



June 2024 Climate Summary



Sunny Day in Central Nebraska, Photo Courtesy of Gannon Rush

Regional Breakdown

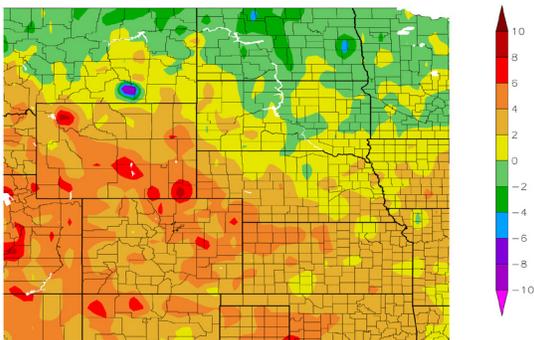
June began on a cooler note, but temperatures rapidly rose during the middle of the month. Winter wheat harvest also began in Kansas this month, with mixed reports on yields due to ill-timed dryness and severe weather. In South Dakota, several rounds of heavy precipitation led to flooding within the state and along the Missouri River and into parts of Kansas.

The month began on the cool side, with highs near 50 degrees F (10 degrees C) for parts of South Dakota and Wyoming. Temperatures flipped in the coming days, with both states experiencing temperatures exceeding 100 degrees F (37.8 degrees C). A significant heatwave spread across the High Plains late in the month, with heat indices peaking near 115 degrees F (46.1 degrees C) in eastern Nebraska.

Winter wheat in Kansas was feast or famine for some farmers this year, with some producers reporting yields of nearly 60 bushels per acre more than last year while others had none and had to rely on insurance. After much of Kansas received over 150 percent of its normal precipitation this winter, there was optimism that yields could be significantly better. The faucet was turned off for much of the western part of the state at the end of February, leading to a rapid return of drought conditions. When moisture did return, hail and straight-line winds accompanied it and wreaked havoc on the weakened crop.

Temperature and Precipitation Overview

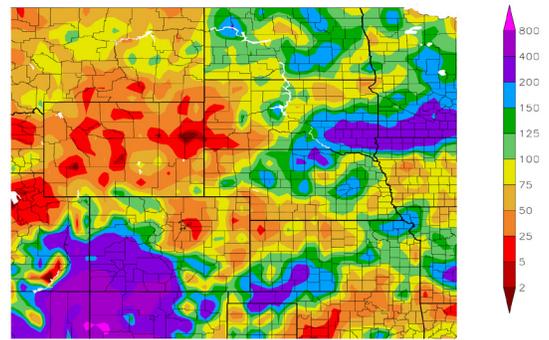
Departure from Normal Temperature (F)
6/1/2024 - 6/30/2024



Generated 7/20/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
6/1/2024 - 6/30/2024



Generated 7/20/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Departure from 1991-2020 normal temperature (left) and percent of normal precipitation (right) for June 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 was scattered but mainly occurred in the eastern part of the High Plains this month. Wyoming missed nearly everything, with some areas with near zero precipitation. Southwestern Colorado was well above normal, potentially hinting that the North American monsoon had begun.

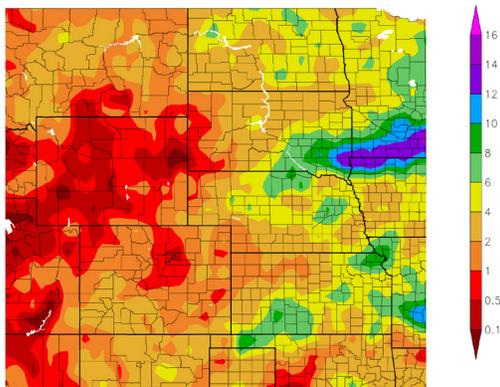
Although Wyoming is typically drier this time of the year, June was nearly bone dry for parts of the state. Several areas received less than 0.10 inches (2.54 mm), which combined with the warm temperatures, led to the intensification of drought conditions. With the outlooks favoring warmer and drier conditions for upcoming months, conditions in the state will need to be monitored.

Several rounds of precipitation impacted southwestern Colorado this month, leading some areas to record their wettest month. Major locations like Alamosa and Grand Junction fell just short, ranking 2nd and 3rd respectively. On the opposite side of the Rockies, cities like Denver were not as fortunate and were nearly in the top 10 driest.

After recording their 3rd driest spring with 1.77 inches (4.50 cm) of precipitation, the situation looked gloomy in Dodge City, Kansas. The month of June flipped that script, with 12.02 inches (30.53 cm) of rain. Not only did this set a new record for the wettest June, but it also ranked as the 2nd wettest month on record. Due to how much rain fell, Dodge City needs only near-normal precipitation for July and August to record their wettest summer.

Regional Precipitation

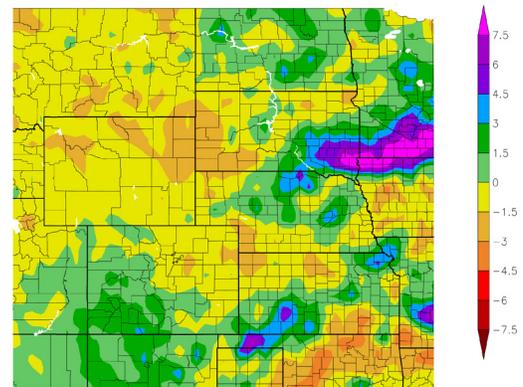
Precipitation (in)
6/1/2024 – 6/30/2024



Generated 7/20/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
6/1/2024 – 6/30/2024



Generated 7/20/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

Warmer temperatures dominated the southern and western part of the High Plains, while North Dakota was slightly below normal this month. Areas in Colorado and Wyoming were over 6 degrees F (3.3 degrees C) above normal, predominantly due to the heatwave that impacted those states this month. During this stretch of heat, the thermometer passed 100 degrees F (37.8 degrees C) in both states.

Wyoming observed record to near-record warmth, especially in the southeastern part of the state. Cheyenne narrowly broke their record for the warmest June, while Laramie easily surpassed theirs. To the west, Rawlins ranked 2nd and Lander tied 2016 for 5th warmest.

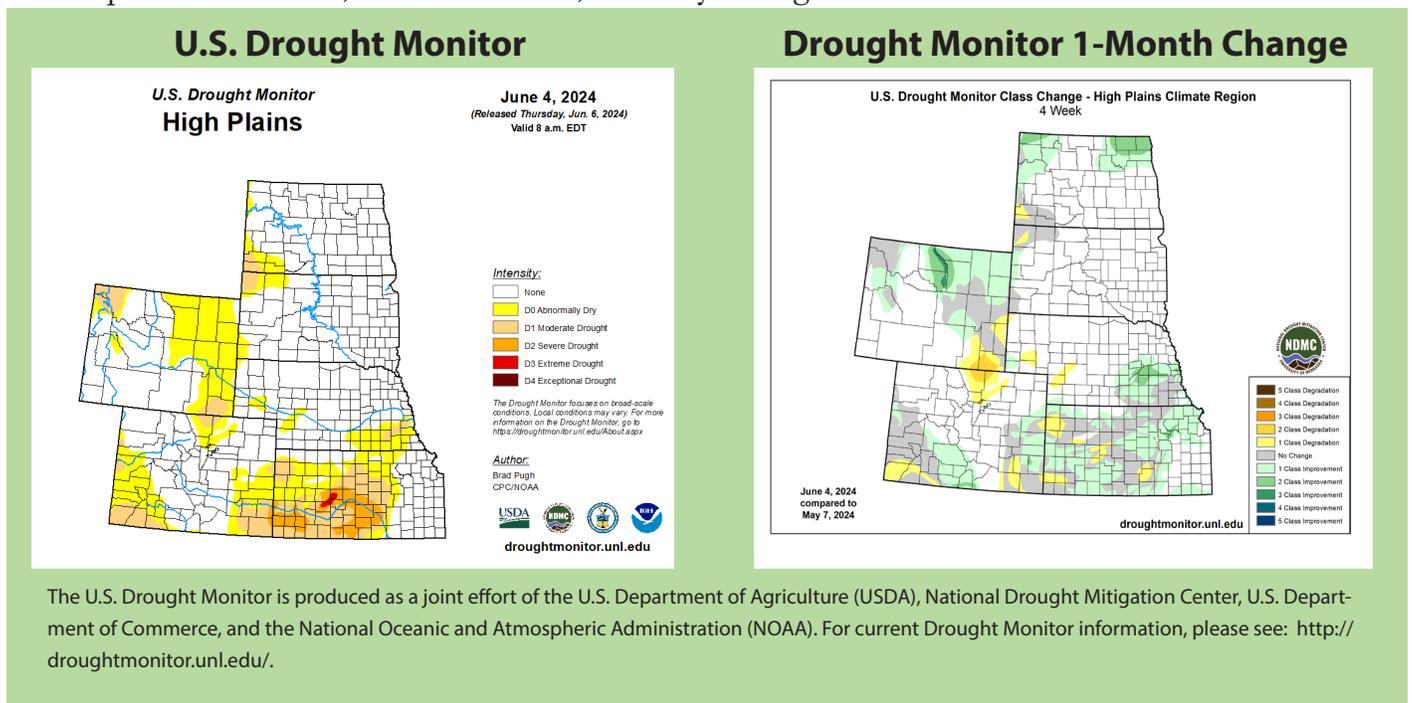
To the south in Colorado, the state was also heavily impacted by the extended stretch of heat. Many of the major locations such as Alamosa, Colorado Springs, Grand Junction, and Denver ranked 2nd warmest this month.

Drought Conditions

June was a mixed bag for drought conditions, with a reduction in intensity but an expansion in coverage. The biggest changes occurred in Wyoming and Kansas this month, while the region observed a 12 percent increase in D0 to D4 (abnormally dry to exceptional drought conditions).

Western and central Kansas headed into summer in rough shape, with D3 (extreme drought) being reintroduced to the area. The heavy precipitation this month helped alleviate conditions, with up to 2 categories of improvement. Another round of storms impacted the Dodge City area towards the end of the month, which will likely lead to further improvements.

Elsewhere in the region, other improvements and degradation were observed. According to the Climate Prediction Center’s U.S. Monthly Drought Outlook for July, drought conditions will expand in Kansas, South Dakota, and Wyoming.



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 Major Flooding in Nebraska and South Dakota along the Missouri River through September. 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

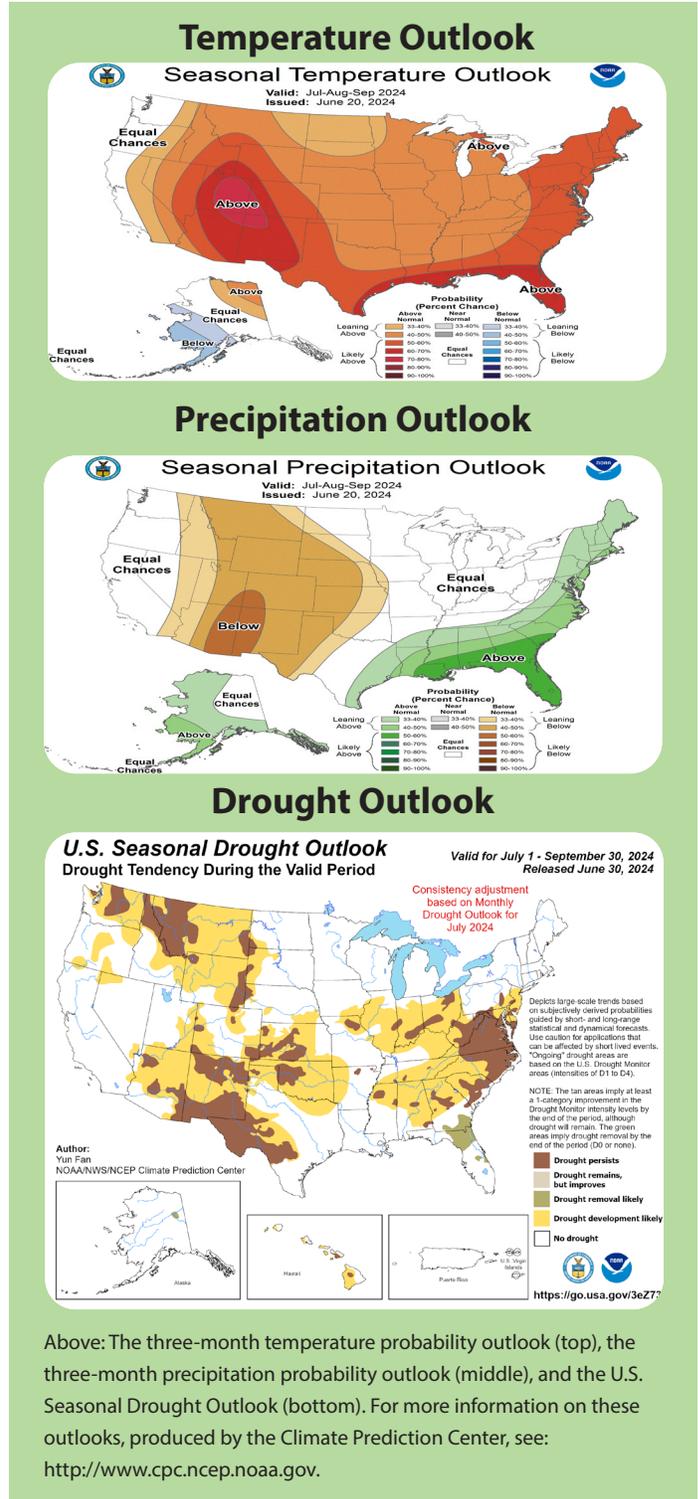
The three-month temperature outlook shows an increased chance of above-normal temperatures across the much of the United States. Above-normal temperatures are possible across the entire High Plains, with western Colorado heavily favored.

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 June 30th 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	86.8	57.5	72.2	4.0	100	06/25	50	06/06	2.25	0.01	100
Alamosa San Luis Airport	82.3	46.3	64.3	3.7	90	06/06+	33	06/03	2.00	1.57	465
Colorado Springs Municipal Airport	86.7	56.3	71.5	4.3	97	06/13	49	06/02	0.71	-1.56	31
Denver International Airport	90.1	57.5	73.8	5.6	100	06/25	50	06/03+	0.36	-1.58	19
Grand Junction Walker Field Airport	93.9	63.2	78.6	5.6	102	06/12	51	06/18	1.76	1.35	429
Pueblo Memorial Airport	93.4	58.7	76.1	4.3	104	06/24	48	06/01	2.11	0.83	165

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	90.3	66.2	78.2	3.8	105	06/13	54	06/05	3.68	-0.15	96
Dodge City Regional Airport	89.3	65.3	77.3	2.2	101	06/13	56	06/11	12.02	8.73	365
Goodland Renner Field	91.3	60.6	76.0	5.3	105	06/24+	49	06/01	0.68	-2.28	23
Topeka Municipal Airport	89.7	68.2	78.9	3.4	102	06/24	57	06/05+	4.88	-0.04	99
Wichita Mid-Continent Airport	90.4	69.0	79.7	2.8	102	06/28	57	06/10	3.20	-1.73	65

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	85.5	52.8	69.2	2.2	103	06/24	34	06/19	1.40	-1.06	57
Grand Island Airport	86.6	62.1	74.4	1.6	103	06/24	53	06/05+	2.75	-1.26	69
Lincoln Municipal Airport	88.3	63.9	76.1	2.4	103	06/24	50	06/05	3.28	-1.20	73
Norfolk Karl Stefan Airfield	84.6	61.3	72.9	2.5	100	06/24	49	06/05+	5.88	1.51	135
North Platte Regional Airport	85.7	59.0	72.3	2.6	102	06/24	50	06/09+	4.07	0.53	115
Omaha Eppley Airport	86.2	63.5	74.8	0.9	101	06/24	51	06/10	3.34	-1.10	75
Valentine Miller Field	82.5	55.0	68.8	-0.2	97	06/24	42	06/01	5.35	1.39	135

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	77.9	51.5	64.7	-0.7	92	06/24	43	06/07+	3.15	-0.21	94
Fargo International Airport	79.3	56.9	68.1	1.3	97	06/12	47	06/30	4.08	-0.21	95
Grand Forks International Airport	76.5	52.3	64.4	-0.2	91	06/24	44	06/10	5.32	1.55	141
Theodore Roosevelt Airport	75.2	48.2	61.7	-0.8	89	06/15	38	06/19	3.41	0.36	112
Williston International Airport	73.5	50.1	61.8	-1.7	85	06/23	39	06/01	2.38	-0.26	90

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>.

June 2024 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	81.5	54.5	68.0	0.4	97	06/12	40	06/01	2.23	-1.53	59
Huron Regional Airport	80.4	57.2	68.8	0.5	94	06/12	45	06/01	6.49	2.60	167
Pierre Regional Airport	80.6	55.5	68.0	0.2	93	06/12	44	06/01	3.19	-0.50	86
Rapid City Regional Airport	81.5	52.2	66.9	2.3	98	06/24	34	06/19	0.97	-1.90	34
Sioux Falls Joe Foss Field Airport	80.7	58.9	69.8	-0.1	94	06/24	47	06/07	11.20	6.97	265

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	85.4	47.3	66.3	3.8	98	06/23	36	06/01	0.80	-0.54	60
Cheyenne Municipal Airport	82.9	53.2	68.1	5.0	95	06/23	39	06/19	1.03	-1.13	48
Lander Hunt Field Airport	84.4	52.4	68.4	5.6	97	06/23	34	06/18	0.13	-0.95	12
Laramie Regional Airport	82.6	48.6	65.6	7.6	91	06/13+	39	06/19	0.58	-0.91	39
Rawlins Municipal Airport	82.8	50.4	66.6	6.7	91	06/23+	35	06/18	0.34	-0.53	39
Sheridan County Airport	82.6	47.9	65.2	3.4	103	06/23	32	06/19	0.84	-1.14	42

June 2024 Highlights

Monthly Rankings

Temperature in degrees Fahrenheit, Precipitation in inches

Precipitation	Precipitation / Ranking	Record / Year	Period of Record
Alamosa, Colorado	2.00 / 2nd Wettest	2.58 / 1969	1906-2024
Sioux Falls, South Dakota	11.20 / 2nd Wettest	13.70 / 2014	1893-2024
Grand Junction, Colorado	1.76 / 3rd Wettest	2.07 / 1969	1893-2024
Temperature	Temperature / Ranking	Record / Year	Period of Record
Cheyenne, Wyoming	68.1 / Warmest	68.0 / 2006	1871-2024
Laramie, Wyoming	65.6 / Warmest	64.0 / 2012	1948-2024
Rawlins, Wyoming	66.6 / 2nd Warmest	66.9 / 1988	1951-2024
Grand Junction, Colorado	78.6 / 2nd Warmest	79.1 / 1977	1893-2024
Alamosa, Colorado	64.3 / 2nd Warmest	64.5 / 2012	1906-2024
Colorado Springs, Colorado	71.5 / 2nd Warmest	73.3 / 2012	1894-2024
Denver, Colorado	73.8 / 2nd Warmest	75.0 / 2012	1872-2024

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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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