CARC Meeting Minutes
Tuesday, June 28, 2016
9:30 a.m. 901 Hardin Hall East Campus
Meeting called to order at 9:34 a.m.

In Attendance:
Committee Members: Mat Habrock (chair), Nebraska Department of Agriculture; Mary Baker, Nebraska Emergency Management Agency; Dr. Michael Hayes, National Drought Mitigation Center; Dr. Rick Rasby, University of Nebraska Extension; Dr. Shuhai Zheng, Nebraska Department of Natural Resources; Dana Divine, UNL Conservation and Survey Division; Howard Isaacs, Nebraska Department of Health and Human Services

Staff and Audience: Brian Fuchs, National Drought Mitigation Center; Al Dutcher, Associate State Climatologist; Steve Roth, Nebraska Department of Agriculture; Sarah Heidzig-Kraeger, Farm Service Agency; Nate Blum, Office of Congressman Jeff Fortenberry; Neil Dominy, USDA/NRCS; Craig Derikson, USDA-NRCS; David Bracht, Nebraska Energy Office; Boone McAfee, Nebraska Corn Board; Jack Daniel, retired, DHSS; Scott Sprague, DHHS-PDW; Marcia Trompke, CNPPID; Neil Moseman, Office of U.S. Senator Deb Fischer; Jason Lambrecht, USGS; Nick Streff, USDA-NASS

Committee Chair Mat Habrock opened the meeting.

Minutes from the Nov. 17, 2015, 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

Drought Conditions

Fuchs first gave an overview of the entire U.S. stating that a year ago (June 2015) the driest areas in the country were in the western third of country, particularly in California and then extending north to the Canadian border and east to the Rockies. There were only pockets of abnormally dry to moderate dry conditions across the rest of the country.

Looking at the map of the U.S.at the last CARC meeting in Nov. of 2015, little had changed from the June 2015 map with the drought continuing in the western third of the country. But an expanding area of abnormal dryness and moderate drought conditions was developing in areas of Kansas, Missouri, Oklahoma, Arkansas and Illinois.

The current national map (June 2016) showed some overall improvements in drought conditions compared to the Nov. 2015 map but extreme drought conditions continue in the central portion of California.

The three-month drought monitor class change map showed improvements across much of the country with a positive improvement from one to three classes of drought in several areas. In Nebraska, there has been a degradation of one to two drought classes in some small areas of the state, primarily in the extreme northwest and south central/southeast portions of the state.

In presenting the High Plains drought monitor map for June 2016, Fuchs noted that 5 percent of the region has drought conditions. That area is located in far western South Dakota and northeast Wyoming. There are some extending areas of abnormally dry conditions scattered across the High Plains region making up a total of 19 percent of the area.

Drought monitor maps for Nebraska comparing June 2015 to 2016 showed relatively small areas of abnormally dry to D1 conditions for this time of year. The total area of D1 was 2 percent of the state last year compared to 1 percent this year.

The 30-day chart for normal precipitation for the High Plains region showed that most areas were 50 percent below normal precipitation for the period. Scattered thunderstorms in the past 30 days provided some relief in a few areas of the region.

The 60-day chart for normal precipitation for the High Plains demonstrated that there was an influence from a wet May for much of the region keeping it close to or above normal precipitation for the time period. However, areas of Wyoming, South Dakota and Minnesota that are beginning to show drought signs had significantly below normal precipitation in the last 60 days.

In the last 90 days the region was mostly above normal precipitation but again parts of Wyoming, South Dakota and Minnesota were still 50 percent below normal precipitation.

For the calendar year beginning Jan. 1, 2016, much of the region has recorded above normal precipitation except for those areas of Wyoming, South Dakota and Minnesota outlined previously.

The evaporative stress (moisture lost in plants and soil) chart again demonstrates the issues forming in the Black Hills areas of Wyoming and South Dakota. It also showed that parts of the eastern Corn Belt are also starting to see this same stress. There were indications that areas of northwest and southeast-central NE have stress to plants due to evaporation that is developing in those areas as well.

Soil moisture deficit is picking up in southeast Kansas and central Missouri, while Nebraska has been holding its soil moisture well.
The 30-day drought outlook indicates little additional drought development (this does not include abnormally dry conditions) through the end of September. However, the current dry conditions in Wyoming and South Dakota are expected to continue.

Fuchs said that charts of ocean temperatures indicate that we are transitioning out of a strong El Nino event and there is a 75 percent chance that we will transition into a La Nina event but it is difficult to predict the strength (mild, moderate or strong) of that event. A La Nina typically brings with it below normal temperatures and below normal precipitation. The effect on Nebraska's weather from a La Nina will depend where the jet streams set up this fall.

Nebraska Water Supply Update

Fuchs presented a chart of the historic pool levels for Lake McConaughy showing that the current level is at 96.7 percent of full, unusually high for this time of year. Last year at this time the level was at 85.1 percent of full pool. The high pool level is a result of above normal temperatures in April causing a rapid snow melt in the mountains above the Platte River basin where the snowpack was well above normal. Adding to the amount of moisture, were heavy rains that occurred both in WY and areas in Nebraska that feed in to Lake McConaughy. Fuchs mentioned that the lake will need to be drawn down five feet by Oct. 1 of this year.

U.S. Army Corps of Engineers, which assumes management of Glendo Reservoir in Wyoming from the U.S. Bureau of Reclamation once the volume of water in the lake reaches the flood pool, is beginning to store additional water in the flood pool to reduce downstream impacts along the North Platte River.

Glendo Reservoir's flood pool is currently about 20 percent full, leaving space to store additional inflows expected in the near future. Pathfinder Reservoir is currently spilling excess water over the dam's Spillway and the snowmelt above Pathfinder and Seminoe Reservoir is beginning to accelerate, so there remains plenty of water yet to come downstream.

The Central Nebraska Public Power and Irrigation District (NPPID) is working with local, state and federal agencies to address issues caused by high water in the Platte Basin. It appears that flows below Kingsley Dam have peaked, he said, unless there is a rapid change in the rate of snowmelt. The late spring rain and snowfall, as well as cooler than normal temperatures in the mountains, have combined to produce a really different year in terms of the timing of the snowmelt and conditions in the basin.

The 14-day average streamflow chart shows the majority of Nebraska's rivers and streams are at normal levels except a few areas above normal in central Nebraska. A couple of streams in the extreme southwest corner of the state are chronically low for this time of year.

Levels of the small reservoirs along the Republican River basin have all increased from last November (last CARC meeting) so more water is being held back in those areas. Current amount of water stored at Harlan County reservoir is 30 percent higher than last November. The increased reservoir levels in the Republican River basin are due to the impact of seasonal run-off.

In closing, Fuchs mentioned that there are currently large fires taking place in southeast Wyoming and could spread to the Black Hills in South Dakota due to continued dryness in those areas. Because of rapid range growth this spring due to ample rain, there is a lot of fuel available for those fires. Fuchs said the same situation could take place in northwest Nebraska if dry conditions persist in that area, so it bears watching.

Fuchs said that they will be monitoring irrigation impacts on Nebraska reservoirs as the season progresses into the hot summer months. He said we have been fortunate to have two good winters upstream in the mountain areas that have provided ample water for the Platte River basin.

Nebraska Weather/Climate Update
Presented by Al Dutcher, Nebraska Associate State Climatologist

Dutcher said that the early spring in Nebraska was very wet and slowed down spring planting. There were also issues with severe weather including hail, flooding and tornadoes. The variance in weather events created a big spread in emergence stages of corn. He mentioned that some of the corn plants that were behind growth stage, didn't canopy soon enough and that created more evaporative stress on the areas where there was bare ground. He also mentioned in cases where there was too much rain early, the roots were unable to get deep enough to support the above-ground crop growth.

Looking at the past 90-day national precipitation trend showed that Nebraska was in fairly good shape but some areas (Missouri, southern Iowa and western Illinois) of the Eastern Corn Belt were seeing physical plant stress.

The 30-day national precipitation chart shows below normal precipitation and thus stress is showing up on crops in general. The current patterns indicate a continuation of hot and dry weather so some areas will likely be depicted as abnormally dry (D0), with the northern Panhandle, south central, and southeast Nebraska the most likely area to experience an upgrade to moderate drought conditions before the end of the 2016 agricultural production season. The post pollination and grain-fill periods are the most immediate concern before attention becomes focused on fall soil moisture recharge.

Dutcher described the national temperature map as "seeing July temperatures on a June map" since temperatures nationally have been primarily above, to significantly above, normal.

The current ocean surface temperature map indicated that the first signs of La Nina are indicated by areas that are cooling off in the eastern and central Equatorial Pacific. Dutcher said the big question is what will be the strength of the La Nina? He is predicting a moderate to strong La Nina event.

The July-September climate outlook is calling for warmer temperatures and equal chances for below or above normal precipitation weather pattern for Nebraska.

Implications of what kind of impact La Nina will have in 2017 will be dependent on how jet streams set up in the next two months. The 2012 drought in Nebraska was worsened by the fact there was not much moisture carryover from the previous year in 2011. Going into 2017, Nebraska will have a better carryover of moisture from the previous year than it did in the 2012 drought year.

Dutcher mentioned that one side effect of La Nina this winter could be possible flooding in the Platte River basin. This could happen if the expected lower than normal temperatures from La Nina resulted in excessive ice pack accumulation on the Platte River that could enhance flood potential downstream of McConaughy if they are forced to release water due to high reservoir levels and/or predictions for above normal mountain snow melt next spring.

The latest three-month outlook for Nebraska indicates above normal temperatures for all but the southeast corner of the state which has equal chances for above or below normal temperatures. Equal chances for above or below normal precipitation is expected for the large majority of the state during that same time period.

Dutcher added that the condition of Nebraska's soil moisture this fall will help predict what will happen in next year's (2017) growing season.

Crops and Hay Stocks Report

Presented by Nicholas Streff, USDA-NASS

Streff reported that Nebraska's hay stocks as of May 1 were in good shape, 16 percent above the tonnage in 2015.

Based on June 1 conditions, Nebraska's winter wheat crop is forecast at 62.5 million bushels, which is up 36 percent from last year despite a considerably less number of wheat acres being planted in 2016 compared to 2015. The increase is due primarily to the record 50 bushels per acre yield forecast for Nebraska. In addition, there was a sharp increase in the percentage of wheat acres expected to be harvested this year (93 percent) compared to a year ago (81 percent).

The current soil moisture progress for Nebraska shows a 15 percent decrease in adequate top soil moisture compared to the same time last year. Adequate subsoil moisture is 3 percent above June 2015 levels.

Streff also provided handouts of the USDA current crop conditions for Nebraska which will be available on the CARC website.

Comments

Committee representative Dana Divine with UNL's Conservation and Survey Division reported that surveys have shown a rise in water level in wells in several areas of the state. Some areas saw a rise of nearly half a foot in well water levels from 2014-2015. She mentioned that Box Butte and parts of the Republican River basin are typical dry and have chronic declines in underground water levels. Lincoln County had a significant drop in water levels due to the NCORPS water pumping that takes place to meet the Republican River Compact requirements.

Sarah Heidzig-Kraeger with Farm Service Agency mentioned that her office has received some reports from producers of livestock losses due to hot weather, but the total number of losses has not reached the threshold yet to declare a disaster area.

Neil Dominy with USDA/NRCS mentioned some of the sign-up dates for conservation programs implemented by his office.

Howard Isaccs with DHHS, mentioned that people typically don't think about what may happen to public water systems during droughts when such conditions don't exist, but that it is important to look ahead and think of water conservation.

Associate State Climatologist Al Dutcher mentioned that he was recommending that some additional areas of Nebraska be added to abnormally dry or D1 categories on the Drought Monitor updated June 30.

Meeting adjourned at 11:23 a.m.