



November 2017 Climate Summary

A gorgeous sunset on November 26th over Longs Peak in Colorado. Photo by Carol Rogers

<http://hprcc.unl.edu>

Warm and Dry to End the Fall Season

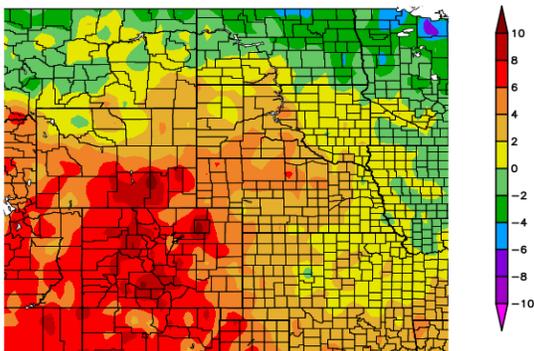
Warm and dry conditions occurred in November across a broad area of the High Plains region to round out the fall season. Although the month started on a cold note, average temperatures by the end of November were above normal throughout western and central portions of the region. An impressive warm-up around Thanksgiving brought temperatures that were more reminiscent of early summer than late fall and broke numerous daily temperature records. The warmth was especially notable across Colorado and Wyoming, where several locations had a top 10 warmest November on record. Widespread dryness accompanied the warmth and precipitation was abysmal, as some parts of the region recorded less than 10 percent of normal precipitation. For instance, the majority of Kansas received less than 0.25 inches (6 mm) of precipitation the entire month.

As a result of the warmth and dryness of November, a lack of snowfall was common across the region, and streamflows and topsoil moisture declined across the southern High Plains. The combination of these conditions contributed to drought spreading across portions of western Colorado and south-central Kansas, as well as the re-intensification of drought in western North Dakota where drought has been present since the early summer. Although warm temperatures caused mountain snowpack to suffer in Colorado, it fared well in the Upper Missouri Basin in Montana and Wyoming, where snowpack ended the month above average.

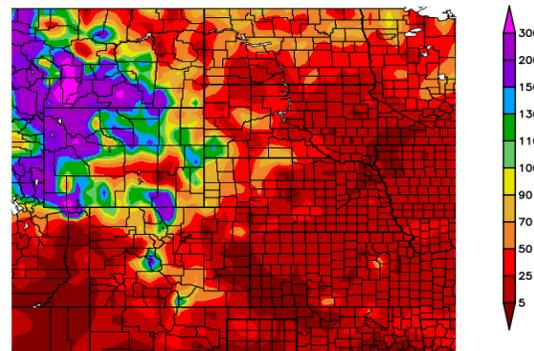
As we enter the winter season, it is worth noting that a La Niña has developed for the second year in a row in the Pacific Ocean. La Niña can influence winter climate in the High Plains. For instance, a colder winter is often favored in the Northern Plains, while warmer and drier conditions are more likely in the Southern Plains. However, this has not always been the case, and other climate patterns can have a greater influence on winter climate but are not as predictable. To learn more about La Niña's influence in the Missouri Basin region, check out the link to a briefing in the Climate Outlooks section.

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
11/1/2017 – 11/30/2017



Percent of Normal Precipitation (%)
11/1/2017 – 11/30/2017



Above: Departure from 1981-2010 normal temperature (left) and percent of normal precipitation (right) for November 2017 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

Dry conditions prevailed over much of the High Plains during November, with the majority of the region only receiving 25 percent of normal precipitation, at best. The driest locations included Grand Junction, Colorado, which had its 3rd driest November on record, as well as parts of Kansas, where it was the 8th driest November on record for Topeka, Dodge City, and Goodland. The primary exception to the widespread dryness was Wyoming, where above-normal precipitation occurred in the northern and western portions of the state. In fact, Sheridan had its 8th wettest November on record.

Coupled with above-normal temperatures, the widespread dryness caused some impacts around the region. For instance, most of the High Plains had below-normal snowfall in November. This “snow drought” was most evident in Colorado. Only a trace of snow was recorded in Denver, and although it tied with many other years, it was the least snowiest November on record. In fact, it snowed more in Denver in October than it did in November! The lack of snow is concerning for recreational businesses such as ski resorts, and it has implications for spring runoff if this pattern continues. While it is still early in the snow season, the situation is worth watching.

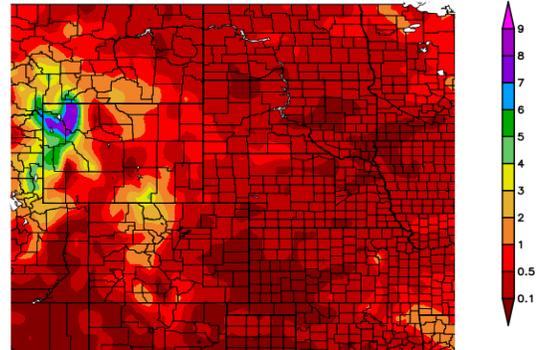
Another impact of the warmth and dryness of November was a rapid decline in soil moisture conditions across the High Plains. The greatest declines over the course of the month occurred in Nebraska and Kansas, where the percent of topsoil moisture rated short to very short increased from 14% to 32% in Nebraska and 18% to 39% in Kansas. Although the growing season is over, an adequate supply of soil moisture is needed going into winter to ensure enough moisture is available for spring planting. During the winter, the ground is often frozen and does not allow precipitation to enter the soil, so soil moisture cannot easily be recharged.

As for the fall season, precipitation varied across the region.

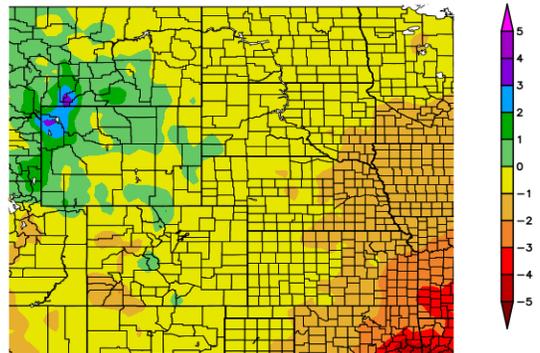
Two primary areas that experienced wet conditions included western and central Wyoming, as well as a swath from western Kansas up through central Nebraska into southeastern South Dakota. North Platte, Nebraska had its 3rd wettest fall on record, while it was the 6th wettest for Huron, South Dakota. Meanwhile, dryness existed throughout a large part of the Dakotas, eastern Kansas, and western Colorado. Grand Junction, Colorado tied for its 9th driest fall on record.

Regional Precipitation

Precipitation (in)
11/1/2017 – 11/30/2017



Departure from Normal Precipitation (in)
11/1/2017 – 11/30/2017



Above: Total precipitation in inches (top) and departure from normal precipitation in inches (bottom) for November 2017. These maps are produced by HPRCC and can be found on the Current Climate Summary Maps page at: <http://hprcc.unl.edu/maps/current>.

Snowpack Update

Mountain snowpack got off to a good start in some parts of the region, but not in others this season. According to the U.S. Army Corps of Engineers, Missouri River Basin mountain snowpack above Fort Peck Reservoir and between Fort Peck and Garrison Reservoirs was above average as of the end of November. Snowpack in the Rockies of Wyoming was also above average. The good start to the snowpack season was largely due to early-season snowstorms that blanketed parts of the Upper Missouri Basin, and cooler temperatures in early November helped the snowpack stick around. However, snowpack was not faring so well in Colorado, particularly in the southern and western portions of the state. November was very warm and dry, and Snow Water Equivalent was less than 25 percent of median in that area. Luckily, snowpack season is just beginning, so there is plenty of time to catch up.

Temperatures

Despite a cold start to the month, November was quite warm on the whole throughout the western and central High Plains. The warmest locations included Colorado and much of Wyoming, with temperatures averaging 6.0-10.0 degrees F (3.3-5.6 degrees C) above normal. The impressive warmth was record-breaking for Alamosa, Colorado and Rawlins, Wyoming, which had their warmest Novembers on record, and several other locations experienced November temperatures that were in their top 10 warmest.

A dramatic warm-up in the latter half of November was largely responsible for much of the region ending the month with above-normal temperatures. This warm spell arrived just in time for the Thanksgiving holiday and lasted for several days. Daily average temperatures were as much as 20.0-30.0 degrees F (11.1-16.7 degrees C) above normal across parts of the region as widespread temperatures in the 70s were reported, and locations as far north as Valentine, Nebraska and Denver, Colorado even reached into the 80s! On the 26th, Cheyenne, Wyoming reported a high temperature of 71.0 degrees F (21.7 degrees C), which was its latest 70.0 degrees F (21.1 degrees C) temperature on record (period of record 1872-2017).

As for fall temperatures, it was warm across most of the High Plains. The central and southern parts of the region experienced temperatures that were 2.0-3.0 degrees F (1.1-1.7 degrees C) above normal, while temperature departures exceeded 4.0 degrees F (2.2 degrees C) above normal in a large portion of Colorado, leading to a couple of records. For instance, Alamosa had its 2nd warmest fall on record, while Colorado Springs had its 4th warmest.

Drought Conditions

Widespread dryness in November led to the expansion and intensification of drought conditions across portions of the High Plains. Region-wide, areas experiencing drought or abnormal dryness (D0-D4) increased from approximately 35 percent to 41 percent over the course of the month, according to the U.S. Drought Monitor.

U.S. Drought Monitor

**U.S. Drought Monitor
High Plains**

November 28, 2017
(Released Thursday, Nov. 30, 2017)
Valid 7 a.m. EST

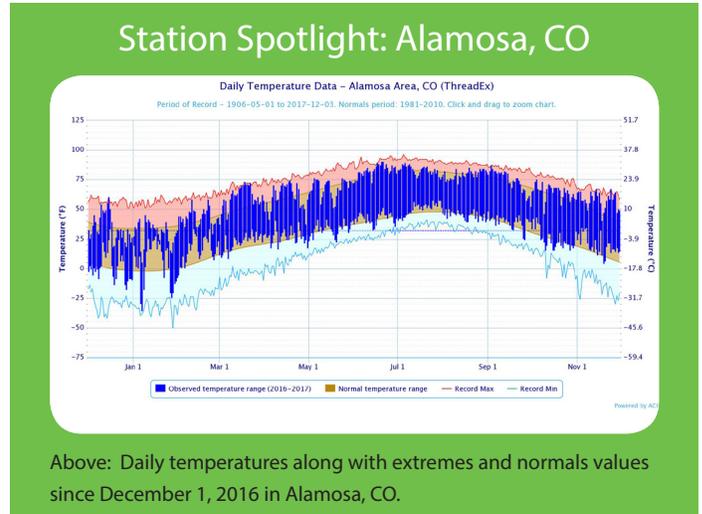
	Drought Conditions (Percent Area)				
	None	D0-D4	D1-D4	D2-D4	D3-D4
Current	59.35	40.65	19.97	3.44	0.00
Last Week (11/21-2017)	62.30	37.70	15.45	3.26	0.00
3 Months Ago (09/29-2017)	50.05	49.95	25.09	13.64	4.01
Start of Calendar Year (01/01-2017)	50.65	49.35	21.54	3.86	0.00
Start of Water Year (09/26-2017)	55.15	43.85	21.11	8.37	1.32
One Year Ago (11/29-2016)	40.35	59.64	21.97	2.70	0.00

Intensity:
■ D0 Abnormally Dry ■ D3 Extreme Drought
■ D1 Moderate Drought ■ D4 Exceptional Drought
■ D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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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/>.



In the Northern Plains where drought has been present since early summer, conditions in Montana improved but worsened in western North Dakota. Western and southern Montana had a wet month, with some areas receiving as much as 300 percent of normal precipitation. Meanwhile, precipitation was scarce across western North Dakota and, as a result, moderate drought (D1) was re-introduced to the area. Elsewhere in the Northern Plains, drought conditions largely remained the same.

Moderate drought was introduced to two other areas in the High Plains in November: western Colorado and south-central Kansas. In western Colorado, the combination of record-breaking warmth and the continuation of below-normal precipitation for the past several months took its toll on soil and vegetative health. Mountain snowpack in this region was below normal in November as well. In Kansas, November precipitation was abysmal, with much of the state receiving less than 25% of normal. The lack of precipitation caused below-normal streamflows in the south-central portion of the state, prompting expansion of drought conditions across the area.

Climate Outlooks

According to the Climate Prediction Center, La Niña conditions are now present in the Pacific and a La Niña Advisory has been issued. Equatorial sea surface temperatures are below average across the central and eastern Pacific Ocean. La Niña conditions are predicted to continue at least through the Northern Hemisphere winter 2017-18. If you are looking for more information about La Niña, check out this briefing on how La Niña may impact the Missouri Basin this winter: <https://hprcc.unl.edu/pdf/LaNina-MOBasin-2017-Final.pdf>. Or, 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

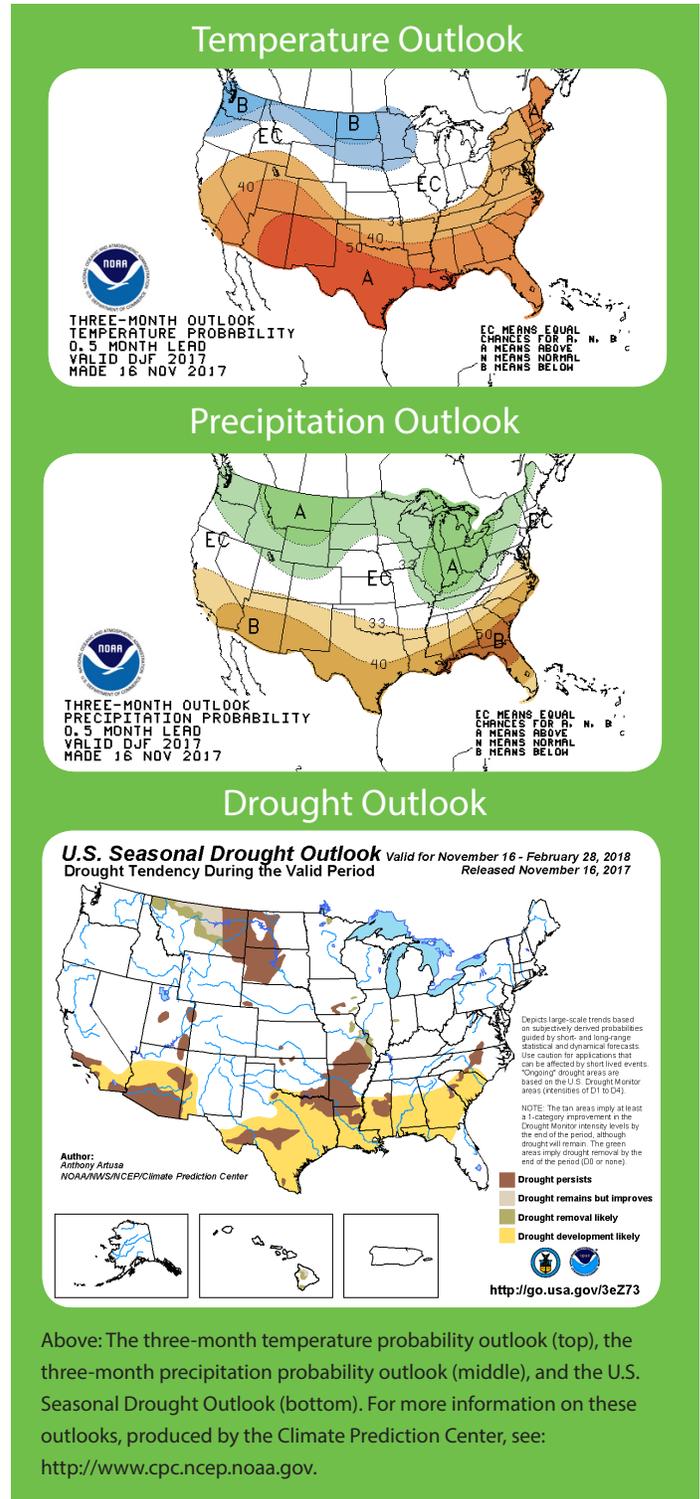
The December-February temperature outlook indicates an increased chance of above-normal temperatures for southern and eastern portions of the contiguous U.S. In the High Plains region, this includes southwestern Wyoming, much of Colorado, and southwestern Kansas. Below-normal temperatures are favored across the Pacific Northwest and Northern Plains, including the Dakotas, northeastern Wyoming, and extreme northern Nebraska in the High Plains region. Elsewhere, there are equal chances for above-, below-, and near-normal temperatures during the December-February period.

Precipitation

The precipitation outlook for the next three months calls for a higher probability of above-normal precipitation in the Northern and Central Rockies, as well as the Ohio Valley and parts of the Northeast. In the High Plains region, this includes Wyoming, northern Colorado, North Dakota, much of South Dakota, and the Nebraska Panhandle. Below-normal precipitation is expected throughout the southern portion of the contiguous U.S. Elsewhere, there are equal chances for above-, below-, and near-normal precipitation in the contiguous U.S. during the December-February period.

Drought

The November 16th U.S. Seasonal Drought Outlook shows that drought is expected to persist across parts of the Southwest, the Plains, the Midwest, and the Southeast. In the High Plains, this includes the area of drought in eastern Montana and the western Dakotas, as well as localized areas in the Nebraska Panhandle, western Colorado, and southern Kansas. Drought may improve or be removed in north-central Montana and parts of the Midwest. Drought development is likely across much of the southern U.S. While the outlook does not indicate drought development in the High Plains through February, it came out before the November 28th U.S. Drought Monitor, which indicates drought conditions are now present in south-central Kansas and western North Dakota.



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	58.8	28.2	43.5	5.9	82	11/27	20	11/19+	0.07	-0.51	12
Alamosa San Luis Airport	57.7	19.0	38.4	8.9	67	11/24+	4	11/19	0.05	-0.37	12
Colorado Springs Municipal Airport	59.5	31.5	45.5	7.4	76	11/27	21	11/19	0.15	-0.25	38
Denver International Airport	61.1	29.4	45.3	7.0	81	11/27	22	11/15+	0.29	-0.32	48
Grand Junction Walker Field Airport	59.6	30.9	45.3	6.3	69	11/03+	14	11/19	0.01	-0.72	1
Pueblo Memorial Airport	62.6	29.2	45.9	6.6	82	11/27+	17	11/19	0.31	-0.16	66

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	56.2	32.7	44.4	2.8	83	11/24	16	11/22	0.14	-0.97	13
Dodge City Regional Airport	60.4	31.7	46.1	3.0	82	11/24	20	11/22+	0.01	-0.75	1
Goodland Renner Field	58.2	28.8	43.5	4.5	82	11/27	18	11/10	0.03	-0.68	4
Topeka Municipal Airport	57.1	34.4	45.8	2.0	79	11/24	18	11/22	0.10	-1.75	5
Wichita Mid-Continent Airport	58.7	37.1	47.9	2.5	76	11/24	20	11/22	0.52	-0.91	36

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	55.4	25.0	40.2	6.2	78	11/16	16	11/30	0.45	-0.17	73
Grand Island Airport	53.4	28.7	41.1	3.0	76	11/27	15	11/21	0.51	-0.66	44
Lincoln Municipal Airport	54.4	27.7	41.0	2.1	75	11/24	12	11/22	0.07	-1.36	5
Norfolk Karl Stefan Airfield	51.4	25.4	38.4	2.0	72	11/27+	10	11/22	0.09	-1.28	7
North Platte Regional Airport	55.6	25.0	40.3	4.7	77	11/27	16	11/19+	0.07	-0.57	11
Omaha Eppley Airport	52.2	29.1	40.7	1.8	72	11/24	15	11/22	0.36	-1.28	22
Valentine Miller Field	55.4	26.6	41.0	6.6	84	11/27	15	11/21	0.56	-0.09	86

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	43.9	19.5	31.7	2.5	74	11/23	6	11/21	0.16	-0.55	23
Fargo International Airport	37.1	19.5	28.3	-0.5	54	11/27+	4	11/09+	0.36	-0.64	36
Grand Forks International Airport	32.8	15.3	24.1	-2.0	49	11/29	-9	11/09	0.86	-0.09	91
Theodore Roosevelt Airport	42.2	18.7	30.5	1.0	70	11/23	2	11/09	0.09	-0.45	17
Williston International Airport	38.6	16.1	27.4	0.3	68	11/23	-8	11/09	0.32	-0.33	49

All data are preliminary and subject to change. + indicates multiple dates, latest date listed. * indicates some missing data for the period. 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>.

November 2017 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	43.0	16.9	30.0	0.7	61	11/20	0	11/22	0.11	-0.62	15
Huron Regional Airport	46.2	21.9	34.0	1.4	70	11/27	8	11/22+	0.08	-0.79	9
Pierre Regional Airport	49.3	23.0	36.2	2.5	70	11/23	10	11/21	0.05	-0.71	7
Rapid City Regional Airport	51.7	24.3	38.0	3.5	75	11/23	12	11/08+	0.14	-0.39	26
Sioux Falls Joe Foss Field Airport	47.3	24.4	35.8	3.2	67	11/27	11	11/22	0.03	-1.33	2

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	51.3	25.5	38.4	5.2	67	11/26	10	11/12	0.31	-0.45	41
Cheyenne Municipal Airport	54.5	28.9	41.7	6.4	71	11/26	16	11/08	0.44	-0.15	75
Lander Hunt Field Airport	49.4	25.1	37.3	6.1	68	11/23	15	11/08	0.45	-0.41	52
Laramie Regional Airport	50.7	25.7	38.2	8.9	64	11/27+	8	11/18	0.77	0.23	143
Rawlins Municipal Airport	49.3	27.8	38.5	8.4	64	11/26	14	11/12	0.59	0.04	107
Sheridan County Airport	48.8	21.5	35.2	2.5	74	11/23	3	11/07	1.54	0.83	217

November 2017 Highlights

Monthly Rankings

Precipitation in inches, Temperature in degrees F

Warmest	Temperature / Ranking	Record / Year	Period of Record
Alamosa, CO	38.4 / WARMEST	34.8 / 1965	1932-2017
Rawlins, WY	38.5 / WARMEST	38.0 / 2012	1951-2017
Grand Junction, CO	45.3 / 2nd warmest	48.3 / 1965	1893-2017
Colorado Springs, CO	45.5 / 2nd warmest (tie, 1927)	47.4 / 1949	1894-2017
Laramie, WY	38.2 / 3rd warmest	40.7 / 1949	1948-2017
Akron, CO	43.5 / 4th warmest	45.3 / 1999	1937-2017
Pueblo, CO	45.9 / 4th warmest (tie, 2016+)	47.4 / 1949	1888-2017
Cheyenne, WY	41.7 / 4th warmest	45.2 / 1949	1872-2017
Driest	Precipitation / Ranking	Record / Year	Period of Record
Grand Junction, CO	0.01 / 3rd driest	T / 1989+	1893-2017
Sioux Falls, SD	0.03 / 5th driest (tie, 1984+)	0.00 / 1914	1893-2017
Goodland, KS	0.03 / 8th driest	0.00 / 1939	1895-2017
Dodge City, KS	0.01 / 8th driest (tie, 1999+)	T / 1989+	1874-2017
Topeka, KS	0.10 / 8th driest (tie, 2007+)	T / 1989+	1887-2017

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North Dakota 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), the statewide total November precipitation was 0.29", 0.01" less than last month, 0.62" less than the last November, and 0.39" less than the 1981-2010 average, making it the 33rd driest November in the 123-year period of record. It was the driest November since 2013. Below-average precipitation was observed commonly in all parts of the state (Figure 1). The greatest monthly precipitation accumulation was 0.86" recorded in Grand Forks, Grand Forks County. The greatest 24-hr precipitation was 0.55" recorded also in Grand Forks, Grand Forks County on November 4. The greatest monthly snowfall accumulation was 12" recorded in Petersburg, Nelson County. The greatest 24-hr snowfall was 7" recorded also in Petersburg, Nelson County on November 4. Based on historical records, statewide November precipitation showed a slight negative long-term trend of -0.03" per century since 1895. The highest and the lowest November precipitation for the state ranged from 2.33" in 2000 to 0.03" in 1939.

Temperature:

The official state average November temperature was 26.5°F, 18.3° colder than last month, 12.7° colder than the last November, and 0.8° colder than the 1981-2010 average, making it the 55th coldest November in the 123-year period of record. It was the coldest November since 2014. Below-average temperatures were observed commonly in all parts of the state except in southwestern parts of the state, especially in Sioux and Adams Counties where the driest conditions were observed (Fig. 2). The state's highest and lowest daily temperatures ranged from 74° on November 24 in Hettinger, Adams County to -12° on November 10 in Rolette, Rolette County. Based on the historical records, the state average November temperature showed a positive trend of 0.28°F per decade since 1895. The highest and the lowest monthly state November average temperatures ranged from 39.2° in 1999 to 6.1° in 1896.

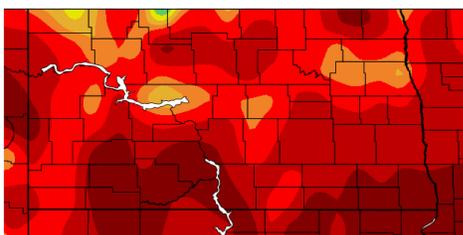
Drought and other notable impacts:

Dry conditions continued from the previous month. In October this provided favorable conditions for accomplishing field work. However, continued dry conditions just before the freeze up raised some concerns about soil being parched down to 4 feet in already drought scarred areas in western North Dakota. Therefore, one category degradation was applied in Drought Monitor in these areas. By the end of the month, the percent of the state experiencing drought was 48%, an 11% increase compared to the previous month. Based on the DM map on November 28, only 5% of the state was in Severe Drought (D2).

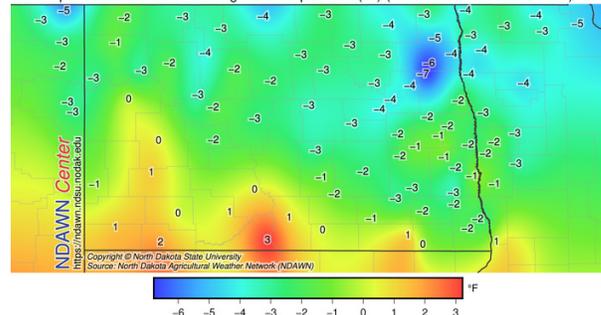
NDAWN's highest peak gust in November was 57 mph, recorded at the Linton weather station in Emmons County on November 29, 2017. Carson, Edgeley, Bowman, Wishek, McHenry, Mott, Mandan, and Oakes stations also recorded wind speeds in excess of 50mph on the same day. The NOAA Storm Report reported no significant storm events in November. Across the observation network of weather stations with at least 30 years of history, a total of 27 daily high-temperature related and 16 daily low-temperature related records were set or tied. A total of 8 highest daily precipitation related records were set or tied.

Temperature and Precipitation Overview

Percent of Normal Precipitation (%)
11/1/2017 - 11/30/2017



Departure from Normal Average Air Temperature (°F) (2017-11-01 - 2017-11-30)



Above: Percent of normal precipitation (left, figure 1) and departure from normal average temperature (right, figure 2) for November 2017 in North Dakota. Figure 1 produced by the Applied Climate Information System, Figure 2 produced by NDAWN.

Kansas Climate Summary

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 Kansas Weather Data Library, Kansas State University
 For more information: www.ksre.ksu.edu/wdl



Dry

The major climate feature for November was the dryness. Statewide average precipitation was just 0.10 inches, which is a 3-way tie for the sixth driest November on record. The driest November on record was in 1989 when the statewide average precipitation was zero, and the greatest amount reported was just 0.01 inches. The Southeast Division came closest to normal with an average of 0.37 inches or 14 percent of normal. The Southwest Division ended as the driest with an average of zero, which was zero percent of normal. Thanks to the wet conditions in the division in September, the Southwest is still at 99 percent of normal for the September through November period. Greatest monthly total for a National Weather Service (NWS) reporting station was 0.88 inches at Coffeyville Waterworks, Montgomery County. The greatest monthly total for a Community Collaborative Rain Hail and Snow (CoCoRaHS) station was 0.77 inches at Wichita 4.5 ENE, Sedgwick County. Not surprisingly, with the low monthly totals the 24hr maximum amounts were also low. The greatest 24hr amounts: 0.59 inches at Cedarvale 5SSE, Chautauqua County, on the 29th (NWS); 0.64 inches at Beaumont 6.6 SSW, Butler County on the 29th (CoCoRaHS).

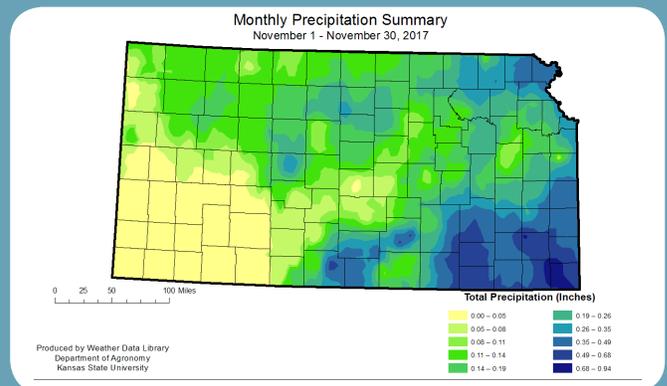
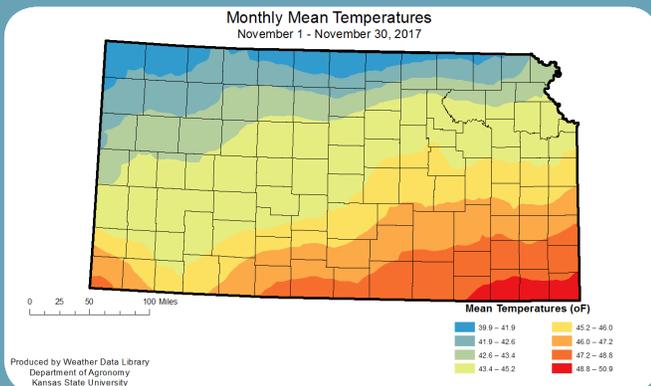
November ended on a warm note, pushing the statewide average to 44.2 oF or 1.6 degrees warmer than normal. That places it on the warm side of the distribution in a 7-way tie for the 36th warmest November since 1895. The warmest November on record occurred in 1999 when the statewide average temperature was 50.1 oF. There were 137 new record daily highs, one of which tied the monthly record high for the location. That was 87 oF reported at Atwood, Rawlins County, on the 28th. There were also 28 new record daily warm minimum temperatures. None of those set new records for the month. On the cold side of the scale, there were 6 new record low maximum temperatures and 4 new record low minimum temperatures during the month. The warmest reading of the month was 86 oF at Salina Airport, Saline County, on the 24th. The coldest temperature for the month was 12 oF reported at Burr Oak and Mankato, both in Jewell County, on the 22nd.

Although the warmth that ended the month made it a distant memory, snow was reported in November. Five locations in North Central KS set daily records for snowfall. The greatest snowfall report for the month was 2.5 inches at Ellis, Ellis County, on the 1st. This Halloween storm was the only significant snowfall event during the month.

Unsurprisingly, given the dry conditions there were no severe weather reports during the month.

Much below normal precipitation, coupled with warmer than normal temperatures resulted in a steep increase in the drought conditions. The area of abnormally dry to moderate drought increased by 33 percent in November. The December outlook calls for drier than normal conditions statewide. Given the low amount of moisture that typically is seen in December, improvement in the current drought status is unlikely. With the wet summer and current dryness, increased fire danger is likely.

Temperature and Precipitation Overview



Above: November 2017 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

Martha Shulski - State Climatologist
 Nebraska State Climate Office, University of Nebraska-Lincoln
 For more information: <https://nsco.unl.edu/>



Warmth and dryness round out the fall season

November brought Nebraskans above-average temperatures and below-normal precipitation this year. Monthly temperatures across the state ranged from the high 30s in the north to the low 40s in the south. These temperatures were slightly above normal in eastern Nebraska to about 5 degrees above normal for the west and north-central portions of the state. Several locations in the west ranked in the top 10 warmest Novembers on record — McCook, North Platte, Scottsbluff, Sidney and Valentine.

At a time of year when temperatures normally decrease over the course of the month, the highest temperatures occurred during the last week. Daily high temperature records were tied or broken for numerous locations during this time — particularly for Nov. 27 where highs in the low 80s and high 70s were reported. The Nebraska Mesonet high temperature was 83°F on the afternoon of Nov. 27.

The statewide average temperature was 40°F, which is 3.3 degrees above the most recent 30-year normal (1981 – 2010). This ranks as 18th warmest on record for Nebraska.

What are the soil temperatures looking like? High 30s in the west and north to low 40s in the south-east. This is under bare ground at the 4-inch depth. The highest and lowest observed soil temperatures were 60°F on the afternoon of Nov. 17 near Guide Rock and the low of 30°F occurred five days later near Fordyce.

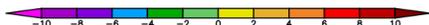
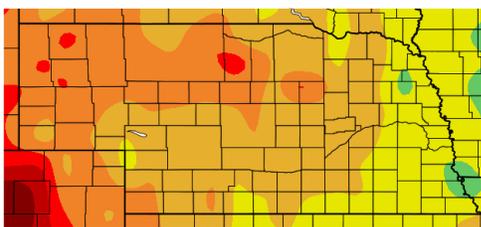
Precipitation

In November, we typically enter our dry season here in Nebraska. For the next several months, precipitation is generally at a minimum compared to other seasons. Precipitation totals were well below normal across Nebraska for the month. Several locations, particularly in the eastern half of the state, reported little enough (less than a tenth of an inch) so that it was a top 10 driest year. Monthly totals were less than a quarter inch in southern Nebraska and in the northeast. Higher amounts (more than three-tenths of an inch) were received in the northwest, Panhandle and portions of central Nebraska. The highest totals were found in locations near Valentine, Rushville, Gordon and Harrison, which saw around six-tenths of an inch. The Nebraska Mesonet station near Harrison reported 0.34 inches on Nov. 4.

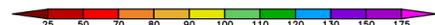
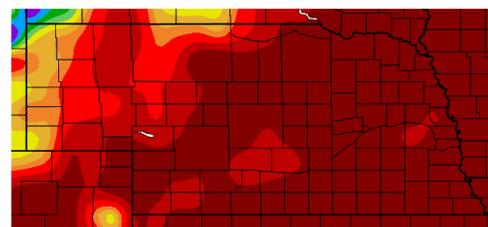
The low totals in the east represent monthly precipitation deficits of an inch and a half. The departures decline westward to an inch in central Nebraska and less than a half inch in the west. On a statewide basis, monthly precipitation was 0.24 inches, which is 0.76 inches below normal and ranks as 19th driest November.

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
 11/1/2017 – 11/30/2017



Percent of Normal Precipitation (%)
 11/1/2017 – 11/30/2017



Above: November 2017 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

Quarterly Climate Impacts and Outlook
Missouri River Basin
December 2014

National - Significant Events for September - November 2014

Highlights for October and the Month:
October was the first month that the Missouri River Basin experienced a normal temperature. There were no significant events for the month. The only significant event was a heavy rain event in the Missouri River Basin on October 15th.

Regional - Impact for September - November 2014

Significance:
Fall began over perfect harvest conditions for the Missouri River Basin states. There were no significant events for the month. The only significant event was a heavy rain event in the Missouri River Basin on October 15th.

Regional - Climate Overview for September - November 2014

Temperature and Precipitation Anomalies
September - November 2014

Drought Co
3 Month Co
3 Month Co

Regional - Outlook for January - March 2015

3 Month Precipitation and Temperature Outlooks
3 Month Co
3 Month Co

Soil Moisture Conditions
3 Month Co
3 Month Co

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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