



May 2024 Climate Summary



Foothills near Fort Collins, Colorado, Photo Courtesy of Gannon Rush

Regional Breakdown

May featured a steady stream of severe weather, with Kansas and Nebraska hit the hardest. More tornadoes struck Nebraska, while Kansas received large hail and exceptionally strong winds. Nearly all weather phenomena were experienced in the region this month, with parts of North Dakota receiving snow late in the month.

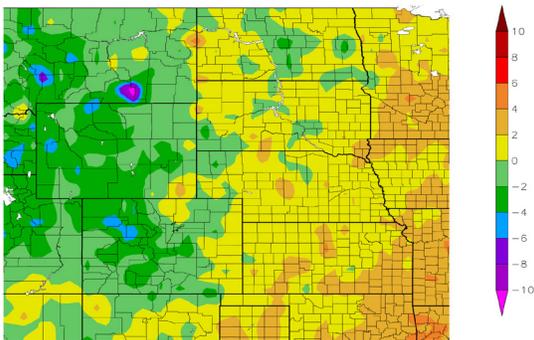
Kansas was pummeled by large hail this month, with two days featuring stones over 4 inches (10.16 cm). A destructive derecho also impacted the central part of the state on the 19th, uprooting trees and destroying buildings. Winds reached 100 mph (161 km/h) in Salina and were above 60 mph (97 km/h) as far east as Kansas City.

Although there have been numerous tornadoes this month in Nebraska, the maximum rating was an EF2 near Lake McConaughy on the 23rd. A preliminary total of 34 were reported this month, more than double their average of 15. Through the end of May, 81 have been reported, which is nearly 30 more than the yearly average at this point of the year. With June being the peak of tornadoic activity in the state, they could position themselves to break their annual record this year.

The steady stream of storms finally led to flooding late in the month. Nearly 7 inches (17.78 cm) of rain fell in parts of a small area across eastern Nebraska stretching from David City to Omaha. Roads were closed, and cars were left stranded due to the flash flooding.

Temperature and Precipitation Overview

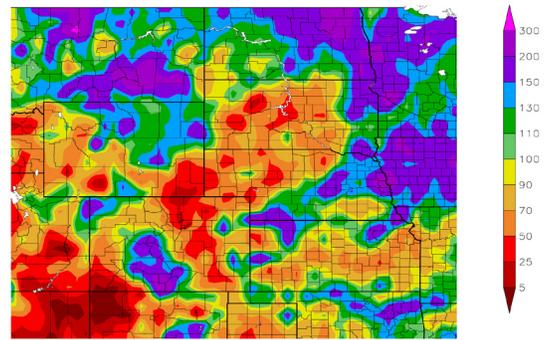
Departure from Normal Temperature (F)
5/1/2024 - 5/31/2024



Generated 6/10/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
5/1/2024 - 5/31/2024



Generated 6/10/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Departure from 1991-2020 normal temperature (left) and percent of normal precipitation (right) for May 2024 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

Precipitation in May was typical of springtime, scattered but also abundant. The areas that did receive rainfall were often over 150 percent of their normal, with some localized amounts exceeding 10 inches this month.

The late April tornado outbreak in eastern Nebraska transitioned into a very wet month for that part of the state. This active pattern peaked on the 21st when a particularly heavy band of precipitation dropped large amounts of rain. Fremont recorded their 2nd highest single-day total of 6.32 inches (16.05 cm) and the 4th wettest month in their 131-year record. Nearby, Omaha was also impacted by the heavy rainfall and observed 11.13 inches (28.27 cm) to fall just shy of their wettest May on record.

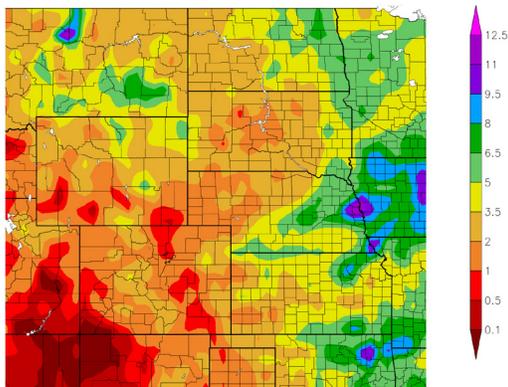
Parts of the Dakotas also received above-normal precipitation, with areas recording more than 7 inches. Sisseton, South Dakota ranked 6th wettest this month, with 5.69 inches (14.45 cm) falling. Across the border, in North Dakota, Fargo placed 8th with 5.92 inches (15.04 cm).

Among those who missed out this month were the areas in and around Cheyenne, Wyoming. The city only measured 0.34 inches (8.64 mm) to rank 7th driest. Nearby Laramie fared slightly better with 0.57 inches (14.48 mm) but also ranked 7th.

Streamflow is in very good shape across the region except for central and western Kansas. Some precipitation has occurred there recently; however, it is not optimal amounts. In the eastern part of the region, streamflow in the Missouri River is near or at record level, creating the concern of flooding.

Regional Precipitation

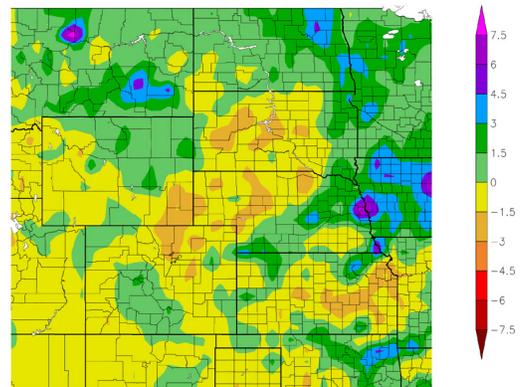
Precipitation (in)
5/1/2024 – 5/31/2024



Generated 6/10/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
5/1/2024 – 5/31/2024



Generated 6/10/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Total precipitation in inches (left) and departure from normal precipitation in inches (right) for May 2024. These maps are produced by HPRCC and can be found on the Current Climate Summary Maps page at: <http://hprcc.unl.edu/maps/current>.

Temperatures

Temperatures were split across the region, with the west below and the east above normal this month. Parts of northwestern Colorado were 5 to 7 degrees F (2.8 to 3.9 degrees C) below normal, thanks to exceptionally cool minimum temperatures. Overall, there were no major locations that ranked in the top 10 for May.

Average minimum temperatures across Colorado were slightly below normal, however, portions west of the Rockies were near or at record lows. Towns such as Meeker were nearly 8 degrees F (4.4 degrees C) below their normal average lows, which also extended into parts of southwestern Wyoming. Despite the cooler temperatures, there were no records broken.

This spring was rather warm across Kansas, with many locations ranking among the warmest. Concordia and Topeka ranked 3rd, while Wichita tied for 4th. To the west, Dodge City ranked 7th. Outside of a few minor heatwaves, temperatures in Kansas remained consistently

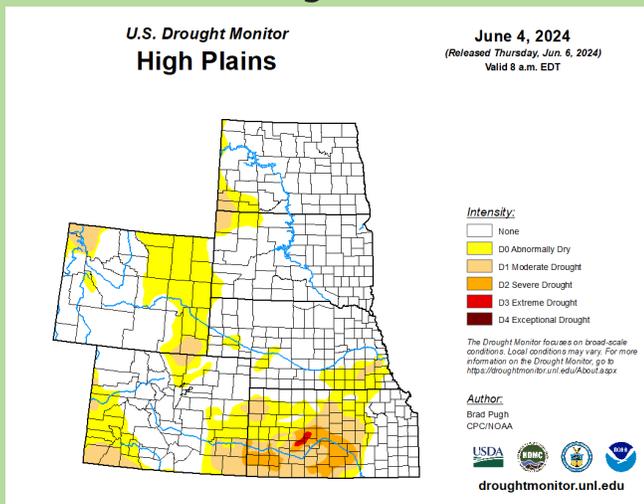
Drought Conditions

The continual rounds of heavy precipitation have greatly improved drought conditions across the High Plains in recent months. Some parts of the west experienced degradation this month, but the region saw a reduction of over 9 percent in D0 to D4 (abnormally dry to exceptional drought conditions).

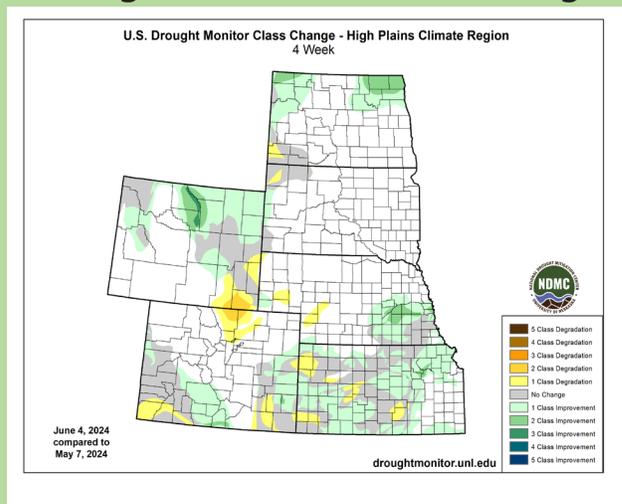
The drought that had gripped Nebraska since 2021 is nearly erased. D2 (severe drought) has been eliminated from the state for the first time since June 1st, 2021. This is also a drastic shift from last year when close to 11 percent of the state was engulfed by D4. Conditions are likely to continue to improve in the state, with standing water common across the eastern part of the state.

Near-record precipitation in North Dakota led to significant improvements, with D0-D4 reduced by 29 percent this month. Only a small sliver of drought conditions remains in the western border, with over 80 percent of the state drought-free.

U.S. Drought Monitor



Drought Monitor 1-Month Change



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/>.

Climate Outlooks

According to the Climate Prediction Center, El Niño conditions are likely to end soon with a transition to ENSO-neutral. An El Niño advisory and La Niña watch is currently in effect. For more information, visit https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/lanina/enso_evolution-status-fcsts-web.pdf

The National Weather Service’s long-range flood outlook indicates elevated chances of Minor and Moderate Flooding in Nebraska and Kansas along the Missouri River through August. According to the National Interagency Fire Center (NIFC), fire potential will be elevated in eastern Colorado and western Kansas in July and August.

The seasonal temperature and precipitation outlooks presented 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 visit <http://www.cpc.ncep.noaa.gov>.

Temperature

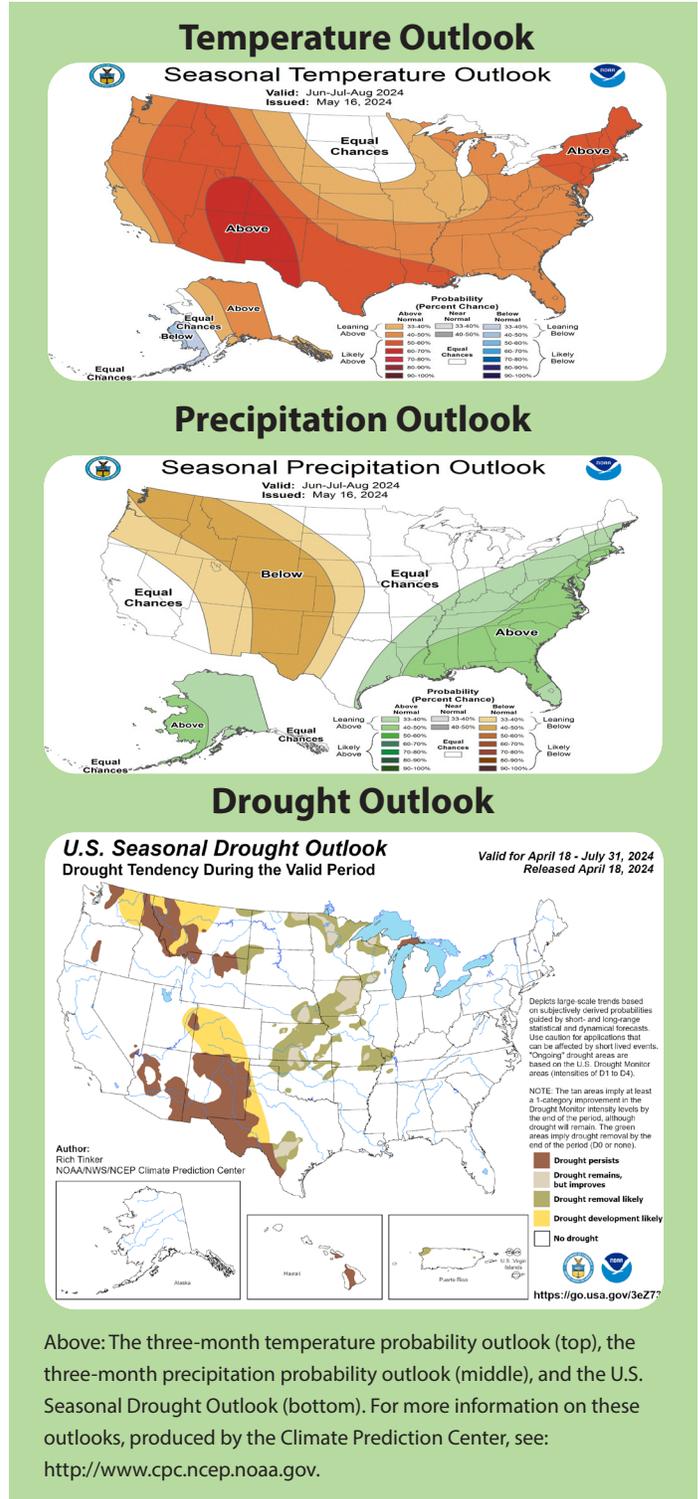
The three-month temperature outlook shows an increased chance of above-normal temperatures across the much of the United States. Above-normal temperatures are slightly favored across Colorado, Kansas, Nebraska, and Wyoming.

Precipitation

The outlook for the next three months indicates below-normal precipitation across the west-central United States, while above-normal is possible in the east. Below-normal precipitation is possible in nearly every state in the High Plains.

Drought

The U.S Seasonal Drought Outlook released on May 31st indicates that improvements to drought conditions will occur across the region except for Colorado, where development is possible.



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	70.5	41.9	56.2	-0.7	83	05/17	29	05/04	3.05	0.40	115
Alamosa San Luis Airport	68.3	32.5	50.4	-1.3	79	05/30	23	05/07	1.70	1.10	283
Colorado Springs Municipal Airport	70.0	42.5	56.3	-0.8	81	05/17	33	05/09+	1.03	-0.96	52
Denver International Airport	70.6	43.2	56.9	-0.5	83	05/29	30	05/02	1.70	-0.46	79
Grand Junction Walker Field Airport	77.4	46.9	62.1	0.1	93	05/29	29	05/08	0.48	-0.35	58
Pueblo Memorial Airport	77.1	43.4	60.3	-1.1	89	05/29	33	05/09	0.80	-0.77	51

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	77.8	54.4	66.1	2.6	87	05/29	45	05/05	4.60	0.26	106
Dodge City Regional Airport	81.3	52.2	66.7	1.9	93	05/18+	41	05/07	1.50	-1.49	50
Goodland Renner Field	74.9	45.0	60.0	0.4	88	05/17+	33	05/04	1.38	-1.43	49
Topeka Municipal Airport	79.3	56.4	67.9	2.2	89	05/18+	45	05/03	2.60	-2.57	50
Wichita Mid-Continent Airport	79.3	56.8	68.0	1.3	88	05/18+	45	05/07+	3.84	-1.33	74

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	67.3	39.4	53.3	-2.2	87	05/18	25	05/04	1.59	-1.40	53
Grand Island Airport	74.4	51.1	62.0	0.8	86	05/05	43	05/05	7.18	2.48	153
Lincoln Municipal Airport	77.6	51.5	64.6	1.5	86	05/17+	39	05/05	4.78	-0.13	97
Norfolk Karl Stefan Airfield	74.2	49.8	62.0	1.9	89	05/17	39	05/05	6.20	2.20	155
North Platte Regional Airport	73.6	45.1	59.4	0.9	90	05/17	32	05/04	5.06	1.71	151
Omaha Eppley Airport	76.1	52.3	64.2	0.6	86	05/20	40	05/03	11.13	6.47	239
Valentine Miller Field	71.5	43.7	57.6	-0.5	90	05/17	29	05/03	2.55	-0.97	72

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	68.6	42.8	55.7	0.4	86	05/17	32	05/04	2.44	-0.06	98
Fargo International Airport	70.4	48.0	59.2	2.6	88	05/17	36	05/03+	5.92	2.83	192
Grand Forks International Airport	67.8	44.4	56.1	2.0	86	05/17	32	05/03	4.21	1.41	141
Theodore Roosevelt Airport	66.8	39.8	53.3	0.4	82	05/17	30	05/01+	3.12	0.57	122
Williston International Airport	66.0	43.4	54.7	0.9	83	05/17	36	05/05	3.13	1.03	149

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

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

The screenshot shows the cover page of a report titled "Missouri River Basin Quarterly Climate Impacts and Outlook" for September-October 2014. It features a map of the basin, a table of contents, and several sections of text and graphics. Key sections include "National - Significant Events for September - November 2014", "Regional - Impacts for September - November 2014", "Regional - Climate Overview for September - November 2014", "Drought Co-Occurrence", "3 Month Precipitation and Temperature Outlooks", and "Soil Moisture Conditions".

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

The screenshot shows a video player for a webinar titled "20141120 Monthly Climate and Drought Webinar". The main content is a map titled "Forecast Precipitation Amounts (7 day)" showing precipitation forecasts for the Midwest and Great Plains regions. The map uses a color scale from blue (low) to red (high). A play button is visible in the center of the map.

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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