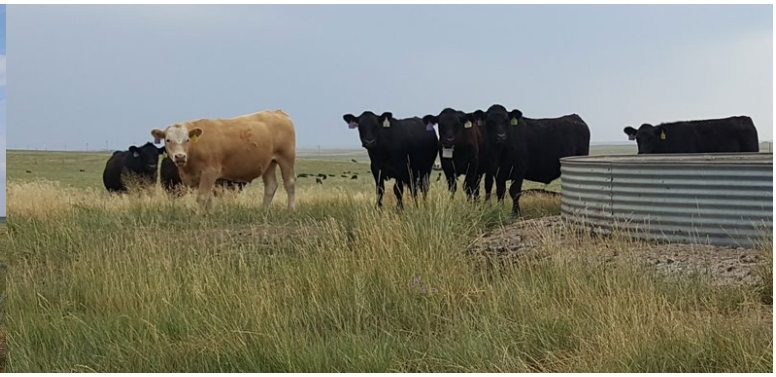


Grass-Cast: An *Experimental* Grassland Productivity Forecast

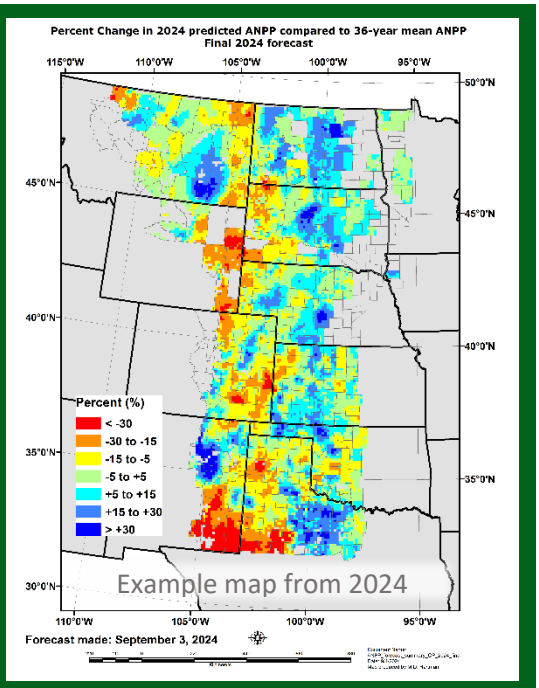
(look for it online in Spring & Summer!)

For livestock producers, Extension, NRCS, and other rangeland managers—a forecast of your grassland's total production for the growing season, across the Great Plains. https://grasscast.unl.edu/

How does it work?

Grass-Cast uses well-known relationships between historical weather and grassland production (lbs/acre). It combines current weather data and seasonal climate outlooks (from NOAA) with a trusted grassland model (*DayCent*) to predict total production for your local area, compared to its 36-year average.

Grass-Cast is an *optional* tool that managers can use to form a more-educated guess about the upcoming growing season. It can help inform the design of proactive drought management plans, trigger dates, stocking dates, and grazing rotations.



No Data

Range production is expected to be **30% lower (or worse)** this year than a county's 36-year average
15 to 30% lower production this year than a county's average
5 to 15% lower production this year than a county's average

} Could be a "poor" year, a "shortage" year

Production is expected to be **near-normal**, ranging from **5% lower** to **5% higher** this year than average

5 to 15% higher production this year than a county's average
15 to 30% higher production this year than a county's average
30% higher (or more) this year than a county's average

} Could be a "good" year, a "surplus" year

Producers and agencies should not rely on Grass-Cast as a sole source for making management decisions. Nor should they look at Grass-Cast just once during the growing season. The accuracy of Grass-Cast improves with time as the growing season unfolds, so it should be consulted every 2 weeks, when it is updated with newly observed weather data. Agencies are discouraged from using Grass-Cast as a sole source of information for setting stocking rates, determining turnout dates, or other aspects of lease agreements, allotments or permits.

For more information, visit **https://grasscast.unl.edu/**

A COLLABORATIVE EFFORT BY:

USDA

Colorado State University

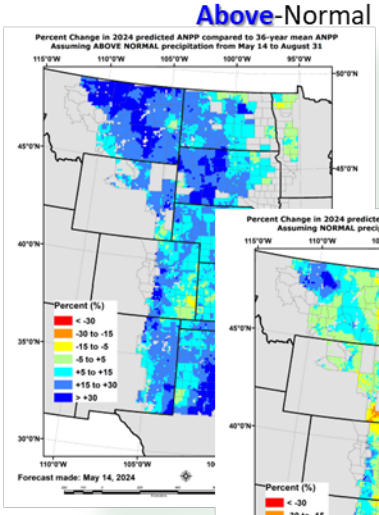
NDMC

THE UNIVERSITY OF ARIZONA

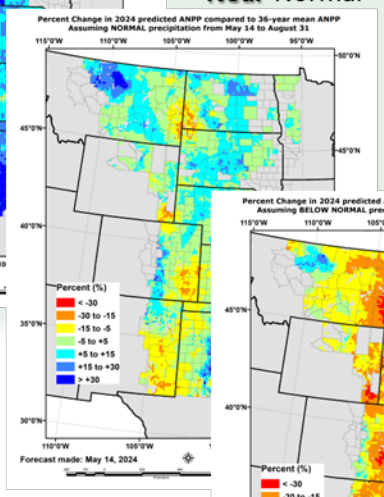
USDA Climate Hubs
U.S. DEPARTMENT OF AGRICULTURE

How much more or less grass will my area have if precipitation during the rest of the growing season is…

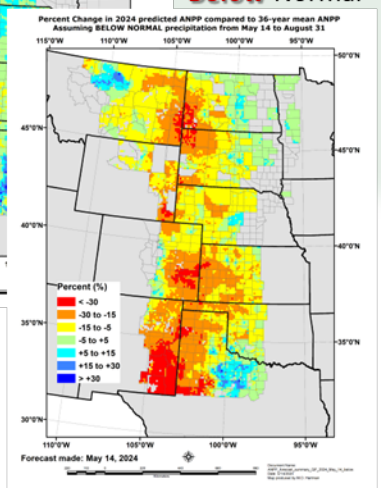
Above-Normal



Near-Normal



Below-Normal



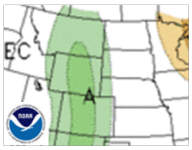
Why 3 different maps? Because forecasts are sometimes wrong! With 3 maps, you can explore 3 different **"What-if" scenarios:**

1) What if…your area receives ***above***-normal precipitation in **May-August**? How much *rangeland vegetation* might grow, compared to your area's 30+ year average? The top-left map shows this scenario (using 2019 as an example).
2) What if your area receives ***near***-normal precipitation? The middle map shows vegetation growth under this scenario.
3) What if your area receives ***below***-normal precipitation? Consult the bottom-right map.

The "Grass-Cast" Procedure

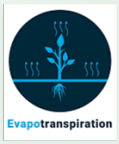
1. **Observed** weather + **Forecasted** weather

DayCent model predicts

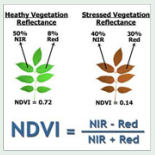


2. **Evapotransp.** for the growing season

Correlates to:

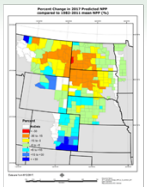


3. **Greeness** for the season



Correlates to:

4. **Lbs/Acre** of Veg for season



For those wanting to "**look under the hood**," this diagram shows how the Grassland Productivity Forecast or "Grass-Cast" map is made.

For details, visit https://grasscast.unl.edu

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Agricultural Research Service
Climate Hubs

NDMC NATIONAL DROUGHT MITIGATION CENTER
AT THE UNIVERSITY OF NEBRASKA-LINCOLN

April 2025