Montana Annual Fire Season Outlook

2025 Montana Governor's Fire Briefing

June 2, 2025

Dan Borsum
Predictive Services Meteorologist
Northern Rockies Geographic Area

Overview

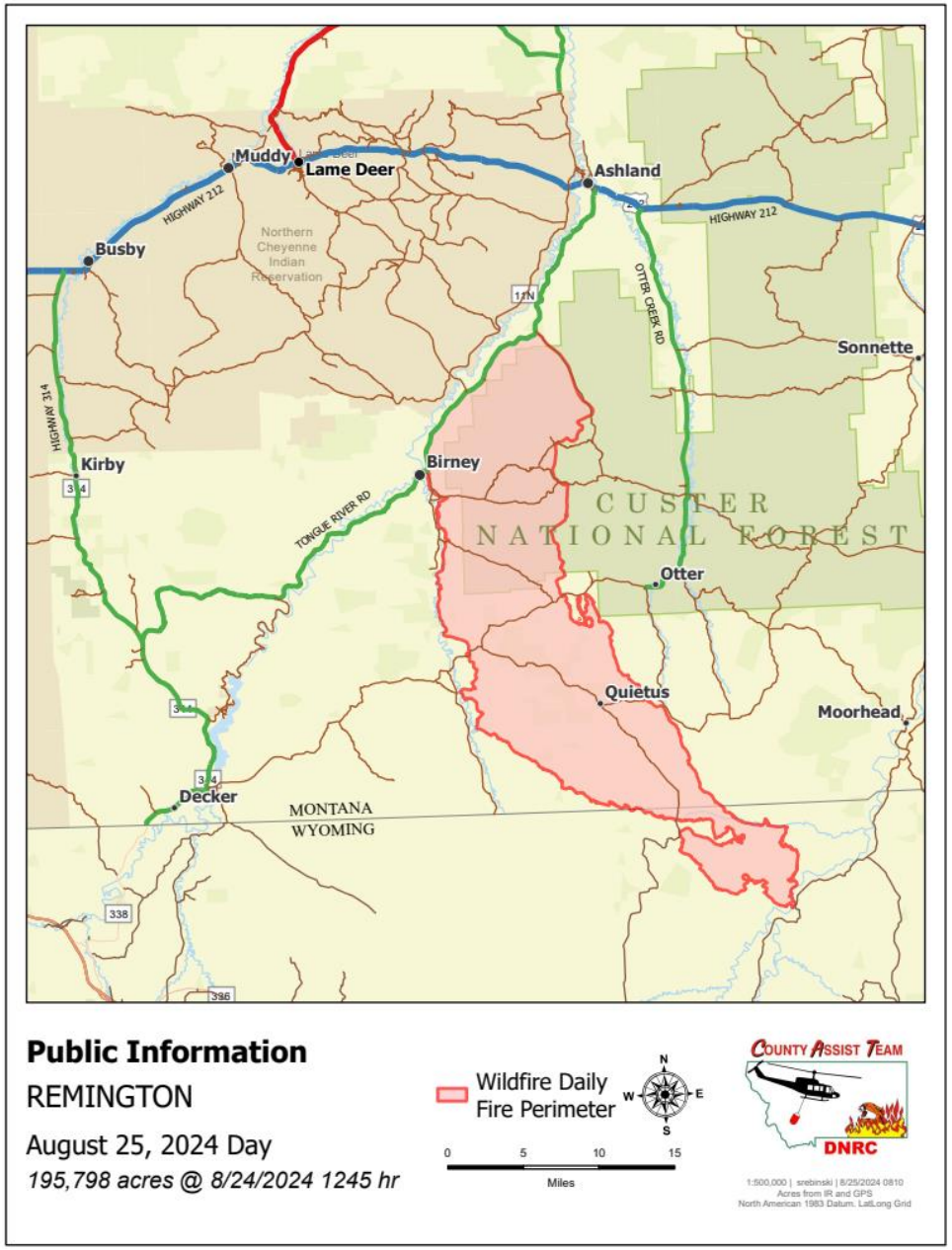
- Significant wildland fire potential develops western Montana in July
- Potential expands into central/eastern Montana in August, persisting into September
- Driving factors
  - Drought exists many areas especially western Montana
  - June through August lean drier and warmer than normal
  - Ocean and equatorial temperature signals compare to active fire years (2006, 2017, 2021)

Montana 2024 Fire Season Review

	Fires	Acreage
2024	2322	352,491*
2023	1662	123,133
2022	2087	137,509
10 Yr Average	2076	372,454

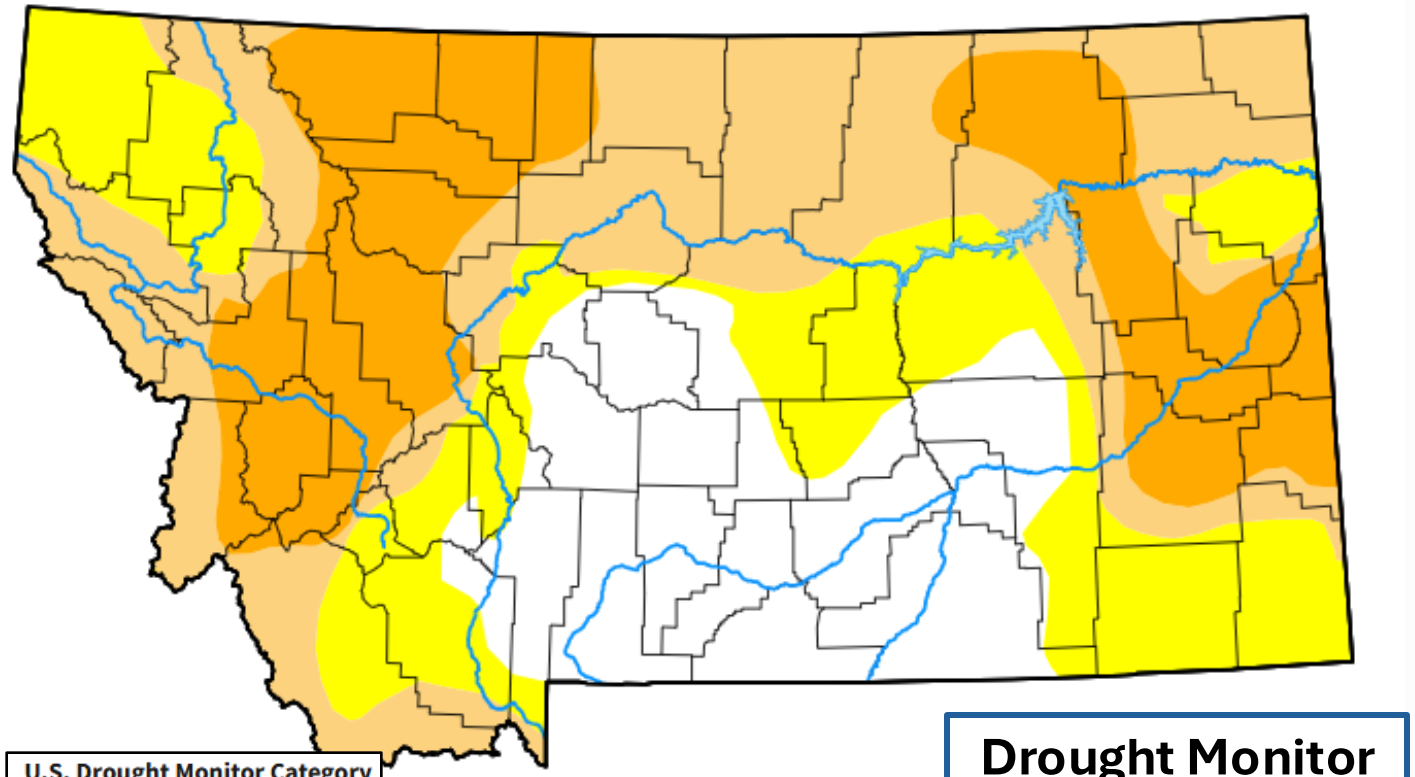
* 176,000 of the 2024 acres were from the Remington Fire in southeast MT

Hot and dry July 2024 set up fire potential in much of NRGA but late July rainfall and live fuels reduced large fire potential

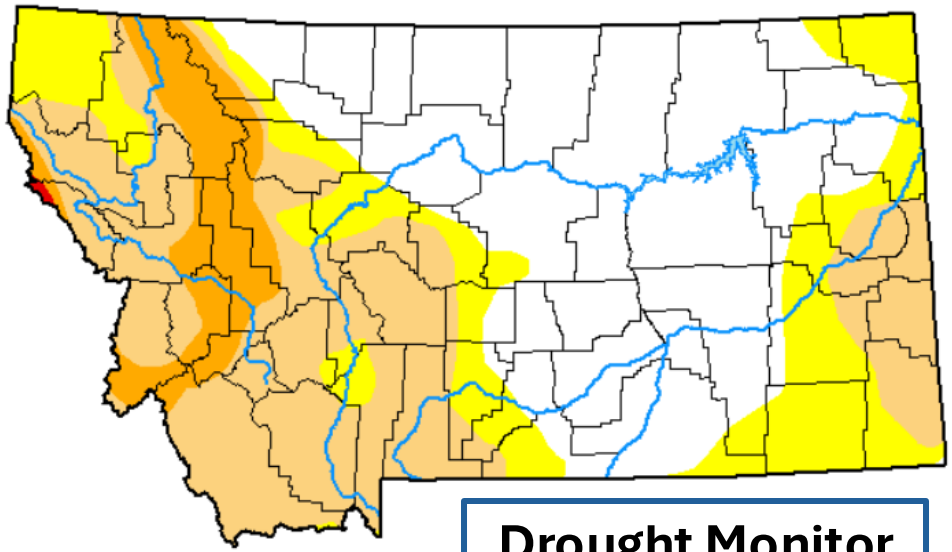


Drought Monitor

- North central Montana drying, moderation parts of southwest and southeast past 8 weeks
- Severe drought coverage has increased over Montana by 15% over the past year



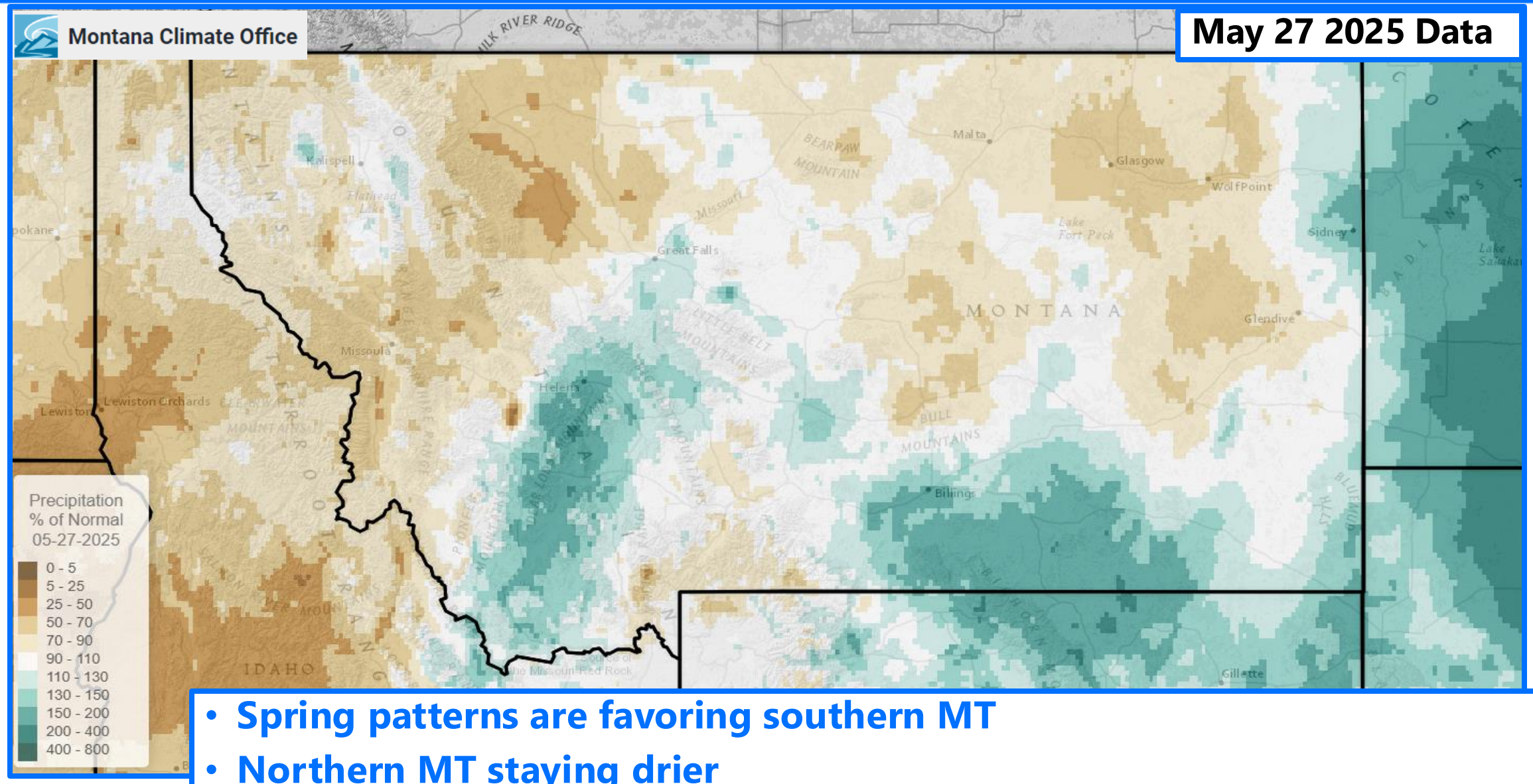
Drought Monitor May 27 2025



Drought Monitor May 28 2024

Northern Rockies
Predictive Services

Departure from normal: 30 Day precipitation



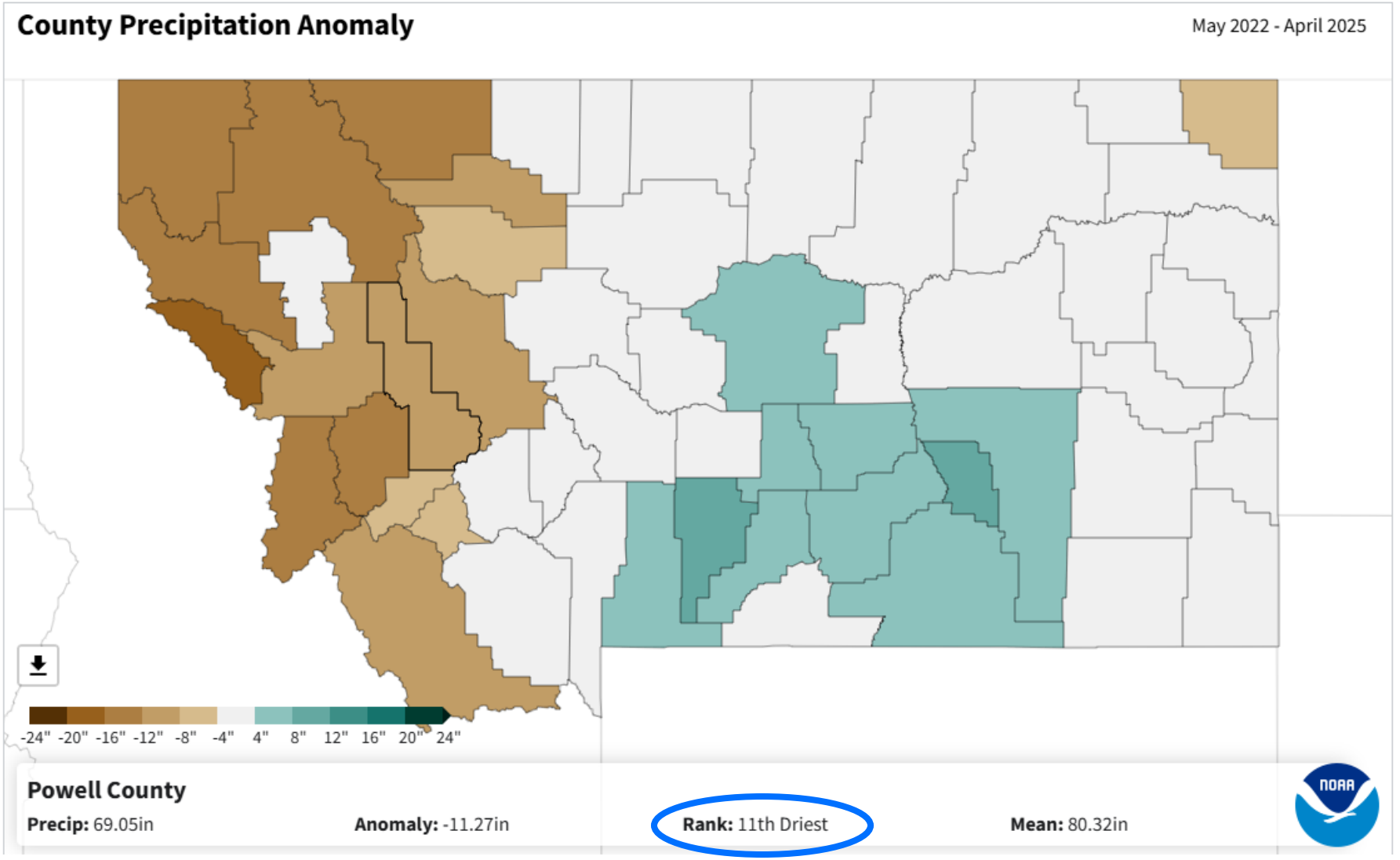
- Spring patterns are favoring southern MT
- Northern MT staying drier
- Weather system this week helps a bit east of Continental Divide

Northern Rockies
Predictive Services

County 36 Month Precipitation Anomaly

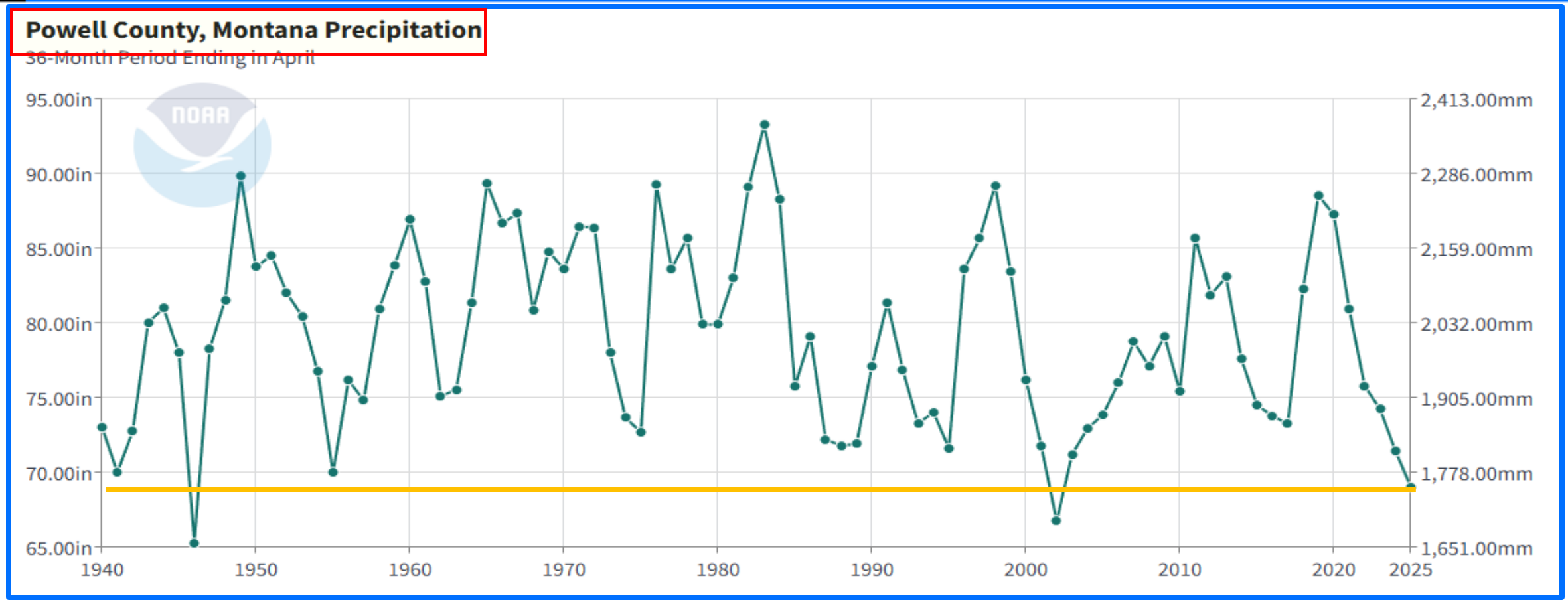
Numerous counties in western Montana missing 8 to 16 inches of moisture past 3 years

Powell County's deficit ranks 11th driest for 36 period for the 128 years of record



Northern Rockies
Predictive Services

Powell County 36 Month Precip Anomaly

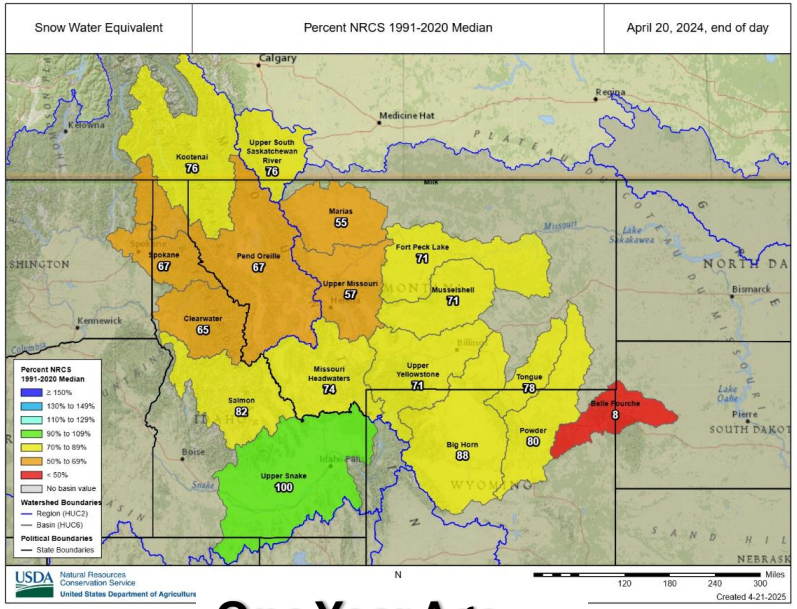


Western Montana Division 36 month running precipitation deficit as dry as early 2000s

Indicator that onset of sustain heat and dryness could cause stress quickly because of reduced groundwater

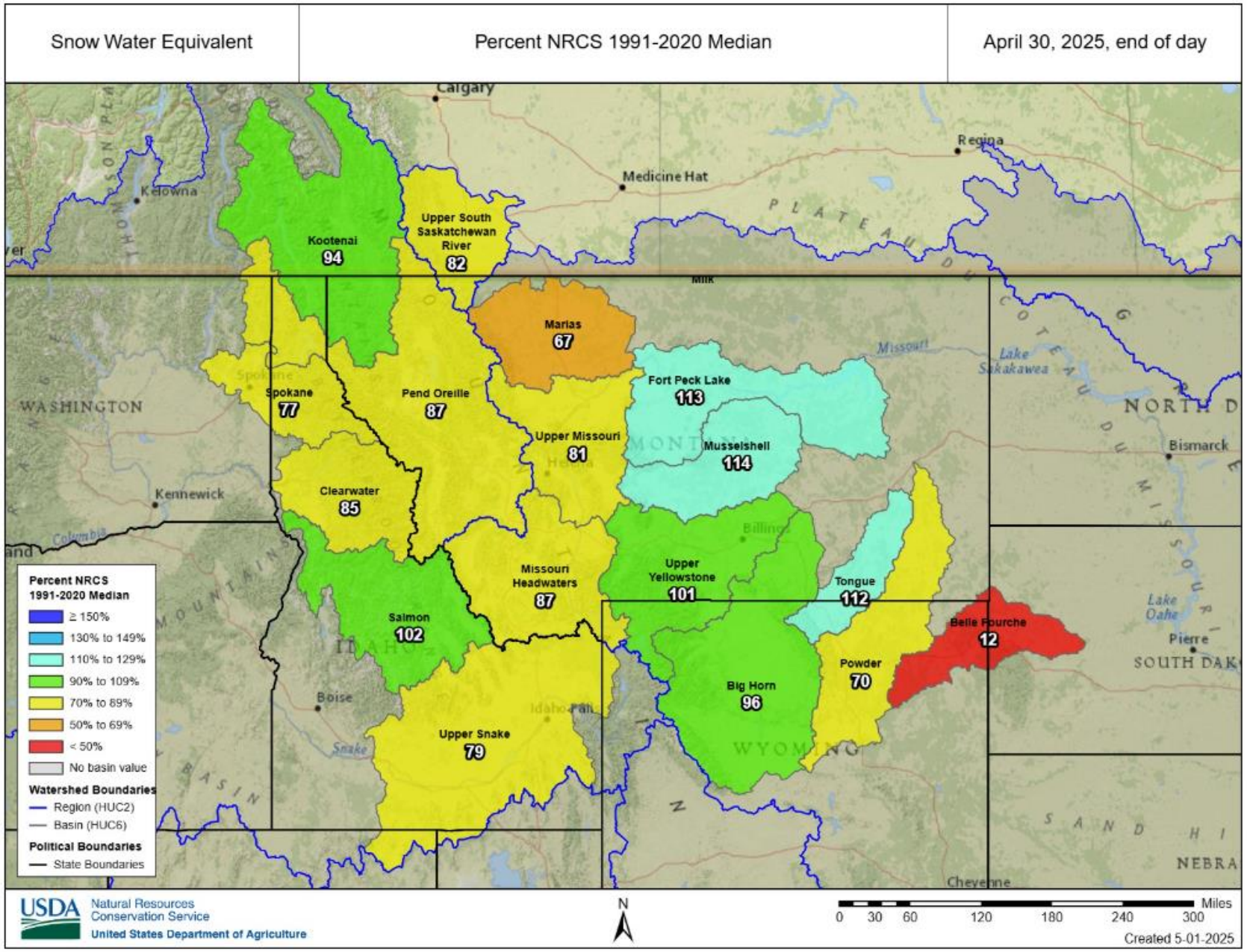
Northern Rockies
Predictive Services

Mountain Snowpack

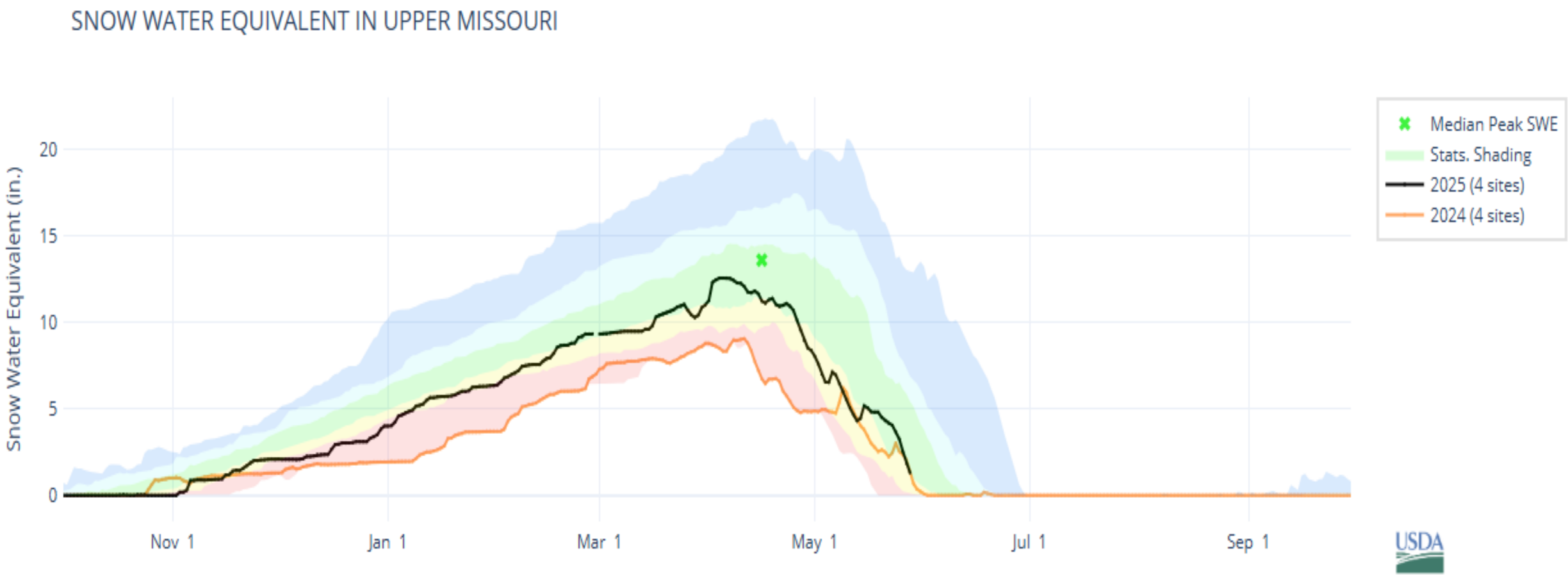


One Year Ago

- **Snowpack slightly below normal western basins with better snowpack central Montana**
- **Improvement compared to last year**



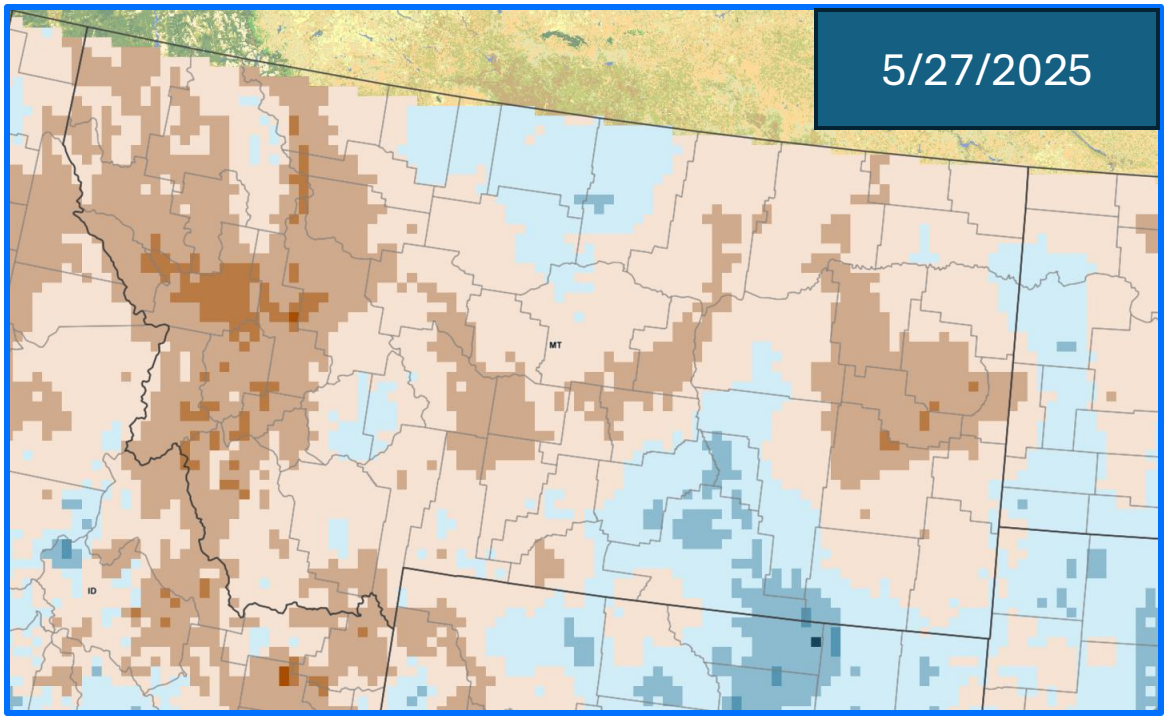
Mountain Snowpack

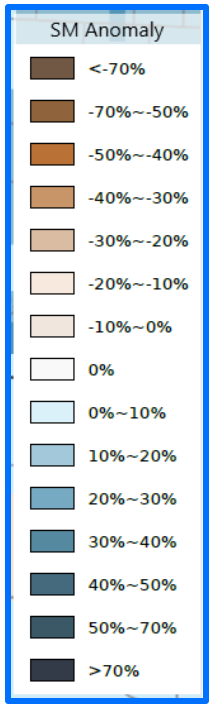


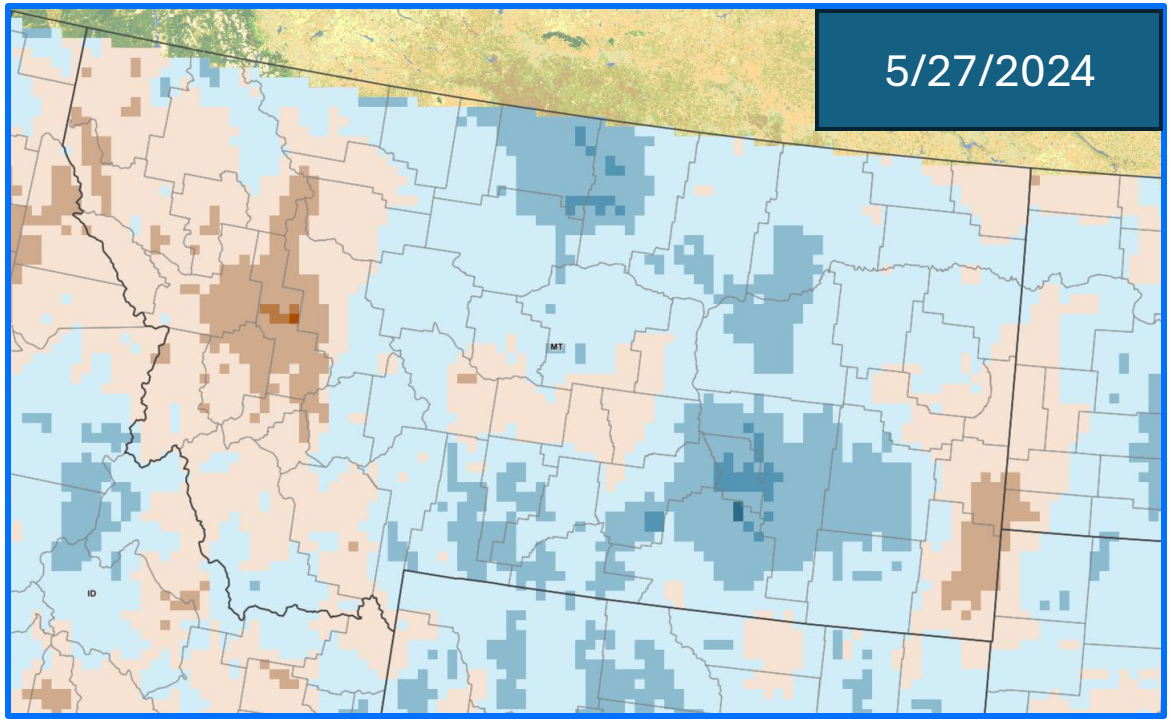
While the snowpack was better than 2024, warmer weather has already caused 2025 snowpack to deplete as quickly as 2024

Subsurface soil anomalies

2025 subsurface soil moisture anomalies display more deep soil dryness across Montana compared to 2024

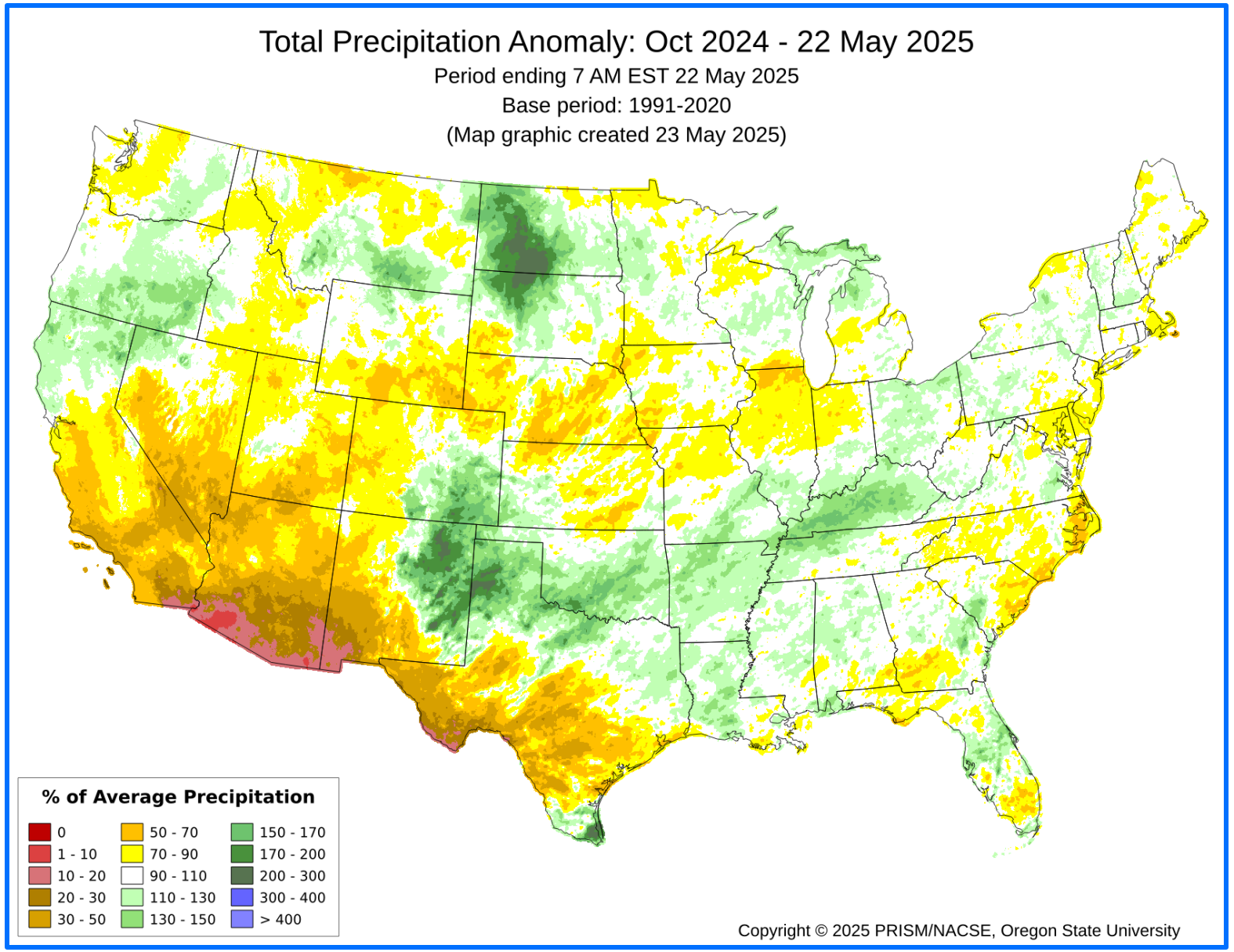






Crop-CASMA (Crop Condition and Soil Moisture Analytics)

Water Year Precipitation Anomaly



Water Year (Oct-Apr) Precipitation Anomaly

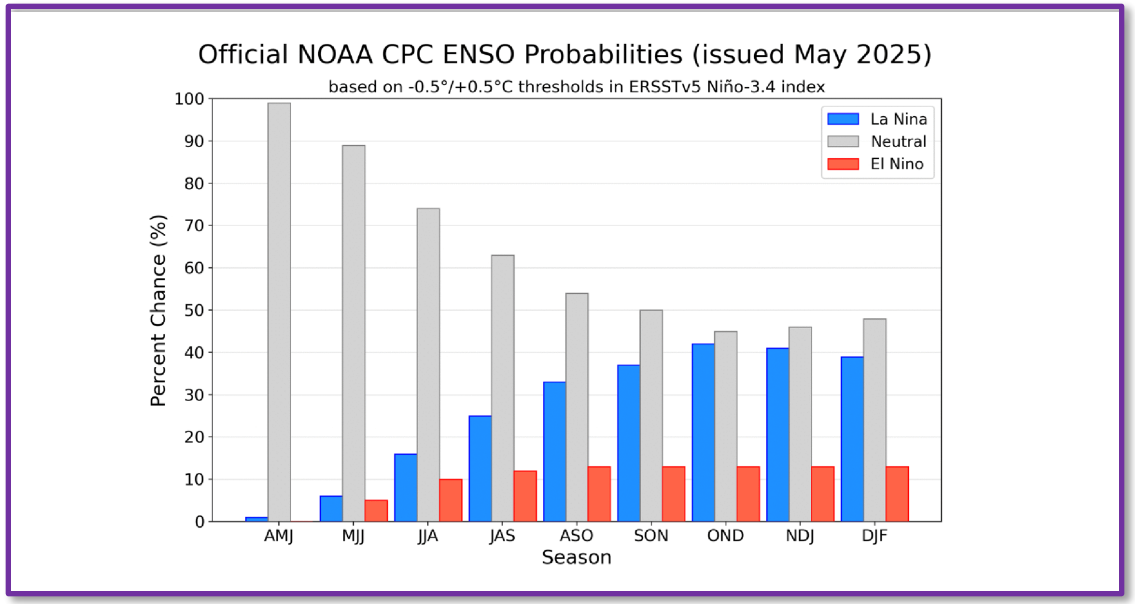
Below normal western NRGA, greater deficits north central MT and along MT/ND border

Above normal moisture south central MT

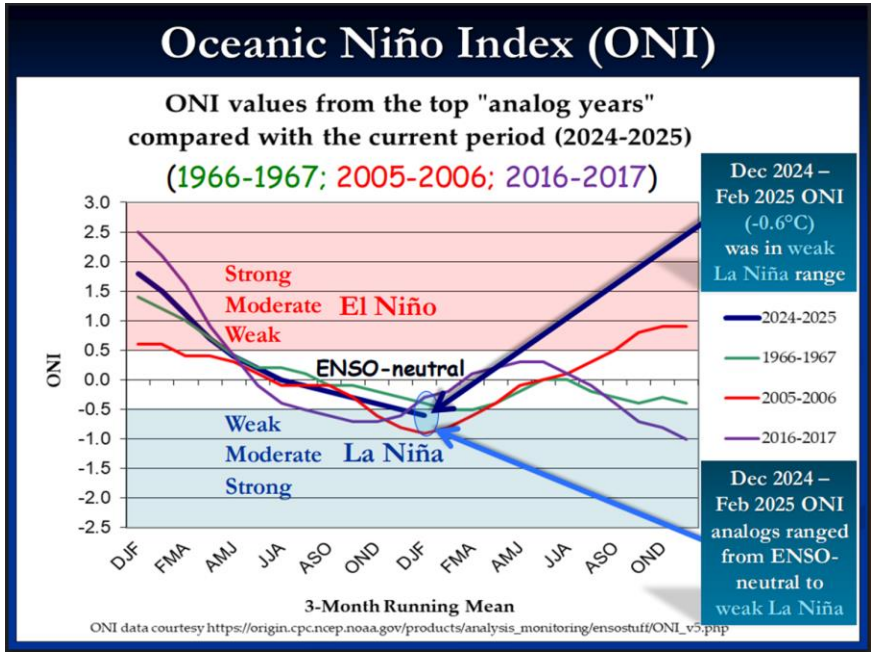
Southwest US/southern GB well below normal

Drier ground to our south will support formation of heat domes

Global Connections Check In



- El Nino/La Nina pattern
  - Winter weak La Nina signal became neutral in March and expected to become weak La Nina in the fall
- Sequence matches critical years (2006, 2017)
- Long term weather analysts identify years where current ocean conditions match previous years (table below)



Nearest Neighbor Analysis

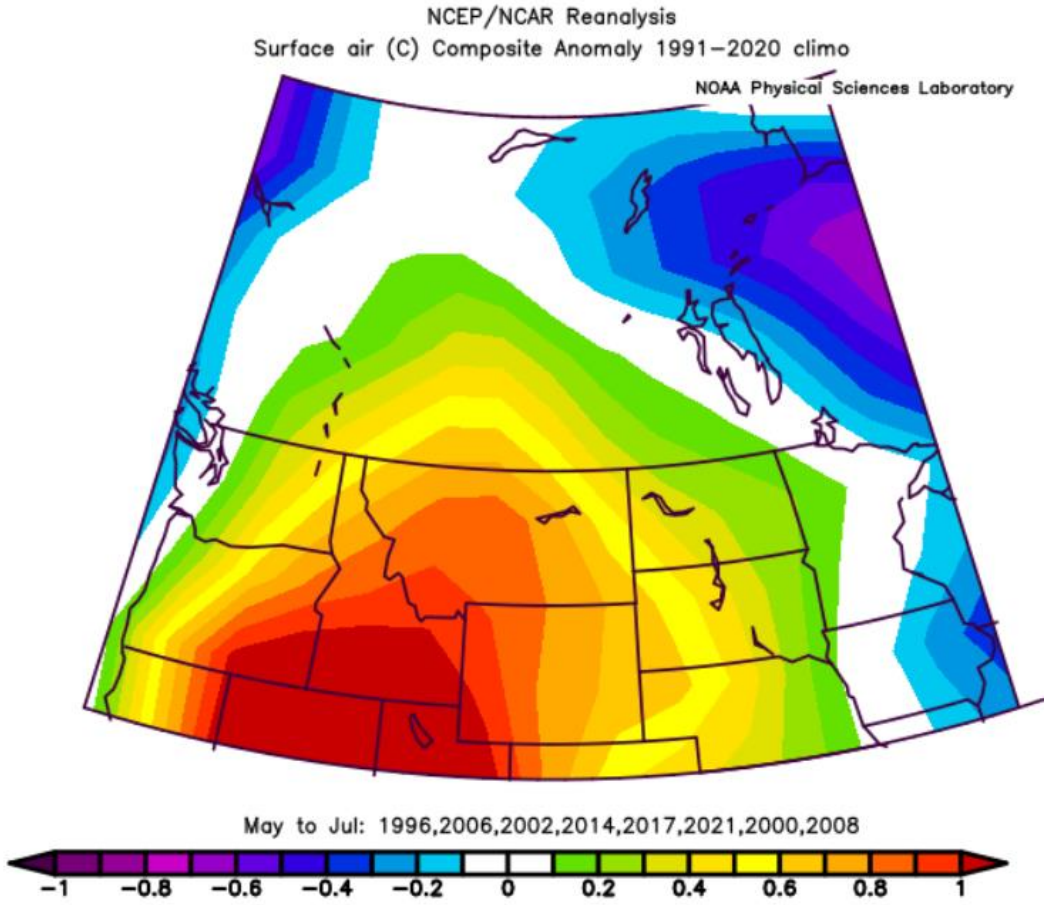
SST	EQ Heat
2006,2002,2017,1996,2014	2021,2008,1996,2000,2006

Sample Size: 8 (1991-Present)

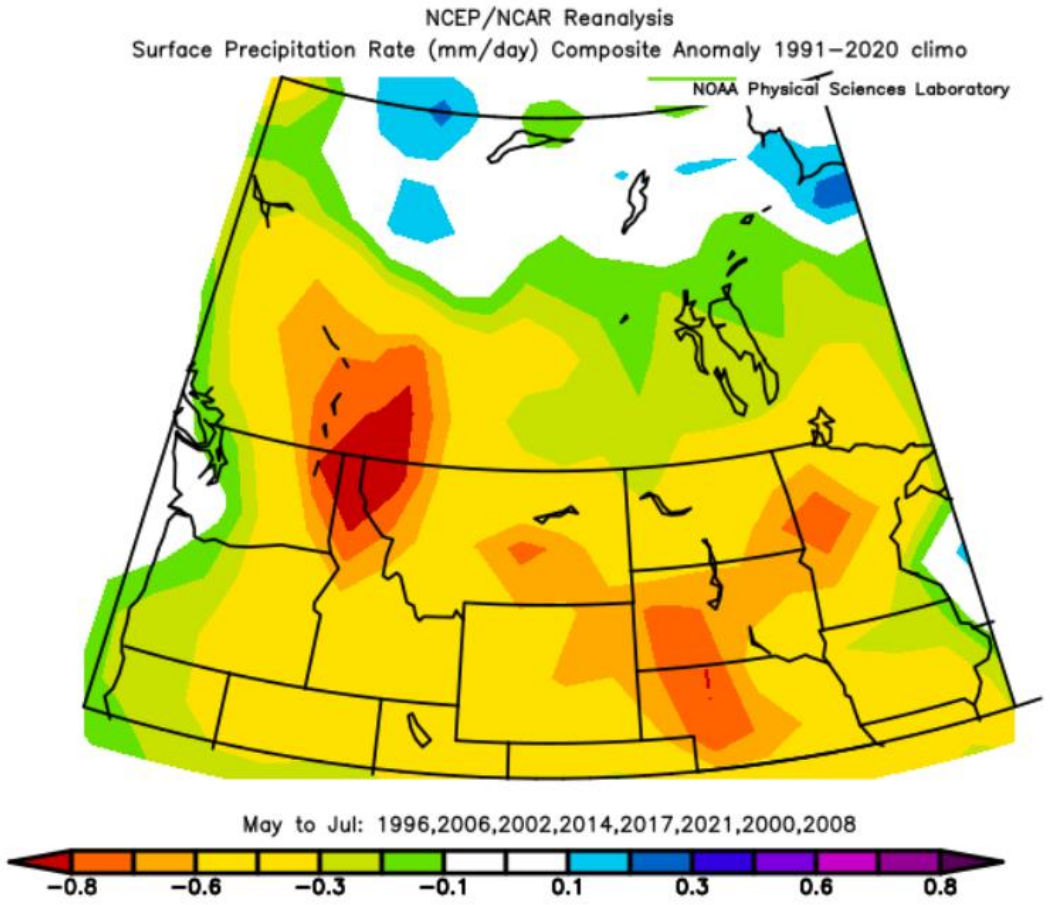
Historical Weather Reanalysis

Outlooks based on other years matching current global patterns

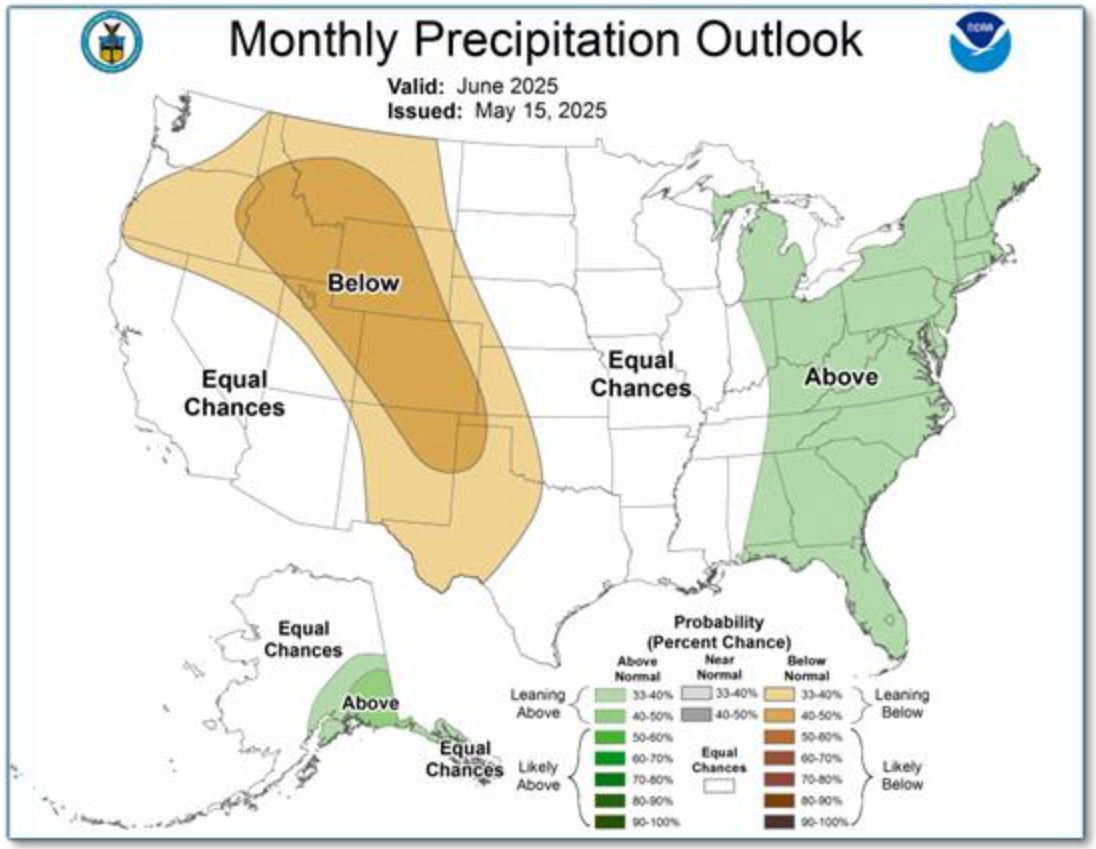
Temperature Reanalysis Outlook MJJ
Strong warm signal western half Montana



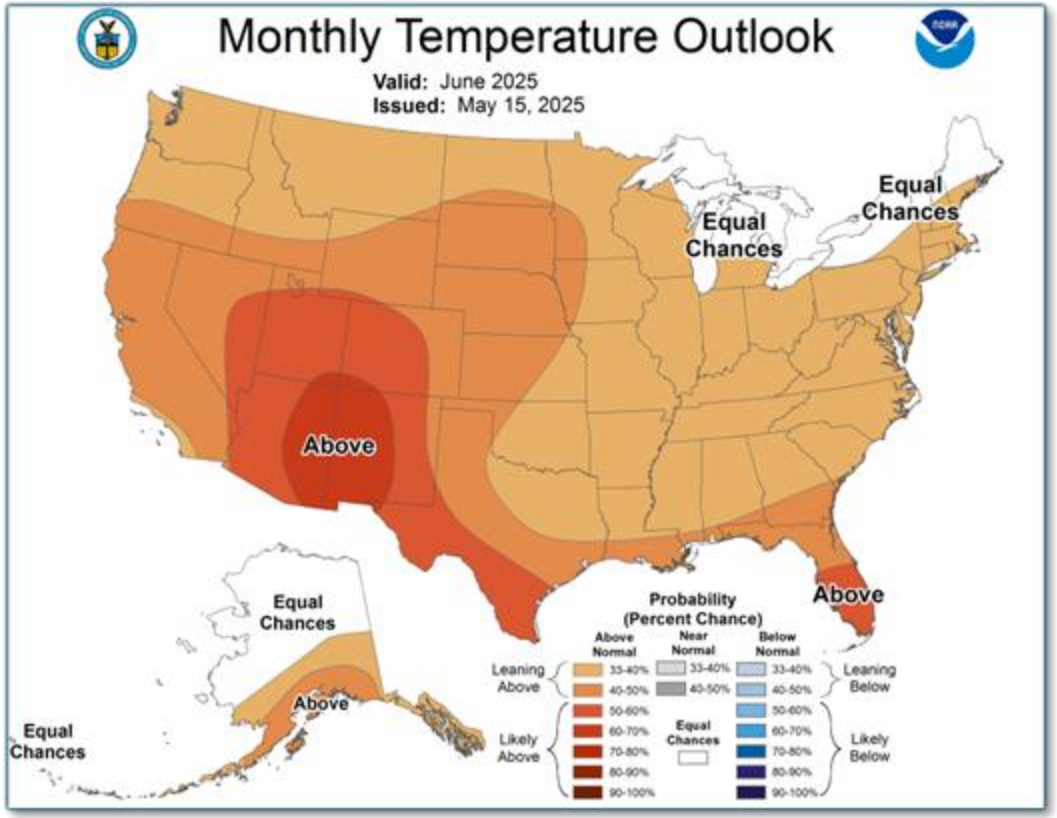
Precipitation Reanalysis Outlook MJJ
Very strong dry signal northwest Montana



Outlook for June

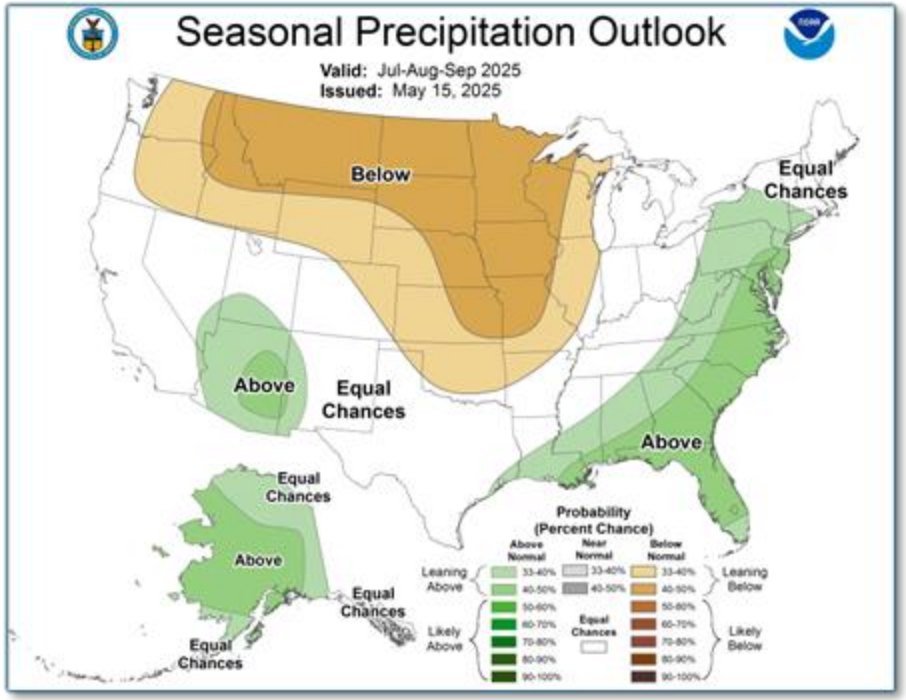


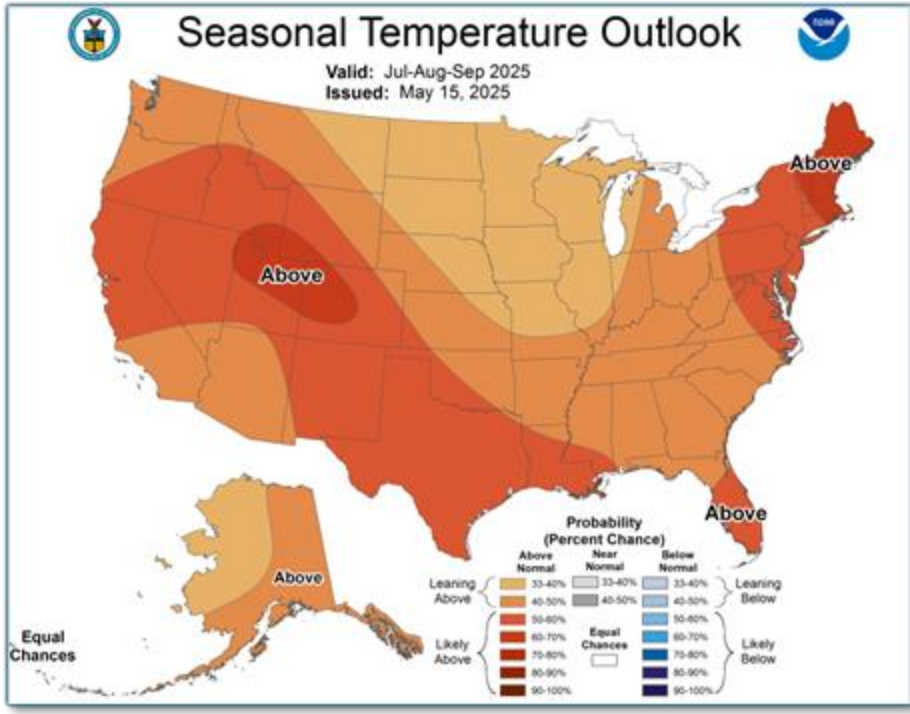
- **Most of Montana has a dry signal and southern half a warm signal**
- **Southwest US and Great Basin should be hotter than normal due to the dry soil conditions**



Outlook July through September

- Widespread below normal signal for all of Montana
- Heat over Great Basin pushing northward in Montana
- Does above normal along AZ/NM border indicate eastward oriented monsoon?

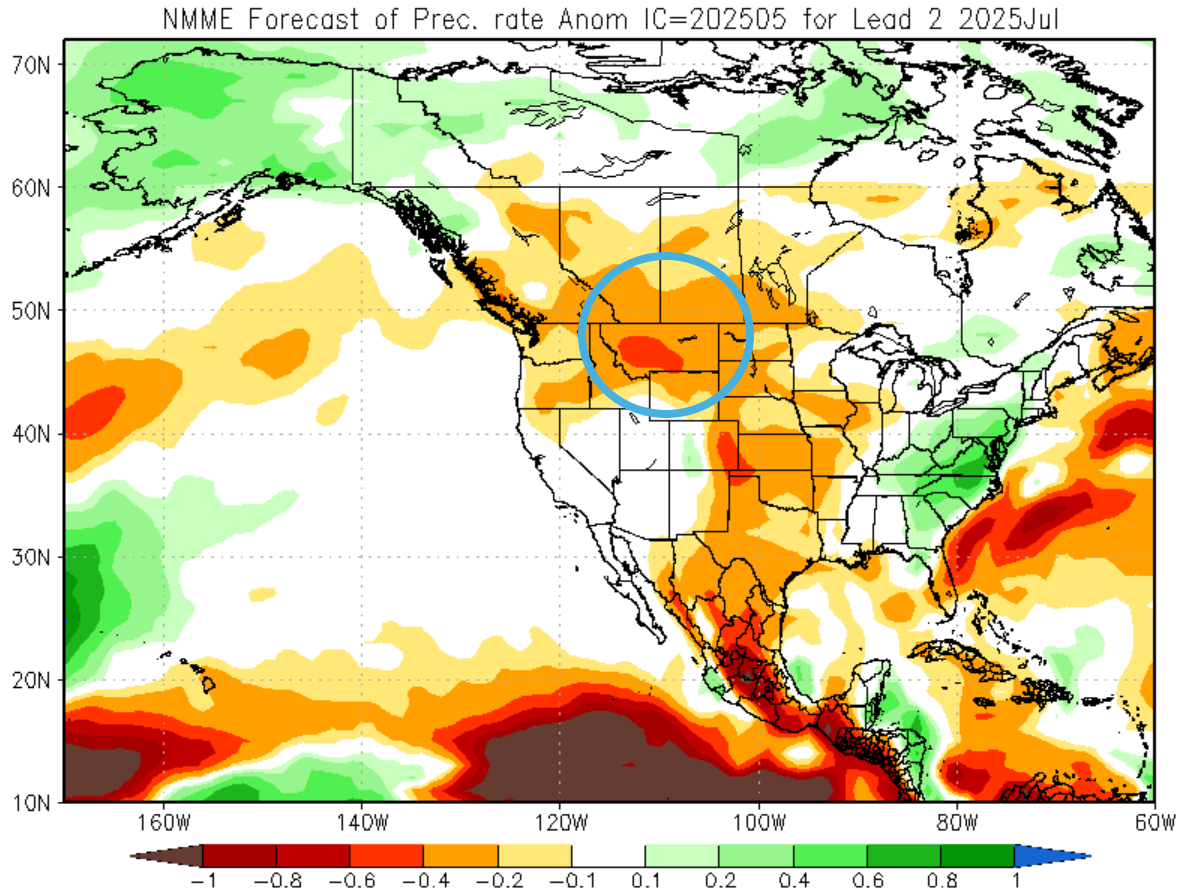


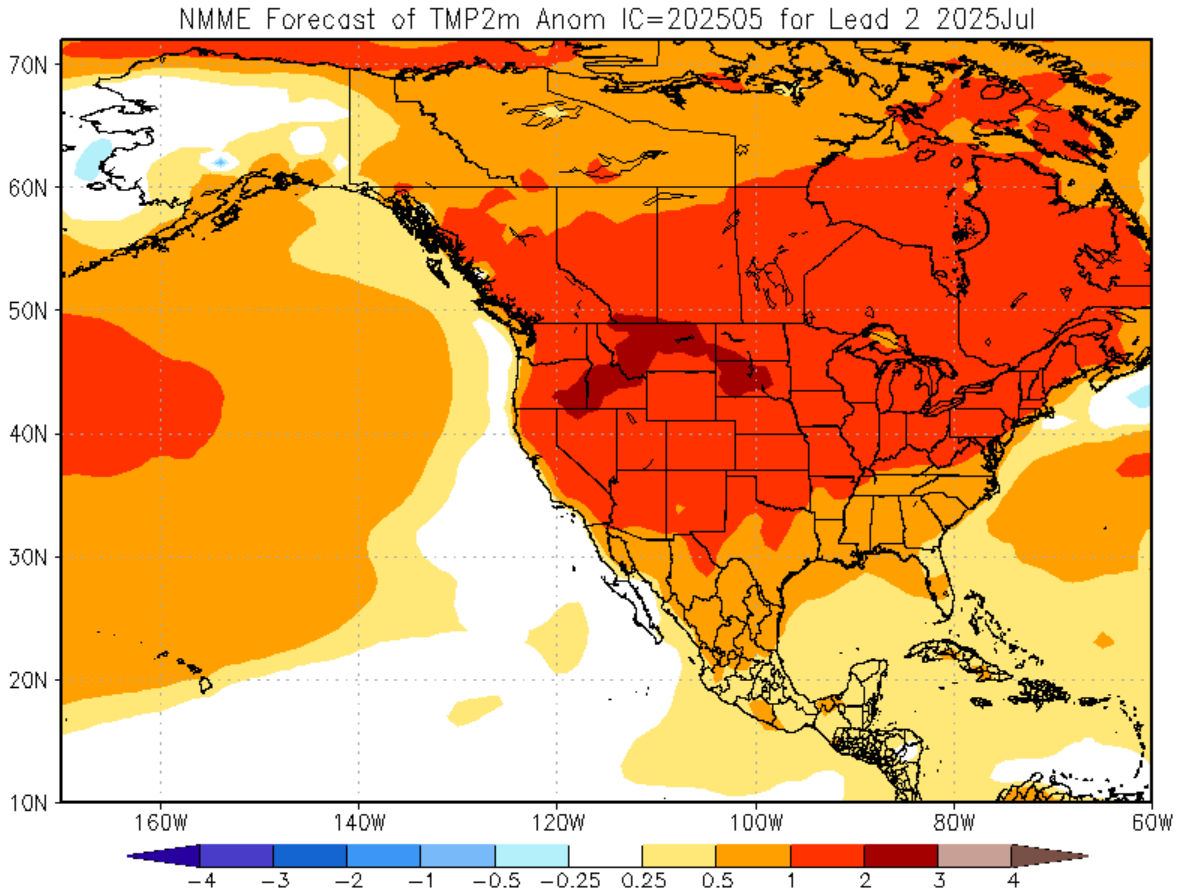


Northern Rockies
Predictive Services

Individual Monthly Outlooks

JULY | AUGUST | SEPTEMBER



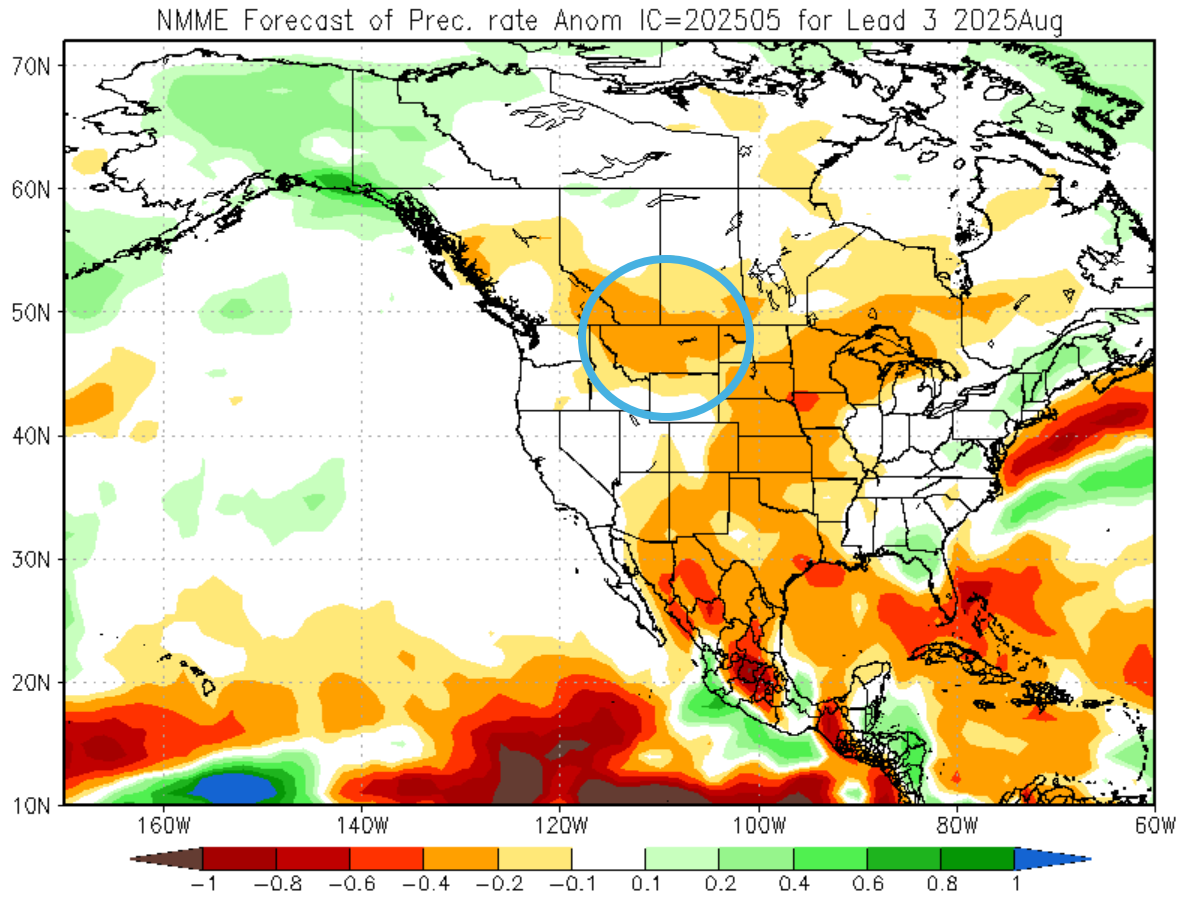


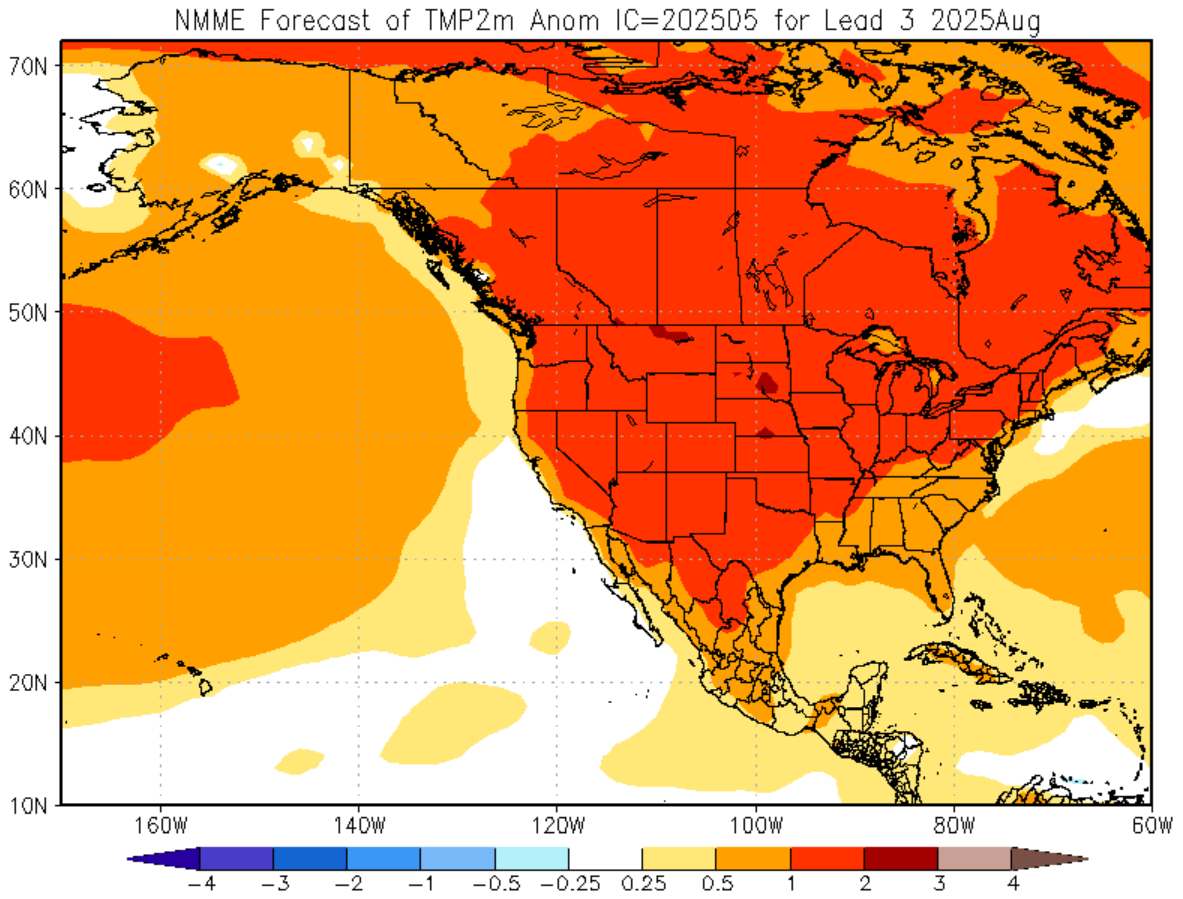
Strong dry signal over Montana with well above normal average temperatures
Wet monsoon signal favors Colorado versus western Great Basin

Northern Rockies
Predictive Services

Individual Monthly Outlooks

JULY | AUGUST | SEPTEMBER



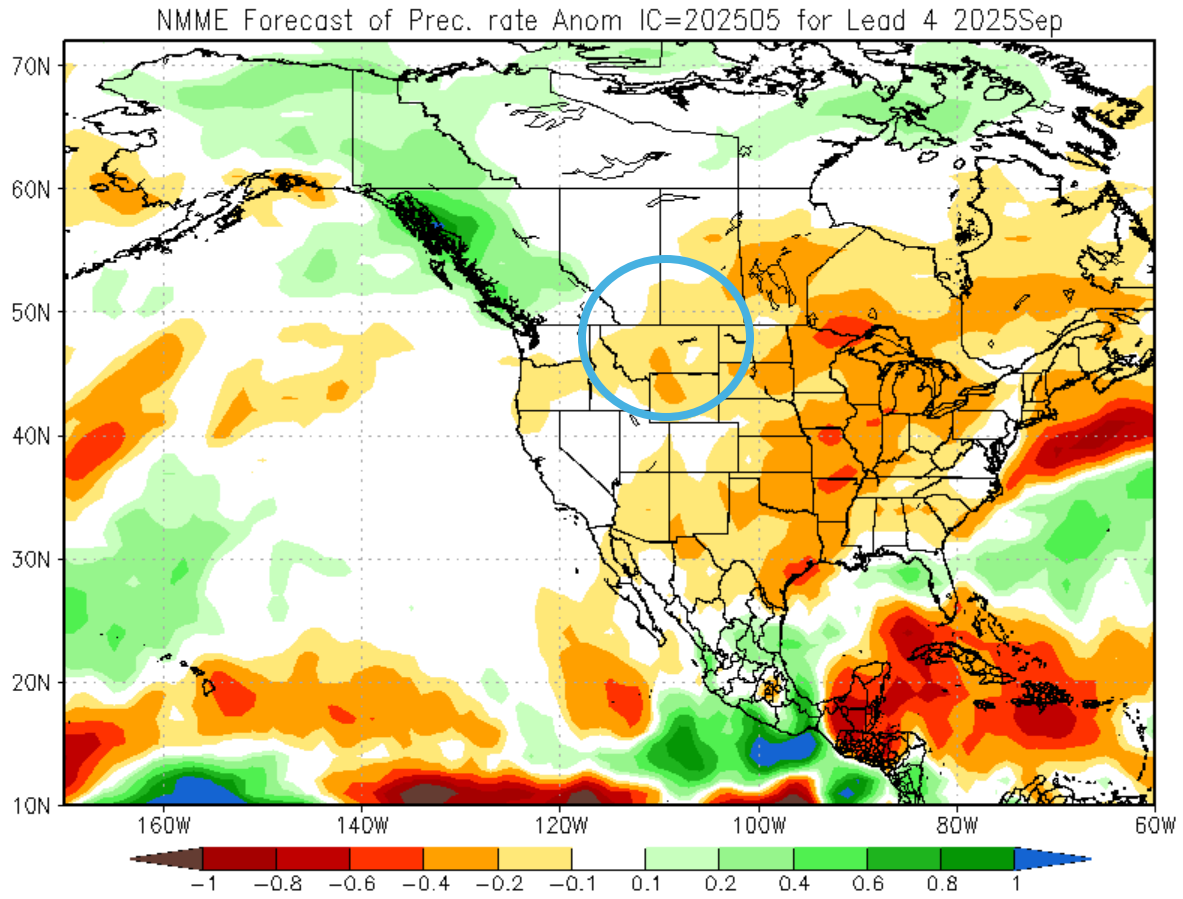


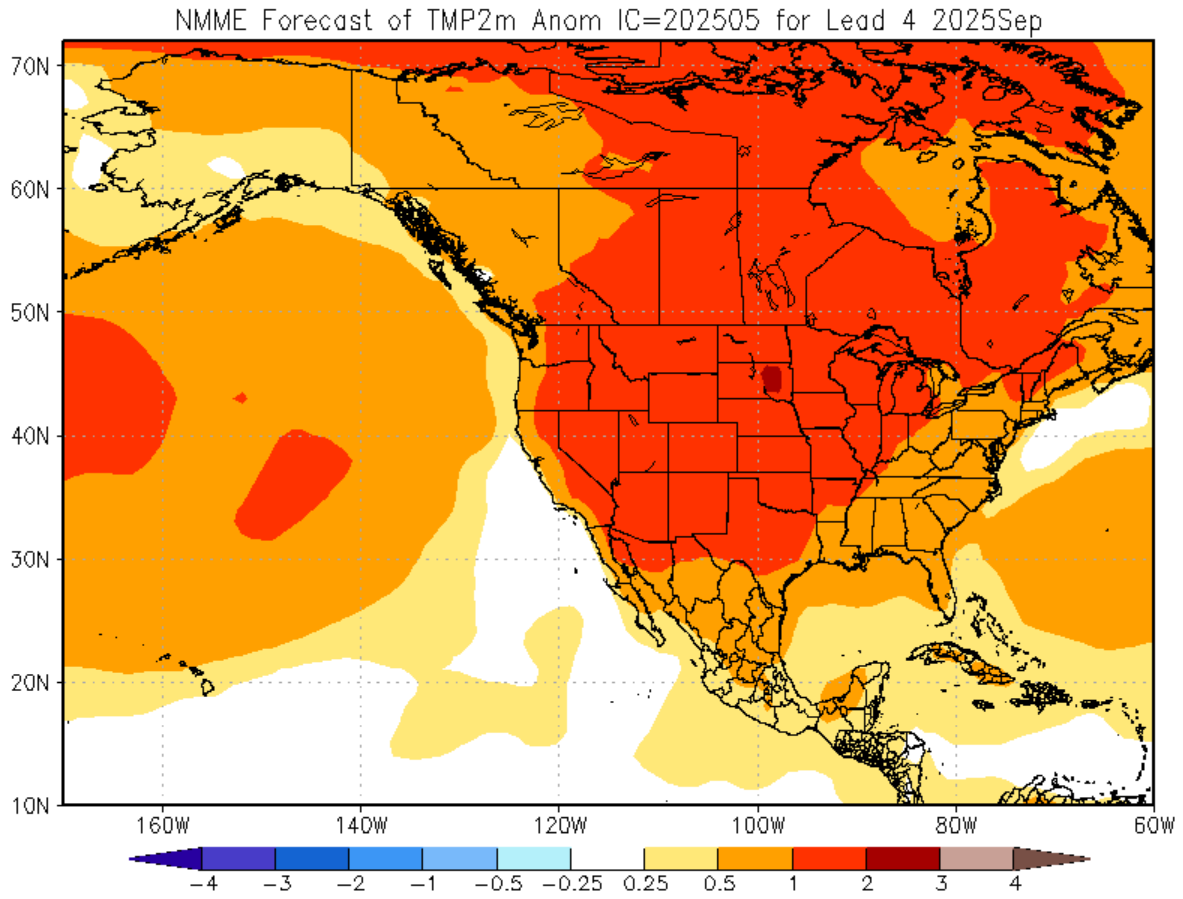
Still dry signal over Montana with normal moisture over the Great Basin indicating monsoon may stay south of state

Northern Rockies
Predictive Services

Individual Monthly Outlooks

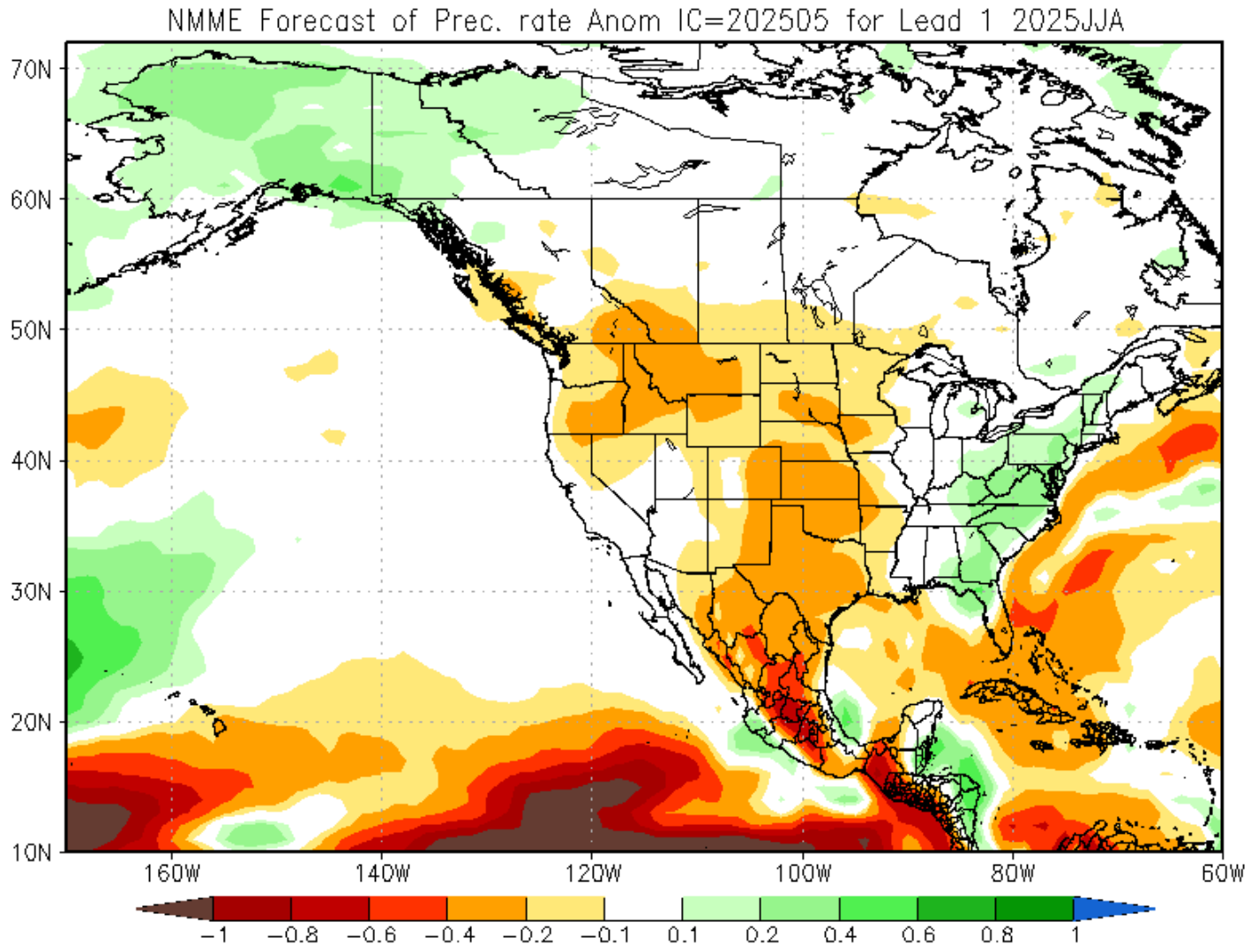
JULY | AUGUST | SEPTEMBER

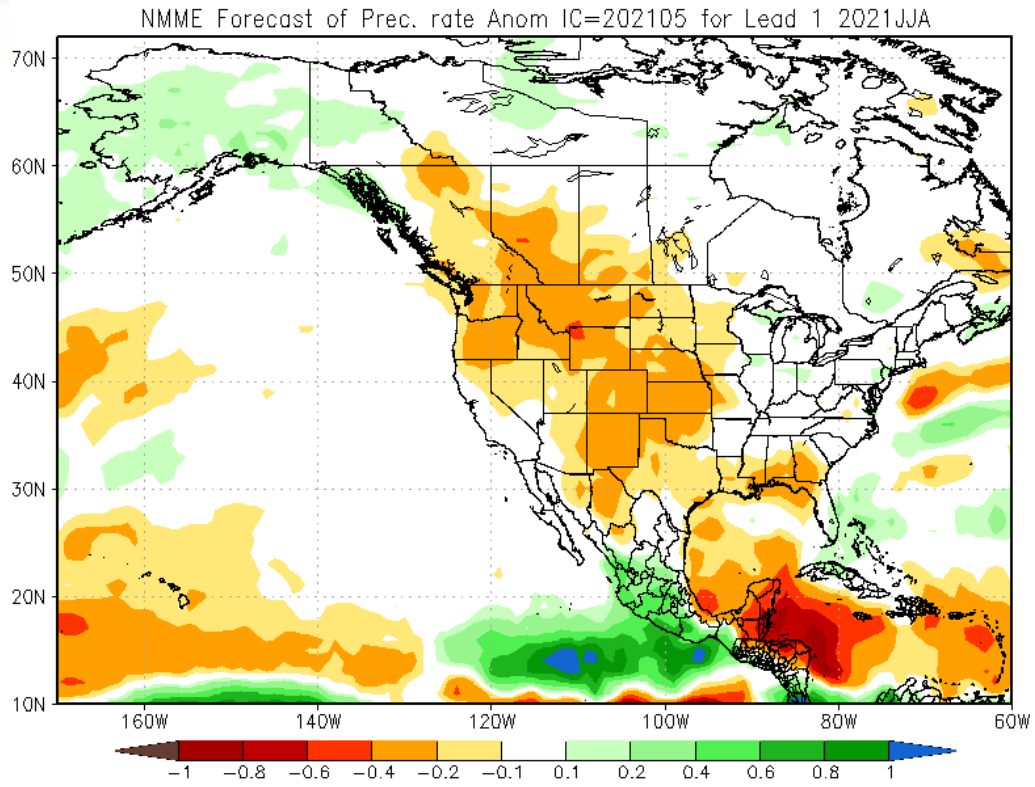




September continues dry with stronger chances shifting a bit east
This is the time of year where wind will become an increasing factor

2025 Summer Forecast compared to 2021 Summer Forecast
May Issuance





Strong similarity 2021 and 2025 forecasts for June through August precipitation anomalies

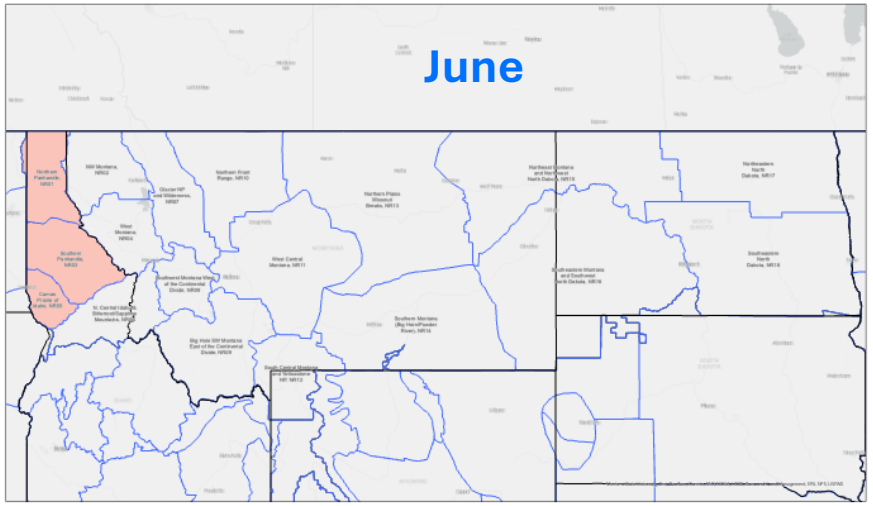
Northern Rockies
Predictive Services

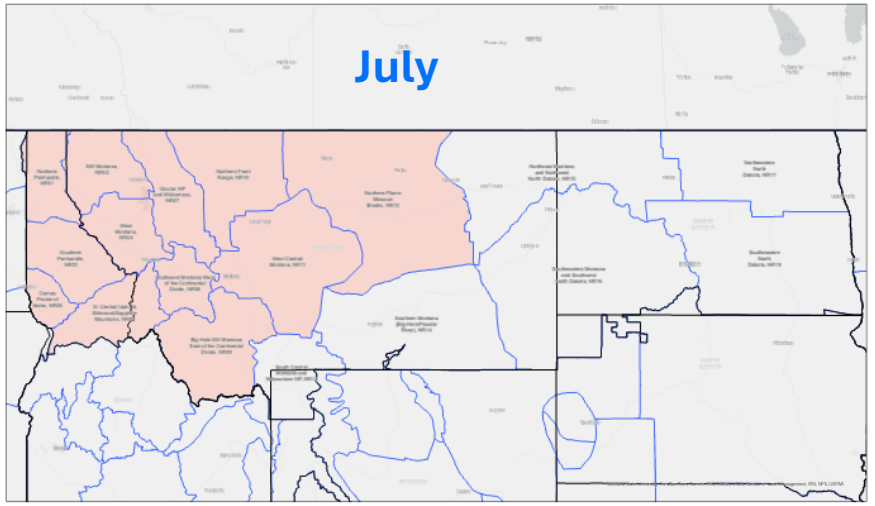
Prelim Significant Wildland Fire Potential

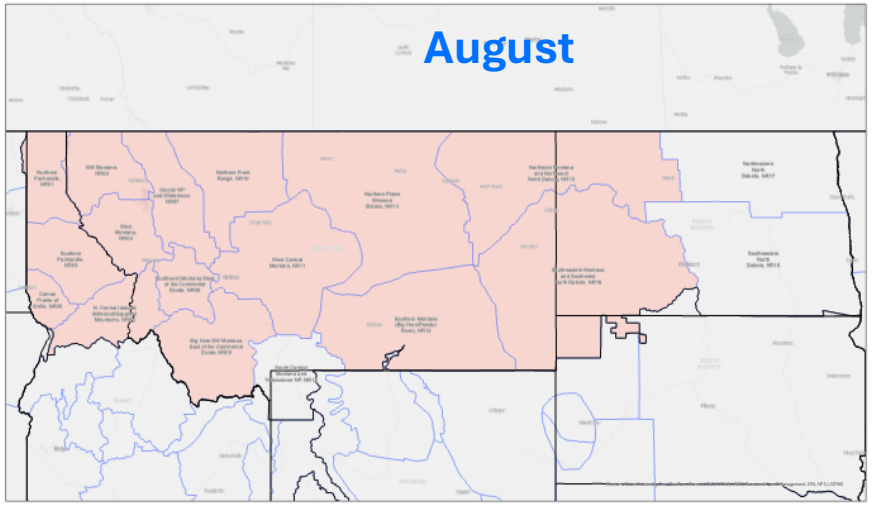
Increasing significant wildland fire potential north Idaho in June.

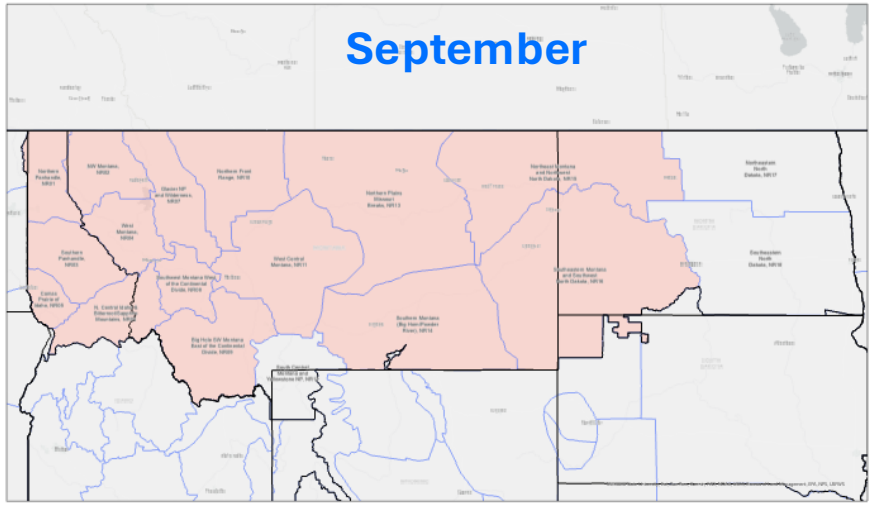
Concerns spread to the western half of Montana in July

Concerns spread through southeast Montana to western North Dakota by August, persist into September









Neighboring geographic areas to our west and south align with our increasing potential

Summary

- Western Montana multi-year moisture deficits match the early 2000s
- June starts wet but turns hot and dry during the second half of the month
- Hot and dry forecasts in July and August will erase spring moisture surplus in central Montana
- Be prepared for an early start and a long fire season especially if monsoon moisture does not recharge seasonal grasses late summer

Contact Information:
Northern Rockies Predictive Services
mtnrc.predictiveservices@firenet.gov

Meteorologist:
Dan Borsum Bureau of Land Management

Fire Analyst:
Erin Noonan-Wright US Forest Service