Regional (lack of) Water 2022



Above: Stressed corn south of McCook, Nebraska, credit Kevin Rush (left); Aftermath of the Cedar Canyon fire near Scottsbluff, Nebraska, credit Gary Stone (center); Water Resources Photo, credit Blank (right).

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2020

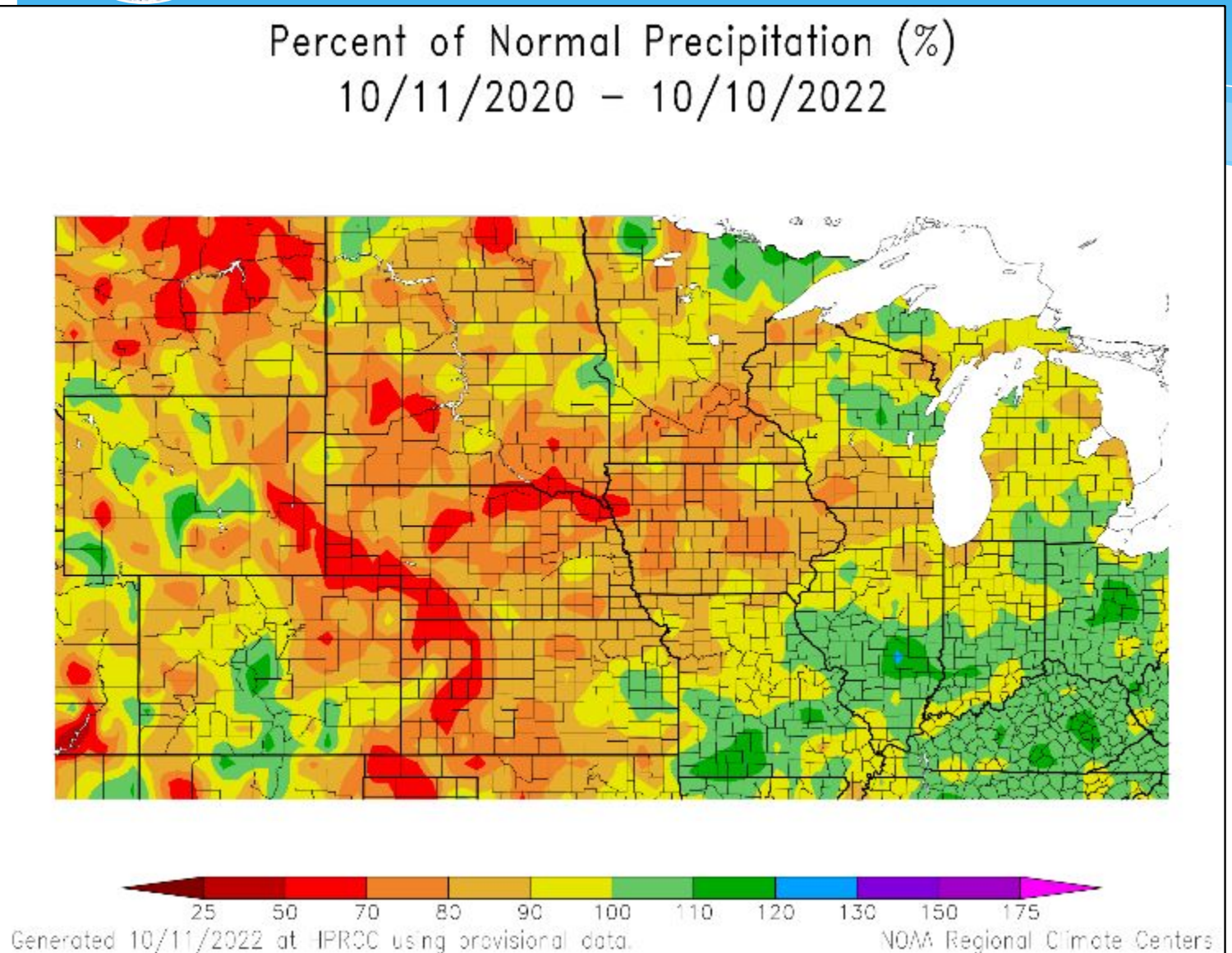

2022

Summary

* Dry and tending downward
* Fall/winter are a recharge seasons… need precipitation before freeze up
* Soils are thirsty = runoff likely lower than normal… have we ever really recovered from 2021?
* Fall into Winter relatively dry time of year (not including higher elevations)
* La Niña X 3 is coming, will it help? Better than El Nino, perhaps

* Will this be a multi-year drought? … yes..aridity?
* If we get average snow pack or average precip. will that end the drought? Well did it? I think the average snow pack was around 85-90%, right? That didn't end the drought.
* How much precip. is needed to end the drought? Varies greatly….generally a lot over a period of time… no Yellowstone floods please.

How Long Has This Been Going On?

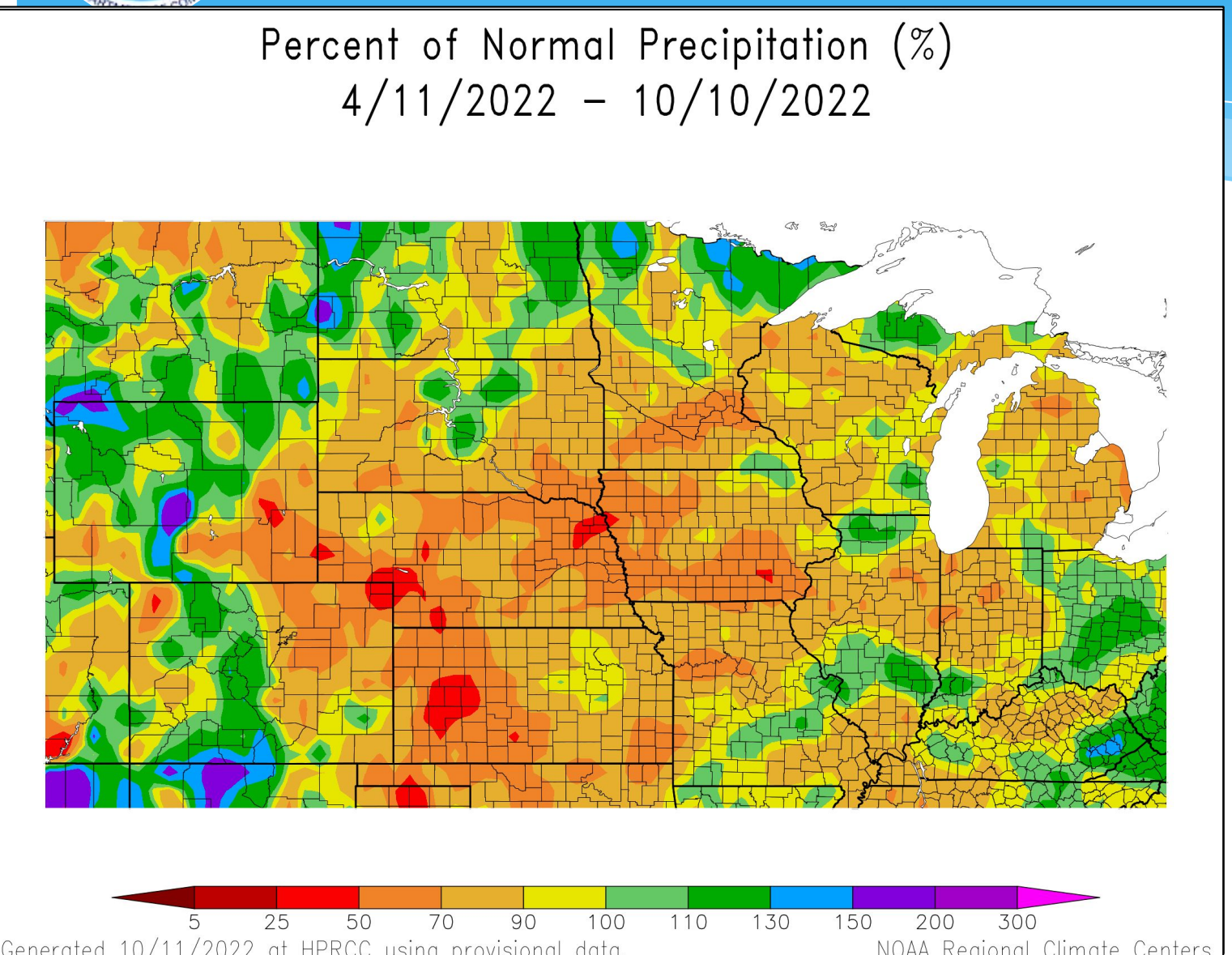


Answer: “Two” long

2+ years and counting actually

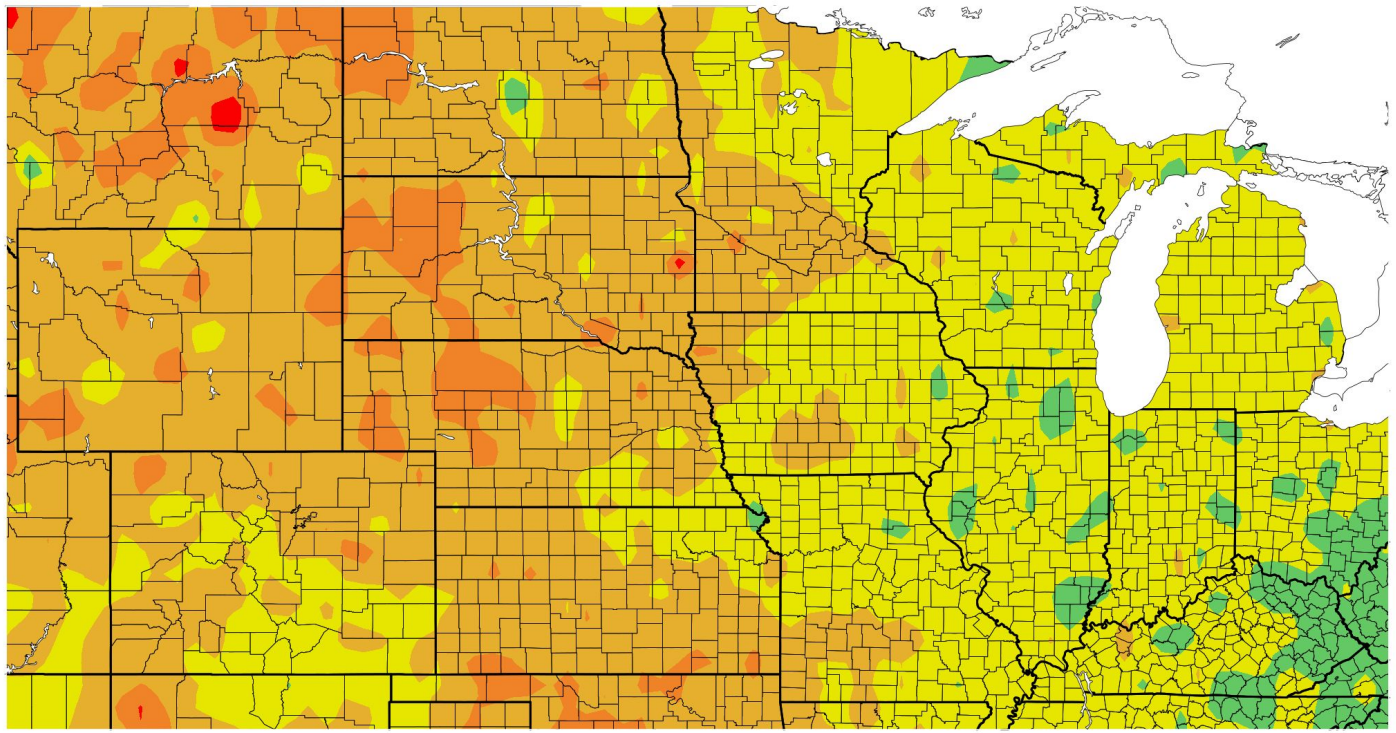
Wet years: 2018-2019

2022 Slicing It Up



1) Year to date
2) Spring
3) Summer
4) Growing Season

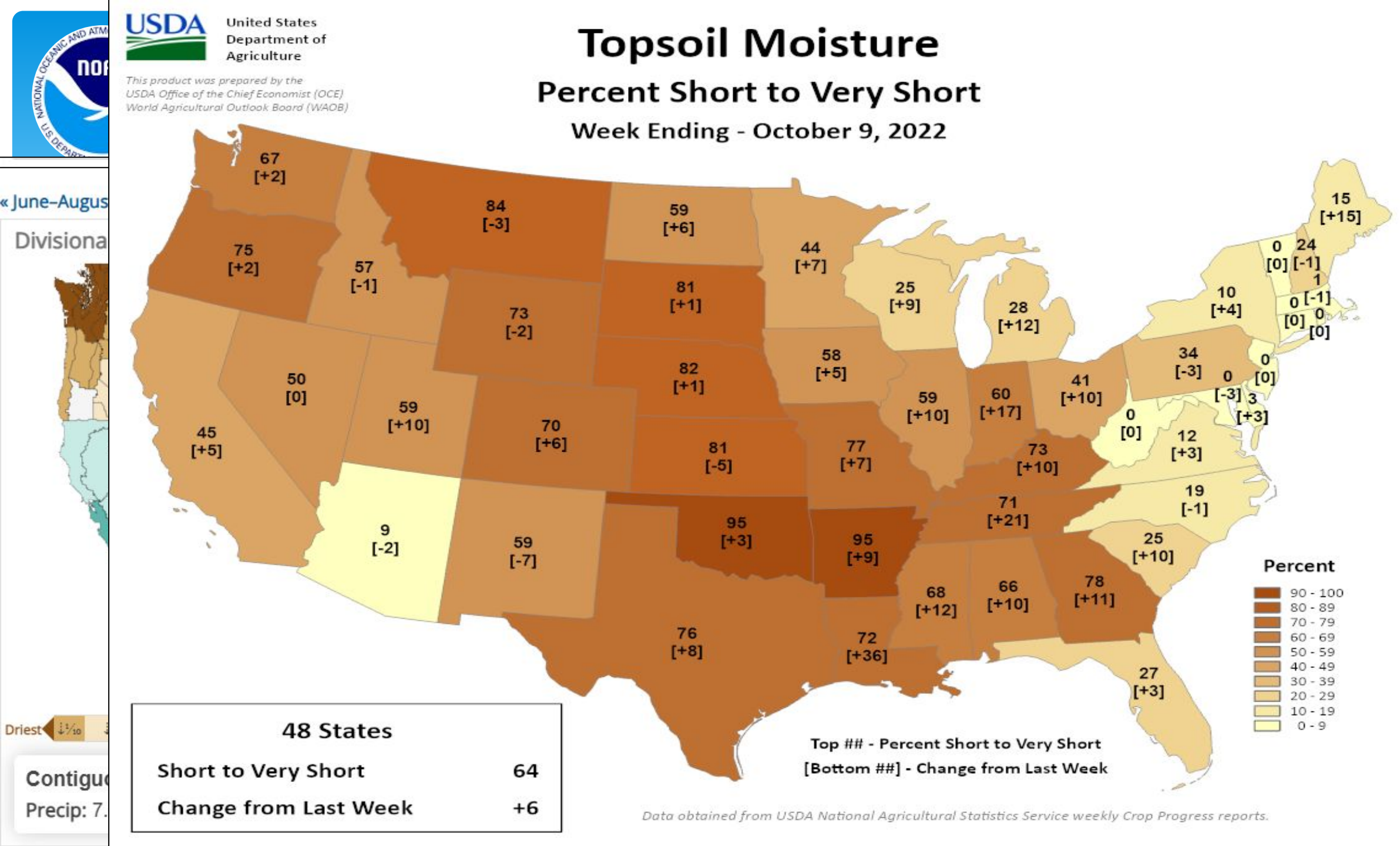
Speaking of Temperature



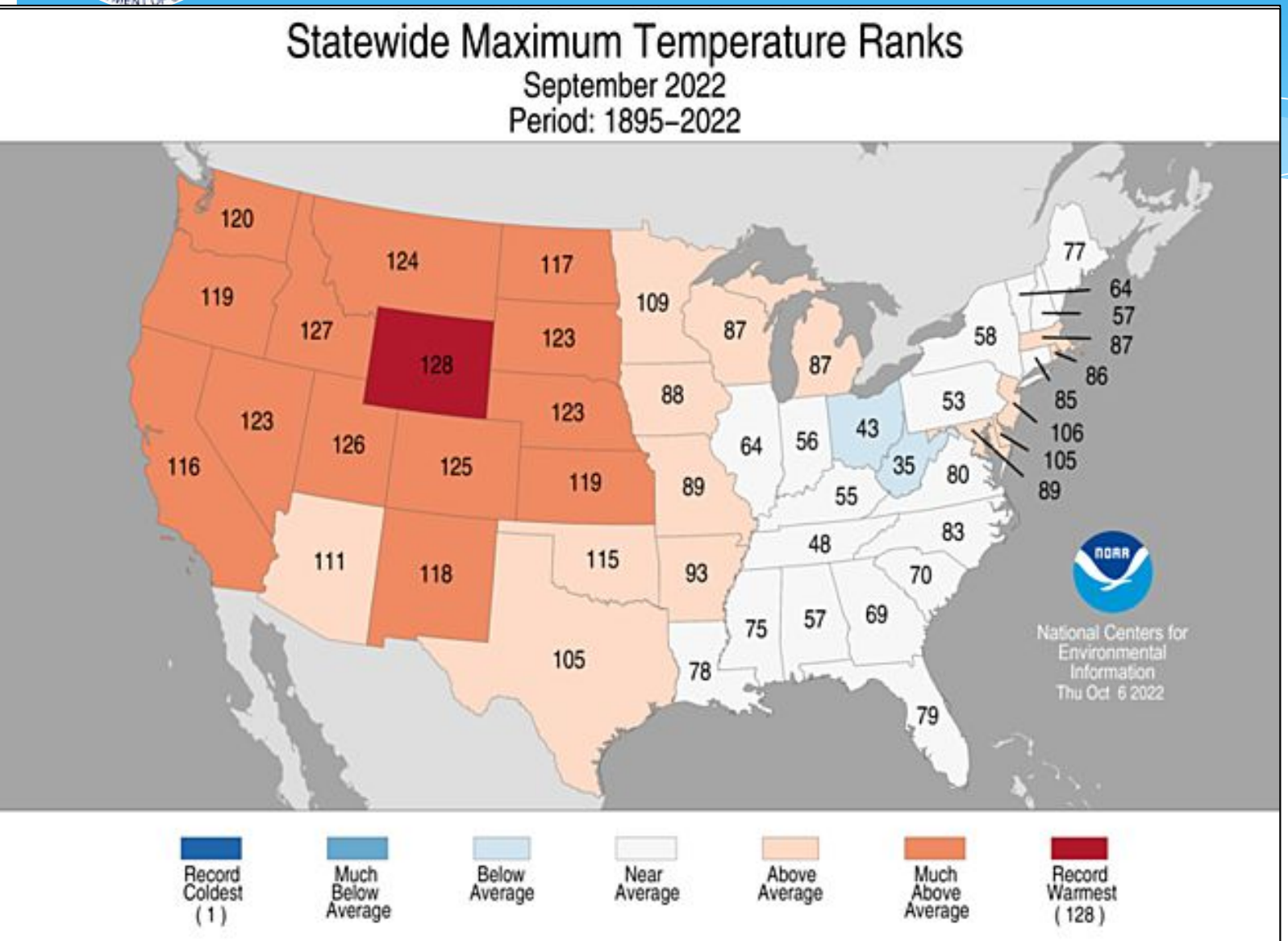
1) Last 12 months

2) Last 120 days (summer)

3) Thus, evapotranspiration heightened all growing season (west)


USDA
United States Department of Agriculture
This product was prepared by the USDA Office of the Chief Economist (OCE) World Agricultural Outlook Board (WAOB)
Topsoil Moisture
Percent Short to Very Short
Week Ending - October 9, 2022
67 [+2]
75 [+2]
57 [-1]
84 [-3]
73 [-2]
59 [+6]
81 [+1]
82 [+1]
44 [+7]
25 [+9]
28 [+12]
58 [+5]
59 [+10]
60 [+17]
41 [+10]
34 [-3]
10 [+4]
15 [+15]
0 [0]
24 [-1]
1 [-1]
0 [0]
0 [0]
0 [0]
0 [-3]
3 [+3]
0 [0]
12 [+3]
50 [0]
59 [+10]
45 [+5]
70 [+6]
81 [-5]
77 [+7]
73 [+10]
71 [+21]
19 [-1]
25 [+10]
9 [-2]
59 [-7]
95 [+3]
95 [+9]
68 [+12]
66 [+10]
78 [+11]
76 [+8]
72 [+36]
27 [+3]
Percent
90 - 100
80 - 89
70 - 79
60 - 69
50 - 59
40 - 49
30 - 39
20 - 29
10 - 19
0 - 9
Top ## - Percent Short to Very Short
[Bottom ##] - Change from Last Week
48 States
Short to Very Short 64
Change from Last Week +6
Data obtained from USDA National Agricultural Statistics Service weekly Crop Progress reports.

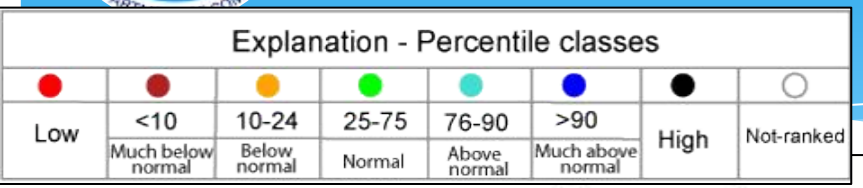
September Hasn't Been Kind

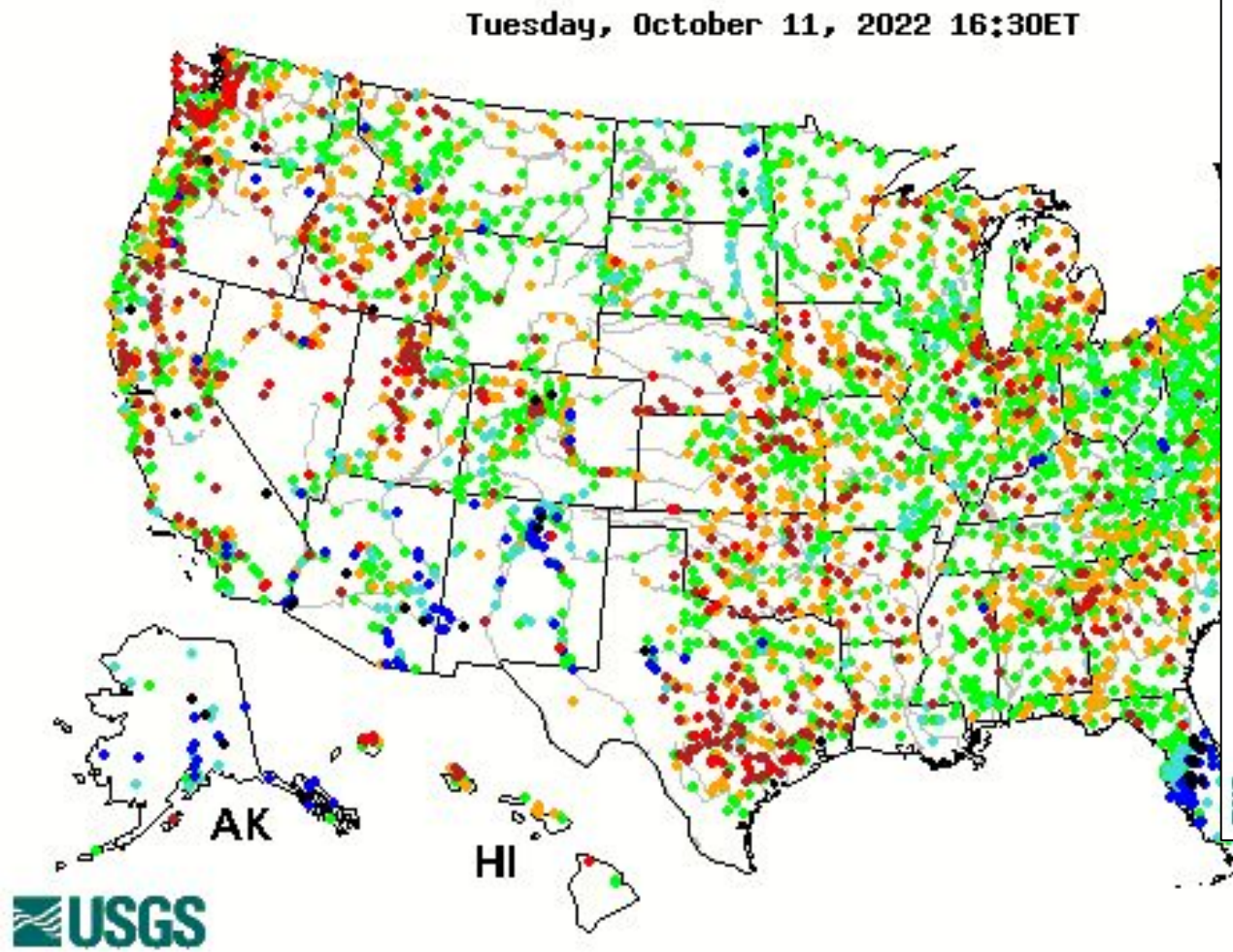


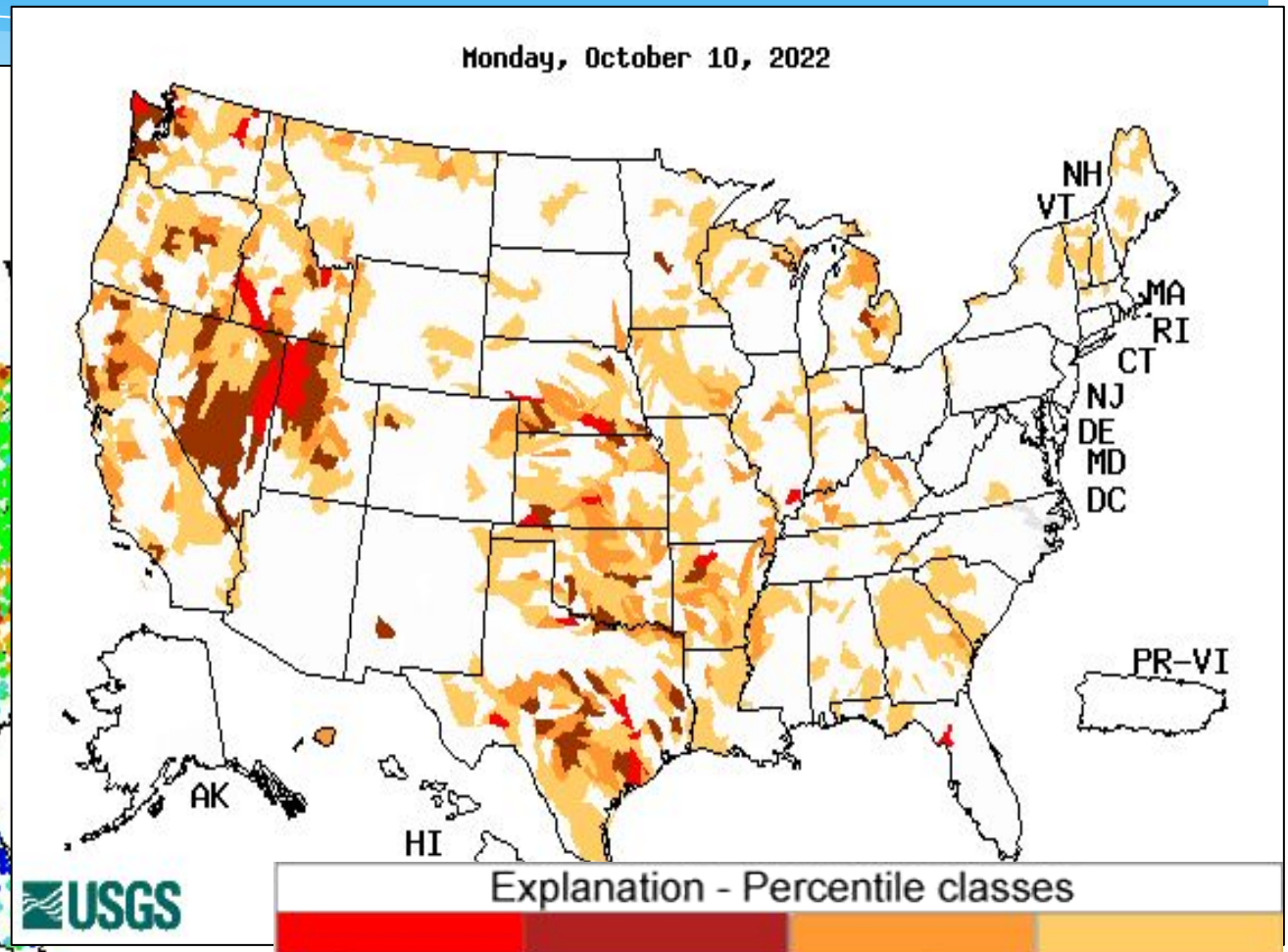
1) Basically hot (west) and dry (everywhere)

2) Especially hot maximum temps (west)

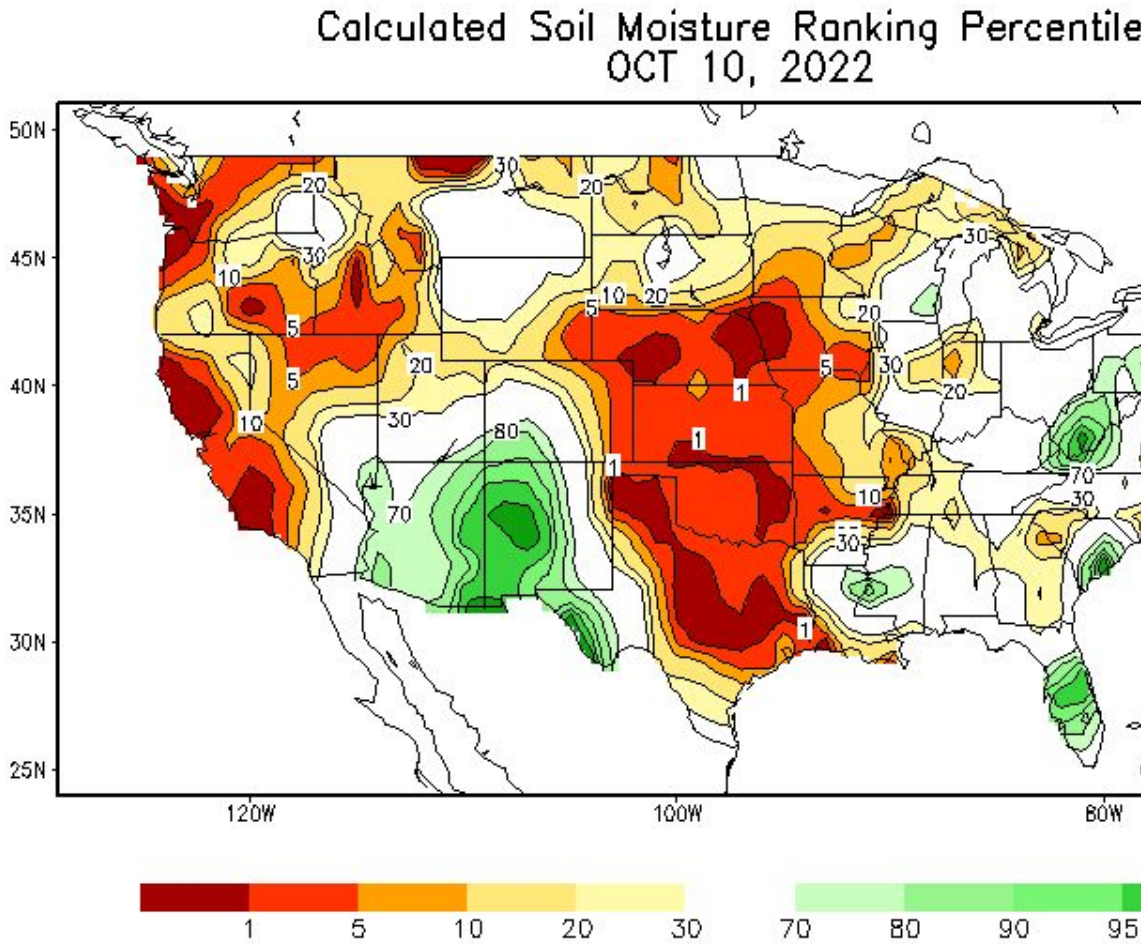
Streamflow Conditions

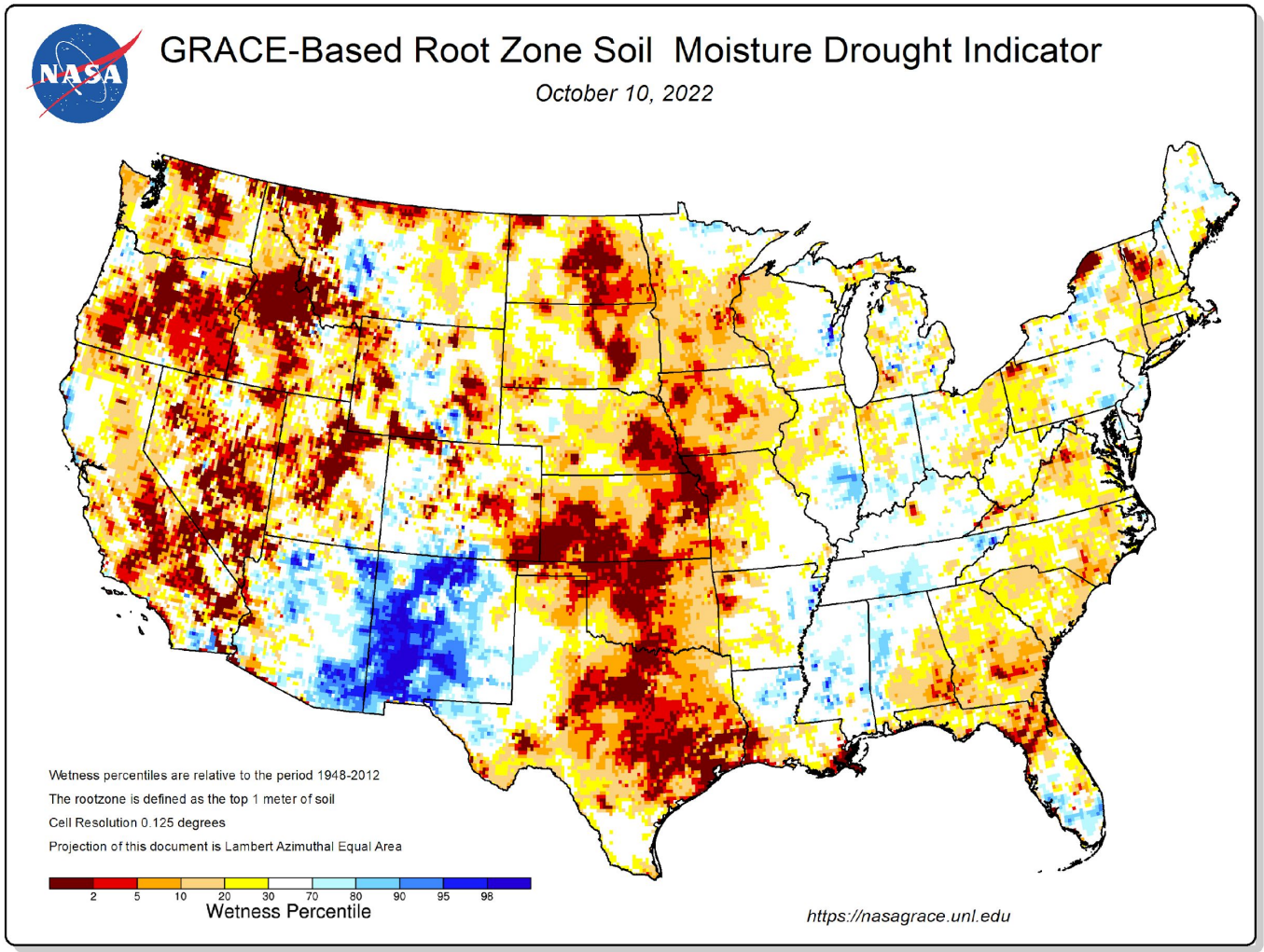






Soil Moisture Indicators

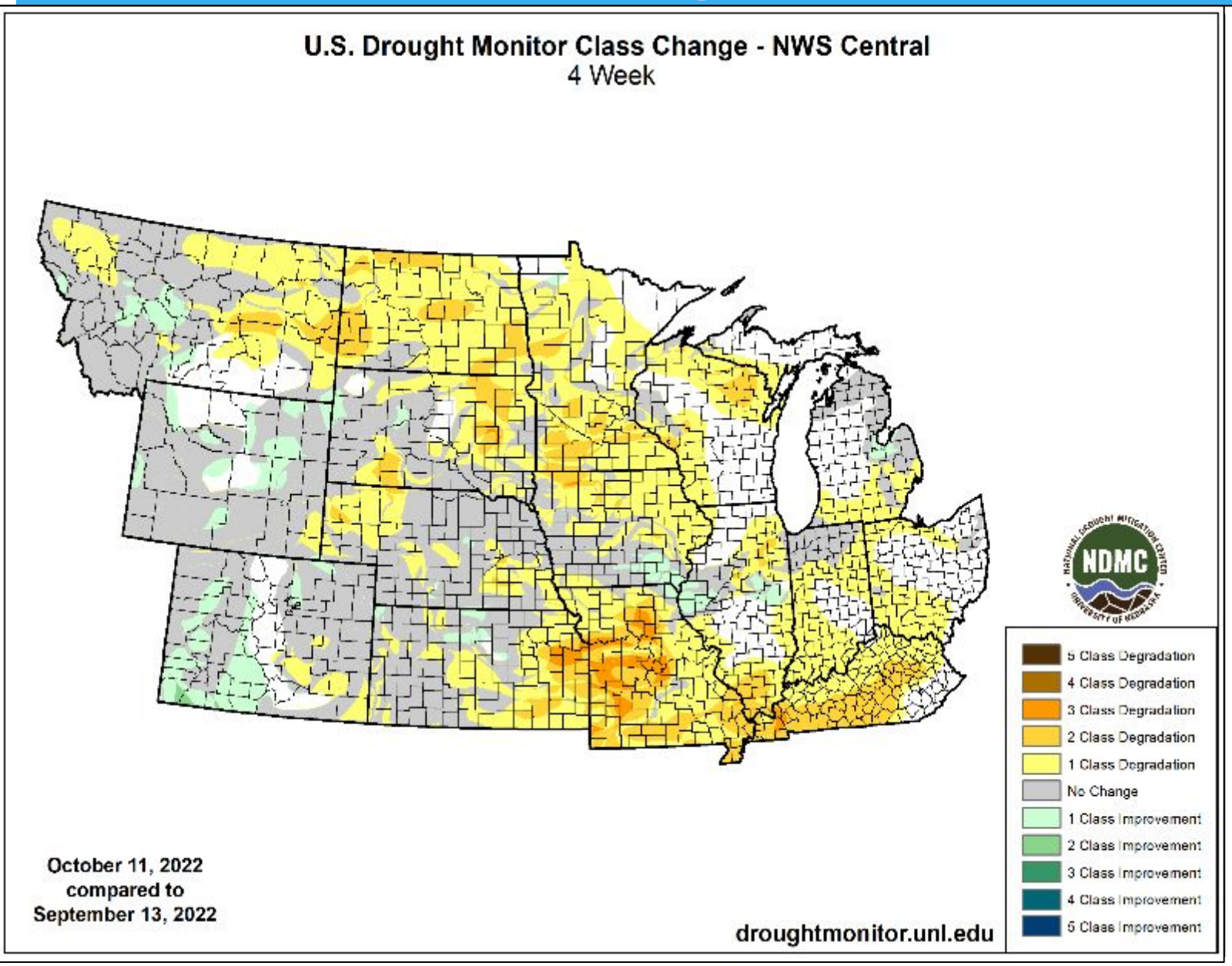




https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Soilmst/Soilmst.shtml

https://nasagrace.unl.edu/

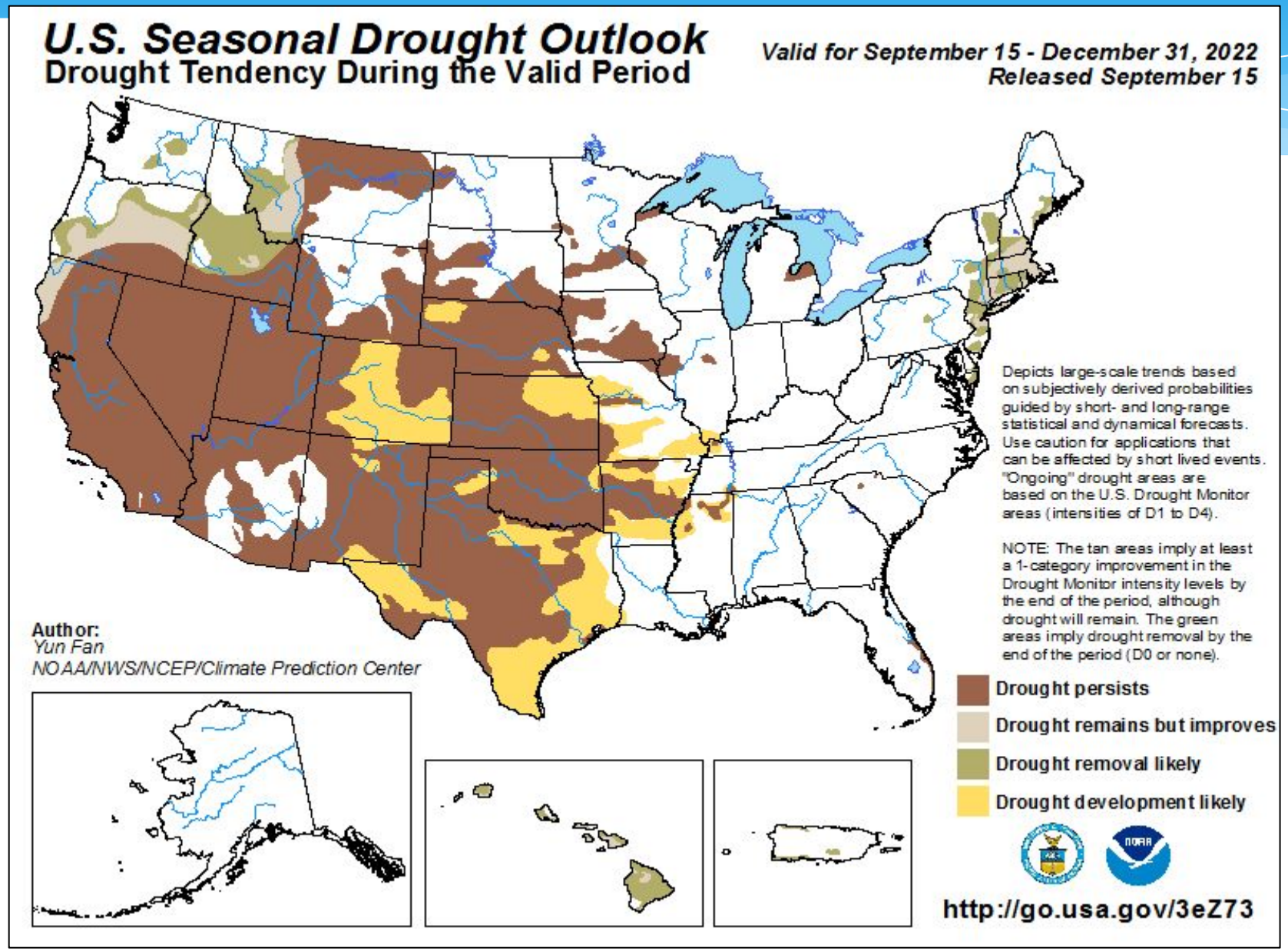
Drought Update & Change Maps



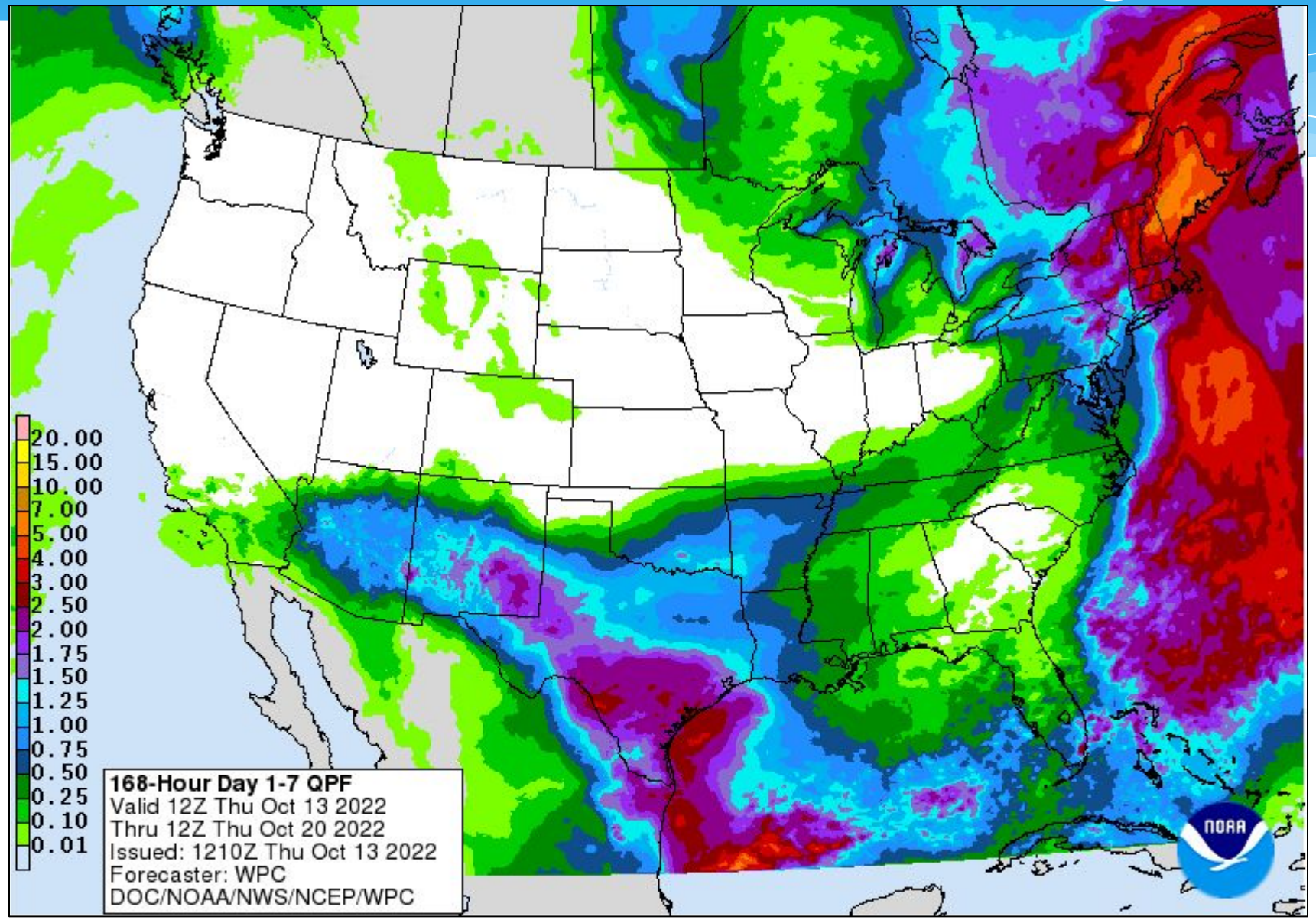
1) Drought Monitor
2) 1 year change map
3) Growing season change map
4) Last 4 weeks change map

https://www.drought.gov/drought/

Drought Outlook through December 2022



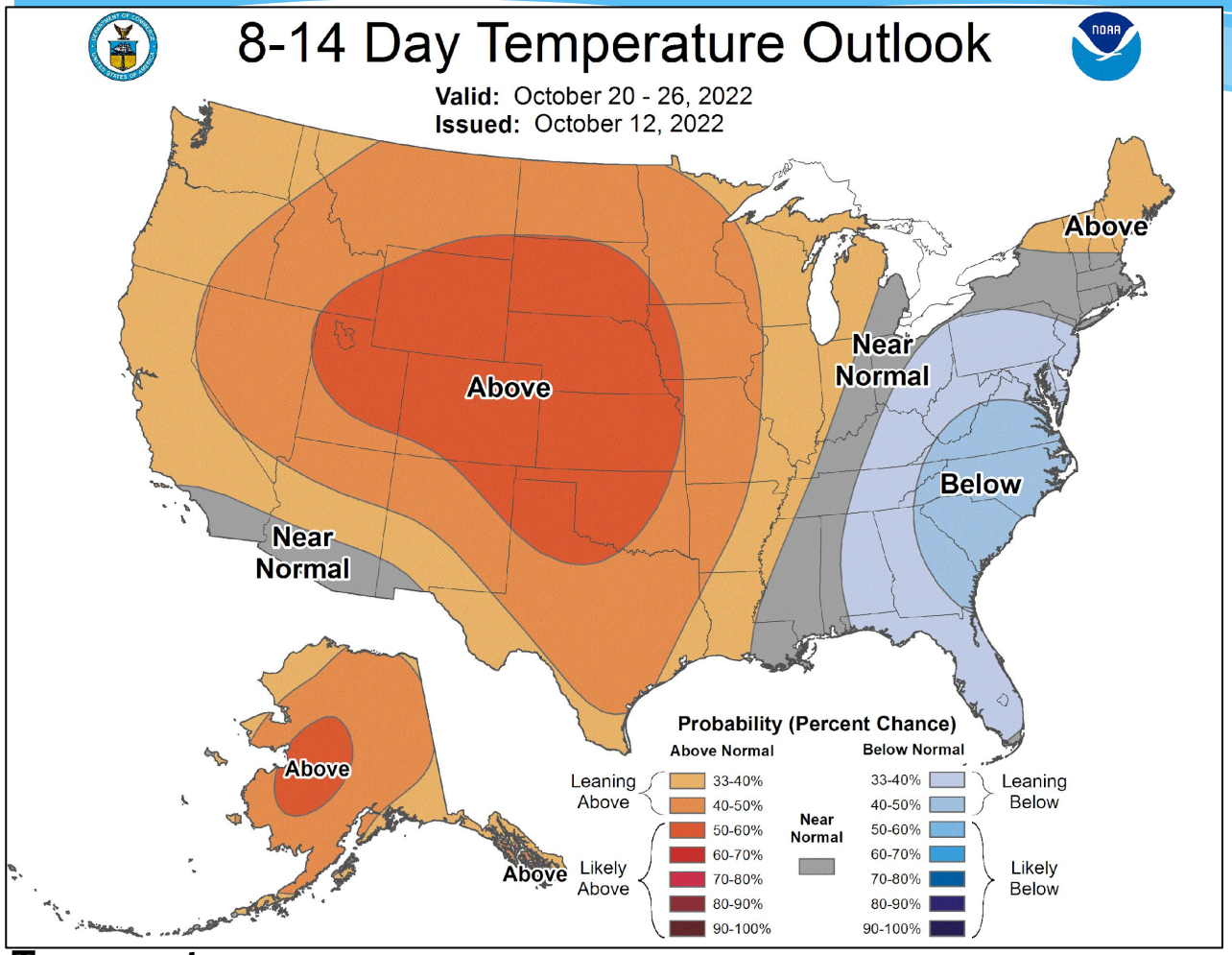
Total Precipitation Outlook Through Oct 20th



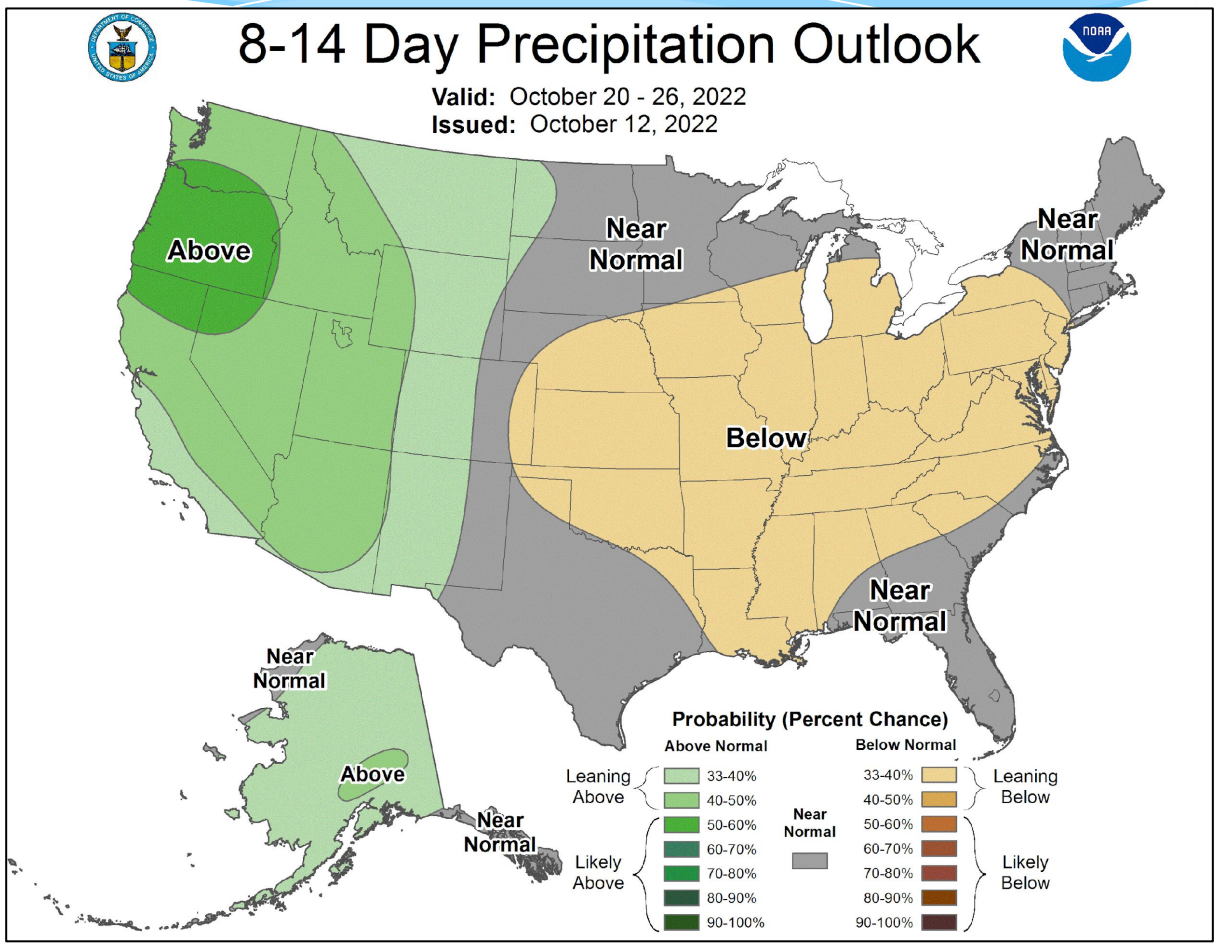
https://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml

Week 2 Temperature & Precipitation Outlook (October 20 - 26)

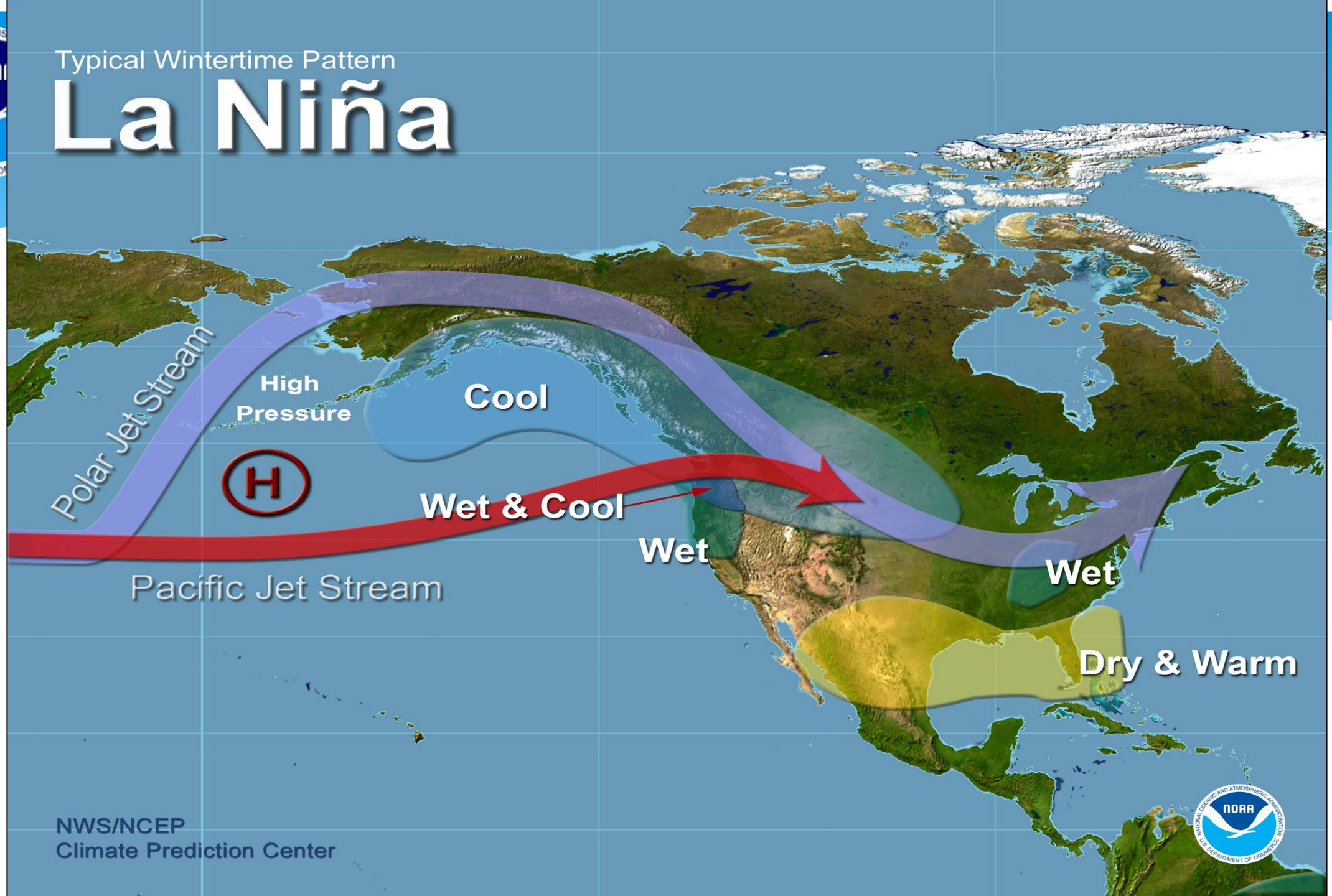
Temperature: warm
Precipitation: dry



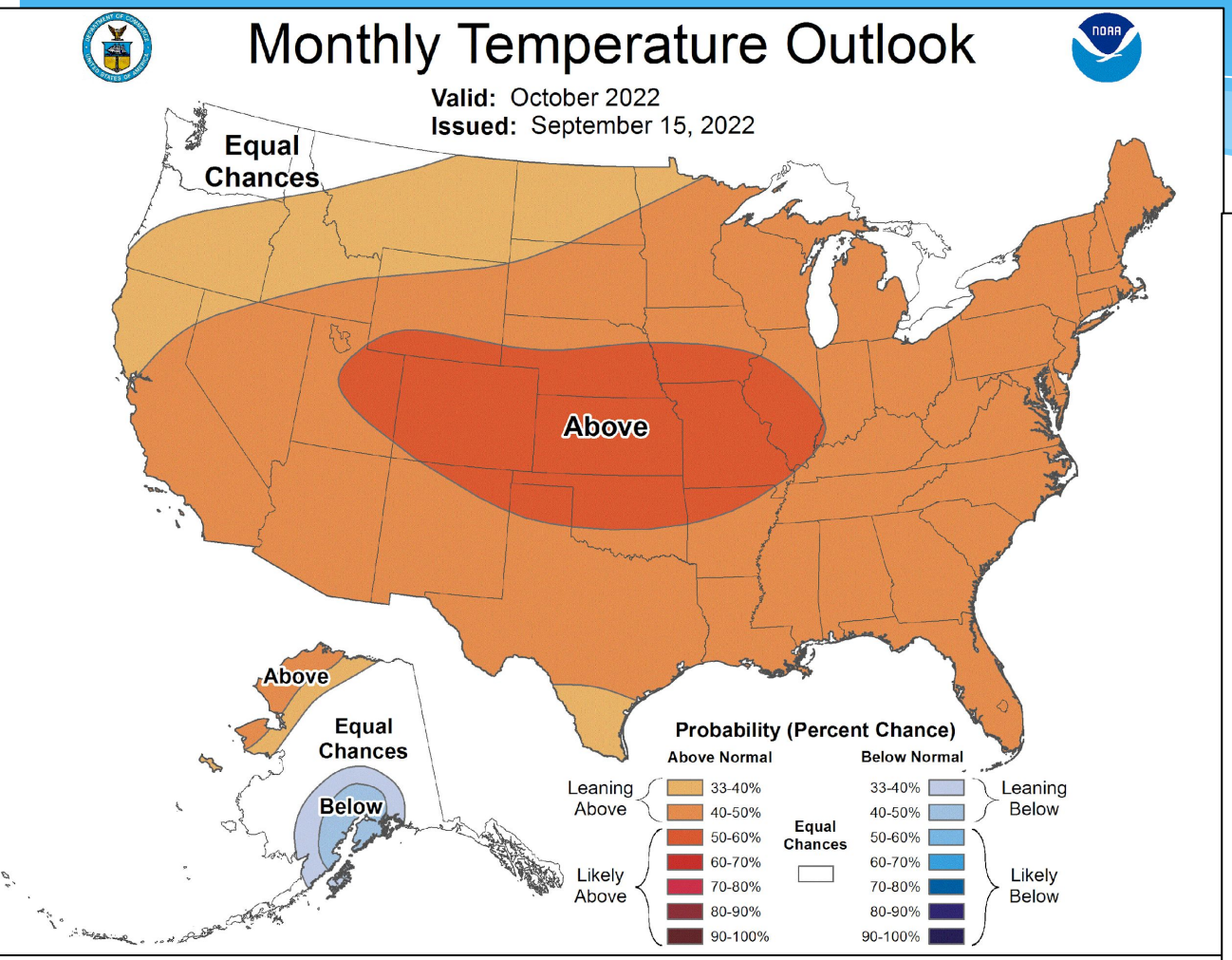
Temperature



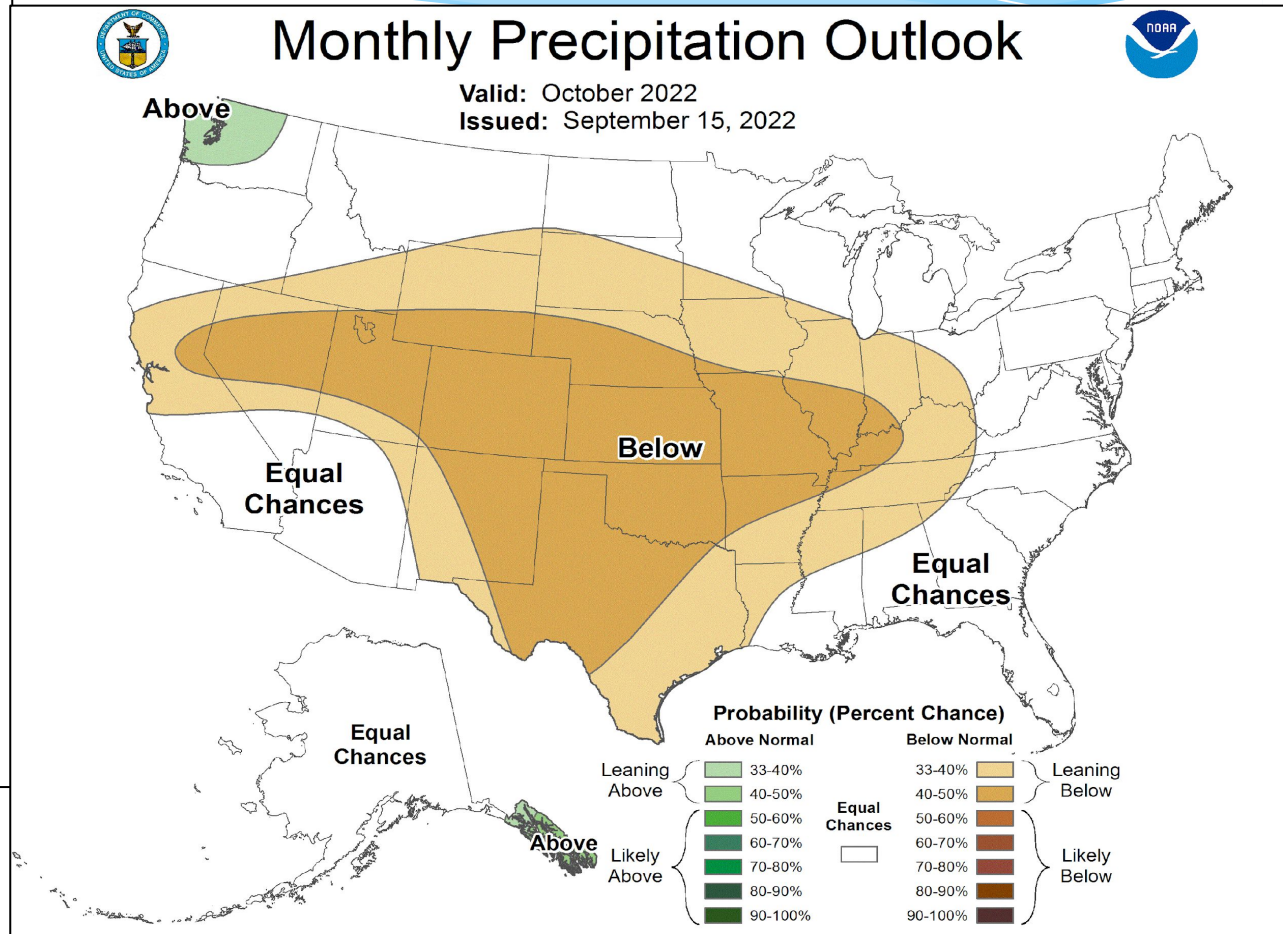
http://www.cpc.noaa.gov/


Typical Wintertime Pattern
La Niña
Polar Jet Stream
High Pressure
H
Cool
Wet & Cool
Wet
Wet
Dry & Warm
Pacific Jet Stream
NWS/NCEP
Climate Prediction Center

October 2022
Temperature & Precipitation Outlook



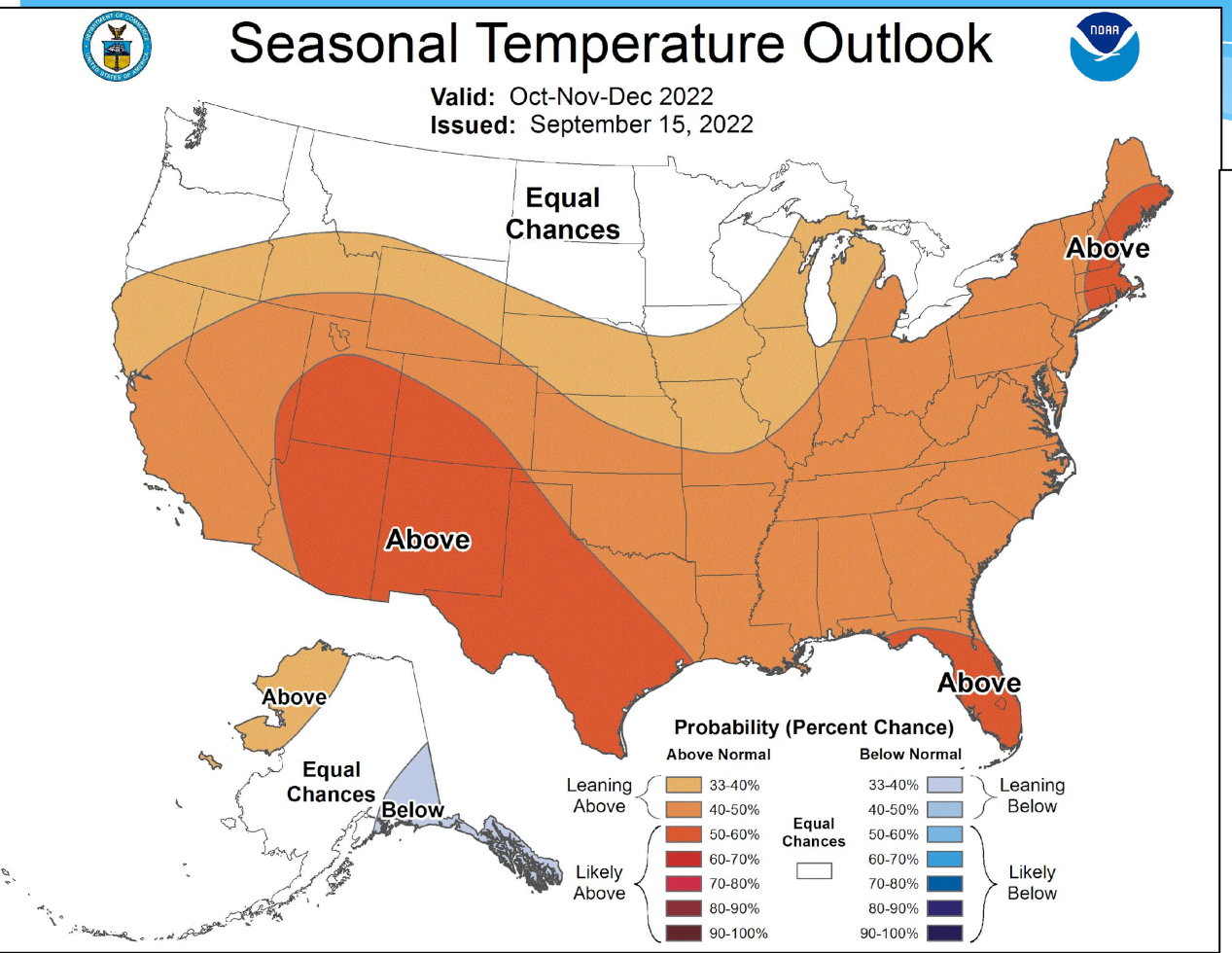
Temperatures: above normal
Precipitation: mostly below normal



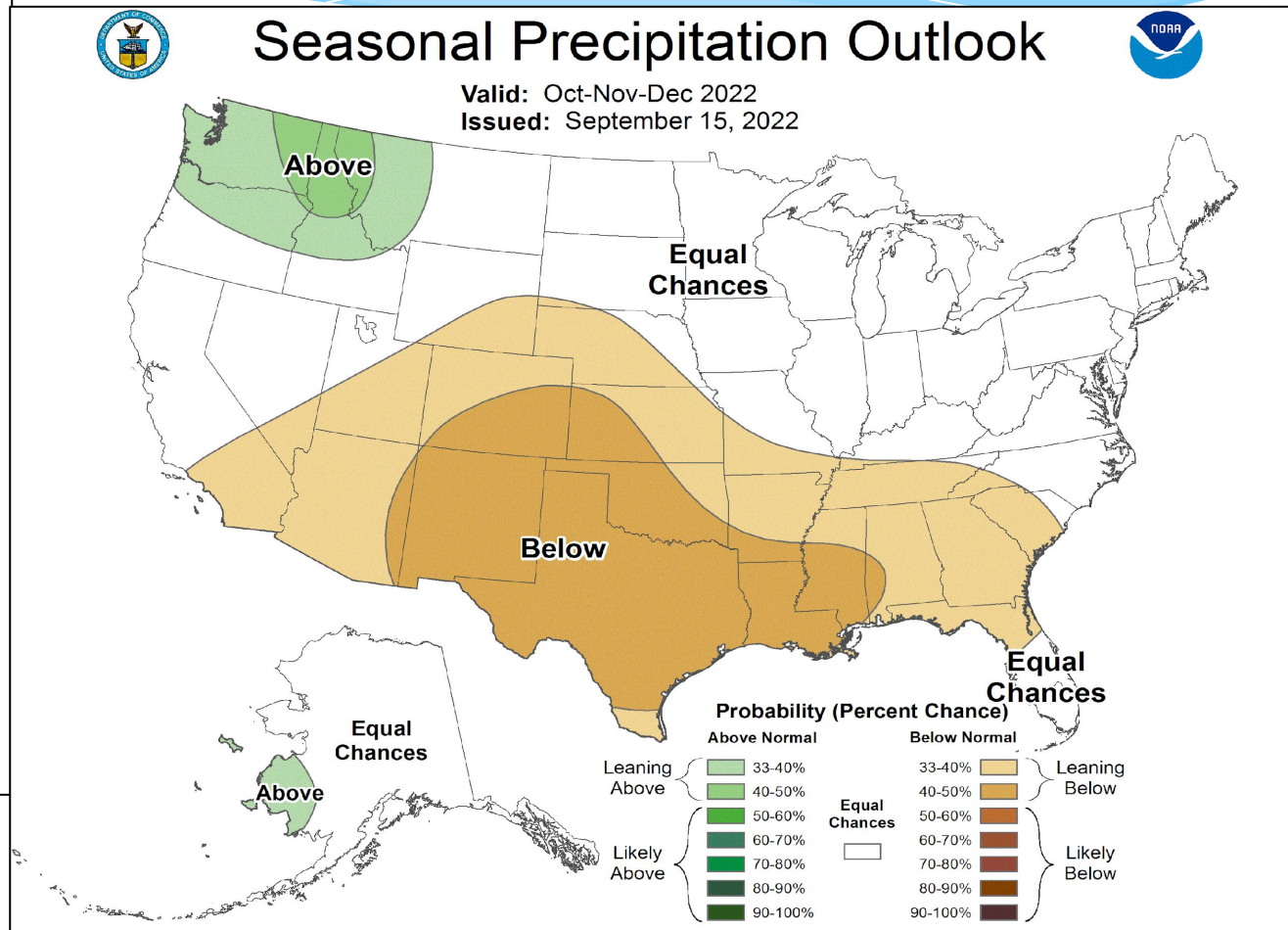
Temperature

http://www.cpc.noaa.gov/

October - December 2022
Temperature & Precipitation Outlook



Temperature leans warmer south
Precipitation leans dry south, wet NW

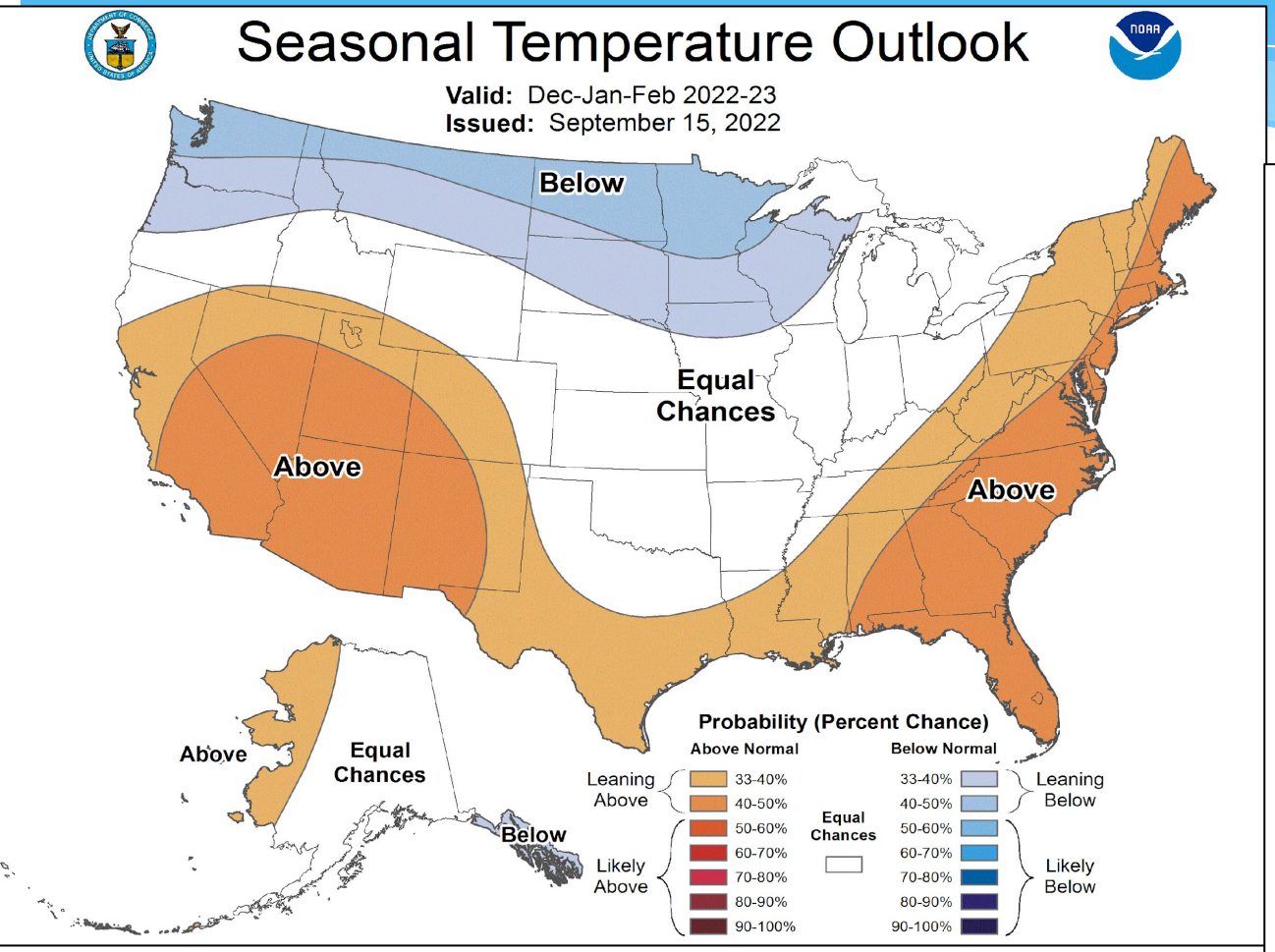


Temperature

http://www.cpc.noaa.gov/

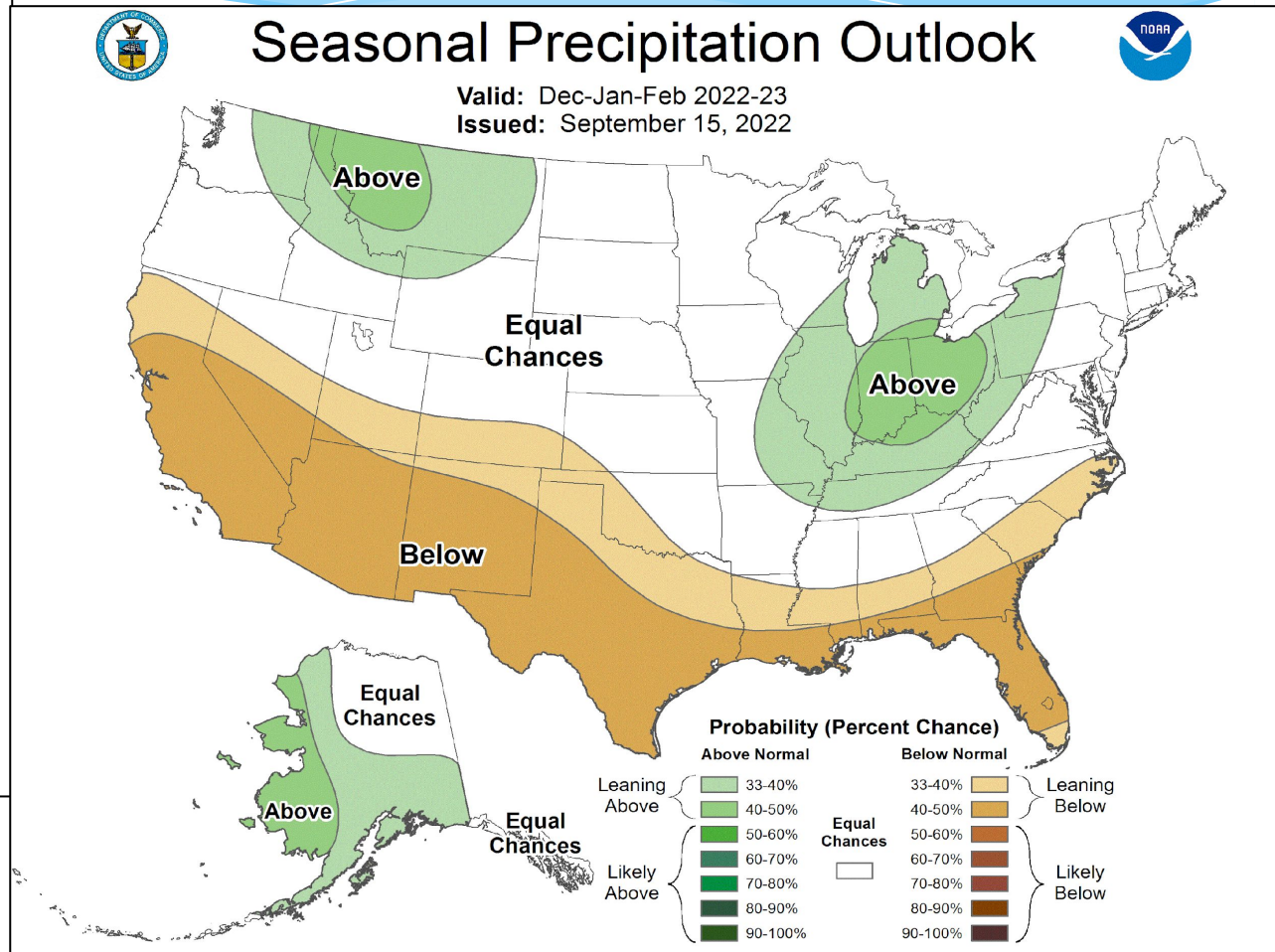
December 2021 – February 2023 Temperature & Precipitation Outlook

Temperature leans cold north
Precipitation leans wet NW



Temperature

http://www.cpc.noaa.gov/



Key Points

* **Current Conditions**
  * Current ENSO condition – **Under a La Niña Advisory, 3rd year in row**
* **Outlook**
  * Very short term (7 days): mostly "bone" dry
  * Short term (Week 2):
    * Temperatures: continue well above normal
    * Precipitation: some enhanced probabilities far west (transition to wet?)
  * Long term (monthly and seasonal): La Niña
    * Temperatures: warm fall more likely, transitioning to better chance cold far north
    * Precipitation: starts generally dry then better chances for above normal northwest

Next monthly North Central Climate Summary & Outlook Webinar, October 20, 2022
https://attendee.gotowebinar.com/register/7528179497868100876