

# Northern Rockies Geographical Area

## Rest of Fire Season Outlook 04 September, 2022

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Robertson Draw Burn Area, PSA 12 05 May 2022 M. Richmond





# FACTORS THAT INFLUENCE NRGW WILDLAND FIRE POTENTIAL

Spring Factor

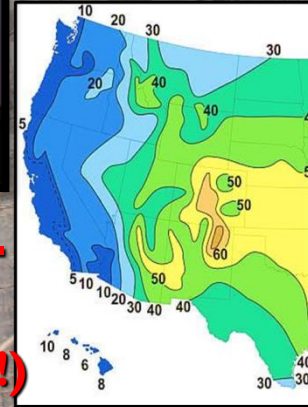
*\*Snowpack melting rates are much more important than snow pack accrual!*



**July Temperatures and Precipitation**  
Warmer/Drier (Yes!)



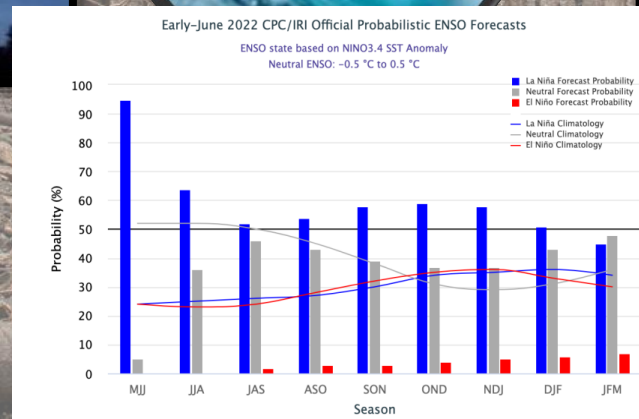
Number of Thunderstorm Days/Year (NOAA)



**Monsoon - Lightning Ignitions (Lots!)**

Start - Fall

**Ocean/Atmosphere Circulations (ENSO/PDO/etc.)**



Live/Dead Fuel Moisture



**Drought**

Fall /Winter Precip: Dry Eastern areas  
Built a good snowpack early.

Winter Snowpack



*Near to Above Average SWE on 01 May, 96-119 Percent*

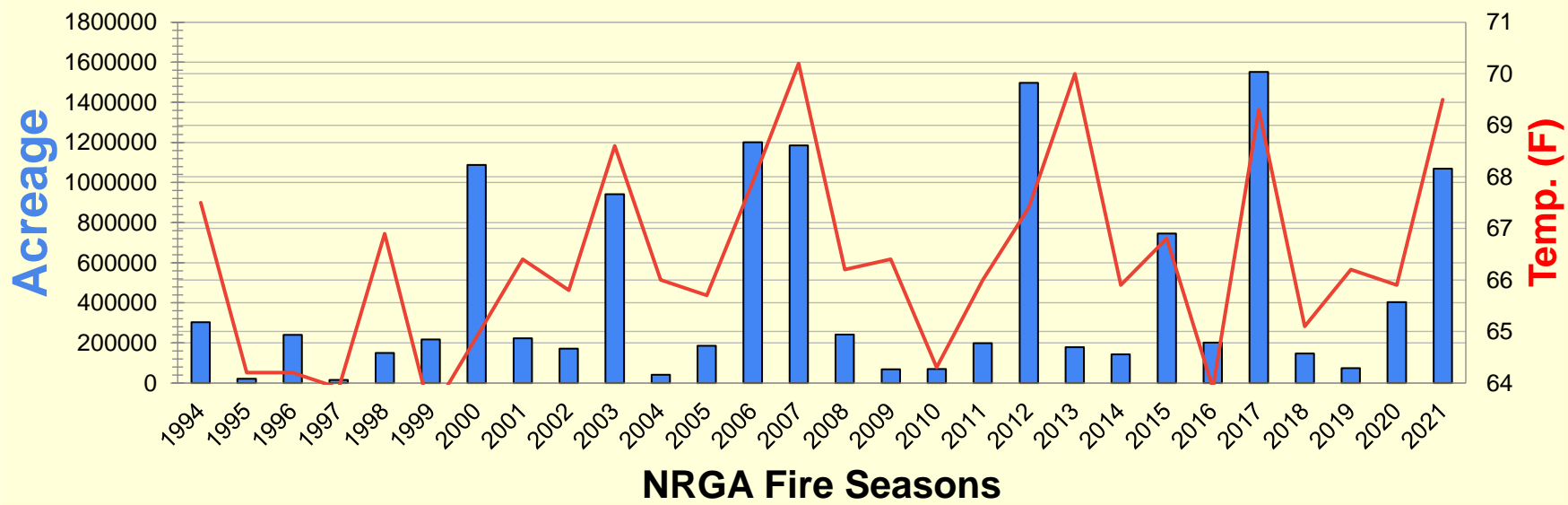
**Weak La Nina of the ENSO Cycle Forecast to Continue Through Summer**





As the plot below depicts, since 1994 (when records are most accurate), peak seasons over 750,000 acres have become larger, and more frequent. Correlating generally with warmer overall fire season average temperatures, and slightly decreased average summer precipitation. Note that there were two peak seasons in a row, 2006/2007, so it is possible.

**NRGA Fire Season Acreages, MSO Fire Season (06/15-09/15)  
Avg. T (F)**



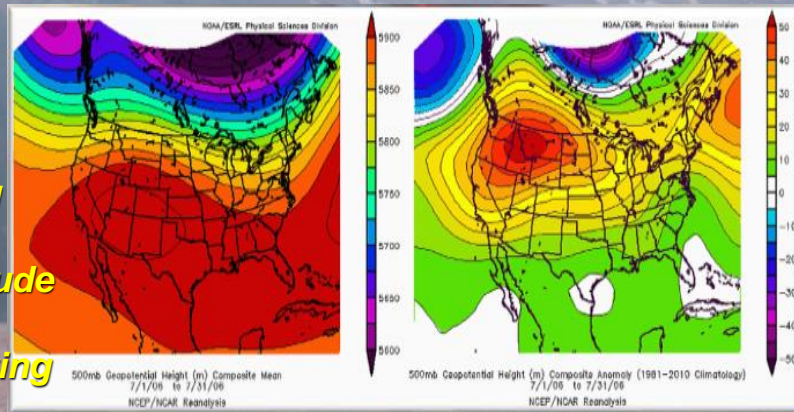


# WESTERN NORTH AMERICA SUMMER UPPER RIDGING ANOMALIES ARE GETTING STRONGER AND LARGER, DRIVING OUR EXTREME SEASONS

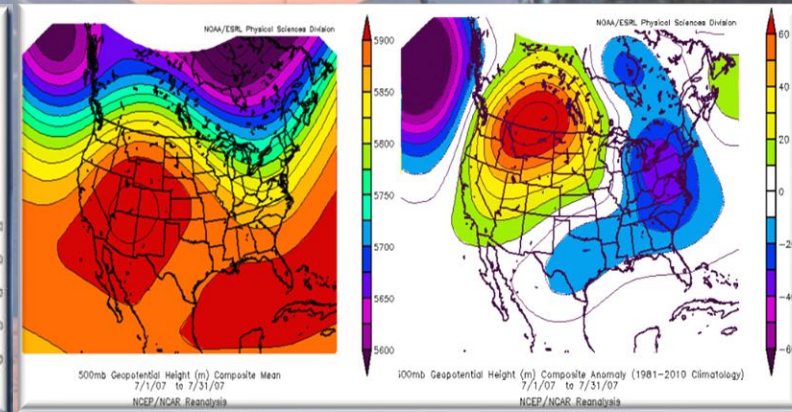
(1988/2000/2012/2015 SLIGHTLY DIFFERENT, WEAKER ANOMALIES BUT LONGER WITH DIFFERENT TIMING) This brings longer multi-day and week periods of warmth/very low RHs with poor RH recoveries on slopes/ridges. **RAPID AND SUSTAINED FUELS DRYING, Drought Stress.**

Are the tropics expanding Northward due to the overall global Oceanic/Atmospheric warming? Stronger summer ridging in favored mid-latitude areas?

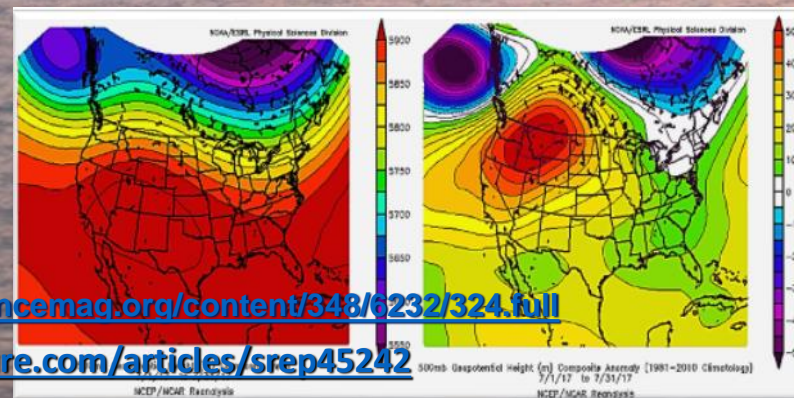
Is diminishing Arctic Sea Ice coverage and thickness playing a role? Is the summer mid-latitude jet long-wave progression slowing and weakening?



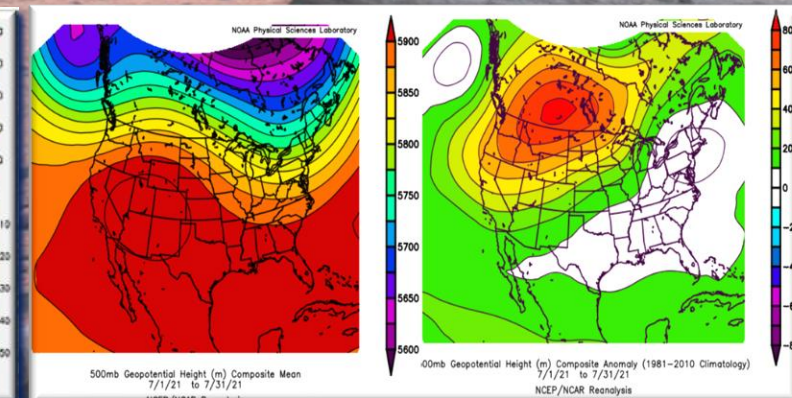
July 2006 Mean Upper Air Pattern/Anomalies



July 2007 Mean Upper Air Pattern/Anomalies



July 2017 Mean Upper Air Pattern/Anomalies



July 2021 Mean Upper Air Pattern/Anomalies

<http://science.sciencemag.org/content/348/6232/324.full>

<https://www.nature.com/articles/srep45242>



# WHAT STRONGER UPPER RIDGING PRODUCES:

**WARMER, DRIER CONDITIONS AT INCREASINGLY HIGHER ELEVATIONS**

COMPARISON OF CONDITIONS BETWEEN AN EXTREME SEASON, AND LESS ACTIVE ONE ON 8000' RIDGETOP LOCATION

**JULY 2017 vs. 2016 PT 6 RAWS just north of Missoula**

**2017 Monthly Summary:**

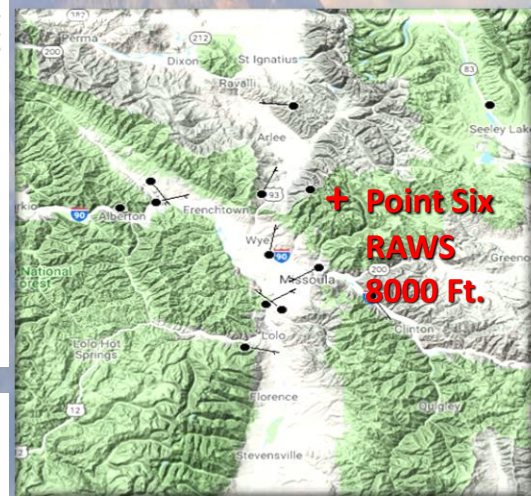
**Tx/Tn: 69/54    Precip: 0.15**

**RH: Monthly Mean 36%**

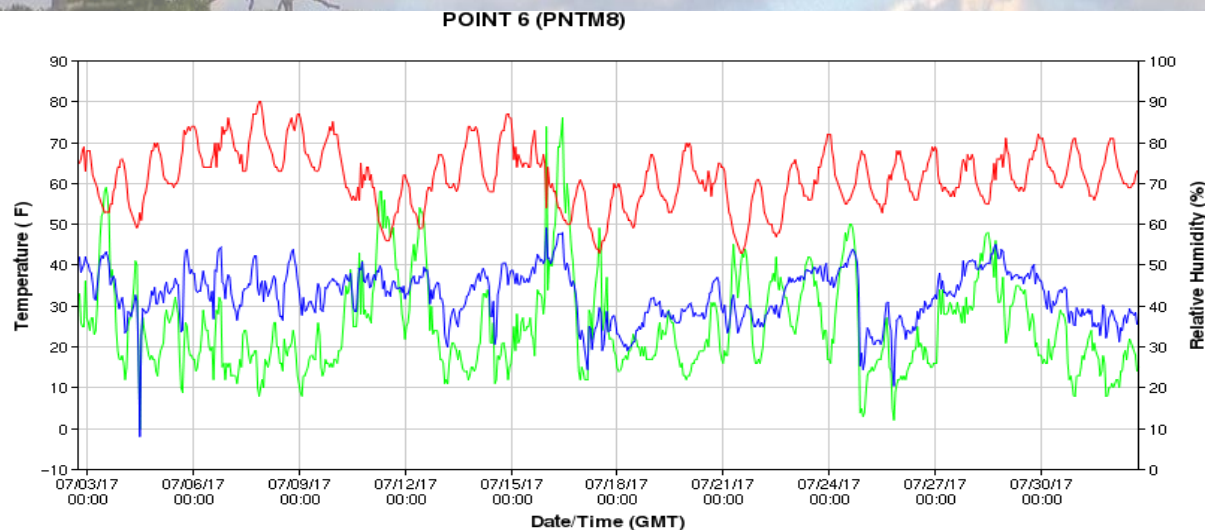
**Minimum: 10%**

**Only one day with mean**

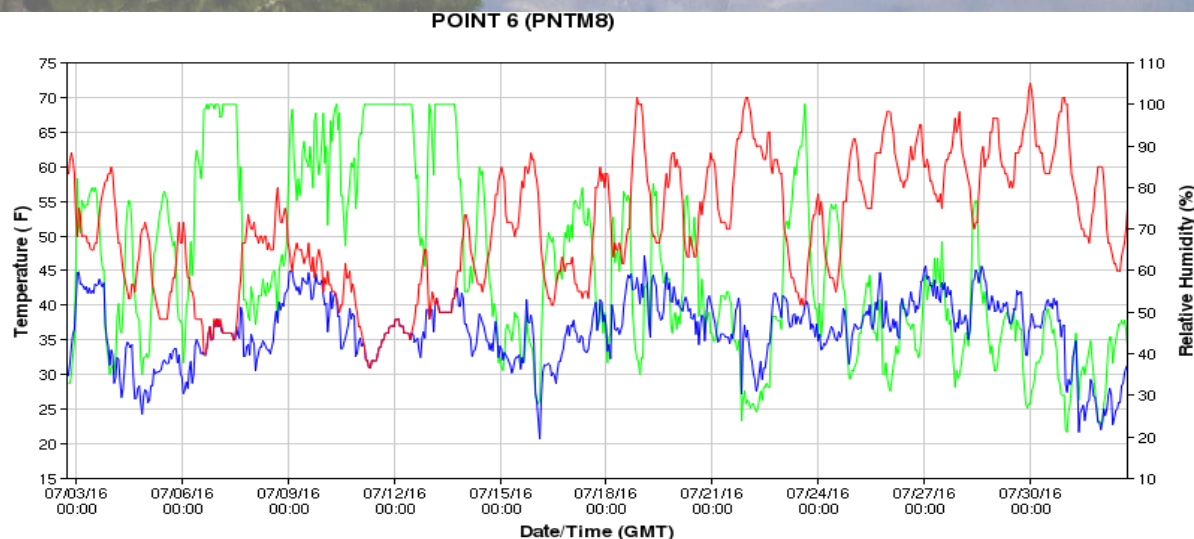
**RH > 50%**



**JULY 2017**



**JULY 2016**



**2016 Monthly Summary:**

**Tx/Tn: 59/44    Precip: 2.25**

**RH: Monthly Mean 60%**

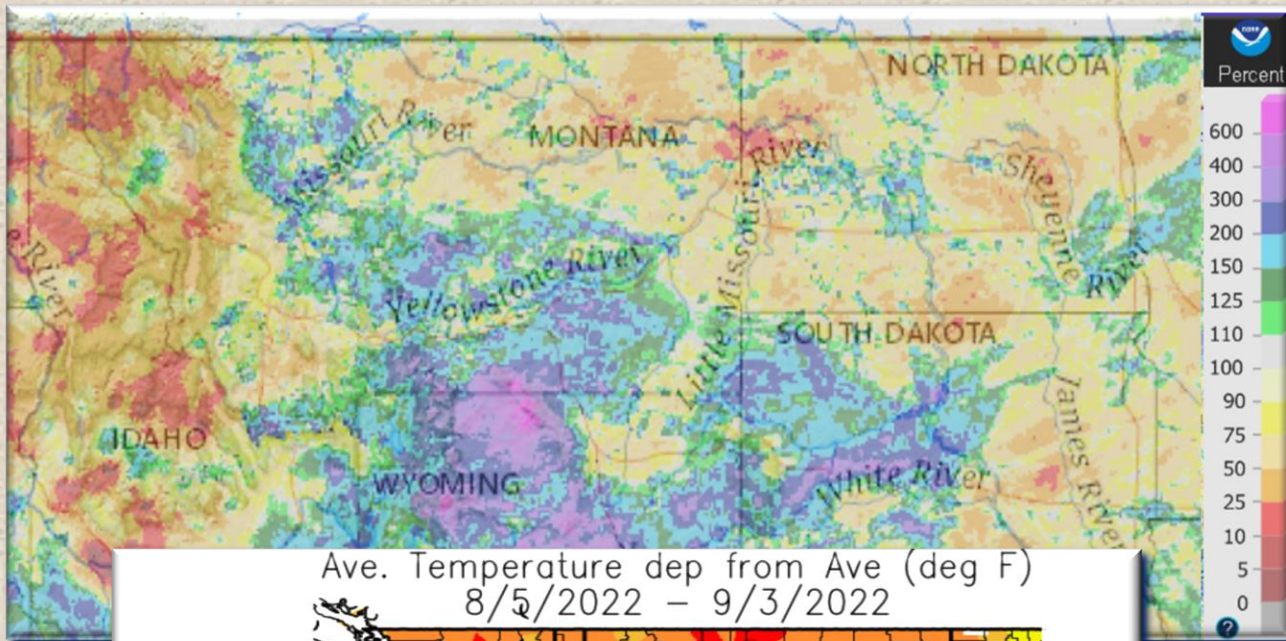
**Minimum: 21%**

**Only eight days with mean**

**RH < 50%**

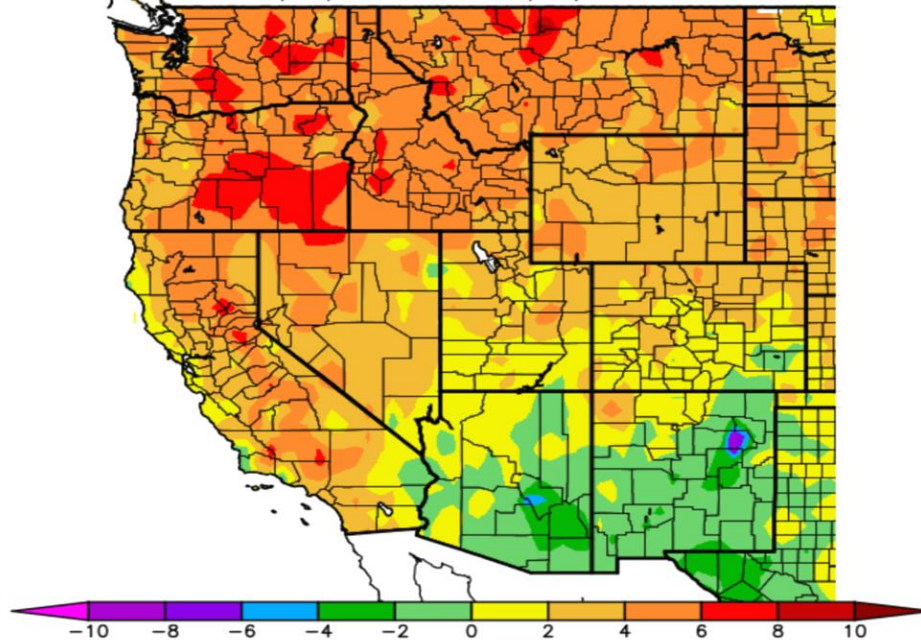


# Outlook-Where We Stand – Previous 30 Days



**Precip:** Very dry, below average North Idaho, Western and SW MT. Also below-average N-Central and NE MT, and almost all of North Dakota. Above average, Yellowstone NP, S-Central into SE MT and along Continental Divide. All thunderstorm generated however.

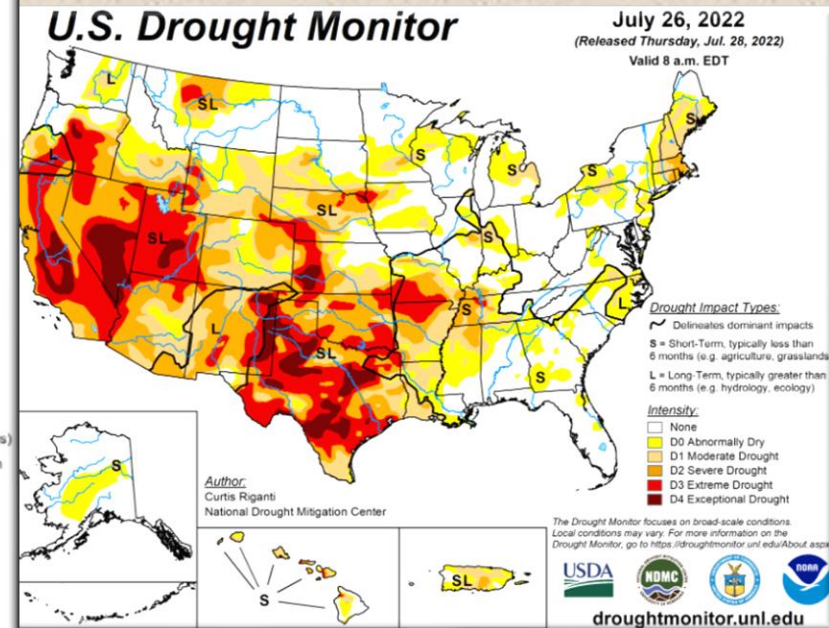
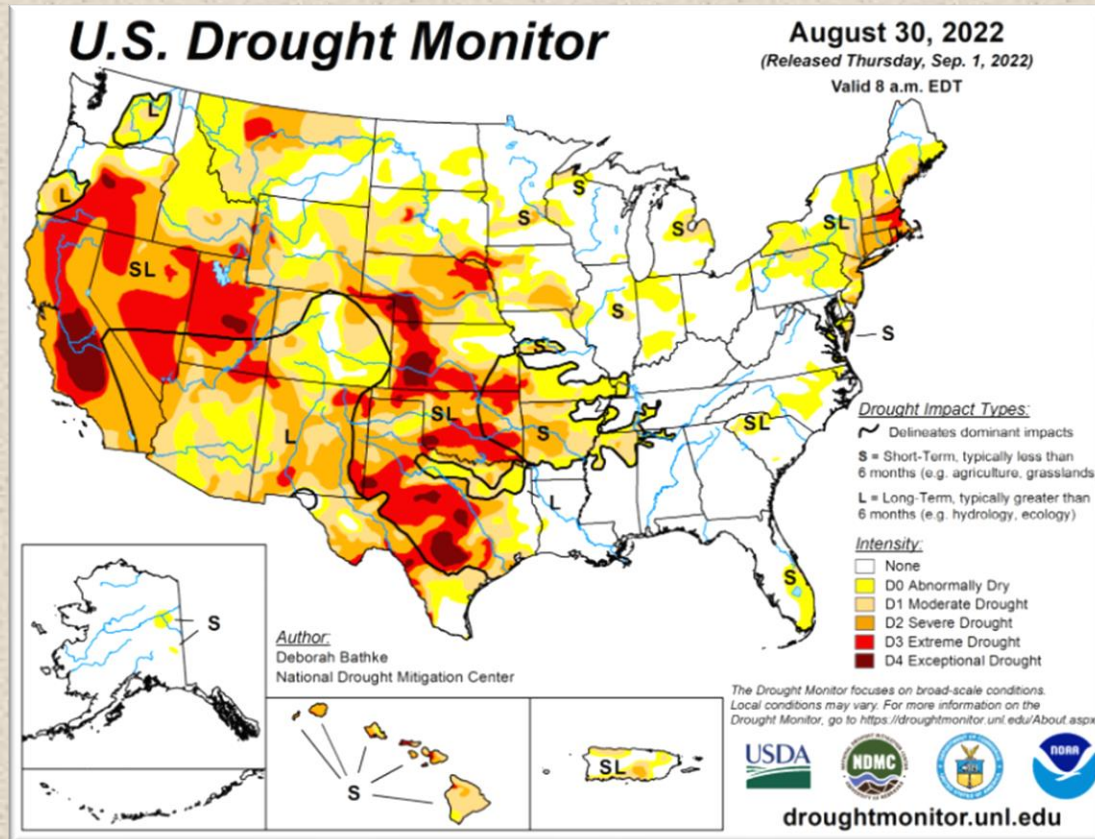
Ave. Temperature dep from Ave (deg F)  
8/5/2022 – 9/3/2022



**Mean Temperatures:** Hot all areas  
Significant heat waves much of August. **Hottest August ever** measured Lewiston ID, Missoula, Bozeman, and Helena.



# Outlook: Where We Stand



North Idaho, Western MT, S-Central/SE MT, and North Dakota all **drought-free**. Portions of Western/Central MT Montana Abnormally Dry. Moderate to Extreme in SW, N-Central and NE Montana.

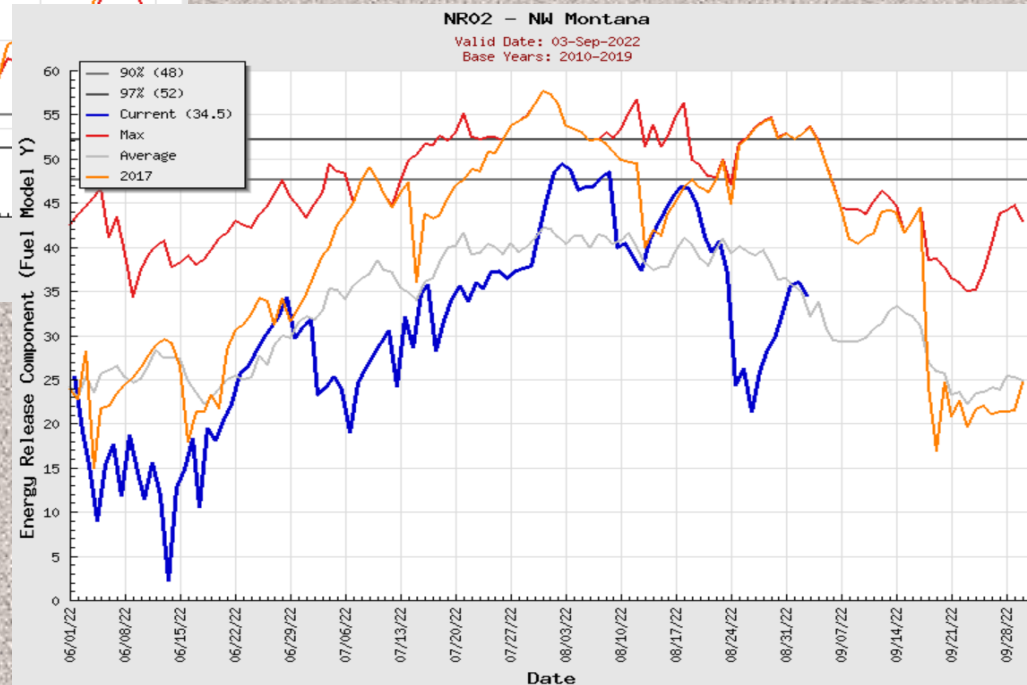
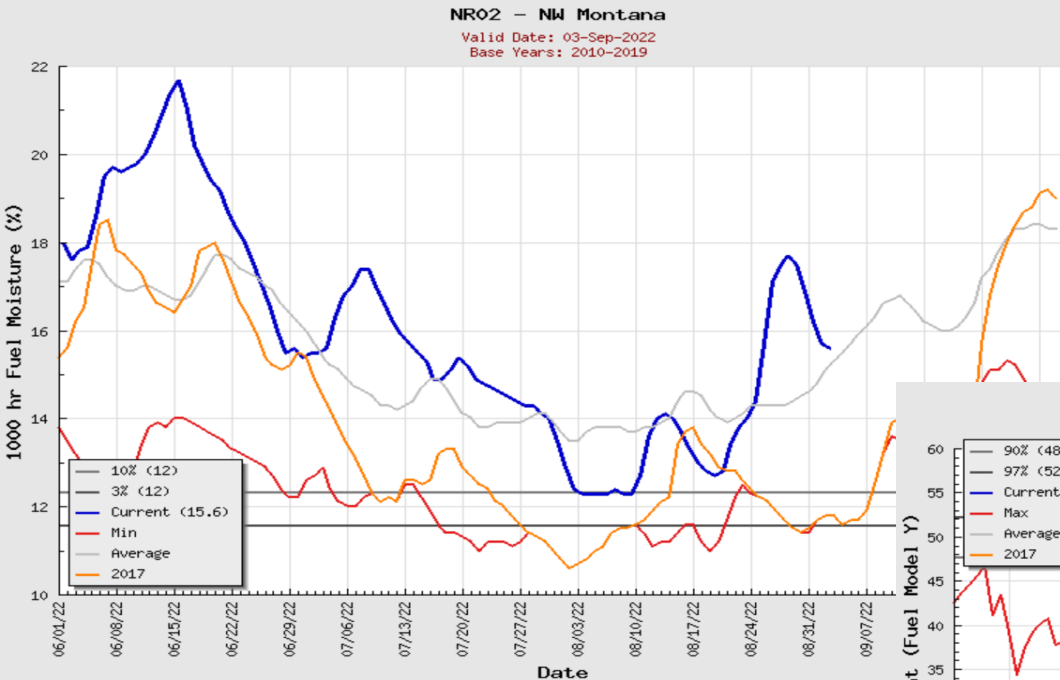
Expansion in Abnormally Dry and moderate drought categories occurred in SW and Central MT during the past month



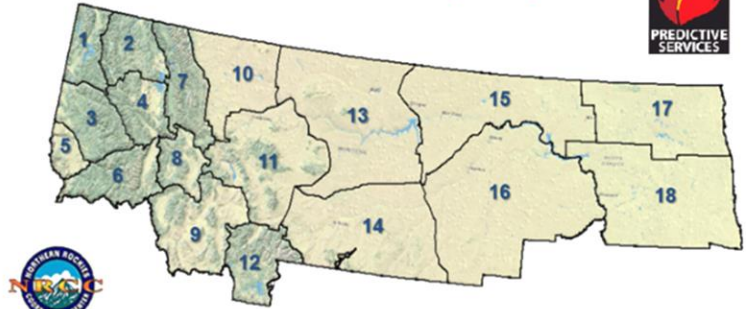
# NRGA Fuels Status

## September 03, 2022

### PSA-NR02 NW Montana



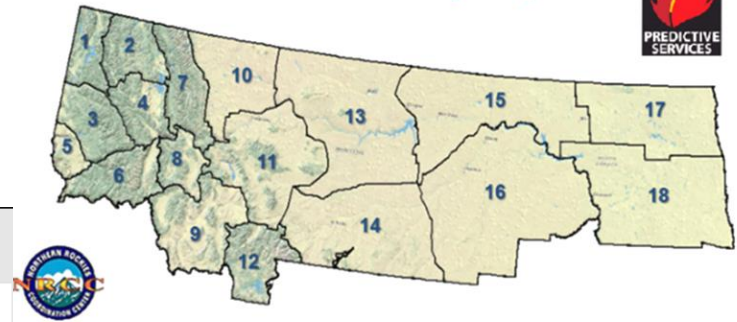
### NRGA Predictive Service Areas (PSAs)





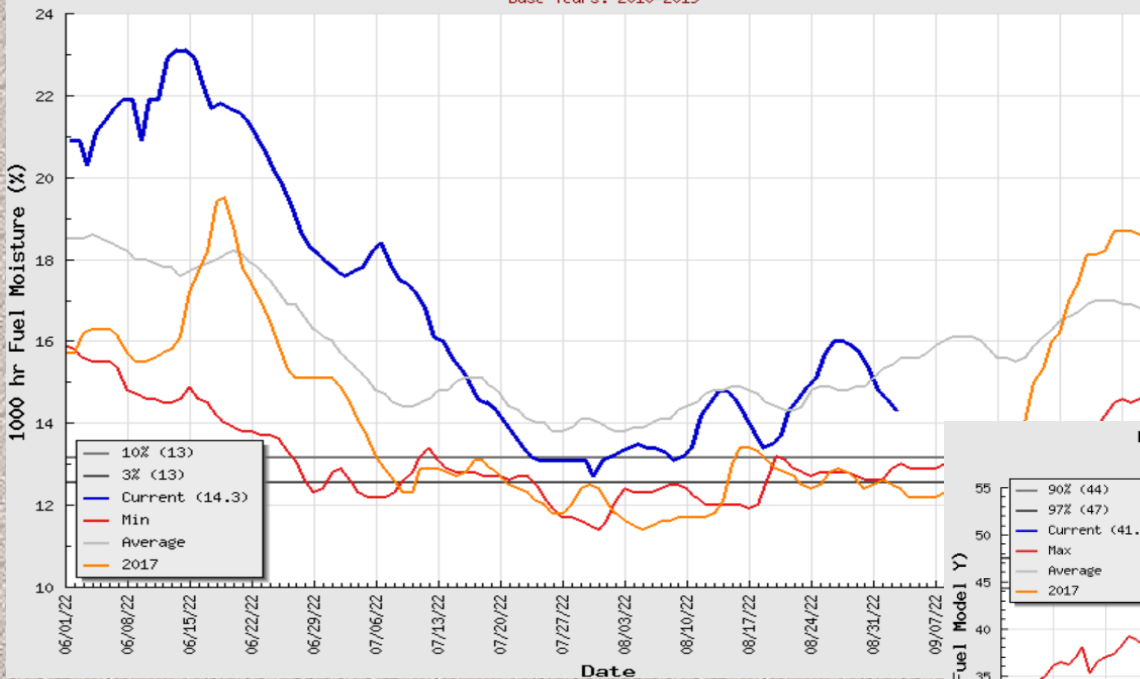
# PSA-NR06 N Central Idaho and Bitterroot/Sapphire Mountains

## NRGA Predictive Service Areas (PSAs)



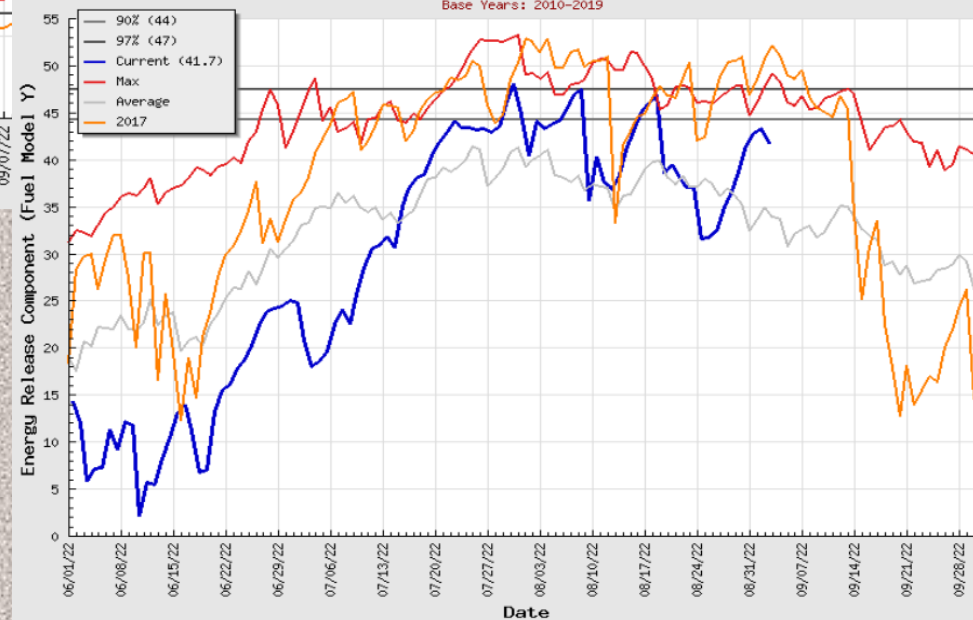
NR06 - N. Central Idaho & Bitterroot/Sapphire Mountains

Valid Date: 03-Sep-2022  
Base Years: 2010-2019



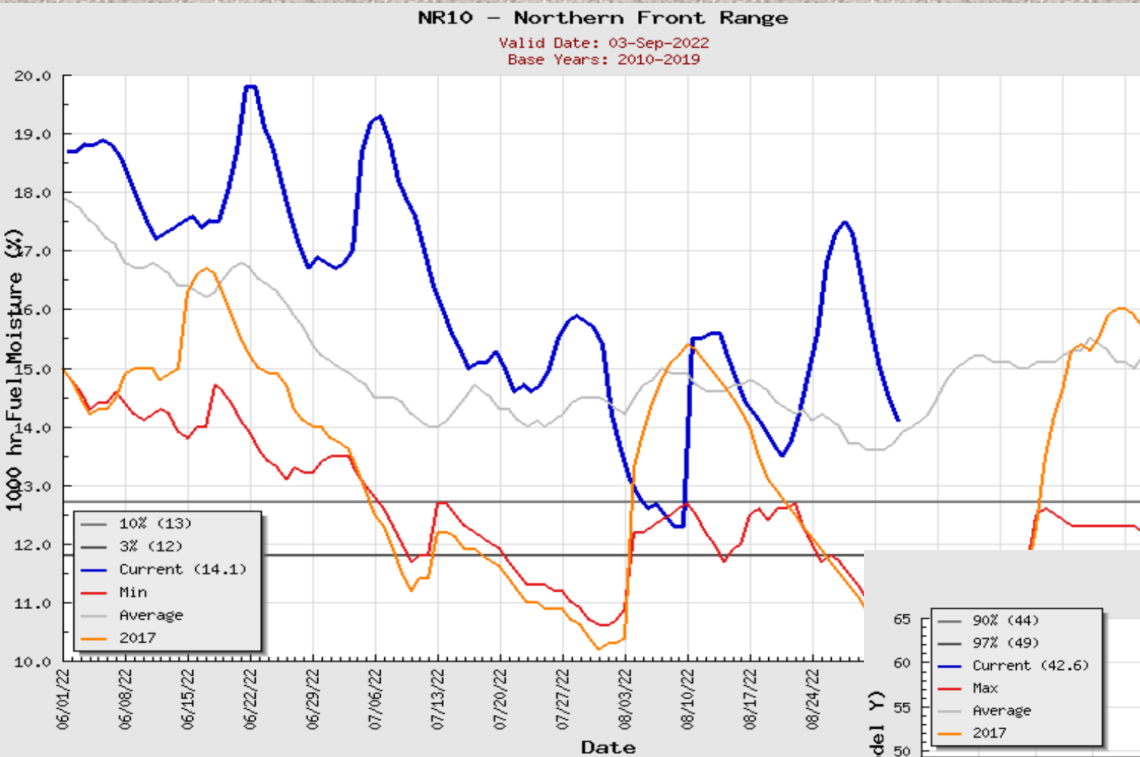
NR06 - N. Central Idaho & Bitterroot/Sapphire Mountains

Valid Date: 03-Sep-2022  
Base Years: 2010-2019

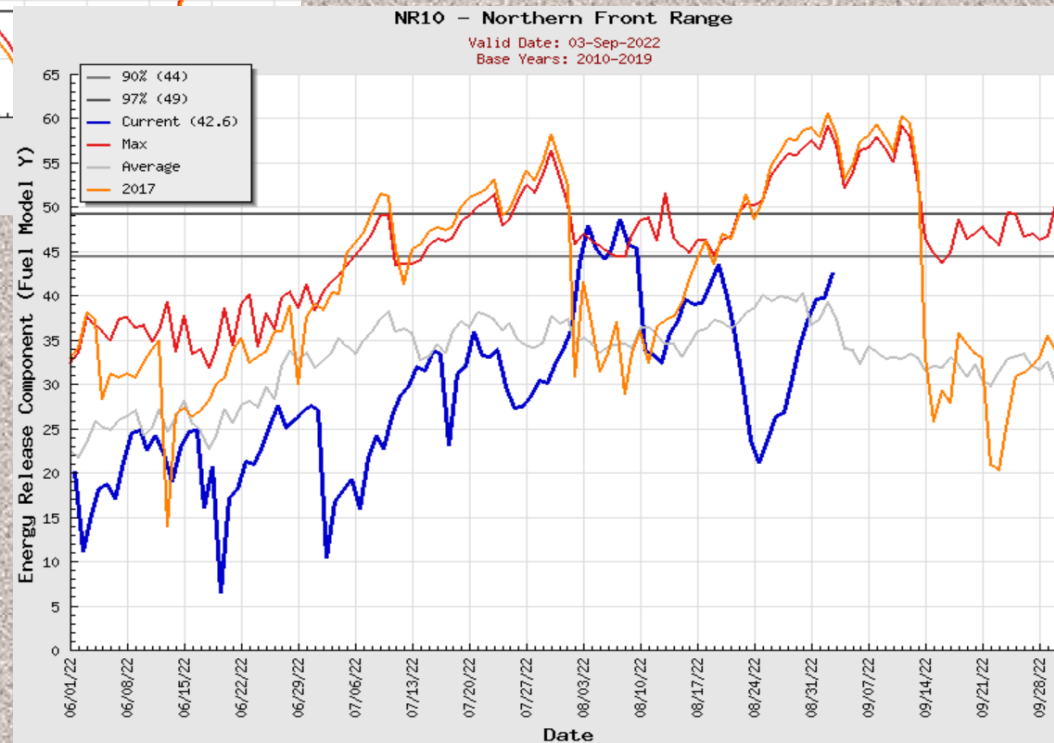




# PSA-NR10 Northern Front Range

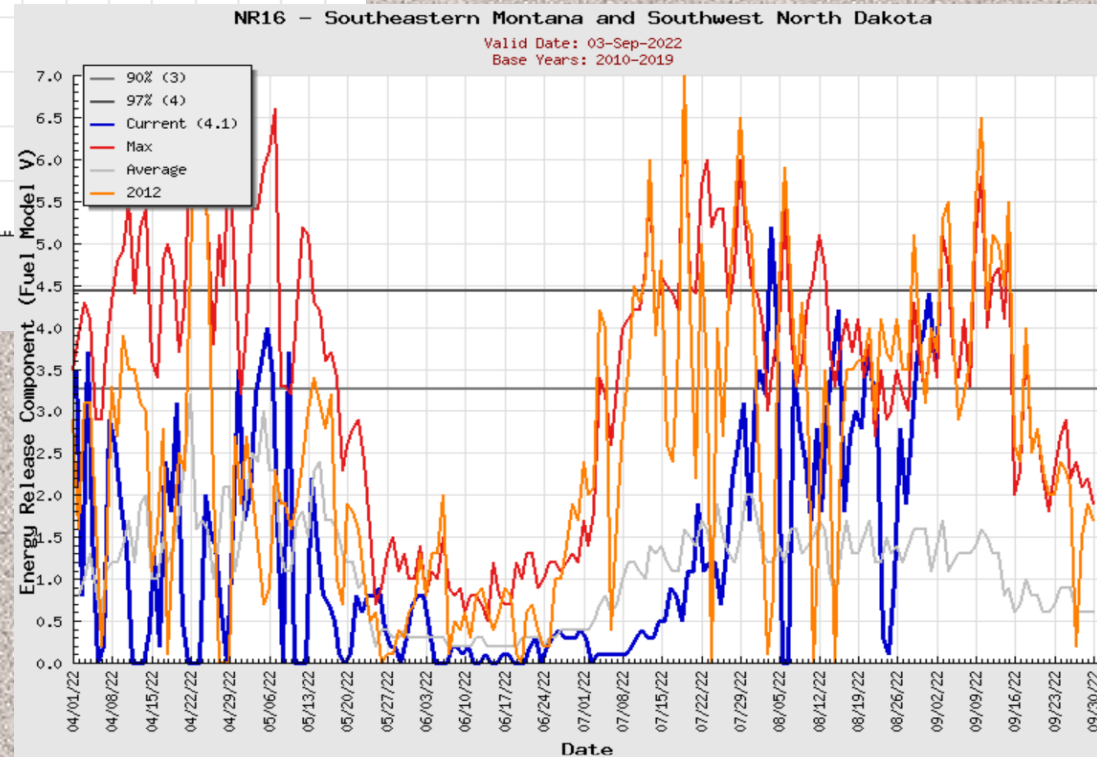
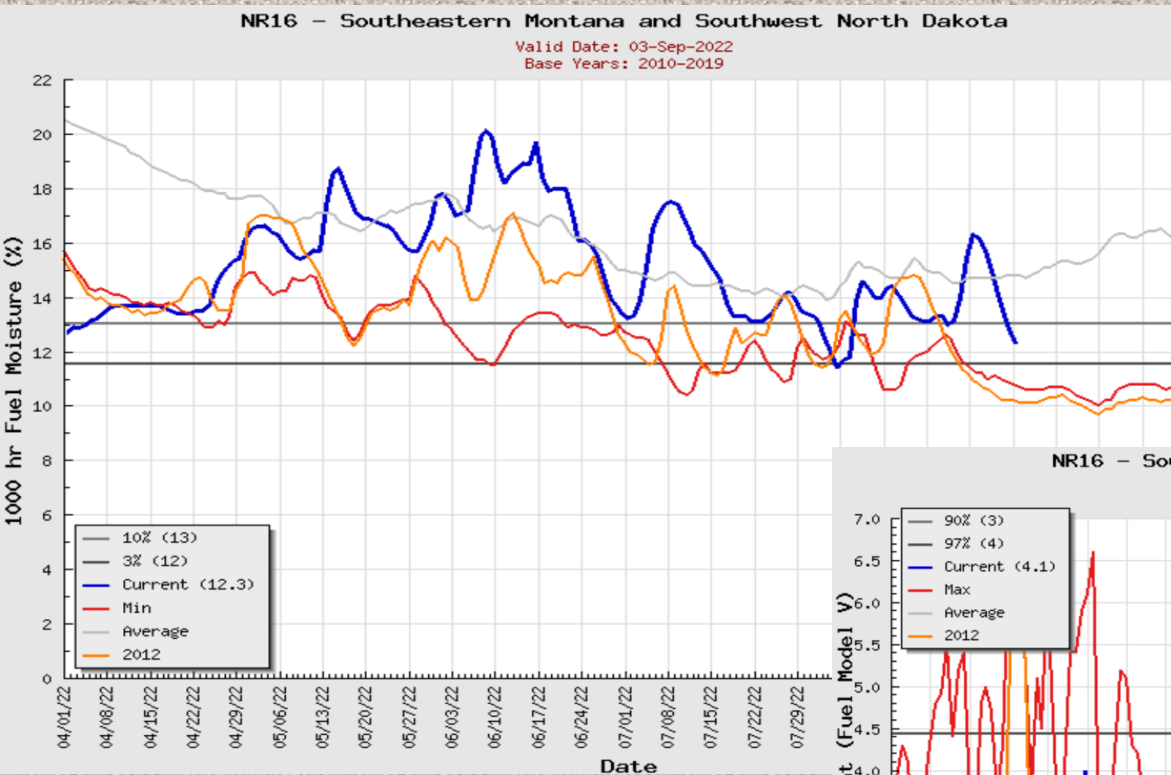


## NRGA Predictive Service Areas (PSAs)



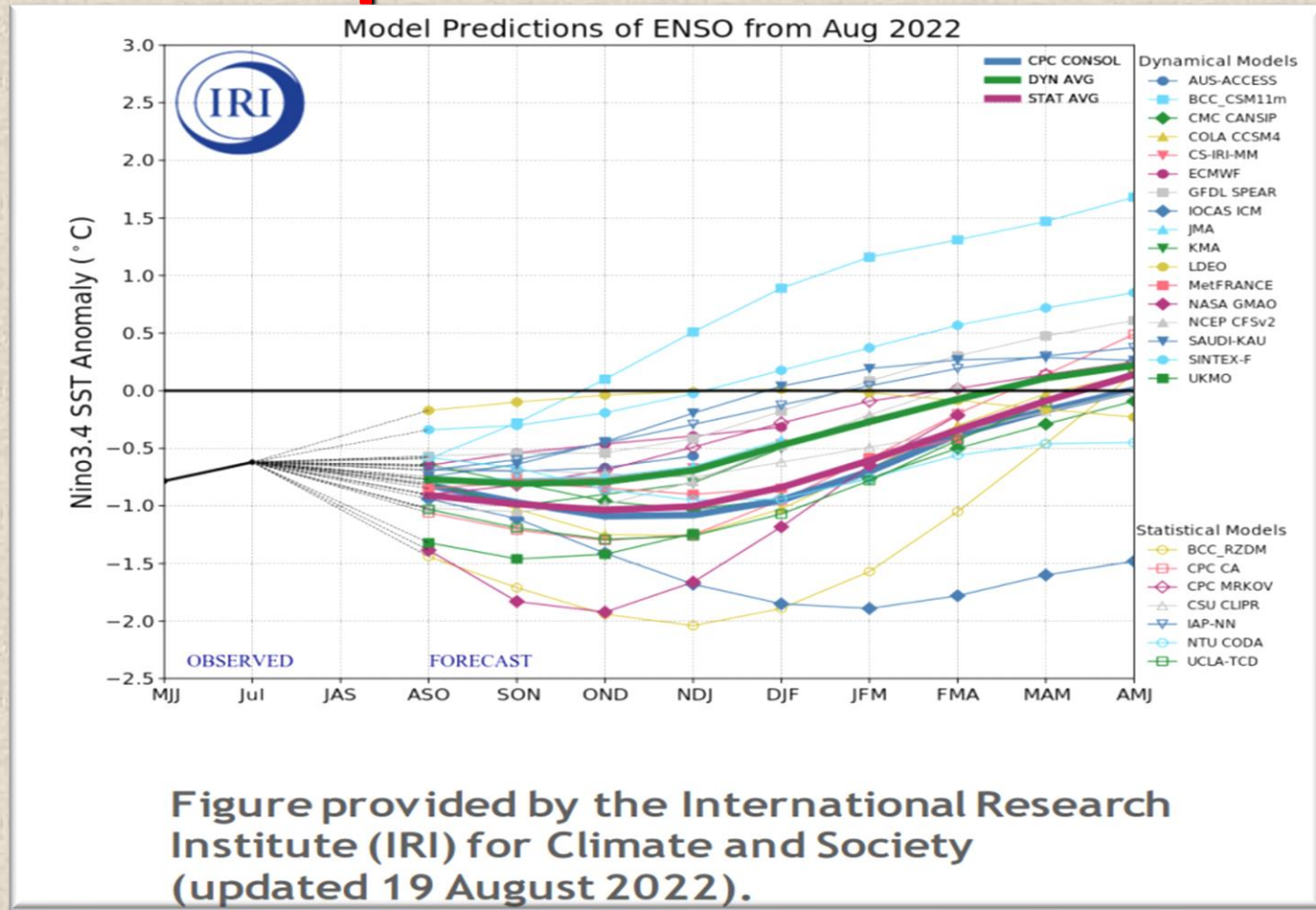


# PSA-NR16 Southeastern Montana and Southwest North Dakota





# Outlook: What is Expected



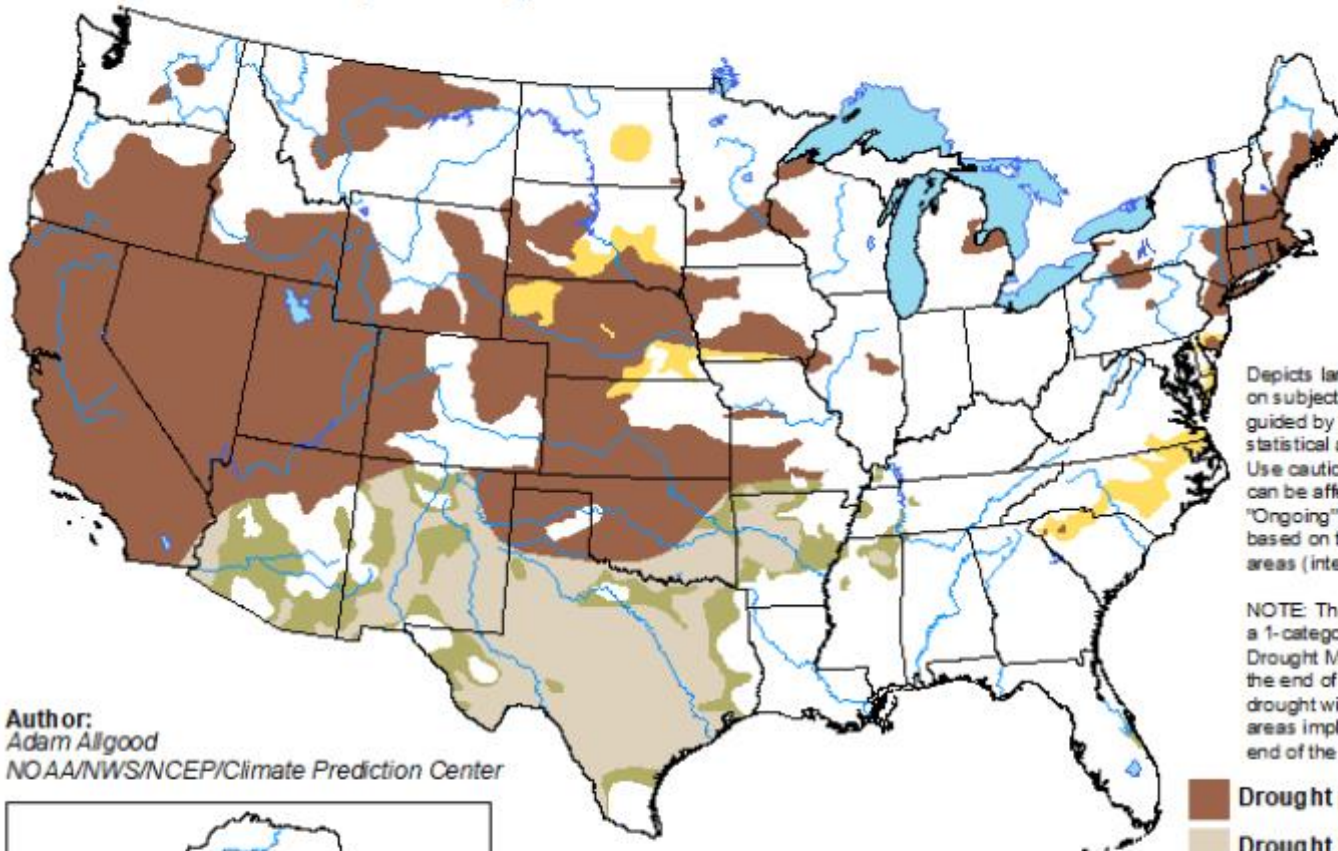
La Nina is expected to persist through the Northern Hemisphere winter 2022-23.



# Outlook: What is Expected

## U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for September 2022  
Released August 31, 2022

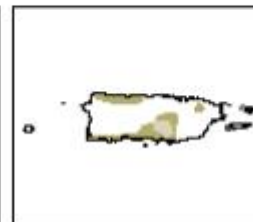


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to 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:  
Adam Allgood  
NOAA/NWS/NCEP/Climate Prediction Center

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



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

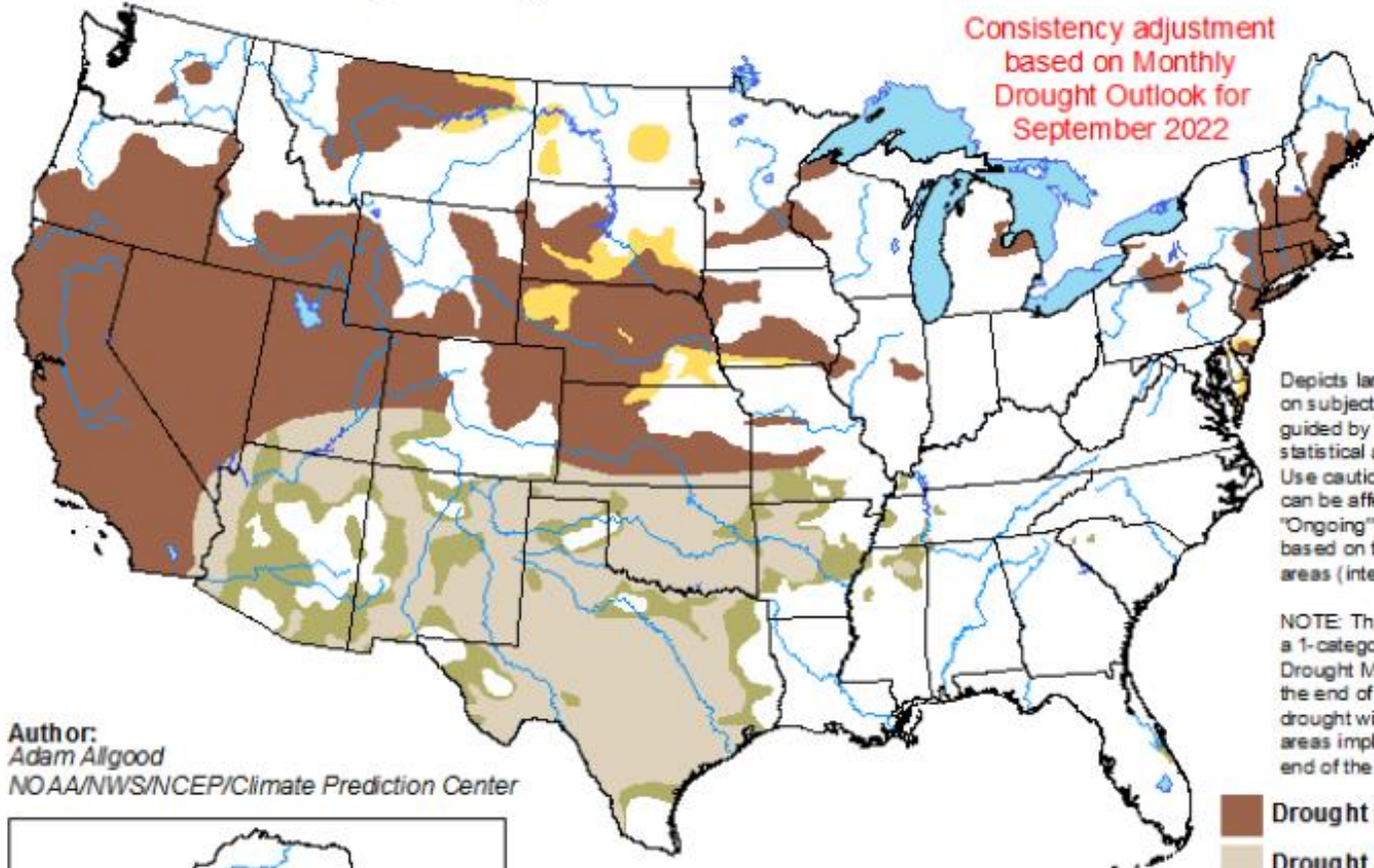


# Outlook: What is Expected

## U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for September 1 - November 30, 2022  
Released August 31, 2022

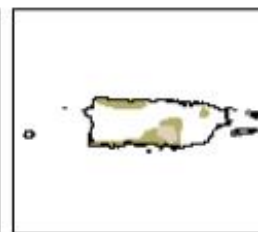
Consistency adjustment  
based on Monthly  
Drought Outlook for  
September 2022



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).

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



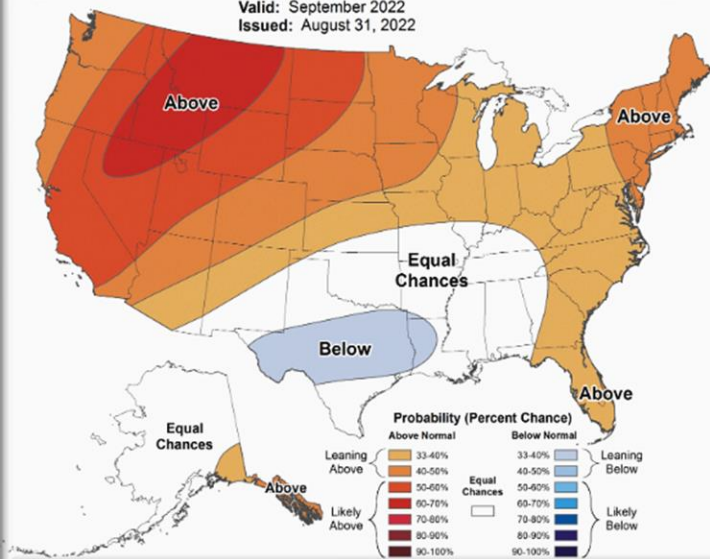
<http://go.usa.gov/3eZ73>





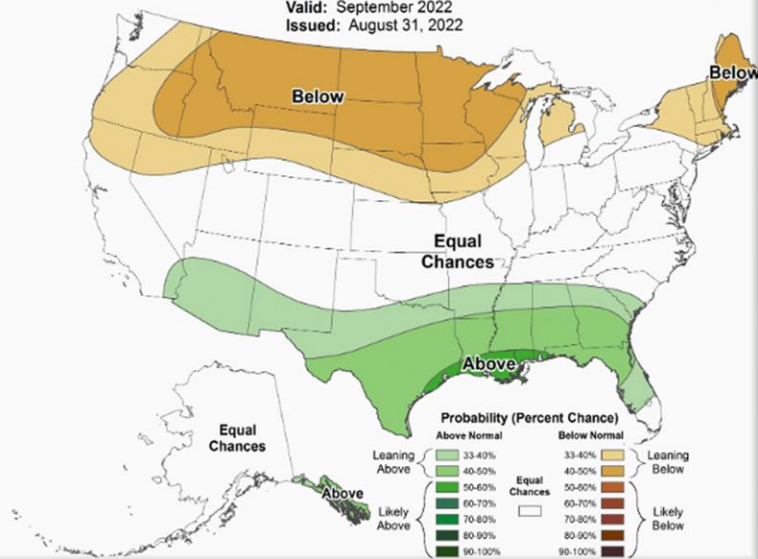
## Monthly Temperature Outlook

Valid: September 2022  
Issued: August 31, 2022



## Monthly Precipitation Outlook

Valid: September 2022  
Issued: August 31, 2022



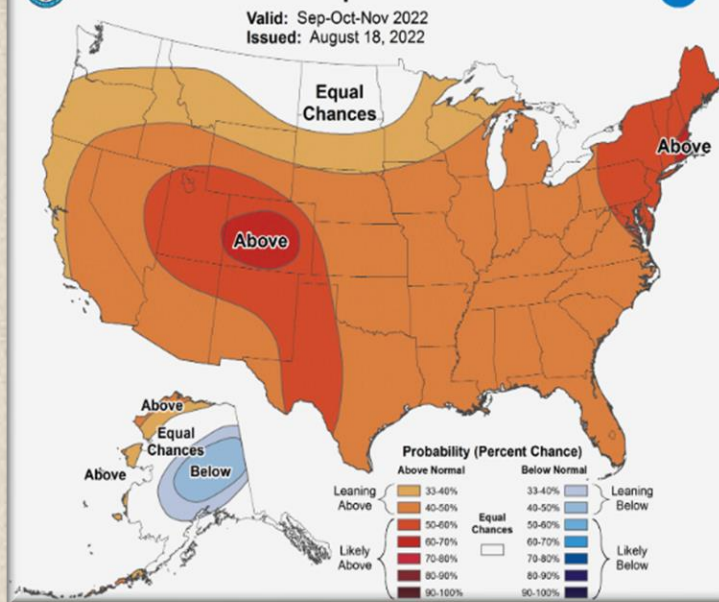
**Above-average temps. and below average precip. favored for September all PSAs.**

# CPC MONTHLY/SEASONAL TEMPERATURE/PRECIPITATION OUTLOOKS



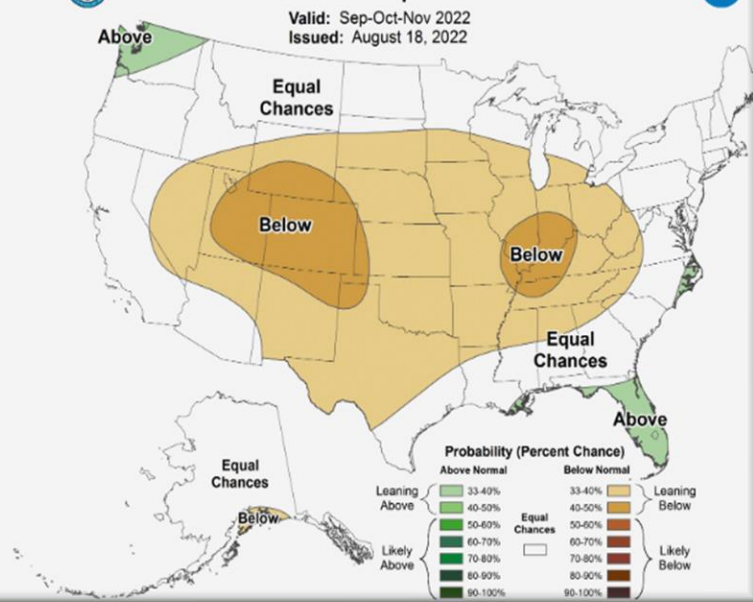
## Seasonal Temperature Outlook

Valid: Sep-Oct-Nov 2022  
Issued: August 18, 2022



## Seasonal Precipitation Outlook

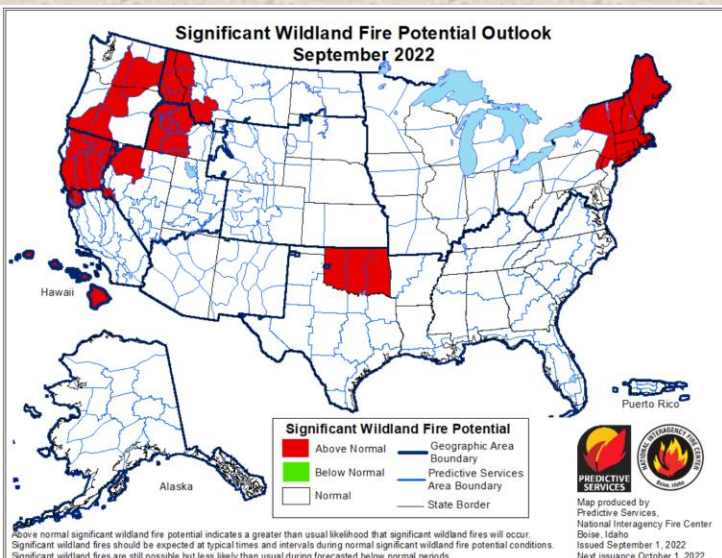
Valid: Sep-Oct-Nov 2022  
Issued: August 18, 2022



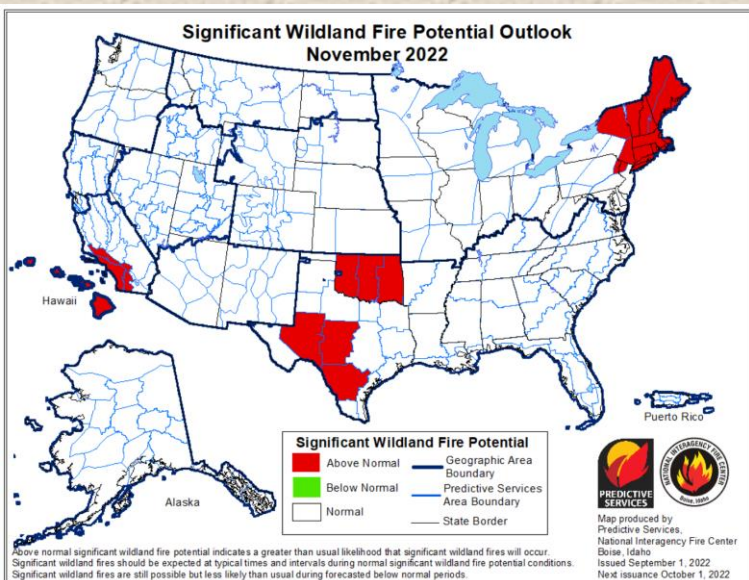
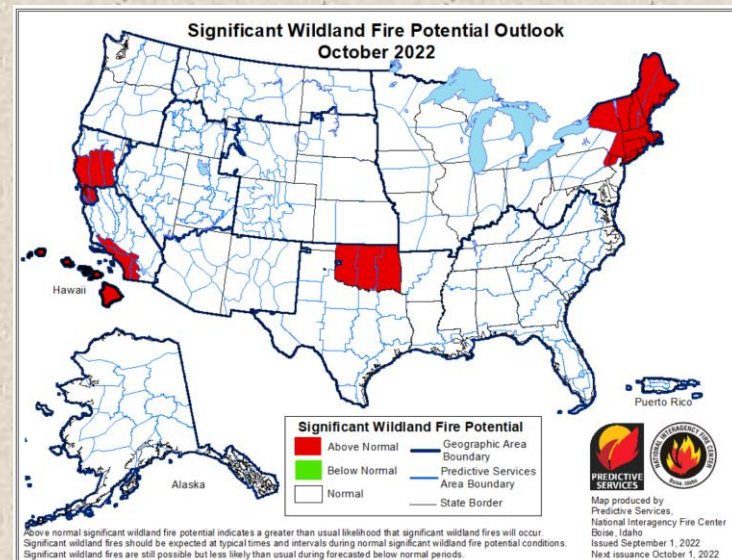
**Near to above average temps. and near average precip. favored all areas September through November.**



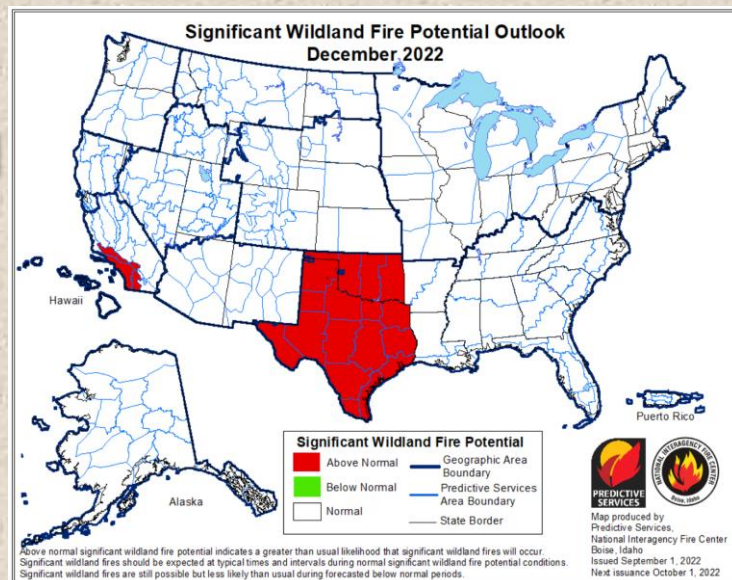
# Outlooks: Monthly Fire Potential



**Above-Normal  
NR PSAs 01-07  
and 09 in  
September,  
Normal  
elsewhere. Then  
becoming normal  
all PSAs in  
October**



**November and  
December:  
Normal all  
PSAs.**





# THANK YOU



## QUESTIONS?

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NRGA Predictive Service Areas (PSAs)



An Interagency Incident Support Website

## NRCC

Northern Rockies Coordination Center

