



Regional Breakdown

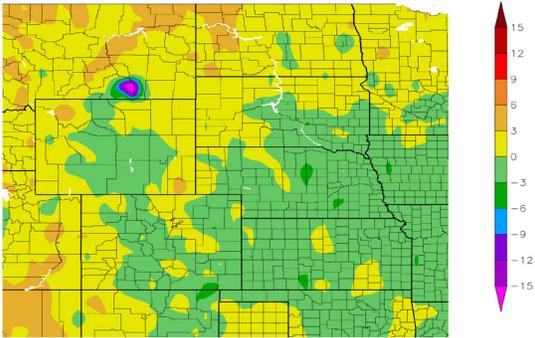
After staying relatively cool over the past two months, the north and northwestern parts of the High Plains were boiling hot this month. Average high temperatures this month in parts of Montana, the Dakotas, and Wyoming were above 90 degrees F (32.2 degrees C), with several bouts of extreme heat striking. Typical of the summertime months, precipitation was sporadic and often brought severe weather.

The places within the region that did receive rain this month were hampered by severe weather, with several devastating hailstorms striking this month. This month's hardest hit places were central and eastern Nebraska, southwestern Kansas, and southeastern Colorado. Corn was in great shape in central Nebraska, with minimal irrigation taking place due to the ample precipitation this year. A nasty storm on the 6th annihilated thousands of acres in a stretch from Gothenburg to Hastings. Wind gusts of over 70 mph (112 km/h) and hailstones over 2.5 inches (6.35 cm) shredded fields for over 100 miles. An untold amount of damage occurred and left farmers facing a tough situation going forward.

The heat impacting the northern and western parts of the region was not just limited to the lower elevation, with parts of Yellowstone National Park in Wyoming having record stretches of warmth.

Temperature and Precipitation Overview

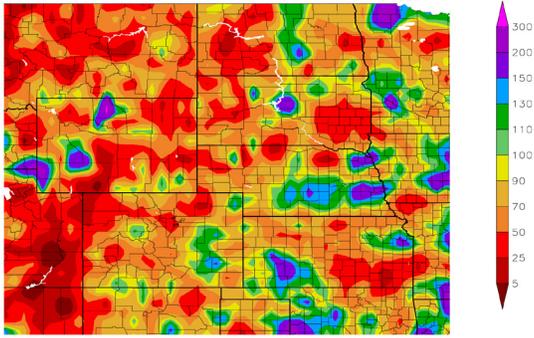
Departure from Normal Temperature (F)
7/1/2024 - 7/31/2024



Generated 8/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
7/1/2024 - 7/31/2024



Generated 8/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

For the most part, the High Plains were dry this month and some places were below five percent of their normal precipitation. The storms this month, particularly in Nebraska, were impactful with extreme winds and large hail.

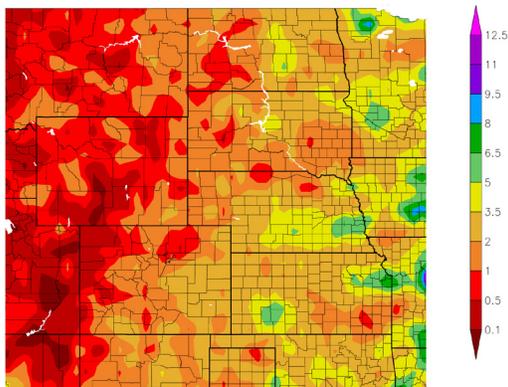
July began with several damaging hailstorms in Nebraska but was relatively quiet until the last day of the month. Extreme winds of over 90 mph (145 km/h) shredded Lincoln and Omaha, with over 250,000 without power. Roughly half of Omaha was without power, the largest outage in the history for the city. The exceptional wind gusts caused extensive tree damage and even structural damage to several businesses and schools. Estimates for the damage will come in the following weeks, but it was likely one of the most expensive storms for Omaha.

The dryness across the Front Range in Colorado finally took its toll, with numerous wildfires breaking out late in the month. Precipitation in the area has been below 50 percent for the past few months, leaving plenty of dried-up fuel for fires. Evacuations were ordered and thick clouds of smoke engulfed cities like Fort Collins. Thousands of acres were in flames at the end of the month, but the arrival of monsoonal rains could provide some relief.

Streamflow at the end of the month was mixed, with some gauges well-above normal and others at near record levels. Central Kansas and southern Nebraska were below normal, with several locations at record lows. Areas near the Missouri River were near normal, while eastern North Dakota was above the 90th percentile.

Regional Precipitation

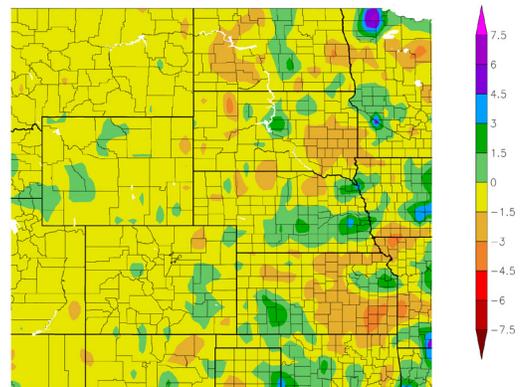
Precipitation (in)
7/1/2024 – 7/31/2024



Generated 8/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
7/1/2024 – 7/31/2024



Generated 8/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Total precipitation in inches (left) and departure from normal precipitation in inches (right) for July 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

Despite the presence of a brutal heatwave this month, temperatures were near normal. Parts of western North Dakota were the warmest, with average temperatures 3 to 6 degrees F (1.7 to 3.3 degrees C) above normal.

An extended stretch of heat hit the northwestern part of the region, including Montana. Many places recorded their longest streaks of 90 degrees F (32.2 degrees C), while the heat carried over into parts of the Dakotas and Wyoming. Highs reached near 110 degrees F (43.3 degrees C) in parts of North Dakota, nearly breaking some all-time records.

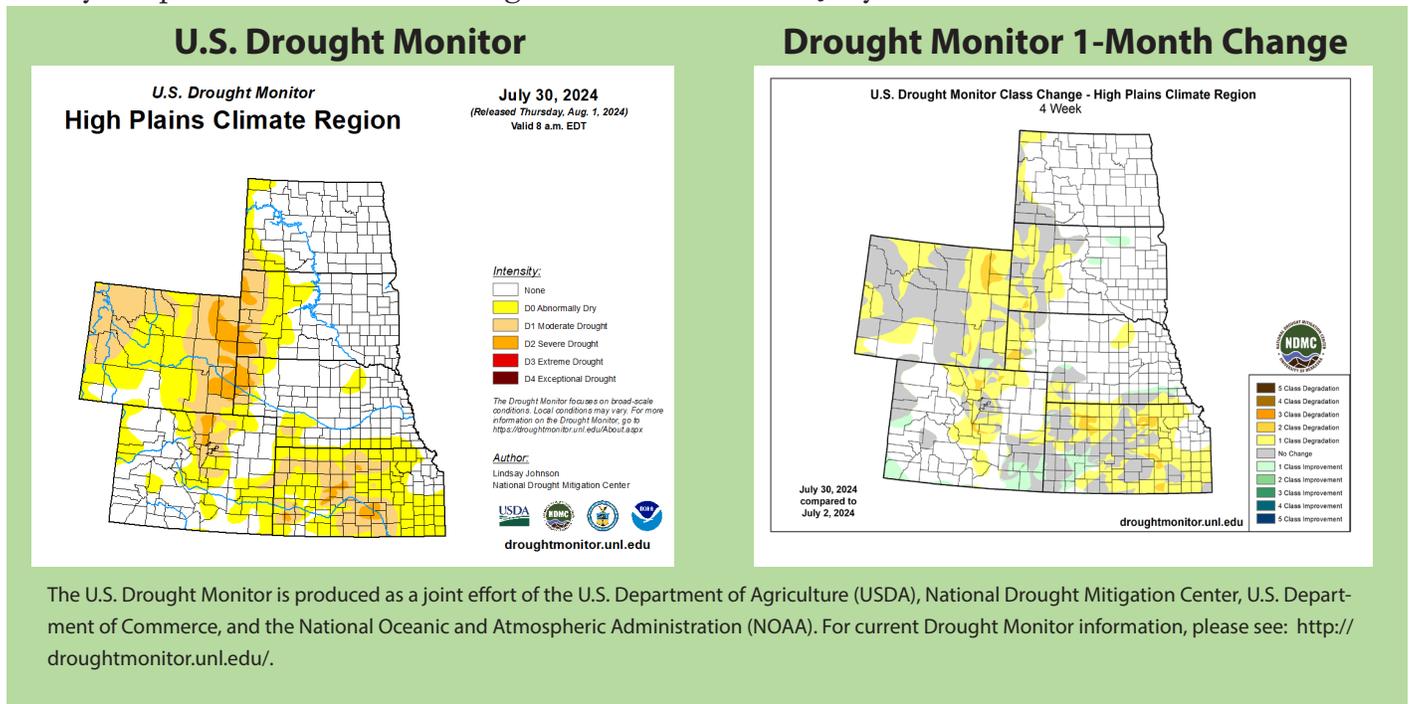
Limiting the overall temperature was the cooler start to July. Temperatures were over 10 degrees (5.6 degrees C) below normal to start the month in parts of the region. The 4th of July was pleasant for many, with some places 15 degrees F (8.3 degrees C) below normal.

Drought Conditions

In part due to the dryness and occasional heat this month, drought expanded and intensified for many. Portions of the southern High Plains experienced a two-category degradation, while over half the region is now in some form of drought category. Overall, the High Plains observed an 11 percent increase in D0 to D4 (abnormally dry to exceptional drought conditions).

The dryness plaguing Wyoming has led to a nine percent increase in D2 (severe drought), with most of this along the state's eastern border. Nearly the entire state is in D0 to D4, but there is some hope that upcoming rains due to the North American Monsoon could help improve the ongoing situation.

Conditions in Kansas had improved this winter and into early spring, however, the state has taken a step back this month. D0 to D4 increased over 34 percent this month alone, with nearly 90 percent of the state engulfed at the end of July.



Climate Outlooks

According to the Climate Prediction Center, ENSO-neutral conditions are present. A 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 high chances of Minor Flooding along the Missouri River through September. According to the National Interagency Fire Center (NIFC), fire potential will be near normal through November.

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

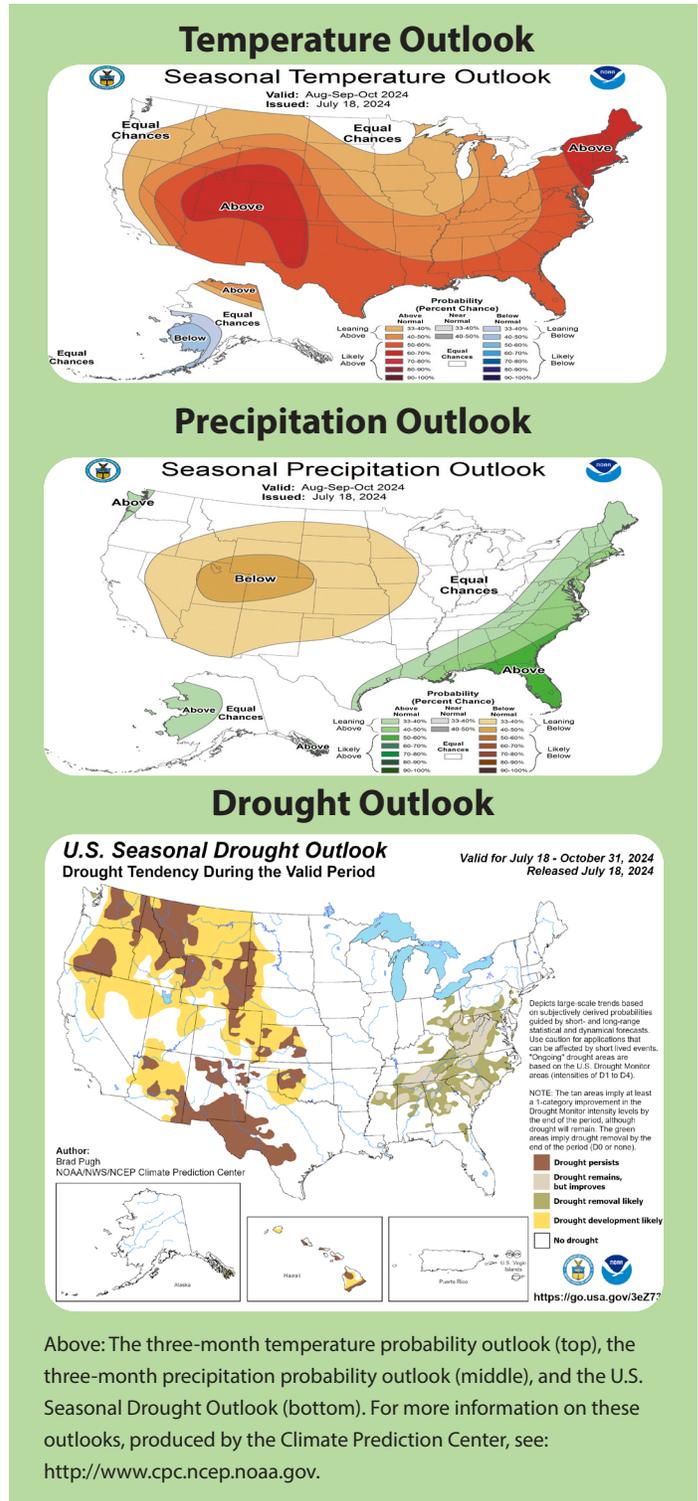
The three-month temperature outlook shows an increased chance of above-normal temperatures across the much of the United States. Above-normal temperatures are possible across the entire High Plains, with Colorado heavily favored.

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 July 18th indicates that drought development and expansion is likely in nearly every state.



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	90.0	59.0	74.5	0.0	101	07/12	48	07/04	2.54	-0.24	91
Alamosa San Luis Airport	84.5	45.7	65.1	-0.2	92	07/07+	38	07/07	0.64	-0.4	62
Colorado Springs Municipal Airport	87.5	57.7	72.6	0.2	100	07/12	49	07/06+	3.04	-0.08	97
Denver International Airport	91.7	59.6	75.7	0.6	102	07/12	52	07/05	1.1	-1.04	51
Grand Junction Walker Field Airport	98.0	68.0	83.0	3.8	104	07/12	60	07/03	0.14	-0.45	24
Pueblo Memorial Airport	93.4	59.9	76.7	-0.5	106	07/12+	53	07/08	2.45	0.56	130

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	91.5	66.2	78.9	0.0	107	07/15	58	07/18	2.16	-1.99	52
Dodge City Regional Airport	91.5	66.2	78.8	-1.3	105	07/31	59	07/06+	2.45	-0.63	80
Goodland Renner Field	91.4	60.5	76.0	-0.1	105	07/30	54	07/08	2.61	-0.47	85
Topeka Municipal Airport	90.1	68.5	79.3	-0.5	102	07/15	60	07/19	6.50	2.51	163
Wichita Mid-Continent Airport	93.0	69.3	81.2	-0.3	105	07/15	62	07/05+	2.57	-1.41	65

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	94.4	56.4	75.4	0.1	106	07/25	45	07/08	1.59	-0.40	80
Grand Island Airport	86.3	62.8	74.6	-2.4	96	07/15+	55	07/07	4.13	0.62	118
Lincoln Municipal Airport	88.3	65.1	76.7	-1.4	100	07/31	58	07/03+	7.23	3.98	222
Norfolk Karl Stefan Airfield	86.0	63.7	74.9	0.1	96	07/31	55	07/08	3.38	0.40	113
North Platte Regional Airport	88.5	59.8	74.1	-1.5	98	07/25	50	07/08	3.01	-0.17	95
Omaha Eppley Airport	86.5	66.6	76.5	-1.6	97	07/15	57	07/18	4.61	1.06	130
Valentine Miller Field	90.1	59.8	75.0	-0.7	104	07/25+	50	07/03+	0.51	-2.31	18

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	86.3	60.5	73.4	2.1	98	07/25	53	07/17	2.57	-0.5	84
Fargo International Airport	84.7	63.0	73.8	3.1	96	07/01	53	07/17+	0.93	-2.14	30
Grand Forks International Airport	84.5	62.0	73.2	4.3	95	07/26	51	07/17	3.18	-0.34	90
Theodore Roosevelt Airport	86.4	56.5	71.4	2.0	108	07/25	51	07/05	0.86	-1.69	34
Williston International Airport	87.1	60.3	73.7	3.3	109	07/25	52	07/03	0.99	-1.49	40

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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