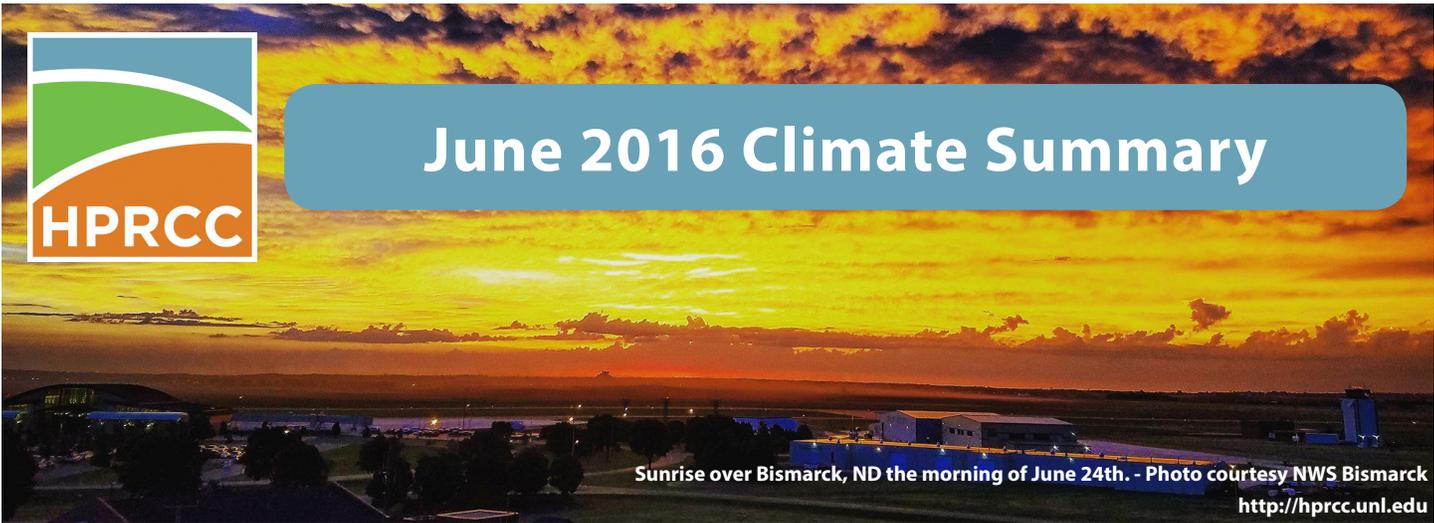




June 2016 Climate Summary



Sunrise over Bismarck, ND the morning of June 24th. - Photo courtesy NWS Bismarck
<http://hprcc.unl.edu>

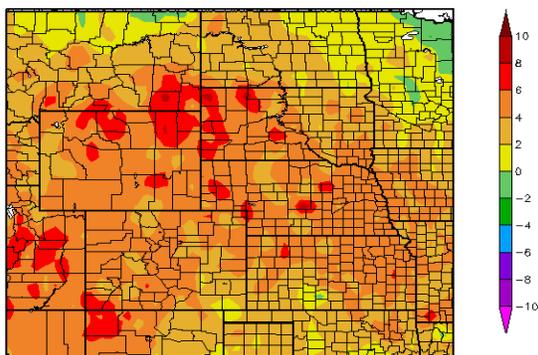
Warm and Dry Conditions Cause Drought Expansion

A major pattern change occurred in the High Plains in June, as cooler and wetter conditions in May abruptly transitioned to warmer and drier weather to start the summer season. Such extremes in moisture were evident in Concordia, Kansas, which went from having its 10th wettest May to its 10th driest June on record (period of record 1885-2016). Grand Island, Nebraska continuously missed out on rainfall, receiving only 0.05 inches (1 mm) of precipitation and having its driest June on record (period of record 1896-2016). Above-normal temperatures also returned to the region. Several locations reached 100 degrees F (37.8 degrees C), including Colorado Springs, Colorado, which has an elevation of over 6,000 feet (1,829 m). Locations that had a top 10 warmest June were common across the entire region. Impressive records occurred in Alamosa, Colorado, which had its 2nd warmest June, and Scottsbluff, Nebraska, which tied for its 2nd warmest June on record (Alamosa period of record 1906-2016, Scottsbluff period of record 1893-2016). Heat waves occurred on several occasions, especially during the first two-thirds of the month, as ample atmospheric moisture combined with high temperatures to create uncomfortable conditions.

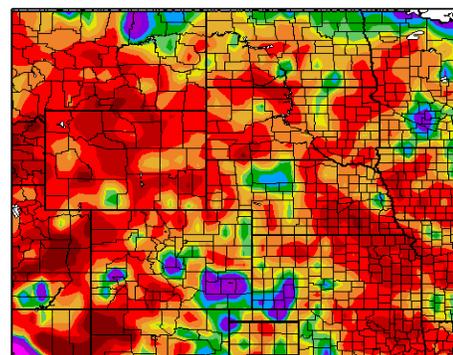
The warmth and dryness experienced in June caused impacts around the region. Drought developed in the eastern Dakotas and south-central Nebraska, and it intensified rapidly in western South Dakota and north-eastern Wyoming. Topsoil dried out quickly, and subsoil moisture began to decline. However, as of the end of June, drought conditions appeared to have caused only localized impacts to crops or rangeland. Despite the high temperatures and lack of adequate precipitation and soil moisture, crop and pasture conditions were mostly in good shape. This was likely due in part to cool and wet conditions in May, although this is likely to change if dryness continues into July. Dry weather also had positive impacts around the region, as it accelerated maturation of small grains in North Dakota and allowed for harvesting of winter wheat in Kansas.

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
6/1/2016 - 6/30/2016



Percent of Normal Precipitation (%)
6/1/2016 - 6/30/2016



Above: Departure from 1981-2010 normal temperature (left) and percent of normal precipitation (right) for June 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>.

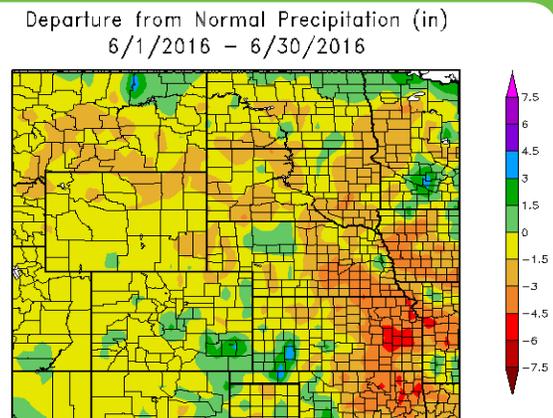
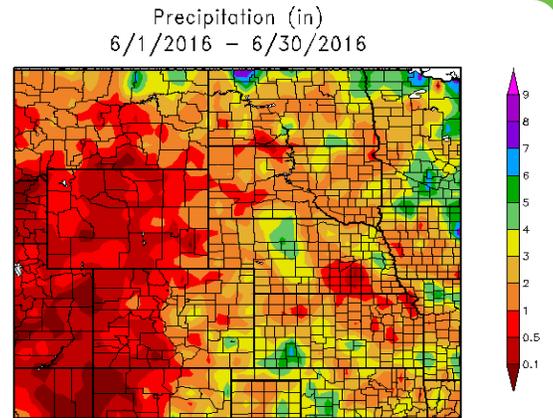
Precipitation

The wet pattern that was present in May throughout the High Plains was reversed in June, as most of the region experienced below-normal precipitation. Departures were greatest in southeastern Nebraska and eastern Kansas, as precipitation in these areas was about 3.00-5.00 inches (76-127 mm) below normal. Grand Island, Nebraska had its driest June on record, receiving only 0.05 inches (1 mm) of precipitation and smashing the previous record of 0.43 inches (11 mm) set in 1922 (period of record 1896-2016). Other locations that had a top 5 driest June included Lincoln, NE (3rd driest), Omaha, NE (tied for 4th driest), and Sheridan, WY (5th driest).

Warm and dry weather led to drought expansion and parched soils across the region. At the end of May, soil moisture was adequate in most areas due to the widespread excessive precipitation that was received throughout the month, but it declined rapidly in June. This was especially the case in South Dakota and Nebraska. At the beginning of the month, topsoil moisture was just 12 percent short to very short in South Dakota, but that number more than quadrupled to 50 percent by the end of the month. In Nebraska, topsoil moisture went from 7 percent to 33 percent short to very short during June. Subsoil moisture also suffered regionwide, as South Dakota was faring the worst at the end of the month with 39 percent short to very short, followed by 31 percent in Wyoming. The deficiencies in soil moisture were impacting agriculture, as visual stress to corn was reported in southern Nebraska and northeastern South Dakota.

The High Plains experienced some positive impacts as a result of the dry weather. While June is typically one of the most active months for severe weather in the region, fewer storm systems moving across the country limited occurrences of such weather nationwide. According to the Storm Prediction Center, the preliminary number of tornadoes in June was far below the 2013-2015 average and down significantly from the preliminary number of tornadoes in May. In addition to fewer occurrences of severe weather, some crops benefited from the dryness. In North Dakota, dryness aided crop maturation of small grains. Oats, barley, and spring wheat entered the heading stage early, and the percent headed was far ahead of the 5-year average. Dryness was welcomed by winter wheat producers in Kansas, as it allowed them to get out in their fields to harvest the crop.

Regional Precipitation



Above: Total precipitation in inches (top) and departure from normal precipitation in inches (bottom) for June 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

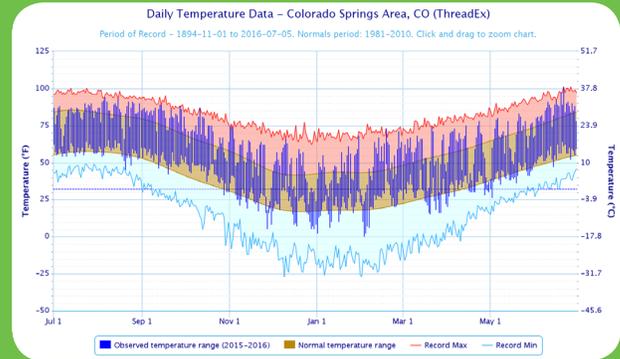
Warm and dry conditions in June caused streamflows to decline in some areas of the High Plains. Streamflows were below normal to much below normal in the Upper Missouri River Basin, including most of Montana, northern Wyoming, and the western Dakotas where it had been especially dry since May. These areas received 50 percent of normal precipitation in June, at best. However, in some areas, streamflows were still high from snowmelt and excessive precipitation in May. Higher streamflows were present in Colorado, Nebraska, and Kansas, and especially along the North Platte River in western Nebraska. Despite June dryness, an extremely wet May and rapid snowmelt in the Rockies caused streamflows in these areas to continue to be above normal. However, flooding is not expected in these areas through the first half of July.

Temperatures

June was very warm across the High Plains region, as most locations experienced temperatures of 3.0-6.0 degrees F (1.7-3.3 degrees C) above normal. Many locations had a top 10 warmest June on record, and all six states in the High Plains had at least one location with a top 5 warmest June. In Nebraska, Omaha and Lincoln hit 80 degrees F (26.7 degrees C) every day during June, which happened for the first time on record for both locations, according to a meteorologist at the NWS Omaha Weather Forecast Office (WFO) (Omaha period of record 1871-2016, Lincoln period of record 1887-2016).

The heat was most evident during the first two-thirds of the month. High temperatures combined with a moist atmosphere to create sultry conditions, prompting several NWS WFOs to issue heat advisories for high heat index values. To demonstrate the danger of heat inside an enclosed vehicle, staff at the NWS Omaha WFO cooked bacon and eggs and baked cookies inside a vehicle on one of the especially hot days!

Station Spotlight: Colorado Springs, CO



Above: Daily temperatures along with extremes and normals values since July 1, 2015 in Colorado Springs, CO.

Several locations hit 100 degrees F (37.8 degrees C) for the first time this year, including a few high-elevation cities in Colorado and Wyoming, which was particularly impressive. For instance, Casper, Wyoming and Colorado Springs, Colorado both experienced their earliest 100 degrees F (37.8 degrees C) day on record (Casper period of record 1939-2016, Colorado Springs period of record 1894-2016). In fact, Colorado Springs hit 101 degrees F (38.3 degrees C) on the 21st, which tied with June 26, 2012 for its highest temperature on record. Reaching 100 degrees F (38.3 degrees C) is uncommon in Colorado Springs; it has only happened 8 times since record-keeping began in 1894.

Drought Conditions

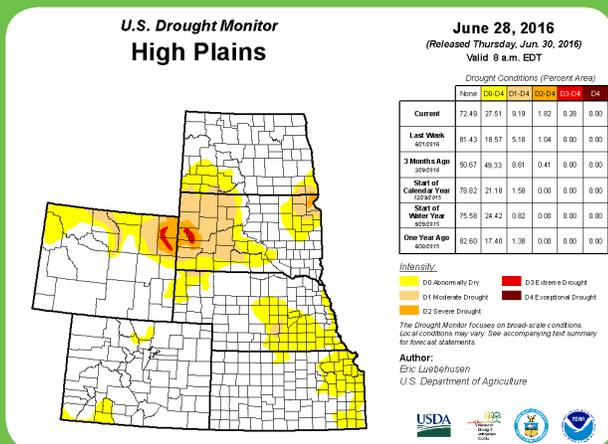
The warmth and dryness experienced across most of the region in June caused expansion of drought conditions in several locations. According to the U.S. Drought Monitor, the area experiencing drought or abnormally dry conditions (D0-D4) increased from about 9 percent to over 27 percent in the last month. The largest area in drought extended from far southwestern North Dakota southward to include most of western South Dakota and northeastern Wyoming.

Dryness that has been present since spring has caused several impacts, such as increased fires, low productivity of rangeland, reductions in livestock, hay losses, and early irrigation. The continued dryness prompted the introduction of severe drought (D2), and then extreme drought (D3), to part of the region by U.S. Drought Monitor authors.

A second area of drought developed in northeastern South Dakota/southeastern North Dakota in June. This region has been rather dry since May. The combination of high temperatures and little precipitation was causing stress to lawns and corn.

Dryness also developed across central/eastern Nebraska and eastern Kansas during June, prompting the introduction of widespread abnormal dryness (D0) to the region, as well as a small area of moderate drought (D1) in south-central Nebraska. Dry topsoil was being reported by extension educators in eastern Nebraska. If above normal temperatures and dry conditions continue into July, drought is likely to spread and intensify across the region.

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/>.

Climate Outlooks

According to the Climate Prediction Center, the El Niño ended in May and ENSO-neutral conditions are present in the Pacific. The 2015-2016 El Niño was one of the strongest El Niño events on record. La Niña is favored to develop during summer 2016, with approximately a 75 percent chance that La Niña conditions will be present during 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 July-September temperature outlook indicates an increased chance of above-normal temperatures for nearly the entire contiguous U.S., including all of the High Plains region. Only southeastern Texas in the contiguous U.S. has equal chances for above-, below-, or near-normal temperatures. There are no areas of the contiguous U.S. with an increased chance for below-normal temperatures during the July-September period.

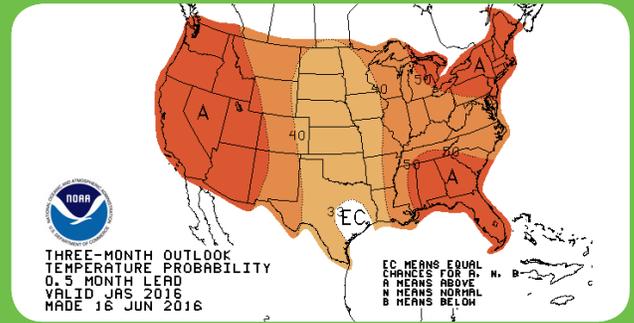
Precipitation

The precipitation outlook for the next three months calls for a higher probability of above-normal precipitation across the northern Plains, the entire Gulf Coast, and the Atlantic Coast of Florida. In the High Plains region, this includes southern North Dakota, most of South Dakota, and northern Nebraska. Below-normal precipitation is favored in the Pacific Northwest and a portion of the northern Rockies. This includes northwestern Wyoming in the High Plains. The remainder of the contiguous U.S. has equal chances for above-, below-, or near-normal precipitation.

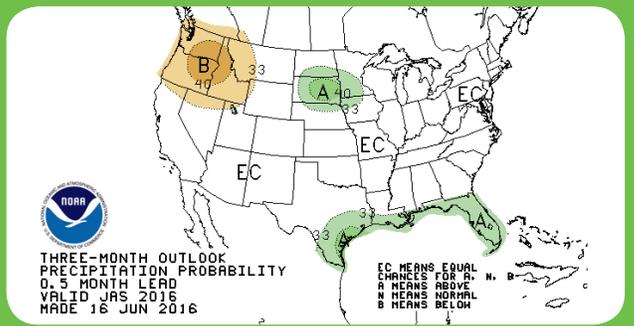
Drought

The June 16th U.S. Seasonal Drought Outlook shows that drought is expected to persist across portions of the West, the western High Plains, and in the Southeast. In the High Plains region, this includes northern Wyoming, as well as the Black Hills area of South Dakota, extending across the border to northeastern Wyoming. Drought will remain, but improve, in southeastern Arizona. Drought removal is likely across several areas, including the Southwest, the northern Plains, and in the Northeast. In the High Plains region, the small area of drought in southeastern North Dakota and northeastern South Dakota may be removed. Drought development is likely in the Pacific Northwest and part of the northern Rockies. At the time this outlook was released, drought was not expected to further develop in the High Plains through September. However, drought was introduced to south-central Nebraska by U.S. Drought Monitor authors in June.

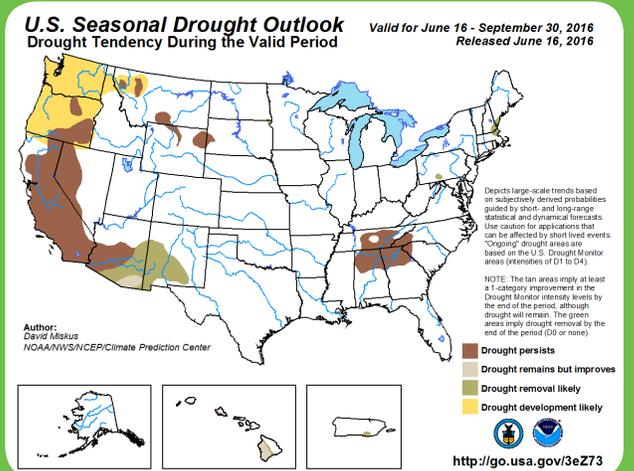
Temperature Outlook



Precipitation Outlook



Drought Outlook



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>.

Drought will remain, but improve, in southeastern Arizona. Drought removal is likely across several areas, including the Southwest, the northern Plains, and in the Northeast. In the High Plains region, the small area of drought in southeastern North Dakota and northeastern South Dakota may be removed. Drought development is likely in the Pacific Northwest and part of the northern Rockies. At the time this outlook was released, drought was not expected to further develop in the High Plains through September. However, drought was introduced to south-central Nebraska by U.S. Drought Monitor authors in June.

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	85.9	57.3	71.6	4.4	98	06/21	47	06/01	3.94	1.48	160
Alamosa San Luis Airport	83.6	44.2	63.9	4.3	93	06/19	38	06/18+	0.51	0.02	104
Colorado Springs Municipal Airport	85.5	55.5	70.5	5.4	101	06/21	47	06/14	1.04	-1.46	42
Denver International Airport	85.5	56.2	70.8	3.4	98	06/21	49	06/02	1.62	-0.36	82
Grand Junction Walker Field Airport	92.6	60.2	76.4	4.4	104	06/21	48	06/01	0.13	-0.33	28
Pueblo Memorial Airport	92.8	59.1	76.0	6.0	105	06/21	49	06/16	0.78	-0.58	57

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	91.5	66.2	78.8	5.4	102	06/15	53	06/07	1.17	-2.88	29
Dodge City Regional Airport	89.5	63.2	76.4	2.5	101	06/22	50	06/05	2.71	-0.53	84
Goodland Renner Field	90.2	58.5	74.3	4.6	102	06/21	46	06/05	1.62	-1.63	50
Topeka Municipal Airport	90.7	68.2	79.4	5.2	103	06/22	57	06/02	2.39	-3.01	44
Wichita Mid-Continent Airport	92.8	69.3	81.1	5.3	103	06/15	58	06/06	2.83	-2.37	54

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	91.3	54.0	72.6	6.7	107	06/21	38	06/01	1.82	-1.42	56
Grand Island Airport	89.6	63.2	76.4	5.1	101	06/21+	50	06/07	0.05	-4.25	1
Lincoln Municipal Airport	91.4	66.1	78.8	6.2	101	06/15	52	06/07	0.58	-3.77	13
Norfolk Karl Stefan Airfield	86.2	61.4	73.8	3.6	95	06/17	46	06/07	3.21	-1.05	75
North Platte Regional Airport	87.4	57.9	72.6	4.7	96	06/16	42	06/05	3.26	-0.16	95
Omaha Eppley Airport	90.6	66.8	78.7	6.6	99	06/15	53	06/07	0.94	-3.24	22
Valentine Miller Field	87.5	57.2	72.4	4.9	102	06/11	42	06/07+	4.16	0.60	117

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismark Municipal Airport	81.6	54.4	68.0	3.3	95	06/09	43	06/02	4.38	1.21	138
Fargo International Airport	80.4	57.2	68.8	2.6	91	06/19+	44	06/02	2.45	-1.45	63
Grand Forks International Airport	77.0	54.1	65.5	1.5	88	06/10+	42	06/02	3.30	-0.18	95
Theodore Roosevelt Airport	79.0	50.3	64.6	2.4	94	06/09	41	06/23+	2.66	-0.54	83
Williston International Airport	81.0	53.8	67.4	4.2	96	06/09	42	06/01	1.84	-0.68	73

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>.

June 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	84.7	56.4	70.6	5.0	100	06/09	40	06/02	1.41	-2.29	38
Huron Regional Airport	85.1	58.4	71.8	4.0	97	06/19	44	06/07+	1.91	-2.02	49
Pierre Regional Airport	86.1	57.7	71.9	4.2	102	06/24	45	06/07+	1.83	-1.74	51
Rapid City Regional Airport	87.1	54.2	70.7	6.2	103	06/11	38	06/01	1.22	-1.31	48
Sioux Falls Joe Foss Field Airport	84.1	60.6	72.4	4.6	98	06/11	43	06/02	1.72	-2.20	44

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	86.2	47.7	67.0	4.8	100	06/21	31	06/01	1.17	-0.44	73
Cheyenne Municipal Airport	82.1	52.5	67.3	5.2	95	06/21	43	06/01	2.08	-0.26	89
Lander Hunt Field Airport	84.3	52.4	68.4	5.4	95	06/21	38	06/01	0.57	-0.70	45
Laramie Regional Airport	78.9	45.0	62.0	4.8	91	06/21	33	06/01	1.68	0.14	109
Rawlins Municipal Airport	83.4	45.2	64.3	5.0	96	06/21	35	06/26	0.19	-0.84	18
Sheridan County Airport	87.0	49.6	68.3	6.7	104	06/21	34	06/01	0.39	-1.73	18

June 2016 Highlights

Monthly Rankings

Temperature in degrees F / Precipitation in inches

Warmest / Coolest	Temperature / Ranking	Record / Year	Period of Record
Alamosa, CO	63.9 / 2nd warmest	64.5 / 2012	1906-2016
Pueblo, CO	76.0 / 3rd warmest	77.0 / 2012	1889-2016
Colorado Springs, CO	70.5 / 3rd warmest (tie: 1952, 2011)	73.3 / 2012	1895-2016
Scottsbluff, NE	73.6 / 2nd warmest (tie: 1933)	75.3 / 2012	1893-2016
Lincoln, NE	78.8 / 3rd warmest (tie: 1953)	80.4 / 1933	1887-2016
Lander, WY	68.4 / 4th warmest	72.5 / 1988	1892-2016
Sheridan, WY	68.3 / 4th warmest	74.1 / 1988	1907-2016
Topeka, KS	79.4 / 6th warmest (tie: 1918)	82.3 / 1934	1887-2016
Wettest / Driest	Precipitation / Ranking	Record / Year	Period of Record
Grand Island, NE	0.05 / DRIEST	0.43 / 1922	1896-2016
Lincoln, NE	0.58 / 3rd driest	0.17 / 2002	1887-2016
Omaha, NE	0.94 / 4th driest (tie: 1911)	0.24 / 2007	1871-2016
Sheridan, WY	0.39 / 5th driest	0.07 / 1933	1907-2016
Concordia, KS	1.17 / 10th driest	0.34 / 1952	1885-2016

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 NCEI calculations, the state averaged 2.34” of precipitation which is 0.29” below the 1981-2010 average. The statewide average precipitation is ranked the 23rd driest on record since 1895. As the northern parts of the state received well above to slightly above normal precipitation, the southern 2/3 of the state received below normal amounts (Fig. 1). Some areas received between 2-3” of rain on the first week of June causing crops to drown. However, mostly widespread precipitation helped replenish soil moisture for seed germination. The second week, the northern locations benefited from needed moisture but some areas had heavy rain and hail caused crop damage. The southern half of the state by the end of the second week was showing crop stress due to dry and windy conditions. Windy conditions also caused a delayed herbicide application in these regions. The largest amount of accumulated precipitation in June was 7.14” and recorded in Northgate, Burke County. Least amount of accumulated precipitation in June was 0.48” and recorded in Pretty Rock, Grant County. Highest 24-hr rainfall recorded in Bismarck was 2.62” on June 14 which is also the daily 24-hr rainfall record for BIS. Based on the historical records since 1890, the state average annual precipitation accumulation shows a decreasing trend by 0.02” per decade.

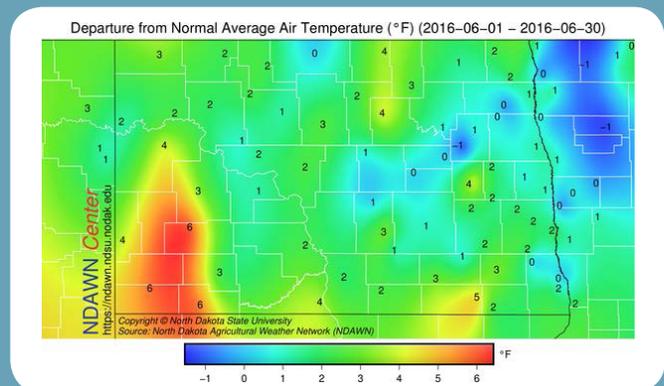
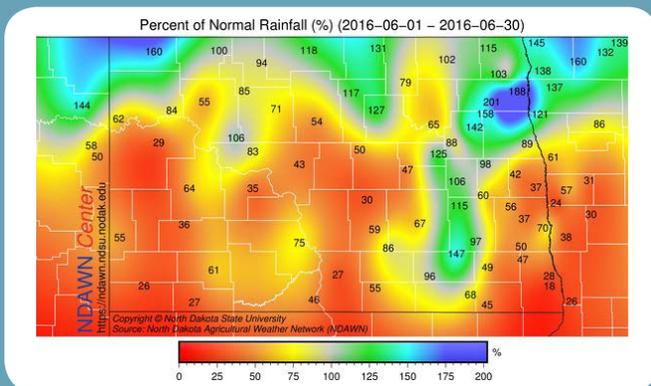
Temperature:

The state average temperature in June was 65.9°F which is the 20th warmest June on record since 1895. Most of the state ranged between slightly above to much above the 1981-2010 average. There were some small pockets where the monthly average was near normal (Fig. 2). The state’s highest and lowest temperatures ranged from 101°F on June 25 in Flasher to 37°F on June 23 in Hettinger, ND. The daily maximum of 101°F that was recorded on June 25 in Flasher is the only 100 degree day so far in ND. Based on the historical records since 1890, the state average annual temperature shows an increasing trend by 0.13°F per decade. The highest and the lowest monthly state average temperatures ranged from 74.1°F in 1988 to 56.8°F in 1915.

Drought and other notable impacts:

Crops in the south central region showed stress from the dry conditions according to the USDA Agricultural Statistics Service (NDASS). NWS Storm Prediction Center reported 3 tornadoes, 62 hail events, and 97 high wind events in ND. Two tornadoes were reported through social media near Watford City on June 21. No known damage was reported with these tornadoes. One tornado was reported near Mott on June 21. Emergency Management reported minor roof damages. This storm near Mott also produced hail with a 2.5” diameter. NDAWN’s highest peak gust in June was recorded at McHenry weather station as 78.5 mph at 5:58 am on June 17, 2016. Locations receiving excessive rain and hail especially in the northeastern portions of the state reported crop damage due to hail. Excessive moisture also caused crop disease issues according to NDASS. By the end of the month, less than 1% of the state (SW corner of Richland County) experienced severe drought while less than 4% of the state experienced moderate drought. More than 80% of the state did not have any drought or 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 June 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



Summer arrives early

June made a quick turn-around with both temperature and precipitation in most of the state. Only the Southwest Division averaged above normal precipitation for the month. The June average precipitation in Southwest KS was 5.14 inches or 158 percent of normal. In contrast, the Northeast division averaged just 0.98 inches or 19 percent of normal. The statewide average was 2.53 inches or 65 percent of normal. That places this June as the 23rd driest since 1896. The driest June on record occurred in 1911, when the statewide average total was just 0.68 inches. Despite the overall dry pattern, there were 32 new record daily rainfall totals. Of those, Cimarron's daily record 4.89 inches set on June 13th set a new monthly record as well. The greatest 24 hour total for a NWS station was 5.80 inches at Bentley 2E, Sedgwick County, on the 16th. The greatest 24 hour total for a CoCoRaHS station was 6.13 inches at Halstead 0.4 S, Harvey County, also on the 16th. Highest monthly totals: 9.79 inches at Winfield, Cowley County (NWS); 7.52 inches at Wichita 6.9 NW, Sedgwick County (CoCoRaHS).

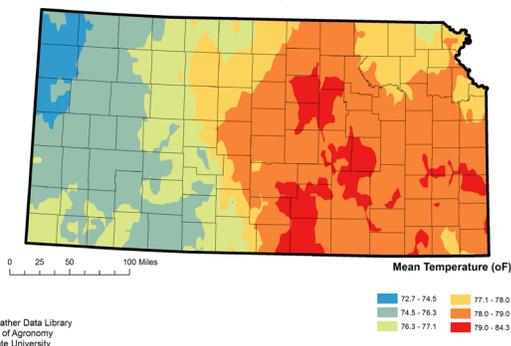
On the temperature side, this was the 10th warmest since 1896. The statewide average temperature was 77.5 oF. Not surprisingly, the Southwest Division was closest to normal for the month. The average was 76.7 oF, or 2.9 degrees warmer than normal. The warmest division was the East Central where the average temperature was 78.4 oF or 4.9 degrees warmer than normal. There were 61 new daily record high temperatures set. In addition there were 31 new record warm minimum temperatures. Of those, 4 set new record warm minimum temperatures for the month of June. Toronto Lake set a new record of 78 oF on the 18th, then tied it again on the 23rd. The highest temperature recorded for the month was 106 oF, set at both Abilene, Dickinson County, and Salina, Saline County, on the 15th. The coldest temperature recorded for the month was 42 oF, reported at Brewster 4W in Thomas County on the 5th.

As the rainfall pattern decreased, there were also fewer severe weather reports. There were no tornadoes reported in June. There were 51 hail reports which were much fewer than the 223 reported in May. The most common severe weather report was damaging winds. There were 86 damaging wind reports in the month.

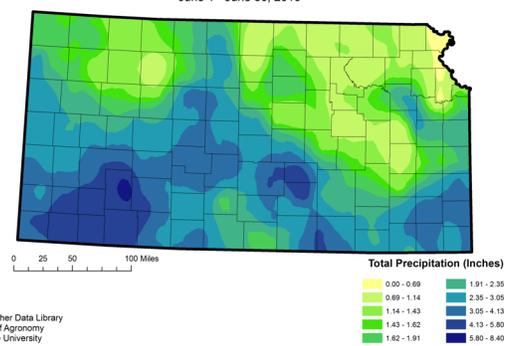
The dry month resulted in a return of abnormally dry conditions across much of the eastern third of the state. The last Drought Monitor issued in June had just over 20 percent of the state as abnormally dry. The precipitation outlook for June for wetter than average conditions didn't materialize. The July outlook is neutral on precipitation, with chances equally likely for above or below normal precipitation. Statewide, the outlook is for warmer than normal temperatures.

Temperature and Precipitation Overview

Monthly Mean Temperatures
June 1 - June 30, 2016



Monthly Precipitation Summary
June 1 - June 30, 2016



Above: June 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

Quarterly Climate Impacts and Outlook
Missouri River Basin
December 2014

National - Significant Events for September - November 2014

Highlights for October and the first week of November 2014

Significant Events for November and Autumn 2014

Regional - Impacts for September - November 2014

Regional - Climate Overview for September - November 2014

Drought Co-Occurrence

3-Month Precipitation and Temperature Outlooks

Soil Moisture Conditions

MO River Basin Partners

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

20141120 Monthly Climate and Drought Webinar

Forecast Precipitation Amounts (7 day)

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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