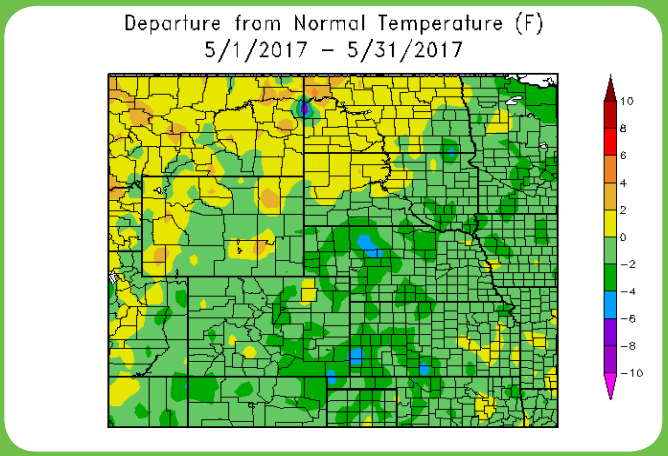
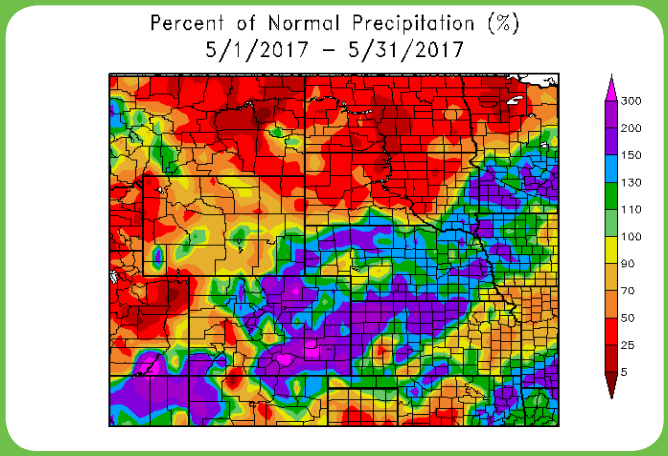
Wet Spring Causes Crop Disease

Wet conditions continued in May for parts of the High Plains region, including eastern Colorado, western and central Kansas, and much of Nebraska. The spring season, which is defined as the March-May period, was very wet for these areas and for central Wyoming as well. The following top 10 records for wettest spring occurred throughout the region: Dodge City, KS (2nd wettest), Goodland, KS (3rd wettest), Pueblo, CO (3rd wettest), Lander, WY (4th wettest), Chadron, NE (5th wettest), and Casper, WY (9th wettest). Rocky Mountain snowpack was impressive this season, as Snow Water Equivalent (SWE) in the Upper Missouri Basin was above normal for most of the season and snowpack peaked two weeks later normal in late April/early May. The combination of above-normal snowpack and increasing temperatures have already caused flooding in Colorado and Wyoming, and more flooding is expected downstream as snowmelt continues to run off. The wet spring and untimely cool temperatures contributed to several problems in the agricultural fields in Kansas and Nebraska. In Kansas, wheat stripe rust continued to spread across the state. The fields that were impacted by the heavy snow event in western Kansas in late April/early May are still being evaluated, but some damage has already been spotted. In Nebraska, black stem disease was reported in alfalfa in the western part of the state, and Wheat Streak Mosaic Virus became prevalent in the southern Panhandle. Producers in both states were concerned about the excess moisture causing root rot and diseases in corn.

In contrast, it was dry across much of the Dakotas during the spring, and precipitation deficits accumulated quickly. According to the U.S. Drought Monitor, drought spread rapidly across the Dakotas in May as impacts became more apparent. Below-normal spring temperatures delayed planting and slowed crop growth in this region. During the month of May, the percent of topsoil moisture rated short to very short increased from 7 percent to 36 percent in North Dakota and from 12 percent to 38 percent in South Dakota. This is something to watch closely as we head into summer.

Temperature and Precipitation Overview





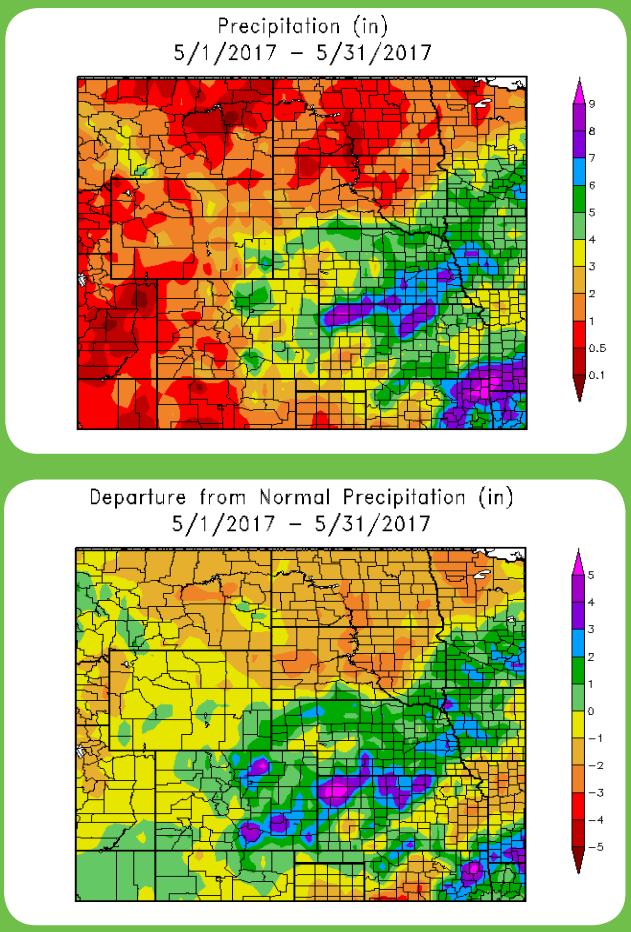
Above: Departure from 1981-2010 normal temperature (left) and percent of normal precipitation (right) for May 2017 in the High Plains region. Maps produced by the High Plains Regional Climate Center and are available at: http://hprcc.unl.edu/maps/current .

Precipitation

The High Plains experienced both above-normal and below-normal precipitation in May. Several storm systems moved through, bringing wet conditions from eastern Colorado northeastward through northern and western Kansas and Nebraska. Precipitation ranged from 150-300 percent of normal across much of this region. Persistent wetness throughout the month resulted in the 4th wettest May for Goodland, Kansas and 9th wettest for Alamosa, Colorado. Meanwhile, dryness prevailed in Wyoming and the Dakotas where some areas received less than 50 percent of normal precipitation. Several locations set top 10 records for driest May, including Bismarck, ND (4th driest), Rapid City, SD (6th driest), Minot, ND (8th driest), and Aberdeen, SD (10th driest).

Severe weather occurred in every state in the High Plains region during May. A couple of storm systems were particularly noteworthy. On the 8th, severe thunderstorms produced giant hail that pummeled Denver, Colorado and the surrounding area. Hail size exceeded 2.0 inches (5 cm) across Denver and Jefferson Counties and damaged homes, businesses, and over 100,000 vehicles. Damage is still being assessed, but it is likely that this storm will become a Billion-Dollar Weather Disaster. Another storm system brought several tornadoes and instances of high wind to parts of Kansas and Nebraska on the 16th. In particular, Omaha, Nebraska and the surrounding area received wind gusts in excess of 80 mph (129 km/hr), which flipped over a plane at Eppley Airfield and knocked out power to 17,000 residents.

Regional Precipitation



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

Given that it is spring on the Plains, it should come as no surprise that snowstorms impacted the region as well. A particularly strong spring storm system dumped several feet of snow in the Colorado Mountains and Foothills from the 18th-20th. According to several weather stations around the area, 30.0-40.0 inches (76-102 cm) of snow fell in Estes Park, which made travel nearly impossible into and out of Rocky Mountain National Park. Southeastern Wyoming was also impacted by this system, as Interstate 80 and several other major highways were forced to close. Cheyenne, Wyoming received 14.3 inches (36 cm) of heavy snow from this system, which damaged trees and downed power lines. Normal snowfall in May for Cheyenne is only 2.3 inches (6 cm), so this system led to Cheyenne having its 6th snowiest May on record.

Snowpack and Runoff Update

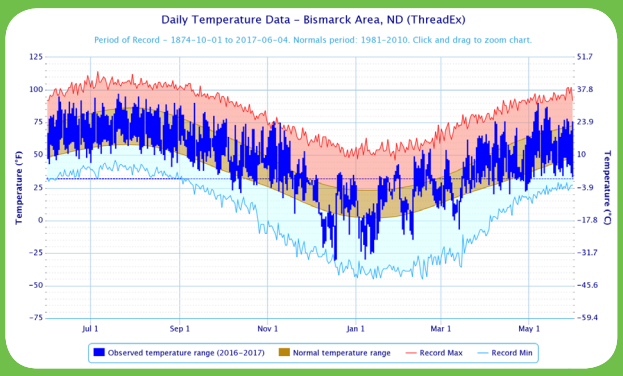
Snowpack peaked and slowly began to decline in the Rockies of Colorado and Wyoming during May. According to the U.S. Army Corps of Engineers, Snow Water Equivalent (SWE) above Fort Peck Dam peaked on April 29 and was 104 percent of average at the end of May. Snowpack between Fort Peck and Garrison Dams peaked on May 2 but began to build again during mid-late May. SWE for this stretch was 164 percent of average by the end of the month. The Missouri River Basin mountain snowpack normally peaks near April 15, but both reaches peaked about two weeks later than average. As a result of the above-normal snowpack in Wyoming, streams ran much above normal to high during May and flooding occurred. Wet conditions caused much-above-normal streamflow throughout eastern Colorado, central Kansas, and eastern Nebraska.

Temperatures

The pattern of near-normal temperatures experienced by much of the region in April continued into May in the High Plains, although temperatures tended to be more on the cool side. Temperatures throughout the central and southern parts of the region ranged from near normal to about 2.0 degrees F (1.1 degrees C) below normal, while they were slightly above normal in portions of the Dakotas.

Despite near-normal temperatures in April and May, the impressive warmth of March caused most of the region to have a warmer-than-normal spring. For instance, Colorado Springs, Colorado had its 5th warmest spring, while it was the 7th warmest for Cheyenne, Wyoming, mostly due to the extremely warm temperatures in March.

Station Spotlight: Bismarck, ND



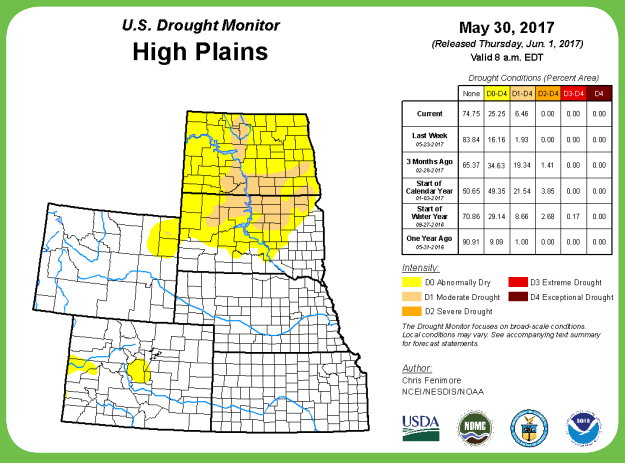
Above: Daily temperatures along with extremes and normals values since June 1, 2016 in Bismarck, ND.

A negative impact of this type of pattern was plants and crops emerged early, then were subjected to sub-freezing temperatures while at growth stages that cannot sustain those types of temperatures for a long period of time. Cooler temperatures and freeze injury contributed to sugar accumulation and stripe rust in winter wheat in Kansas, and fluctuating soil temperatures put early planted corn at risk for seedling disease development in Nebraska. Unlike the rest of the region, parts of the Dakotas were particularly cool throughout most of the spring, which caused delays in planting and crop growth. Fortunately, the delays protected crops from late-season freezes because they were in early growth stages, and warmer temperatures in May helped accelerate growth. However, delayed planting raises the risk of freeze injury in the fall. To assess fall frost risk in corn, check out the Useful to Usable Corn Growing Degree Day (GDD) decision support tool on our webpage: https://hprcc.unl.edu/gdd.php.

Drought Conditions

The drought depiction for the High Plains changed drastically during May, as both improvements and degradations occurred throughout the region. The area in drought or abnormal dryness (D0-D4) only increased from 20 percent to 25 percent during the month, but a closer look at several parts of the region revealed that conditions changed quickly.

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/.

Improvements in drought and dryness occurred throughout Kansas, Nebraska, Colorado, and Wyoming. These states experienced excessively wet conditions during much of the spring, which alleviated the dryness. As of the end of May, Colorado, Nebraska, and Kansas were drought free, and less than one percent of Wyoming was experiencing drought. It is worth noting that very little drought existed in the U.S. during May. In fact, the May 23rd depiction of the U.S. Drought Monitor showed that only 4.52 percent of the nation was in drought (D1-D4), which was the smallest area since the U.S. Drought Monitor's inception in 2000.

In contrast, drought and abnormal dryness expanded across the Dakotas in May. Much of this region had a dry spring, and the central Dakotas received no more than 50 percent of normal precipitation. Poor water quality in stock ponds, stressed winter wheat, and poor growth in seasonal grasses were reported in northern South Dakota/southern North Dakota. However, fall moisture was helping some areas get through the dry spring, and the dryness was welcomed by producers conducting field work.

Climate Outlooks

According to the Climate Prediction Center, ENSO-neutral conditions are present in the Pacific. Equatorial sea surface temperatures are near average to above average across most of the Pacific Ocean. ENSO-neutral and El Niño conditions are nearly equally favored during the Northern Hemisphere summer and fall 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.

According to the National Weather Service, minor flooding is expected along the Wind River in Wyoming and the North Platte River in Nebraska during the June-August period. This is likely due to the anticipation of high runoff from an above-normal snowpack in the Rockies of Wyoming. Excessively wet conditions during the spring have also raised the risk of minor flooding in southeastern Nebraska and minor to moderate flooding in eastern Kansas for the same period.

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 June-August temperature outlook indicates an increased chance of above-normal temperatures for the western, southern, and eastern U.S. This includes southern and western Colorado, as well as the southwestern tips of Wyoming and Kansas 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 June-August period.

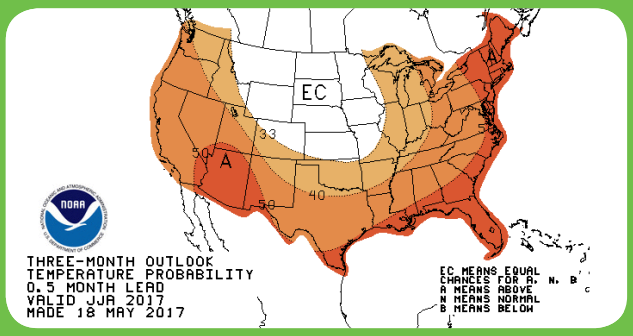
Precipitation

The precipitation outlook for the next three months calls for a higher probability of above-normal precipitation across the Rockies southward throughout the central and southern Plains. In the High Plains region, this includes Wyoming, Colorado, Kansas, Nebraska, most of South Dakota, and northern and western North Dakota. The remainder of the contiguous U.S. has equal chances for above-, below-, or near-normal precipitation.

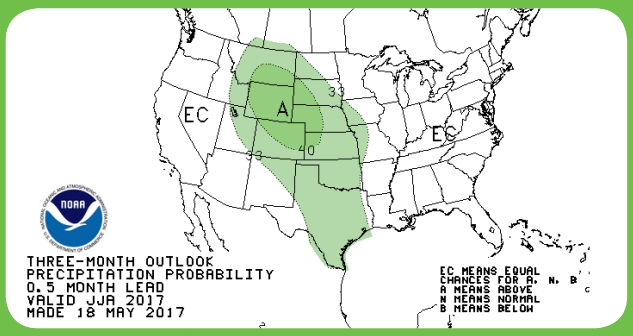
Drought

The May 18th U.S. Seasonal Drought Outlook shows that drought is expected to persist across portions of the Southwest and the Southeast. Drought may improve or be removed in portions of the Southwest, the Plains, and the Southeast, including Florida. In the High Plains, this includes small areas of drought in northeastern Wyoming and central Colorado. Drought development is not predicted in any region of the U.S. through August. However, it is important to note that according to the May 30th U.S. Drought Monitor, drought has developed throughout the Dakotas.

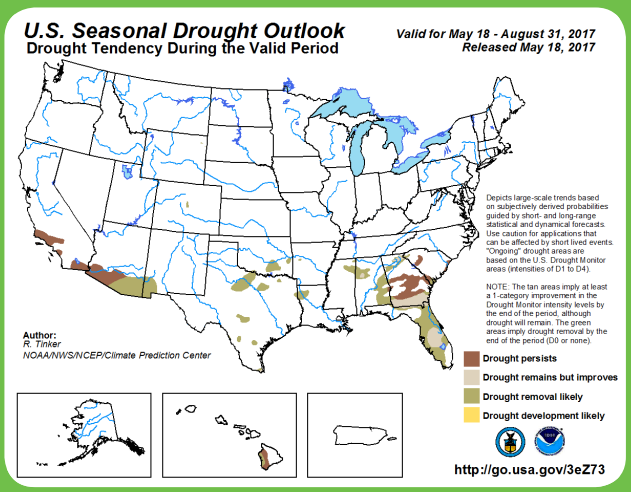
Temperature Outlook



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	68.9	42.6	55.8	-1.3	85	05/06	30	05/01	2.82	-0.10	97
Alamosa San Luis Airport	68.0	32.7	50.4	-0.8	76	05/24+	22	05/20	1.24	0.66	214
Colorado Springs Municipal Airport	68.5	42.9	55.7	-0.2	82	05/24	31	05/04	3.15	1.12	155
Denver International Airport	69.6	42.3	55.9	-1.2	86	05/06	32	05/04	3.66	1.54	173
Grand Junction Walker Field Airport	75.5	46.4	60.9	-0.7	88	05/24	35	05/20	0.66	-0.22	75
Pueblo Memorial Airport	73.7	44.1	58.9	-1.5	89	05/24	32	05/04+	3.00	1.49	199

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	73.7	50.4	62.0	-1.1	86	05/14	34	05/01	8.00	3.84	192
Dodge City Regional Airport	75.7	48.5	62.1	-2.1	90	05/15	34	05/01	4.62	1.77	162
Goodland Renner Field	72.5	44.5	58.5	-0.9	88	05/15+	32	05/04+	7.66	4.71	260
Topeka Municipal Airport	76.7	53.4	65.1	0.1	89	05/15	39	05/01	3.69	-1.22	75
Wichita Mid-Continent Airport	77.7	54.0	65.9	-0.1	89	05/31	40	05/01	4.44	-0.13	97

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	68.1	41.6	54.9	-0.9	87	05/06	30	05/04	3.48	0.72	126
Grand Island Airport	72.7	47.9	60.3	-0.9	91	05/08	32	05/01	5.28	0.87	120
Lincoln Municipal Airport	75.8	49.8	62.8	0.5	93	05/08	36	05/01	6.29	2.00	147
Norfolk Karl Stefan Airfield	71.2	46.3	58.8	-1.7	89	05/08	32	05/01	4.33	0.40	110
North Platte Regional Airport	71.3	41.7	56.5	-1.4	87	05/07	29	05/04+	3.30	0.02	101
Omaha Eppley Airport	75.2	50.9	63.1	0.8	93	05/15+	37	05/01	4.60	-0.16	97
Valentine Miller Field	70.9	43.5	57.2	-0.4	90	05/07	30	05/21	5.41	2.28	173

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	72.5	41.3	56.9	1.4	90	05/07	29	05/01	0.25	-2.15	10
Fargo International Airport	69.6	44.4	57.0	-0.1	87	05/13	34	05/11	1.14	-1.67	41
Grand Forks International Airport	69.2	43.2	56.2	1.4	81	05/15+	32	05/19+	1.11	-1.57	41
Theodore Roosevelt Airport	68.2	38.9	53.5	0.4	89	05/07	28	05/21	1.21	-1.11	52
Williston International Airport	73.3	41.7	57.5	3.4	89	05/06	30	05/19	0.98	-0.94	51

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.

May 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	71.6	42.1	56.9	0.5	87	05/07	25	05/02	0.65	-2.46	21
Huron Regional Airport	71.5	43.7	57.6	-0.5	88	05/14	30	05/02	1.34	-1.77	43
Pierre Regional Airport	71.5	44.4	58.0	0.1	92	05/07	33	05/01	1.10	-2.05	35
Rapid City Regional Airport	69.3	41.5	55.4	0.4	88	05/13+	31	05/04+	1.16	-2.06	36
Sioux Falls Joe Foss Field Airport	69.5	45.6	57.6	-0.4	85	05/14	31	05/02	3.23	-0.17	95

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	66.4	37.6	52.0	-0.2	85	05/06	28	05/20	2.25	0.23	111
Cheyenne Municipal Airport	62.6	38.9	50.8	-1.6	81	05/06	30	05/20+	3.89	1.55	166
Lander Hunt Field Airport	65.1	39.7	52.4	-0.9	80	05/12+	30	05/19	2.20	0.00	100
Laramie Regional Airport	61.1	31.8	46.5	-1.1	78	05/13	23	05/20	1.36	-0.33	80
Rawlins Municipal Airport	64.9	34.0	49.4	0.0	81	05/06	26	05/20	1.07	-0.34	76
Sheridan County Airport	67.8	38.6	53.2	0.7	88	05/06	30	05/20	2.24	-0.11	95

May and Spring 2017 Highlights

Monthly and Seasonal Rankings

Precipitation in inches

Wettest and Driest May	**Precipitation / Ranking**	**Record / Year**	**Period of Record**
Goodland, KS	7.66 / 4th wettest	8.21 / 1981	1897-2017
Alamosa, CO	1.24 / 9th wettest (tie, 1955)	2.97 / 1935	1906-2017
Bismarck, ND	0.25 / 4th driest	0.04 / 1901	1875-2017
Rapid City, SD	1.16 / 6th driest	0.33 / 1966	1943-2017
Minot, ND	0.63 / 8th driest	0.02 / 1984	1949-2017
Aberdeen, SD	0.65 / 10th driest	0.25 / 1900	1893-2017
Wettest and Driest Spring	**Precipitation / Ranking**	**Record / Year**	**Period of Record**
Dodge City, KS	14.86 / 2nd wettest	15.70 / 1881	1875-2017
Goodland, KS	11.16* / 3rd wettest	15.67 / 1981	1896-2017
Pueblo, CO	8.14 / 3rd wettest	9.78 / 1900	1889-2017
Lander, WY	10.11 / 4th wettest	14.23 / 2016	1892-2017
Bismarck, ND	1.73 / 7th driest	0.80 / 1952	1875-2017
Aberdeen, SD	2.70 / 7th driest	1.33 / 1948	1893-2017

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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For more information please contact us: http://www.hprcc.unl.edu/contact.php.

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 May precipitation was 1.02", 1.29" less than the last year, and 1.51" less than the 1981-2010 average, making it the 15th driest May in the 123-year period of record. It was the driest May since 1997. Below-average precipitation was common in all parts of the state (Figure 1). The greatest monthly precipitation accumulation was 2.79" recorded in Oakes, Dickey County. The greatest 24-hr precipitation was 0.32" recorded in Kulm, LaMoure County on May 21. Based on historical records, statewide May precipitation showed a slight positive long-term trend of 0.37" per century since 1895. The highest and the lowest May precipitation for the state ranged from 5.96" in 1927 to 0.23" in 1901.

Temperature:

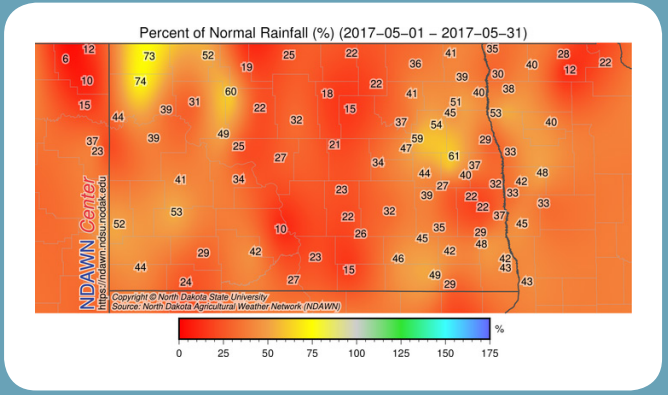
The official state average May temperature was 54.7°F, 1.9° colder than the last year, but 0.6° warmer than the 1981-2010 average, making it the 46th warmest May in the 123-year period of record. Above-average temperatures were observed in western parts of the state. There were also some warm pockets along the Red River Valley north of Grand Forks. Below average conditions were observed elsewhere (Fig. 2). The state's highest and lowest daily temperatures ranged from 91° on May 8 in Hettinger, Adams County to 23° on May 21 in Pretty Rock, Grant County. Based on historical records, the state average May temperature showed no discernable trend since 1895. The highest and the lowest monthly state May average temperatures ranged from 63.5° in 1934 to 44.4° in 1907.

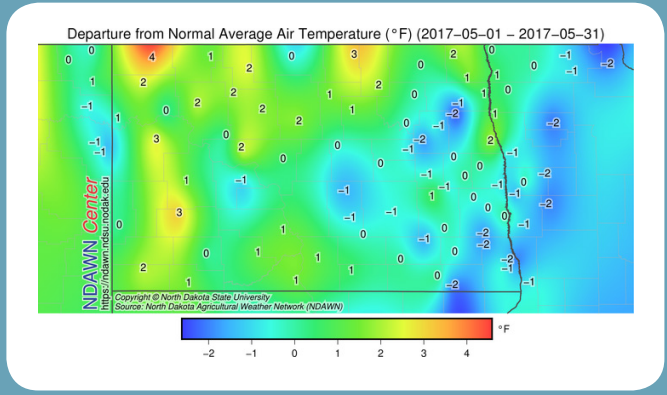
Drought and other notable impacts:

Consistently dry conditions during the last three-month period depleted the moisture left over from Fall and Winter season. The conditions across the state quickly deteriorated resulting in an area of Moderate Drought or D1 based on a scale developed by the National Drought Monitor (DM), in south central ND along the MO River. By the end of May, nearly 25% of the state was in Moderate Drought. A steep increase in coverage and intensity were observed during the last week of May reflecting true conditions in all parts of the state. If timely precipitation is not received, conditions will worsen especially in areas with warmer temperatures promoting higher evaporative loss.

Much warmer than normal temperatures towards the end of the month along with persisting dry conditions caused drought to intensify. Areas in late start will be severely impacted as seed is begging for moisture to germinate. Blowing dust due to lose soil and dry conditions in central ND is reported. Cattle producers are worried about deteriorating pasture and hayland conditions and reduction of cattle size in drought stricken areas. Alfalfa is starting to dry out from the ground up; therefore, farmers in Kidder County are starting to consider harvesting winter wheat and rye for hay since they fear that plants will not fill for the planned grain crop. Alfalfa conditions are similar in the counties of Adams and Logan as well as those located between them. Blowing dust became a common observation during high wind in the most drought prevelant areas.

Temperature and Precipitation Overview





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

Kansas Climate Summary

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

KANSAS STATE UNIVERSITY

Cold, wet start

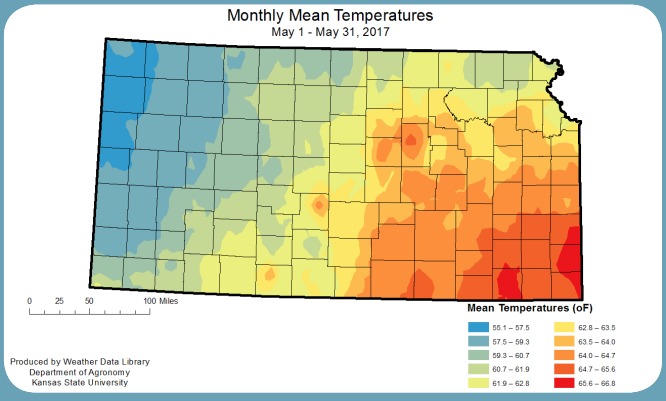
The epic April blizzard carried into the first of May, with significant snowfall reported from the event. This started a wetter than normal month for most of the state. The state-wide average precipitation was 4.66 inches which is 113 percent of normal. The North Central Division had the highest percent of normal with an average of 6.32 inches or 154 percent of normal. The Northeast, East Central and Southwest divisions were below normal for the month, but given the very wet conditions in April, all divisions are above normal for the April – May period. Rains were frequent enough that even the divisions with below normal precipitation had planting delays. The greatest monthly precipitation total for a National Weather Service (NWS) Coop station was 9.49 inches at Oswego 1N, Labette County. The greatest monthly total for a Community Collaborative Rain, Hail and Snow (CoCoRaHS) station was 9.91 inches at Beloit 9.9 SSW, Mitchell County. The highest 24hr totals: 5.18 inches at Norwich, Kingman County, on the 12th (NWS); 5.00 inches at Abilene 0.7 E, Dickinson County, on the 19th (CoCoRaHS).

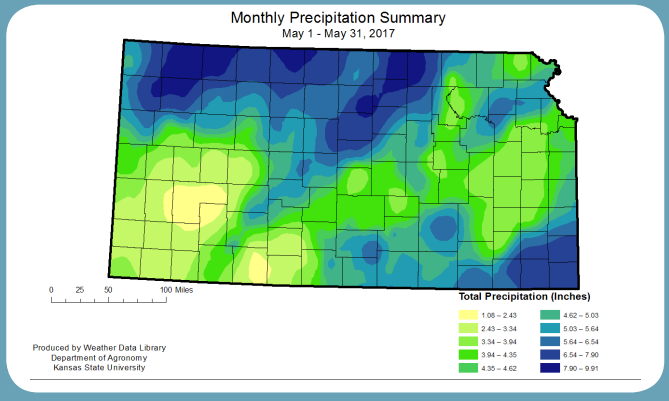
Temperatures were slow to recover from the cooler than normal start. State-wide temperatures averaged 61.8 oF or -1.7 degrees from normal. The East Central and Southeast divisions averaged closest to normal with a departure of -0.7 oF respectively. The warmest reading for the month was 95 oF at Elkhart, Morton County, on the 26th. The coldest reading, not surprisingly was at the beginning of the month when Hays 1ESE recorded a low of 22 oF on the 1st. Despite the cool temperatures, there were five record high maximum temperatures during the month and seven record high minimum temperatures. On the cold side, there were 41 new record cold maximum temperature in May and 33 new record low minimum temperatures. Of the record cold maximum temperatures, 15 set new records for any day in May. Freezing temperatures were reported in five of the nine climate divisions. The exceptions were the South Central Division and the eastern divisions. All divisions, except the Southeast, saw high temperatures reach 90 oF or more.

After the remnants of the winter storm, an outbreak of typical spring severe weather occurred. There were 37 reports of tornadoes, 160 hail reports, and 106 high wind reports. The largest outbreak came during the week of May 16th to May 22nd when 35 tornadoes and 123 hail events were reported.

The higher than normal precipitation resulted in continued drought free conditions state-wide. The June outlook calls for a slightly increased chance of wetter than normal conditions the across the state coupled with equal chances of above or below normal temperatures. At this point, the dry pattern expected for the next week is providing a welcome window for field work.

Temperature and Precipitation Overview





Above: May 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

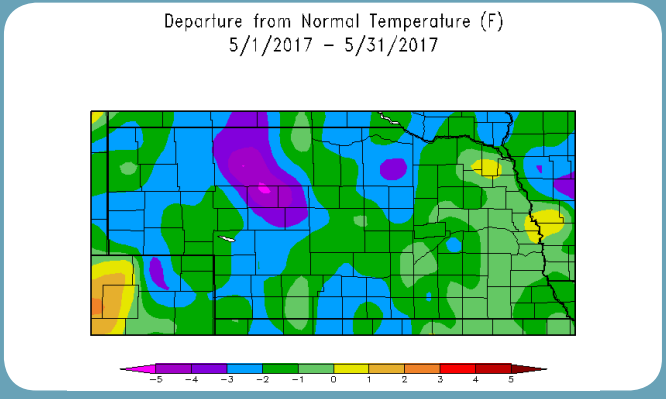
In an overall cool and wet May, Nebraska experienced a taste of winter and spring weather with both snow and tornadic activity. A late-April snowstorm left a narrow band of snow cover in central Nebraska to start off the month. This wasn't on the ground long as temperatures warmed quickly. A second snow event on May 20-21 resulted in the Panhandle getting a few inches of snow – the highest reported total was six inches. In addition to the snow, storm reports indicate three tornadic events. Two F0 tornados occurred on May 16 (near Exeter and Brandon) and an F1 was confirmed near Wisner that impacted a local farmstead. A wind gust of 93 mph was reported on May 14 near Harrison, Nebraska (panhandle), which was associated with a convective storm moving through the Panhandle. Reports confirm damage around the area.

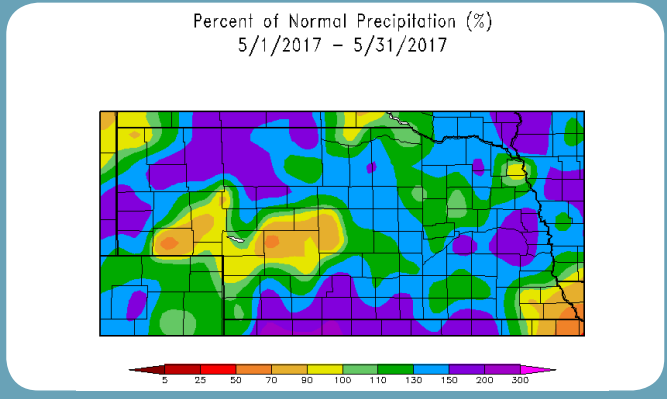
Monthly average temperatures were cooler than normal overall. The coldest pockets were in north-central Nebraska and the southern Panhandle with departures of 3°F or more. Temperatures did vary quite a bit, as can be typical for a transition season. The highest air temperature reading from the Nebraska Mesonet network was 94°F on May 8 near Oakland (northeast), while the lowest Mesonet reading was observed only a few days earlier on May 4, 28°F near Whitman (northcentral).

Monthly precipitation totals were in the 3 to 6 inch range across Nebraska, which is mostly above average. Portions of the northwest, southcentral and east-central received the highest amounts relative to normal (150%). A few locations scattered around the state received slightly below normal precipitation. What fell was enough to eliminate the remaining D0 conditions in southcentral and southwest Nebraska during May. The highest monthly observed Mesonet rainfall total was 6.48 inches near Lincoln.

Corn and soybean planting progress was impacted by a period of near consistent rainfall and subsequent saturated field conditions during the latter half of the month. By the third week of May, the percent planted statewide lagged a bit behind normal. Some relief in the wet pattern occurred at the end of the month however. Bare soil temperatures at the 4 inch depth were in the 60s and 70s by months end.

Temperature and Precipitation Overview





Above: May 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.

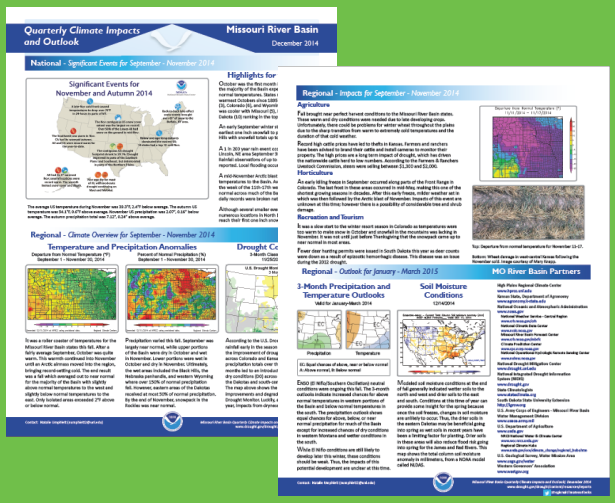
Much of the data and products found throughout this publication were built on the Applied Climate Information System (ACIS) framework. ACIS was designed to manage the complex flow of information from climate data collectors to the end users of climate data information. The main purpose of ACIS is to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

ACIS Applied Climate Information System

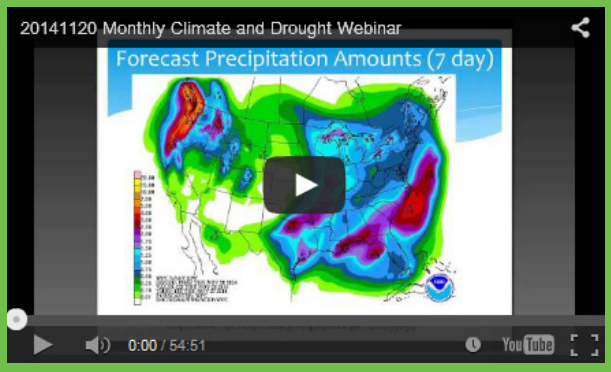
Additional Summary Information for the High Plains

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:
www.hprcc.unl.edu/webinars.php

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