

CARC Meeting Minutes (DRAFT)

Tuesday, November 7, 2023

901 Hardin Hall

3310 Holdrege St., Lincoln, NE

Meeting was called to order at 2:03 p.m.

In Attendance

Committee members: Hilary Maricle (Chair), Nebraska Department of Agriculture; Jesse Bradley, Nebraska Department of Natural Resources; Matt Joeckel, UNL Conservation and Survey Division; Becky Wisell, Nebraska Department of Health and Human Services; Mark Svoboda, National Drought Mitigation Center

Staff and audience: Brian Fuchs, National Drought Mitigation Center; Eric Hunt, University of Nebraska Extension State Climate Office; Nick Streff, USDA National Agriculture Statistics Service; Aaron Young, UNL Conservation and Survey Division; Holle Evert, Nebraska Department of Agriculture; Jenny Prenosil, NGPC; Kole Pederson, NE Farm Bureau; Neil Moseman, US Senator Deb Fischer's office; Carlos Villarreal, USDA Natural Resources Conservation Resources; Shannon Anderson, Nebraska Department of Agriculture; Paul Hammel, Nebraska Examiner; Rezaul Mahmood, High Plains Regional Climate Center; Jason Lambrecht, U.S. Geological Survey; Taylor Nicolaisen, National Weather Service; Debbie Borg, U.S. Sen. Ricketts office.

CARC follows provisions in Nebraska's Open Meetings Act.

Minutes from the July 17, 2023, CARC meeting were approved as presented.

Reports were provided as follows:

Nebraska Drought Conditions and Water Supply Update

Presented by Brian Fuchs, National Drought Mitigation Center

Note: Maps, statistics, charts and other details are available on Fuch's PowerPoint presentation that can be found at carc.nebraska.gov

Past/Current Climate & Drought Report

Temperatures have been warmer than normal throughout the central to southern High Plains over the last 60-days and cooler than normal in the western portions of the region and warmer than normal in the east for the calendar year. Over the last 60 days, most all the High Plains was 2-4 degrees above normal, with even some greater departures in North Dakota.

Precipitation has been mixed in the region with portions of eastern Kansas, northern and central Nebraska, southern South Dakota and much of Wyoming and North Dakota above normal over the last 60 days which is helping with soil moisture recharge.

Nebraska is currently showing 24.81 percent of the state in drought with just under 11% in extreme drought or worse. Areas of the Panhandle into central Nebraska have had drought be eliminated with the recent wetter pattern.

The seasonal drought outlook that goes through the end of January 2024 has the current drought situation holding status quo during this time for most all the region with drought improvement expected to our south in Kansas into the southern Plains as well as in the Midwest.

Nebraska Water Supply Update

Lake McConaughy is currently 55.7 percent of capacity and has been slowly rising due to some downstream maintenance and the end of the irrigation season.

Upstream reservoirs in Wyoming are reducing capacity for this time of year with most sending water downstream in preparation for the winter.

The Republican River basin reservoirs all have less water in storage than in July as the irrigation season utilized these reservoirs, especially in the drier south-central portion of the state.

Harlan County Reservoir is holding about 36,000 acre-feet less water now than in July and is also holding about 32,000 acre-feet less than the historical average for this time of year.

Nebraska Climate Update

Presented by UNL Extension Agricultural Climatologist, Eric White

Note: Maps, statistics, charts and other details are available on White's PowerPoint presentation that can be found at carc.nebraska.gov

Overall, for the year 2023, Nebraska has seen warm and dry conditions on the eastern side of the state with much wetter and near average temperatures in the west. Summer of 2023 in Nebraska saw average, to in some cases, below average temperatures. However, for the period August 19, 2023, through August 25, 2023, every climate division in Nebraska recorded the hottest temperatures on record for this period of August. During this same period, it was also very humid with little wind and high solar radiation, particularly in southeastern and east central to northeast Nebraska. These conditions led to three to four days of Nebraska being in the extreme danger category on the cattle comfort index.

Precipitation was generally, very wet in October for areas north of the Platte River. Drier than average conditions were reported in southeastern Nebraska. Severe weather storms in 2023 were comparable to 2022 with the exception of more tornadoes reported in 2023. It was noted that 2022 was a very low year for tornadoes in Nebraska. However, 2023 saw more of the severe weather storms occurring during June through August during the critical stages for crop production.

Pasture and range conditions have seen significant changes over the last year. NASS reported as of October 29, that over 51% of pasture and range were in good to excellent condition. One year ago, only 2% of pasture and range fell within the good to excellent category.

USDA-NASS Crop and Acreage Reports

Presented by Nick Streff, USDA-NASS

Note: Maps, statistics, charts and other details are available on Streff's PowerPoint presentation that can be found at carc.nebraska.gov

Corn Report

As of 11/05, Corn harvested was 84%, behind 89% last year, but ahead of 78% for the five-year average. The October Crop Production report forecasted 174 bushels per acre for Nebraska corn yields, which is up 5.5% from last year. Based on October 1 conditions, Nebraska's 2023 corn production is forecast at 1.67 billion bushels, up 15% from last year's production.

Soybean Report

As of 11/05 Soybeans harvested was 95%, behind 100% last year, and near 96% average. The October Crop Production report forecasted 55 bushels per acre for Nebraska soybean yields, up from 49 bushels from 2022. Soybean production is forecast at 281 million bushels, up 1% from last year.

Winter Wheat

With recent precipitation, wheat progress and condition is trending up. Wheat was planted on time and emerged ahead of normal and is currently sitting at 50% good to excellent condition.

Soil Condition Report

Topsoil moisture is at 50% adequate or surplus.

Subsoil moisture is at 37% adequate or surplus.

Pasture, Range, Hay Report

2023 conditions did not start out well with 0% in good to excellent range. With precipitation over last few months condition has improved to 56% of pasture and range in good to excellent condition.

October Crop Production Report for Hay

Alfalfa hay production is at 3.04 million tons, up 24% from last year. Yields are forecast at 4.00 tons per acre, up .90 ton per acre from 2022.

All other hay production is at 3.20 million tons, up 69% from last year. Yields are forecast at 2.00 tons per acre, up .60 ton from 2022.

February 13, 2024, the 2022 Census of Agriculture report will be released. This a 5-year report with county level data, economic data, and demographic information.

Groundwater Update

Presented by UNL Extension Geologist, Aaron Young

Note: Maps, statistics, charts and other details are available on Young's PowerPoint presentation that can be found at carc.nebraska.gov

The groundwater monitoring program in Nebraska is a cooperation of 30 State and Federal agencies. Data is collected from all 23 Natural Resources Districts, several offices of the U.S. Bureau of Reclamation, Nebraska Public Power offices, Irrigation Districts and the U.S. Geological Survey. Every spring readings from approximately 6,500 wells in Nebraska are received to the UNL Conservation and Survey Division. Nebraska has one of the most robust groundwater level monitoring programs in the nation.

In Nebraska groundwater levels and precipitation are very closely related. If we have a very wet year, ground water levels tend to come up. Two reasons are because we have extra water available for recharging aquifers and also because we are not drawing as much water out of the aquifers for irrigation.

Groundwater level changes in Nebraska – Predevelopment to Spring 2022.

West and southwest part of the state are seeing declines of up to 130ft. These declines are not nearly as severe as the declines that southern states are seeing. Both the west and southwest have areas of fairly significant saturated thicknesses and are not in danger of running out of water in the foreseeable future.

Parts of the central sandhills have seen groundwater levels rise slowly over the last several decades.

South of the Platte River and around the Calamus Basin groundwater levels have risen to a magnitude of up to 130ft, largely due to seepage of groundwater from canals and larger reservoir systems.

Between wet and dry years, the eastern area has seen significant swings in water levels. Hoping that some wetter years will bring this area's groundwater levels up again.

Forecast for Nebraska groundwater levels – Climate change will have an impact on groundwater levels. Groundwater levels in the west will continue to decline.

Groundwater levels in the Sandhills will continue to rise or remain steady.

Groundwater levels in the east will become more variable based on annual climate variability.

The impact of drought events has greater impact on groundwater than extreme wet events.

Young noted that long term impacts of climate extremes on water levels are difficult to predict.

Other Updates from CARC Members/Advisors

Matt Joeckel, UNL Conservation and Survey Division

Joeckel commended Young's work and dedication to bringing groundwater data delivery into the current century. Joeckel would like the Conservation and Survey Division to provide the committee with a groundwater report once per year. Next year marks 150 years that UNL has had a state geologist or survey division in some capacity.

Ervin Portis, Nebraska Emergency Response Agency

NEMA sent a report via email to let the committee know of two counties in Nebraska that were designated as community disaster resilient zones. The counties are Furnas and Webster. NEMA is working with the School of Natural Resources at UNL on the feasibility of a mesonet project that would install ten state of art fully instrumented weather stations in Furnas and Webster counties.

Hilary Maricle, Nebraska Department of Agriculture

Review of the State Statutes and Drought Plan. The point of the Statute is to bring agencies together to share information. A summary is sent to the Governor following each meeting. Maricle asked committee members and others to review drought plan and make notes on what the most important pieces are that need updated. The drought plan will be emailed out to each committee member and others on CARC email list.

She also stated that NDA has been having conversations and is planning additional meetings with other agencies to see what work each is doing with climate and drought. NDA has been present at the mesonet meetings. There is a push for increasing weather stations across the state.

Mark Svoboda, National Drought Mitigation Center

Nebraska's last Drought Plan was established in 2000. Every state around us has updated their drought plans in recent years. Nebraska does not have a good trigger system in place that links to a drought plan. The 2000 plan is very limited. We have a lot more capacity, real time data available now. Svoboda fears we are missing out on being ahead of the curve and instead being reactive to the curve. He'd like to see this committee help revise the state drought plan. In the past this committee was a vehicle for stimulating the revision of the drought plan.

Brian Fuchs, National Drought Mitigation Center

The National Drought Mitigation Center has other state's drought plans linked on their website. Some have been updated recently. These can be valuable resources as Nebraska looks to revise the drought plan.

The meeting was adjourned at 3:06 p.m.