



January 2018 Climate Summary

Ice fog forms on trees in Nebraska. Photo courtesy Ken Dewey
<http://hprcc.unl.edu>

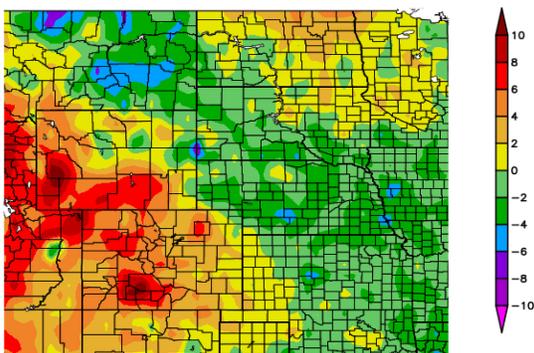
Drought Continues to Spread and Intensify

Much of the High Plains experienced another dry month, with the greatest departures across the southern part of the region. Drought continued to expand and intensify throughout Kansas and Colorado. Despite the fact that the winter season does not greatly contribute to annual precipitation totals, a few impacts were already being reported and more are feared as spring arrives in a couple of months. For instance, the lack of snow in addition to the presence of cold temperatures put winter wheat at risk for damage. In Colorado, mountain snowpack got off to a slow start this season, and many were hoping that January would bring big snowstorms to help make up the deficit. However, it was another disappointing month for snowfall, and the deficit continued to grow, making it less likely that it will be made up this season. Ski resorts have not had enough snow to stay open daily, and there is growing concern that limited water supply will be an issue this summer. Additionally, fires continued to be problematic in January. In southwestern Kansas, an extended period of dry weather and high winds contributed to a fire starting in a cotton gin yard during the early part of the month, burning about 400 round modules. In South Dakota, a wildfire erupted in the western part of the state and grew to just over 500 acres. According to Darren Clabo, South Dakota state fire meteorologist, "classic" fire conditions were not in place at the time, but fuels were dry enough that a fire was able to ignite easily.

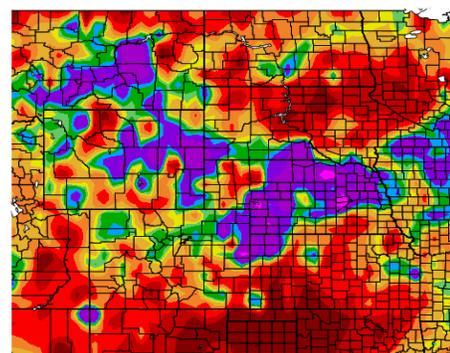
Temperatures were on the cool side throughout South Dakota, Nebraska, and Kansas in January. Bitterly cold temperatures were in place across much of the region at the beginning of the New Year, and several cold outbreaks followed throughout the month. It is interesting to note that much of the central and eastern U.S. were in a deep freeze the week of January 5th, which placed quite the demand on the energy sector. According to the U.S. Energy Information Administration, it was the largest weekly storage withdrawal of natural gas ever experienced in the U.S., and the cold temperatures also decreased natural gas production, causing prices to spike.

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
1/1/2018 - 1/31/2018



Percent of Normal Precipitation (%)
1/1/2018 - 1/31/2018



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

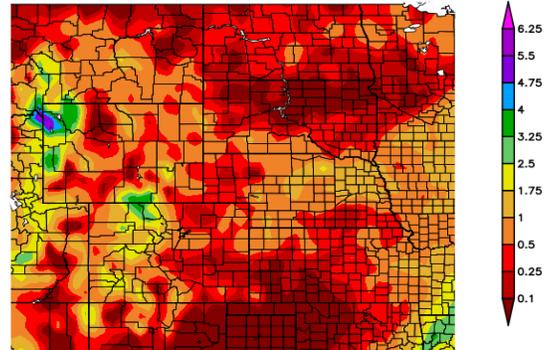
January brought a mix of wet and dry conditions to the High Plains, with plentiful precipitation falling across the central part of the region and paltry amounts occurring to the north and south. Portions of Nebraska and Wyoming experienced precipitation exceeding 200 percent of normal, while much of Kansas and the Dakotas received less than 50 percent of normal precipitation.

A blizzard occurred in the eastern High Plains on the 21st-22nd, with the greatest impacts affecting central and eastern Nebraska. A band of heavy snow fell across the state, with a sharp gradient to the north and south that caused large differences in snowfall totals over short distances. For instance, the Columbus 3 NE COOP station recorded 12.0 inches (30 cm) of snow, while Lincoln, which is less than 80 miles to the southeast, recorded only 1.8 inches (5 cm). One of the highest snowfall totals reported came from the Bloomfield COOP station, which received 17.6 inches (45 cm) over the two days. This amount was the 2nd highest 2-day total snowfall ever recorded in January in Bloomfield, and it was the 9th highest 2-day total snowfall recorded in any month (period of record 1905-2018). In the heaviest bands, snowfall rates were so intense that thundersnow occurred. The snow was accompanied by winds in excess of 50 miles per hour (80 km/hr), causing visibilities to drop below one-quarter mile and making travel nearly impossible. Drifting snow and low visibilities caused numerous rural roads to close, and multiple accidents on Interstate 80 prompted its closure as well. The high winds downed power lines, knocking out power to several thousand people.

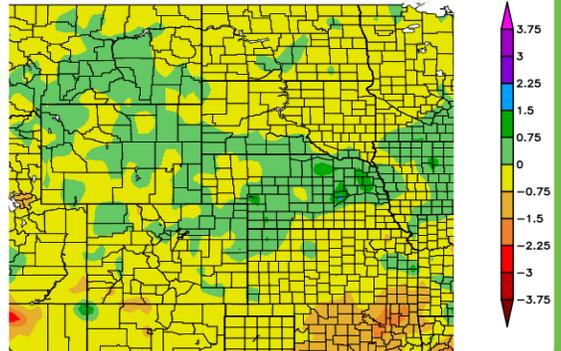
While precipitation was plentiful in Nebraska, it was scarce in much of the rest of the High Plains, especially in Kansas. For example, Garden City did not have measurable precipitation during January, recording only a trace and tying multiple years for the 2nd driest January on record. And, some locations in Kansas experienced record-breaking dry streaks that carried into January. For instance, Liberal had its longest dry streak on record, with no measurable precipitation for 96 days (October 7, 2017 - January 10, 2018), crushing the old record of 82 days in 1989. Snowfall has been lacking in Kansas this season as well. In fact, until January 15th, Wichita had not received any snowfall since December 2016, breaking the record for most consecutive days without snowfall (393 days, running December 18, 2016 - January 14, 2018). The lack of precipitation in January caused drought to expand and intensify across Kansas.

Regional Precipitation

Precipitation (in)
1/1/2018 - 1/31/2018



Departure from Normal Precipitation (in)
1/1/2018 - 1/31/2018



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

Snowpack Update

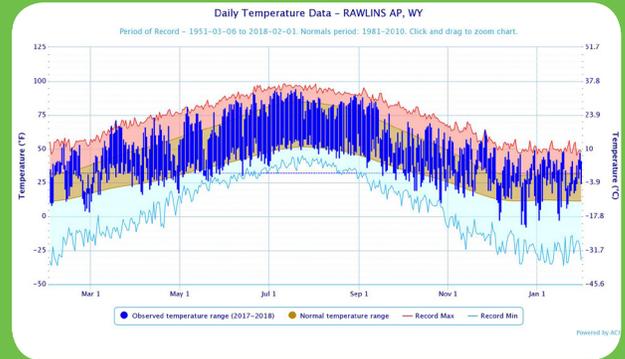
Northern Rockies snowpack continued to be above normal during January. According to the U.S. Army Corps of Engineers, Snow Water Equivalent (SWE) in the Missouri River Basin above Fort Peck Reservoir and between Fort Peck and Garrison Reservoirs was 114% and 124%, respectively, as of the end of January. Despite it being slightly warmer and drier than normal for the month, snowpack was still above normal in the Rockies of Wyoming. Colorado snowpack, however, remained below normal due to persistently warm and dry conditions, with SWE at less than 50 percent of normal in the southwestern portion of the state. In the Plains, snow covered the ground across parts of North Dakota, southeastern South Dakota, and central Nebraska at the end of January. However, a large portion of the region was snow-free, and many of these areas were experiencing below-normal snowfall for the season.

Temperatures

Temperatures were variable throughout the High Plains in January. The greatest departures occurred in Wyoming and Colorado where temperatures were 3.0-7.0 degrees F (1.7-3.9 degrees C) above normal. The warmth resulted in a few locations having a top 10 warmest January on record, including Laramie and Rawlins (both coming in at 6th warmest) in Wyoming, as well as Alamosa (9th warmest) and Akron (10th warmest) in Colorado. Additionally, maximum temperatures were impressive. For instance, it reached 63.0 degrees F (17.2 degrees C) in Alamosa on the 31st, which was Alamosa's highest January temperature on record and the highest temperature ever recorded that early in the year (period of record 1933-2018). In addition to the western High Plains, temperatures were slightly above normal in the eastern Dakotas.

Elsewhere, January was slightly on the cool side with departures of 1.0-3.0 degrees F (0.6-1.7 degrees C) below normal. In general, temperatures were well below normal during the first half of the month, with the temperature pattern swinging to above normal during the latter part of January. Some of the coldest temperatures of the month occurred on New Year's Day. An Arctic air mass brought temperatures that were well below 0.0 degrees F (-17.8 degrees C), with a few locations in the Dakotas dipping below -30.0 degrees F (-34.4 degrees C). Another cold snap occurred around the middle of the month, bringing dangerous wind chills to much of the eastern High Plains. The combination of cold temperatures and lack of snow has increased frost depths in the soil across much of the region, which could cause negative impacts. For instance, high frost depths may damage winter wheat, and buried water pipes could freeze and burst.

Station Spotlight: Rawlins, WY

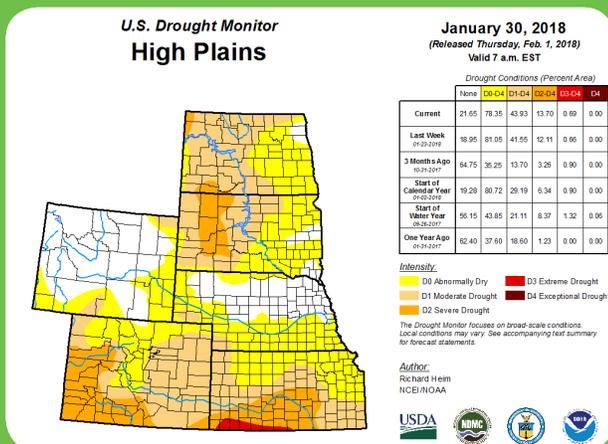


Above: Daily temperatures along with extremes and normals values since February 1, 2017 in Rawlins, WY.

Drought Conditions

A continuation of dry conditions caused drought to spread and intensify across the High Plains in January. According to the U.S. Drought Monitor, the area in drought (D1-D4) increased from 28 percent to 44 percent over the course of the month. The majority of the degradations occurred in Colorado and Kansas where November-January precipitation was less than 25 percent of normal.

U.S. Drought Monitor



The U.S. Drought Monitor is produced as a joint effort of the U.S. Department of Agriculture (USDA), National Drought Mitigation Center, U.S. Department of Commerce, and the National Oceanic and Atmospheric Administration (NOAA). For current Drought Monitor information, please see: <http://droughtmonitor.unl.edu/>.

The worst conditions could be found in southern Kansas where extreme drought (D3) was introduced to the area. Moderate drought (D1) and severe drought (D2) spread northward into central Kansas. Winter wheat was not faring well, with nearly half of the crop in poor to very poor condition by the end of the month. In Colorado, snowpack continued to suffer, and mounting snowfall deficits in the southwestern portion of the state warranted D2 conditions on the U.S. Drought Monitor map. Ski resorts were losing business and forced to close for periods of time due to the lack of snow. Additionally, water managers began doubting that the precipitation deficit could be made up this season and began expressing concerns over the lack of water supplies later on in the year.

Despite the overall drought degradations in January, two primary areas experienced improvement in conditions. Excessive precipitation in northern and central Nebraska prompted the removal of abnormally dry conditions (D0), while gradual improvement in drought conditions led to the removal of D3 in South Dakota.

Climate Outlooks

According to the Climate Prediction Center, La Niña conditions are present in the Pacific and a La Niña Advisory is in effect. Equatorial sea surface temperatures are below average across the central and eastern Pacific Ocean. La Niña conditions are likely through the Northern Hemisphere winter 2017-18, with a transition to ENSO-neutral expected during the spring. 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

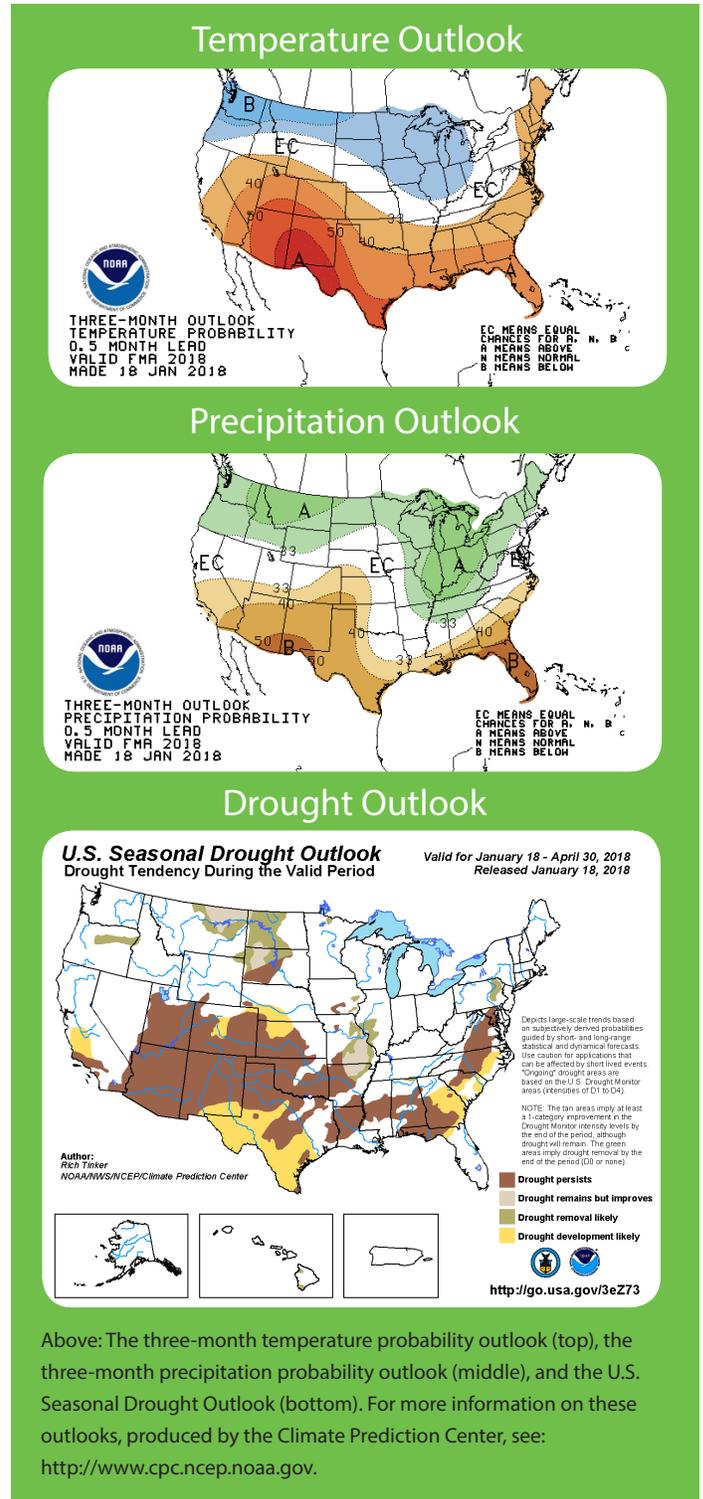
The February-April temperature outlook indicates an increased chance of above-normal temperatures for southern, western, and eastern portions of the contiguous U.S. In the High Plains, this includes Colorado, southern Wyoming, the southwestern half of Kansas, and extreme southwestern Nebraska. Below-normal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

Precipitation

The precipitation outlook for the next three months calls for a higher probability of above-normal precipitation in the Northern Rockies and Northern Plains, as well as the Ohio Valley and parts of the Northeast. In the High Plains region, this includes North Dakota, northwestern South Dakota, and northern and central Wyoming. Below-normal precipitation is expected throughout southern and central portions of the contiguous U.S., including the western half of Kansas, southern and eastern Colorado, and southwestern Nebraska in the High Plains. Elsewhere, there are equal chances for above-, below-, and near-normal precipitation in the contiguous U.S. during the February-April period.

Drought

The January 18th U.S. Seasonal Drought Outlook shows that drought is expected to persist across parts of the Southwest, the Plains, the Midwest, and the East. In the High Plains, this includes central and southern Colorado, western and central Kansas, southwestern Nebraska, south-central Wyoming, and a part of South Dakota. Drought may improve or be removed in the Northern Plains, Midwest, and parts of the East and Pacific Northwest. Drought development is likely across the southern and central U.S. through April, which includes parts of Colorado, Nebraska, and Kansas in the High Plains.



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	45.6	18.0	31.8	3.2	65	01/09	-9	01/16	0.71	0.41	237
Alamosa San Luis Airport	45.2	2.0	23.6	7.3	63	01/31	-11	01/23	0.08	-0.18	31
Colorado Springs Municipal Airport	50.2	19.8	35.0	4.5	70	01/19	-1	01/16	0.16	-0.16	50
Denver International Airport	49.2	20.1	34.6	3.9	68	01/09	-4	01/16	0.54	0.13	132
Grand Junction Walker Field Airport	43.6	19.3	31.5	4.1	52	01/31	7	01/22	0.76	0.18	131
Pueblo Memorial Airport	53.6	14.7	34.2	3.7	72	01/19	-3	01/01	0.23	-0.12	66

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	40.7	16.5	28.6	0.0	66	01/25	-10	01/01	0.42	-0.16	72
Dodge City Regional Airport	50.2	17.0	33.6	1.4	74	01/10	-9	01/01	0.09	-0.49	16
Goodland Renner Field	46.7	16.5	31.6	2.0	74	01/19	-7	01/16	0.68	0.30	179
Topeka Municipal Airport	41.0	17.7	29.4	-0.3	68	01/25	-9	01/01	0.94	0.08	109
Wichita Mid-Continent Airport	47.2	20.9	34.0	1.8	67	01/25	-2	01/01	0.20	-0.63	24

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	36.5	11.3	23.9	-0.5	60	01/09	-16	01/16	0.07	-0.29	19
Grand Island Airport	34.0	13.5	23.7	-1.4	52	01/09	-16	01/01	1.08	0.55	204
Lincoln Municipal Airport	35.4	12.7	24.0	-0.6	56	01/10	-19	01/01	0.41	-0.23	64
Norfolk Karl Stefan Airfield	31.5	10.1	20.8	-1.8	55	01/19	-26	01/01	1.07	0.48	181
North Platte Regional Airport	35.6	9.9	22.8	-2.2	59	01/09	-12	01/02	1.05	0.71	309
Omaha Eppley Airport	32.9	13.7	23.3	-0.2	54	01/26	-20	01/01	0.77	0.05	107
Valentine Miller Field	36.4	11.3	23.8	0.2	61	01/19+	-24	01/01	0.54	0.28	208

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	25.0	1.0	13.0	0.2	49	01/30	-29	01/13+	0.42	-0.01	98
Fargo International Airport	19.5	2.9	11.2	1.9	41	01/19	-23	01/05	0.21	-0.49	30
Grand Forks International Airport	18.4	1.7	10.0	3.3	41	01/19	-25	01/13	0.50	-0.05	91
Theodore Roosevelt Airport	27.8	6.0	16.9	0.6	47	01/30	-31	01/01	0.03	-0.27	10
Williston International Airport	24.4	0.1	12.2	1.2	44	01/30	-30	01/12	0.19	-0.40	32

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>.

January 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	27.4	3.3	15.3	3.3	52	01/19	-32	01/01	0.04	-0.43	9
Huron Regional Airport	27.2	5.4	16.3	-0.4	48	01/26	-30	01/01	0.38	-0.12	76
Pierre Regional Airport	30.4	8.3	19.3	-0.6	49	01/19	-22	01/01	0.08	-0.34	19
Rapid City Regional Airport	38.3	11.1	24.7	-0.3	61	01/09	-19	01/01	0.17	-0.13	57
Sioux Falls Joe Foss Field Airport	27.3	7.5	17.4	0.8	52	01/19	-25	01/02	0.38	-0.18	68

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	37.5	17.8	27.6	2.9	51	01/18	-19	01/01	0.68	0.17	133
Cheyenne Municipal Airport	43.9	20.0	32.0	3.2	62	01/19	-4	01/16+	0.57	0.24	173
Lander Hunt Field Airport	33.2	12.6	22.9	1.2	52	01/30	-11	01/02	0.68	0.27	166
Laramie Regional Airport	40.5	14.2	27.4	5.7	56	01/19+	-8	01/16	0.15	-0.12	56
Rawlins Municipal Airport	37.8	19.1	28.4	6.8	48	01/19+	-3	01/16+	0.16	-0.20	44
Sheridan County Airport	37.5	12.3	24.9	1.1	60	01/30	-19	01/01	0.63	0.07	113

January 2018 Highlights

Monthly Rankings

Precipitation in inches, Temperature in degrees F

Wettest/Driest	Precipitation / Ranking	Record / Year	Period of Record
North Platte, NE	1.05 / 7th wettest (tie, 2011)	2.33 / 1879	1875-2018
Akron, CO	0.71 / 9th wettest	1.68 / 1988	1938-2018
Garden City, KS	T / 2nd driest (tie, 2012+)	0.00 / 1986	1948-2018
Dickinson, ND	0.03 / 3rd driest (tie, 1961)	T / 2008	1949-2018
Aberdeen, SD	0.04 / 7th driest	0.00 / 1898	1895-2018
Warmest	Temperature / Ranking	Record / Year	Period of Record
Laramie, WY	27.4 / 6th warmest (tie, 1969)	30.1 / 2003	1948-2018
Rawlins, WY	28.4 / 6th warmest	30.4 / 2003	1952-2018
Alamosa, CO	23.6 / 9th warmest (tie, 1981)	26.4 / 2003	1933-2018
Akron, CO	31.8 / 10th warmest	37.1 / 2006	1939-2018

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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 January precipitation was 0.24 inch, which was 0.2 inch less than last month, 0.24 inch less than in January 2017 and 0.25 inch less than the 1981-2010 average, making it the 22nd driest January in the 124-year period of record. It was the driest January since 2016. Below-average precipitation was observed commonly in all parts of the state, except for a small portion in the central part of the state where above-normal precipitation was observed (Figure 1). The greatest monthly precipitation accumulation was 0.91 inches, recorded in Grand Forks, Grand Forks County. The greatest 24-hour precipitation was 0.8 inches, also recorded in Grand Forks, on Jan. 11. The greatest monthly snowfall accumulation was 9.8 inches, recorded in Grand Forks. The greatest 24-hour snowfall was 6.5 inches, also recorded in Grand Forks, on Jan. 11. Based on historical records, statewide January precipitation showed a slight negative long-term trend of 0.01 inch per century since 1895. The highest and the lowest January precipitation for the state ranged from 1.27 inches in 1916 to 0.09 inch in 1942.

Temperature:

The official state average January temperature was 11.8 F, 5 F colder than last month, but 0.6 F warmer than January 2017, and 1.2 F warmer than the 1981-2010 average, making it the 35th warmest January in the 124-year period of record. It was the warmest January since 2016. Above-average temperatures were observed commonly in the state with few exceptions in the west (Figure 2). The state's highest and lowest daily temperatures ranged from 52 F on Jan. 19 in Fullerton, Dickey County, to minus 45 F on Jan. 1, in Hettinger, Adams County. Based on the historical records, the state average January temperature showed a staggering positive trend of 0.5 F per decade since 1895. The highest and the lowest monthly state January average temperatures ranged from 25.9 F in 2006 to minus 11.9 F in 1950.

Drought and other notable impacts:

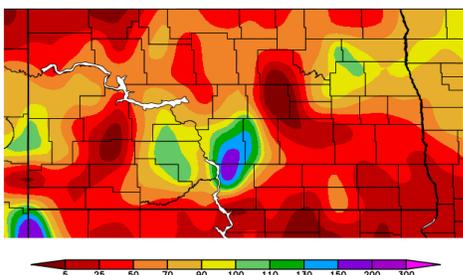
Dry conditions continued from the previous month. By the end of the month, the percent of the state experiencing drought was over 61, a 1 percent increase, compared with the previous month. Based on the DM map on Jan. 30, only less than 5 percent of the state was in severe drought (D2).

Storm Reports: NDAWN's highest peak gust in January was slightly over 50 mph, recorded at the McHenry weather station in Foster County on Jan. 30, 2018. The NOAA Storm Report reported no significant storm events in January.

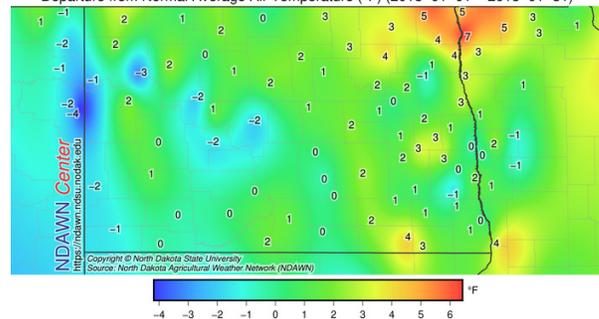
Daily Record Event in January: Across the observation network of weather stations with at least 30 years of history, a total of 23 daily high-temperature-related and 26 daily low-temperature-related records were set or tied. A total of 22 highest daily precipitation-related records were set or tied.

Temperature and Precipitation Overview

Percent of Normal Precipitation (%)
 1/1/2018 - 1/31/2018



Departure from Normal Average Air Temperature (°F) (2018-01-01 - 2018-01-31)



Above: Percent of normal precipitation (left, figure 1) and departure from normal average temperature (right, figure 2) for January 2018 in North Dakota. Figure 1 produced by the Applied Climate Information System, Figure 2 produced by NDAWN.

Kansas Climate Summary

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Some welcome moisture

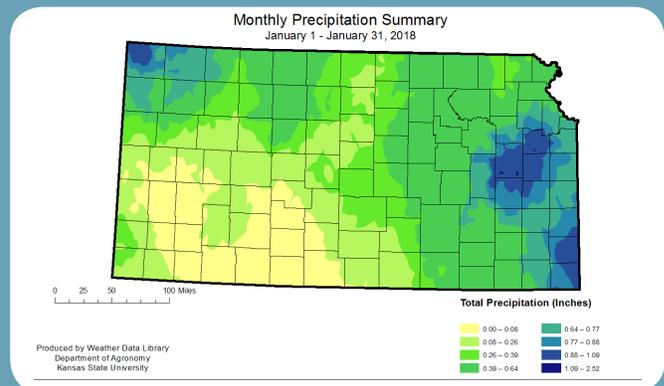
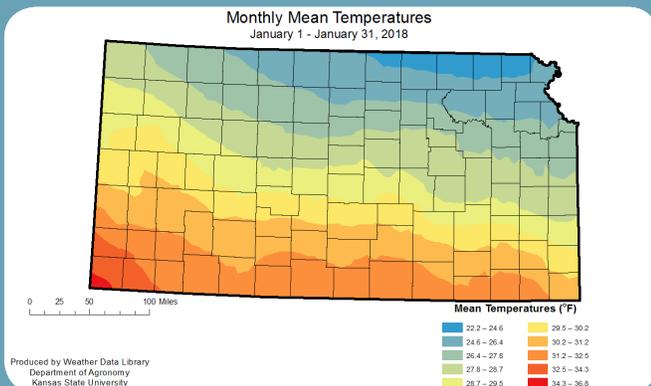
After an extended period with little to no moisture, parts of Kansas recorded some significant precipitation. At Tribune, a small snow event on January 12th snapped a 97-day period without any precipitation. This ties the previous record set in 1901. When it comes to a wetting precipitation event – defined as a tenth of an inch or greater – Elkhart is just two days shy of the 120-day record set in 1936. Manhattan established a new record of 87 days, which ended on January 10th with 0.17 inches. The previous record was 76 days set in 1927. State-wide the average precipitation was 0.34 inches or 46 percent of normal. The East Central Division came closest to normal with 0.65 inches or 67 percent of normal. The South Central Division, with just 0.18 inches, had the lowest percent of normal with just 21 percent. The greatest monthly precipitation totals were 2.52 inches at Osage City, Osage County (NWS) and 2.05 inches at St. Francis 12.1 NW, Cheyenne County (CoCoRaHS). Most of the precipitation came in the form of snowfall. A series of storms brought snowfall across mainly the northern half of the state. Forty-six locations set daily records for snowfall. Multiple locations tied for the greatest daily snowfall at 9 inches at Atwood, Rawlins County, on the 22nd. The greatest snowfall totals for the month were 12 inches at Atwood, Rawlins County (NWS) and 14.4 inches at Goodland 16.6 NW, Sherman County (CoCoRaHS).

January continued the pattern of wide temperatures swings, as might be expected with the dry air in place. The statewide average temperature was 28.8 oF, or 1.1 degrees cooler than normal. The warm days weren't persistent enough to outweigh the very cold start to the month. The western divisions came closest to normal, with the Southwest Division coming in as the warmest, averaging 32.7 oF, or 0.1 degrees warmer than normal. The central and eastern divisions were all colder than normal. The Northeast had the greatest departure, with an average of 25.0 oF or 2.5 degrees cooler than normal. The warmest temperature reported for the month was 83 oF at Medicine Lodge, Barber County, on the 20th. The coldest reading was -16 oF at Belleville, Republic County, on the 1st. Records were set on both the cold and warm end of the spectrum. On the cold side, there were 37 new record low maximum temperatures and 31 new record low minimum temperatures. On the warm side, there were 41 new record high maximum temperatures and 53 new record high minimums.

Unsurprisingly, given the dry conditions, there were no severe weather reports during the month. In addition to several winter weather advisories, there were several days with extreme fire danger, and also several days with wind chill warnings.

With much below normal precipitation, there was a steep increase in the drought conditions. Extreme drought conditions now cover almost 5 percent of the state. Severe drought has expanded to a quarter of the state while moderate drought covers an additional 36 percent of the state. No area of the state is currently drought-free. The February outlook has a slight chance for drier than normal conditions in the southern half the state, and equal chances for above or below normal precipitation in the rest of the state. Given the low amount of moisture that typically is seen in February, improvement in the current drought status is unlikely. With the wet summer last year and current dryness, increased fire danger continues.

Temperature and Precipitation Overview



Above: January 2018 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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Well below zero temperatures and a blizzard kick off 2018

The new year rang in with a cool start across Nebraska with temperatures well below normal the first week of January. It was cold enough that a few locations reached new record lows on the 1st (-20 in Omaha, -26 in Norfolk) and 2nd (-17 in Norfolk). Temperatures in the 20 to 30 below range registered as the coldest for the month with the statewide low of -32°F reported in Concord on January 1. Also on New Year's was the lowest wind chill reading of -42°F at the Nebraska Mesonet Fordyce 4N station.

A warm up followed the cool weather with high temperatures reaching 50 or greater. The few inches of snow that was on the ground melted or declined significantly. This was followed by a winter storm that crossed the state on the 21st through the 23rd bringing blizzard conditions. Winds gusted to 60 mph with this storm. The highest snowfall totals of 8 inches or greater occurred in a swath from southwest to northeast Nebraska. The heaviest amounts were in northeast Nebraska with more than 14 inches. New daily snowfall totals were reported for Grand Island (7.4 inches) on Jan. 22 and North Platte (8 inches) on Jan. 21.

It's no surprise that the average temperature for the month was 1.9°F cooler than normal at 23.1°F. In fact, much of the eastern half of the U.S. was colder than normal this January with warmer than normal conditions in the west.

Ground temperatures at the four-inch depth observed at Nebraska Mesonet locations registered around the freezing point. The coldest temperatures for the weekly average by the start of February were around 30°F. A few locations in central Nebraska are above freezing. The lowest soil temperature occurred at Curtis 1N on the morning of the 16th at 12°F. The highest observed soil temperature was 42°F on the afternoon of the 26th at Nebraska City 3NW.

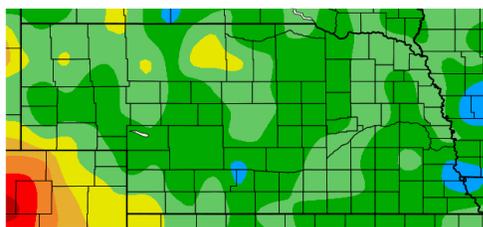
January snowfall totals ranged from a few inches in the southeast to about 18 inches in the northeast. The heaviest amounts for the month occurred in the path of the blizzard as some locations reported more than a foot of snow for the month. There were also some high totals (> 12 inches) in the northern panhandle and north central along the Niobrara River.

Liquid equivalent precipitation was correspondingly highest in the southwest, central, and northeast Nebraska at more than an inch. These amounts are twice the normal total for January. Daily liquid equivalent moisture records of 0.62 inches at North Platte and 0.20 inches at Valentine were recorded on Jan. 21. Locations except the southcentral, southeast, and portions of the Panhandle reported above normal totals. These areas received a half inch or less. The statewide monthly precipitation total was 0.68 inches, which is 0.21 inches above normal.

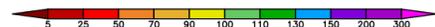
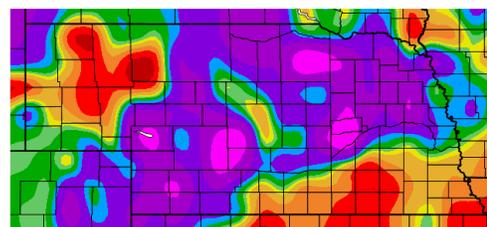
A large swath of northcentral and northeast Nebraska saw an improvement to the dryness conditions that were in place at the beginning of the year. By month's end, the D0 was removed in this area. However, moderate drought (D1) was introduced in the southwest corner of the state due to a lack of precipitation. This is impacting primarily Dundee county and portions of the three surrounding counties.

Temperature and Precipitation Overview

Departure from Normal Temperature (F)
 1/1/2018 - 1/31/2018



Percent of Normal Precipitation (%)
 1/1/2018 - 1/31/2018



Above: January 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

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 precipitation month. There were 1.0 inches of precipitation recorded across the basin with Missouri (MO) and Kansas (KS) receiving the most precipitation. An early September winter of a cold front system was associated with heavy snowfall in the northern portion of the basin. A large winter storm system was associated with heavy snowfall in the northern portion of the basin. A large winter storm system was associated with heavy snowfall in the northern portion of the basin.

Regional - Impacts for September - November 2014

Significance:
Fall rains over the period resulted in the Missouri River Basin states. There were no significant impacts on the basin. There were no significant impacts on the basin.

Regional - Climate Overview for September - November 2014

Temperature and Precipitation Anomalies
September - November 2014

Drought Co
3 Month Coefficient of Correlation

Regional - Outlook for January - March 2015

3 Month Precipitation and Temperature Outlooks
MO to March 2015

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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