

Triggering Management Decisions Before a Drought



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Today's plan

- *Drought Planning Trigger Dates* (beef.unl.edu, Brad Schick)
- Weather-past and forecast
- Drought affects plants how?
- Reduce stocking rates-what does this look like?
- Trigger dates: what to look for and management options
- Resources



Disclaimer

Options presented today will not work for everyone

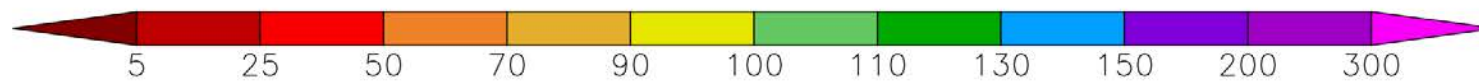
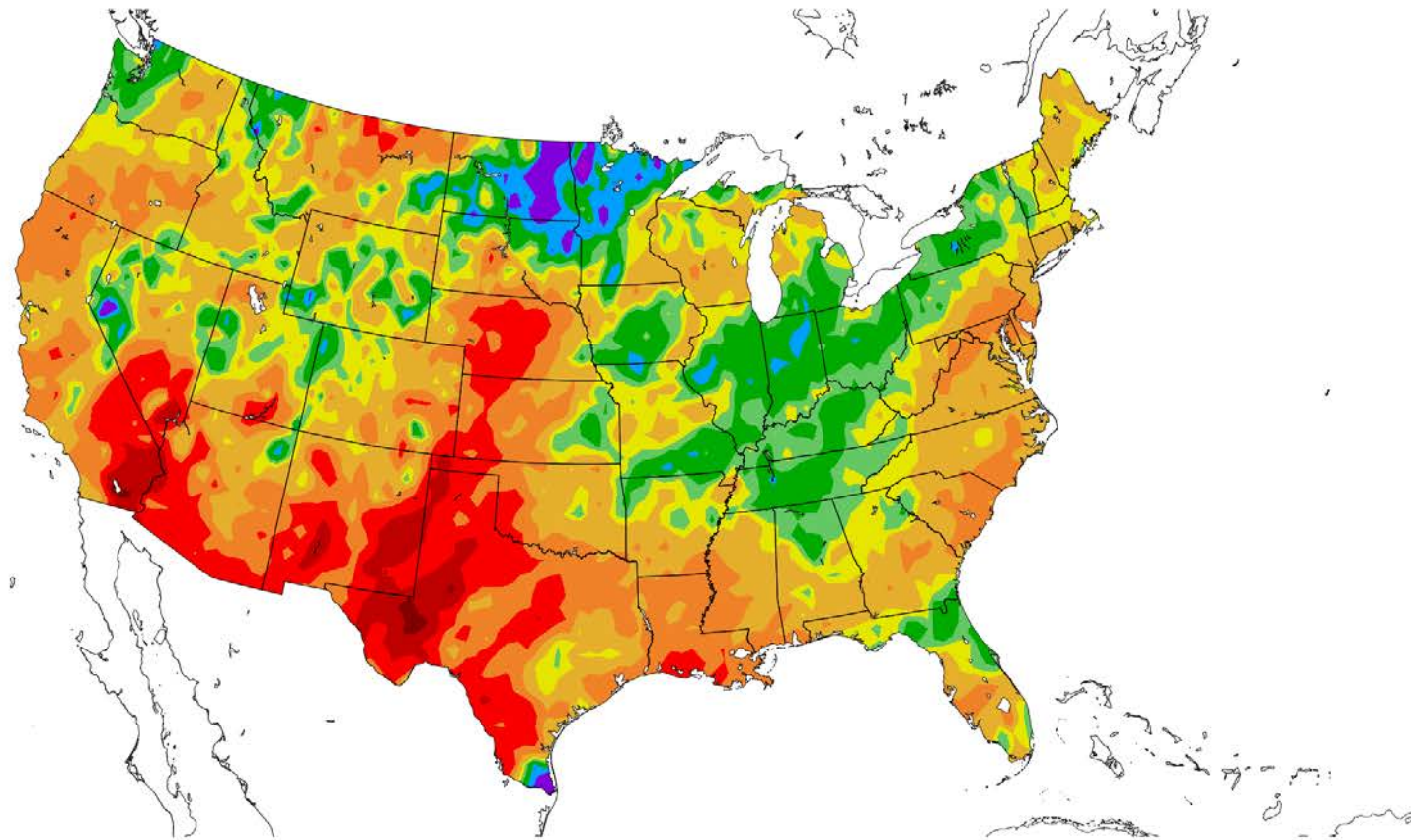
What are your ranch goals?

What are your resources?

If we keep talking about it, maybe it'll rain

Percent of Normal Precipitation (%)

10/1/2021 – 3/31/2022



Generated 4/1/2022 at HPRCC using provisional data.

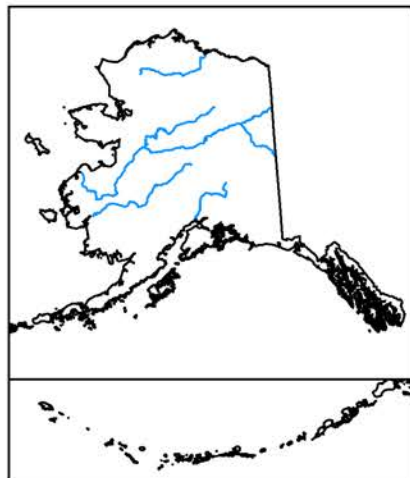
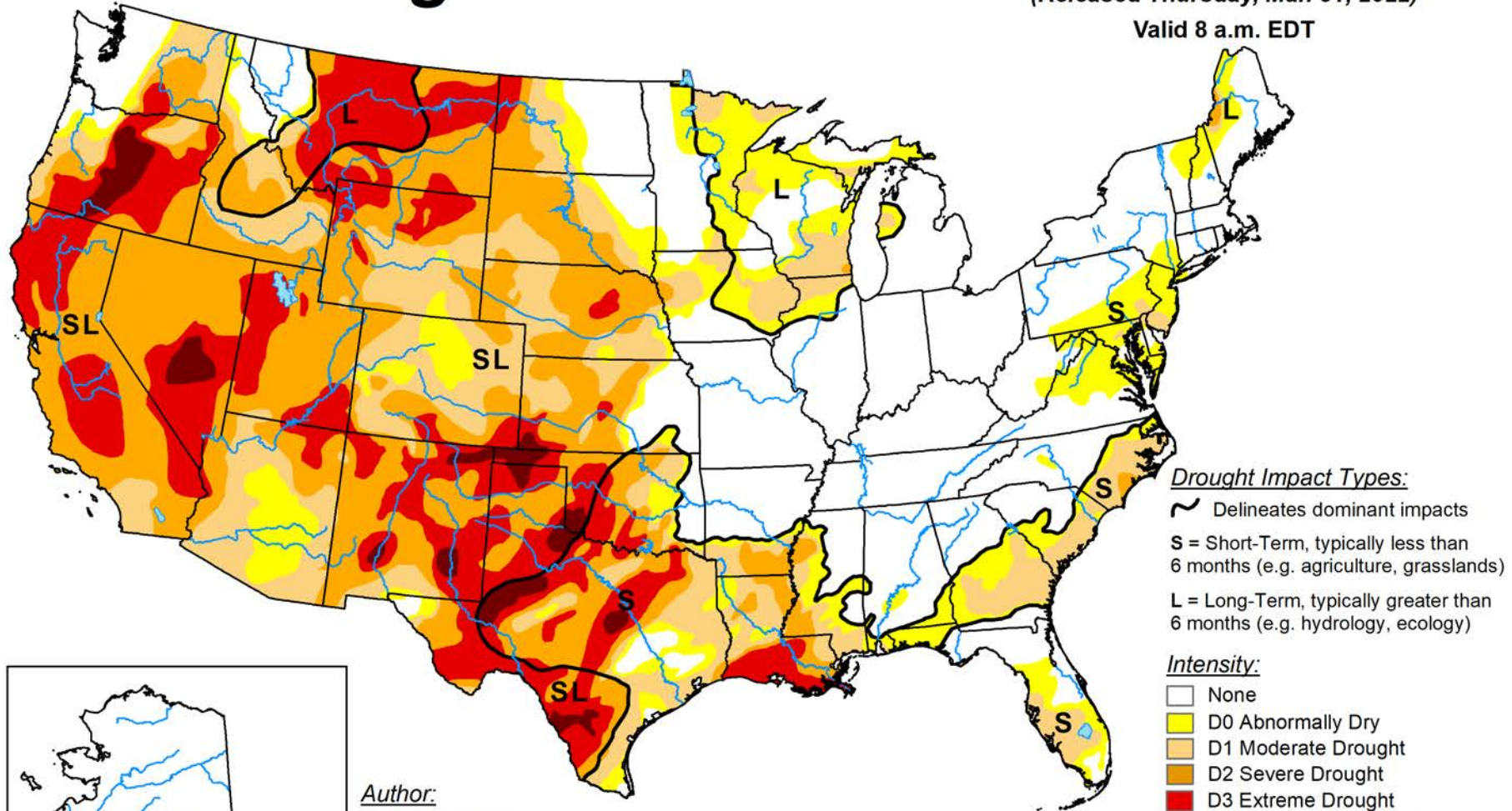
NOAA Regional Climate Centers



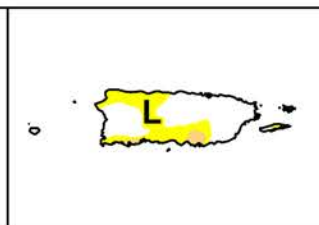
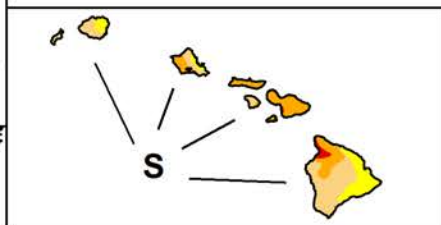
U.S. Drought Monitor

March 29, 2022
(Released Thursday, Mar. 31, 2022)

Valid 8 a.m. EDT



Author:
Deborah Bathke
National Drought Mitigation Center



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



droughtmonitor.unl.edu

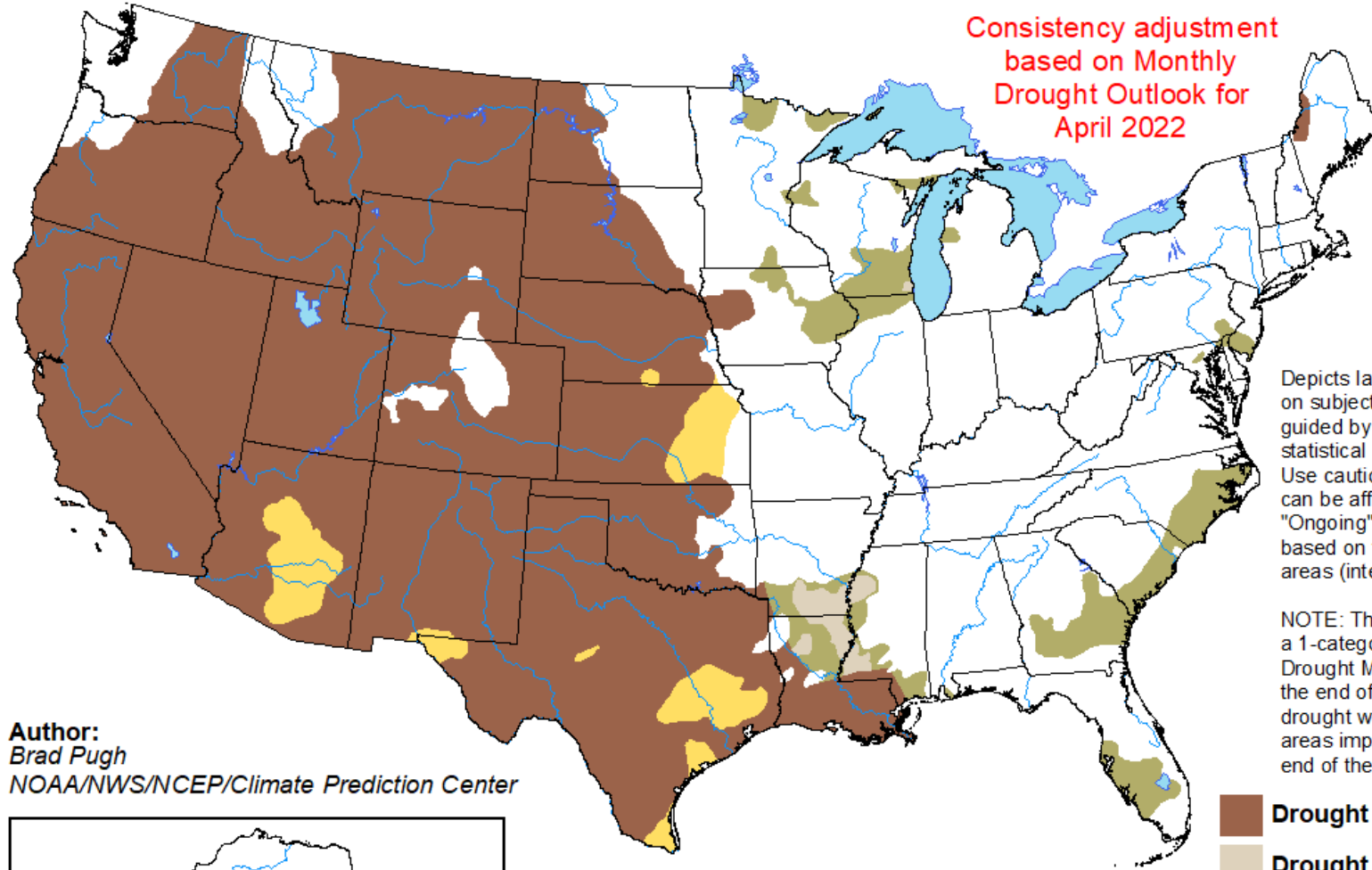


U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for April 1 - June 30, 2022
Released March 31, 2022

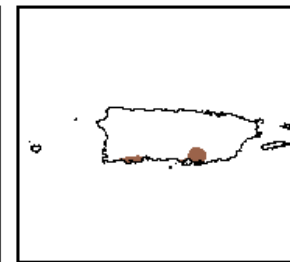
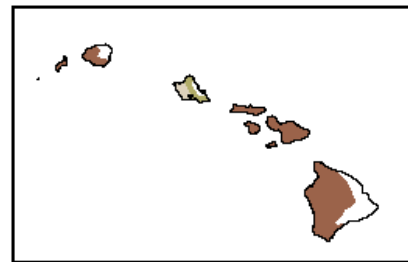
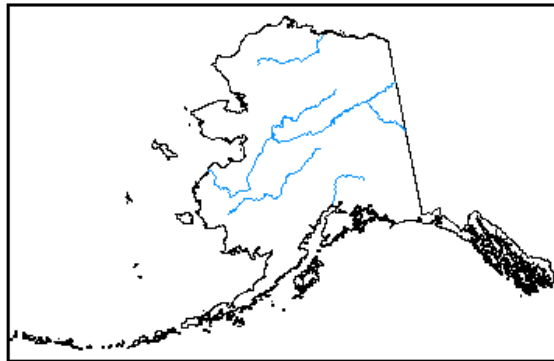
Consistency adjustment
based on Monthly
Drought Outlook for
April 2022







Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center



-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely



<http://go.usa.gov/3eZ73>



Proactive > Reactive

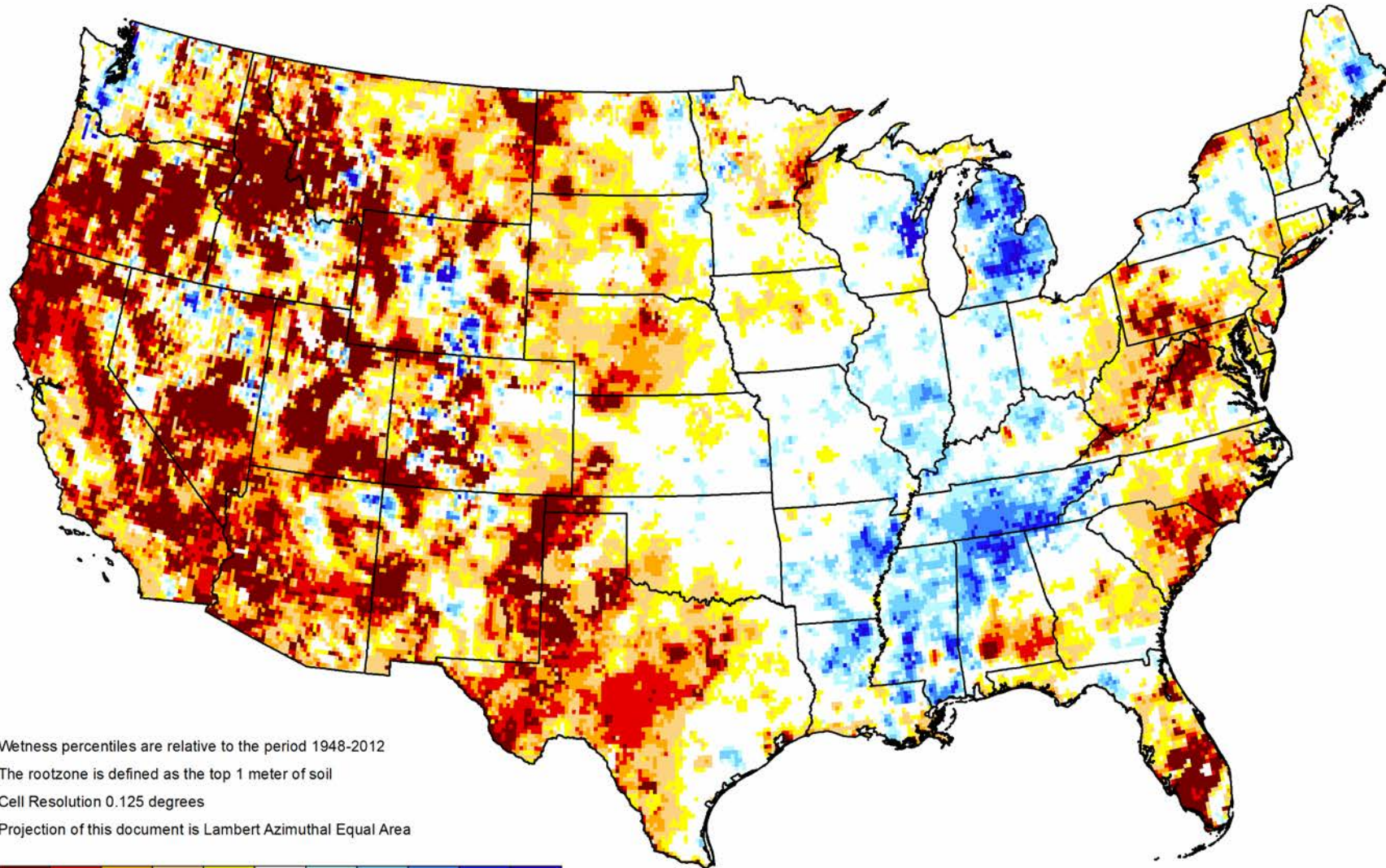
- Planning provides more options than reacting
- Inventory animals and feed resources



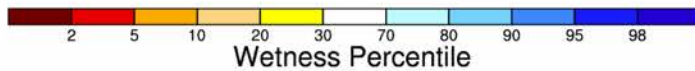


GRACE-Based Root Zone Soil Moisture Drought Indicator

March 28, 2022



Wetness percentiles are relative to the period 1948-2012
The rootzone is defined as the top 1 meter of soil
Cell Resolution 0.125 degrees
Projection of this document is Lambert Azimuthal Equal Area

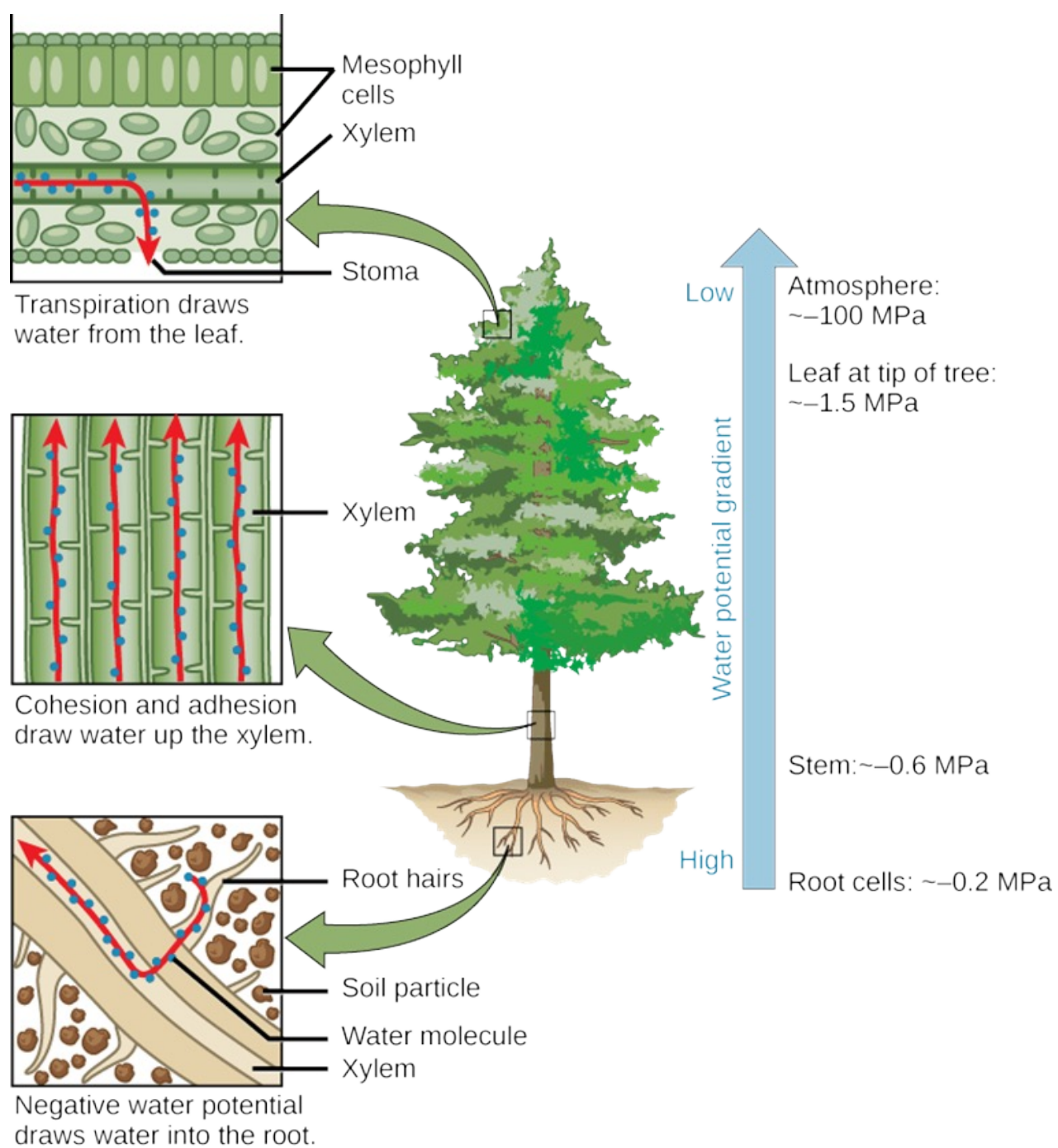


<https://nasagrace.unl.edu>



How do plants work?

- As drought progresses soil becomes drier holding onto water more tightly
- If we don't feed cows enough protein, they metabolize muscle. Same thing with plants using water & carbohydrates.





Roots

- When plants go dormant, due to drought, they use carbohydrates in roots
- Root mass shrinks, fewer roots to take up water after drought
- Overgrazing does the same thing
- If compounded by overgrazing in drought it can have long-term plant health impacts

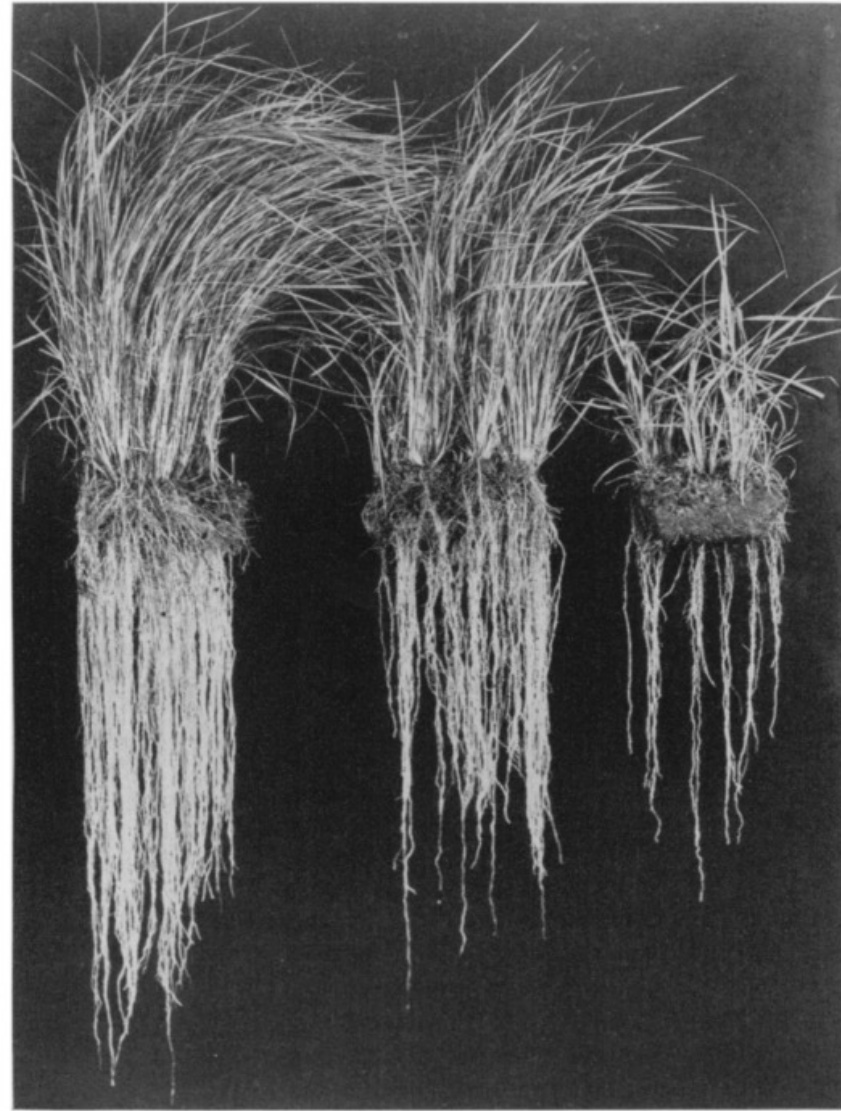
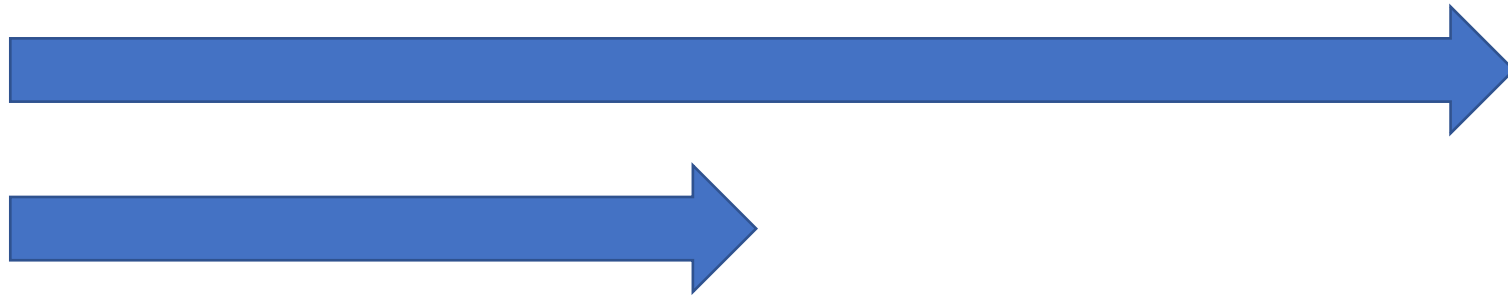


FIG. 7. New growth of roots and tops of little bluestem six weeks after transplanting the sods on May 17. The sods were each 6 inches long, 4 inches wide, and 3 inches deep but taken from a high-grade, mid-grade, and low-grade pasture, respectively.

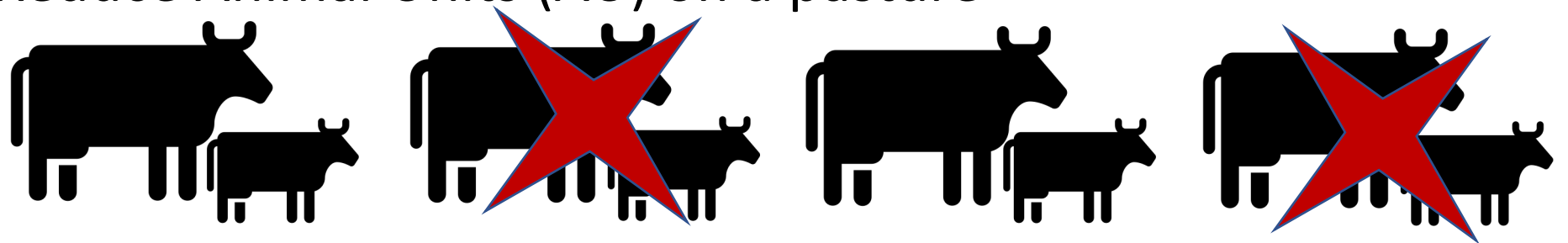


Reduce Stocking Rates

- Reduce grazing length on a pasture



- Reduce Animal Units (AU) on a pasture



Smaller AU's



1 Animal Unit (AU) = 1,000 lb animal
1 AU consumes 26 lb of dry forage a day



Trigger Dates

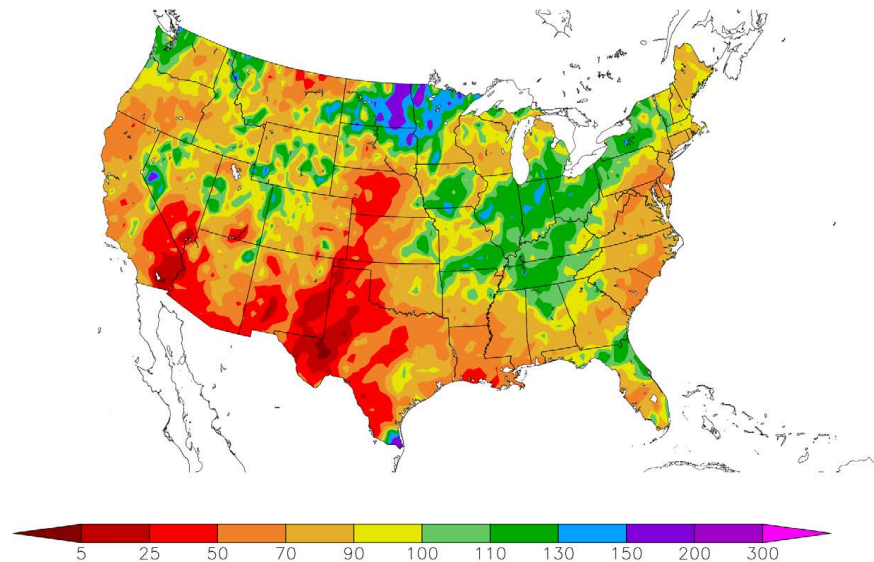
- April 1
- April 15 to May 10
- May 20 to June 10
- June 15 to June 30
- June 15 to July 15
- September 1 to September 15



April 1-Look at

- Soil moisture critical - previous growing season & dormant season moisture
- Lack of moisture reduces cool-season grass growth

Percent of Normal Precipitation (%)
10/1/2021 - 3/31/2022



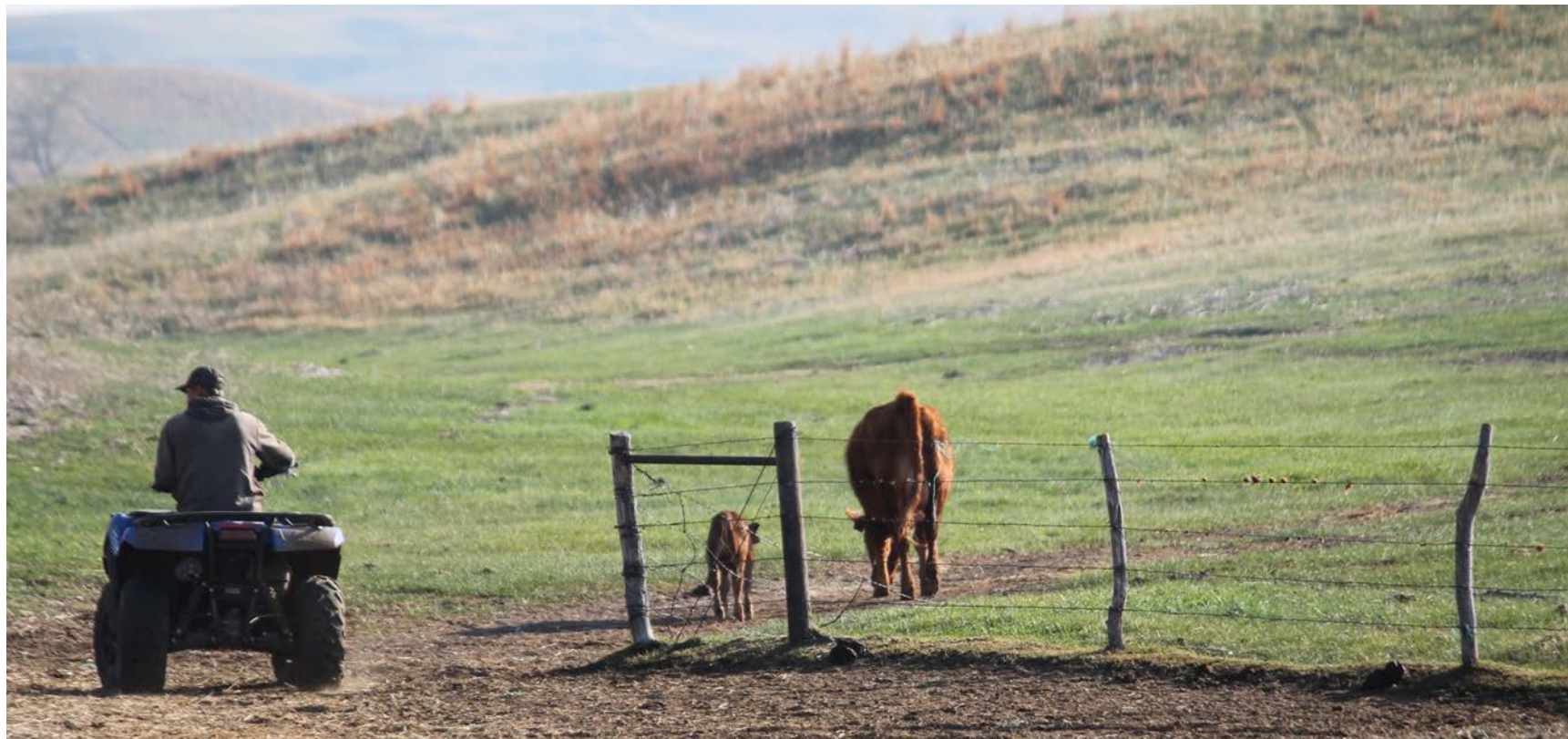


April 1- Management

- If exceptionally dry, reduce stocking rates 10-20% cool season rangeland
- Inventory all cattle & feed resources-what can go first?
- Cull late calvers, opens
- Keep smaller AU's: heifers vs pairs
- Pastures leases – evaluate drought clause, find more pasture

April 15 to May 10-Look at

- 30-45 day forecasts
- Cool season grass green-up

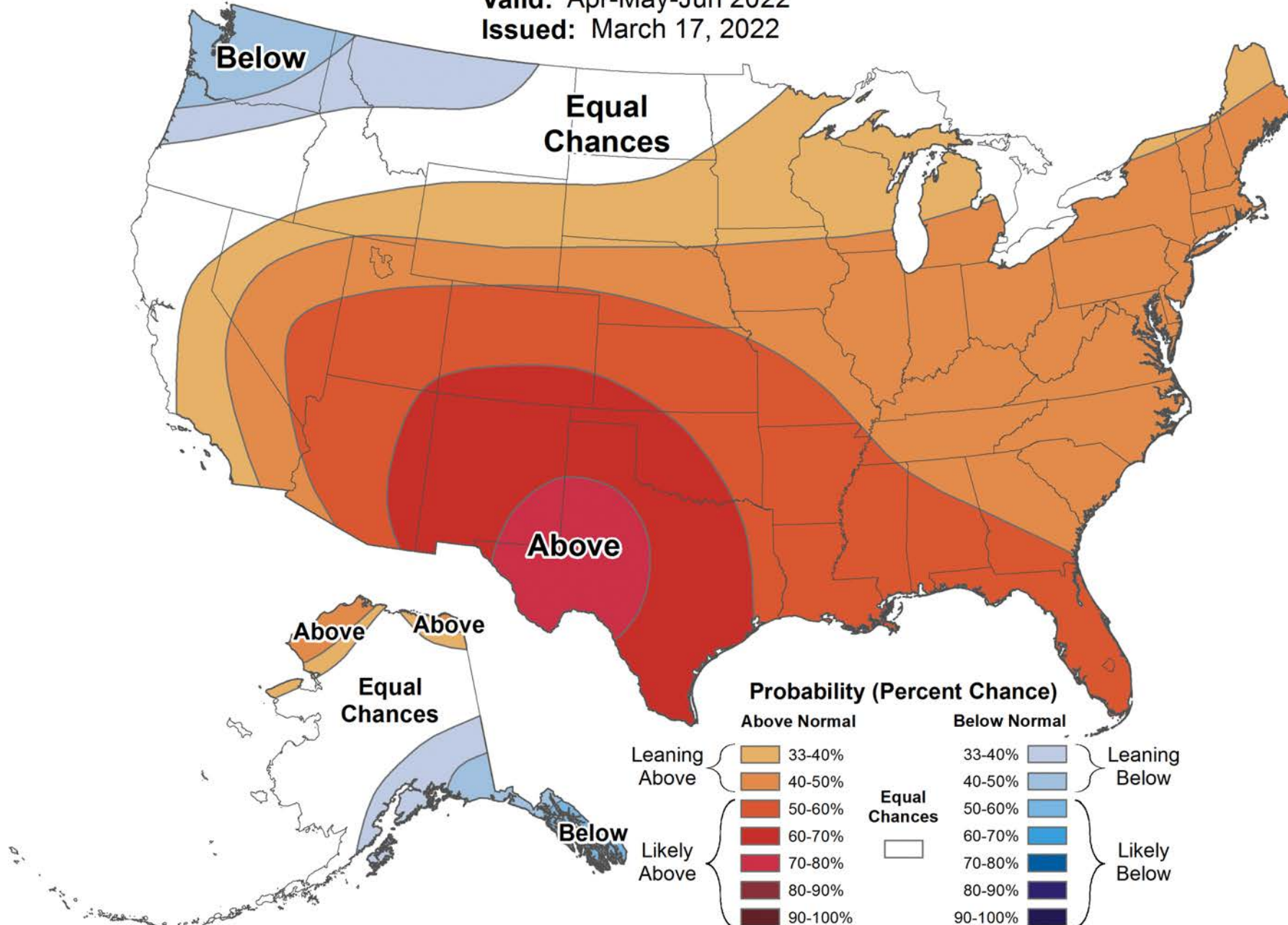




Seasonal Temperature Outlook



Valid: Apr-May-Jun 2022
Issued: March 17, 2022

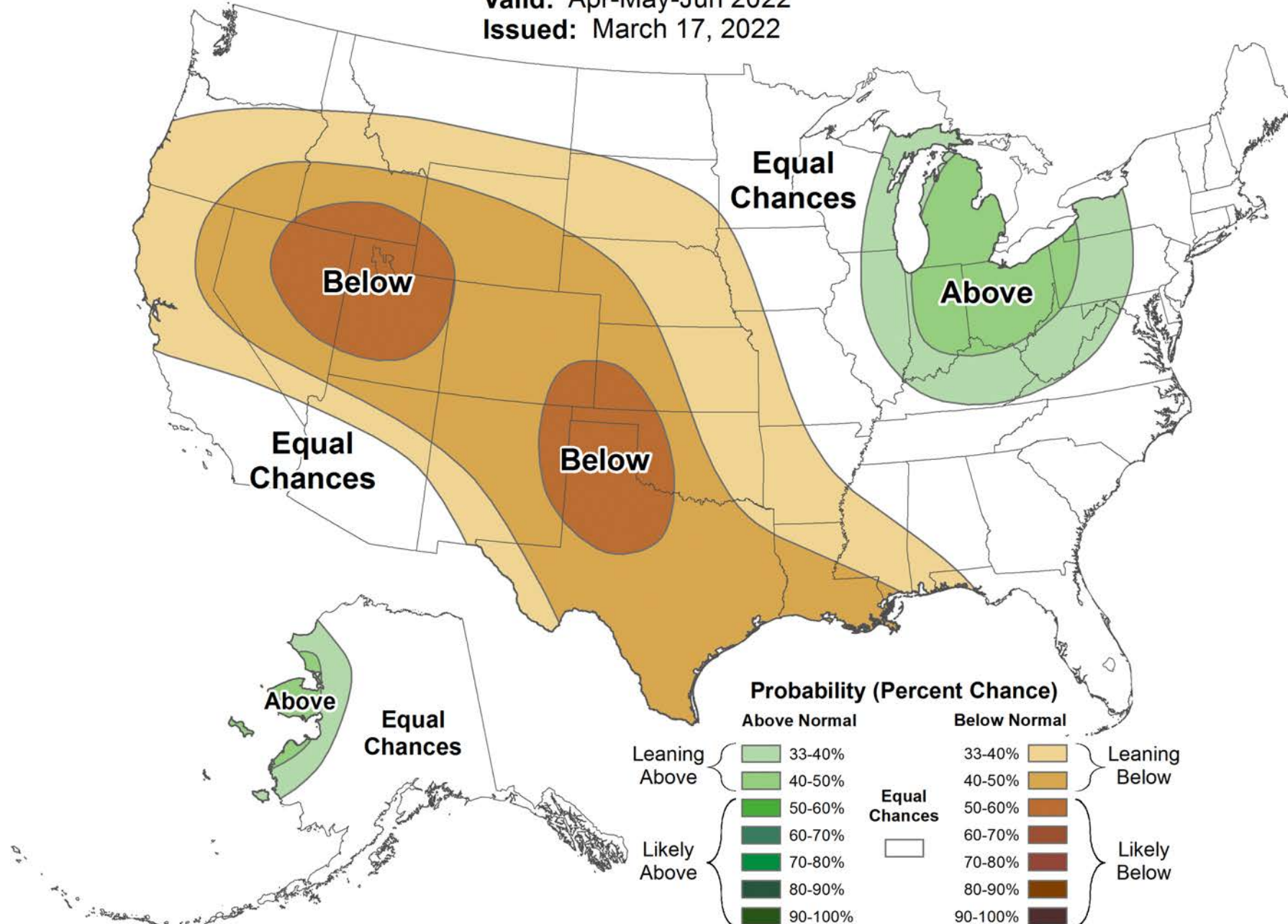




Seasonal Precipitation Outlook



Valid: Apr-May-Jun 2022
Issued: March 17, 2022





April 15 to May 10-Management

- Decrease stocking rate more
- Cull more
- Delay turn out, know your hay/feed inventory



May 20 to June 10-Look At

- Needlegrasses finishing growth
- Wheatgrasses rapid growth window
- March-May precipitation compared to average



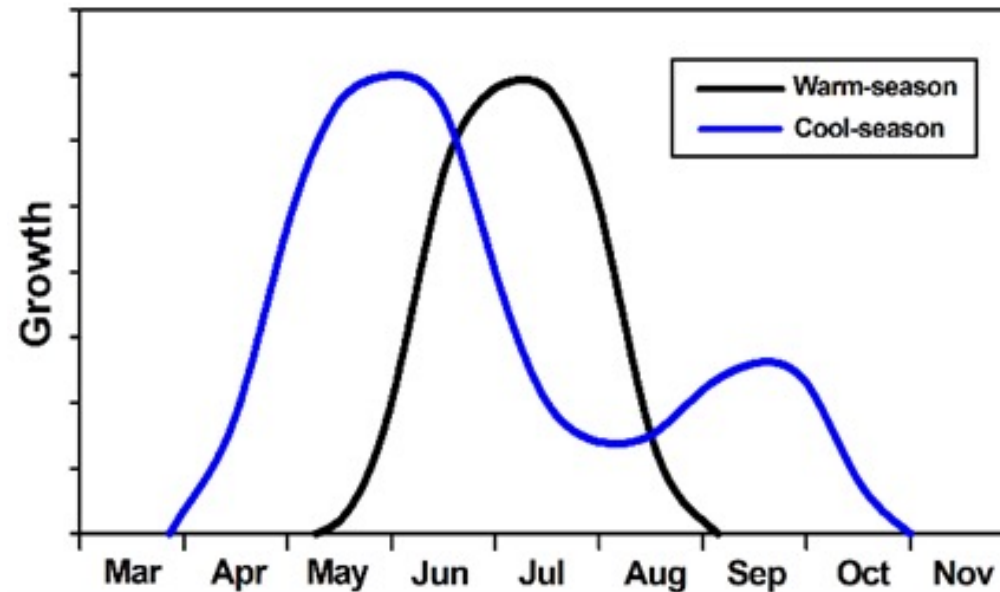
May 20 to June 10-Management

- Reduce stocking rates 30-40% or more
- Cull late calvers, opens
- Shorten breeding season, depending on calving season, sell bulls
- Heifers vs pairs



June 15 to June 30-Look at

- Cool-season grass done growing, unless irrigated
- 50% of warm-season grass growth
- Rainfall after late June may benefit warm-seasons





June 15 to June 30-Management

- Reduce stocking rates
- Shorten breeding season
- Preg check, cull lates & opens
- Sell bulls





June 15 to July 15-Look at

- Precipitation and available soil moisture important for warm-season grass
- Most warm-season growth by July 15
- Some shortgrass warm-seasons may benefit from precipitation



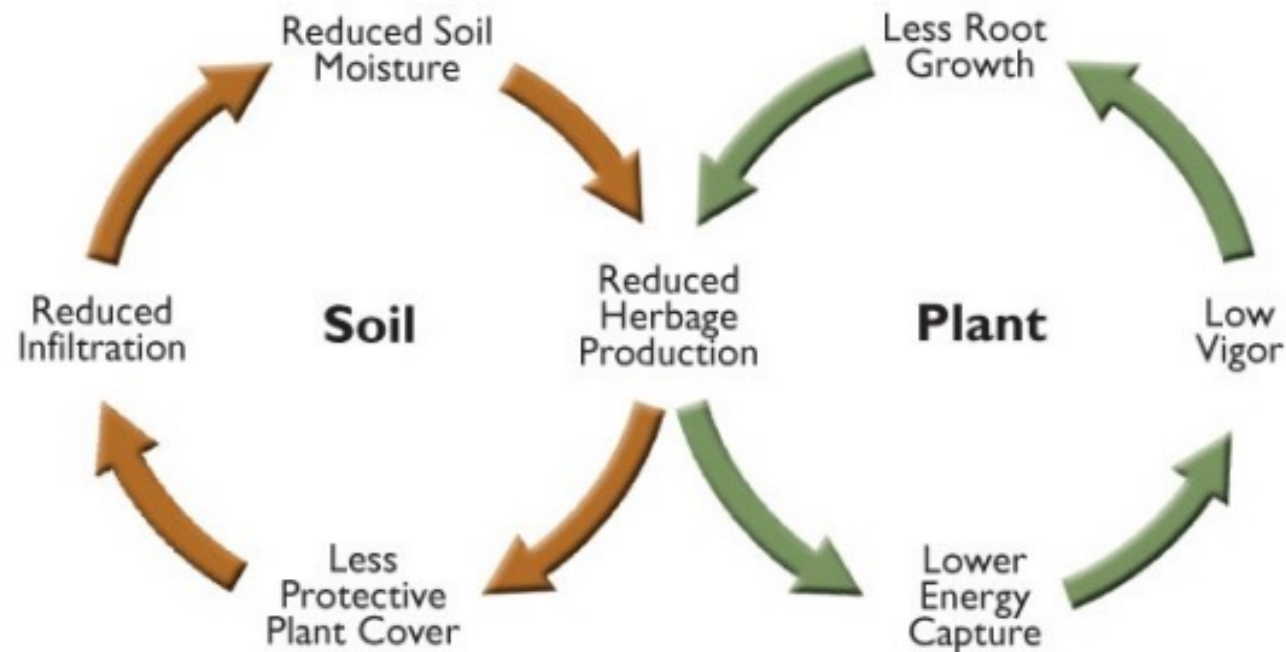
June 15 to July 15-Management

- Reduce stocking rate; remove from pasture
- Shorten breeding season
- Cull late calvers, opens, bulls
- Early wean, creep feed, etc
 - Creep feed ↓ calf forage consumption; does not reduce cow milk



September 1 to September 15-Look at

- Cool-season pasture regrowth if adequate moisture now
- Temperature & precipitation forecasts





September 1 to Sept 15-Management

- Start planning for next year
- How will drought affect production
- Early wean/marketing calves
- Cornstalk leases
- Acquire feed
 - If bringing in feed watch for weeds/invasive plants where fed
 - Fescue toxicity



Summary

Drought is in the forecast

Plan now or react later

To reduce stocking rates, shorten time or fewer AU's

Be flexible

Use trigger dates to manage



Resources

National Weather Service Climate Prediction Center

- Short and long term precip and temp forecasts

NebGuide: Skillful Grazing Management on Semiarid Rangelands

Beef.unl.edu

Drought.unl.edu

Managing Drought Risk on the Ranch

FSA/NRCS drought programs-keep records!



Contact Us-Find us on HWY 83

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