



January 2024 Climate Summary

View of Snowy Range in Wyoming, Photo Courtesy of Gavin Rush

Regional Breakdown

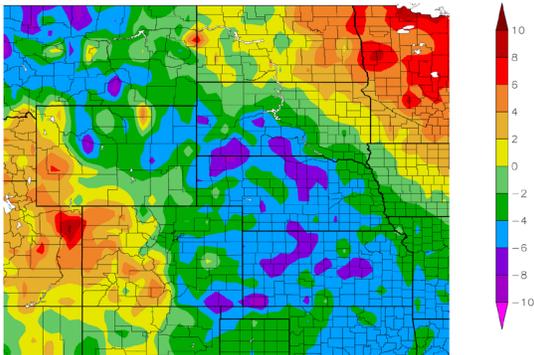
The run of scalding hot temperatures stretching back to September finally ended this month, and winter arrived with a vengeance. Temperatures dipped below zero, while wind chills plummeted. Several rounds of snow pushed through the southern portions of the region, but the northern parts were nearly bone-dry.

Temperatures were mild during the first week of the month before a front packed with arctic air and heavy snowfall trekked south. Up to 12 inches (30.48 cm) of snow fell in parts of Nebraska on the 8th, while air temperatures fell to -30 degrees F (-34.4 degrees C) at Old Faithful at Yellowstone National Park in Wyoming. The thermometer continued to drop across the region, with thousands of daily and over 30 all-time records broken at the end of this arctic blast. Light winds were also present for several days, creating life-threatening wind chills nearing -65 degrees F (-53.9 degrees C) in North Dakota.

After a steady warmup, the month ended on a bright note with temperatures rising to over 60 degrees F (15.6 degrees C) for many. Not only did this provide a reprieve from the absurdly cold temperatures, but it also melted away the snow and ice in the region.

Temperature and Precipitation Overview

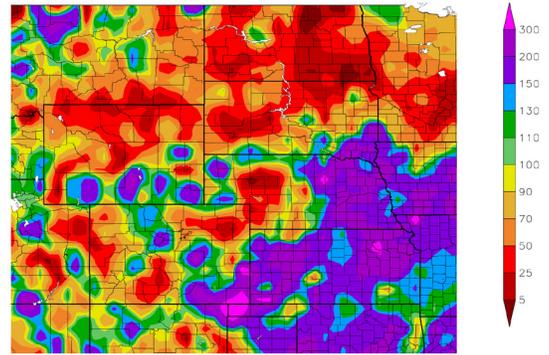
Departure from Normal Temperature (F)
1/1/2024 - 1/31/2024



Generated 2/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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



Generated 2/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

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

A one-two punch impacted Kansas and Nebraska this month, while the rest had spotty precipitation. The Dakotas and northern Wyoming were near bone-dry, with parts of those states receiving less than 0.10 inches (2.54 mm) of precipitation this month.

Winter arrived with a vengeance in Kansas and Nebraska. A moderate amount of snow fell on the 8th and the 9th, but the gut punch occurred on the 12th. Nearly a foot (30.48 cm) of snow fell in parts of Nebraska, while temperatures plummeted below zero. Roads rapidly turned into icy nightmares, with hundreds of wrecks reported. At the end of the month, several major locations ranked in the top 10 for January snowfall. Norfolk, Nebraska nearly broke their monthly record, with 20.6 inches (52.32 cm) of snow, while a CoCoRaHS observer near Columbus reported a whopping 31 inches (78.74 cm) this month.

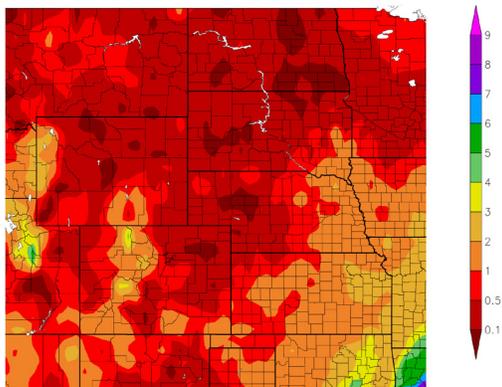
Outside of the southeastern corner of South Dakota, the Dakotas largely missed any form of precipitation this month. Fargo, North Dakota recorded their 6th lowest January snowfall while other parts of the state recorded a mere dusting.

In the west, Colorado and Wyoming had isolated patches of above-normal precipitation but also significant dryness. Akron, Colorado only measured 0.01 (0.254 mm) of precipitation, ranking third driest and Cody, Wyoming received trace amounts to tie for fourth driest.

At the end of January, snowpack was in decent shape for most of Colorado and average to poor in Wyoming. Much of the snow this year has fallen in the plains and not the mountains. The extreme cold created ice jams in the rivers, however, the warmer temperatures at the end of the month have helped clear out some of the jams.

Regional Precipitation

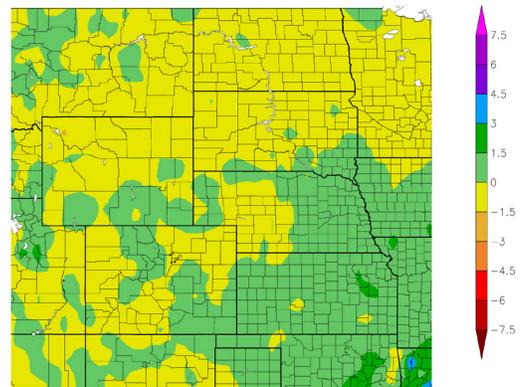
Precipitation (in)
1/1/2024 - 1/31/2024



Generated 2/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2024 - 1/31/2024



Generated 2/6/2024 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Total precipitation in inches (left) and departure from normal precipitation in inches (right) for January 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 below normal for most of the region, due to the arctic blast in the middle of the month. Despite the cold, the southwestern and northeastern parts of the region experienced departures of over 4 degrees F (2.2 degrees C) above normal. Even with the variability, very few locations ranked in the top 10 warmest or coldest this month.

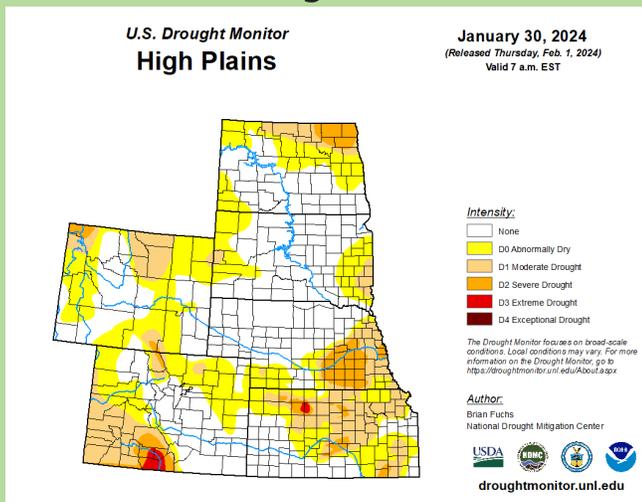
The warmth from the back half of 2023 carried into the opening days of 2024, with temperatures reaching up to 57 degrees F (13.9 degrees C) in Kansas on the 4th. That would be the last glimmer of hope as much of the region plunged into below-freezing temperatures for almost two weeks. High temperatures dropped all the way to -25 degrees F (-31.7 degrees C) outside of Williston, North Dakota, and subzero highs stretched all the way to Kansas. The peak of this cold spell occurred on the 14th when hundreds of daily records were broken. After suffering through this, temperatures steadily rose until the end of the month.

Drought Conditions

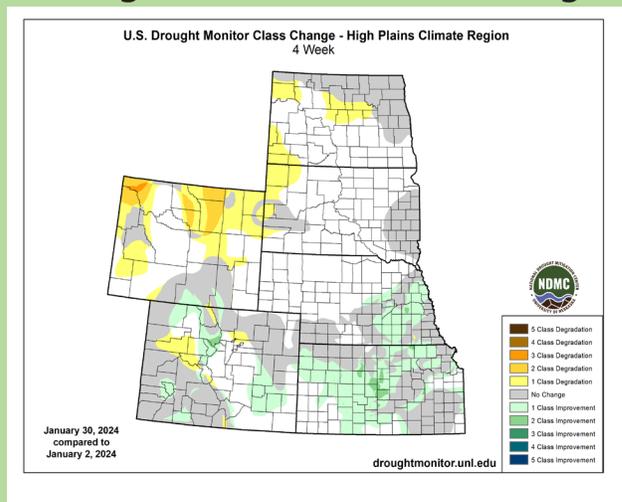
The continued above-normal precipitation in Kansas and eastern Nebraska over the past 90 days has tremendously improved the drought situation, while conditions have deteriorated in the northern portions of the region due to low snowfall. Despite this increase, the region experienced a reduction of nearly 6 percent in D0 to D4 (abnormally dry to exceptional drought conditions).

Drought conditions have improved significantly in Kansas since the beginning of the water year, with a 40 percent reduction in D2 to D4 (severe to exceptional drought) due to several timely bouts of precipitation. The same can be said for eastern Nebraska, where the intensity of drought conditions has been reduced immensely. On the opposite end of the spectrum, snowfall has been hard to come by in northern Wyoming, with drought degrading up to 3 classes this month.

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/>.

January 2024 Climate Summary

Climate Outlooks

According to the Climate Prediction Center, El Niño conditions are likely to continue but transition towards ENSO-neutral in mid to late Spring. An El Niño advisory 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 Flooding in the eastern parts of Kansas and South Dakota through the end of April. According to the National Interagency Fire Center (NIFC), fire potential will be limited across the region through May.

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

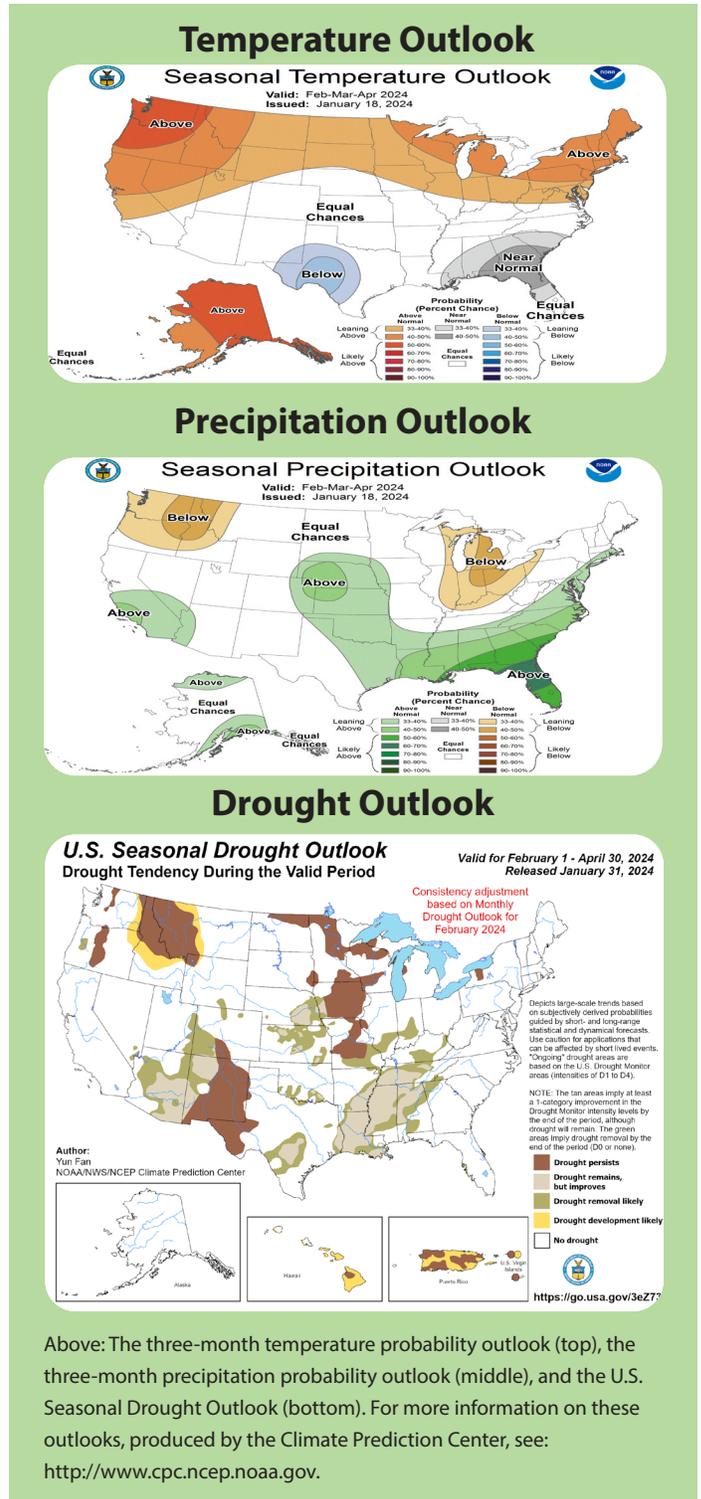
The three-month temperature outlook shows an increased chance of above-normal temperatures across the northern United States. Above-normal temperatures are slightly favored in the Dakotas and Wyoming.

Precipitation

The outlook for the next three months indicates below-normal precipitation across the Pacific Northwest and the Great Lakes, while above-normal precipitation is favored for the eastern United States and portions of the Plains. Above-normal precipitation is slightly favored in Kansas, Nebraska, and parts of Colorado and South Dakota.

Drought

The U.S. Seasonal Drought Outlook released on January 31st indicates that improvements to drought conditions will continue in Kansas, Nebraska, and western Colorado over the next three months.



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	38.0	13.2	25.6	-3.5	63	01/31	-19	01/16	0.01	-0.16	6
Alamosa San Luis Airport	37.6	5.5	21.5	4.7	54	01/29	-18	01/12	0.25	-0.07	78
Colorado Springs Municipal Airport	42.7	17.1	29.9	-1.8	65	01/31	-10	01/15	0.62	0.33	214
Denver International Airport	41.8	14.5	28.2	-3.5	61	01/31	-19	01/16	0.28	-0.10	74
Grand Junction Walker Field Airport	45.4	24.1	34.8	7.1	62	01/30	4	01/12	0.26	-0.35	43
Pueblo Memorial Airport	43.9	14.5	29.2	-2.7	65	01/31	-11	01/16	0.32	0.03	110

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	32.8	17.6	25.2	-3.6	70	01/31	-10	01/13	1.33	0.66	199
Dodge City Regional Airport	38.2	18.4	28.3	-4.7	68	01/31	-7	01/16	1.06	0.46	177
Goodland Renner Field	35.5	13.5	24.5	-5.7	67	01/31	-16	01/15	0.69	0.37	216
Topeka Municipal Airport	35.2	18.0	26.6	-3.6	66	01/31	-8	01/15	2.25	1.36	253
Wichita Mid-Continent Airport	38.0	19.7	28.8	-4.4	69	01/31	-4	01/14	1.76	0.91	207

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	31.4	4.8	18.1	-7.4	62	01/31	-26	01/13	-0.23	-0.38	-153
Grand Island Airport	28.8	13.0	20.9	-5.0	62	01/31	-17	01/14	1.35	0.74	221
Lincoln Municipal Airport	30.0	13.5	21.7	-3.3	61	01/31	-18	01/14	0.95	0.22	130
Norfolk Karl Stefan Airfield	26.5	11.8	19.1	-3.2	53	01/31	-21	01/20	1.22	0.61	200
North Platte Regional Airport	35.2	9.8	22.5	-3.8	68	01/31	-20	01/16	0.28	-0.11	72
Omaha Eppley Airport	28.1	13.6	20.9	-3.5	57	01/31	-16	01/14	0.88	0.13	117
Valentine Miller Field	31.0	7.6	19.3	-5.2	64	01/31	-23	01/14	0.48	0.16	150

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	23.3	7.6	15.5	2.7	55	01/31	-27	01/13	0.32	-0.16	67
Fargo International Airport	23.2	11.2	17.2	8.0	52	01/31	-14	01/14	0.15	-0.56	21
Grand Forks International Airport	20.1	7.7	13.9	7.6	49	01/31	-15	01/14	0.26	-0.23	53
Theodore Roosevelt Airport	26.2	6.5	16.3	-0.1	62	01/31	-33	01/13	0.01	-0.24	4
Williston International Airport	24.4	9.0	17.4	5.8	55	01/31	-29	01/13	0.29	-0.27	52

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>.

January 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	22.4	8.2	15.3	2.5	48	01/31	-18	01/13	0.13	-0.42	24
Huron Regional Airport	22.9	8.7	15.8	-0.2	52	01/31	-18	01/20	0.50	-0.08	86
Pierre Regional Airport	23.4	8.8	16.1	-3.0	44	01/31	-19	01/13	0.41	-0.04	91
Rapid City Regional Airport	34.8	10.5	22.7	-1.6	65	01/31	-23	01/14	0.05	-0.26	16
Sioux Falls Joe Foss Field Airport	25.2	11.2	18.2	0.3	50	01/31	-19	01/20	1.16	0.56	193

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	34.0	10.7	22.3	-2.8	56	01/31	-37	01/13	0.36	-0.13	73
Cheyenne Municipal Airport	37.1	14.4	25.8	-3.4	61	01/31	-23	01/13	0.52	0.17	149
Lander Hunt Field Airport	27.8	6.6	17.0	-4.3	47	01/28	-27	01/13	0.46	-0.05	90
Laramie Regional Airport	35.7	9.1	22.4	0.5	56	01/31	-30	01/16	0.34	0.06	121
Rawlins Municipal Airport	31.9	12.1	22.0	-0.3	49	01/31	-20	01/13	1.42	1.00	338
Sheridan County Airport	37.5	8.6	23.1	-0.9	68	01/30	-31	01/13	0.27	-0.34	44

January 2024 Highlights

Monthly Rankings

Temperature in degrees Fahrenheit, Precipitation in inches

Precipitation	Precipitation/ Ranking	Record / Year	Period of Record
Rawlins, Wyoming	1.42 / 3rd Wettest	3.12 / 2023	1951-2024
Chadron, Nebraska	0.97 / 4th Wettest	2.40 / 1949	1941-2024
Grand Island, Nebraska	1.35 / 10th Wettest	2.60 / 1932	1895-2024
Akron, Colorado	0.01 / 3rd Driest (tied with 1983+)	Trace / 2010 and 1964	1937-2024
Snowfall	Snowfall/ Ranking	Record / Year	Period of Record
Norfolk, Nebraska	20.6 / 2nd Snowiest	21.2 / 1932	1893-2024
Grand Island, Nebraska	17.4 / 5th Snowiest	26.0 / 1932	1895-2024
Hastings, Nebraska	15.6 / 6th Snowiest	22.0 / 1932	1894-2024
Dodge City, Kansas	12.0 / 6th Snowiest	19.7 / 1898	1893-2024
Goodland, Kansas	12.4 / 8th Snowiest	19.4 / 1988	1895-2024
Fargo, North Dakota	1.4 / 6th Lowest Snowfall	0.8 / 1990 and 1942	1885-2024
Temperature	Temperature/ Ranking	Record / Year	Period of Record
Grand Junction, Colorado	34.8 / 6th Warmest	36.9 / 2005	1893-2024

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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). The video player interface includes a play button, a progress bar at 0:00 / 54:51, and a YouTube logo.

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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