

CARC Meeting Minutes  
Monday, July 10, 2017  
901 Hardin Hall, UNL East Campus

Meeting called to order at 9:30 a.m.

In Attendance:

*Committee Members or representatives:* Mat Habrock (chair), Nebraska Department of Agriculture; Mark Svoboda, National Drought Mitigation Center; Dr. Shuhai Zheng, Nebraska Department of Natural Resources; Dana Divine, UNL Conservation and Survey Division; and Howard Isaacs, Nebraska Department of Health and Human Services.

*Staff and Audience:* Brian Fuchs, National Drought Mitigation Center; Martha Shulski, Nebraska State Climatologist; Steve Roth, Nebraska Department of Agriculture; Nick Streff, USDA-NASS; Robert Swanson, USGS; Joanne Young, Lincoln Journal Star; David Bracht, Nebraska Energy Office; Neil Moseman, U.S. Senator Deb Fischer's office; Mike Moritz, National Weather Service-Hastings; Eric Zach, Nebraska Game and Parks Service; Scott Sprague, Department of Health and Human Services, Mike Hayes, UNL- School of Natural Resources; Suzanne Plass, National Drought Mitigation Center; Neil Dominy, USDA-NRCS; and Crystal Stiles, High Plains Regional Climate Center.

Committee Chair Mat Habrock opened the meeting.

Minutes from the Nov. 22, 2016, CARC meeting were accepted by the committee.

Reports were provided as follows:

***Nebraska Drought Conditions and Water Supply Update***

Presented by Brian Fuchs, National Drought Mitigation Center, UNL School of Natural Resources (PowerPoint presentation available on CARC's website)

Past/Current Climate & Drought Report

Fuchs compared U.S. Drought Monitor maps from a year ago (July 2016) to last CARC meeting (November 2016) to current month (July 2017).

Last July Nebraska had abnormally dry areas primarily in southeast, south central and the northwest corner of the state. California was still mired in exceptional and extreme drought conditions at that time. Meanwhile, drought conditions were beginning to worsen in western South Dakota and the northeast corner of Wyoming.

By November 2016, the map showed the drought conditions in California, South Dakota and Wyoming had remained similar to those in July. However, a large section of southeastern states had developed an area of extreme to exceptional drought conditions. The abnormally dry conditions in Nebraska had moved to portions of the central, south central and far west panhandle regions of the state.

The July 4, 2017, map indicates that while most areas in the United States have upgraded from previous drought conditions, most of North Dakota and areas of South Dakota and Montana have degraded significantly. Fuchs said that in the past month there have been 1 to 2 drought class changes in that region including some areas of severe and extreme drought. Approximately 30 percent of North Dakota is experiencing extreme drought.

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In Nebraska there is a very small area of moderate drought in the extreme northeast corner of the state with abnormally dry conditions covering much of the state due to recent hot, dry and windy weather. Currently, approximately 68 percent of the state has abnormally dry or D1 drought conditions compared to a year ago when only 30 percent of the state had those same conditions.

Fuchs commented that the next two months will be important for producers in Nebraska as this is the time that row crops are developing. Meanwhile, concerns are starting to increase in western Nebraska where pastureland is beginning to show heat stress.

Quite a contrast was evident on the “departure from normal temperature” maps that Fuchs presented highlighting Nebraska. The 30-day map showed temperatures well above normal in the center third of the state. Only the far southeast and far northwest corners of the state had below normal average temperatures the past month. In the past 60 days, the departure from normal temperatures was quite different than the 30-day map with much of the state cooler than normal with a few pockets slightly above normal. However, for the calendar year, average temperatures throughout the majority of the state were still running well above the norm.

The 30-, 60- and 90-day “percent of normal precipitation” maps show that over the past seven months there has been a very steady decline in moisture received for most of Nebraska. This was especially true in the past 30 days with percent of normal precipitation for almost the entire state significantly below the average. However, because of good rainfall amounts earlier in the year, much of the state is still running 70 to 110 percent above normal precipitation for the year.

Fuchs said that for the rest of the month of July expect drought conditions to persist in Montana and the Dakotas. Nebraska could have moderate drought conditions developing quite rapidly if the hot and dry conditions continue.

Fuchs provided the following summary for the climate and drought status for Nebraska:

- Warmer than normal conditions and a mix of precipitation have been the dominant feature on the High Plains with the northern Plains being quite dry in 2017 so far.
- The summer, up to this point, has not been overly hot.
- Drought has developed rapidly over the northern Plains over the last one to two months with areas now in Extreme Drought through almost 30 percent of North Dakota.
- Conditions for Nebraska are currently typical for this time of year with some dryness and drought developing over the last month and 8.69 percent of the state in drought, confined to northeast and north central Nebraska.
- The seasonal drought outlook does show the potential for improvements over the northern Plains by the end of September.

### Nebraska Water Supply Update

The water elevation level on Lake McConaughy is currently at 85.2 percent of capacity compared to the 98 percent of capacity a year ago in July. Fuchs said that the current level is still good for this time of year given the hot and dry weather that has increased irrigation demand both upstream and downstream from the lake.

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According to a report from civil engineer Cory Steinke, the elevation level is dropping about two inches per day. Inflows to the lake have been around 600 cubic feet per second while releases have been at 3,100 cubic feet per second. Overall the outflows have been fairly typically for this time of year during a high demand irrigation season.

Meanwhile, the July 6, 2017, 14-day streamflow map indicated that the large majority of rivers and streams in Nebraska had average to well above average streamflows compared to historical streamflows for that day of the year. Fuchs said good water supplies this past winter and spring have contributed to the flows remaining strong.

All but one of the conservation pool levels of the smaller reservoirs along the Republican River are above last year's levels. Hugh Butler is at 44.9 percent of conservation pool (39.5 percent – 2016), Enders at 21.4 percent (23.5 percent – 2016), Harry Strunk at 76.7 percent (69.3 percent – 2016) and Swanson at 57.6 percent (39.7 percent – 2016).

The largest reservoir on the Republican River, Harlan County, is also above levels from a year ago. Currently, Harlan County is at 81.6 percent of full capacity. Storage is at 256,247 acre-feet compared to 235,510 acre-feet in storage at the same time a year ago, and 253,575 acre-feet for the historical average.

Fuchs provided the following water supply summary for Nebraska:

- Lake McConaughy is currently 85.2 percent of capacity which is about what it was in November 2016 (last CARC meeting). However, seasonal demands for water due to irrigation are increasing and could further affect levels.
- The Republican River basin reservoirs are at typical levels for this time of year as water is moved through them to meet irrigation demands.
- Harlan County Reservoir is holding about 65,000 acre-feet more water now than in November of last year, and about 20,000 acre-feet more water now than last year at this time which is about average for this time of year.

Fuchs said there should be plenty of water moving through these systems to meet irrigation demand for the 2017 growing season.

#### ***Nebraska Climate Update***

Presented by Martha Shulski, Nebraska State Climatologist  
(PowerPoint presentation available on CARC's website)

Shulski's report was broken down by seasons beginning with last fall.

From September through November 2016, Nebraska's average temperature ranked as the second warmest on record with the average daily temperature at 54.8°F, nearly 5°F above normal.

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Agriculture impacts from climate conditions during the fall time period included:

- A very warm fall, with the freeze coming late.
- Spring wheat diseases developed in southern Nebraska.
- Most of the state received below normal moisture, increasing concerns about poor soil moisture recharge.
- Expansive drought areas developed in the southeast and south central parts of the U.S.
- Heavy precipitation occurred in southern Minnesota and northern Iowa.

From December 2016 through February 2017, most of Nebraska saw wetter than normal conditions with the state average precipitation at 2.55 inches, .90 of an inch above the average for that time period.

Agriculture impacts from climate conditions during the winter time included:

- A very cold start to the winter across northwestern Nebraska averaging 6 to 8°F below normal. However, the second half of the season was warmer in that area. Little significant cold conditions occurred during that period for the remainder of the state.
- Heavy moisture in December came in liquid form instead of snow and fell before the ground froze. This helped to make up some of the fall moisture losses and decreased soil moisture deficits.
- The northern one-third of state had above normal snowfall, while there was below normal snowfall for the southern two-thirds of Nebraska, There was record low snowfall south of Interstate-80.
- The late winter warmth raised concerns about early dormancy break.

The March through May period this year brought above normal temperatures and above normal precipitation to Nebraska. The average temperature for the period was 3.5°F above normal. The statewide average precipitation for the three-month period was 8.9 inches, 1.29 inches above normal.

Agriculture impacts from climate conditions during the spring time period included:

- Very warm and dry conditions that prevailed through early April. Stormy and cold weather developed at the beginning of corn planting season which resulted in some delays and replanting. This was especially true in the northeast portion of Nebraska.
- Growing Degree Days accumulations from April 15 through May 15 were above normal for the southern and eastern half of the state.

In the month of June, most of Nebraska experienced hot and dry conditions. Average temperature was 2.1 degrees warmer than normal, which is in the top 30 percent of the warmest temperatures for the month. It was also the second driest June on record statewide with average rainfall just 1.44 inches, 2.31 inches below normal amounts. However, there were localized heavy rain events in some areas in Nebraska, evidenced by Lincoln's June rain amount being the sixth most on record.

Current agriculture impacts from climate conditions include:

- Cattle stress values approaching 120°F possible at times due to 90s coupled with dew points in the 70s.

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- Greatest crop and pasture stress reported right now is for sandier soils and pivot corners. Row crops are beginning their seed-production stage, so stress from heat and lack of moisture going forward will determine potential impact to yields.
- Winds are increasing evapotranspiration which increases the soil moisture loss.

The short term six- to ten-day and 14-day weather outlooks call for continued hot and dry weather with scattered to isolated thunderstorms possible.

The three-month outlook for Nebraska from the National Weather Service calls for a higher probability of above normal temperatures and equal chances of above or below precipitation.

### **Nebraska Hay Stocks and Crop Condition Report**

Presented by Nick Streff, USDA-NASS

(PowerPoint presentation available on CARC's website)

Streff said that USDA-NASS puts out hay stocks reports for Nebraska twice a year. The most recent report on May 1, 2017, indicated Nebraska hay stocks were 10 percent lower than the previous year but that was in line with 10 percent lower production for 2016. Overall, Streff said the hay stock reserves for the state are in good shape for this year.

The June first winter wheat yield report estimates Nebraska's per bushel an acre average at 46 which is down eight bushels an acre from last year. Streff pointed out that last year was a record year for the state.

Streff said that Nebraska's planted acres for corn this year were down slightly from the previous year. However, planted soybean acres set a record high this year.

The latest field crop report has the corn condition rated 1 percent very poor, 4 percent poor, 20 percent fair, 63 percent good, and 12 percent excellent. Soybean condition was rated 1 percent very poor, 5 percent poor, 24 percent fair, 64 percent good, and 6 percent excellent. Alfalfa condition was rated 1 percent very poor, 4 percent poor, 25 percent fair, 63 percent good, and 7 percent excellent. Pasture and range conditions rated 1 percent very poor, 9 percent poor, 40 percent fair, 46 percent good, and 4 percent excellent.

### Other comments:

CARC Chairman Mat Habrock with the Nebraska Department of Agriculture provided the following report received from committee member Barb Cooksley, a rancher from Anselmo:

*An update; we are now dry...*

*June rainfall, was 1.5 inches, July rainfall so far is .05. Temperatures have been in the upper 90s reaching 100.*

*Summer pastures that have not been grazed look good, not as much grass as I have come to expect the last few years. Any pastures that are grazed have not shown any regrowth. Pastures need to be checked early in the day before fire danger increases. Our neighbor's pickup caught fire when stopped in pasture to cut thistle. Pastures must be checked twice a week, now more, to ensure adequate water for cattle is available.*

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*We develop replacement heifers offsite, not planning to bring them to ranch until rainfall comes. Pasture could not be grazed for more than a few weeks before damage to grass would occur.*

*Also, grasshoppers are increasing in size and numbers in our area too.*

*Barb*

Dana Divine, Survey Hydrologist, UNL-Conservation and Survey Division, discussed some of the findings in the 2016 Nebraska Statewide Groundwater-Level Monitoring Reports. The report provides data on the changes in groundwater levels in Nebraska comparing various time periods. This information reflects the decline in groundwater levels depending on climate conditions and various locations in the state. Divine made copies of the report available to meeting attendees.

Howard Isaacs, Administrator for the Office of Drinking Water and Environmental Health for the Nebraska Department of Health and Human Services, reported that community wells across the state have been in good shape the past couple of years due to adequate precipitation and strong stream flows. There have been no recent reports of community wells going dry which is a concern during drought conditions.

Mark Svoboda, Director, National Drought Mitigation Center, mentioned that he was told that North Dakota and Colorado are currently revising their state drought plans. He mentioned it in light of previous discussion of possibly revising CARC's state drought plan. He referred to Habrock to discuss the recent meeting the two of them had with Mary Baker, State Hazard Mitigation Office with the Nebraska Emergency Management Agency (NEMA).

Habrock mentioned that Baker, a CARC member, was unable to attend today's meeting and is working on a five-year state emergency plan as part of her duties for NEMA. The plan will include a section on drought response. Baker is gathering information from several sources in Nebraska in developing that plan. Habrock said he will stay in contact with Baker to see if there is a possibility of coordinating NEMA's drought response plan efforts with CARC.

Habrock also mentioned that he is reviewing the listing of CARC members with the state's office on Committees and Commissions to try to fill all positions appropriately. He will work with the Governor's office to fill the seats on the committee as outlined in statute.

Habrock commented on the worsening drought situation in North Dakota. He said at a recent meeting of members of the Midwest Association of State Departments of Agriculture, North Dakota representatives mentioned that livestock producers in their state are having issues getting enough hay. With parts of Montana and South Dakota also in drought conditions, North Dakota producers are looking elsewhere for hay stocks. Adding to their dilemma is the fact that several tons of surplus hay were donated earlier this year to ranchers experiencing fires in Kansas, Oklahoma and Texas, leaving supplies tight. As a result of short hay stocks, a lot of producers in North Dakota have been selling off their cattle at a frenetic pace. Habrock said the Nebraska Department of Agriculture has been talking with farm organizations in Nebraska to see if there may be some actions they can take to assist farmers and ranchers in the drought stricken area.

Meeting adjourned at 10:31 a.m.