

South Dakota Drought Tool

User's Quick Guide

The South Dakota Drought Tool can be accessed at the following location:
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/sd/technical/landuse/pasture/>

Click on the



icon.



Drought Tool Instructions



SD Drought Tool

South Dakota Range Planning Tools



After you click on this icon, a dialog window similar to the one above will appear giving you the options to “Open”, “Save”, or “Cancel”. It is recommended to choose the “Save” or “Save As...” button, and save the Excel file to your local computer and then run it from there. However, you can choose the “Open” button as well and run the program through the internet connection. Also, each time you use it, just close the file without saving. This should keep the file “clean”.

There are three main screens, plus the summary page. The next three pages show each screen with instructions below. A symbol (1) will appear on the picture of the screen – these numbers correspond to the stepped instructions below the screen.

Screen 1

Be sure to enable macros before performing analysis. Data retrieval may take up to a minute or more depending on your internet connection.

South Dakota Drought Tool

Drought will always be a challenging component of the livestock industry. While we cannot control drought, we can capitalize on our resources in good years, and plan to conserve in drought years. Drought has long term effects, and takes long term recovery. Since 1940, drought historically occurred an average of 21% of years in the northern Great Plains.

The South Dakota Drought Tool is a tool designed to monitor the current and near future drought status of grasslands specific to your operation and assist making management decisions in drought years. Having a drought plan will help sustain your livestock operation for years to come.

Choose your County, nearest weather station, and click "Next" to continue.

Month Day Year
1 Now Now Now
2 Choose County
3 Choose Station
4 Next

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USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Station names in all caps are NOAA NWS COOP climate stations.
Station names with an ID (like SD-BD-1) in parentheses are CoCoRaHS stations.
Other station types are identified after the name (i.e., RAW5, SDSU Mesonet, SNOTEL).

Step 1: Select a date from which to run the analysis, or leave as "Now" to run from today's date. Selecting a date in the past may be helpful to compare today's conditions to past conditions.

Step 2: Choose the County in which you are interested from the drop-down list.

Step 3: Choose the climate station nearest to the area in which you are interested from the drop-down list. If you do not know the location of the climate stations in the selected County, click on the question mark below the drop-down list, and a map will appear showing the active climate stations. A "Back" button is provided on the map so you can return to Screen 1.

Step 4: When you are satisfied with your selections, click on the "Next" button to proceed to Screen 2.

Screen 2 – Precipitation assessment/adjustment



United States Department of Agriculture
Natural Resources Conservation Service

Local Precipitation

Back
Please Verify Local Precipitation data. Changes can be entered in the Precipitation Adjustment Table.** 3
Next

****Values that report as a 0.00 may not be accurate or data may be missing. Consider adjusting in th Precipitation Adjustment Table.**

Historic and short-term precipitation values for Beadle County *													
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Sum
Hist.-Ave.	1.15	2.19	2.81	3.53	2.60	2.26	0.80	1.47	0.72	0.56	0.52	0.62	20.23
2017/2018	0.77	1.18	1.34	3.04	3.40	1.78	0.97	1.78	0.08	0.50	0.38	0.96	21.18
2018/2019	1.96	2.29	1.39	2.53	1.71	1.34	3.37	1.88	0.65	1.18	0.79	1.09	20.18

Enter alternative or custom precipitation values here. Values entered overwrite automatic precipitation values.

Precipitation Adjustment Table													
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
2017/2018							0						
2018/2019													

References

<https://digitalcommons.unl.edu/extensionhist/1815/>

<https://www.rcc-acis.org/>

<https://www.cocorahs.org/>

<https://wrcc.dri.edu/>

<https://www.sdstate.edu/mesonet>

<https://www.wcc.nrcs.usda.gov/>

<http://drought.unl.edu/ranchplan/Overview.aspx>

Drought Management on Range and Pastureland
Applied Climate Information System
Community Collaborative Rain, Hail, and Snow network (CoCoRaHS)
Western Regional Climate Center - USDA Forest Service RAWS
South Dakota State University - Mesonet
USDA NRCS National Water and Climate Center
Managing Drought Risk on the Ranch - National Drought Mitigation Center
Kruse, R.E. 2002. Beef Cattle Management Decisions Relating to Drought In The Northern Great Plains.

Step 1: Briefly look at the data to see if it “makes sense” and to see if there are any “0” values that might indicate missing data. The “0” values are in red so they are easy to see, but may not necessarily be a missing value. That month may have had no measurable precipitation. Values in blue indicate data from your own weather station.

Step 2: If you collect your own precipitation data (which is recommended), or you have other sources which you feel are more reliable, you can enter that data for each month in the table here corresponding to the months in the table above. As you enter values you will see the values change in the table above.

Step 3: When you are satisfied that the precipitation values represent the conditions for the time and place you are analyzing, click on the “Next” button to see the results.

Screen 3 – Drought Status

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Drought Status

Back 7 Finish

Precipitation is not likely to be limiting, maintain current management.

Select future conditions for the July 1 peak production prediction: **6** Normal

Drought Status	
Drought status as of	2/28/2019
County Selection	Beadle
Weather Station	HURON WB AIRPORT
<i>This value represents a current status of estimated soil moisture conditions and potential production.</i>	1 99.0%
<i>This is the future prediction of the July 1 or peak production if future conditions are average.</i>	2 105.3%
<i>Hayland - this value represents the current status of the potential peak production of hayland.</i>	3 99.8%

Click for Drought Phase information

4 Current Drought Status

Phase 1	Phase 2	Phase 3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Normal	Risk	Drought

Precipitation Comparison*

5

Average High Temperature Comparison**

Step 1: This number represents the current drought status. When the tool is run in the winter and early spring, think of this as the current soil moisture conditions which will impact plant growth in the coming spring.

Step 2: When the tool is run from November through May, this number represents the predicted peak forage production as of July 1st. It is calculated based on the assumption of normal precipitation in the months leading up to July 1st.

Step 3: This value is the percent of normal hayland production. The other values are related to grasslands, but this number was recently added to show the impact of precipitation on hayland.

Step 4: This graphic represents the current drought status: normal, at risk, or drought. These categories pertain to the development of a drought plan, and will be discussed further on the next page.

Step 5: This is simply a graphical representation of the monthly precipitation in the previous 12 months, and the average monthly high temperature, both compared to the historic average (the red line). The temperature is provided here just for consideration to make further adjustments to the assessment.

Step 6: “What if” toggle – change to see the change in predicted value.

Step 7: Click on the “Finish” button to go to the drought planning page.

Screen 4 – Summary Page



Name

Today: 3/12/2019

Location

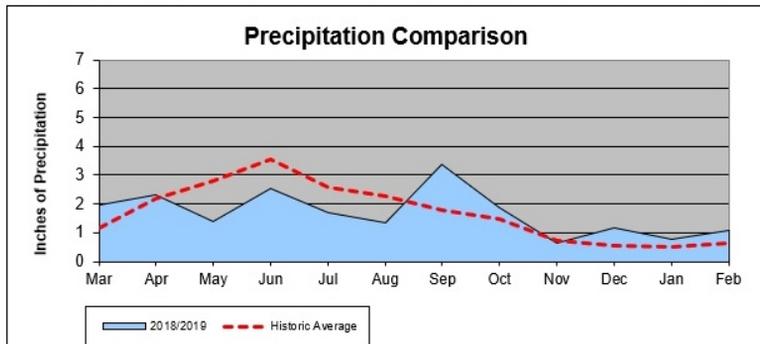
[Print Summary](#)

Drought Status: Phase 1 normal 1

Current Status (Percent of normal Production)	99.0%
Projected Status (Percent Peak Production)	105.3%
Suggested Percent of Normal Stocking	No Adjustment 2

Precipitation is not likely to be limiting, maintain current management.

% Norm Production	99%	Date	2/28/2019	County	Beadle	Precip station	HURON WB AIRPORT					
Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Hist -Ave	1.15	2.19	2.81	3.53	2.60	2.26	1.80	1.47	0.72	0.56	0.52	0.62
2017/2018	0.77	1.18	1.34	3.04	3.40	1.78	5.97	1.78	0.08	0.50	0.38	0.96
2018/2019	1.96	2.29	1.39	2.53	1.71	1.34	3.37	1.88	0.65	1.18	0.79	1.09



The summary page contains all the pertinent data from the previous screens and is formatted for printing. You can enter a name and location to keep for future reference, and the “Print Status and Summary” button 1 will print the formatted information.

Also included with this page is the Suggested percent of normal stocking” value 2. This number provides a recommended percent of normal stocking and can be used to aid in the development of a drought contingency plan.

To continue on with the development of a drought plan, simply page down to the drought planning section on this Summary page.

Drought Planning Section



Drought Contingency Plan

2/28/2019

Drought Contingency Plan

In the event of Drought Conditions, initiating a plan of action will alleviate stress on grazinglands, preventing a loss of production, vigor, and diversity in subsequent years. Create a customized drought contingency plan for your operation. The NRCS example drought contingency plan recommendations are also provided below.

Phase 1 Normal Status

Observe field conditions, forage growth rates, observable plant stress etc.

Save Drought Plan

Observations:

Phase 2 Risk Status

Take risk management actions to relieve plant stress

Save Drought Plan

Early culling/weaning of livestock:

Alternative feed/forages:

To develop your own drought contingency plan, fill out the sections related to each phase of a drought. Guidance for each phase is shown below this section.

When you are done entering your drought plan, click on the “Save Drought Plan” button. This will save your data and it will be reloaded the next time you open the Drought Tool. Again, when you are finished using the SD Drought Tool, simply close the file and select “Don’t save”. This should keep the SD Drought Tool “clean” for future use.