

Nebraska Ag Climate Update

March 4, 2016

Current Conditions

The story heading into the meteorological spring has been the warm, and fairly wet, February and most of the winter season. Many locations in Nebraska had their top 10 warmest and top 10 wettest winter season on record. This has led to above normal soil moisture and soil temperature conditions.

The current soil moisture regime for Nebraska is very positive for most of the state. Areas in northeast Nebraska are seeing much above normal soil moisture values (Figure 1), but most of the state is near to slightly above normal. This will hopefully provide adequate moisture for early pasture growth, wheat production, or seed germination later in the spring. Many locations in Iowa, Illinois, and Wisconsin have very saturated soils and will need significant drying before field operations can begin.

Soil temperatures have been tracking above normal for most of the winter for a large portion of the state, especially northern and west central Nebraska. This is due to above normal temperatures, increased soil moisture, and timely snow cover that kept soil temperatures from dropping too far during the winter. Current soil temperatures (Figure 2) show temperatures in the low 40s in portions of southern Nebraska, which is not far from recommended germination temperatures for some agronomic crops (Table 1).

Soil Moisture Percentile

3-1-16

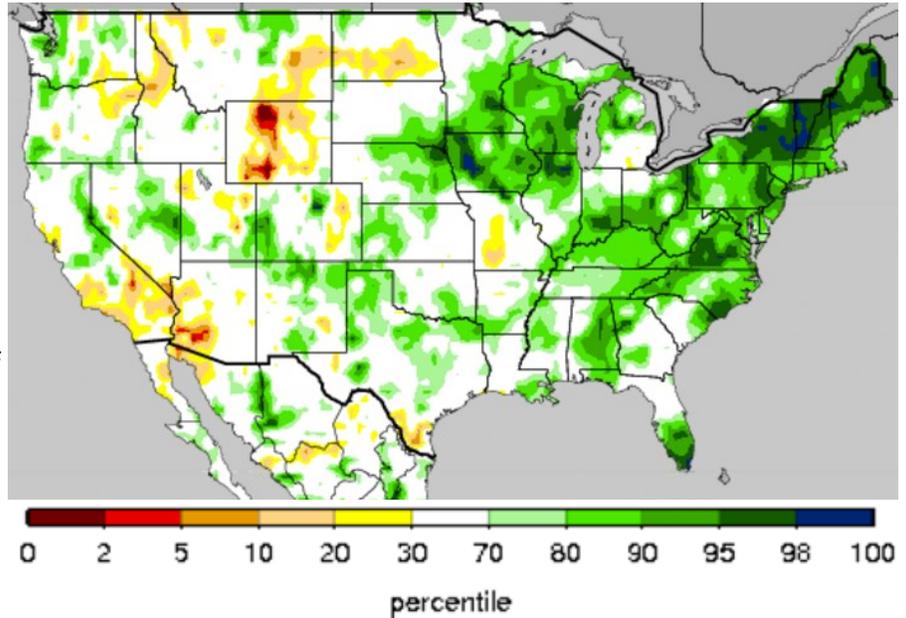


Figure 1. Soil moisture percentile on March 1, 2016 with reference to 1916-2004 average. Map from NIDIS U.S. Drought Portal—<https://www.drought.gov>

Soil Temperature

03-01-2016

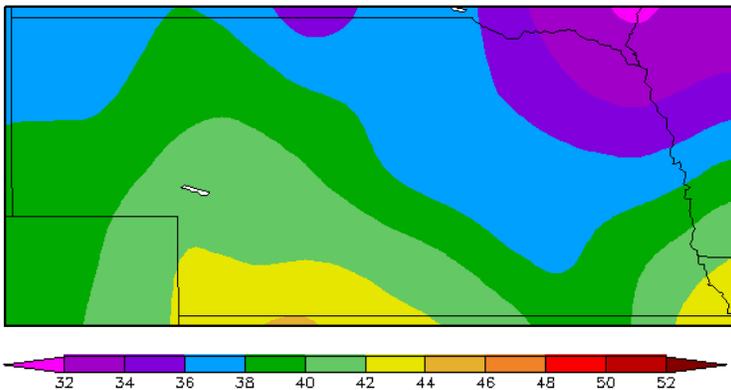


Figure 2. Soil temperature at the 4 inch depth on March 1, 2016. Map from CropWatch—cropwatch.unl.edu

Table 1. Recommended minimum soil temperature needed for germination of selected crops.

Crop	Temp (°F)
Spring Wheat	37
Spring Barley	40
Rye	41
Oats	43
Alfalfa	45
Spring Canola	50
Sugarbeet	50
Field Corn	55
Soybean	59
Sunflower	60
Millet	60
Sorghum	65
Dry Bean	70

Table from NebGuide - G2122 - Soil Temperature: A Guide for Planting Agronomic and Horticulture Crops in Nebraska.

Looking Forward

After a fairly cool week, it is nice to know that warm temperatures are on the way, and they might stick around for a while. This weekend will feature temperatures climbing into the 60s and 70s as high pressure builds in over the Central Plains. There is a small chance for precipitation and even a slight chance of seeing an isolated thunderstorm for the end

of the weekend and start of the work week but chances remain low.

A ridge will continue to move through the middle part of the U.S. early next week with troughs over the east and west coasts. The trough over the west coast will slowly move towards the middle of the country, but will deepen and move south before ejecting across the central plains. The timing and strength of the system is still highly variable, but will move through the middle of next week. This will probably produce some significant precipitation and possibly severe thunderstorms; however, most of this moisture may be south and east of Nebraska. The models show a cut-off low over southern Texas towards the end of next week that will probably keep temperatures moderate and precipitation at a minimum.

The pattern of weather systems from the southwest U.S. may continue over the next couple weeks and is the reason behind the cool temperatures expected over the western U.S. in the 8-14 day outlook (Figure 3) from the Climate Prediction Center. This outlook still gives Nebraska increased chances for above normal temperatures for that time period. As these systems move through the area, we can expect a decline in temperatures, but the models show a quick rebound to fairly warm temperatures. With all that said, our weather pattern may be highly variable for at least the next couple weeks and the precipitation will also be hit or miss across our area.

The monthly forecast for March put out by the CPC gives increased odds for above normal precipitation for Nebraska and much of the central and southern plains (Figure 4). This forecast is due to the typical El Nino pattern for March in our area, as well as the near term forecast for multiple weather systems passing through the middle part of the country. Looking at the short-term models, there is a good chance that we will have below normal precipitation during the first half of March, so if the upcoming systems don't start to produce some precipitation in Nebraska, we could see some early drying in the region and the monthly outlook may not verify.

There is also a potential flood risk in extreme southeast Nebraska on the Missouri River due to the current soil moisture, near-to-above normal stream flows, and the expectation of above normal precipitation in March. The risk is minor, as far as flooding impact, but something to think about if you have fields in the low lying areas.

The three month outlook from the CPC continues to show above normal precipitation for most of Nebraska, but this may be strongly impacted by the precipitation expected in March. There is some concern that we could see some drying in April and May in Nebraska; however, this may not be all bad for field operations, as long as temperatures don't get extremely warm.

Tyler Williams
Nebraska Extension Educator in Lancaster County
lancaster.unl.edu
twilliams2@unl.edu
 Twitter: @tylerw_unl
<http://agclimatenebraska.weebly.com/>

8-14 Day Outlook

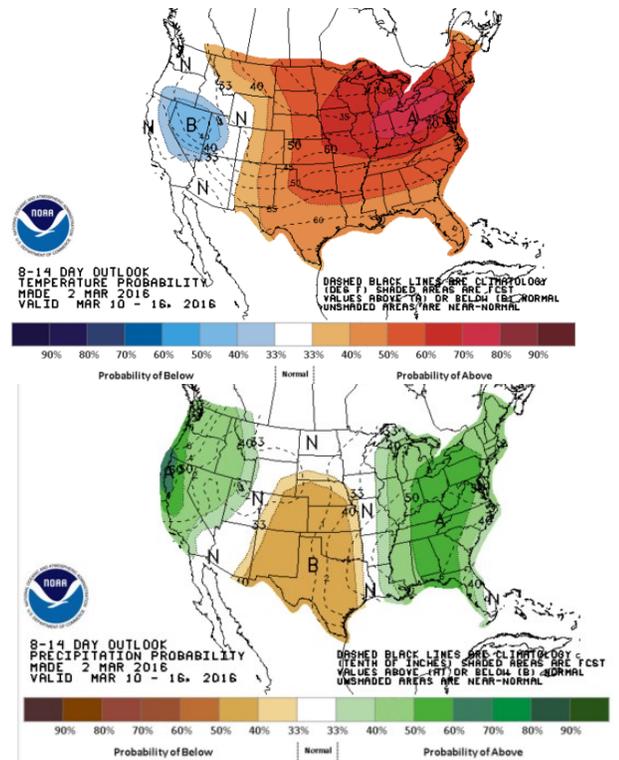


Figure 3. 8-14 Day temperature (top) and precipitation (bottom) outlook for March 10-16 from the Climate Prediction Center—cpc.ncep.noaa.gov

One-Month Outlook

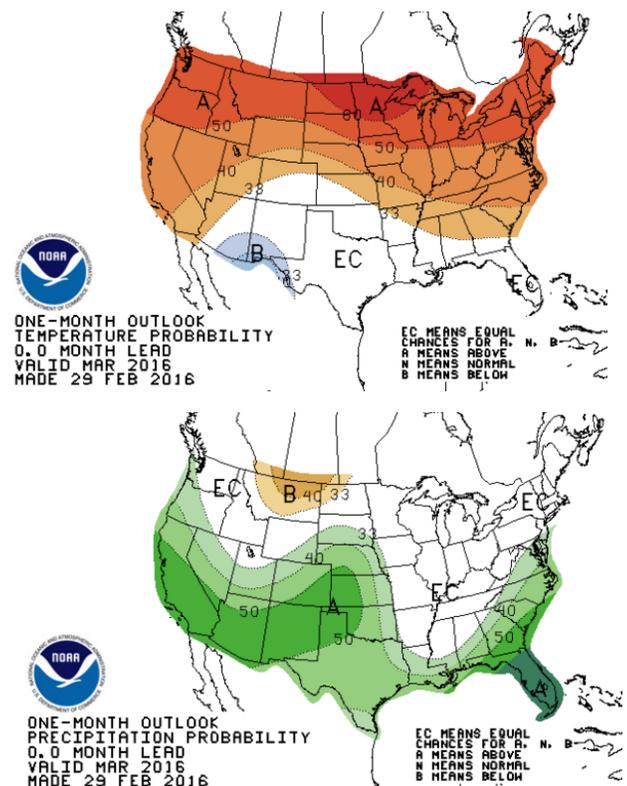


Figure 4. One-month temperature (top) and precipitation (bottom) outlook for March from the Climate Prediction Center - www.cpc.ncep.noaa.gov/