



June 2018 Climate Summary



A herd of elk roams at dusk near Telluride, CO. Photo courtesy of Emily Laidlaw.
<http://hprcc.unl.edu>

Continued Warmth

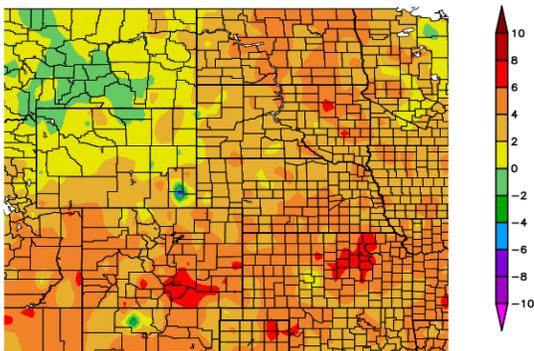
It was another warm month throughout the High Plains, as June temperatures averaged 3.0-6.0 degrees F (1.7-3.3 degrees C) above normal for much of the region. Similar to May, numerous top 10 records for warmest June were broken. This late spring/early summer heat allowed crops to progress quickly after getting off to a late start due to a chilly April. While corn and soybeans were faring well for the most part across the region, a continuation of excessive heat could impact yields and is something to watch throughout the summer.

Precipitation varied throughout the region during June, with record-breaking rainfall across portions of Nebraska and South Dakota, and dry conditions across much of Colorado and eastern Kansas. Severe weather was abundant during June, including the uncommon occurrences of strong tornadoes in Wyoming and dust storms in South Dakota. Meanwhile, wildfires raged across southern Colorado where drought has been present. Fires threatened public safety and natural resources at San Juan National Forest, prompting the U.S. Forest Service to close it down in mid-June. At the time of this writing, the Spring Creek fire had burned more than 103,000 acres and was the third largest wildfire in Colorado's history, according to *The Denver Post*.

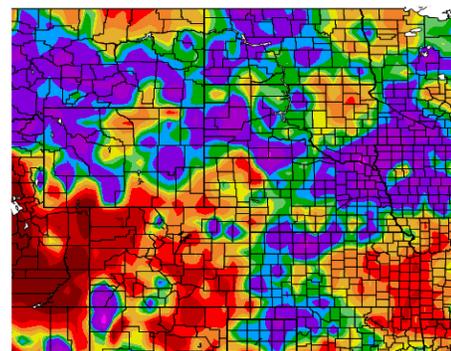
June 30th was the official end of the 2017-18 snow season, which brought both above-normal and below-normal snowfall to the region. Snowfall was plentiful in the Northern Plains, particularly in South Dakota and Nebraska. The following locations ranked in the top 10 for snowiest season: North Platte, NE (5th snowiest), Sioux Falls, SD (5th snowiest), Pierre, SD (10th snowiest), and Rapid City, SD (10th snowiest). Snowfall was scarce throughout Colorado and parts of Kansas, however. Locations ranking in the top 10 for least snowiest season included: Alamosa, CO (least snowiest), Dodge City, KS (3rd least snowiest), Pueblo, CO (4th least snowiest), Denver, CO (5th least snowiest), and Grand Junction, CO (tied for 5th least snowiest).

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
6/1/2018 - 6/30/2018



Percent of Normal Precipitation (%)
6/1/2018 - 6/30/2018



Above: Departure from 1981-2010 normal temperature (left) and percent of normal precipitation (right) for June 2018 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

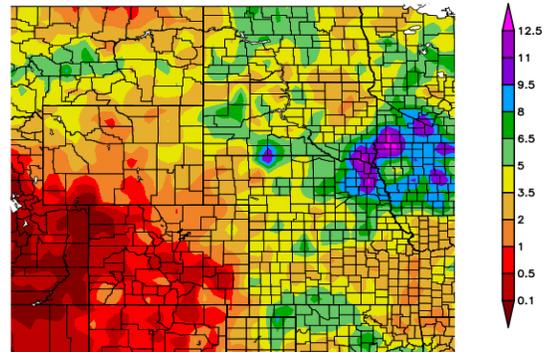
Much of the High Plains had a wet June, as the western Dakotas, eastern Nebraska, western Kansas, and pockets of Wyoming received at least 150 percent of normal precipitation. Fortunately, heavy rains fell across areas that have been in drought, such as portions of the Dakotas and western Kansas. The heaviest rains fell across eastern Nebraska and southeastern South Dakota, resulting in some impressive monthly precipitation records. For instance, Sioux Falls, South Dakota had its 6th wettest June on record, while Lincoln, Nebraska tied for its 8th wettest. Not all areas of the High Plains were wet in June, however. Much of Colorado, eastern Kansas, and the eastern Dakotas were left dry, causing drought to expand and intensify in these regions.

Repeated thunderstorms brought heavy rainfall to much of eastern Nebraska and southeastern South Dakota from June 17th-25th. Sioux Falls, South Dakota received 4.69 inches (119 mm) of precipitation June 20th-21st, which was the 3rd highest 2-day total precipitation on record for June (period of record 1893-2018). In Omaha, Nebraska, the College World Series was occurring during this period and, according to the *Omaha World-Herald*, rain and lightning caused 660 minutes of game delays, which was longer than the past seven years combined!

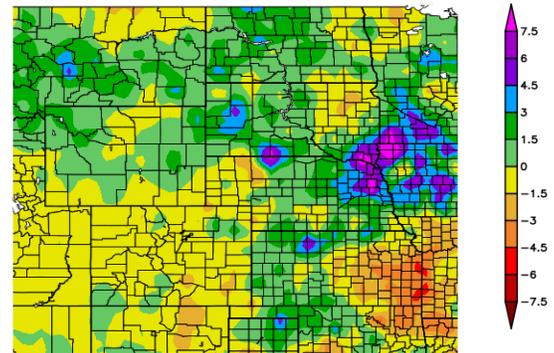
Numerous severe weather events occurred throughout the High Plains in June, some of which were particularly notable. On June 1st, severe storms impacted a large portion of the High Plains region, with widespread reports of tornadoes, large hail, and damaging winds throughout northeastern Wyoming, the Dakotas, Nebraska, and eastern Kansas. For instance, a tornado touched down near Gillette, Wyoming and destroyed numerous structures, snapped trees and utility poles, and caused two injuries. This tornado was rated an EF-3 on the Enhanced Fujita Scale. According to records from the National Centers for Environmental Information (NCEI), the last time a tornado of this strength was reported in Wyoming was 1987. Also on the 1st, strong winds kicked up dirt and dust over dry areas of northeastern South Dakota and produced a dust storm, reducing visibilities and causing traffic issues and damage to vegetation. Later in the month, two hailstorms decimated corn and soybean fields in South Dakota between Rapid City and Pierre. The storms left hail scars on the landscape, which could be seen on satellite images.

Regional Precipitation

Precipitation (in)
6/1/2018 – 6/30/2018



Departure from Normal Precipitation (in)
6/1/2018 – 6/30/2018



Above: Total precipitation in inches (top) and departure from normal precipitation in inches (bottom) for June 2018. 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

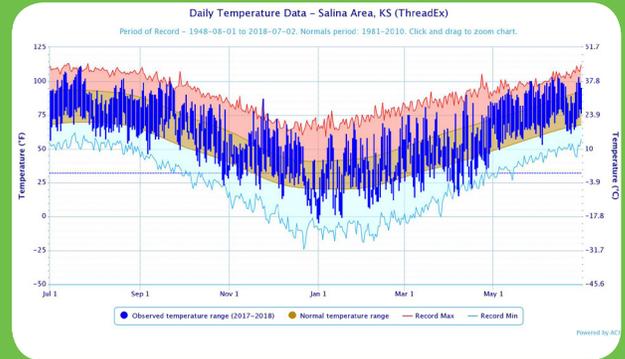
As of the end of June, Upper Missouri Basin snowpack had almost completely melted out. Rapid melting due to above-normal temperatures in May and June caused streamflows to be much above normal. The U.S. Army Corps of Engineers continued higher-than-average releases from Missouri River mainstem projects in June. Colorado snowpack was abysmal this year, peaking at 71 percent of normal statewide. The snowpack melted out nearly a month early in southern basins, so streamflows were well below normal during June. In the Plains, below-normal streamflows were common in areas where drought was present, including southeastern Colorado, central and eastern Kansas, and along the southern border of Nebraska. Meanwhile, periodic heavy rainfall in northeastern Nebraska and southeastern South Dakota caused much-above-normal streamflows, including flooding on the Missouri River.

Temperatures

Above-normal temperatures continued into June for most of the High Plains region. Other than northern and central Wyoming where June temperatures were generally near normal, the region experienced departures of approximately 3.0-6.0 degrees F (1.7-3.3 degrees C) above normal. Every state in the High Plains region had locations that experienced a top 10 warmest June on record. The greatest departures occurred in small pockets of east-central Kansas and south-central Colorado, and records were most impressive in these areas. For instance, Salina, Kansas tied for its warmest June on record, while Colorado Springs, Colorado and Pueblo, Colorado had their second warmest.

A widespread heat wave impacted the region June 27th-29th, prompting the National Weather Service to issue heat advisories for much of the eastern High Plains and Midwest. High humidity levels warranted an excessive heat warning for eastern Kansas. Temperatures topped 100.0 degrees F (37.8 degrees C) throughout Colorado, Kansas, Nebraska, and South Dakota. Given the high elevation, this is a less common occurrence in Colorado. For instance, Denver tied its highest June temperature on record of 105.0 degrees F (40.6 degrees C), while Colorado Springs and Pueblo both tied for 3rd highest at 100.0 degrees F (37.8 degrees C) and 106.0 degrees F (41.1 degrees C), respectively. It is also worth noting that minimum temperatures were rather warm during this heat wave as well. On the 29th, it only dropped down to 81.0 degrees F (27.2 degrees C) in Topeka, Kansas, which tied for its 3rd highest minimum temperature on record for June. Lincoln, Nebraska tied for its 4th highest minimum temperature for June at 80.0 degrees F (26.7 degrees C). Elsewhere, numerous daily records for highest minimum temperature were broken during this heat wave.

Station Spotlight: Salina, KS



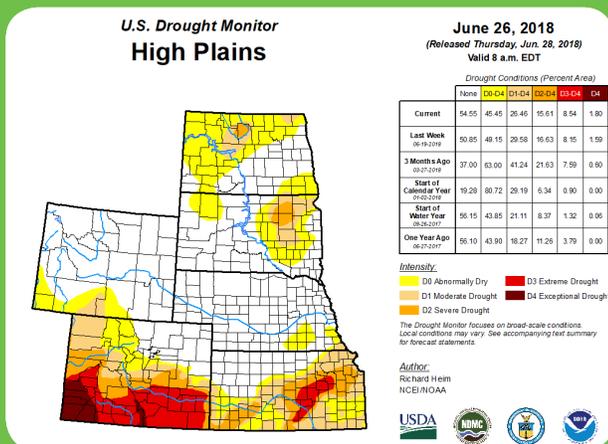
Above: Daily temperatures along with extremes and normals values since July 1, 2017 in Salina, KS.

Drought Conditions

Heavy rains improved drought conditions across the western Dakotas and northern and western Kansas during June, while eastern South Dakota, eastern Kansas, and portions of Colorado missed out and drought conditions worsened. The U.S. Drought Monitor indicated an overall improvement in drought conditions for the High Plains region during the past month, as areas experiencing drought (D1-D4) improved from 36 percent at the end of May to 26 percent in late June.

One of the most notable improvements included the elimination of drought from much of the western Dakotas, an area that had been in drought since June 2017. While some lingering impacts justified the depiction of abnormally dry conditions (D0) on the U.S. Drought Monitor map, this area received approximately 130-150 percent of normal precipitation from April to June, allowing for gradual improvements. Portions of Kansas benefited from above-normal precipitation in June, as exceptional drought (D4) and severe drought (D3) were eliminated from southwestern Kansas, while moderate drought (D1) and D0 conditions were erased from the north-central part of the state.

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/>.

As for degradations, drought developed and intensified over northeastern South Dakota, which had below-normal precipitation in June. A similar situation occurred in eastern Kansas, as this area was dry while the western half of the state was wet. Drought intensified in western Colorado where water-year precipitation deficits continued to accumulate.

Climate Outlooks

According to the Climate Prediction Center, ENSO-neutral conditions are present in the Pacific. Equatorial sea surface temperatures are near to above average across the east-central Pacific Ocean. ENSO-neutral is favored through summer 2018, with the possibility of El Niño nearing 50 percent by fall and 65 percent by winter. An El Niño Watch has been issued. If you are looking for more information about ENSO, check out the ENSO blog here: <https://www.climate.gov/news-features/department/8443/all>.

The National Weather Service’s long-range flood outlook indicates that moderate flooding may occur along Stranger Creek in eastern Kansas, while minor flooding is possible on the Red River of the North at Fargo, North Dakota through September. According to the National Interagency Fire Center, below-normal wildland fire potential is favored throughout much of South Dakota, northern Wyoming, and northwestern Nebraska in July; otherwise, wildland fire potential is expected to be near normal for the High Plains through October.

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

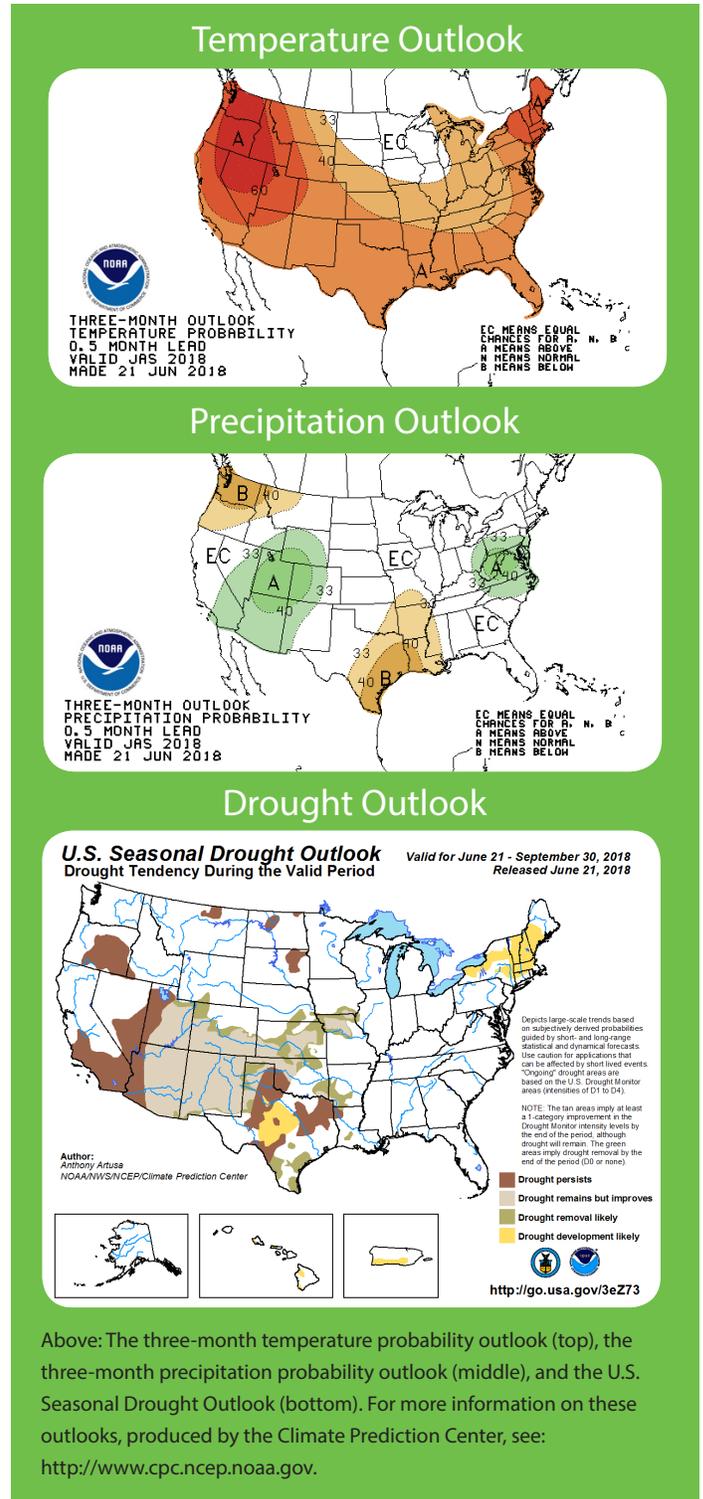
The July-September temperature outlook indicates an increased chance of above-normal temperatures for southern, western, central, and eastern portions of the contiguous U.S. In the High Plains, this includes Colorado, Wyoming, Kansas, most of Nebraska, and southwestern South Dakota. Elsewhere, there are equal chances for above-, below-, and near-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 Mid-Atlantic and Four Corners regions. In the High Plains, this includes much of Wyoming as well as western and central Colorado. Below-normal precipitation is expected in the Pacific Northwest and southern portions of the Plains and Midwest. Elsewhere, there are equal chances for above-, below-, and near-normal precipitation in the contiguous U.S. during the July-September period.

Drought

The June 21st U.S. Seasonal Drought Outlook shows that drought is expected to persist across parts of the Northwest, Southwest, and Plains regions. In the High Plains, this includes small portions of the Dakotas. Drought may improve or be removed in the Southwest and the Plains, including areas of Kansas, Colorado, Nebraska, and Wyoming. Drought development is likely across central Texas and parts of the Northeast, but additional drought development is not expected in the High Plains through September.



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	85.1	55.5	70.3	3.1	101	06/28	47	06/24	2.59	0.13	105
Alamosa San Luis Airport	83.4	41.7	62.6	3.0	91	06/28+	29	06/02	0.62	0.13	127
Colorado Springs Municipal Airport	87.1	55.1	71.1	6.0	100	06/28	48	06/25+	1.43	-1.07	57
Denver International Airport	88.8	56.0	72.4	5.0	105	06/28	44	06/02	0.43	-1.55	22
Grand Junction Walker Field Airport	93.1	59.6	76.4	4.4	102	06/27+	50	06/11	0.09	-0.37	20
Pueblo Memorial Airport	94.8	58.4	76.6	6.6	106	06/27	46	06/25	0.17	-1.19	13

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	90.8	66.8	78.8	5.4	101	06/14+	55	06/03	4.92	0.87	121
Dodge City Regional Airport	93.6	65.2	79.4	5.5	104	06/10	53	06/03	2.85	-0.39	88
Goodland Renner Field	88.9	58.5	73.7	4.0	101	06/28+	49	06/03	4.63	1.38	142
Topeka Municipal Airport	90.7	69.4	80.1	5.9	100	06/28	58	06/04	4.60	-0.80	85
Wichita Mid-Continent Airport	92.7	70.0	81.4	5.6	100	06/28+	57	06/03	3.41	-1.79	66

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	83.8	54.5	69.2	3.3	103	06/28	38	06/03	2.40	-0.84	74
Grand Island Airport	88.2	64.8	76.5	5.2	103	06/15	54	06/03	4.61	0.31	107
Lincoln Municipal Airport	88.6	65.9	77.3	4.7	101	06/15	52	06/03	8.83	4.48	203
Norfolk Karl Stefan Airfield	83.9	63.2	73.5	3.3	96	06/16	52	06/13	10.75	6.49	252
North Platte Regional Airport	86.3	59.4	72.8	4.9	100	06/14	42	06/03	3.76	0.34	110
Omaha Eppley Airport	87.6	67.5	77.6	5.5	99	06/29	58	06/04+	6.89	2.71	165
Valentine Miller Field	85.0	59.5	72.3	4.8	102	06/05	43	06/03	7.30	3.74	205

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	82.2	57.7	70.0	5.3	93	06/10+	44	06/13	3.45	0.28	109
Fargo International Airport	81.3	59.2	70.3	4.1	91	06/09	46	06/12	4.03	0.13	103
Grand Forks International Airport	80.7	55.6	68.1	4.1	89	06/22	45	06/07+	4.41	0.93	127
Theodore Roosevelt Airport	78.6	52.6	65.6	3.4	91	06/14	42	06/13	4.94	1.74	154
Williston International Airport	80.6	53.9	67.3	4.1	92	06/09	42	06/13	3.01	0.49	119

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June 2018 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	59.5	72.1	6.5	101	06/05	44	06/13	2.72	-0.98	74
Huron Regional Airport	82.3	61.2	71.8	4.0	95	06/05	42	06/13	2.53	-1.40	64
Pierre Regional Airport	82.6	58.9	70.7	3.0	99	06/05	45	06/13	4.45	0.88	125
Rapid City Regional Airport	78.9	53.8	66.4	1.9	105	06/14	41	06/03	6.06	3.53	240
Sioux Falls Joe Foss Field Airport	82.1	62.0	72.1	4.3	95	06/16+	47	06/13	7.29	3.37	186

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	81.8	46.4	64.1	1.9	97	06/28	35	06/13	1.63	0.02	101
Cheyenne Municipal Airport	81.4	50.6	66.0	3.9	99	06/28	42	06/03	1.55	-0.79	66
Lander Hunt Field Airport	78.7	49.3	64.0	1.0	92	06/28	36	06/02	1.66	0.39	131
Laramie Regional Airport	79.2	43.1	61.2	4.0	92	06/28	34	06/02	1.12	-0.42	73
Rawlins Municipal Airport	80.9	44.0	62.5	3.2	94	06/28	32	06/03	0.55	-0.48	53
Sheridan County Airport	76.5	48.1	62.3	0.7	91	06/09	34	06/12	1.43	-0.69	67

June 2018 Highlights

Monthly Rankings

Precipitation in inches, Temperature in degrees F

Warmest	Temperature / Ranking	Record / Year	Period of Record
Salina, KS	81.9 / WARMEST (tie, 1952)	81.9 / 1952	1949-2018
Colorado Springs, CO	71.1 / 2nd warmest	73.3 / 2012	1895-2018
Pueblo, CO	76.6 / 2nd warmest	77.0 / 2012	1889-2018
Aberdeen, SD	72.1 / 3rd warmest	75.0 / 1988	1893-2018
Bismarck, ND	70.0 / 5th warmest	75.6 / 1988	1875-2018
Hastings, NE	76.0 / 5th warmest	78.2 / 1952	1907-2018
Alamosa, CO	62.6 / 5th warmest (tie, 1981+)	64.5 / 2012	1906-2018
Fargo, ND	70.3 / 6th warmest	73.8 / 1988	1881-2018
Topeka, KS	80.1 / 6th warmest	82.3 / 1934	1887-2018
Denver, CO	72.4 / 7th warmest	75.0 / 2012	1872-2018
Dodge City, KS	79.4 / 7th warmest	81.7 / 1952	1875-2018
Wichita, KS	81.4 / 7th warmest (tie, 2011)	83.1 / 1953	1889-2018
Wettest	Precipitation / Ranking	Record / Year	Period of Record
Rapid City, SD	6.06 / 4th wettest	7.12 / 2015	1943-2018
Norfolk, NE	10.75 / 5th wettest	12.28 / 1924	1893-2018
Valentine, NE	7.30 / 5th wettest	8.63 / 2014	1890-2018
Sioux Falls, SD	7.29 / 6th wettest	13.70 / 2014	1893-2018
Lincoln, NE	8.83 / 8th wettest (tie, 1902)	12.93 / 1967	1887-2018

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North Dakota Climate Summary

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Precipitation:

Based on the National Centers for Environmental Information (NCEI), the statewide total June precipitation was 4 inches, which was 2.17 inches more than last month, 1.8 inches more than in June 2017 and also 0.66 inch more than the 1981-2010 average, making it the 34th wettest June in the 124-year period of record. It was the wettest June since 2014. Above-average precipitation was observed commonly in all parts of the state except for a small area in east-central North Dakota, where below-average conditions were observed (Figure 1). The greatest monthly precipitation accumulation was 9.43 inches, recorded in Rolette, Rolette County. The greatest 24-hour precipitation was 2.81 inches, recorded in McLeod, Richland County, on June 25. Based on historical records, statewide June precipitation showed a negative long-term trend of 0.18 inch per century since 1895. The highest and lowest June precipitation for the state ranged from 7.01 inches in 2005 to 1.11 inches in 1974.

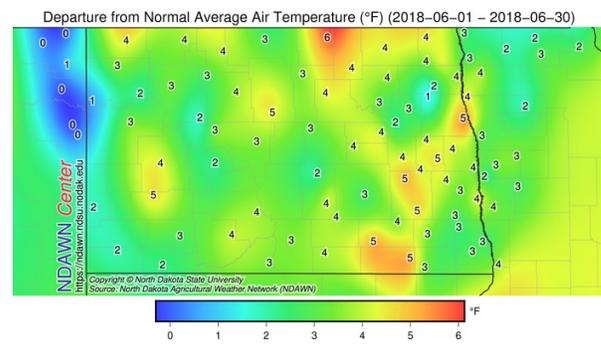
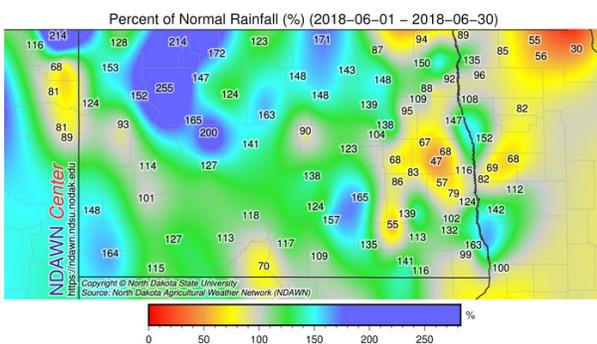
Temperature:

The official state average June temperature was 67.4 F, 7.5 F warmer than last month, 2.6 F warmer than in June 2017 and also 4.1 F warmer than the 1981-2010 average, making it the eight warmest June in the 124-year period of record. It was the warmest June since 1988. Above-average temperatures were observed commonly in the state, with the highest departure from the average near Rolette, Towner, Dickey and LaMoure counties (Figure 2). The state's highest and lowest daily temperatures ranged from 98 F on June 6 in Oakes, Dickey County, to 34 F on June 24 in Hettinger, Adams County. Based on the historical records, the state average June temperature showed a positive long-term trend of 0.14 F per decade since 1895. The highest and the lowest monthly state June average temperatures ranged from 74.1 F in 1988 to 56.8 F in 1915.

Drought and other notable impacts:

In general, overall drought conditions improved throughout the month. By the end of June, severe drought conditions in the north-central part of the state shrunk by 12 percent in comparison with the beginning of the month. NDAWN's highest peak gust in June was 71 mph, recorded at the Linton weather station in Emmons County on June 14, 2018. The Harvey station also recorded a maximum wind speed in excess of 70 mph on June 29, 2018. The NOAA Storm Report reported a total of 249 significant storm events in June. Across the observation network of weather stations with at least 30 years of history, a total of 24 daily high and two daily low-temperature-related records were set or tied. A total of 19 highest daily precipitation-related records were set or tied.

Temperature and Precipitation Overview



Above: Percent of normal precipitation (left, figure 1) and departure from normal average temperature (right, figure 2) for June 2018 in North Dakota. Both figures produced by NDAWN.

Kansas Climate Summary

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Continued Heat

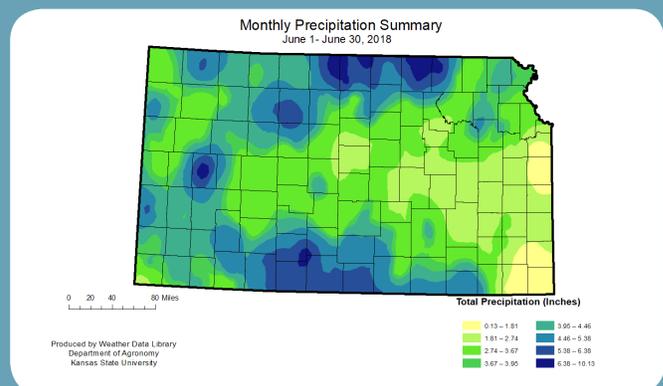
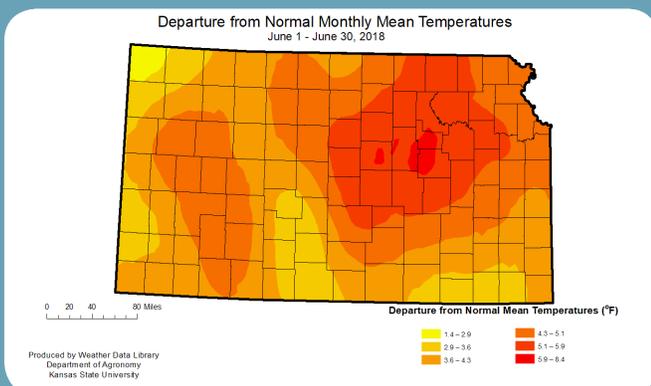
While the heat wasn't as dramatic as in May, June still came in as the 7th warmest since 1895. The state-wide average for the month was 77.9 oF. This was 4.2 degrees warmer than normal. The Central Division had the greatest departure with an average of 79.8 oF which was a departure of +5.5 degrees. The Northwest and Southeast divisions came closest to normal with departures of +3.9 degrees. For the Northwest that was with an average temperature of 74.7 oF, while the Southeast had an average of 78.1 oF. There were 50 new record daily warm maximum temperatures. The real warmth came in the low temperatures where there were 116 new daily record warm minimum temperatures. Two of those set records for the warmest minimum temperatures for June at those locations. Despite the heat, there were 19 new record coldest maximums and 2 record coldest minimum temperatures. This nighttime warmth is one reason that the monthly average was so much warmer than normal with relatively few record highs. The warmest temperature reported during the month was 107 oF at Abilene, Dickinson County on the 28th. The coldest temperature reported during June was 41 oF, reported at Plainville 4WNW, Rooks County, on the 28th.

June precipitation came very close to normal, although the distribution was uneven. The state-wide average precipitation was 4.24 inches which was 99 percent of normal. As the month was much warmer than normal, the benefit from that precipitation was less than it might have been. The division with the largest surplus was the Northwest Division, with an average of 4.03, or 143 percent of normal. The Southeast Division had the greatest departure, with an average of 3.61 inches for a deficit of 2.31 inches. That is 61 percent of normal. The greatest monthly total for a National Weather Service Cooperative station was at Scott City, Scott County, with 7.29 inches on the 20th. The Community Collaborative Rain, Hail and Snow network station with the greatest monthly precipitation was Courtland 6.1 N, Republic County, with 6.81 inches, also on the 20th. Among the Kansas Mesonet stations, the Viola station in Sumner County had the greatest total at 6.81 inches.

With the resurgence of moisture, severe weather reports during the month also increased. Tornado numbers were lower than in May with only 4 tornadoes reported. Unfortunately one hit the town of Eureka. Eight people were injured and damage was widespread. In addition to the tornado damage, there were significant damages from the hail and wind storms. Total storm reports: 4 tornadoes, 105 hail events, and 268 reports of damaging wind.

With the near normal rains, and above normal rains in the west, the drought picture has changed significantly. Extreme drought has shifted into Central Kansas, while the drought free area of the state has expanded. Currently, 27 percent of the state is drought free, while only 6 percent remains in extreme drought. The July outlook has a slight chance for drier than normal conditions across the state. The temperature outlook is for warmer than normal temperatures statewide. That combination is unlikely to result in significant improvement of the drought conditions.

Temperature and Precipitation Overview



Above: June 2018 departure from normal monthly mean temperatures (left) and total precipitation (right) in Kansas. Maps produced by Weather Data Library, Department of Agronomy, Kansas State University.

Nebraska Climate Summary

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 For more information: <https://nsco.unl.edu/>



June has continued warmth and plenty of rain

Excessive rainfall in many areas of the state and a continued warm trend from last month highlight June. Thanks to large-scale convective storms systems impacting the Central U.S., much of Nebraska received above normal rain for the month. Aside from the Panhandle, monthly totals were 3.5 inches or greater. The highest totals were found in the eastern third of the state, particularly the northeast. More than 10 inches fell in locations such as Norfolk, Crofton, Concord and West Point, which is twice the normal amount for this time of year. Several locations experienced near record-setting rainfall totals for June – Lincoln Airport, 8.83 inches, 3rd highest; Norfolk Airport, 10.75 inches, 3rd highest; Valentine Airport, 7.30 inches, 5th highest. Some impressive daily rainfall totals also occurred with these storms. There were several locations with totals greater than 4 inches in a 24-hour period with the highest daily totals observed near West Point (6.48 inches on the 25th), Concord (6.43 inches on the 26th at the Nebraska Mesonet site) and Fairbury (8.54 inches ending at 8am on the 20th).

June was not without severe weather. The 17th was active for tornados with 10 official reports made, and a total of 26 for the month. High wind reports were scattered throughout June (222 in all) with most reports coming during the first week. Hail events totaled 127 and crop fields felt the impact. For example, corn fields near Holdrege were completely destroyed as stalks were broken off at about 3ft high. For local resources on hail damage and assessments, visit: cropwatch.unl.edu/hailknow.

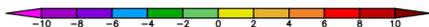
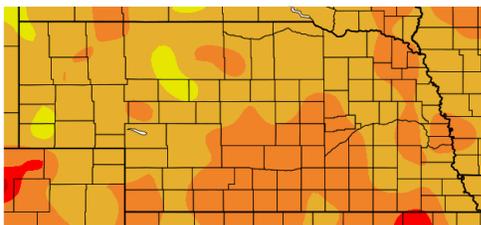
Temperatures averaged above normal during June across Nebraska. Departures from normal ranged from 2 – 6 degrees F statewide. The mercury hit 100 or above at a number of locations in southern tier counties and across the Panhandle. The highest observed temperature statewide was 107°F at the Bridgeport cooperative station in Morrill County. In contrast, temperatures dipped into the 30s in the Panhandle at a number of locations. The lowest temperature was 34°F at Alliance. There were some warm evenings, however. Some locations in the east saw record high minimum temperatures with lows of 77°F and 78°F in Norfolk, Omaha and Lincoln on the 15th.

Given the plentiful precipitation amounts during June, areas in southeast Nebraska saw alleviations in dryness and drought conditions, according to the U.S. Drought Monitor. At the start of the month, 13% of the state was abnormally dry and 5% was categorized as moderate drought (D1). Rainfall was enough to make up some deficits in much of this area and by the start of July, dryness impacted a three-county area (Nemaha, Pawnee, Richardson) in the far southeast corner of the state.

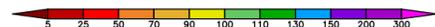
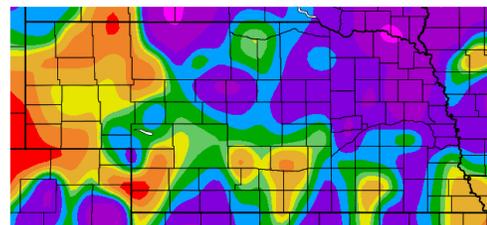
The Climate Prediction Center has issued an El Niño watch, meaning that conditions are favorable for an El Niño to develop this fall. As such, the seasonal climate outlooks reflect a trend indicative of this pattern. There is an increased chance for above normal temperatures for Nebraska and much of the U.S. for the July – August – September timeframe. For precipitation, the trend is an enhanced probability of wetter than normal conditions in the southwestern U.S., which just grazes the Nebraska Panhandle.

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
6/1/2018 – 6/30/2018



Percent of Normal Precipitation (%)
6/1/2018 – 6/30/2018



Above: June 2018 departure from normal temperature (left) and percent of normal precipitation (right) in Nebraska. Maps produced by the Applied Climate Information System.

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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