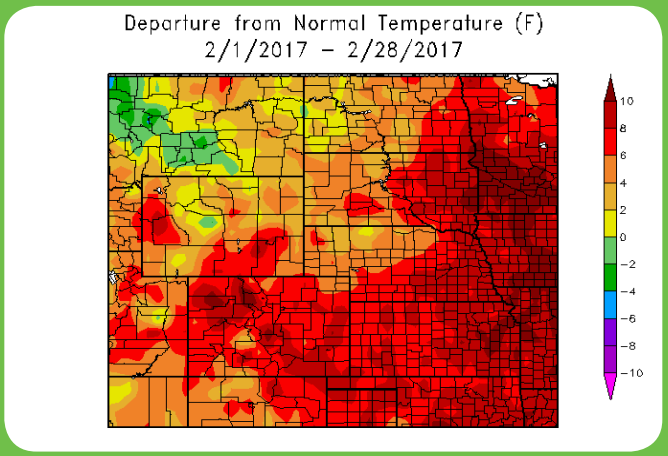
Warm Weather to End the Winter Season

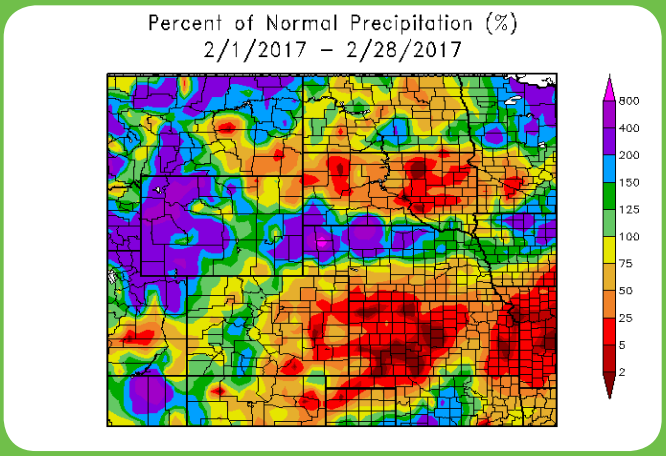
The biggest weather story of the month was unseasonably warm temperatures across the majority of the High Plains. Temperature departures ranged from 2.0-10.0 degrees F (1.1-5.6 degrees C) above normal throughout the region. Numerous top 10 records for warmest February were set. The abnormal warmth was not confined to the High Plains; most of the contiguous U.S. experienced above-normal temperatures as well, and it even reached 100.0 degrees F (37.8 degrees C) in parts of Texas. While February was especially warm in the High Plains, December and January were cooler, and only a few locations in North Dakota and Kansas had a top 10 warmest winter on record.

Most of the High Plains were dry during February, with the exception of the Rockies and a swath of higher precipitation across much of Wyoming, southern South Dakota, and northern Nebraska. Unfortunately, drought-stricken areas of eastern Colorado and Kansas received very little precipitation during February, which caused drought to remain or intensify. Meanwhile, ample precipitation in the Rockies helped snowpack continue to build in Colorado and Wyoming, and these areas are on pace to have a very high snowpack year. As for precipitation during the winter season, it was wet in parts of the region. Locations across Colorado, Wyoming, and North Dakota had their wettest winters on record.

While the late-winter warmth allowed for a welcomed break from typical wintertime temperatures, it has caused some negative impacts and concerns around the region. For example, plants broke dormancy early, putting them at risk for freezes later in the spring. Insects and pests have emerged early; for instance, alfalfa weevil larvae are already present in some areas of Kansas. Producers in Kansas and Nebraska are concerned about the winter wheat crop emerging early due to warm temperatures, and the lack of snow cover during cold snaps may have led to winterkill. Warm temperatures have also melted snow and ice rapidly, causing ice jams and flooding along rivers in Wyoming.

Temperature and Precipitation Overview





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

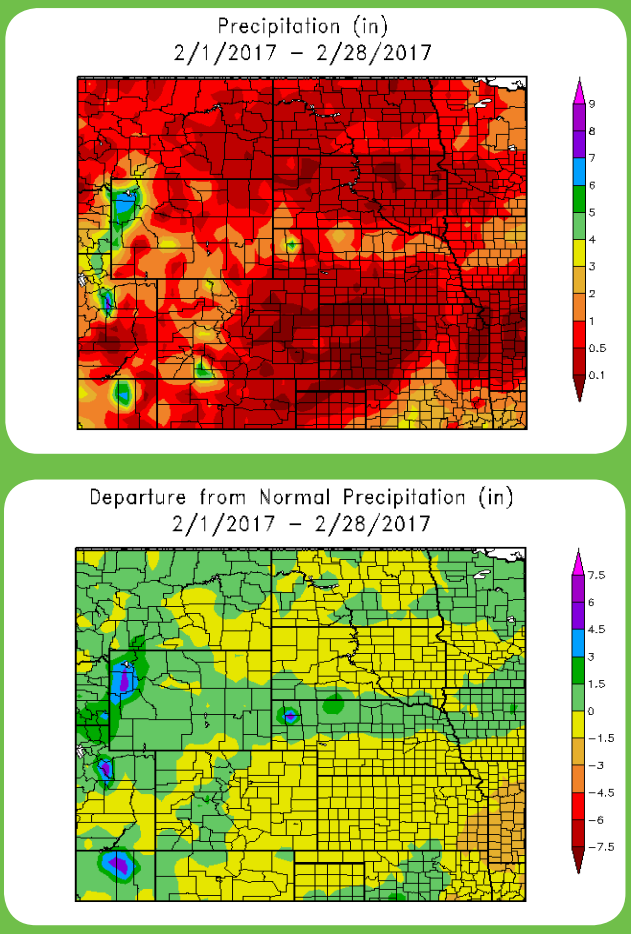
Precipitation

February yielded a mix of wet and dry conditions across the High Plains. It was dry throughout much of Kansas, eastern Colorado, southern Nebraska, and the Dakotas. While it is not unusual to be dry this time of year, some areas received less than 5 percent of normal precipitation. This February made the top 5 driest on record at the following locations: Akron, CO (tied for driest), Topeka, KS (4th driest), Goodland, KS (4th driest), and Dodge City (tied for 5th driest). It was so dry in Akron, it recorded only a trace of precipitation the entire month. The dryness in Kansas and eastern Colorado prevented these areas from seeing any drought relief during February; in fact, drought began to spread across eastern Kansas.

Similar to January, warmer temperatures contributed in part to below-normal snowfall in February in some locations. For instance, Wichita, Kansas received no snowfall the entire month, tying three other years for the least snowiest February on record. Huron, South Dakota had its 2nd least snowiest February and recorded only 0.3 inches (1 cm) of snowfall, which was 7.1 inches (18 cm) below normal. Both of these locations experienced temperature departures of approximately 9.0 degrees F (5.0 degrees C) above normal, so some of their precipitation fell as rain. The lack of snowfall has implications for winter wheat, which is especially a concern in Kansas and Nebraska, because snow is needed to insulate and protect the crop from damaging freezes and wind.

Meanwhile, wetter conditions prevailed across most of Wyoming, southern South Dakota, and northern Nebraska. Precipitation exceeded 150 percent of normal across these areas. The wetness was due to persistent storm systems crossing the area. On February 7th, a winter storm accompanied by high winds toppled power poles in northwestern Wyoming, knocking out power to several communities. Jackson Hole Mountain Ski Resort was out of power for 5 days, which shut down the resort during a crucial time of the season. A winter storm struck northern Nebraska and southeastern South Dakota February 23rd-24th, creating some impressive snow totals across this region along with blowing and drifting snow. For example, the Alliance 1WNW (Nebraska) COOP station recorded 22.1 inches (56 cm) of snowfall the 23rd-24th, 17.3 inches (44 cm) of which fell on the 24th. This was the highest 1-day and 2-day total snowfall ever recorded at this station (period of record 1894-2017).

Regional Precipitation



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

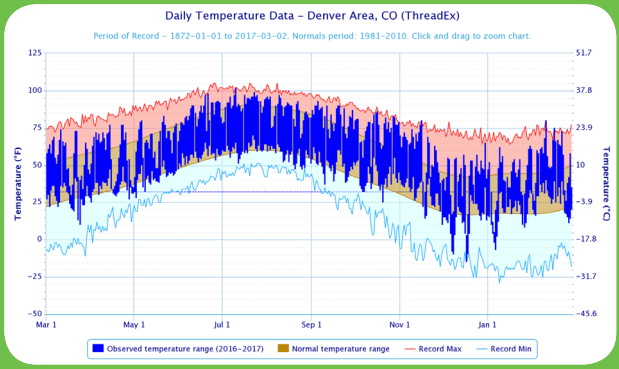
Snowpack Update

The Rockies in Colorado and Wyoming continued to experience an ample snowpack in February, despite above-normal temperatures throughout the month. It was very wet in western Wyoming, as this region received more than 200 percent of normal precipitation. Despite most of Colorado experiencing drier than normal conditions during February, the central part of the state where the highest elevations exist had above-normal precipitation. According to the U.S. Army Corps of Engineers, Snow Water Equivalent (SWE) above Fort Peck Dam was 97 percent of average at the end of February, which was a notable increase from the previous month. Snowpack continued to build between Fort Peck and Garrison Dams, as SWE increased to 132 percent of average, surpassing the snowpack on this date in 2011. Normally by March 1, about 79 percent of the peak mountain SWE has occurred in both reaches.

Temperatures

The warmth of February contributed to impressive temperature departures across the region. The northern and western High Plains experienced temperatures that ranged from 2.0-6.0 degrees F (1.1-3.3 degrees C) above normal, while temperature departures in eastern and southern areas exceeded 6.0 degrees F (3.3 degrees C). Kansas, eastern Nebraska, and the eastern Dakotas were especially warm with temperature departures greater than 8.0 degrees F (4.4 degrees C). The warmth led to many daily maximum temperature records being broken, and some locations even had their highest February temperature on record.

Station Spotlight: Denver, CO



Above: Daily temperatures along with extremes and normals values since March 1, 2016 in Denver, CO.

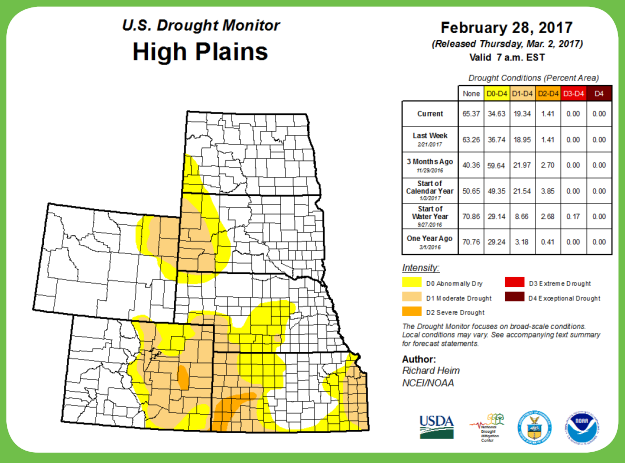
The highest temperatures of the month occurred on the 10th and 11th. On the 10th, for example, Denver, Colorado reached 80.0 degrees F (26.7 degrees C), which was its highest February temperature and earliest 80-degree day on record by over a month (the next earliest 80-degree day occurred March 16, 2015). On the 11th, the temperature soared to 90.0 degrees F (32.2 degrees C) in Liberal, Kansas, which was its highest winter temperature and earliest 90-degree day on record (period of record 1893-2017).

The late-winter warmth has caused impacts around the region. Parks and Recreation in Sioux Falls, South Dakota closed their outdoor ice rinks for the season on February 10th, which was several weeks earlier than normal. Prolonged above-freezing temperatures caused trees and plants to break dormancy early, which leaves them vulnerable to freeze damage because the average last spring freeze does not typically occur until April or May throughout most of the region. In Wyoming, ice jams occurred on several rivers and caused minor to moderate flooding.

Drought Conditions

Drought conditions did not change drastically during February, which is common for this time of year when impacts tend to be minimal. The area in abnormal dryness or drought (D0-D4) on the U.S. Drought Monitor decreased slightly from 38 percent to 35 percent in February. The area in drought (D1-D4) changed very little. However, there were some improvements and degradations in drought conditions in the region.

U.S. Drought Monitor



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

The persistent area of drought stretching from the Black Hills of South Dakota into northeastern Wyoming received some relief during February. A snowstorm brought beneficial moisture to western South Dakota and western Nebraska, which led to the trimming of moderate drought (D1) on the eastern edge of the area and the removal of abnormal dryness (D0) from parts of the Nebraska panhandle.

As for degradations, D1 was introduced to eastern Kansas during February. This area has been contending with dryness since December. February did not offer any relief, as temperatures in this region were more than 8.0 degrees F (4.4 degrees C) above normal and precipitation was less than 25 percent of normal. The February 27th USDA Kansas Crop Progress and Condition Report stated that over half of the state's topsoil and subsoil moisture was short or very short, and nearly a quarter of the winter wheat crop was rated poor or very poor. Concerns are growing over the possibility of additional drought development, so producers will be watching the weather closely during March.

Climate Outlooks

According to the Climate Prediction Center, the La Niña ended in February and ENSO-neutral conditions are present in the Pacific. Equatorial sea surface temperatures are near average in the central and east-central Pacific Ocean, while they are above average in the eastern Pacific Ocean. ENSO-neutral conditions are favored to continue through at least spring 2017. 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 Missouri River Basin Forecast Center Spring Flood Outlook states that spring flood risk is expected to be near normal for most of the basin. However, above-average mountain snowpack, the presence of river ice, and expected spring convection have increased flood risk in parts of Wyoming, the Dakotas, and Nebraska.

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 March-May temperature outlook indicates an increased chance of above-normal temperatures for the central, southern, and eastern U.S. This includes Colorado, Kansas, Nebraska, southeastern Wyoming, and southeastern South Dakota in the High Plains region. Elsewhere, there is an equal chance for above-, below-, or near-normal temperatures in the contiguous U.S. during the March-May period.

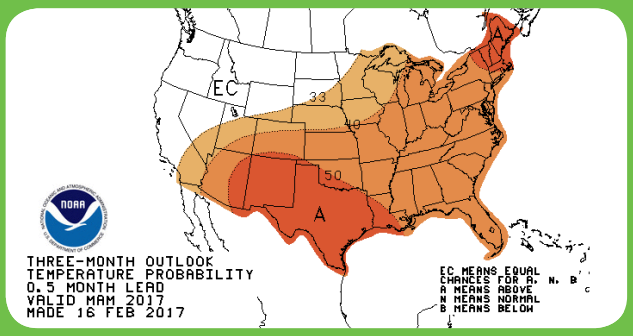
Precipitation

The precipitation outlook for the next three months calls for a higher probability of above-normal precipitation across the Pacific Northwest, northern Rockies, northern Plains, and the western half of the Great Lakes region. In the High Plains region, this includes North Dakota, South Dakota, and northern and central Wyoming. Below-normal precipitation is favored across the Southwest, including southwestern Colorado in the High Plains. The remainder of the contiguous U.S. has equal chances for above-, below-, or near-normal precipitation.

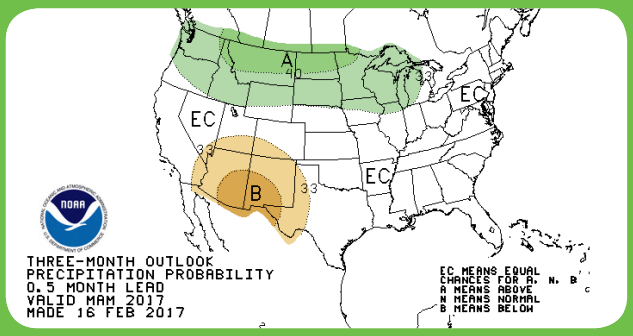
Drought

The February 16th U.S. Seasonal Drought Outlook shows that drought is expected to persist across portions of the Southwest, the central Plains, the southern tip of Texas, and southern Florida. In the High Plains, this includes eastern Colorado, western Kansas, and southwestern Nebraska. Drought may improve or be removed in portions of the West, the Plains, the Northeast, and the Southeast. This includes the area in drought in the Black Hills region of South Dakota extending west into Wyoming and a small area in south-central Nebraska. Drought development is likely along the southern tip of Texas and far southern Florida, but drought development is not likely in the High Plains region through May.

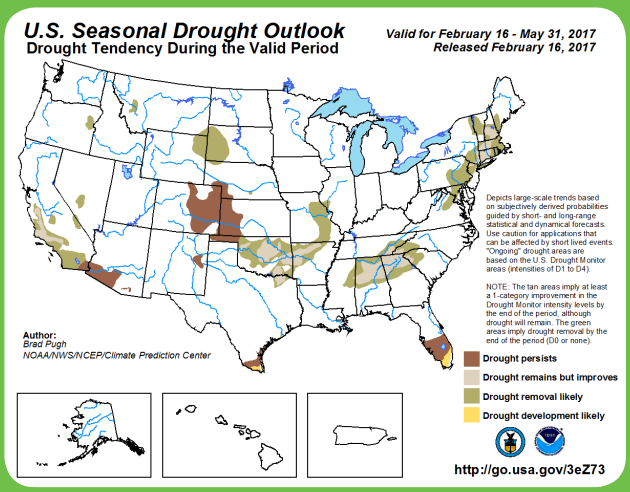
Temperature Outlook



Precipitation Outlook



Drought Outlook



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

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	51.8	23.9	37.8	6.4	78	02/10	10	02/24+	T	-0.44	0
Alamosa San Luis Airport	43.5	15.5	29.5	6.7	58	02/21+	-6	02/01	0.29	0.03	112
Colorado Springs Municipal Airport	53.7	26.0	39.8	7.7	77	02/10	5	02/25	0.07	-0.27	21
Denver International Airport	53.9	26.6	40.3	7.8	80	02/10	11	02/26	0.23	-0.14	62
Grand Junction Walker Field Airport	53.1	30.4	41.7	7.2	69	02/10	13	02/26	0.54	0.00	100
Pueblo Memorial Airport	59.6	24.5	42.0	8.1	82	02/10	9	02/25	0.17	-0.13	57

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	53.8	28.8	41.3	8.6	77	02/22	12	02/25+	0.10	-0.69	13
Dodge City Regional Airport	60.3	27.1	43.7	7.8	87	02/10	9	02/25	0.01	-0.67	1
Goodland Renner Field	55.6	23.6	39.6	7.3	87	02/10	7	02/25	0.01	-0.48	2
Topeka Municipal Airport	57.5	31.0	44.2	9.8	79	02/22	15	02/09	0.11	-1.21	8
Wichita Mid-Continent Airport	59.0	32.5	45.8	8.6	77	02/22	17	02/09	0.83	-0.35	70

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	44.3	16.9	30.6	3.2	72	02/21+	-18	02/03	1.28	0.67	210
Grand Island Airport	50.8	24.8	37.8	8.7	77	02/21+	10	02/25	0.25	-0.43	37
Lincoln Municipal Airport	52.2	24.4	38.3	9.3	76	02/22+	11	02/25+	0.55	-0.22	71
Norfolk Karl Stefan Airfield	45.9	22.3	34.1	7.3	74	02/21	1	02/09	0.99	0.23	130
North Platte Regional Airport	51.0	19.9	35.5	6.5	79	02/21	4	02/25	0.52	0.02	104
Omaha Eppley Airport	49.9	25.5	37.7	9.6	75	02/22+	6	02/08	1.04	0.19	122
Valentine Miller Field	44.9	17.9	31.4	4.2	75	02/21	-5	02/03	1.16	0.68	242

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	31.9	13.3	22.6	4.5	55	02/21	-15	02/09	0.76	0.25	149
Fargo International Airport	32.0	16.4	24.2	9.6	56	02/19	-9	02/08	0.79	0.18	130
Grand Forks International Airport	28.2	11.5	19.9	7.9	46	02/21+	-12	02/08	0.40	-0.12	77
Theodore Roosevelt Airport	30.7	13.6	22.1	1.6	55	02/21	-15	02/08	0.24	-0.09	73
Williston International Airport	29.5	10.1	19.8	2.9	52	02/16	-25	02/08	0.70	0.31	179

All data are preliminary and subject to change. + indicates multiple dates, latest date listed. * indicates some missing data for the period.
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February 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	36.5	17.5	27.0	9.4	64	02/21	-5	02/09+	0.17	-0.38	31
Huron Regional Airport	41.5	20.3	30.9	9.3	69	02/21	0	02/08	0.22	-0.38	37
Pierre Regional Airport	40.1	20.3	30.2	5.9	70	02/21	2	02/08+	0.25	-0.34	42
Rapid City Regional Airport	44.8	18.5	31.7	4.3	72	02/21+	-6	02/08+	0.46	0.02	105
Sioux Falls Joe Foss Field Airport	41.9	21.6	31.7	10.2	68	02/21	4	02/03	0.49	-0.11	82

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	42.4	20.0	31.2	4.5	61	02/10	-12	02/03+	0.81	0.24	142
Cheyenne Municipal Airport	46.2	23.3	34.8	5.2	69	02/16	2	02/03	0.67	0.20	143
Lander Hunt Field Airport	39.0	17.1	28.1	2.9	59	02/09	-5	02/03	1.11	0.53	191
Laramie Regional Airport	41.2	19.9	30.6	7.1	59	02/16	0	02/24	0.15	-0.19	44
Rawlins Municipal Airport	38.2	21.1	29.7	6.0	54	02/10	3	02/28	0.62	0.20	148
Sheridan County Airport	42.3	15.8	29.1	2.5	64	02/15+	-22	02/03	0.66	0.12	122

February 2017 Highlights

Monthly Rankings

Temperature in degrees F

Warmest	**Temperature / Ranking**	**Record / Year**	**Period of Record**
Wichita, KS	45.8 / 2nd warmest (tie, 1954)	48.6 / 1930	1889-2017
Topeka, KS	44.2 / 3rd warmest	46.7 / 1930	1888-2017
Lincoln, NE	38.3 / 3rd warmest	41.6 / 1930	1887-2017
Colorado Springs, CO	39.8 / 3rd warmest	41.1 / 1954	1895-2017
Pueblo, CO	42.0 / 3rd warmest	43.9 / 1954	1889-2017
Omaha, NE	37.7 / 4th warmest	40.9 / 1930	1871-2017
Sioux Falls, SD	31.7 / 5th warmest (tie, 1930)	33.4 / 1954	1893-2017
Highest February Temperature	**Temperature / Date**	**Previous Record / Date**	**Period of Record**
Liberal, KS (COOP)	90 / February 11, 2017	88 / February 19, 2016	1893-2017
Goodland, KS	87 / February 10, 2017	82 / February 18, 2016	1895-2017
Pueblo, CO	82 / February 10, 2017	81 / February 18, 2016+	1888-2017
Denver, CO	80 / February 10, 2017	77 / February 28, 2006+	1872-2017
North Platte, NE	79 / February 21, 2017	Tie / February 11, 1962	1874-2017
Akron, CO	78 / February 10, 2017	77 / February 28, 2006+	1937-2017
Colorado Springs, CO	77 / February 10, 2017	76 / February 5, 1963	1894-2017

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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), statewide total February precipitation was 0.45", 0.5" greater than the last year, 0.01" greater than the 1981-2010 average, making it the 47th wettest (77th driest) February in the 123-year period of record. It was the wettest February since 2016. Above-average precipitation was observed in central, south central, northwest and north central parts of the state. Drier than normal conditions were observed in southwest ND and in Devils Lake Basin, which was a much needed break from a wet rest of the winter (Figure 1). The greatest monthly precipitation accumulation was 1.27" recorded in Williston, Williams County.The greatest monthly snowfall accumulation was 14" recorded also in Williston, Williams County. The greatest 24-hr precipitation was 0.82" that was recorded in Rhame, Bowman County on February 22. The highest 24-hr snowfall of 6" was recorded in both Williston in Williams County on February 4 and Tolley in Renville County on February 7. Based on historical records, statewide February precipitation showed a negative long-term trend of 0.07" per century since 1895. The highest and the lowest February precipitation for the state ranged from 1.59" in 1998 to 0.07" in 1934.

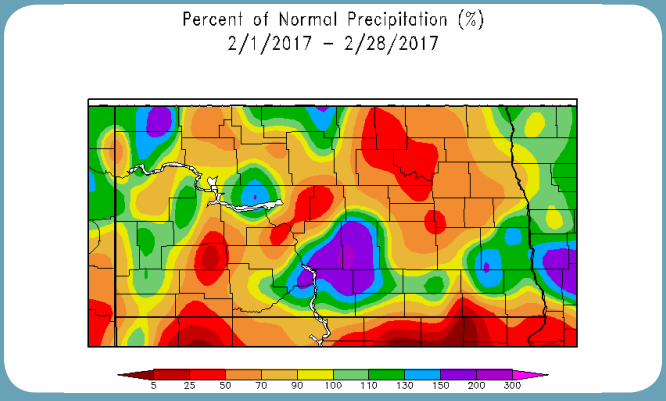
Temperature:

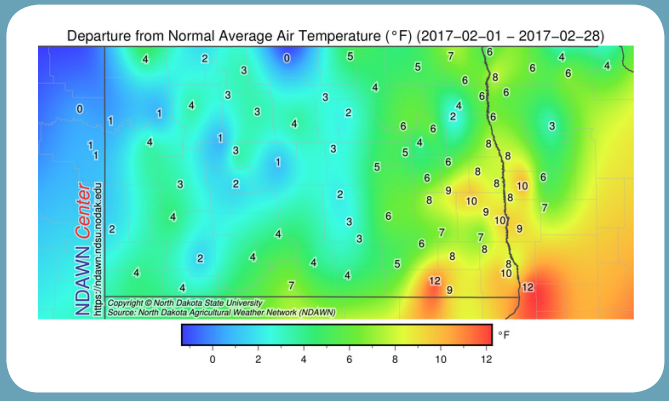
The official state average February temperature was 20.5°F, 5.1° colder than the last year, but 4.8° warmer than the 1981-2010 average, making it the 19th warmest February in the 123-year period of record. Above-average temperatures were observed almost all over the state except in Bottineau county where near normal conditions were observed. The warmest anomalies were observed in the southeastern regions (Fig. 2). The state's highest and lowest daily temperatures ranged from 66° on February 17 in Hettinger, Adams County to 26° on February 13 in Taylor City, Stark County. Based on historical records, the state average February temperature showed an increasing trend of 0.73°F per decade since 1895 (The steepest February trend in the US). The highest and the lowest monthly state February average temperatures ranged from 29.6° in 1954 to -14.1° in 1936.

Drought and other notable impacts:

Based on the Drought Monitor (DM) and given the nature of the frozen ground in winter, the drought conditions did not change throughout February as expected in ND. Less than 10% of the state was consistently designated as "Abnormally Dry". USDA's National Agricultural Statistics Service (NASS) reported that snow melt towards the end of the month helped livestock access to feed supplies. Based on the NASS report, 94 % of winter wheat conditions are fair or better in the state. Northern Red River flood potential remains problematic. Snow cover in the southern valley diminished or melted significantly and moved into the river. Based on the Advanced Hydrological Prediction Center of NOAA, there is a 75% chance that the river level at Fargo will exceed the flood stage during the period from March 5 to June 3, 2017. There is also approximately 10% chance of exceeding the major flood stage at the same location and during the same time span. The chance of flood conditions increases northward. For instance, there is a 95% chance that the river level will exceed the flood stage in Pembina during the same time span.

Temperature and Precipitation Overview





Above: Percent of normal precipitation (left, figure 1) and departure from normal average temperature (right, figure 2) for February 2017 in North Dakota. Figure 1 produced by ACIS, Figure 2 produced by NDAWN.

February 2017 Climate Summary

Kansas Climate Summary

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

KANSAS STATE UNIVERSITY

Warm and dry

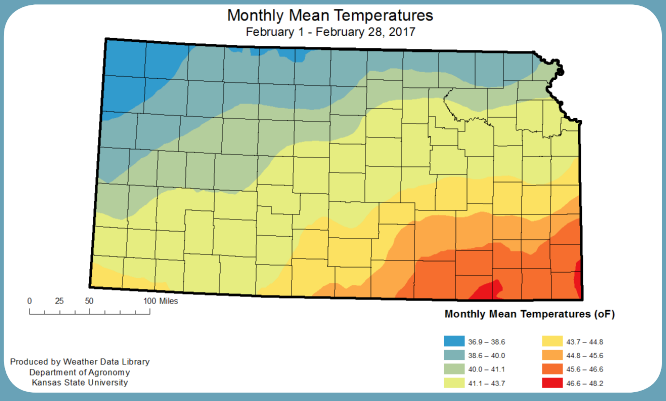
February was much warmer and drier than normal. The state-wide average temperature was 41.9 oF, which is 7.9 degrees warmer than normal. This places it as the 7th warmest since 1895. The January to February period, not surprisingly, also ranks in the top ten warmest as the 9th warmest. Overall, the East Central Division showed the greatest departure from normal with an average of 42.8 oF and a departure of 9.0 degrees. The West Central Division, which averaged 40.1 oF, was the closest to normal and was still 7.0 degrees warmer. The highest temperature reported was 90 oF at Liberal, Seward County, on the 11th. The lowest temperature reported was 0 oF at Brewster 4W, Thomas County, on the 4th. Not surprisingly, there were no record cold maximum or minimum temperatures. There were 155 new daily record high maximums, and 10 of those set new record highs for February. There also were 106 new daily record high minimum temperatures, of which 6 set new records for the month.

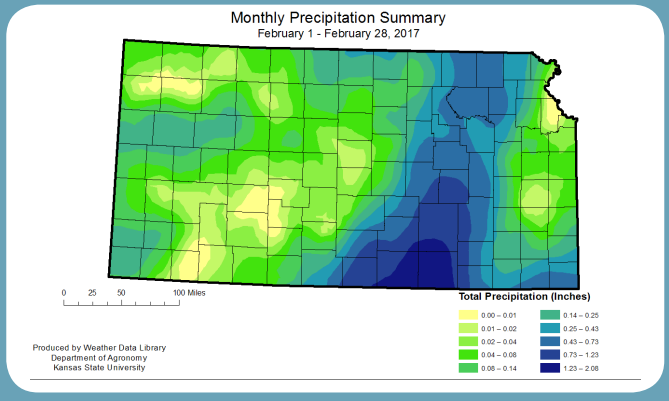
The warmer than normal temperatures were accompanied by much drier than usual conditions. The state-wide average precipitation was 0.23 inches, or just 23 percent of normal. This ranks as the 14th driest February since 1895. The South Central came closest to normal with an average of 0.44 inches or 44 percent of normal. The Northwest Division was the driest with an average of just 0.01 inches, which was 2 percent of normal. Still, despite the dry pattern, 14 stations set daily record precipitation values. The greatest 24-hour precipitation total for a National Weather Service (NWS) station was 1.87 inches at Smileyberg, Butler County, on the 20th. The greatest 24-hour precipitation total for a Community Collaborative Rain Hail and Snow (CoCoRaHS) station was 1.93 inches at Arkansas City 3.1 N, Cowley County, also on the 20th. The stations with the greatest monthly totals: 2.03 inches at Winfield 3NE, Cowley County (NWS); 2.08 inches at Arkansas City 3.9 SSW, Cowley County (CoCoRaHS). While snow wasn't a huge factor, there were still some snow events during the month. The greatest snowfall total for February at a National Weather Service station was 1.8 inches at Smith Center, Smith County. The greatest snowfall total for the month at a CoCoRaHS station was 2.5 inches at Phillipsburg 5.7 E, Phillips County.

The month was again calm as far as severe weather events. There were no reports of tornadoes, hail or high winds. Snowfall wasn't an issue this month. The biggest concern was the increase in extreme fire weather days, with the potential for wildfires.

The lower than normal precipitation resulted in worsening conditions in the U.S. Drought Monitor. Biggest deterioration occurred in the eastern parts of the state, where February precipitation is generally higher and deficits accumulate much more quickly. Unfortunately, the updated March outlook does not indicate any immediate chance for improvement.

Temperature and Precipitation Overview





Above: February 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/

NEBRASKA STATE CLIMATE OFFICE

From heavy snow to record-setting warmth, February had a lot to offer Nebraskans this year. During the first week of the month, a couple of light snow events resulted in several inches of accumulation, mostly for the northern portion of the state. The big story for snowfall, however, was a storm system that traveled west out of the Rockies on February 23rd and 24th bringing high winds and snow amounts of more than 10 inches across north central Nebraska. For the month, snowfall totals were 15 to 30 inches across the northern half of the state. This was in sharp contrast to southern tier counties in which only a few inches were received during February.

The percent of normal precipitation was only 5% to 10% in the far south and gradually increased moving northward across the state. Conditions were near normal across central and northeast Nebraska and the strongest positive departures were in the areas where the heaviest snows were received – the north central and northern panhandle.

The other big weather story was the record warmth occurring mid-month. Temperatures soared all across Nebraska and many daily temperature records were broken from Feb 9th through the 23rd. These records include both highest daytime highs as well as highest nighttime lows. A handful of 80 degree temperatures were reported, with the highest being 83 degrees on February 22nd in Beaver City, Nebraska (south central). The streak of warmth was most significant from Feb 15th – 22nd, and ended abruptly with the storm system and a return to winter.

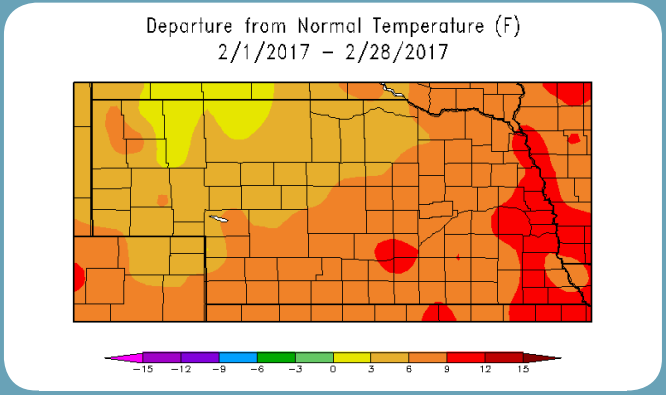
Temperatures for the month overall showed warmth statewide with average values at or near 40 degrees in the southeast to low 30s in the north. In comparison to normal, the strongest departures (9 degrees or more) were in the southeast and least in the northwest (less than 3 degrees). Not surprisingly, soil temperatures across Nebraska at the four-inch depth under bare soil showed similar warmth. Readings into the 40s were observed by month's end – quite warm for wintertime conditions.

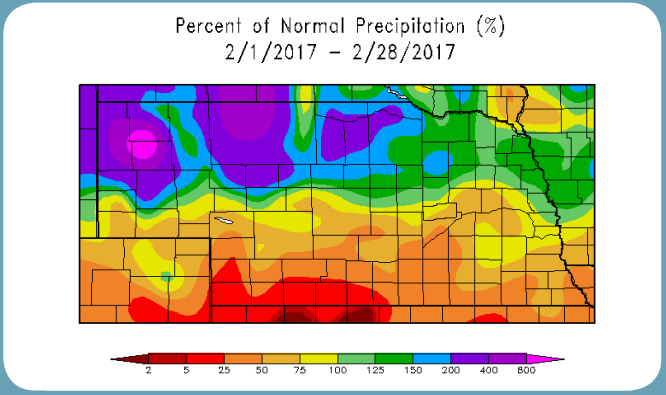
At the start of the February, drought (D0 – D1) conditions covered 44.7% of the state. As a result of precipitation received during the month, some alleviation occurred in the west with a trimming of D0 by month's end. Nebraska started March with 33.7% of the state in drought. The current D0 and D1 areas remain in the northern panhandle, southwest, and southcentral portions of the state.

Nebraska's statewide weather network operated by the University of Nebraska Lincoln, the Nebraska Mesonet, cataloged the following extremes this February:

Highest air temperature: 79.5°F on Feb 21 (Ragan 5W, Holdrege area)
Lowest air temperature: -17.3°F on Feb 3 (Angora 13N, Alliance area)
Greatest 24-hour temperature change: 55°F, -16°F on Feb 3 to 39° on Feb 4 (Angora 13N, Alliance area)
Highest 4-inch bare soil temperature: 60.8°F on Feb 22 (Guide Rock 3E, Red Cloud area)
Lowest 4-inch bare soil temperature: 22.5°F on Feb 3 (Fordyce 4N, Crofton area)
Highest 5-second wind gust: 50 mph on Feb 21 (Harrison 4NW)
Lowest wind chill: -28°F on Feb 3 (Harrison 4NW)

Temperature and Precipitation Overview





Above: February 2017 monthly departure from normal temperatures (left) and percent of normal precipitation (right) in Nebraska. Maps produced by the Applied Climate Information System (ACIS).

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.

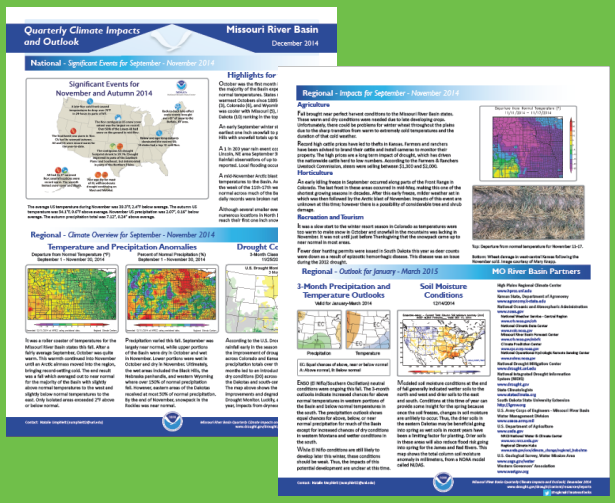
Much of the data and products found throughout this publication were built on the Applied Climate Information System (ACIS) framework. ACIS was designed to manage the complex flow of information from climate data collectors to the end users of climate data information. The main purpose of ACIS is to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

ACIS Applied Climate Information System

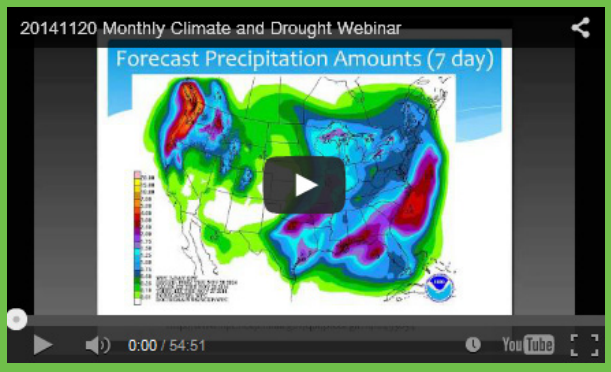
Additional Summary Information for the High Plains

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:
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Author Information

For questions, comments, or suggestions, please contact:
Crystal Stiles, Applied Climatologist
(402) 472-8208 - cstiles3@unl.edu
712 Hardin Hall, 3310 Holdrege Street
Lincoln, NE 68583-0997
http://hprcc.unl.edu

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