



April 2023 Climate Summary



Cattle in a struggling Western Kansas pasture. Photo Courtesy of Gannon Rush

Regional Breakdown

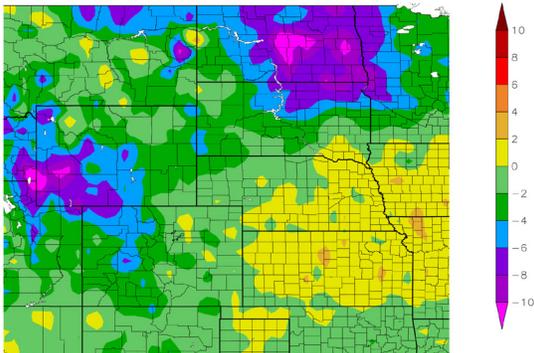
The northern parts of the High Plains continued to deal with the brutal winter, while the southern portions were dry once again. Both parts of the region are dealing with issues related to their ends of the extremes.

Snow continued to pile up in the Dakotas and Wyoming, with numerous impacts. Hunting permits for antelope and deer were slashed in Wyoming this fall as a result of the winter. The Wyoming Game and Fish Department observed the excessive snowfall reduced both populations and has cut the permit numbers in an effort to help manage the populace. In North Dakota, a large number of dead deer were reported around the state, with over 100 reported in the Jamestown area alone. The rapid snowmelt in the middle of the month further exacerbated the issues, with flooding along the Red River and the Big Sioux. While in South Dakota, the heavy snow caused homes to explode due to the excessive weight.

In the southern Plains, drought-related issues continued to plague the population. Several significant wildfires broke out in Nebraska due to the dry conditions. The state has implemented a burn ban to help reduce the number of fires. Kansas agricultural producers are preparing for another year of drought, with farmers scrambling to find food sources for their already culled herds.

Temperature and Precipitation Overview

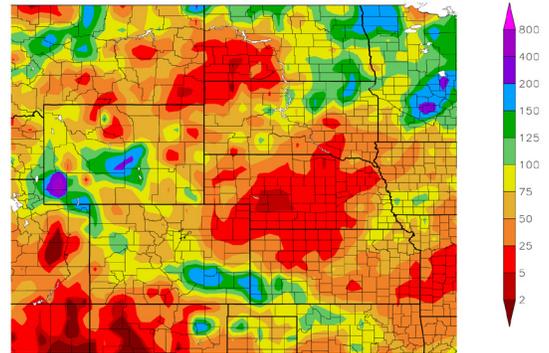
Departure from Normal Temperature (F)
4/1/2023 - 4/30/2023



Generated 5/10/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Percent of Normal Precipitation (%)
4/1/2023 - 4/30/2023



Generated 5/10/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Departure from 1991-2020 normal temperature (left) and percent of normal precipitation (right) for April 2023 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 and Water Resources

April precipitation was below-normal for much of the region, with Nebraska very dry. The majority of the state was below 25 percent of their normal precipitation, leading to multiple locations ranking in the top 10 driest. Southwestern Kansas finally received some meaningful precipitation, however, not nearly enough to help improve the dire drought situation.

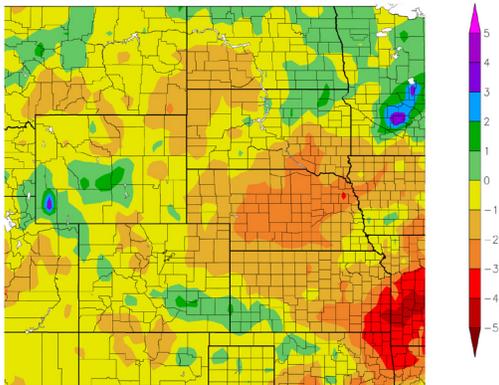
North Platte, Nebraska was arguably the driest location in the region, with only 0.04 inches (1.02 mm) of precipitation. This tied with 1928 for the driest April on record. Nearby Grand Island only observed 0.15 inches (3.81 mm), ranking 3rd driest. Other locations in the state ranking in the top 10 driest include Chadron, Lincoln, and Norfolk.

The significant snowfall that has impacted the Dakotas and Wyoming continued into April. Parts of Wyoming saw over 30 inches (76.2 cm) of snow, leading to numerous records. The small town of Atlantic City observed a whopping 48.8 inches (123.95 cm), the most in the state. The Dakotas received over 20 inches (50.8 cm) in some places. With such high totals continuing into April, many locations are likely to have recorded their snowiest year on record.

According to the United States Army Corps of Engineers, runoff for this calendar year is projected to be slightly above-normal despite the drought conditions. Streamflow is well below-normal across much of the southern Plains, while rapid snowmelt has led streams to be well above-normal in the Dakotas.

Regional Precipitation

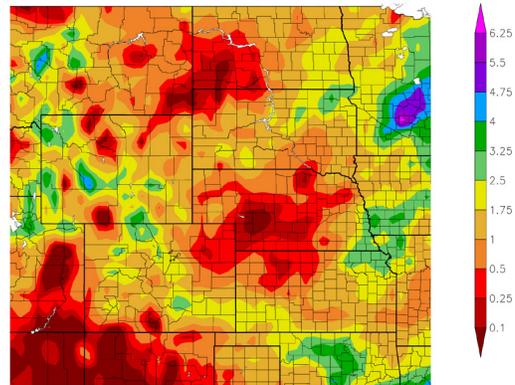
Departure from Normal Precipitation (in)
4/1/2023 - 4/30/2023



Generated 5/10/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Precipitation (in)
4/1/2023 - 4/30/2023



Generated 5/10/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Above: Total precipitation in inches (left) and departure from normal precipitation in inches (right) for April 2023. 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

Winter does not seem to want to end, with cooler temperatures dominating the northern and western parts of the region. Average temperatures were still below freezing across North Dakota and Wyoming, with some locations recording their coldest April on record.

Temperatures have been cooler for western Wyoming since the beginning of the year, with some locations 10 degrees F (5.6 degrees C) below normal through the end of April. Multiple locations including Tower Falls and Pavillion recorded their coldest month on record. Old Faithful in Yellowstone National Park observed a chilly average temperature of 25.9 degrees F (-3.4 degrees C) this month.

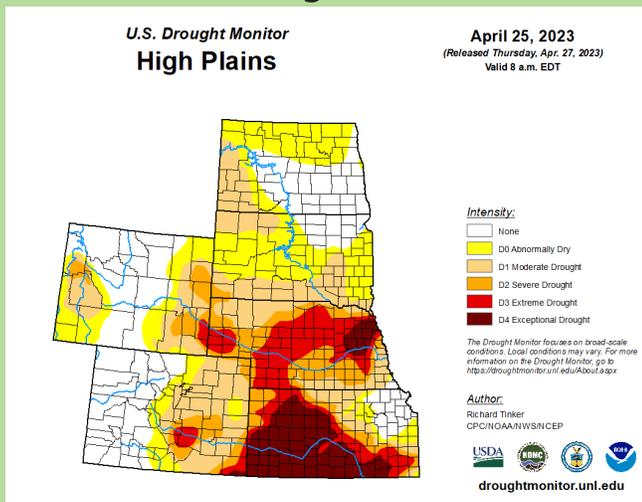
Just like Wyoming, North Dakota continued to be cooler into April. Despite having temperatures over 10 degrees F (5.6 degrees C) below normal, only three locations in the state ranked as the coldest April on record. Most notably, the town of Mayville has records dating to 1895 and observed an average temperature of 29.8 degrees F (-1.2 degrees C) to rank coldest on record. Both Moffit and Carrington also recorded their coldest month.

Drought Conditions

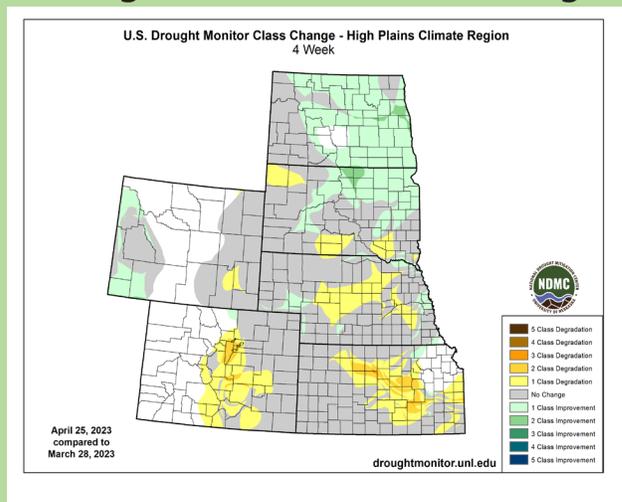
For the second month in a row, drought conditions improved in the Dakotas while degrading in the southern plains. Central Kansas and the front range of Colorado experienced up to a three-class degradation in April alone. Overall, there was a 6 percent decrease in D0 to D4 (abnormally dry to exceptional drought conditions).

Rapid snowmelt after well-above-normal temperatures caused North Dakota to observe a 40 percent decrease in D0 to D4. Soil moisture greatly improved, while some minor flooding is taking place in the state. While some beneficial precipitation occurred in southwestern Kansas late in the month, the majority of the state has experienced a poor spring for precipitation. The central part of the state observed a multi-class degradation, with a 10 percent increase in D4.

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/>.

April 2023 Climate Summary

Climate Outlooks

According to the Climate Prediction Center, La Niña conditions have ended and transitioned to ENSO-neutral. The final La Niña advisory was issued on March 9th. 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 increased chances of Major Flooding in central South Dakota. According to the National Interagency Fire Center (NIFC), fire potential will be limited across the region through 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

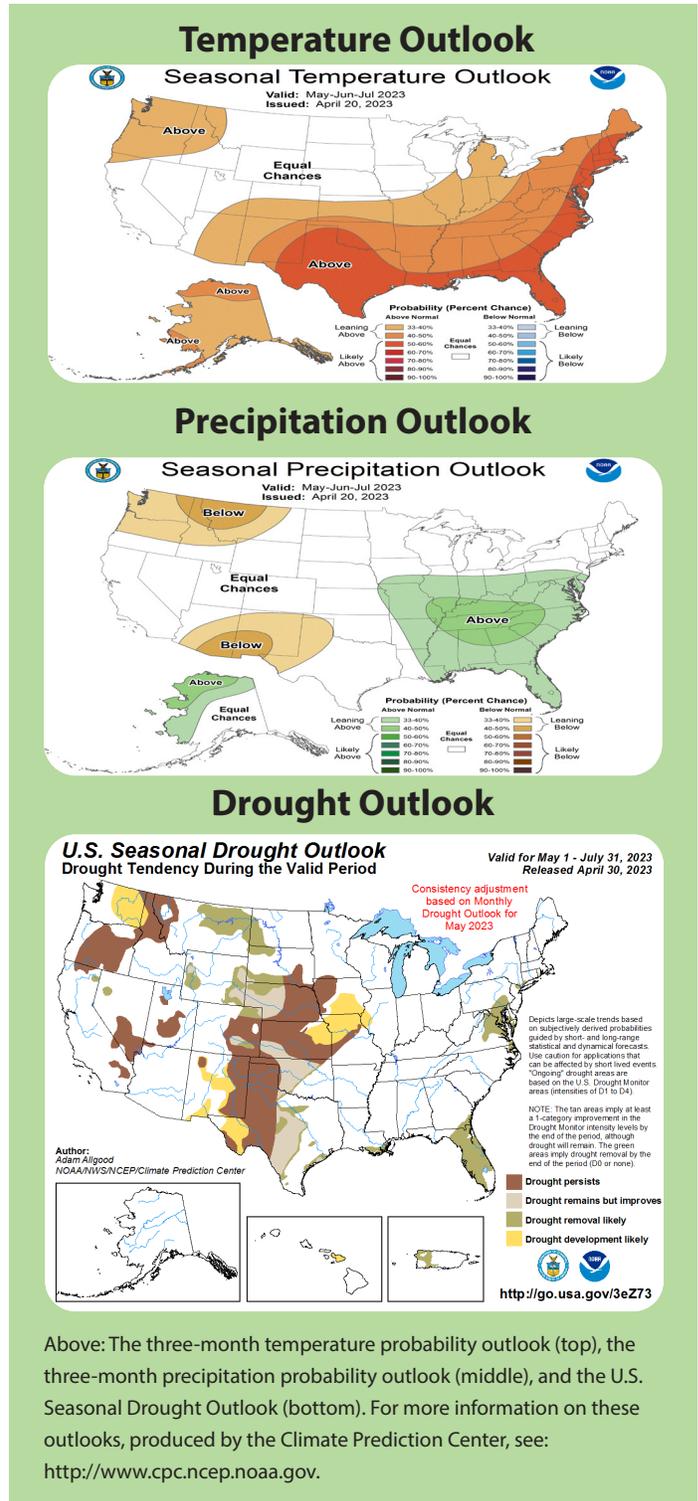
The three-month temperature outlook shows an increased chance of above-normal temperatures across the southern and eastern United States. Increased chances of above-normal temperatures are present in Colorado and Kansas.

Precipitation

The outlook for the next three months indicates below-normal precipitation across the southwestern and northwestern United States, while above-normal precipitation is favored for the Southeast. The High Plains region has equal chances of precipitation.

Drought

The U.S. Seasonal Drought Outlook released on March 31st indicates that improvements to drought conditions will continue across the majority of the region. Drought conditions will likely be introduced across eastern Kansas.



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	62.4	31.9	47.2	0.0	87	04/12	14	04/05	0.32	-1.11	22
Alamosa San Luis Airport	60.8	19.6	40.2	-2.4	75	04/11	4	04/06	0.14	-0.43	25
Colorado Springs Municipal Airport	61.6	31.3	46.5	-1.0	83	04/11	12	04/05	1.45	0.00	100
Denver International Airport	63.3	32.2	47.8	0.0	85	04/12	11	04/05	0.80	-0.88	48
Grand Junction Walker Field Airport	63.4	35.7	49.5	-2.4	83	04/11	20	04/05	0.78	-0.20	80
Pueblo Memorial Airport	69.2	32.1	50.6	-0.7	90	04/12	22	04/16	2.33	0.76	148

Kansas	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Concordia Municipal Airport	70.8	40.9	55.9	2.8	88	04/13	23	04/06	1.08	-1.45	43
Dodge City Regional Airport	70.6	39.4	55.0	0.7	90	04/18	20	04/06	1.78	-0.21	89
Goodland Renner Field	66.4	33.0	49.7	0.4	93	04/12	17	04/23	0.56	-1.13	33
Topeka Municipal Airport	71.9	42.8	57.4	1.9	89	04/04	28	04/06	1.82	-1.99	48
Wichita Mid-Continent Airport	71.5	42.9	57.2	0.7	89	04/04	29	04/05	0.60	-2.50	19

Nebraska	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Chadron Municipal Airport	58.8	27.7	43.2	-2.6	87	04/11	4	04/06	0.84	-1.12	43
Grand Island Airport	66.9	36.4	51.6	0.6	90	04/12	19	04/06	0.15	-2.37	6
Lincoln Municipal Airport	69.1	37.1	53.1	1.1	89	04/13	14	04/06	0.59	-2.10	22
Norfolk Karl Stefan Airfield	64.4	36.1	50.3	1.4	91	04/12	16	04/06	0.42	-2.31	15
North Platte Regional Airport	67.1	28.8	47.9	-0.3	95	04/13	13	04/06	0.04	-2.25	2
Omaha Eppley Airport	66.4	39.4	52.9	0.3	88	04/12	21	04/06	3.31	0.14	104
Valentine Miller Field	60.1	31.3	45.7	-1.5	91	04/11	11	04/01	0.80	-1.68	32

North Dakota	Temperatures (degrees F)								Precipitation (inches)		
	Averages				Extremes				Totals		
	Max	Min	Mean	Depart	High	Date	Low	Date	Obs	Depart	% Norm
Bismarck Municipal Airport	47.6	26.5	37.0	-6.2	66	04/26	1	04/06	0.63	-0.71	47
Fargo International Airport	45.9	27.8	36.9	-6.1	63	04/27	5	04/07	1.49	-0.05	97
Grand Forks International Airport	42.0	24.3	33.2	-7.5	56	04/30	-2	04/07	1.83	0.62	151
Theodore Roosevelt Airport	49.7	26.6	38.1	-3.5	83	04/11	6	04/07	0.07	-1.30	5
Williston International Airport	46.4	27.4	36.9	-5.5	80	04/11	6	04/05	1.00	-0.05	95

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>.

April 2023 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	48.1	27.1	37.6	-6.9	72	04/26	0	04/06	1.67	-0.24	87
Huron Regional Airport	57.2	30.9	44.1	-1.6	92	04/11	15	04/06	0.57	-1.95	23
Pierre Regional Airport	55.6	29.3	42.4	-3.5	94	04/11	8	04/06	0.55	-1.38	28
Rapid City Regional Airport	55.6	27.7	41.6	-2.3	87	04/11	8	04/01	0.75	-1.33	36
Sioux Falls Joe Foss Field Airport	59.7	35.3	47.5	0.3	92	04/12	21	04/06	0.87	-2.13	29

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	51.7	26.9	39.3	-3.0	72	04/12	3	04/05	1.49	0.08	106
Cheyenne Municipal Airport	55.2	29.3	42.2	-0.6	80	04/11	10	04/05	1.55	-0.24	87
Lander Hunt Field Airport	51.5	26.5	39.0	-4.2	72	04/30	7	04/05	2.83	0.76	137
Laramie Regional Airport	50.8	22.5	36.7	-1.2	71	04/12	2	04/05	0.41	-0.63	39
Rawlins Municipal Airport	47.9	25.4	36.7	-3.7	69	04/30	2	04/07	1.42	0.16	113
Sheridan County Airport	53.8	27.5	40.7	-2.5	75	04/11	14	04/07	1.26	-0.61	67

April 2023 Highlights

Monthly Rankings

Temperature in degrees Fahrenheit, Precipitation in inches

Precipitation	Precipitation/ Ranking	Record / Year	Period of Record
North Platte, Nebraska	0.04 / Driest (tied with 1928)		1874-2023
Grand Island, Nebraska	0.15 / 3rd Driest	0.09 / 1989	1895-2023
McCook, Nebraska	0.20 / 8th Driest	0.00 / 1924	1894-2023
Norfolk, Nebraska	0.42 / 8th Driest	0.11 / 1928	1893-2023
Lincoln, Nebraska	0.59 / 8th Driest	0.02 / 1910	1887-2023
Akron, Colorado	0.32 / 8th Driest (tied with 1992)	0.03 / 2022	1937-2023
Wichita, Kansas	0.60 / 10th Driest	0.22 / 1963	1888-2023
Temperature	Temperature/ Ranking	Record / Year	Period of Record
Sisseton, South Dakota	39.0 / 5th Coldest	36.1 / 2018	1931-2023
Aberdeen, South Dakota	37.6 / 5th Coldest (tied with 1907)	34.9 / 2013	1893-2023
Grand Forks, North Dakota	33.2 / 6th Coldest (tied with 2018)	29.7 / 1950	1893-2023
Pierre, South Dakota	42.4 / 9th Coldest (tied with 1997)	37.6 / 2013	1893-2023

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>.

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

Author Information

For questions, comments, or suggestions, please contact:
Gannon Rush
711 Hardin Hall, 3310 Holdrege Street
Lincoln, NE 68583-0997
402-472-8968
<https://hprcc.unl.edu/contact.php>

