4	0.4	90	8/31+	43	8/24	4.55	2.03	181
Grand Forks International Airport	80.7	55.2	68.0	0.1	91	8/31	39	8/24	2.55	-0.17	94
Williston International Airport	85.4	54.5	69.9	1.6	101	8/1	40	8/23	1.27	-0.21	86

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>.

August 2008 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	82.9	57.0	70.0	-0.5	91	8/31+	44	8/23	1.24	-1.18	51
Huron Regional Airport	84.6	59.9	72.3	0.8	92	8/31+	46	8/23	2.79	0.72	135
Rapid City Regional Airport	85.9	55.8	70.9	-0.2	99	8/31+	43	8/23	1.42	-0.19	88
Sioux Falls Joe Foss Field Airport	83.0	60.1	71.5	0.7	99	8/3	48	8/29	1.91	-1.1	63

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	86.5	50.1	68.3	-0.3	99	8/1	36	8/28	0.72	-0.01	99
Cheyenne Airport	78.9	53.5	66.2	0.3	98	8/2+	46	8/27	6.55	4.73	360
Lander Hunt Field Airport	85.9	54.9	70.4	1.0	98	8/1	46	8/27	0.84	0.27	147
Laramie Regional Airport	78.0	47.2	62.6	0.9	90	8/1	38	8/29+	1.56	0.33	127
Rawlins Municipal Airport	82.7	49.8	66.2	-0.3	95	8/1	38	8/17	0.43	-0.38	53
Sheridan County Airport	88.0	50.4	69.2	1.0	103	8/1	39	8/23	0.28	-0.52	35

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State Spotlight - Nebraska

Al Dutcher - State Climatologist

Nebraska State Climate Office, University of Nebraska - Lincoln

Nebraska temperatures were generally cooler than normal during August of 2008. Only 20% of the reporting sites across the state experienced positive average temperature departures. The highest average temperature departure reported for August 2008 was at Bridgeport with +1.5 F, while the greatest negative departure was observed at Superior with -4.4 F. The real tale of this August was the magnitude of variability within the month. Most of the state experienced their hottest temperatures of the year during the first 3 days of the month. The unofficial high temperature of 111 F was recorded at Imperial on the 2nd. Of the 161 stations reporting temperature data (cooperative and automated), 44 recorded at least one day of temperatures exceeding 100 F, with 21 exceeding 105 F. Cold air infiltrated the state during the last week of August, with the lowest recorded temperature of 38 F reported at Agate and Gudmundsens Ranch (Whitman) on the 23rd. At least 95 stations experienced minimum temperatures less than 50 F, with 18 seeing minimum temperatures below 45 F.

A strong upper air low originating in south central Canada moved southward across the High Plains to the Texas panhandle region during the August 4-8 time frame. Much of the Nebraska Panhandle and the Southwest climate district received widespread rainfall with 1-3 inch amounts commonly reported. Approximately 30% of the reporting locations across the state received above normal precipitation, with 80% of these stations located in the Panhandle and Southwest Climate district. Two additional periods of moisture were noted during the month of August, 8/9-8/12 and 8/24-8/28. During these two periods, precipitation was scattered, with no single region experiencing widespread coverage. The greatest monthly total for August 2008 was reported at Oxford with 6.97 inches, as well as the greatest 24-hour total of 4.93 inches on the 24th.

The Nebraska State Climate Office is a part of the School of Natural Resources, University of Nebraska - Lincoln.

For more information about the School of Natural Resources at UNL: <http://www.snr.unl.edu>.

For more information on the University of Nebraska - Lincoln: <http://www.unl.edu>.



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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