



July 2016 Climate Summary

Wind River Canyon south of Thermopolis, Wyoming. - Photo courtesy Crystal Stiles
<http://hprcc.unl.edu>

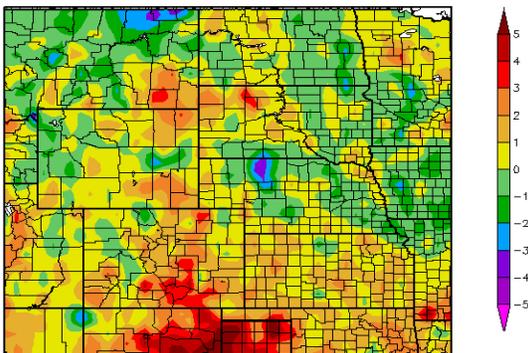
Precipitation Extremes

The month of July brought a variety of climate conditions to the High Plains region, as some places were wet while others were dry, and temperatures were both cool and warm at times. The western High Plains experienced warmer and drier conditions, causing streamflows to run low and drought to expand and intensify in western South Dakota/northeastern Wyoming. In Colorado, top 10 records for warmest July were set in Pueblo (2nd warmest), Alamosa (6th warmest), and Colorado Springs (7th warmest). Several locations in Wyoming had a top 5 driest July, including Lander (tied for driest), Rawlins (4th driest), Casper (4th driest), and Laramie (5th driest). In the eastern High Plains, many locations enjoyed unseasonably cool temperatures over the 4th of July weekend, but a heat wave occurred in the latter part of the month, prompting the issuance of excessive heat warnings by the National Weather Service. It was also much wetter in this part of the region, and top 10 records for wettest July were set in North Dakota at Bismarck (6th wettest), Dickinson (7th wettest), and Fargo (10th wettest), as well as Wichita, Kansas (2nd wettest).

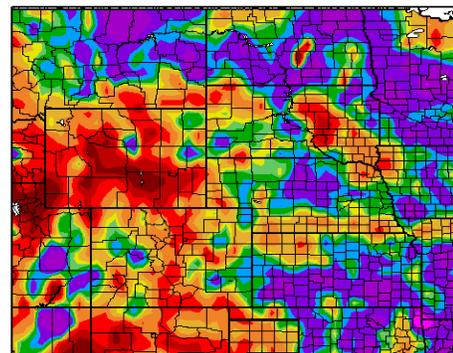
The climate conditions in July impacted several sectors around the region. The heat wave that was previously mentioned caused stress to spring wheat in South Dakota and fledglings in the northern Plains and into the Midwest. Soil moisture declined in July across most of the region except North Dakota, and crop stress was evident in areas where drought was present. The occurrence of wildfires increased, particularly across Wyoming, Colorado, and South Dakota. However, above-normal temperatures over the past few months have had positive impacts such as accelerated crop growth in the Dakotas, and ideal field conditions have allowed small grains to be harvested much earlier than usual. Additionally, timely rainfall in the eastern Dakotas brought beneficial moisture as corn was beginning to tassel, and row crop conditions improved. In Kansas, cooler and wetter weather benefited developing sorghum, but a storm system that brought excessive rainfall in early July caused flooding in and around the city of Wichita.

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
7/1/2016 - 7/31/2016



Percent of Normal Precipitation (%)
7/1/2016 - 7/31/2016



Above: Departure from 1981-2010 normal temperature (left) and percent of normal precipitation (right) for July 2016 in the High Plains region. Maps produced by the High Plains Regional Climate Center and are available at: <http://hprcc.unl.edu/maps/current>.

Precipitation

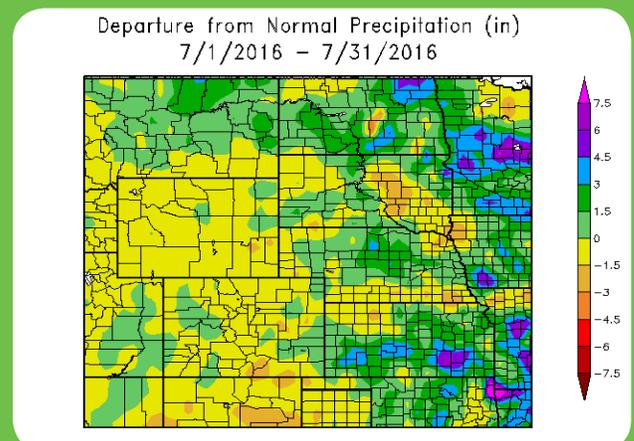
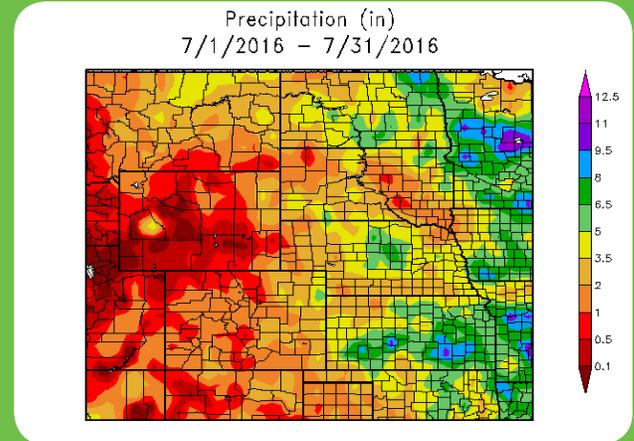
The region experienced a mix of wetter and drier conditions in July. The western High Plains, particularly Wyoming and Colorado, had a very dry July while the eastern High Plains were mostly wet, especially in North Dakota, central Nebraska, and Kansas. The differences in precipitation were extreme across the region, as locations in Wyoming and Colorado had a top 10 driest July on record, while North Dakota and Kansas experienced record wetness.

The dryness in Wyoming was especially pronounced, as a large portion of the state received only 25 percent of normal precipitation for the month, at best. Several top 5 driest Julys on record were set. Only a trace of precipitation was recorded at Hunt Field Airport in Lander, Wyoming, tying 1901 and 1917 for the driest July on record (period of record 1892-2016). The dry weather in July followed a very dry June in Wyoming, causing drought to expand and intensify. Wildfires were burning in several of the state's forests. Despite the dryness over the past two months, the spring was so wet in parts of Wyoming that some locations, such as Lander and Casper, have already received enough precipitation to have a top 10 wettest year on record.

Some of the wettest areas in the region included parts of North Dakota and Kansas, where precipitation was more than 200 percent of normal. The most impressive precipitation records were set in Wichita, Kansas, which ended the month at 6.35 inches (161 mm) above normal and had its 2nd wettest July on record (period of record 1888-2016). On the 2nd, Wichita received an astounding 5.72 inches (145 mm) of precipitation, which was the highest 1-day total precipitation on record for July, crushing the previous record of 3.52 inches (89 mm) set in 1950. July 2nd also became the 6th highest 1-day total precipitation recorded in any month for Wichita.

Adequate precipitation is very important during this part of the growing season, as some crops are entering critical growth stages. For example, moisture is especially needed when corn begins to tassel. Fortunately, dry areas in the eastern Dakotas received beneficial rainfall during this corn growth stage, and row crop conditions improved. Cooler, wetter weather in Kansas benefited developing sorghum. However, soil moisture continued to decline in July throughout much of the High Plains, which could cause crop conditions to worsen and impact yields should conditions not improve.

Regional Precipitation



Above: Total precipitation in inches (top) and departure from normal precipitation in inches (bottom) for July 2016. These maps are produced by HPRCC and can be found on the Current Climate Summary Maps page at: <http://hprcc.unl.edu/maps/current>.

Streamflow Update

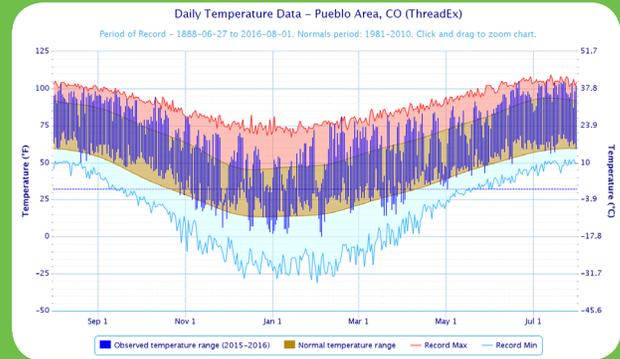
Streamflows were running much below normal across the northern half of Wyoming and in western South Dakota in July. The early melting of mountain snowpack and very little precipitation during the month were to blame for low streamflows in Wyoming. The presence of drought in western South Dakota was taking its toll on streamflows there, and water quantity and quality issues were being reported. Streamflows were mostly normal in Colorado despite a dry July, although there were some exceptions in the southern part of the state. This area was much warmer, and the spring supply of snowmelt and soil moisture began to diminish, causing a decline in streamflows and reservoir levels. Streamflows were running much above normal in locations in the High Plains where rainfall was ample, such as in North Dakota, northern and central Nebraska, and Kansas.

Temperatures

On the whole, temperatures were closer to average in the High Plains region in July, as most locations were between 1.0 degrees F (0.6 degrees C) below normal and 2.0 degrees F (1.1 degrees C) above normal. However, the first half of the month was cooler than normal in the northern and eastern parts of the region, while the latter half was much warmer, so monthly temperatures came out close to average in these areas. The primary exception was in parts of Colorado, where it was much warmer and temperatures were 2.0-5.0 degrees F (1.1-2.8 degrees C) above normal. Pueblo, Colorado was especially warm, as this location experienced not only its 2nd warmest July, but its 2nd warmest month on record as well (period of record 1888-2016). Only July 2003 was warmer in Pueblo.

A cool spell occurred during the first week of the month across the eastern High Plains, which was a welcomed break from the heat experienced in June. The 4th of July weekend was rather pleasant, especially in eastern Nebraska and eastern Kansas. In fact, record cool daily maximum temperatures were set on the 3rd in Nebraska at Lincoln and Norfolk, as well as in Kansas at Concordia and Topeka. The heat returned during the latter half of the month, however, and a heat wave occurred from the 20th-22nd across the eastern High Plains and parts of the Midwest. A combination of heat indices of at least 110.0 degrees F (43.3 degrees C), warm nighttime low temperatures of around 80.0 degrees F (26.7 degrees C), and high relative humidity created very uncomfortable conditions and posed a danger to those who are particularly sensitive to heat. As a result of these conditions, numerous National Weather Service Weather Forecast Offices issued excessive heat warnings and heat advisories across the area.

Station Spotlight: Pueblo, CO

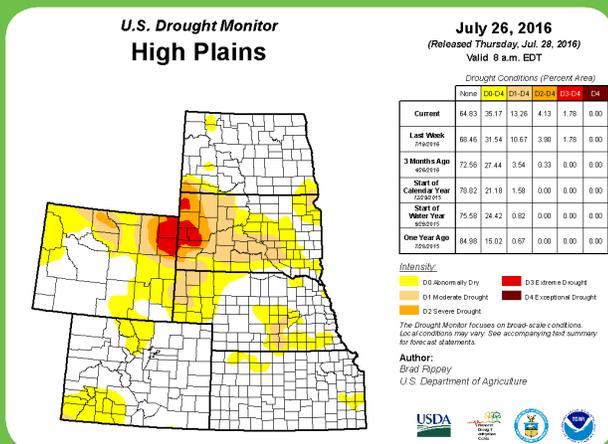


Above: Daily temperatures along with extremes and normals values since August 1, 2015 in Pueblo, CO.

Drought Conditions

Drought and abnormal dryness expanded and intensified across much of the region in July due to the lack of adequate rainfall in areas that needed it most. The July 26th release of the U.S. Drought Monitor indicated that approximately 35 percent of the High Plains region was experiencing drought or abnormal dryness (D0-D4), compared to about 28 percent at the end of June. Reports of impacts became more common as conditions continued to worsen. However, wetter conditions prevailed in areas of the eastern High Plains, which allowed for improvement of drought and dryness in some areas.

U.S. Drought Monitor



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). For current Drought Monitor information, please see: <http://droughtmonitor.unl.edu/>.

The area in drought in the Black Hills of South Dakota extending into northeastern Wyoming was faring the worst in the region, as the area received little drought relief in July after enduring a very dry June. Impacts that have been reported include low alfalfa yields, little hay production, water quantity and quality issues, and wildfires. Moderate drought (D1) began to spread from this area into central South Dakota and the Nebraska panhandle. Another area of drought that intensified was in the Bighorn Mountains of northern Wyoming, where drought has been present since the snowpack season and precipitation has been abysmal so far this summer.

As for improvements, ample precipitation fell in the eastern Dakotas in July, providing some relief from drought conditions in the area. Also, abnormal dryness (D0) was nearly erased in eastern Kansas due to impressive July rainfall totals.

Climate Outlooks

According to the Climate Prediction Center, ENSO-neutral conditions are present in the Pacific. Equatorial sea surface temperatures are near average to below average in the east-central and eastern Pacific Ocean. La Niña is favored to develop during the August-October 2016 time period, with approximately a 55-60 percent chance that La Niña conditions will be present during the fall and winter. A La Niña Watch has been issued, which means conditions are favorable for the development of La Niña conditions within the next six months. If you want to keep up to date on the potential for a developing La Niña, check out the ENSO blog here: <https://www.climate.gov/news-features/department/8443/all>.

The seasonal temperature and precipitation outlooks below combine the effects of long-term trends, soil moisture, and when applicable, the El Niño Southern Oscillation cycle (ENSO). To learn more about these outlooks, please see: <http://www.cpc.ncep.noaa.gov>.

Temperature

The August-October temperature outlook indicates an increased chance of above-normal temperatures for the entire contiguous U.S., including all of the High Plains region. There are no areas of the contiguous U.S. with an increased chance for below-normal temperatures, nor are there areas with an equal chance for above-, below-, or near-normal temperatures during the August-October period.

Precipitation

The precipitation outlook for the next three months calls for a higher probability of above-normal precipitation across the northern Plains, southeastern Texas, and the southern half of Florida. In the High Plains region, this includes North Dakota, South Dakota, the northern half of Nebraska, and northeastern Wyoming. Below-normal precipitation is favored in the Interior West and in the Southeast. This includes the northwestern tip of Wyoming in the High Plains. The remainder of the contiguous U.S. has equal chances for above-, below-, or near-normal precipitation.

Drought

The July 21st U.S. Seasonal Drought Outlook shows that drought is expected to persist across portions of the West, the Plains, the Southeast, and the Northeast. In the High Plains region, this includes northern Wyoming and south-central Nebraska. Drought will remain, but improve, in southeastern Arizona and in the Blackhills region of South Dakota extending west into northeastern Wyoming. Drought removal is likely across the Southwest and the northern Plains, including parts of northeastern Wyoming, western and central South Dakota, and northeastern South Dakota/southeastern North Dakota. Drought development is likely in the northern Rockies, central Texas, and in the Southeast. At the time this outlook was released, drought was not expected to further develop in the High Plains through October. However, according to the U.S. Drought Monitor, drought spread further into the Nebraska panhandle in July.

Temperature Outlook

Precipitation Outlook

Drought Outlook

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period

Author: Richard Tinker
NOAA/NWS/NCEP/Climate Prediction Center

Valid for July 21 - October 31, 2016
Released July 21, 2016

<http://go.usa.gov/3eZ73>

Above: The three-month temperature probability outlook (top), the three-month precipitation probability outlook (middle), and the U.S. Seasonal Drought Outlook (bottom). For more information on these outlooks, produced by the Climate Prediction Center, see: <http://www.cpc.ncep.noaa.gov>.

Station Summaries: By the Numbers

Colorado	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Akron Washington County Airport	88.2	60.3	74.3	0.3	98	07/10	55	07/07	2.69	0.14	105
Alamosa San Luis Airport	85.8	47.9	66.8	2.2	91	07/30+	37	07/13	0.31	-0.66	32
Colorado Springs Municipal Airport	89.3	59.7	74.5	3.6	96	07/20+	55	07/15+	3.04	0.20	107
Denver International Airport	92.0	60.5	76.2	2.0	102	07/10	51	07/12	1.07	-1.09	50
Grand Junction Walker Field Airport	94.3	63.7	79.0	0.8	103	07/28	48	07/12	0.60	-0.01	98
Pueblo Memorial Airport	97.9	62.8	80.4	4.6	105	07/10	56	07/13	1.05	-1.01	51

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	89.5	68.7	79.1	0.0	100	07/21+	61	07/03	6.17	2.25	157
Dodge City Regional Airport	92.4	67.7	80.0	0.4	101	07/23+	58	07/16	5.30	2.22	172
Goodland Renner Field	92.3	63.1	77.7	2.0	104	07/22+	56	07/12	2.75	-0.72	79
Topeka Municipal Airport	89.4	70.6	80.0	1.0	100	07/22	63	07/30	5.36	1.54	140
Wichita Mid-Continent Airport	94.5	72.8	83.6	2.5	105	07/23+	67	07/15+	9.67	6.35	291

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	92.3	58.8	75.5	1.9	108	07/20	46	07/12	1.64	-0.47	78
Grand Island Airport	87.0	65.1	76.0	-0.2	99	07/21	55	07/01	4.10	0.70	121
Lincoln Municipal Airport	88.0	67.5	77.8	0.2	99	07/21	57	07/01	4.67	1.27	137
Norfolk Karl Stefan Airfield	84.3	63.8	74.1	-0.9	93	07/21	50	07/01	2.88	-0.44	87
North Platte Regional Airport	86.7	62.0	74.4	0.1	98	07/21	53	07/12	3.84	0.77	125
Omaha Eppley Airport	87.1	68.4	77.8	1.1	98	07/21	55	07/01	6.61	2.78	173
Valentine Miller Field	87.6	60.5	74.1	-0.4	102	07/20	49	07/12	3.11	-0.10	97

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	83.9	59.8	71.8	0.7	97	07/20	44	07/01	5.10	2.21	176
Fargo International Airport	82.3	61.4	71.9	0.9	92	07/22	45	07/01	5.98	3.19	214
Grand Forks International Airport	81.0	58.5	69.7	1.1	90	07/25+	40	07/01	5.30	2.15	168
Theodore Roosevelt Airport	82.7	54.2	68.5	-0.7	98	07/20	44	07/15	3.90	1.46	160
Williston International Airport	84.4	58.4	71.4	1.3	99	07/31	48	07/15	2.39	-0.15	94

All data are preliminary and subject to change. + indicates multiple dates, latest date listed.

Data are retrieved through the Applied Climate Information System (ACIS) and are available online through the CLIMOD system.

For more information please contact us: <http://www.hprcc.unl.edu/contact.php>.

July 2016 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	84.9	58.9	71.9	0.6	96	07/20+	42	07/01	3.69	0.67	122
Huron Regional Airport	87.0	60.9	74.0	0.3	99	07/22+	42	07/01	1.00	-1.92	34
Pierre Regional Airport	90.1	61.7	75.9	0.5	109	07/20	48	07/01	4.31	1.70	165
Rapid City Regional Airport	87.9	57.8	72.8	0.2	102	07/20	51	07/14+	2.83	0.98	153
Sioux Falls Joe Foss Field Airport	84.1	62.8	73.5	0.5	93	07/22+	47	07/01	2.32	-0.77	75

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	90.4	52.1	71.3	0.8	97	07/25	43	07/14+	0.24	-1.17	17
Cheyenne Municipal Airport	86.2	56.7	71.4	2.0	96	07/09	45	07/12	1.08	-1.11	49
Lander Hunt Field Airport	89.5	55.5	72.5	1.3	97	07/21	46	07/12	T	-0.78	0
Laramie Regional Airport	82.7	48.9	65.8	1.8	89	07/26+	34	07/12	0.40	-1.03	28
Rawlins Municipal Airport	86.3	50.1	68.2	1.2	92	07/25+	38	07/12	0.06	-0.78	7
Sheridan County Airport	91.0	53.5	72.2	2.2	102	07/22	40	07/12	0.22	-0.96	19

July 2016 Highlights

Monthly Rankings

Temperature in degrees F / Precipitation in inches

Warmest / Coolest	Temperature / Ranking	Record / Year	Period of Record
Pueblo, CO	80.4 / 2nd warmest	81.2 / 2003	1888-2016
Alamosa, CO	66.8 / 6th warmest (tie: 1964)	68.4 / 2011	1932-2016
Colorado Springs, CO	74.5 / 7th warmest	75.8 / 2003	1895-2016
Wettest / Driest	Precipitation / Ranking	Record / Year	Period of Record
Wichita, KS	9.67 / 2nd wettest	13.37 / 1950	1888-2016
Bismarck, ND	5.10 / 6th wettest	13.75 / 1993	1875-2016
Dickinson, ND	3.90 / 7th wettest	5.65 / 1997	1948-2016
Fargo, ND	5.98 / 10th wettest	8.42 / 1952	1881-2016
Lander, WY	T / DRIEST	Tie / 1917+	1892-2016
Rawlins, WY	0.06 / 4th driest	0.02 / 1955	1951-2016
Casper, WY	0.24 / 4th driest (tie: 1999)	0.09 / 1991	1940-2016
Laramie, WY	0.40 / 5th driest	0.17 / 1997	1948-2016
Alamosa, CO	0.31 / 8th driest (tie: 1999)	0.02 / 1994	1932-2016

All data are preliminary and subject to change. + indicates multiple dates, latest date listed. - indicates insufficient data.
 Data are retrieved through the Applied Climate Information System (ACIS) and are available online through the CLIMOD system.
 For more information please contact us: <http://www.hprcc.unl.edu/contact.php>.

North Dakota Monthly Climate Summary

Adnan Akyuz - State Climatologist

North Dakota State Climate Office, North Dakota State University

For more information: www.ndsu.edu/ndsco or www.ndawn.ndsu.nodak.edu



Precipitation:

Based on the National Centers for Environmental Information (NCEI), statewide averaged monthly accumulated precipitation was 4.38", 1.73" greater than last year and 1.5" greater than the 1971-2010 average July precipitation. The statewide average precipitation was ranked the 9th wettest on record since 1895. Majority of the state received above to much-above normal precipitation (Figure 1). Northeastern parts of the state received between 1.7 and 2.3 times as much rain as normally falls in these regions. Northwestern parts and some small pockets of southwest in Adams county continued to stay in the drier end. The largest amount of monthly accumulation was 9.89" and was recorded in Cavalier, Pembina County by a CoCoRaHS observer. Least amount of monthly accumulation was 0.6" and recorded in Hettinger, Adams County. The greatest 24-hr rainfall was 3.13" and was recorded in Fargo on July 27 by another CoCoRaHS observer. Based on the historical records since 1895, the state average annual precipitation accumulation showed an increasing trend of 0.09" per decade. The highest and the lowest monthly state July precipitation ranged from 7.97" in 1993 to 0.94" in 1936.

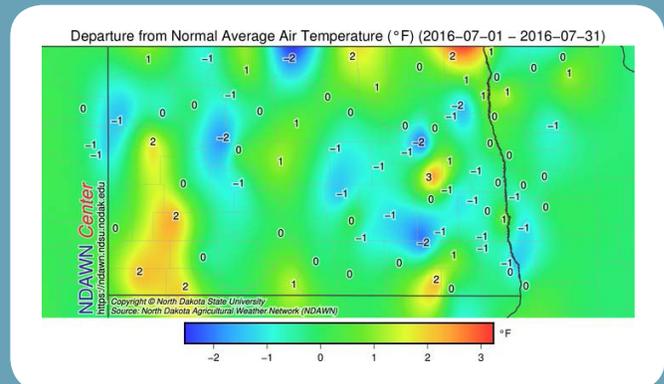
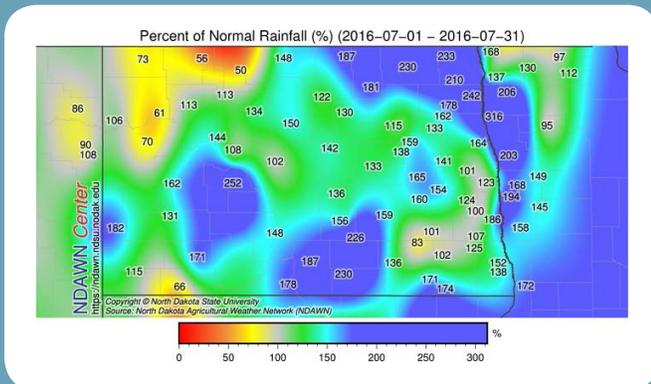
Temperature:

The state average temperature in July based on NCEI was 69.2°F, 0.7° cooler than last year but 0.2° warmer than 1971-2010 average. It was ranked the 63rd warmest or 60th coldest July on record since 1895. For most of the state, it was either an average July or within one degree from the 1971-2010 average (Fig. 2). The state's highest and lowest daily temperatures ranged from 105° on July 20 in Hettinger (Adams County) to 39° on July 1 in Hazelton (Emmons County) and Willow City (Bottineau County). Based on the historical records since 1895, the state average annual temperature showed an increasing trend of 0.03°F per decade. The highest and the lowest monthly state July average temperatures ranged from 80.1° in 1936 to 61.8° in 1992.

Drought and other notable impacts:

Based on the Drought Monitor (DM) on July 26, 2016, less than 3% of the state was under a drought designation. Out of that, only 1.2% was designated in severe category or D2 based on the index used by the DM from D0 (Abnormally Dry) to D4 (Exceptional Drought). NWS Storm Prediction Center reported 15 tornadoes, 120 hail events, and 113 high wind events in ND. NDAWN's highest peak gust in July was 89.5 mph recorded at McHenry weather station on July 4, 2016. Locations receiving excessive rain and storm damage in Pembina and Walsh counties impacted the state's overall potato conditions. Based on the ND Agricultural Statistical Services, the state's potato crop was rated at 21% poor to very poor condition. As of July 26, Bowman and Slop Counties were in the severe drought area. Counties in moderate drought areas included Bowman, Slope, and Adams in the southwest, and Richland in the southeast. More than 90% of the state did not have any D-designation including abnormally dry conditions.

Temperature and Precipitation Overview



Above: Percent of normal precipitation (left, figure 1) and departure from normal average temperature (right, figure 2) for July 2016 in North Dakota. Both figures produced by NDAWN.

Kansas Climate Summary

Mary Knapp - Service Climatologist
 Kansas Weather Data Library, Kansas State University
 For more information: www.ksre.ksu.edu/wdl



Hot and muggy

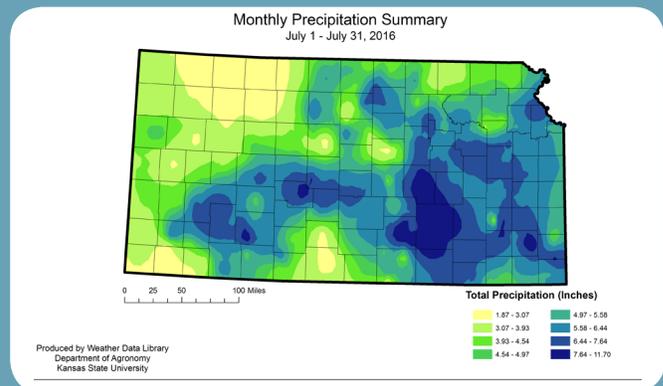
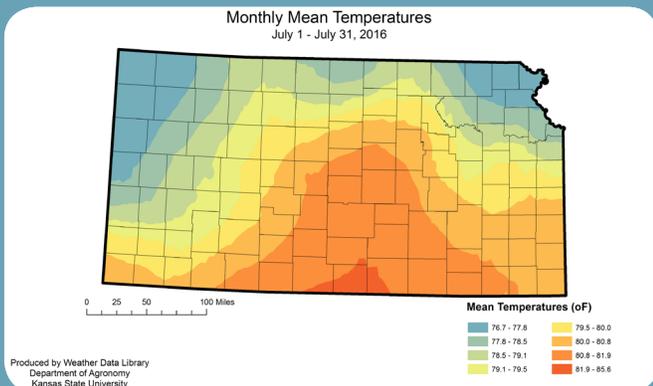
Warm humid weather was the rule for Kansas this July, although the departures from normal weren't as great as in June. On the temperature side, this was the 47th warmest since 1896, which places it in the middle range of the distribution. The state-wide average temperature was 79.4 oF or 0.8 oF warmer than normal. The North Central Division was closest to normal for the month. Their average was 79.2 oF, or just 0.2 degrees warmer than normal. The warmest division was the Southwest Division where the average temperature was 80.2 oF or 1.3 degrees warmer than normal. There were only 3 events that tied daily record high temperatures. In contrast, 30 new low maximum temperature records were set. Most of the departures came in the low temperatures. There were 23 new record warm minimum temperatures set, and 32 records tied. Of those, 2 tied record warm minimum temperatures for the month of July. The highest temperature recorded for the month was 109 oF, set at Salina, Saline County, on the 22nd. The coldest temperature recorded for the month was 41 oF at Horton, Brown County, on the 13th.

State-wide rainfall for July was above normal; however the Northwest Division missed out on the extra rainfall. The Northwest Division averaged 2.23 inches or just 66 percent of normal. In contrast, the Southeast Division averaged 7.57 inches or 187 percent of normal. This July ranks as the 18th wettest in the 122 years of record. The wettest July on record occurred in 1993, when the statewide average total was 9.28 inches. With the overall wet pattern, there were 107 new record daily rainfall totals. Of those, two reports, on July 2nd, set new monthly records as well: Ulysses with 2.89 inches and Wichita with 5.72 inches. The greatest 24 hour total for a NWS station was 6.53 inches at Easton, Leavenworth County, on the 3rd. The greatest 24 hour total for a CoCoRaHS station was 8.09 inches at Bel Aire 0.5 WSW, Sedgwick County, also on the 3rd. Highest monthly totals: 11.47 inches at Virgil, Greenwood County (NWS); 11.70 inches at Ingalls 6.2 WNW, Gray County (CoCoRaHS).

With the wetter pattern than seen in June, there were also more severe weather reports. There were eight tornadoes reported in July. The most severe of these struck Eureka, KS on the 7th. Fortunately there were no deaths or injuries reported with the event. There was a total of 56 hail reports which was similar to June's total of 51 events. The most common severe weather report was damaging winds. There were 180 damaging wind reports in the month.

Despite the wetter than average conditions state-wide, there was an expansion of abnormally dry conditions in the Northwest. This region of the state missed out on most of the precipitation events. The wetter pattern in the eastern third of the state reduced the abnormally dry conditions there. The last Drought Monitor issued in June had just over 20 percent of the state as abnormally dry; the latest Drought Monitor places the total in abnormally dry conditions at just over 13 percent. The precipitation outlook for August is neutral, with it equally likely to have above or below normal precipitation. Statewide, the outlook is for an increased chance of warmer than normal temperatures. This is likely to follow July's pattern, with the departure as warmer than normal low temperatures.

Temperature and Precipitation Overview



Above: July 2016 monthly mean temperatures (left) and total precipitation (right) in Kansas. Maps produced by Weather Data Library, Department of Agronomy, Kansas State University.

About the High Plains Regional Climate Center

The High Plains Regional Climate Center (HPRCC) is one of six NOAA Regional Climate Centers (RCCs) that has been providing timely climate data and information to the public for cost effective decision-making since 1987. The HPRCC primarily serves the six-state region of Colorado, Kansas, Nebraska, North Dakota, South Dakota, and Wyoming, but has also served people from all across the country and even throughout the world. HPRCC operates under a three-tiered structure of climate services and works closely with other organizations on the local, regional, and national levels. HPRCC staff engage with a wide range of stakeholders including K-20 education, the public, media, private industry, research, and state/tribal/federal entities, among others.

Much of the data and products found throughout this publication were built on the Applied Climate Information System (ACIS) framework. ACIS was designed to manage the complex flow of information from climate data collectors to the end users of climate data information. The main purpose of ACIS is to alleviate the burden of climate information management for people who use climate information to make management decisions.

HPRCC is involved in the ongoing development and management of ACIS. In the spring of 2014, the RCCs released a new website for ACIS. This new and improved website not only contains descriptions of ACIS and the sources of data found within, but also features real-world examples of how RCCs and external groups are using ACIS for their particular climate data needs. In addition to these examples, there is extensive documentation and tutorials on how ACIS can be used and accessed by external clients using Web Services. For more information see: <http://rcc-acis.org>.



Additional Summary Information for the High Plains

Missouri River Basin Quarterly Climate Impacts and Outlook

For more information:
<https://www.drought.gov/drought/dews/missouri-river-basin/reports-assessments-and-outlooks>

Midwest and Great Plains Monthly Climate and Drought Webinar

To sign up for future webinars:
<https://www.drought.gov/drought/calendar/webinars>

For an archive:
www.hprcc.unl.edu/webinars.php

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