CARC Meeting Minutes
Tuesday, Nov. 22, 2016
901 Hardin Hall, UNL East Campus
Meeting called to order at 9:32 a.m.

In Attendance:
Committee Members: Mat Habrock (chair), Nebraska Department of Agriculture; Mary Baker, Nebraska Emergency Management Agency; Mark Svoboda, National Drought Mitigation Center; Ashley Mueller, University of Nebraska Extension; Dr. Shuhai Zheng, Nebraska Department of Natural Resources; Dr. Matt Joekel, UNL Conservation and Survey Division; Howard Isaacs, Nebraska Department of Health and Human Services; and Barb Cooksley, Rancher.

Staff and Audience: Brian Fuchs, National Drought Mitigation Center; Al Dutcher, Nebraska Extension Agricultural Climatologist; Martha Shulski, State Climatologist; Steve Roth, Nebraska Department of Agriculture; Nick Streff, USDA-NASS; Barb Mays Boustead, National Weather Service; Suzanne Fortin, National Weather Service; Neil Moseman, U.S. Senator Fischer's Office; Doug Klein, USDA-FSA; Wayne Vanek, NRCS; Scott Sprague, NDHHS; Natalie Umphlett, High Plains Regional Climate Center; and Tyler Williams, University of Nebraska Extension.

Committee Chair Mat Habrock opened the meeting.

Minutes from the June 28, 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 (Power Point presentation available on the CARC website)

Drought Conditions
In looking at the Drought Monitor map presented at the last CARC meeting in June, Fuchs pointed out that dry conditions had started to develop in southeast and south central Nebraska. An area in southwest Nebraska-northeast Wyoming and extreme northwest Nebraska had developed into extreme and exceptional drought stages.

The Drought Monitor map from a year ago (Nov. 2015) showed that Nebraska had only one very small area in the northwest corner of the state that was abnormally dry, the rest of the state was drought and abnormally dry free. The west cost of the United States was still mired in exceptional drought conditions. Most of the rest of the U.S. had just a few scattered pockets of abnormally dry and D1-drought conditions.

The Nov. 2016 Drought Monitor map showed that some of the areas on the west coast had gotten drought relief but a large portion of central California remained in D4 or D3 drought. The most significant change is the development of a large D4 area in several of the southeastern states. There is also D4-drought conditions that have developed in a smaller area along a portion of the northeast coastal region.

Fuchs commented that comparing drought conditions in Nebraska from last November to this year, the areas of the state in some type of drought category increased from 2 percent to 11 percent.

The 30-day precipitation chart for Nebraska indicated very dry conditions which Fuchs said was good for the harvest season but not good to start the wheat and cover crops.

The 60- and 90-day precipitation charts reflected some of the earlier rains from spring and summer offsetting some the recent dry conditions bringing most areas close to normal precipitation for the year. However, there were pockets of abnormally dry to very dry conditions in various places around the state.

In presenting the calendar year precipitation amounts for Nebraska, Fuchs said that the majority of the state is normal or above normal precipitation for the year.

Soil moisture maps for the United States reflect the flash drought that has developed over many of the southeastern states. The fact that soils in that area do not hold moisture very well has compounded the problem.

Drier top soil moisture is developing through central Nebraska into the Dakotas. Adding to the concern is that this is the time of year this area would typically receive precipitation to recharge the soil moisture but that hasn't happened much so far this fall. Recharge could still take place if additional precipitation would come prior to the ground getting a hard freeze. But that is unpredictable at this time.

Fuchs provided these climate/drought summaries:

- Most of the region has recorded above normal precipitation for the year, but there are pockets of dryness and drought which have developed in the summer and fall.

- 30.13 percent of the contiguous United States is currently in drought (D1 or worse) as of 11/15/2016
    - This time last year it was at 22.78 percent.
    - Up nearly 12 percent Year-to-Date (18.74 percent on Dec. 29, 2015)

- Current United State Drought Monitor map (11/15/2016) for Nebraska shows 10.68 percent of the state in drought (D1 only), up from 0 percent on January 1, 2016

- The Climate Prediction Center's Seasonal Drought Outlook calls for development of drought across the Southern United States through the end of February with drought development into the Mid-Atlantic possible, too

- CPC/IRI ENSO Alert System Status:
    - La Niña conditions into early 2017 and transitioning to neutral conditions by spring
    - Synopsis: There is an approximately 65 percent chance that a moderate La Niña will develop through the Northern Hemisphere during the fall/winter

Nebraska Water Supply Update

Fuchs reported that as of November 21, Lake McConaughy was at 86.4 percent of full pool compared to 97.6 percent of full pool in June. He noted that this was normal due to irrigation, evaporation and change in outflow during that time period.

Currently, there is just as much water coming into Lake McConaughy as there is going out. Engineers are hoping to draw down more water out of the reservoir in order to make room for more water storage this spring if needed.

Stream flows on the Platte River continue to be strong especially on the western end of the river. Fuchs noted that just from his own observations on the eastern portion of the Platte, that he was not seeing any sandbars, indicating good water levels up and down the river.

The national stream flow maps demonstrate the effects of the building drought in the southeastern part of the country with many of the rivers and streams and very low level.

The map also shows that most of the Nebraska waterways are at good levels except along the Republican River basin which has been historically low this time of year. Many of the reservoirs are drawn down during the irrigation season leaving them at lower levels in the fall.

Harlan County Reservoir is currently at 60.9 percent of full conservation pool capacity (191,433 acre feet). This is above the capacity (153,524 acre feet) from a year ago but behind the historical average (211,954 acre feet).

Committee member Dr. Shuhai Zheng commented that some of the reservoirs along the Republican River basin were at slightly higher than normal levels. This may be due to the Rock Creek and N-CORPE augmentation projects' pumping that was implemented to meet the requirement of the Republican River Compact. He mentioned that due to recent resolutions signed by basin states, Nebraska has been able to do some of the pumping now instead of waiting to next spring or summer.

Fuchs provided these water supply summaries:

- No serious hydrological issues in the state as we have had significant run-off into the Platte basin due to a good snow season in 2015-16 and timely summer rains reducing irrigation demand overall. Continued low flows in the southwest part of Nebraska.

- Lake McConaughy is currently:
    - 6.6 feet lower than it was during the last CARC meeting in June 2016.
    - The inflows are near normal and stabilized in the past few months.
    - Elevation is about the same as it was last year at this time.
- Overall, storage in the Republican River basin has decreased since the last CARC meeting.
    - Harlan County is currently:
        - 49,591 acre-feet lower than in June 2016 (last CARC meeting)
        - 20,521 acre feet lower than the historical average for this time of year

Nebraska Weather/Climate Update
Presented by Al Dutcher, Nebraska Extension Agricultural Climatologist
(Power Point presentation available on the CARC website)

Dutcher commented that the most important period for fall soil moisture recharge is in October which normally represents about 60 to 70 percent of the total during that fall period. In presenting several precipitation maps, he pointed out there was a very large area or Nebraska that did not receive very much precipitation this fall. Portions of eastern Nebraska are significantly drier this fall due to the lack of precipitation during this time period. It has also been very dry in portions of southwest Nebraska but in portions of the Sandhills in central Nebraska they have received considerably more precipitation. He did add that if we received more precipitation in December before the ground froze, it would be very beneficial for the soil moisture recharge.

The latest one-month temperature outlook for NOAA gives Nebraska an above average chance of temperatures being above normal. The one-month precipitation outlook gives Nebraska equal chances for above or below average precipitation. The three-month temperature and precipitation outlooks indicate equal chances for above or below average temperatures and precipitation.

With the uncertainty of the strength and longevity of a La Nina event, it is difficult to make any sound predictions at this time. Dutcher said in typical La Nina conditions the northern half of the United States tends to be colder and wetter than normal are typical for the Pacific Northwest and Ohio River Valley. The southern 1/3 of the U.S. will typically experience warmer and drier than normal conditions during the winter. Without knowing how long or how strong such an event will occur makes it difficult to know the exact impacts it will have on climate conditions.

Dutcher added that the effects on Nebraska's weather as a result of a La Nina, are almost unpredictable not knowing how the jet stream will setup up from the north into the Gulf of Mexico. During a La Nina, Nebraska typically has equal chances for above or below normal temperatures and precipitation.

Barb Mayes Boustead from the National Weather Service in Omaha echoed many of Dutcher's comments to the unpredictability of a La Nina event. She said it is more unpredictable than the El Nina event we had last spring. The length of the event could have a great bearing on whether or not we have a dry spring in Nebraska.

Crops and Hay Stocks Report
Presented by Nicholas Streff, USDA-NASS
(PowerPoint Presentation on CARC website)

Streff noted that NASS puts out two hay stock reports a year, the most recent one for Nebraska was in May in which it indicated that Nebraska had the highest hay stocks since 2004 and the third highest since 1990.

The October 1 Nebraska crop production report had Nebraska's 2016 alfalfa hay production forecasted at 3.04 million tons, down 6 percent from last year. Average yield was forecasted at 3.80 tons per acre, down .20 tons from last year.

All other hay production was 3.06 million tons, up 3 percent from last year. Record yield was forecasted at 1.70 tons per acre, up .10 tons from last year.

Overall most pasture conditions around the state were in good to excellent condition throughout most of the year but conditions had deteriorated some in the past couple of months due to drier conditions.

Streff said that the final crop production report for Nebraska will be issued Jan. 12. As of now USDA is forecasting record corn (1.75 billion bushels) and soybean (319 million bushels) production for 2016. It's also expected Nebraska will have a record average of 62 bushels per acre for soybeans. Grain sorghum production (15.5 million bushels) is expected to be slightly down due to fewer acres planted, while sugar beet production (1.48 million hundredweight) is expected to be up 11 percent from last year.

Wheat conditions in the state have been deteriorating the past two months as drier condition have prevailed in the wheat producing areas in Nebraska. Only 50 percent of the state has adequate to surplus top soil moisture.

Al Dutcher commented that due to the warmer than normal temperatures that have extended into November, there have been concerns of possible rust developing in the wheat that could present itself again this spring.

Streff mentioned that USDA-NASS will release its last weekly crop condition report for the year next week.

Comments

Mary Baker, Hazard Mitigation Officer with the Nebraska Emergency Management Agency, presented committee members with information on a UNL-championed project designed to develop and implement a decision-support model for drought planning using the Threat and Hazard Identification and Risk Assessment (THIRA) process. THIRA is a Federal Emergency Management Agency-mandated risk assessment process to identify threats and develop capability targets to inform planning and preparedness as well as assist in mitigation efforts. Funding for this project is provided by the National Oceanic and Atmospheric Administration.

Baker says the model is intended to provide communities in Nebraska a guideline for developing their own individual drought plan. The goal is to reduce risk for every community by giving them examples of how to mitigate drought conditions.

Mat Habrock, Assistant Director, Nebraska Department of Agriculture and CARC Chair, said he appreciated the work the stakeholders group was doing since he feels that it is important that each community customizes a drought plan that meets that communities specific needs.

Baker mentioned that her agency (NEMA) develops multiple hazard plans that are revised every five years. The next State Mitigation plan is due in May of 2019. This plan does not have a comprehensive drought plan but relies on other state counterparts to incorporate their mitigation plan into the State Hazard Mitigation Plan as a whole, in the form of an annex or chapter within the larger plan.

Mark Svoboda, Director, National Drought Mitigation Center commented that his office has been getting a lot of requests for drought plans. He said that the committee might want to take another look at the state drought plan that hasn't been revised for several years.

Habrock, said he had visited with Kenny Zoeller, Policy Advisor to Nebraska Governor Pete Ricketts, who said the Governor would like to put any revisions to the state drought plan on hold until a special legislative committee formed under LR455 presents its final report on a climate action plan to the legislature's executive committee. That report would be reviewed to decide what appropriate steps should be taken for any state drought plan revisions.

Meanwhile, Habrock read a report from Marcia Trumpke, Conservation Director for the Central Nebraska Public Power & Irrigation District submitted in lieu of her being able to attend the meeting. The email was as follows:

"I have two report items for the Update agenda;

1. I am representing Central on the THIRA Advisory Group. We will have data to share and should be able to help move the thought process forward as one of multiple perspectives on this important topic. I look forward to further participation with this group.

2. Lake McConaughy is in good condition; just 3 feet short of our maximum elevation of 3260' this time of year. We are releasing water from McConaughy for power production to keep the elevation stable and there is minor groundwater recharge underway on two of our three irrigation canals. The large Wyoming Reclamation storage units (Seminoe, Pathfinder and Glendo) on the North Platte River are collectively 690,000 AF short of capacity today or 76 percent, 84 percent and 44 percent of capacity respectively). A "normal" spring runoff from snowpack is around 1,000,000 AF and of course temperature determines the day and nighttime rate of the flow. With both an ample supply of storage water in Nebraska and Wyoming and drought indicators coming into play, we will monitor snowpack conditions, upstream storage capacity and basin precipitation, both up and downstream of McConaughy closely to determine best use and conservation of water. We operate the Central system in close coordination with NPPD. The spring runoff may keep Cory (CNPPID engineer) quite busy this year as the elasticity of the system decreases when storage increases but our monitoring and water gate systems are excellent and agile enough to handle whatever he might encounter this spring. A normal to above normal South Platte snowpack may also have flood potential from the city of North Platte to points downstream, again depending on temperature and rate of flow.."

Other comments made by committee members included:

Barb Cooksley, rancher, said her area (Anselmo, Nebraska) had received just over 21 inches of precipitation for the year which was right at the average. They received almost an inch every week in July leading to extensive grass growth, much of which remains in the pastures. With recent drier weather and as much as three-foot high grass, that area is now looking at a high fire danger index.

Howard Isaacs, Administrator for the Office of Drinking Water and Environmental Health in the Department of Health and Human Services, commented that one of his department's challenges continues to be keeping people mindful of drought mitigation during wet periods as we have seen in much of Nebraska this past year.

Ashley Mueller, Disaster Education Coordinator with the University of Nebraska Extension, also mentioned the challenges of trying to get producers to get engaged in drought mitigation. The key is to get producers to look at making long-term management decisions. Mueller mentioned that during Husker Harvest Days, she and other staff members were able to ask many producers their biggest concerns in regards to climate and the answers were usually drought, strong weather events or hail.

Brian Fuchs mentioned that the bi-annual U.S. Drought Monitor Forum will be held in Rapid City, South Dakota on April 3-5, 2017. There will be no registration fee to attend. The forums are used to hear from stakeholders about the U.S. Drought Monitor and to provide an opportunity to discuss ways to improve the U.S. Drought Monitor map and process to make the map each week. More information will be available in early 2017 and will be found on the webpage of the National Drought Mitigation Center (drought.unl.edu).

Meeting adjourned at 11:02 a.m.