



— BUREAU OF —
RECLAMATION



WY Conditions & Outlooks:

Precipitation, Temperatures, Drought, Floods, & Everything In-between

August 17, 2023



— BUREAU OF —
RECLAMATION



Presentation Outline

- **Current Conditions:** Overview
 - Drought, Temperature, Precipitation, Soils
 - Streamflow
 - Reservoir Supply
 - Water Calls & Allocations
- **Outlooks:**
 - Temperature & Precipitation
 - Fuels' Status & Wildland Fire Outlook
- **Highlight of the Month**
 - Condition Monitoring Observer Reports
- **Questions**



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RECLAMATION

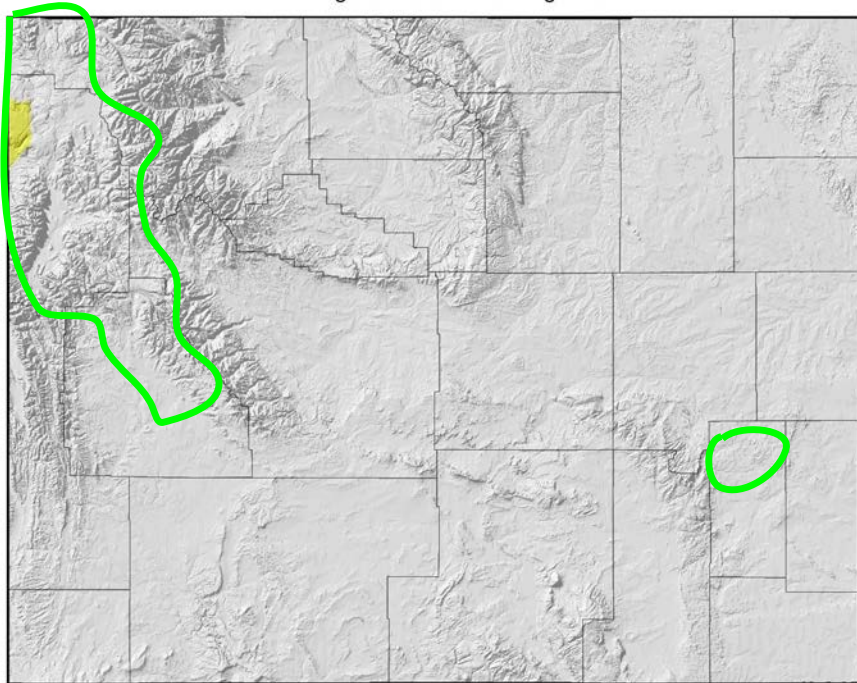


Current Conditions

US Drought Monitor for August 15, 2023

(Released Thursday, August 17, 2023)
Valid 8 a.m. EDT

US Drought Monitor for 15 Aug 2023



US Drought Monitor

- 0.20% D0 Abnormally Dry
- 0.00% D1 Moderate Drought
- 0.00% D2 Severe Drought
- 0.00% D3 Extreme Drought
- 0.00% D4 Exceptional Drought

Map Created by:
National Drought Mitigation Center
<https://droughtmonitor.unl.edu>



Map Layout Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



Drought Level	Percentile
None	>30
D0 (Abnormally Dry)	21 to 30
D1 (Moderate Drought)	11 to 20
D2 (Severe Drought)	6 to 10
D3 (Extreme Drought)	3 to 5
D4 (Exceptional Drought)	0 to 2

<https://youtu.be/45MQ1GB-uTc>

Improvements since the last webinar everywhere that had some sort of drought level present.

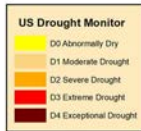
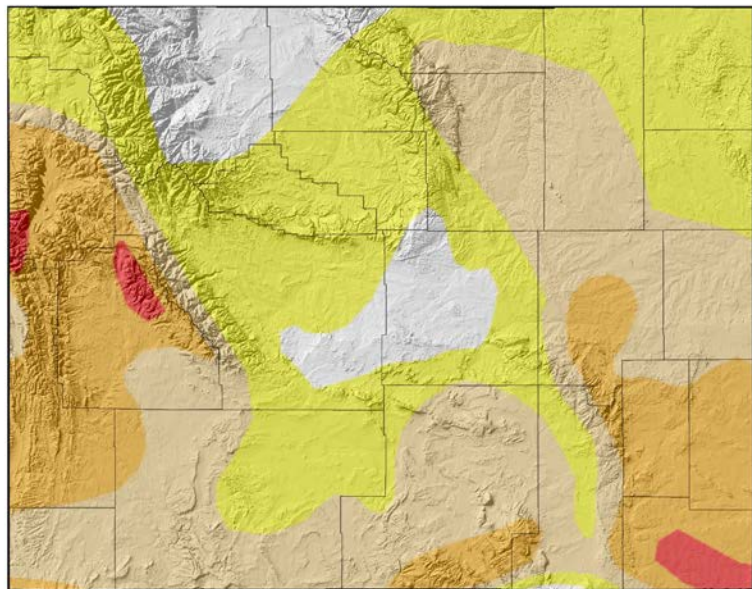
The U.S. Drought Monitor, is a weekly map of drought conditions produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln. The U.S. Drought Monitor website is hosted and maintained by the NDMC. <http://droughtmonitor.unl.edu>

Map Layout Created 17 Aug 2023 <http://www.wrds.uwyo.edu>



One Year Ago

US Drought Monitor for 16 Aug 2022



Map Created by:
National Drought Mitigation Center
<https://droughtmonitor.unl.edu>



Map Layout Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>

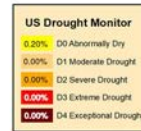
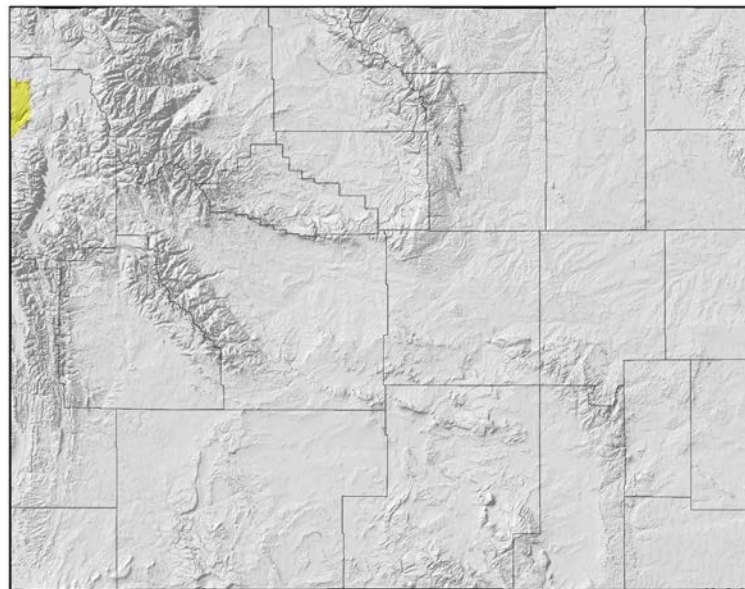


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Map Layout Created 10 Dec 2022 <http://www.wrds.uwyo.edu>

Today

US Drought Monitor for 15 Aug 2023



Map Created by:
National Drought Mitigation Center
<https://droughtmonitor.unl.edu>



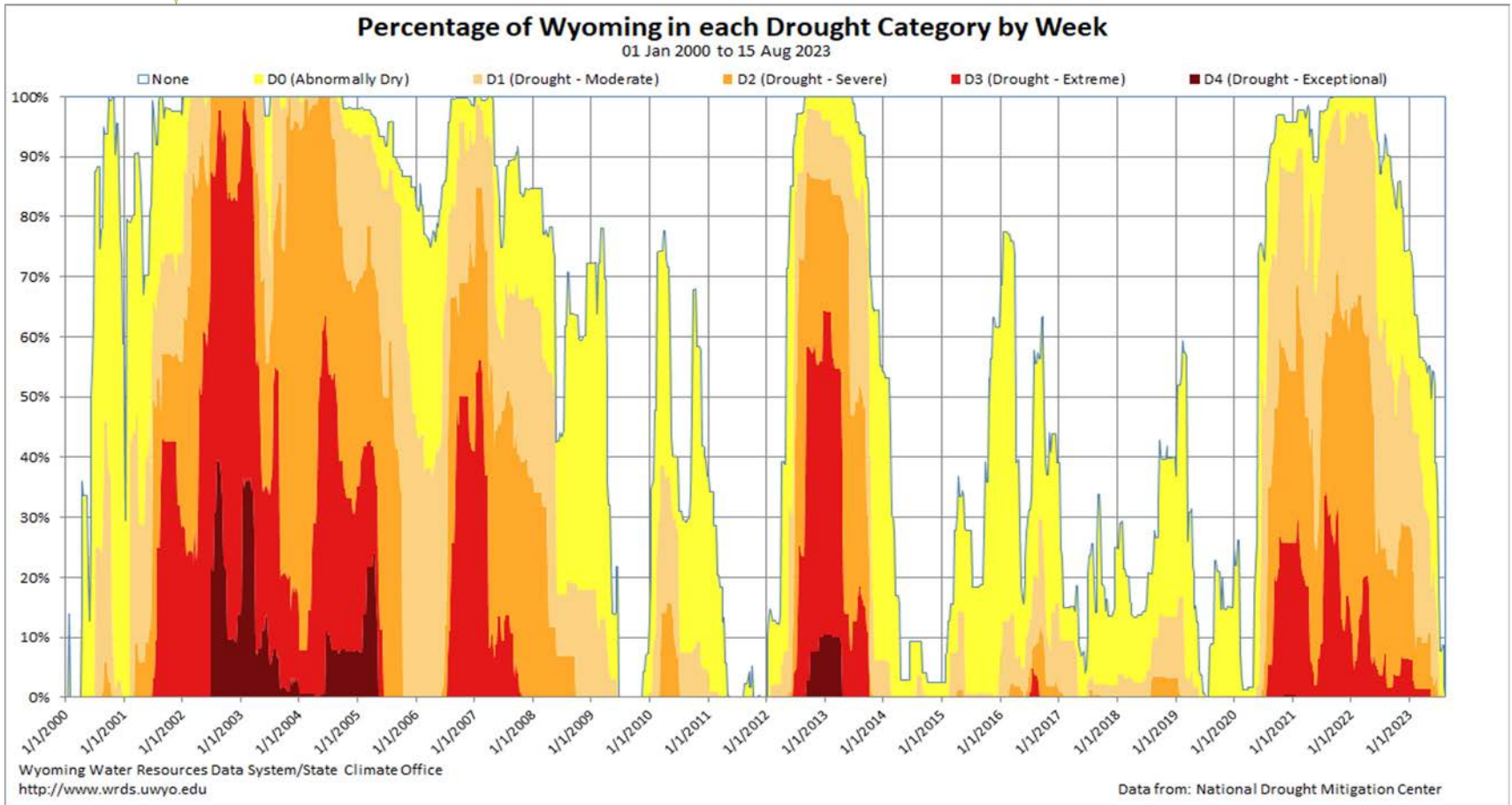
Map Layout Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



The U.S. Drought Monitor, is a weekly map of drought conditions produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln. The U.S. Drought Monitor website is hosted and maintained by the NDMC. <http://droughtmonitor.unl.edu>

Map Layout Created 17 Aug 2023 <http://www.wrds.uwyo.edu>

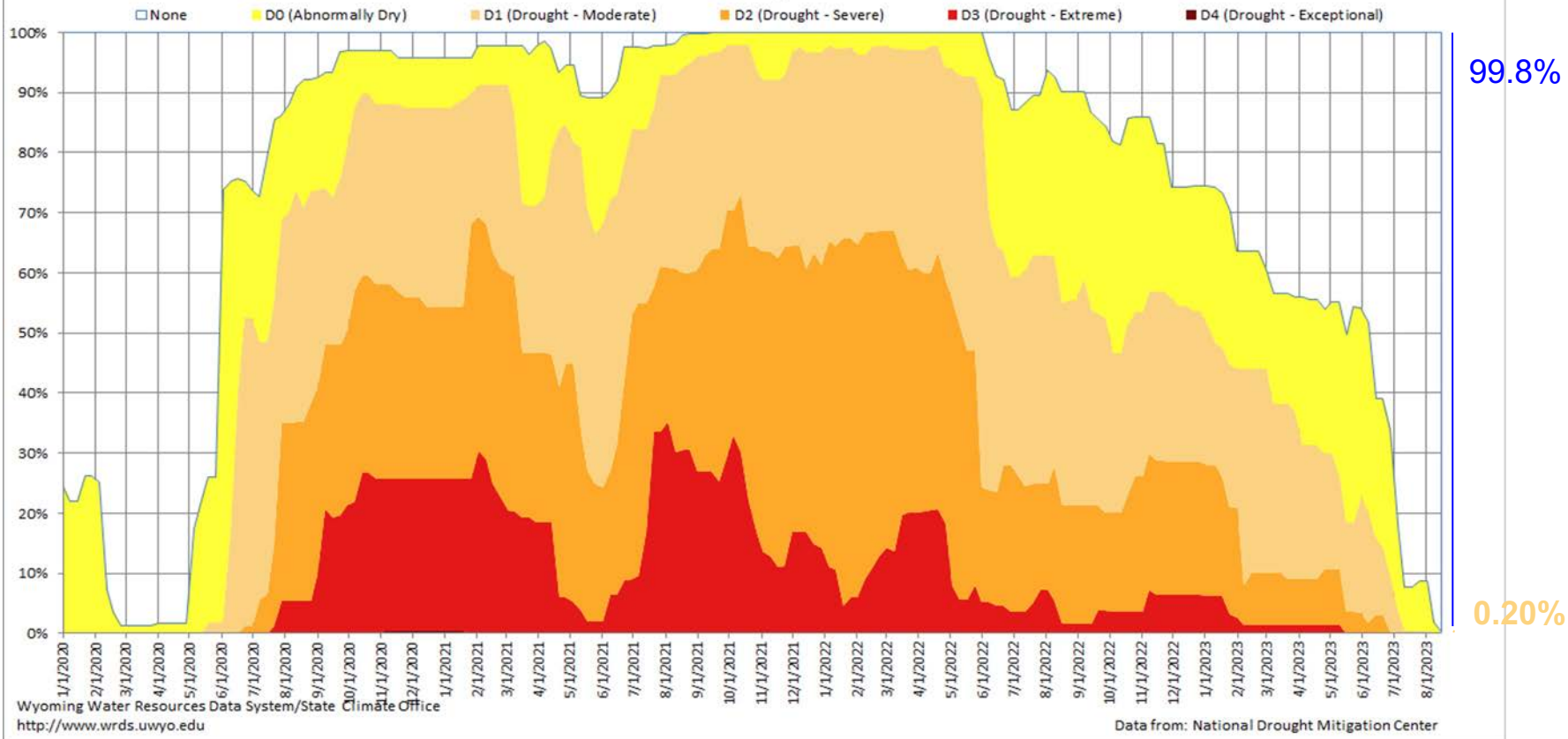
Wyoming Area Affected: 0.2% D0-D4 ; 0% D1-D4





Percentage of Wyoming in each Drought Category by Week

01 Jan 2020 to 15 Aug 2023



99.8%

0.20%

14-Day Precipitation Percentile (03 Aug 2023 to 16 Aug 2023)

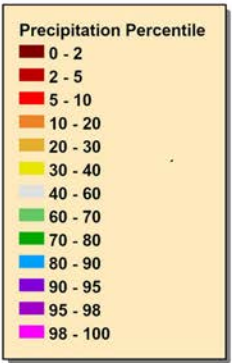
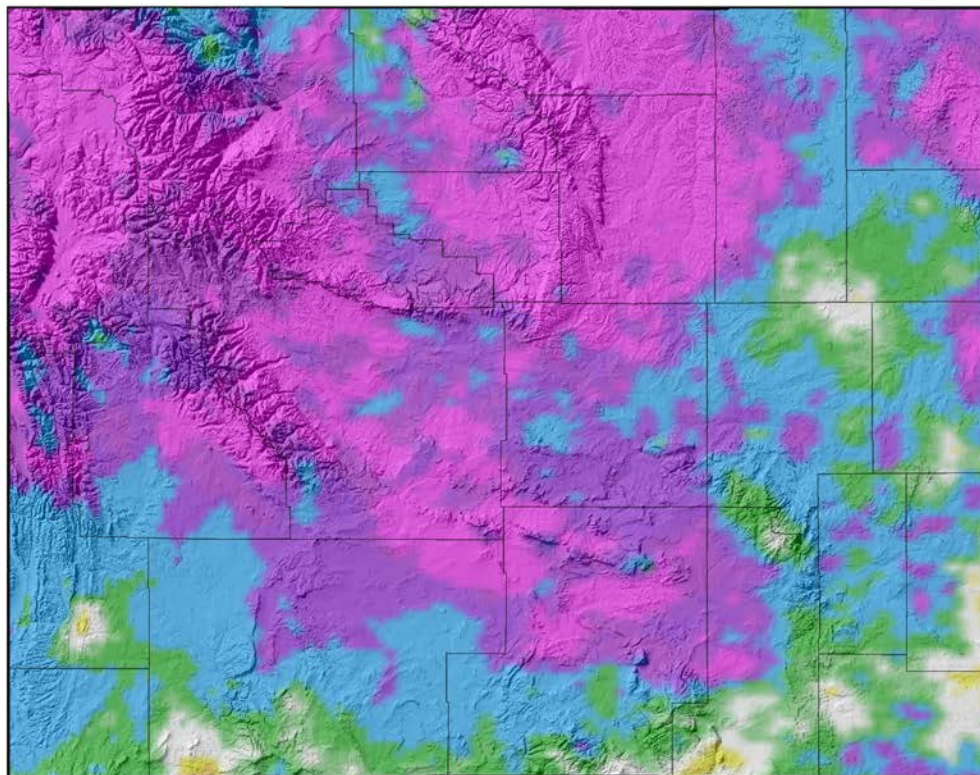
14-Day Precipitation (Percentile) for 03 Aug 2023 to 16 Aug 2023

Above Median:

- Wyoming

Below Median (Areas of Concern):

- SW Sweetwater
- SW Albany
- Laramie/Goshen border
- All VERY slight



Precipitation Data
PRISM Climate Group
<http://prism.oregonstate.edu>



Map Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



Provisional data, subject to revision

Daily precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>
Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>
Daily percentiles created from PRISM daily precipitation grids

90-Day Precipitation Percentile (19 May 2023 to 16 Aug 2023)

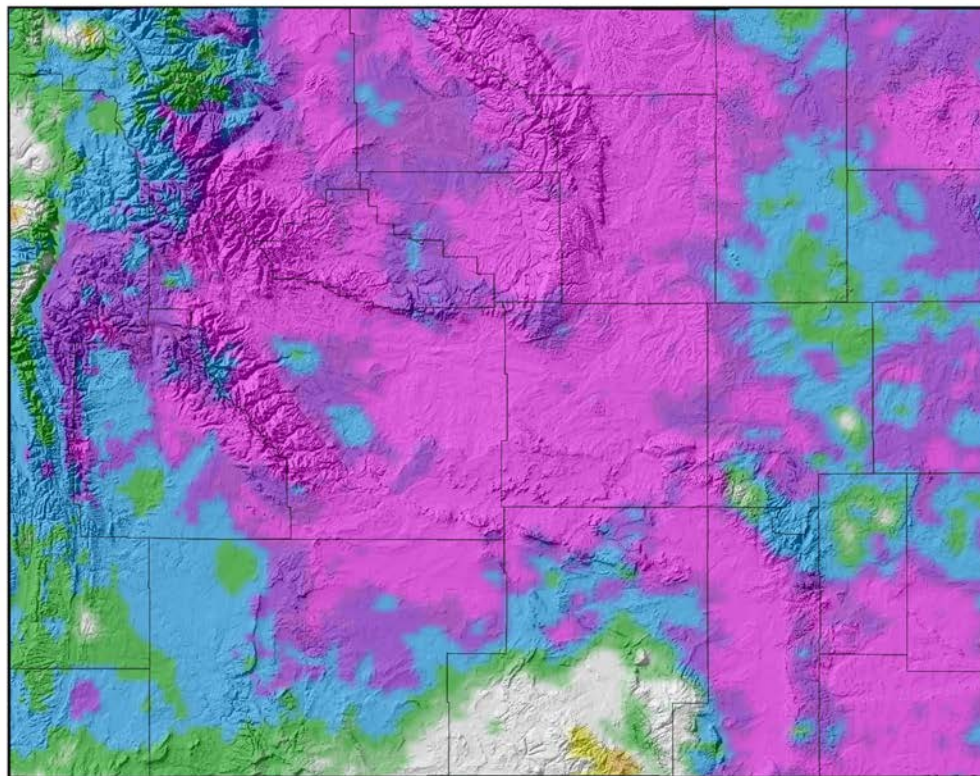
90-Day Precipitation (Percentile) for 19 May 2023 to 16 Aug 2023

Above Median:

- Most of Wyoming

Below Median (Areas of Concern):

- Sierra Madres



Precipitation Percentile

0 - 2
2 - 5
5 - 10
10 - 20
20 - 30
30 - 40
40 - 60
60 - 70
70 - 80
80 - 90
90 - 95
95 - 98
98 - 100

Precipitation Data
PRISM Climate Group
<http://prism.oregonstate.edu>



Map Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



Provisional data, subject to revision

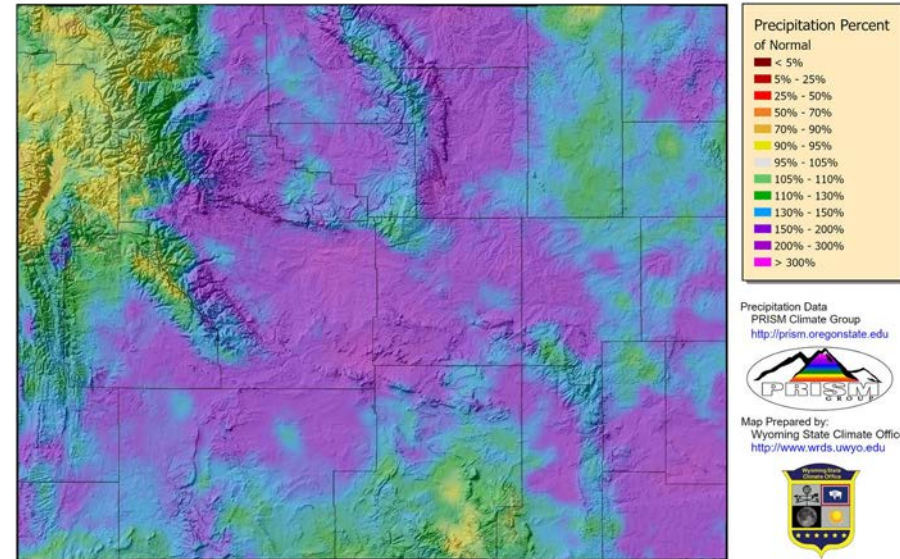
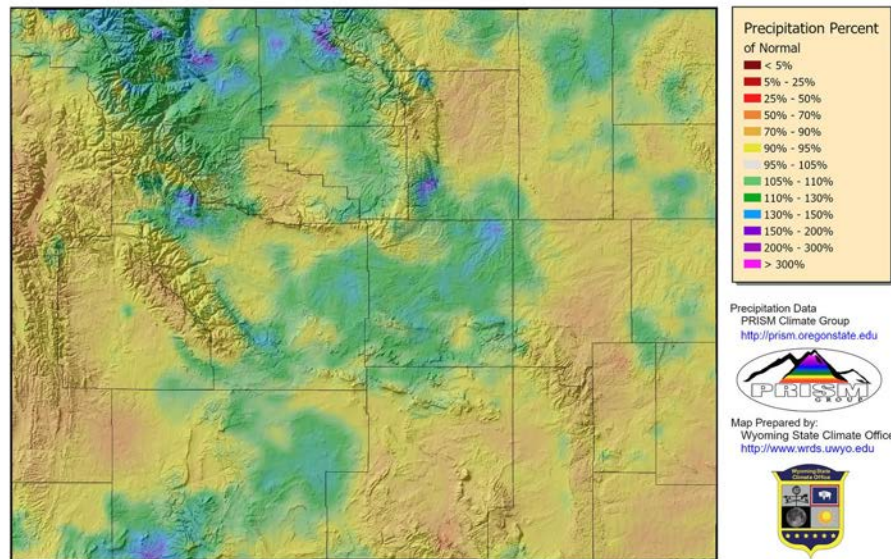
Calendar-Year-to-Date Precipitation (Percent of Average)

2022

2023

Calendar-Year Precipitation (Percent of 1991-2020 Average) for 01 Jan 2022 to 16 Aug 2022

Calendar-Year Precipitation (Percent of 1991-2020 Average) for 01 Jan 2023 to 16 Aug 2023



Provisional data, subject to revision

Provisional data, subject to revision

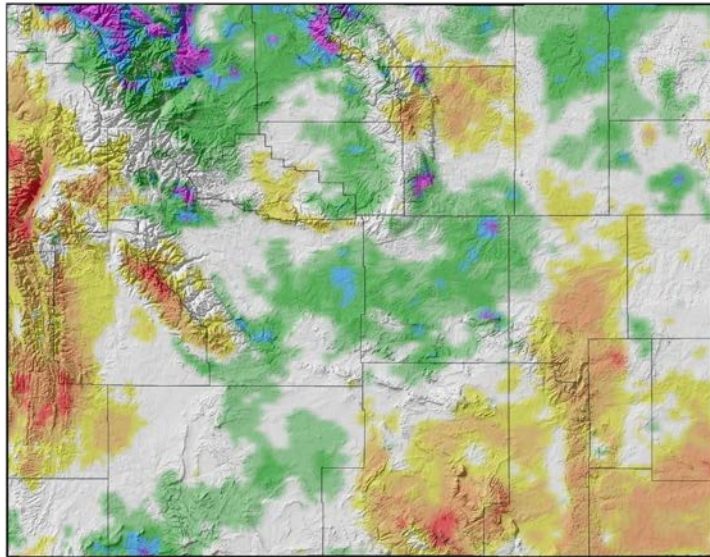
Monthly and Normal precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University,
<http://prism.oregonstate.edu>
Map Created 04 Aug 2023 <http://www.wrds.uwyo.edu>
Daily averages created from PRISM daily precipitation grids

Monthly and Normal precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University,
<http://prism.oregonstate.edu>
Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>
Daily averages created from PRISM daily precipitation grids

Calendar-Year-to-Date Precipitation (Percentile)

2022

Calendar-Year Precipitation (Percentile) for 01 Jan 2022 to 16 Aug 2022



Precipitation Data
PRISM Climate Group
<http://prism.oregonstate.edu>



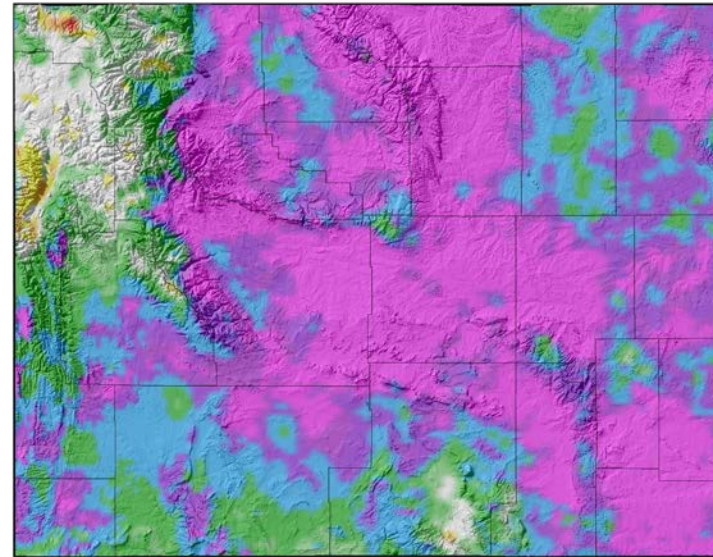
Map Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



Provisional data, subject to revision

2023

Calendar-Year Precipitation (Percentile) for 01 Jan 2023 to 16 Aug 2023



Precipitation Data
PRISM Climate Group
<http://prism.oregonstate.edu>



Map Prepared by:
Wyoming State Climate Office
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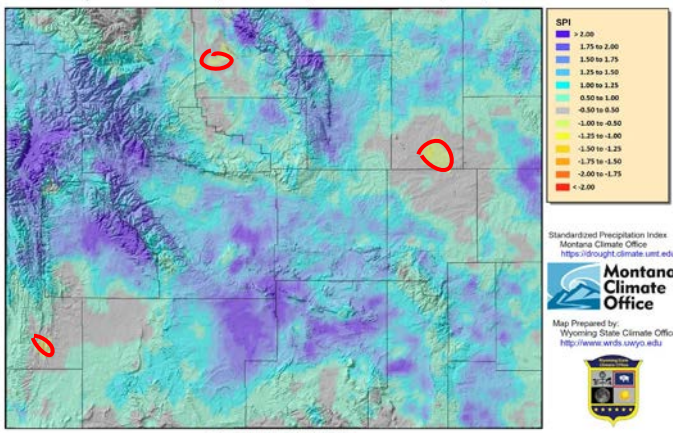
Provisional data, subject to revision

Daily precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University,
<http://prism.oregonstate.edu>
Map Created 04 Aug 2023 <http://www.wrds.uwyo.edu>
Daily percentiles created from PRISM daily precipitation grids

Daily precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University,
<http://prism.oregonstate.edu>
Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>
Daily percentiles created from PRISM daily precipitation grids

30-Day Standardized Precipitation Index (17 Jul 2023 to 15 Aug 2023)

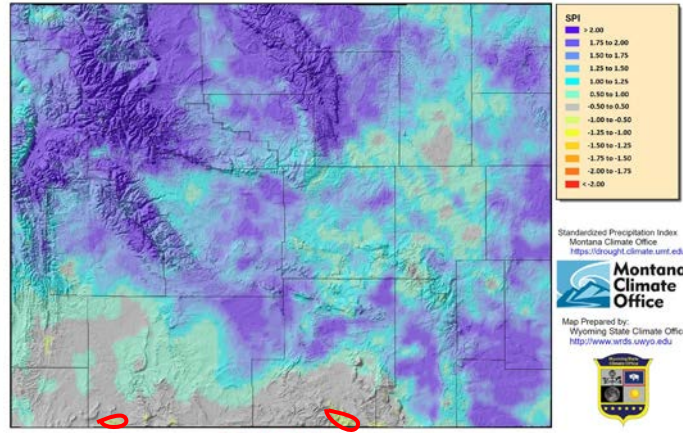
30-Day
 →
 Jul 17 - Aug 15



Provisional data, subject to revision
 Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
 Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>

60-Day
 →
 Jun 17 - Aug 15

60-Day Standardized Precipitation Index (17 Jun 2023 to 15 Aug 2023)



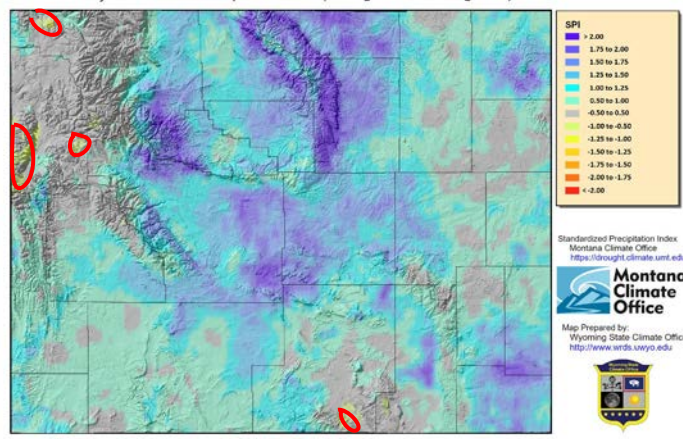
Provisional data, subject to revision
 Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
 Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>

Standardized Precipitation Index (SPI)

Short term: Southern Campbell, Bighorn, Southern Lincoln (all very minor)
Long term: Tetons

1-Year
 →

365-Day Standardized Precipitation Index (16 Aug 2022 to 15 Aug 2023)

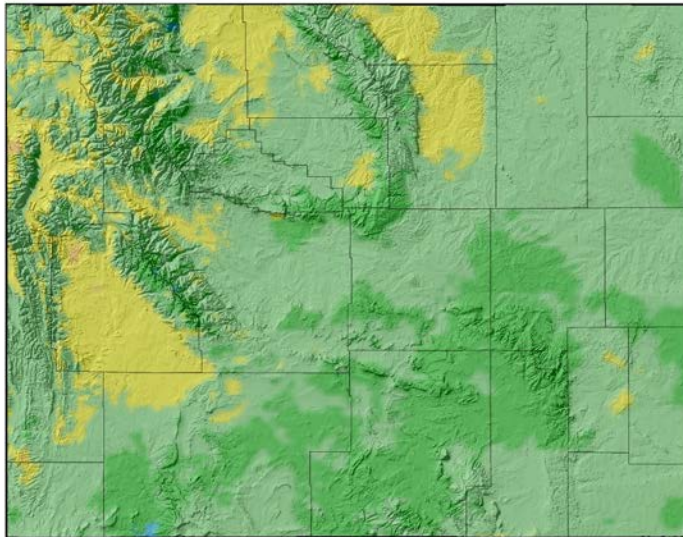


Provisional data, subject to revision
 Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
 Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>

14-Day Average Minimum Temperature (03 Aug to 16 Aug)

- Highest elevation mins right about freezing
- Northwest generally 30s to low 40s
- BH/Wind Basins, much of the plains 50s

14-Day Average Minimum Temperature (Departure from 1991-2020 Average) for 03 Aug 2023 to 16 Aug 2023

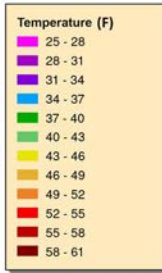
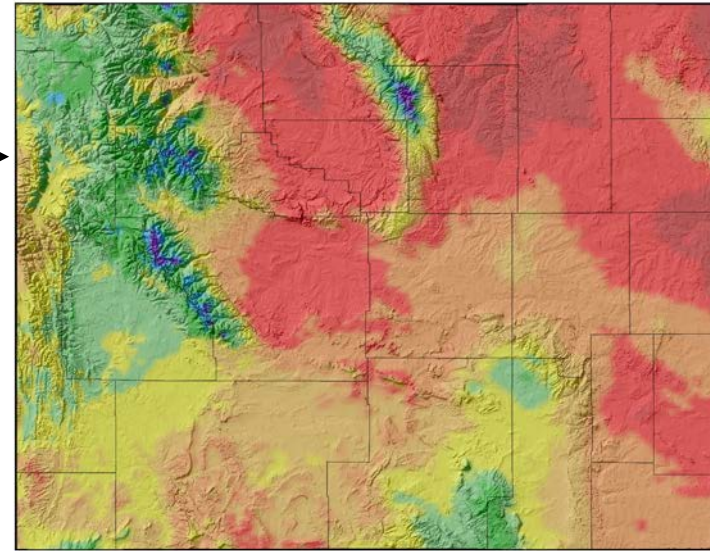


Temperature Data
PRISM Climate Group
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Map Prepared by:
Wyoming State Climate Office
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Daily Temperature data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>
Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>
Temperature averages created from PRISM daily tempWYerature grids



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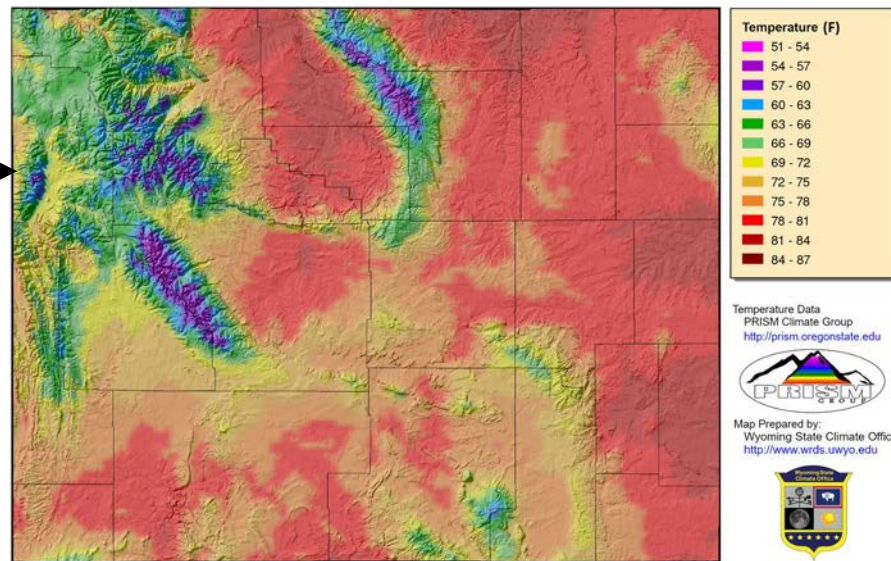
14-Day *Departure from Normal* Average Minimum Temperature

- Above average in Upper Green, scattered NW, east of the Bighorns, 0-3F above
- South Central 3-6F below average
- Remainder generally 0-3F below average

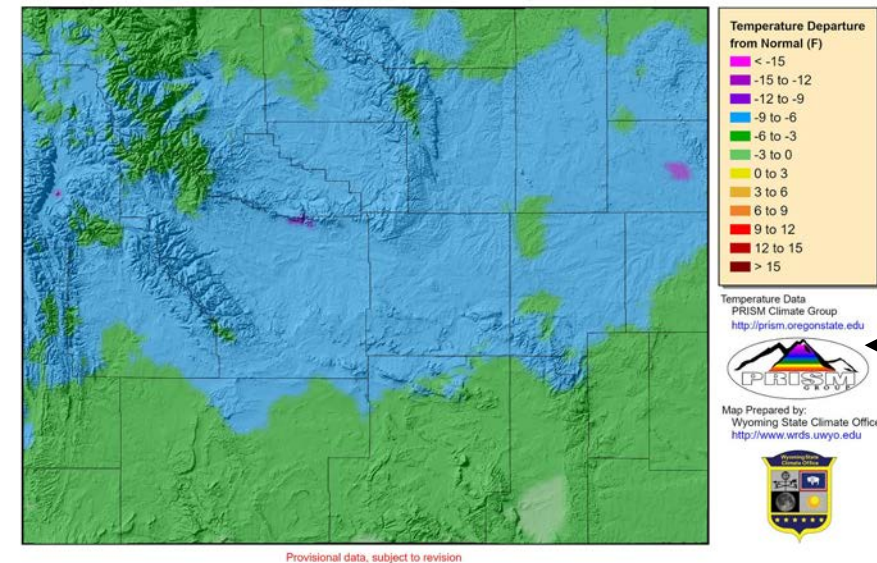
14-Day Average Maximum Temperature (03 Aug to 16 Aug)

- Highs in the mid-70s to mid-80s except for higher elevations

14-Day Average Maximum Temperature for 03 Aug 2023 to 16 Aug 2023



14-Day Average Maximum Temperature (Departure from 1991-2020 Average) for 03 Aug 2023 to 16 Aug 2023



14- Day *Departure from Normal* Average Maximum Temperature

- 3-6F below average along the far northern reaches as well as the southern third
- Swath in between was 6-9F below average
- Laramie Valley 0-3F below average

Provisional data, subject to revision

Daily Temperature data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>
Map Created 17 Aug 2023 <http://www.wrds.uwyo.edu>
Temperature averages created from PRISM daily tempWYearure grids

Provisional data, subject to revision

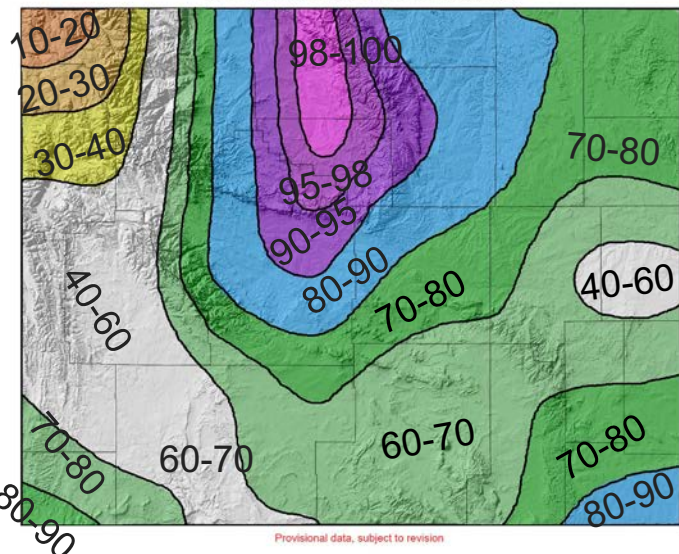


Soil Moisture Percentile

Two Weeks Ago

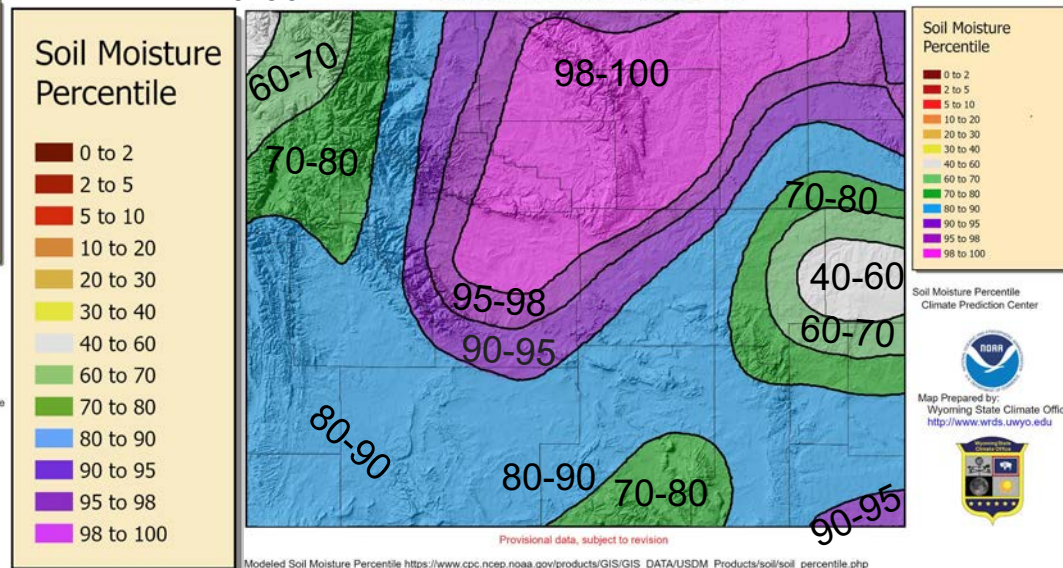
16 Aug 2023

Soil Moisture Percentile for 03 Aug 2023



40-60

Soil Moisture Percentile for 16 Aug 2023

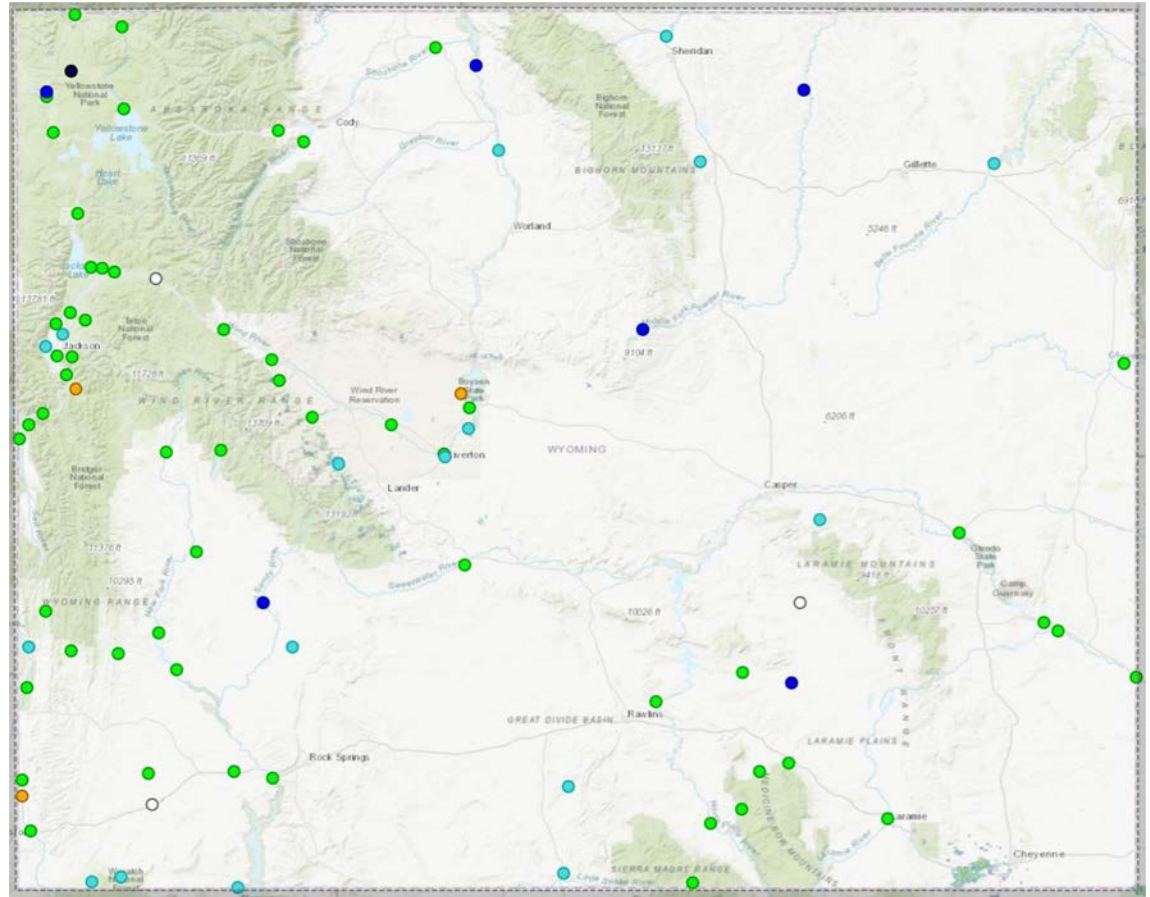


Improvements statewide.

Streamflow Status

Streamflow: Status

- Above flood stage
- All-time high for this day
- Much above normal
- Above normal
- Normal
- Below normal
- Much below normal
- All-time low for this day
- Not flowing
- Not ranked
- Measurement flag
- Recent measurement unavailable

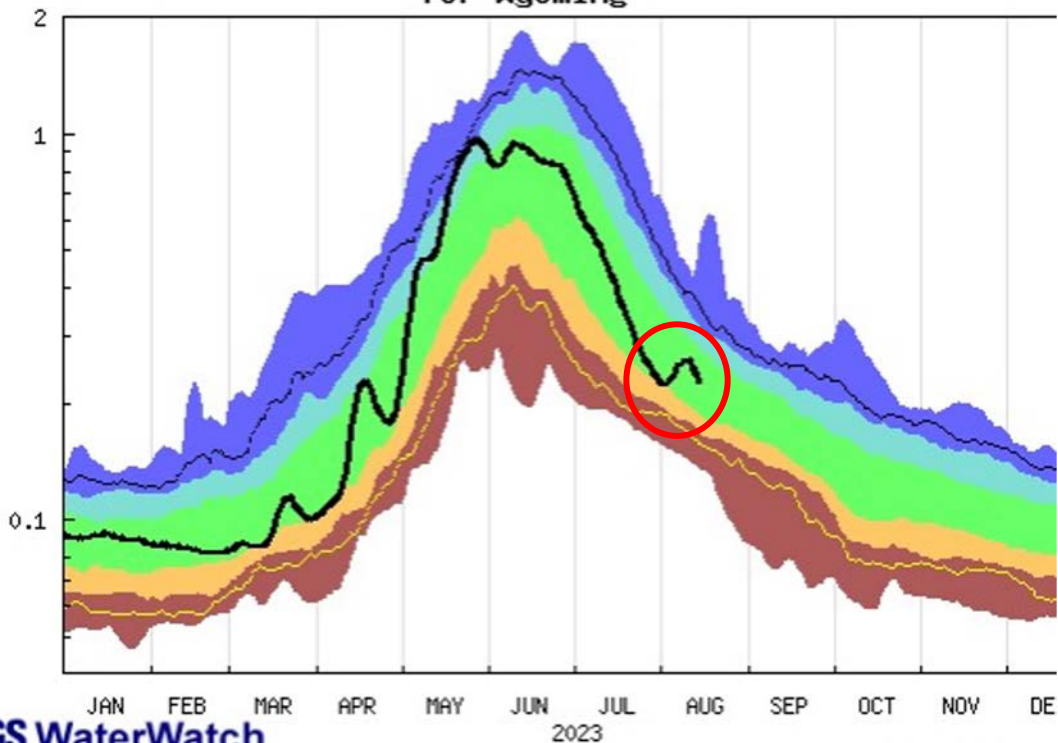


WY Duration Hydrograph of 7-day runoff

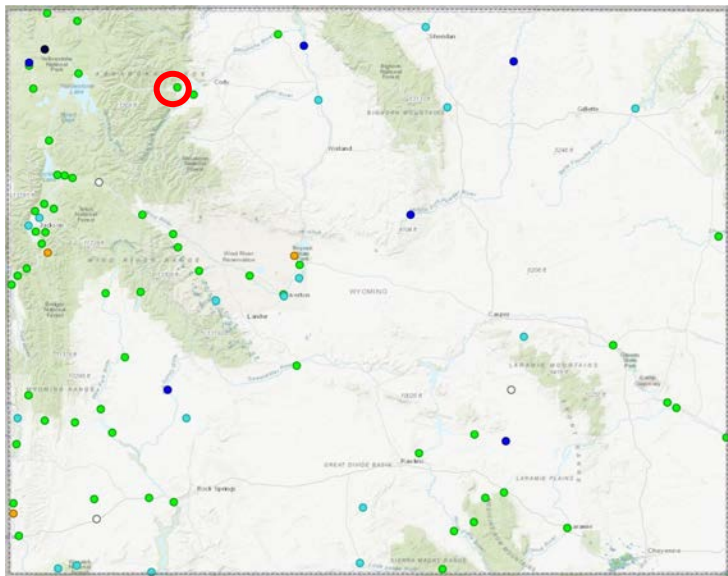
Spring Streamflow

- Recent rains helping to sustain normal & above flow conditions
- Continued sharp downward trend

Duration hydrograph of 7-day average runoff
for Wyoming



Select WY Streamflows

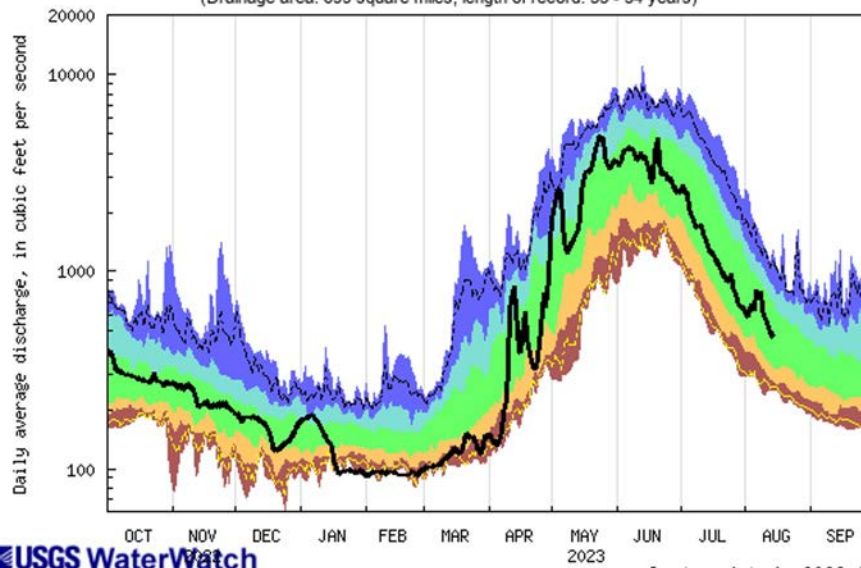


<https://dashboard.waterdata.usgs.gov/>

<https://waterdata.usgs.gov/>

North Fork Shoshone River, WY Last updated August 15, 2023

USGS 06279940 NORTH FORK SHOSHONE RIVER AT WAPITI, WY
(Drainage area: 699 square miles, length of record: 33 - 34 years)

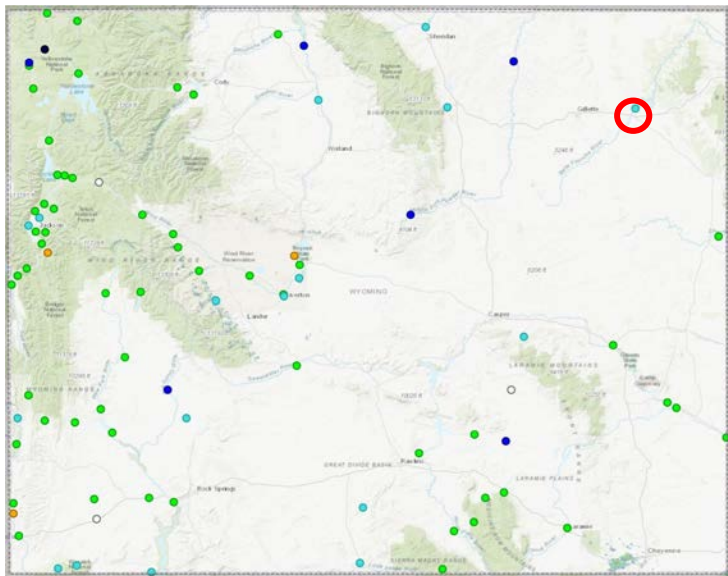


USGS WaterWatch

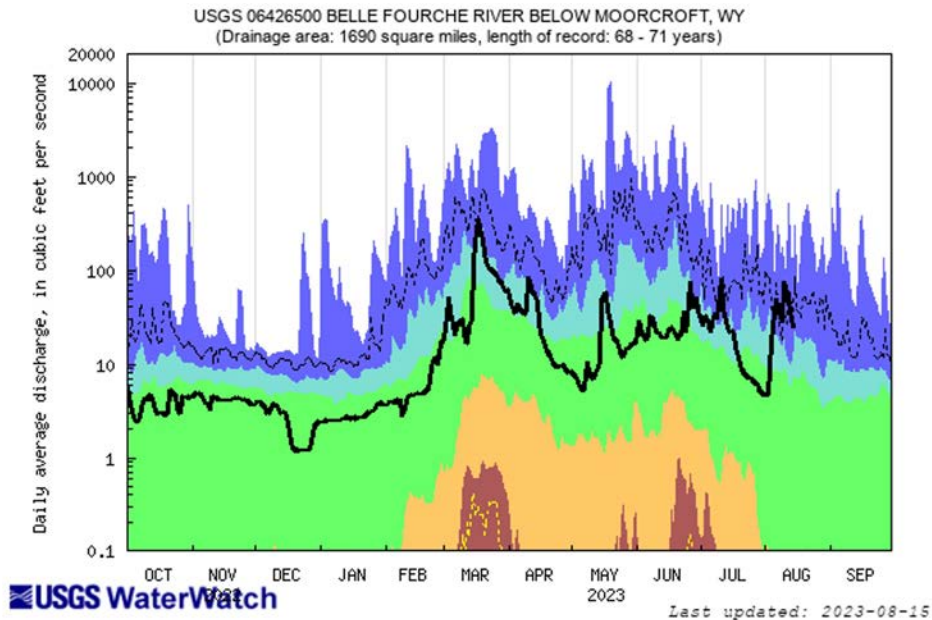
Last updated: 2023-08-15

Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile - highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

Select WY Streamflows



Belle Fourche below Moorcroft, WY Last updated August 15, 2023

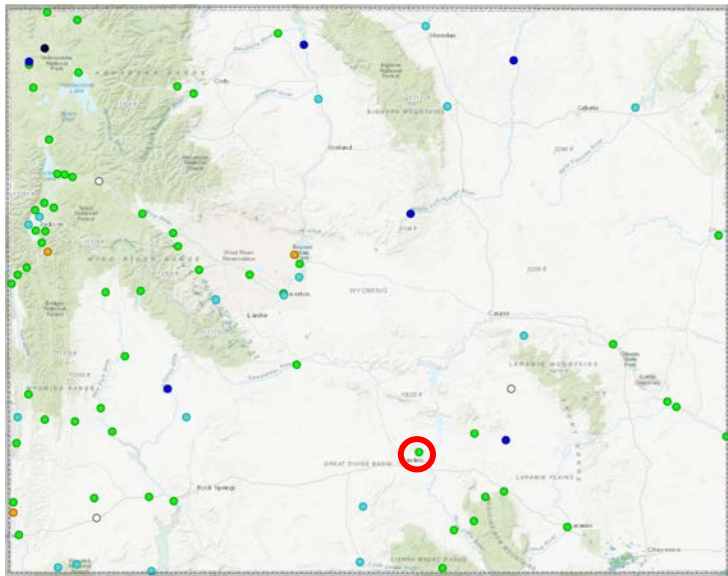


<https://dashboard.waterdata.usgs.gov/>

<https://waterdata.usgs.gov/>

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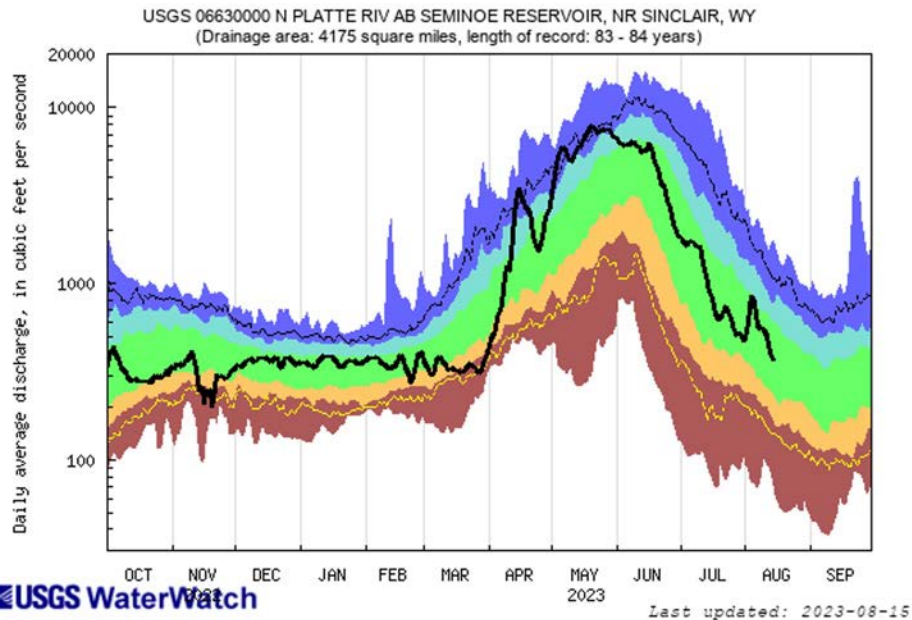
Select WY Streamflows



<https://dashboard.waterdata.usgs.gov/>

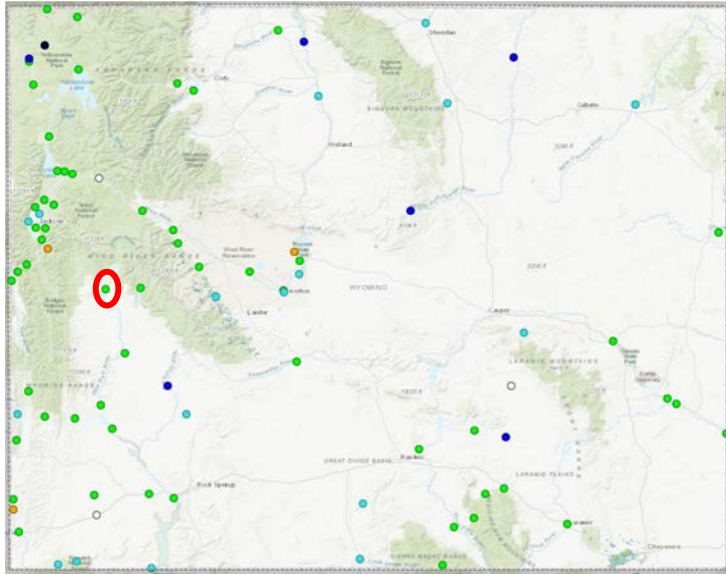
<https://waterdata.usgs.gov/>

North Platte River ab Seminoe Reservoir, WY Last updated August 15, 2023



Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

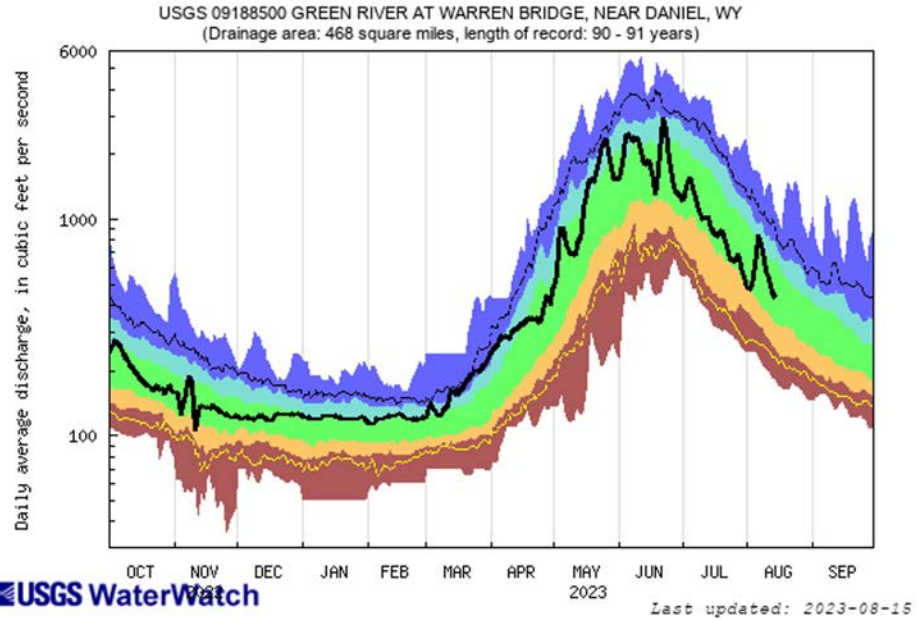
Select WY Streamflows



<https://dashboard.waterdata.usgs.gov/>

<https://waterdata.usgs.gov/>

Green River at Warren Bridge nr Daniel, WY Last updated August 15, 2023



Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile - highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow



Current Reservoir Conditions: Bighorn System



Shoshone River Below Buffalo Bill

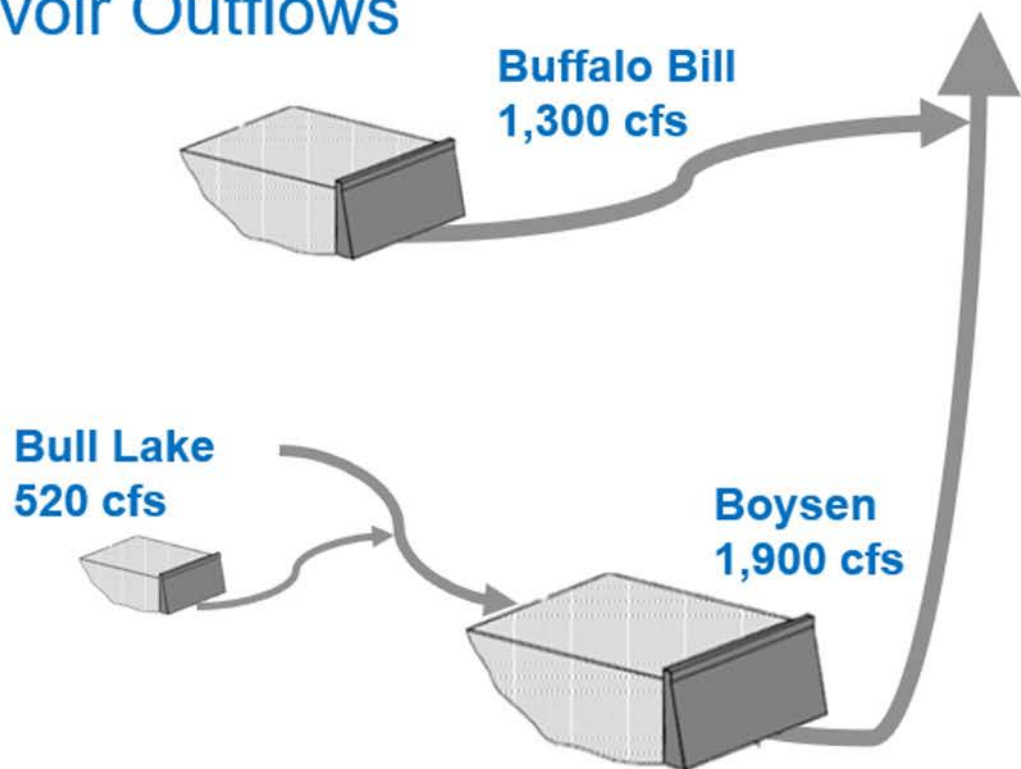
<u>2023</u>	<u>April – July Runoff (KAF)</u>	<u>% of Average</u>
Bull Lake	187	130%
Buffalo Bill	765	102%
Boysen	1,058	171%

KAF = 1,000's Acre-Feet

As of August 14, Bighorn System: 92% of Full, 110% of Average

<u>Reservoir</u>	<u>Content (AF)</u>	<u>Capacity (AF)</u>	<u>% of Full</u>	<u>% of Avg</u>
Bull Lake	144,400	152,500	95%	117%
Buffalo Bill	570,900	646,600	88%	103%
Boysen	706,200	741,600	95%	114%

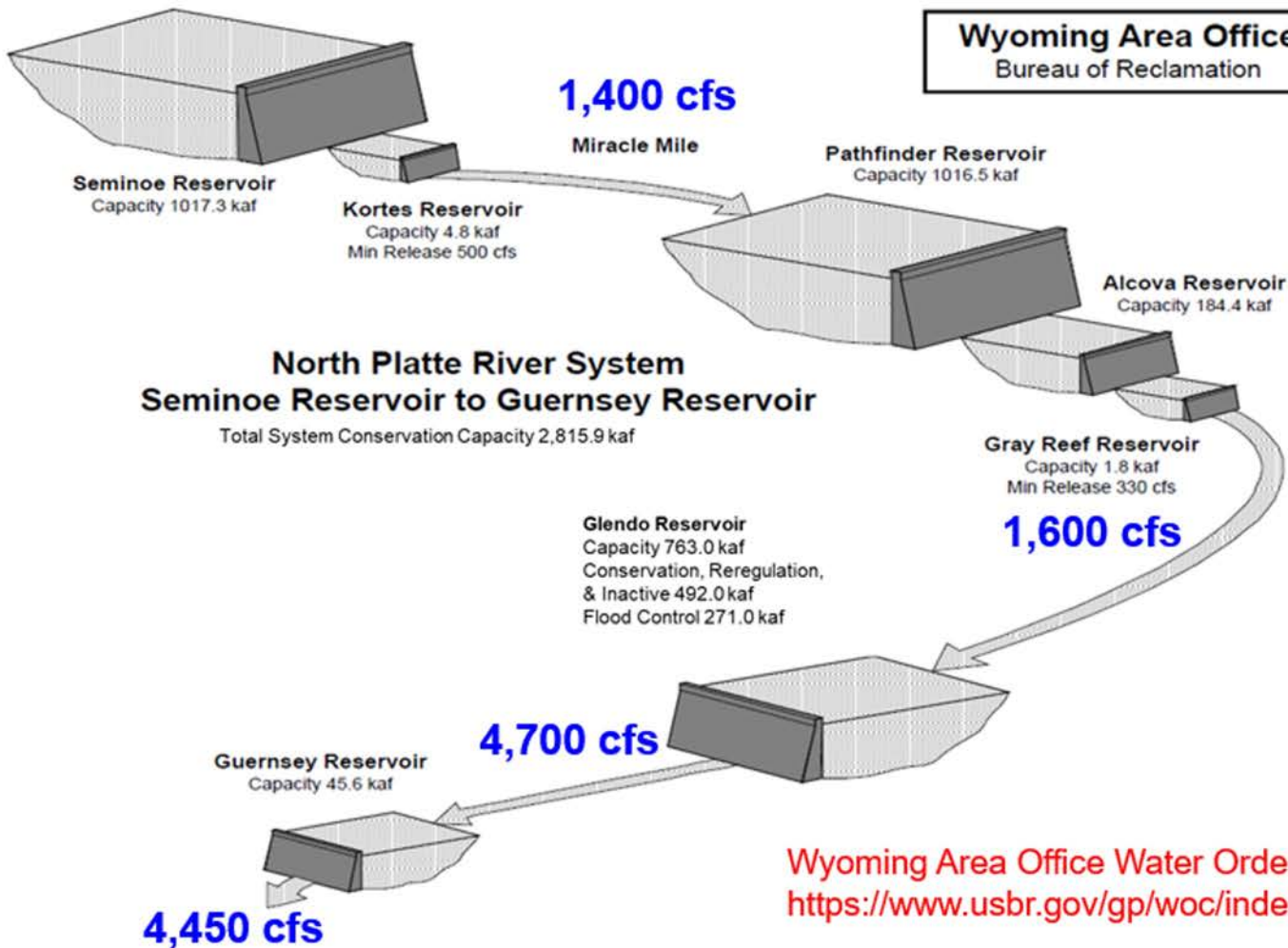
Current Reservoir Outflows





As of August 16, North Platte System: 67% of Full, 114% of Average

<u>Reservoir</u>	<u>Content (AF)</u>	<u>Capacity</u>	<u>% of Full</u>	<u>% of Avg</u>
Seminoe	767,114	1,017,300	75%	113%
Pathfinder	671,458	1,070,000	63%	114%
Glendo	285,695	492,000	58%	120%



Wyoming Area Office Water Order Changes – <https://www.usbr.gov/gp/woc/indexwy.html>



WY SEO Divisions and Superintendents

Contact information for calls and administration

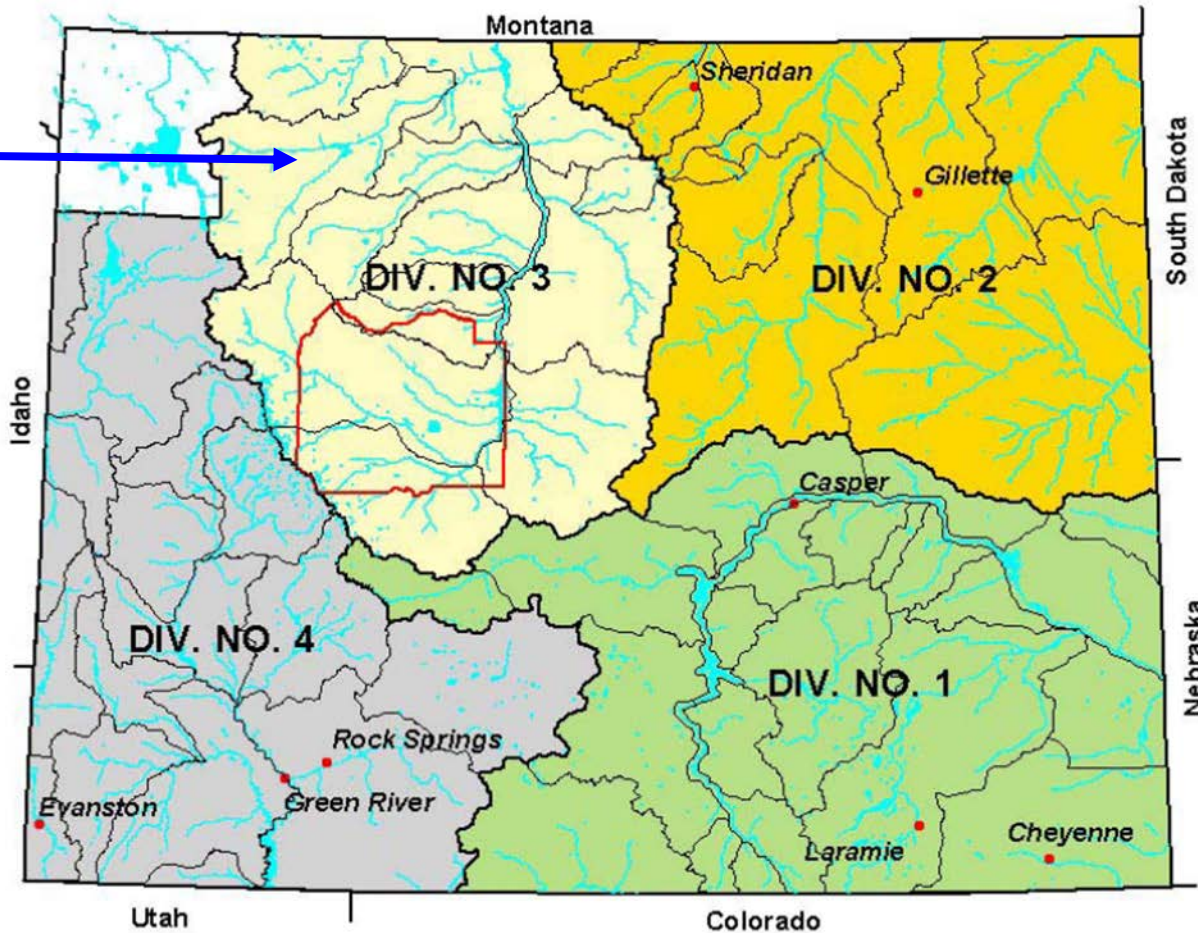
Division 3

Joshua
Fredrickson,
856-0747



Division 4

Kevin Payne,
279-3441



Division 2

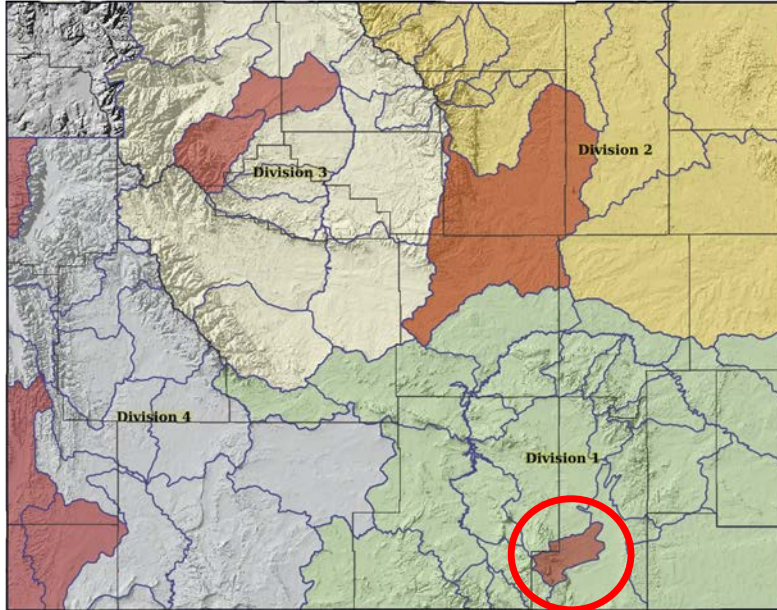
David
Schroeder,
674-7012

Division 1

Cory Rinehart,
532-2248



Division 1

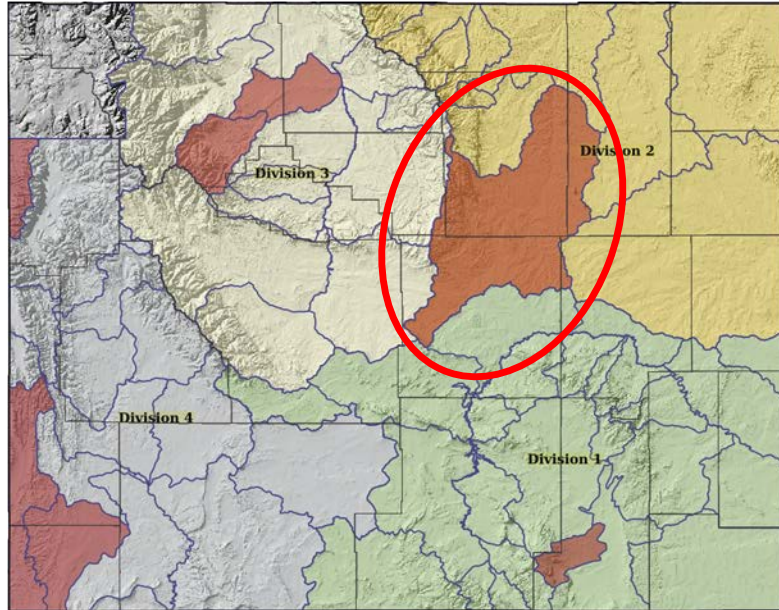


1. July 17, 2023 call on Little Laramie River and tribs, District 4B, to a priority date of May, 1882.
1. July 17, 2023 call on Little Laramie River and Tribs, District 4B, to a priority date of Spring, 1881.



Division 2

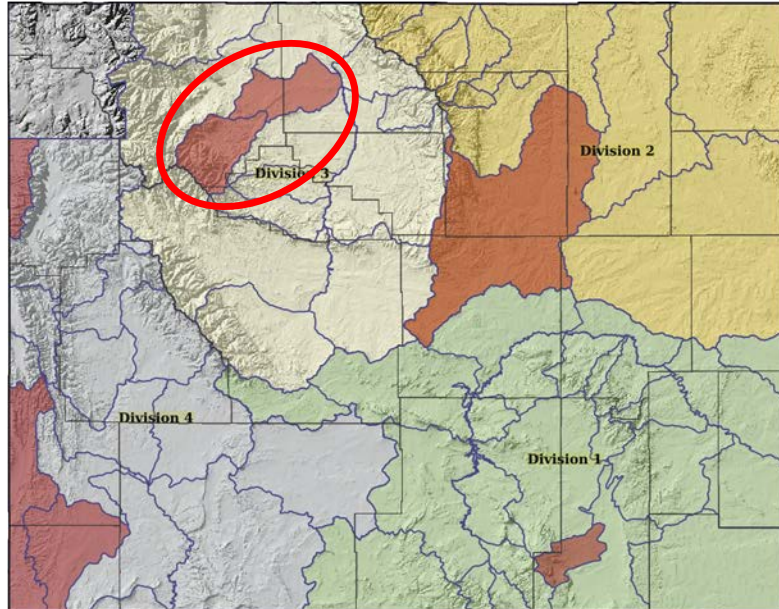
1. July 28, 2023 call on the North Fork Powder River, District 8, for shepherding of water from storage to headgates.





Division 3

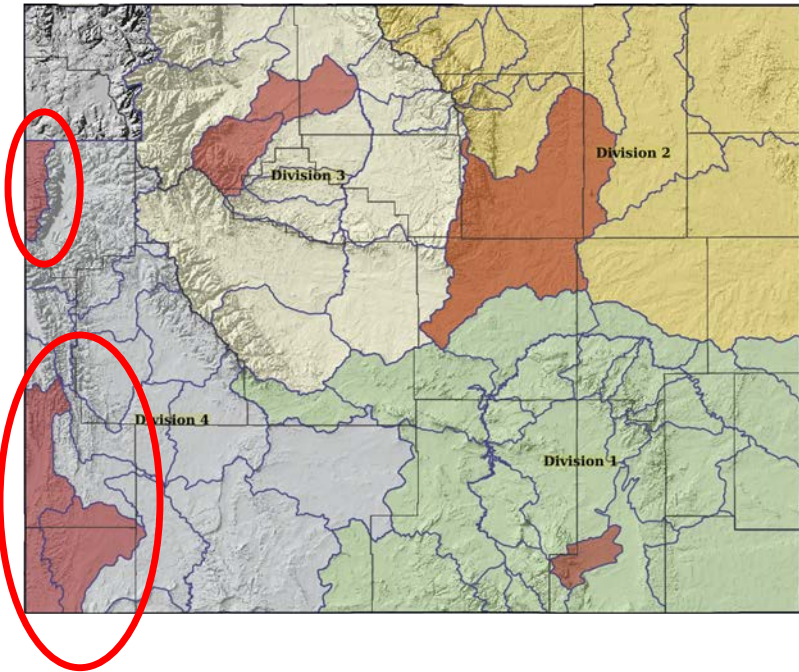
1. July 31, 2023 call on Greybull River and tribs, District 8 and 16, to a priority date of 1/27/1913.





Division 4

1. July 11, 2023 call on Smith's Fork River and tribs, District 4, to a priority date of April, 1875.
2. July 14, 2023 call on Black's Fork River and Tribs, District 15, to a priority date of 10/29/1909.
3. July 27, 2023 call on East Fork of Smith's Fork River and Tribs, District 4, to a priority date of 01/04/1910.
4. July 31, 2023 call on Teton Creek and Tribs, District 13, regulated to meet the Roxanna Decree.
5. August 2, 2023 call on Smith's Fork and Bear River and Tribs, regulated to monitor diversions per Bear River Compact.





WY SEO Divisions and Superintendents

Contact information for calls and administration

Division 3

Joshua
Fredrickson,
856-0747



Division 2

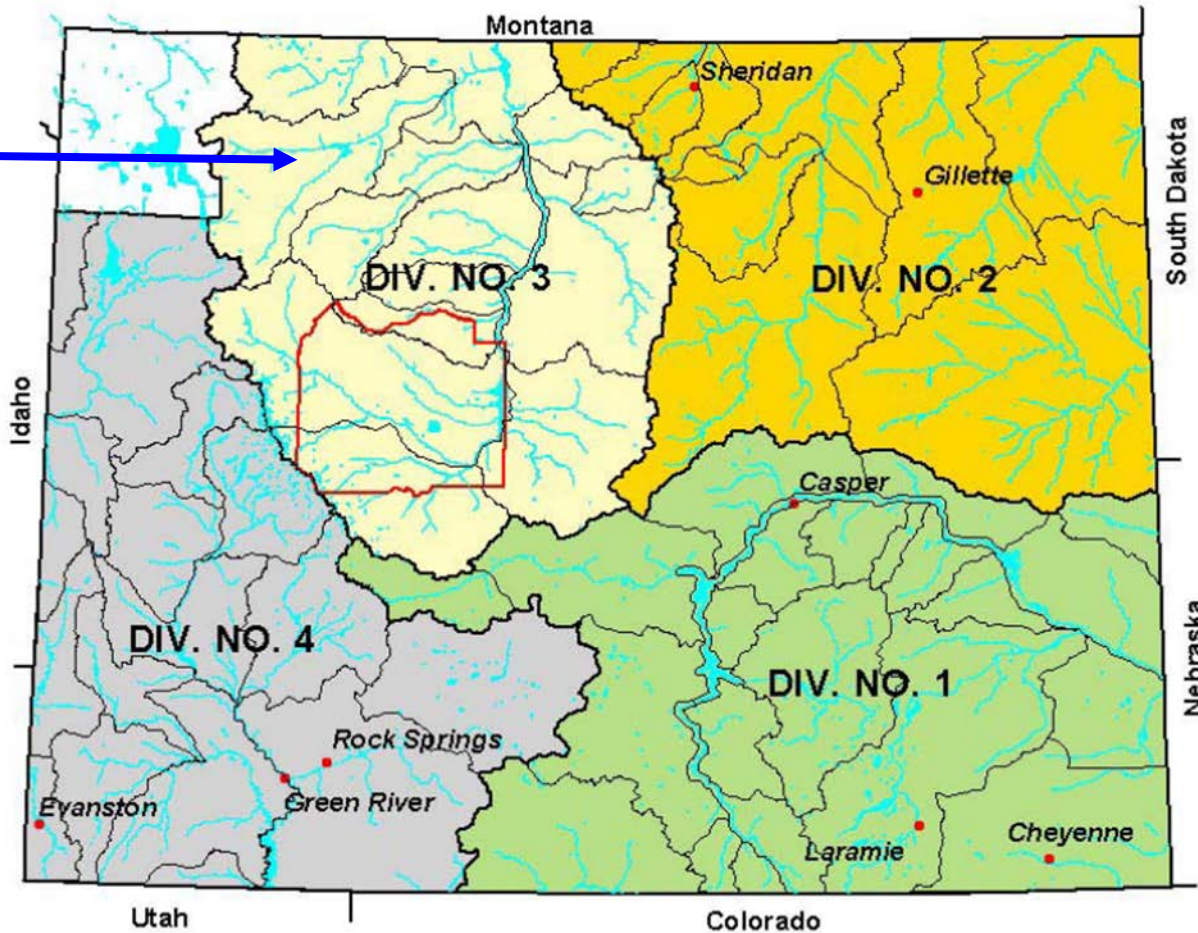
David
Schroeder,
674-7012

Division 4

Kevin Payne,
279-3441

Division 1

Cory Rinehart,
532-2248





— BUREAU OF —
RECLAMATION



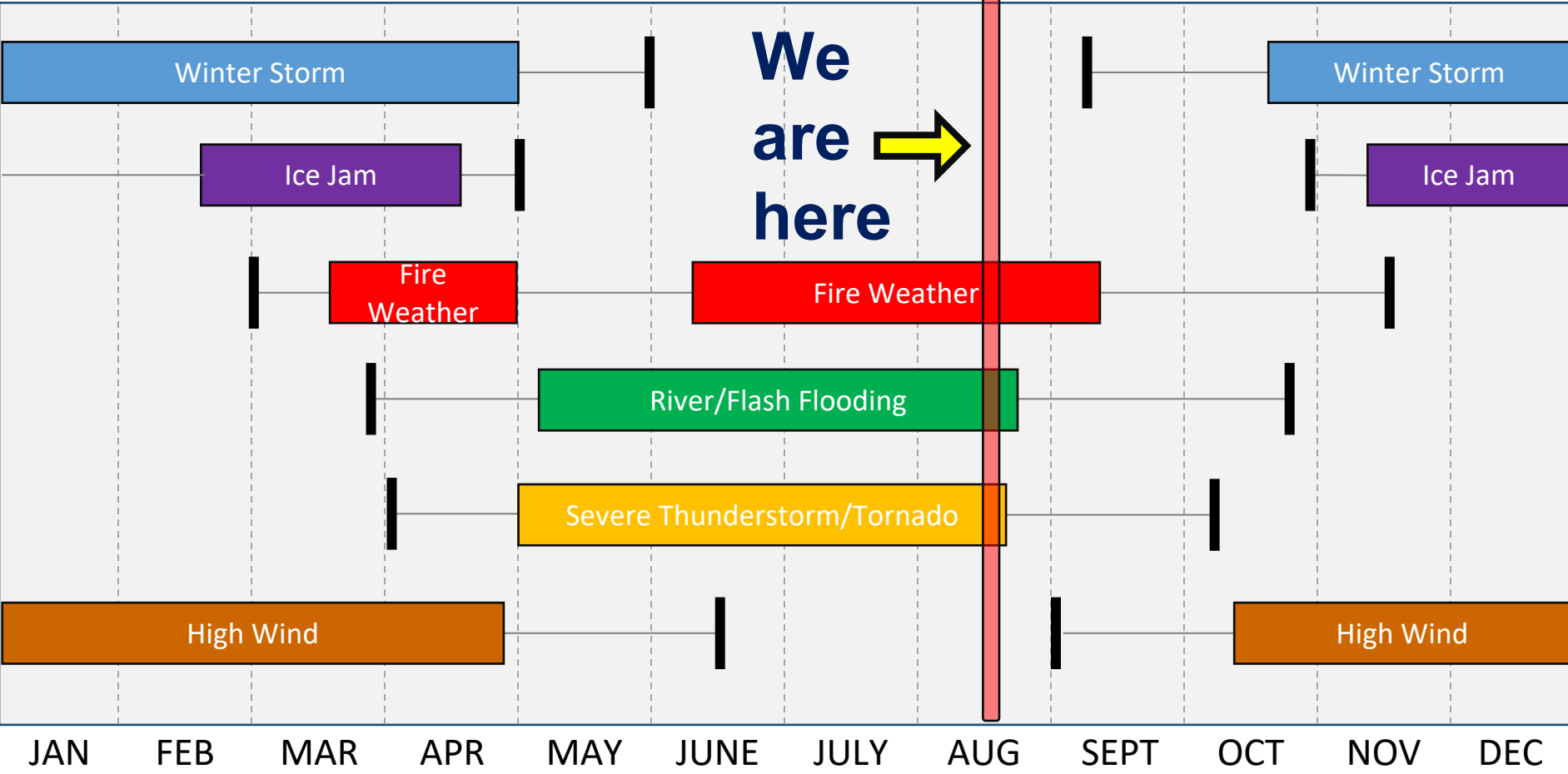
Weather Info & Forecasts



NWS Wyoming Typical Hazard Calendar



**We
are
here** →

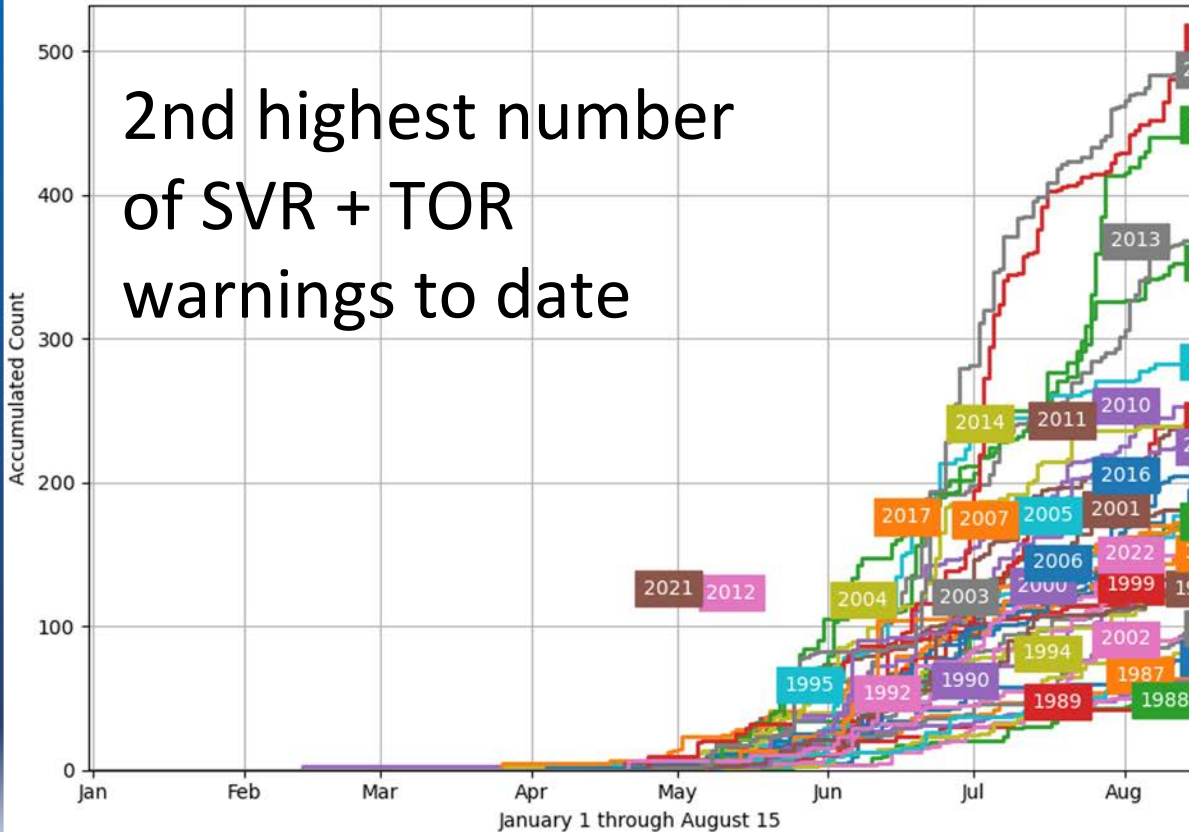


Severe Weather Season so far:



NWS Issued for Counties in Wyoming [January 1 through August 15]
Severe Thunderstorm + Tornado Warning Count

2nd highest number
of SVR + TOR
warnings to date



Severe Thunderstorm = SVR

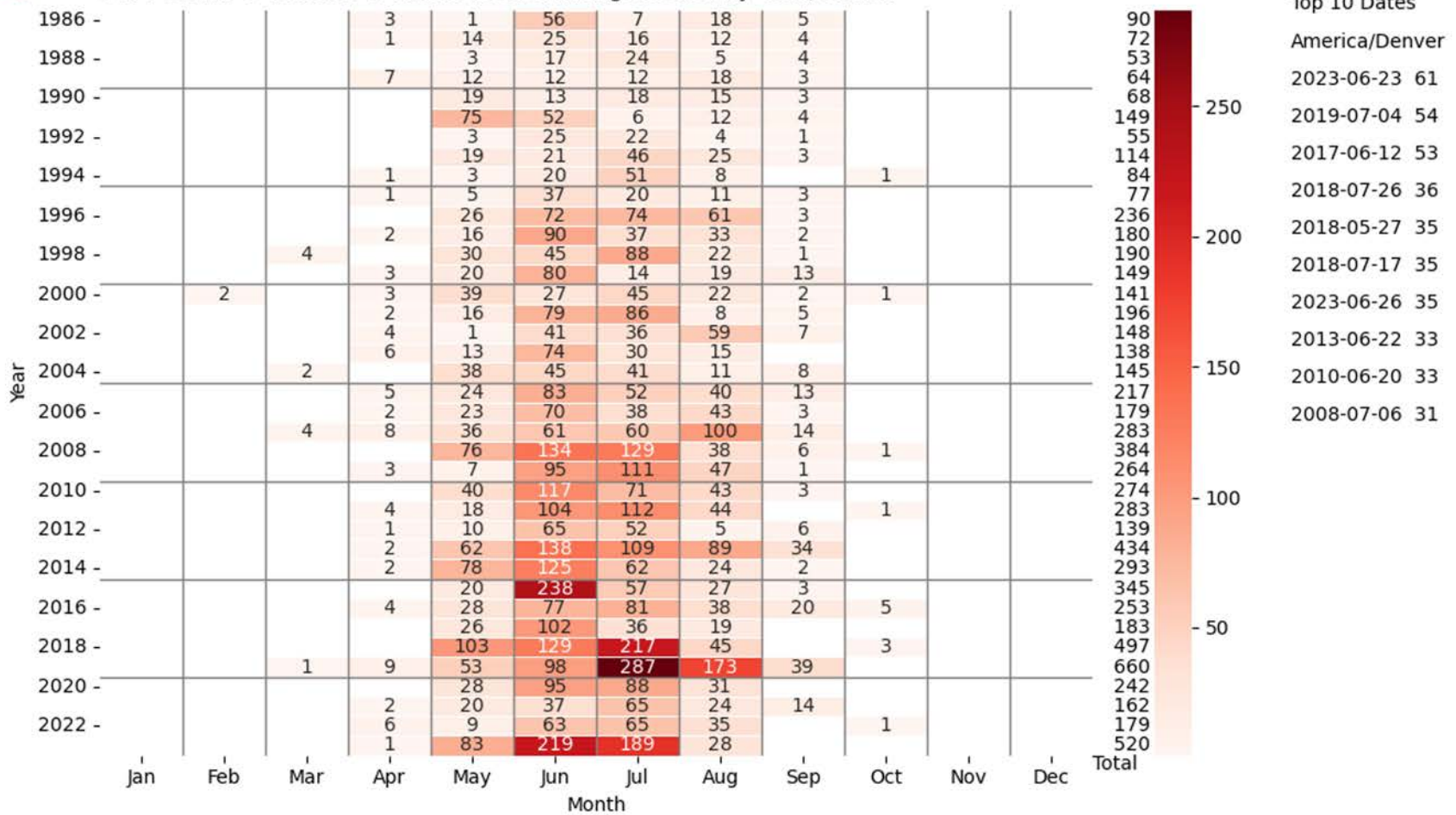
Tornado Warning = TOR

1986 (78)	2005 (177)
1987 (66)	2006 (144)
1988 (48)	2007 (174)
1989 (47)	2008 (353)
1990 (62)	2009 (243)
1991 (126)	2010 (253)
1992 (53)	2011 (243)
1993 (99)	2012 (123)
1994 (81)	2013 (368)
1995 (59)	2014 (241)
1996 (203)	2015 (284)
1997 (151)	2016 (205)
1998 (173)	2017 (176)
1999 (129)	2018 (449)
2000 (128)	2019 (507)
2001 (181)	2020 (225)
2002 (91)	2021 (126)
2003 (120)	2022 (150)
2004 (118)	2023 (487)



NWS Issued for Counties/Zones for State of Wyoming

Svr T'Storm + Tornado + Flash Flood Warnings Issued by Year, Month

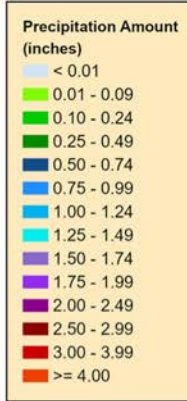
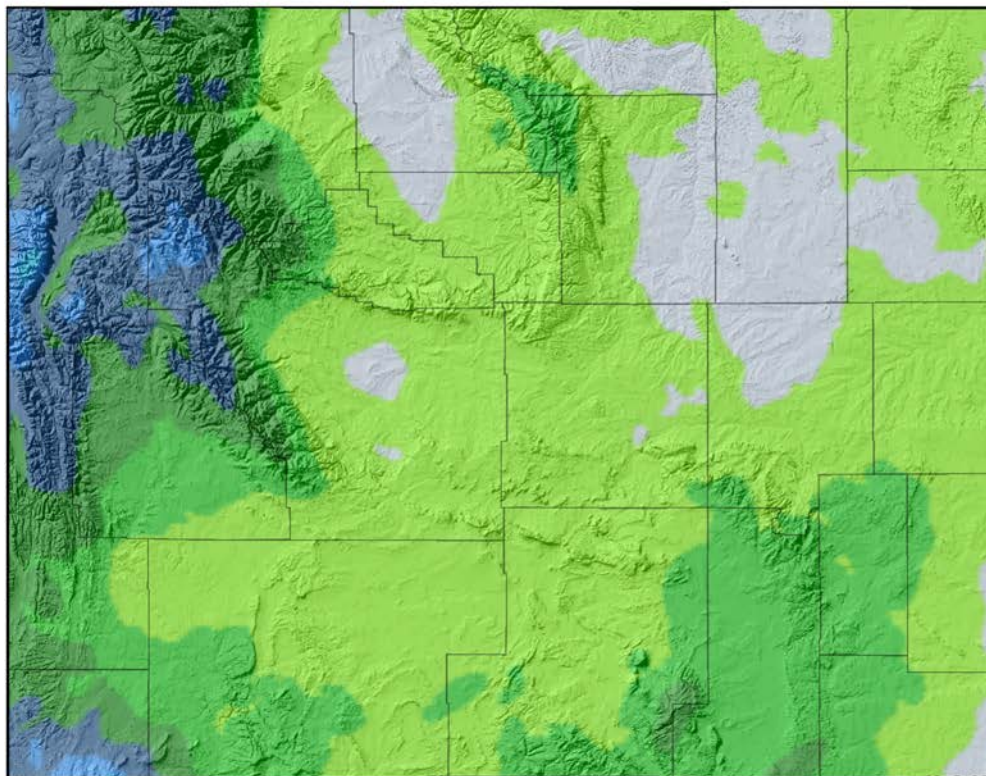


- Top 10 Dates
- America/Denver 61
 - 2023-06-23 61
 - 2019-07-04 54
 - 2017-06-12 53
 - 2018-07-26 36
 - 2018-05-27 35
 - 2018-07-17 35
 - 2023-06-26 35
 - 2013-06-22 33
 - 2010-06-20 33
 - 2008-07-06 31



7-Day Total Precipitation Forecast

Through 8/23/23



Forecast:
Weather Prediction Center



Map Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



- Monsoon moisture from Friday to Sunday will bring 0.5 to 1.0" of rainfall to western WY and 0.5" to southeast WY
- Isolated showers and thunderstorms will move into the south and west today and spread further north on Friday
- Dry elsewhere until showers late Saturday and Sunday



6-10 Day Outlooks (Aug 22 - Aug 26)

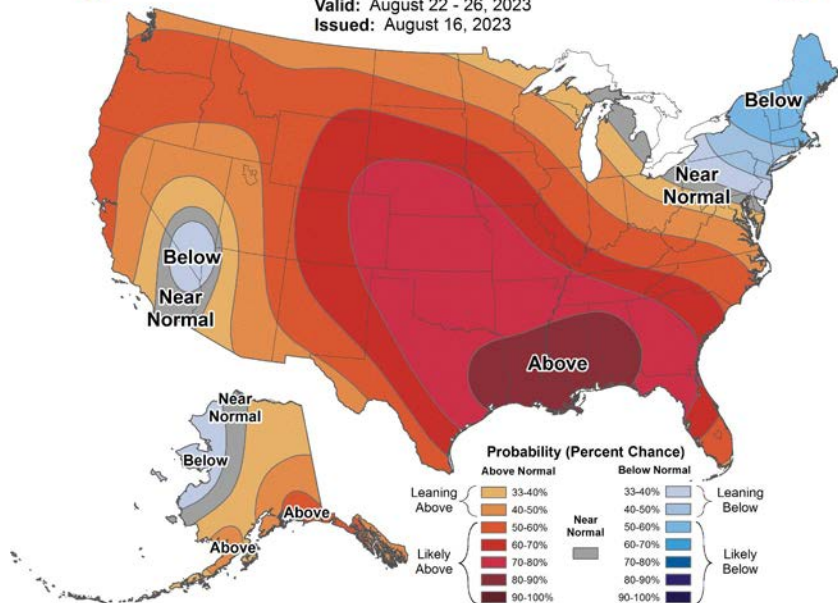
https://bit.ly/CPC6_10Day



6-10 Day Temperature Outlook



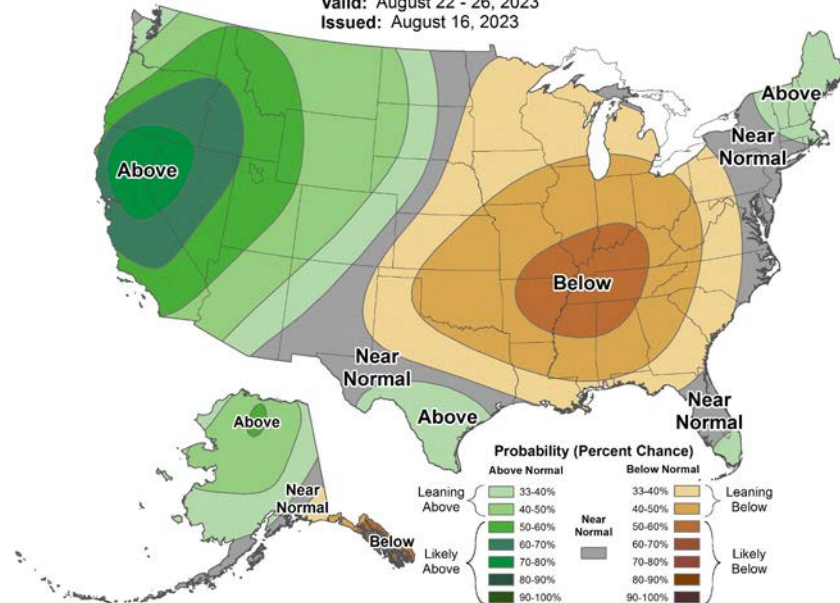
Valid: August 22 - 26, 2023
Issued: August 16, 2023



6-10 Day Precipitation Outlook



Valid: August 22 - 26, 2023
Issued: August 16, 2023



Very strong signal for above normal temperatures

Above normal precipitation is expected



8-14 Day Outlooks

(Aug 24 - Aug 30)

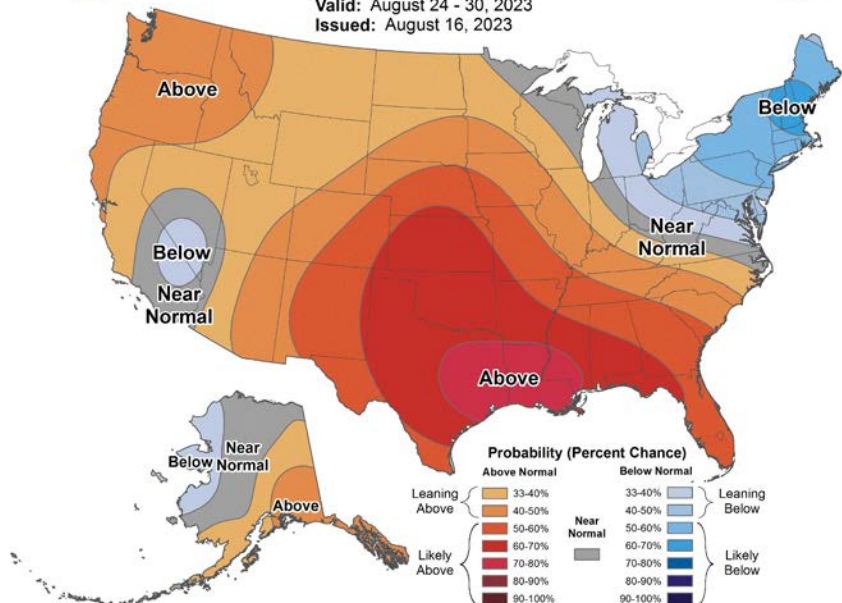
https://bit.ly/CPC8_14Day



8-14 Day Temperature Outlook



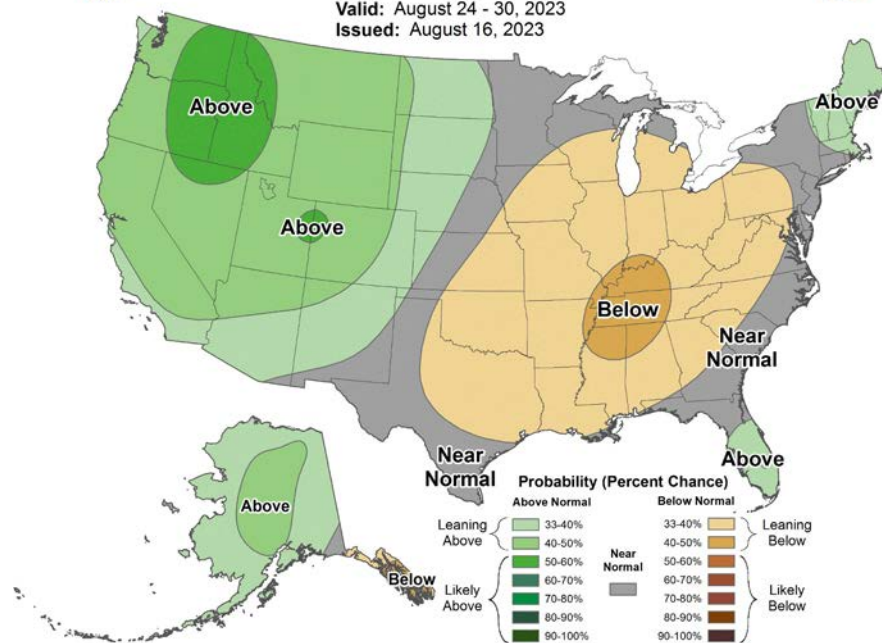
Valid: August 24 - 30, 2023
Issued: August 16, 2023



8-14 Day Precipitation Outlook



Valid: August 24 - 30, 2023
Issued: August 16, 2023



Warmer than normal remains most likely

Above normal precipitation across Wyoming



3-Month Outlooks (Sep-Oct-Nov)

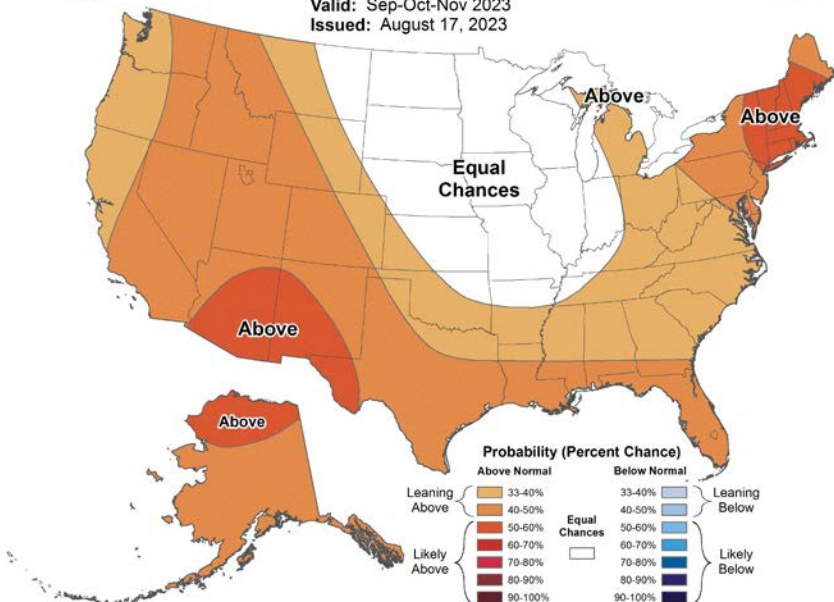
https://bit.ly/CPC_Seasonal



Seasonal Temperature Outlook



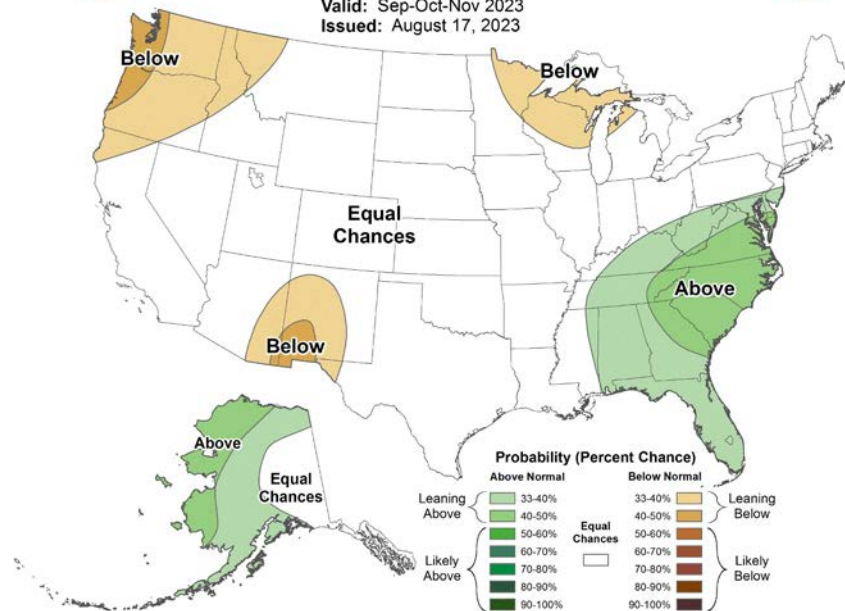
Valid: Sep-Oct-Nov 2023
Issued: August 17, 2023



Seasonal Precipitation Outlook



Valid: Sep-Oct-Nov 2023
Issued: August 17, 2023



Above-normal temperatures for most of WY

No clear signal from the global weather pattern:
Near climatology is best forecast



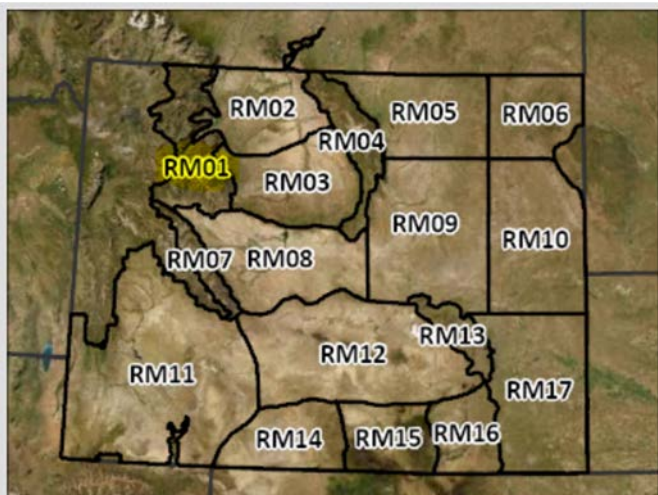
Fuel Moisture and Energy Release Component (ERC) -Definitions and Explanations

- **Live Fuel Moisture**- Influenced by seasonality, species characteristics and available moisture (soil and air).
- **Dead Fuel Moisture**- Influenced by precipitation and relative humidity. 4 Size Classes based on “Time Lag”, simply explained as the amount of time it takes the fuel to adjust to closely resemble the humidity of its surrounding environment.
 - **1 Hour Fuels**
 - Less than 1/4" diameter.
 - Fine flashy fuels that respond quickly to weather changes. Computed from observation time temperature, humidity, and cloudiness.
 - **10 Hour Fuels**
 - 1/4 to 1" diameter.
 - Computed from observation time temperature, humidity, and cloudiness. Or can be an observed value, from a standard set of "10-Hr Fuel Sticks" that are weighed as part of the fire weather observation.
 - **100 Hour Fuels**
 - 1 to 3" diameter.
 - Computed from 24-hour average boundary condition composed of day length, hours of rain, and daily temperature/humidity ranges.
 - **1000 Hour Fuels**
 - 3 to 8 " diameter.
 - Computed from a 7-day average boundary condition composed of day length, hours of rain, and daily temperature/humidity ranges.
- **Energy Release Component (ERC)**- Related to the available energy (BTU) per unit area (square foot) within the flaming front at the head of a fire. The ERC is considered a composite fuel moisture index as it reflects the contribution of all live and dead fuels to potential fire intensity.



Current Fuels Conditions: ERC

RM01-Shoshone Valid Date: August 15, 2023

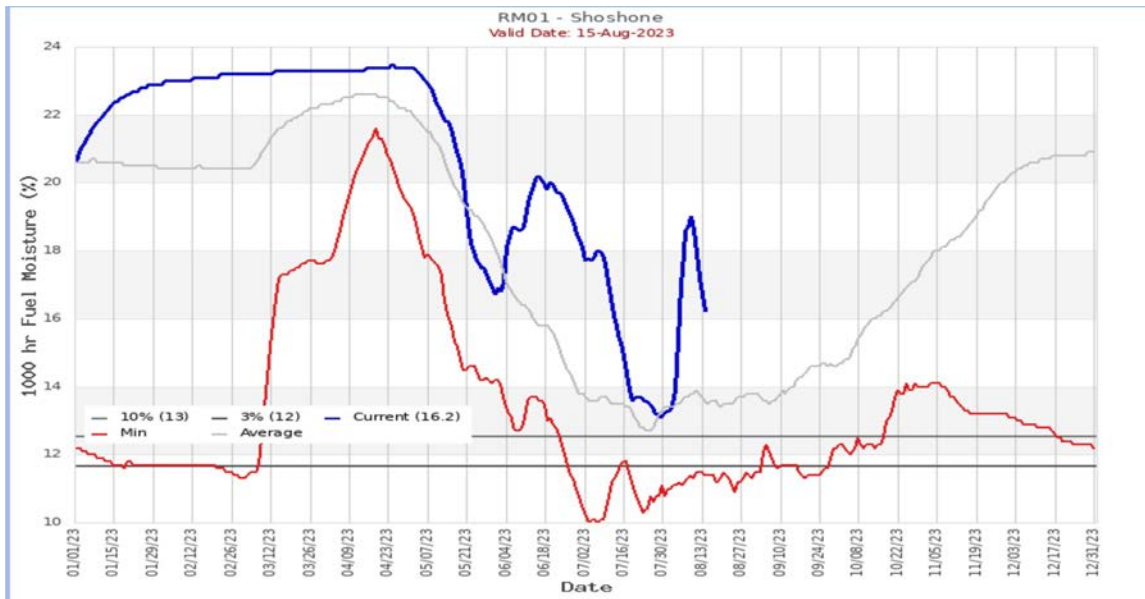
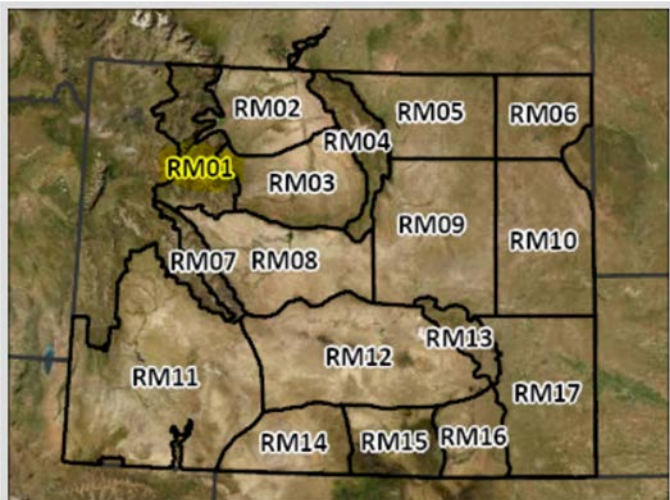




Current Fuels Conditions: 1,000Hr Dead Fuels

RM01-Shoshone

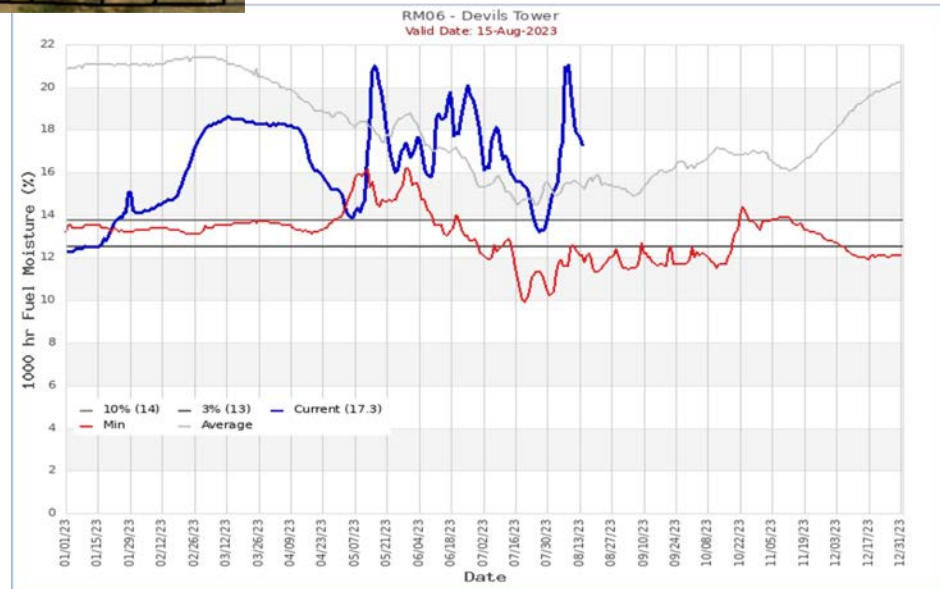
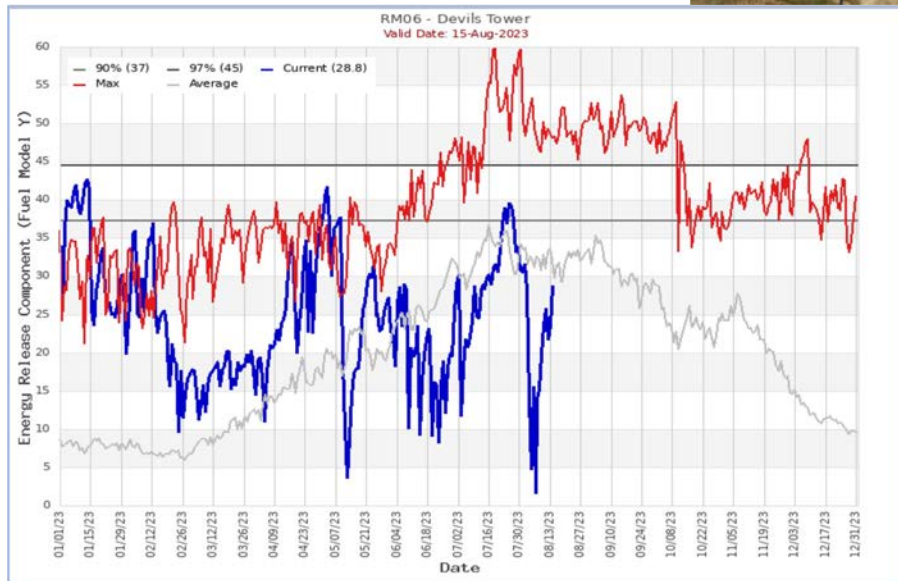
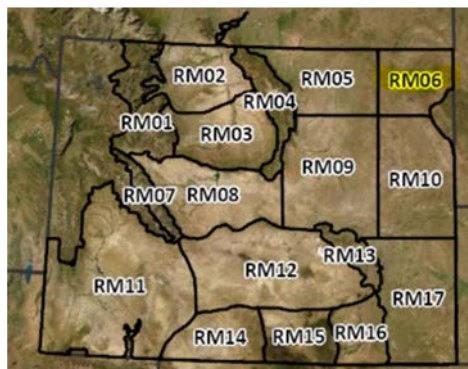
Valid Date: August 15, 2023





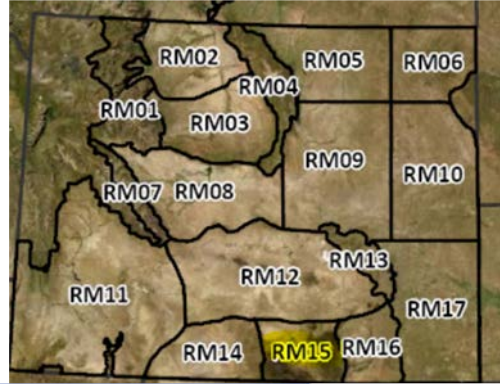
Current Fuels Conditions- ERC and 1,000Hr Dead Fuels

RM06-Devils Tower Valid Date: August 15, 2023



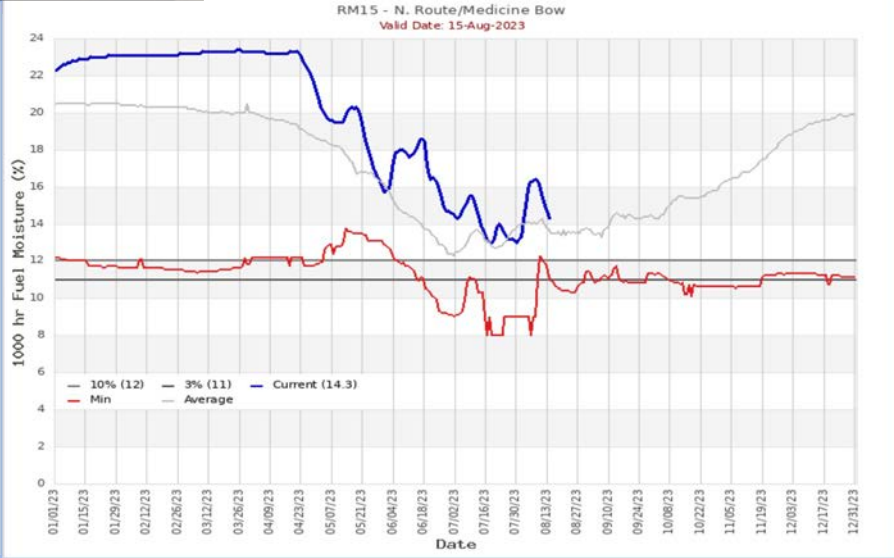
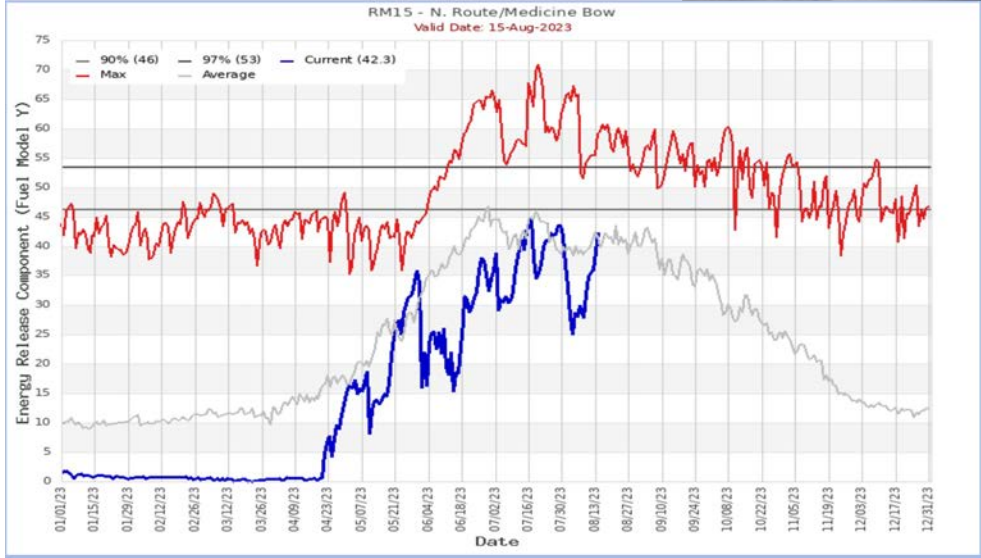


Current Fuels Conditions- 1,000Hr Dead Fuels and ERC



RM15-N Route/Medicine Bowe

Valid Date: August 15, 2023

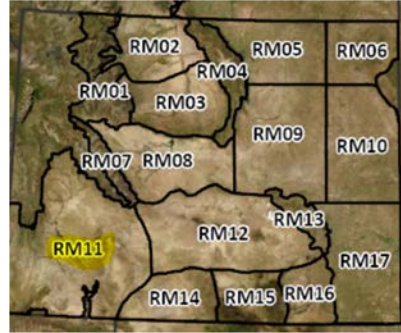




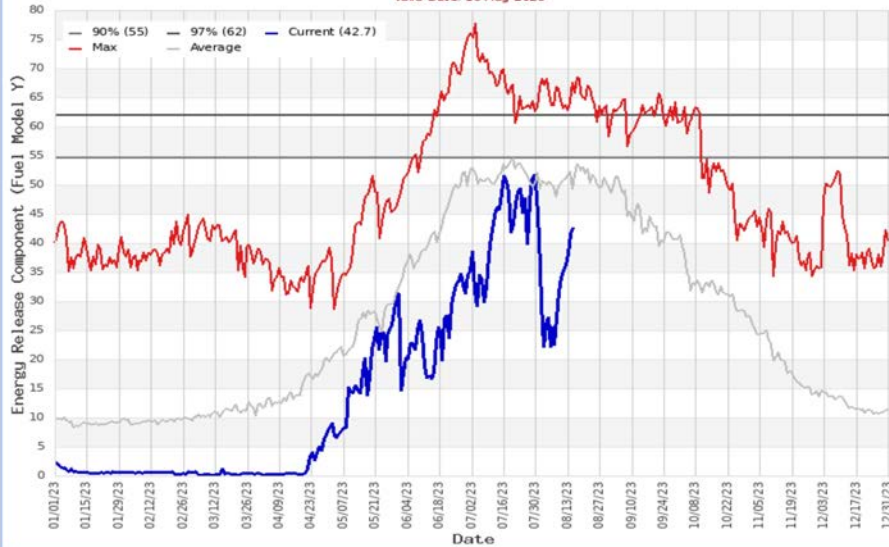
Current Fuels Conditions- ERC and 1,000Hr Dead Fuels

RM11-Great Divide Basin

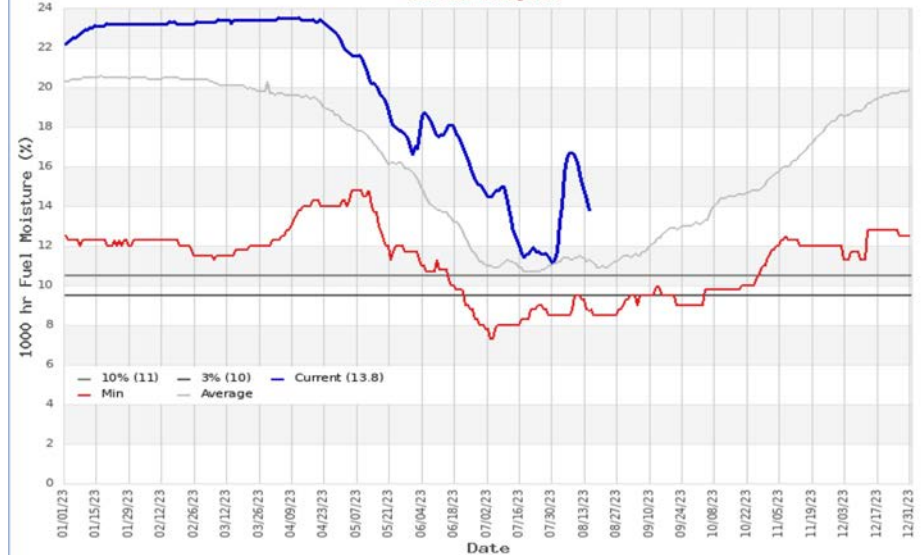
Valid Date: August 15, 2023



RM11 - Great Divide Basin
Valid Date: 16-Aug-2023

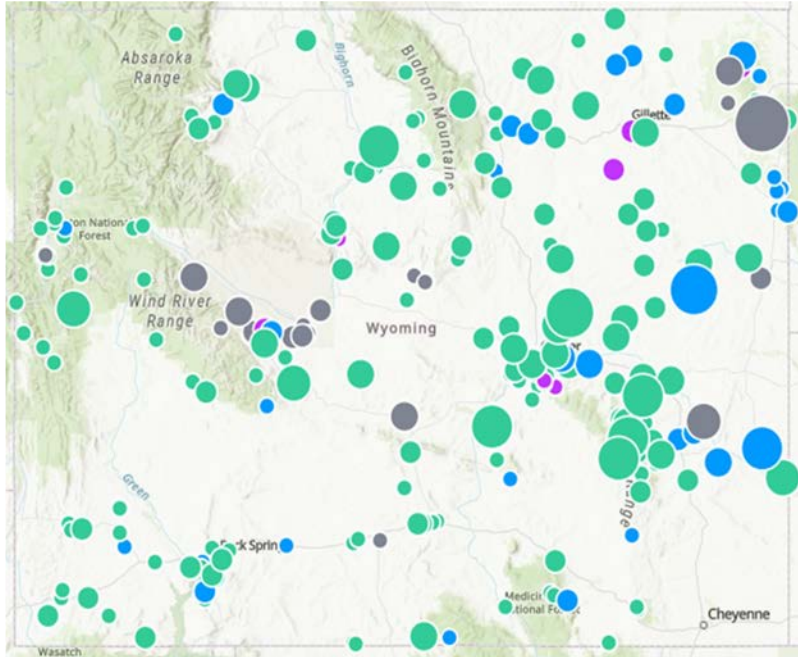


RM11 - Great Divide Basin
Valid Date: 16-Aug-2023

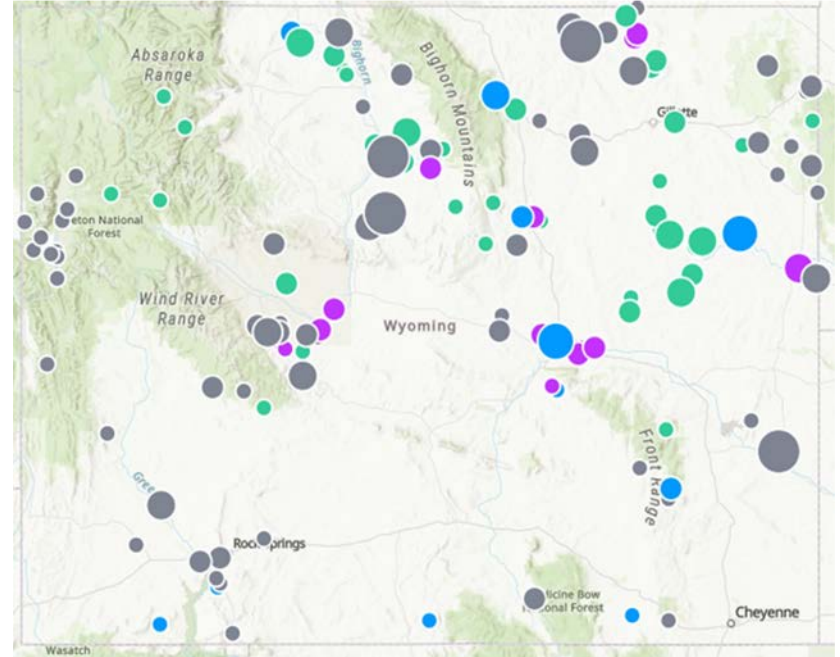




Fire Occurrence 2022 vs 2023



2022



2023

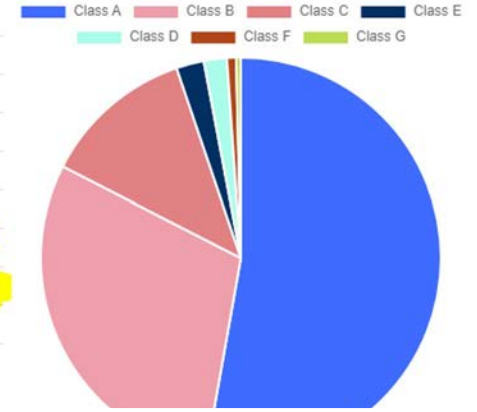


Fire size 2022 vs 2023

Value	Description
A	Greater than 0 but less than or equal to 0.25 Acres
B	0.26 to 9.9 Acres
C	10.0 to 99.9 Acres
D	100 to 299 Acres
E	300 to 999 Acres
F	1000 to 4999 Acres
G	5000 to 9999 Acres

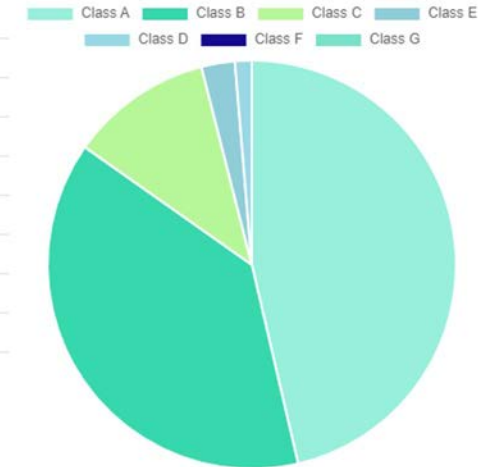
Incident Type: WF
State: US-WY

Size Class	Number of Incidents	Percentage
Class A	142	52.79 %
Class B	80	29.74 %
Class C	33	12.27 %
Class E	6	2.23 %
Class D	5	1.86 %
Class F	2	0.74 %
Class G	1	0.37 %
Total	269	



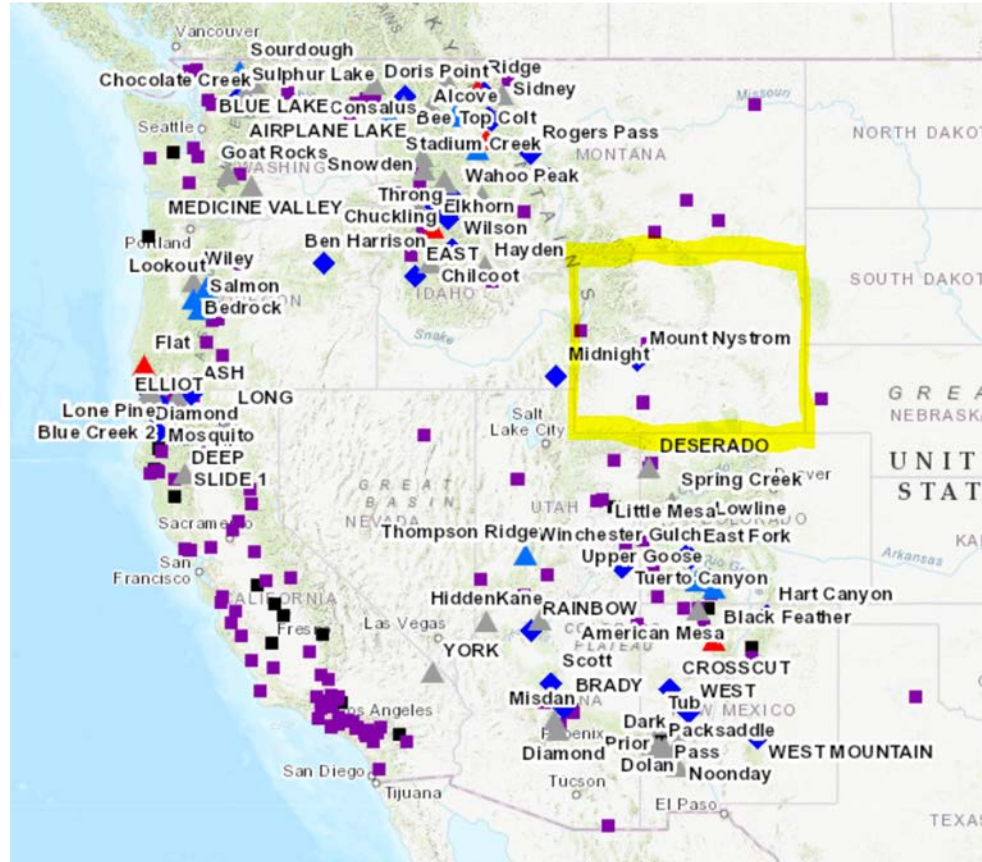
Incident Type: WF
State: US-WY

Size Class	Number of Incidents	Percentage
Class A	70	46.36 %
Class B	58	38.41 %
Class C	17	11.26 %
Class E	4	2.65 %
Class D	2	1.32 %
Class F	0	0.00 %
Class G	0	0.00 %
Total	151	





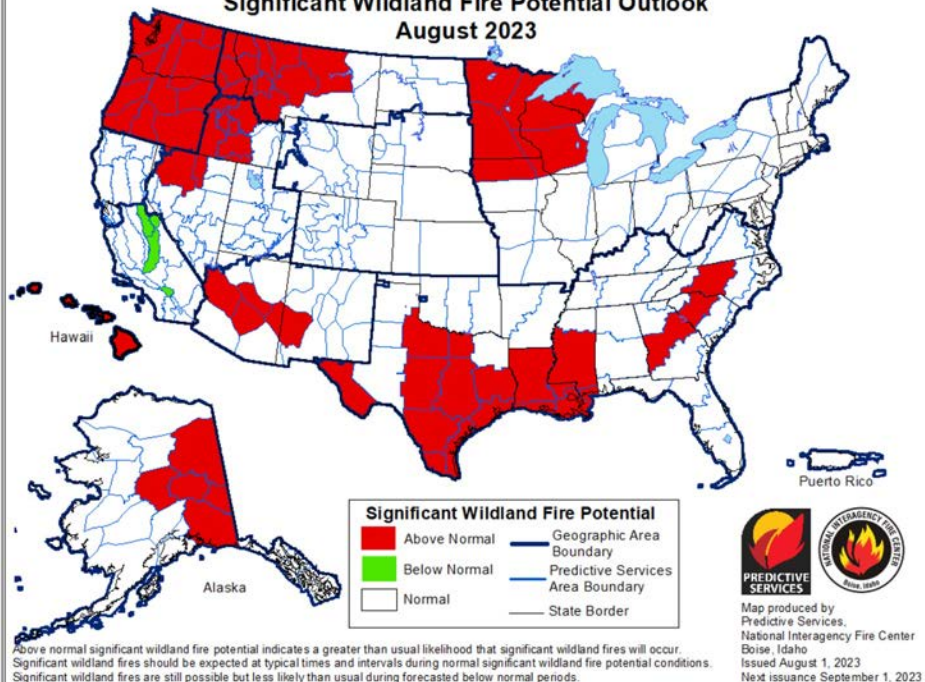
Current Situation Nationally (08/15/23)



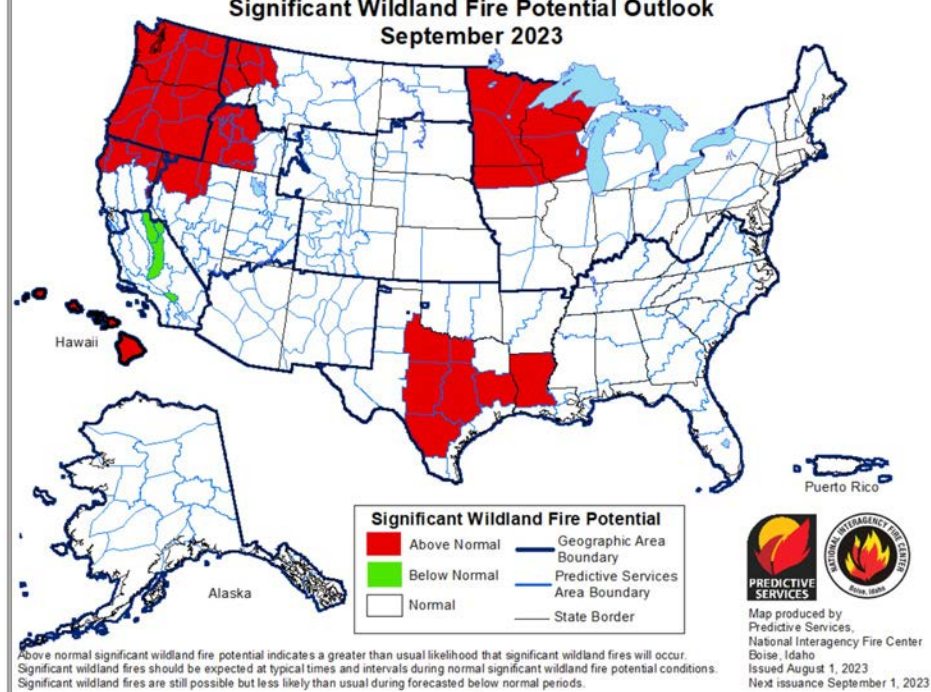


National Fire Danger Outlook

Significant Wildland Fire Potential Outlook August 2023



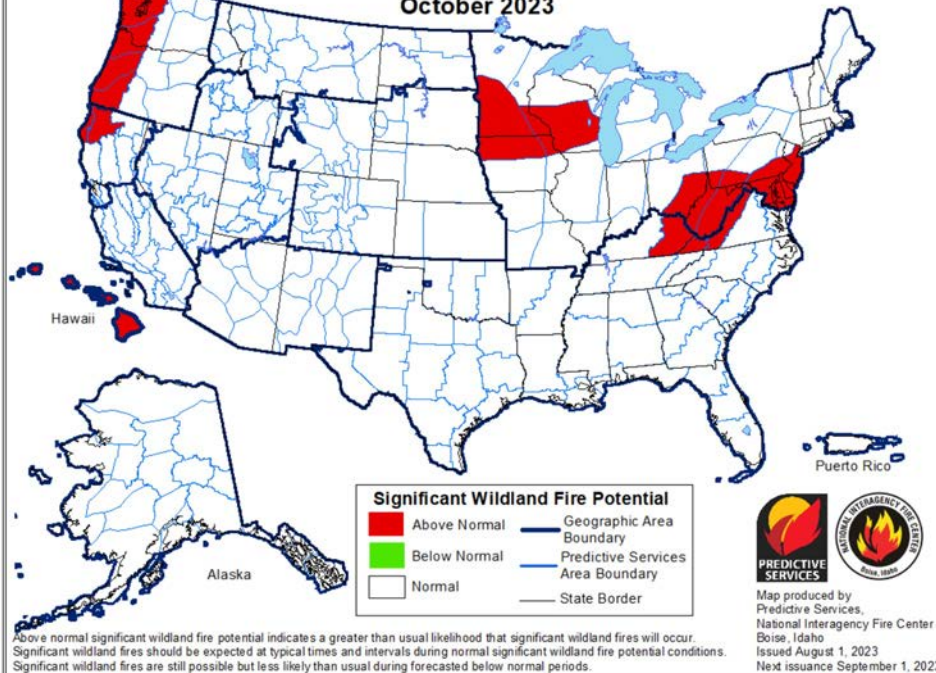
Significant Wildland Fire Potential Outlook September 2023



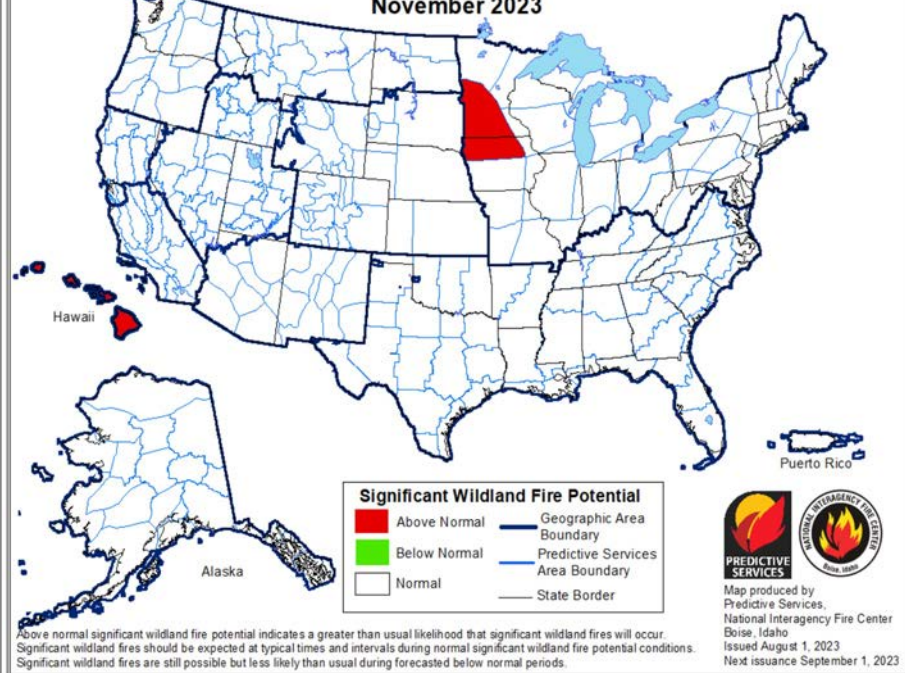


National Fire Danger Outlook

Significant Wildland Fire Potential Outlook October 2023



Significant Wildland Fire Potential Outlook November 2023



Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur. Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions. Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.

Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur. Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions. Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.



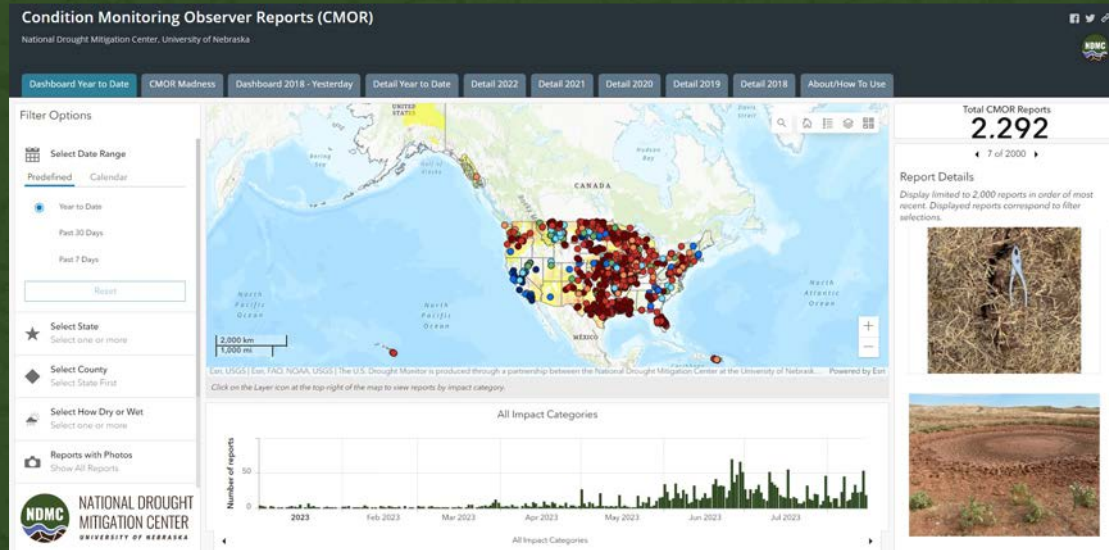
— BUREAU OF —
RECLAMATION

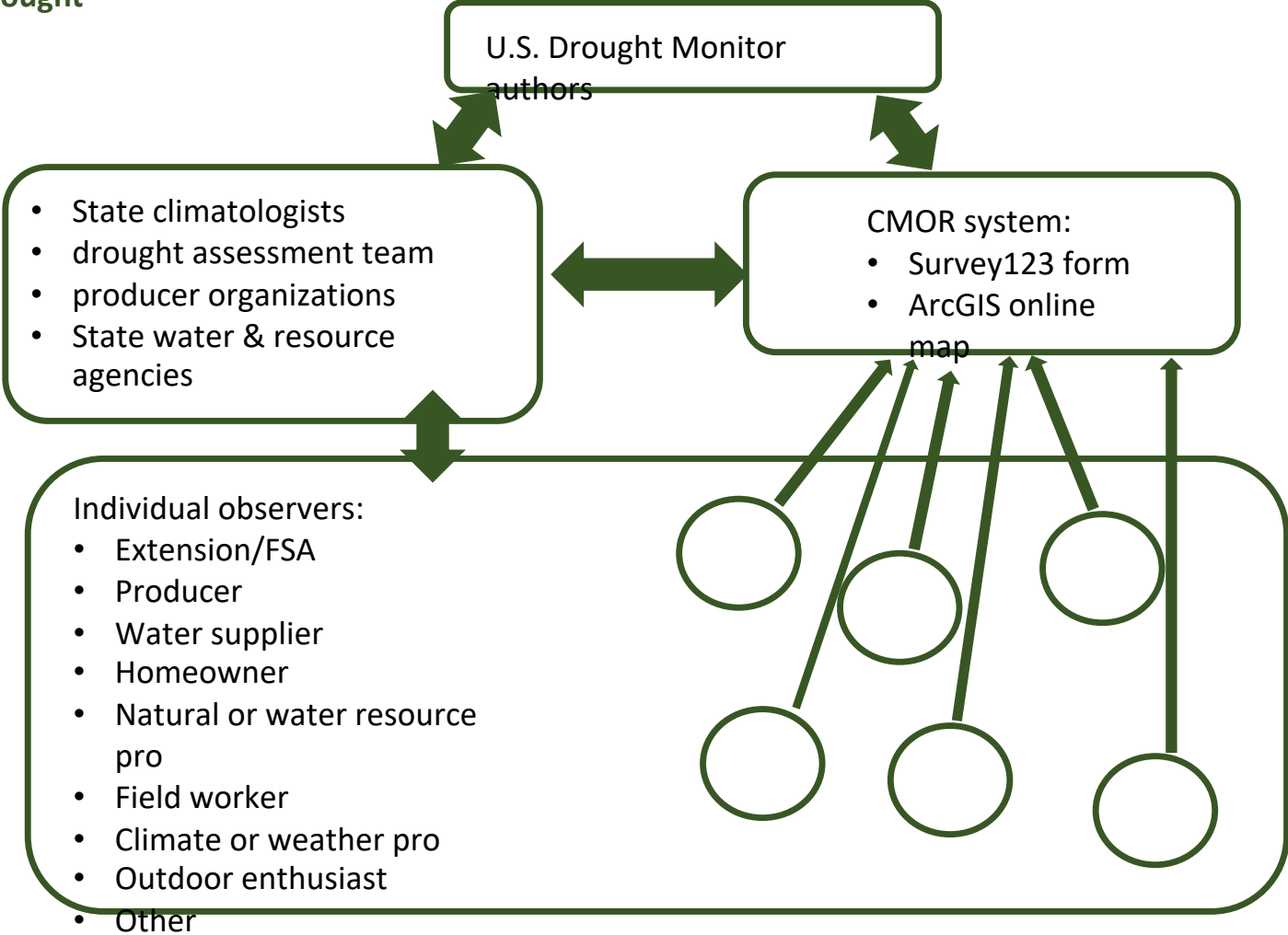


Highlight of the Month:

Condition Monitoring Observer Reports (CMOR)

Condition Monitoring Observer Reports (CMOR) help us “see more” drought go.unl.edu/cmor_drought





Submit and view Condition Monitoring Observer Reports (CMOR)

[Home](#) / [Tools](#) / CMOR

You can use the Condition Monitoring Observer Reports (CMOR) system to report drought-related conditions and impacts within the U.S. and its territories. This is a nation-wide service provided by the National Drought Mitigation Center, based at the University of Nebraska-Lincoln, developed in partnership with the National Integrated Drought Information System and the U.S. Department of Agriculture. Your report will become part of the permanent record, appearing immediately on an interactive map visible to the public, including authors of the U.S. Drought Monitor and the media.

CMOR Desktop and Mobile Options



CMOR Reports Dashboard for desktop
(Includes reports 2018-present and more filter options)

[Map of Reports](#)

[Submit a Report](#)



CMOR Reports Map for mobile
(Includes year-to-date reports and fewer filter options)

[Map of Reports](#)

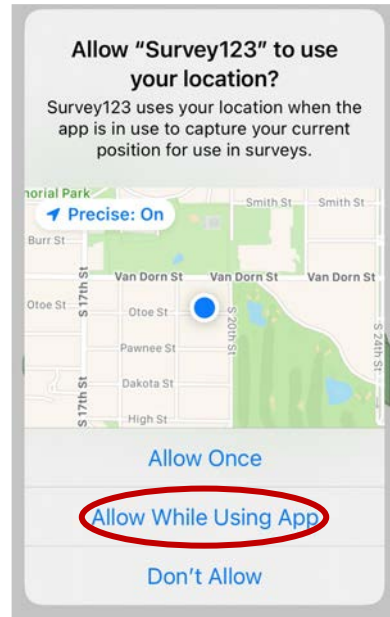
[Submit on Mobile](#)

For more information on submitting CMOR reports and for getting started using the app, please see the [factsheet](#).

Getting started with the field app



- Go to the app store and download Esri's Survey123 field app.
- Click on "Continue without signing in."



- Allow the app to use your location.
- Then **EXIT THE APP** and enter go.unl.edu/CMOR or use the QR code to download the survey.

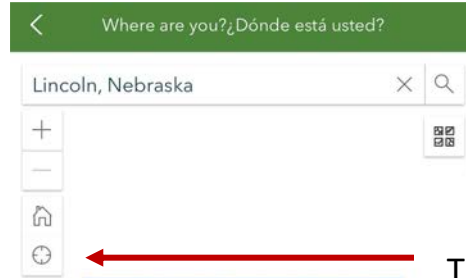


Location widget – several options

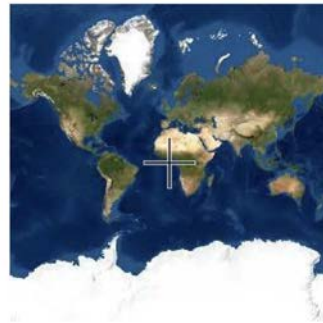
https://go.unl.edu/gmor_drought
English Reset Saved

Where are you?*

Use the search box to enter the city or county of your observation. If you are using the mobile app, you have the option to enable location and use that instead. From a computer, clicking on the compass icon may work if you are not using a VPN, depending on your configuration.

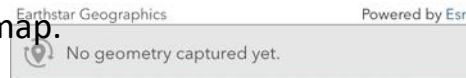


Type it in. City or county is close enough.



Touch the compass to let it find you. Can be extremely precise, especially from the app. But not from a computer with VPN.

Position the marker on the map.



Location QC

Location quality control helps us catch user error but does not position marker on map.

Select your jurisdiction:

Select a state/territory:
This will help us spot wrong locations but does not position your report correctly on the map. Use the marker on the map above to make sure your report shows up in the right place.

Select a local jurisdiction:
This will help us spot wrong locations but does not position your report correctly on the map. Use the marker on the map above to make sure your report shows up in the right place.

7-point dry to wet scale

How dry or wet is it?*

Please use what you know about your part of the country and base your observation on what is normal for this time of year. A normal dry season is not the same as drought.

Severely Dry: There is no soil moisture. Ponds, lakes, streams and wells may be nearly empty or dry. Producers may have crop or pasture losses. Mandatory water restrictions may be in place.

Moderately Dry: Plants may be brown due to dry conditions. Streams, reservoirs or well water levels may be low. Voluntary water use restrictions may be in place. There may be water shortages. Plants, crops or pastures may be stressed. Soil is dry.

Mildly Dry: Growth may have slowed for plants, crops or pastures. Soil is somewhat dry. Local plants, pastures or crops may not have fully recovered if conditions are changing from drier to wetter.

Near Normal: What you're seeing is what you expect for this time of year.

Mildly Wet: Local plants, crops or pastures are healthy, recovering from dry conditions or draining from wet conditions. Soil moisture is above normal.

Moderately Wet: Local plants, crops or pastures are healthy and lush. Soil is very damp and the ground may be saturated with water. There may be standing water in low areas and ditches. Water bodies may be fuller than normal.

Severely Wet: Water levels in lakes, streams and ponds are well above normal. Standing water covers some areas that are normally dry. Soil is wet and ground is completely saturated. There may be flooding.



Experience relates to Drought Monitor levels

How much experience do you have with conditions there?

- less than 5 years
- 5-10 years
- 10-20 years
- 20 or more years

How many times in the past have you seen it like this?

- Never
- Once
- Twice or more
- Other

Other

Worst winter in memory



How localized or widespread are the conditions you are reporting?

Widespread



Category	Label	Percentile	Years
D0	Abnormally Dry	21 to 30	1 in 3-5
D1	Moderate Drought	11 to 20	1 in 5-10
D2	Severe Drought	6 to 10	1 in 10-20
D3	Extreme Drought	3 to 5	1 in 20-30
D4	Exceptional Drought	0 to 2	1 in 50

Reporting on normal or wet conditions provides context and contrast, and builds a track record

Conditions are normal or wet

Please use the checkboxes to tell us which of these conditions you are seeing.

Normal conditions for this time of year

More green than usual for this time of year

More standing or flowing water than usual for this time of year

Increased moisture or humidity

Groundwater wells above normal static level

Soil moisture is adequate to good

Non-irrigated crops or pastures are doing well

Lawn and garden watering is not necessary

Low fire danger

Abundant insects or water-loving wildlife

Fisheries in good condition

- Report crop production impact ▶
- Report livestock production impact ▶
- Report municipal water supply impact ▶
- Report community hydropower impact ▶
- Report health impact ▶
- Report household impact ▶
- Report recreation or tourism impact ▶
- Report other business or industry impact ▶
- Report fire impact ▶
- Report forest impact ▶
- Report wildlife impact ▶
- Report freshwater fish impact ▶
- Report spawning fish impact ▶

Impact checklists

Report crop production impact ▼

Crop production

Please use the check boxes to tell us what effects of drought you have experienced and what actions you have taken.

Less water for irrigation

Reduced yield

Insect infestation

Crop disease

Other

|

Crop condition scale, planting and harvest status, similar to USDA reporting

Report crop production impact

How are crop conditions at this time?

- Very Poor - Extreme degree of loss to yield potential, complete or near crop failure.
- Poor - Heavy degree of loss of yield potential which can be caused by excess soil moisture, drought, disease, etc.
- Fair - Less than normal crop condition. Yield loss is a possibility but the extent is unknown.
- Good - Yield prospects are normal or above normal; moisture adequate with minimal damage.
- Excellent - Yield prospects are above normal and crops are experiencing little or no stress.

Planting Status

When do you anticipate planting compared to a typical year?

- Normal
- Earlier than normal
- Later than normal

Harvest Status

When do you anticipate harvesting compared to a typical year?

- Normal
- Earlier than normal
- Later than normal

Report livestock production impact

Livestock production

Please use the check boxes to tell us what effects of drought you have experienced and what actions you have taken.

Reduced pasture, forage

Feeding hay early

Supplemental feed

Purchased hay

More invasive species (plants)

Decreased stock weights

Animal stress

Mortality

Reduced grazing on public lands

Range conditions

How are range conditions at this time?

Very Poor - Pastures provide very little or no feed. Supplemental feeding is required to maintain livestock condition.

Poor - Pastures are providing marginal feed; supplemental feeding required.

Fair - Pastures are providing generally adequate feed but still less than normal for the time of year.

Good - Pastures are providing adequate feed supplies for the current time of year.

Excellent - Pastures are supplying feed in excess of what is normally expected at the current time of year.

Share photos for non-profit use, retain copyright

Upload photo(s)

You can upload a photo of up to 10 MB, if you are the photographer or have permission to share the photo. It will be visible on the web. Please be sure to use the description field below for credit and caption information: Who took the photo, what is the location, what is the date, and what is it showing us?

You as the copyright holder agree that by uploading a photo, it may be used by UNL, and shared with and by government and academic partners, for drought monitoring, management, and education. Your photo will become part of a permanent public archive. UNL reserves the right to remove objectionable content.

Select image file



Description

Please enter a description to help us understand the drought impact or conditions that you checked, or what to look for in the photo(s). Try to provide context, even a photo from a different year, to help show the difference between dry and normal conditions.

1000

Photos

- Take a photo, or upload one that's already taken
- Up to 5 photos
- Provide caption information. If the photo shows drought, please tell us what normal would look like, or upload a photo contrasting drought conditions with normal conditions.
- By uploading a photo, you agree that it may be used and shared for educational and management purposes, but you still hold the copyright.

Identity: Display name, role, name, email

Your role

Please choose one or more observer types to help us understand your perspective.

Extension or Farm Service Agency (FSA)

Farmer or livestock producer

Water supplier

Homeowner

Natural or water resources professional

Field worker

Climate or weather professional

Outdoor enthusiast

Other

Display Name

A display name will let users of this information see whether multiple reports are from a single individual. Especially if you submit reports consistently over time, this helps you build a credible track record.

You can use your real name, come up with a descriptive username such as "NDrancher07," or use a random string of letters and numbers. If you forget your display name, you can zoom in on the map to find your previous report and see what you used. If the drought center uses one of your photos, we may use your display name as attribution, i.e., "Photo by HappyRancher42 via CMOR."

Name*

We won't use your name on public-facing maps but will share it internally with state and federal officials who are assessing drought conditions.

IMPORTANT: Please enter your name the same each time you submit a report if you wish to establish a consistent record.

Your email*

We won't use your email on public-facing maps but will share it internally with state and federal officials who are assessing drought conditions in case they need to follow up with you.

IMPORTANT: Please enter your email the same each time you submit a report if you wish to establish a consistent record.

Default view of CMOR dashboard: year-to-date

Condition Monitoring Observer Reports (CMOR)

National Drought Mitigation Center, University of Nebraska



Dashboard Year to Date

CMOR Madness

Dashboard 2018 - Yesterday

Detail Year to Date

Detail 2022

Detail 2021

Detail 2020

Detail 2019

Detail 2018

About/How To Use

Filter Options

Select Date Range

Predefined Calendar

Year to Date

Past 30 Days

Past 7 Days

Reset

Select State

Select one or more

Select County

Select State First

Select How Dry or Wet

Select one or more

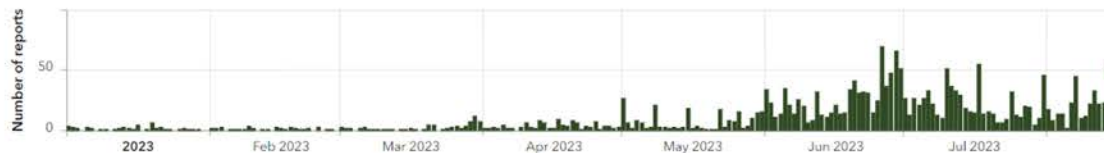
Reports with Photos

Show All Reports



Esri, USGS | Esri, FAO, NOAA, USGS | The U.S. Drought Monitor is produced through a partnership between the National Drought Mitigation Center at the University of Nebraska... Powered by Esri
Click on the Layer icon at the top-right of the map to view reports by impact category.

All Impact Categories



All Impact Categories

Total CMOR Reports

2.292

◀ 7 of 2000 ▶

Report Details

Display limited to 2,000 reports in order of most recent. Displayed reports correspond to filter selections.



Find your dot on the map

Condition Monitoring Observer Reports (CMOR)

National Drought Mitigation Center, University of Nebraska



- Dashboard Year to Date
- CMOR Madness
- Dashboard 2018 - Yesterday
- Detail Year to Date
- Detail 2022
- Detail 2021
- Detail 2020
- Detail 2019
- Detail 2018
- About/How To Use

Filter Options

- Select Date Range
 - Predefined
 - Calendar
 - Year to Date**
 - Past 30 Days
 - Past 7 Days
 - Reset
- Select State
 - Wyoming**
- Select County
 - Select one or more
- Select How Dry or Wet
 - Select one or more
- Reports with Photos
 - Show All Reports

Description and/or caption information:
No forage available for livestock producers to turn out on. Salt sages has even dry.

Submitted by: Big Horn County FSA- Producer reporting



Total CMOR Reports
6

1 of 6

Report Details

Display limited to 2,000 reports in order of most recent. Displayed reports correspond to filter selections.

State/Territory: Wyoming
County: Big Horn

Date: 5/26/2023

How dry or wet is it? Severely Dry

How much experience do you have with conditions there?
20 or more years

How many times in the past have you seen it like this?
Never

How localized or widespread are the conditions you are reporting?
North Big Horn County from Frannie to Hwy 16/20 junction NW of Greybull. Dry conditions not allowing producers to turn out livestock for spring grazing. Usually out to grazing by April 15 of each year. Livestock is still in feedlots or on irrigated fields to try and find feed for them.

How are range conditions at this time?
Very Poor - Pastures provide very little or no feed. Supplemental feeding is required to maintain livestock condition.



The "2018-yesterday" tab lets you filter all years at once and it includes the U.S. Drought Monitor status.

Condition Monitoring Observer Reports (CMOR)

National Drought Mitigation Center, University of Nebraska



Dashboard Year to Date

CMOR Madness

Dashboard 2018 - Yesterday

Detail Year to Date

Detail 2022

Detail 2021

Detail 2020

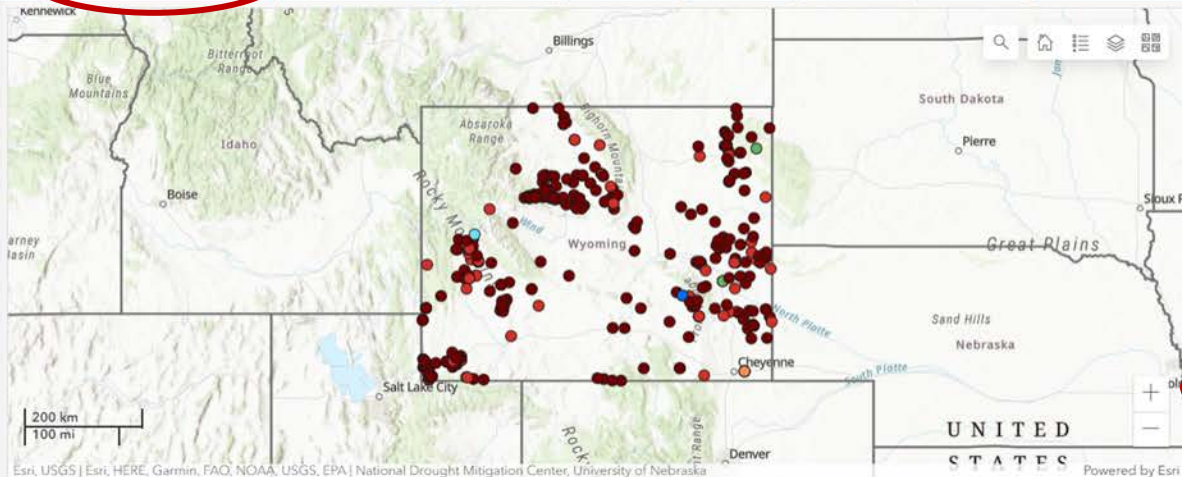
Detail 2019

Detail 2018

About/How To Use

- Tennessee
- Texas
- Utah
- Vermont
- Virgin Islands
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

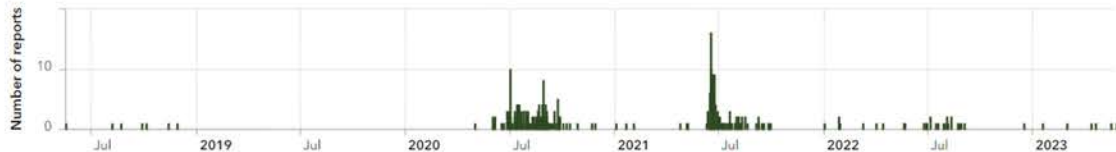
Reset Select all



Esri, USGS | Esri, HERE, Garmin, FAO, NOAA, USGS, EPA | National Drought Mitigation Center, University of Nebraska

* Click on the Layer icon at the top-right of the map to view reports by impact category

All Impact Categories



All Impact Categories

Total CMOR Reports
332

1 of 332

Report Details

Display limited to 2,000 reports in order of most recent. Displayed reports correspond to filter selections.

State/Territory: WY
County: Big Horn

Date: 5/26/2023

How dry or wet is it? Severely Dry

U.S. Drought Monitor Intensity:
None

How much experience do you have with conditions there?
20_or_more_years

How many times in the past have you seen it like this?
never

How localized or widespread are the conditions you are reporting?
North Big Horn County from Frannie to Hwy 16/20 junction NW of Greybull. Dry conditions not allowing producers to turn out livestock for spring grazing. Usually out to grazing by April 15 of each year. Livestock is still in feedlots or on irrigated fields to try and find feed for them.

How are range conditions at this time?



Separate maps for each year show more detail

Condition Monitoring Observer Reports (CMOR)

National Drought Mitigation Center, University of Nebraska



Dashboard Year to Date

CMOR Madness

Dashboard 2018 - Yesterday

Detail Year to Date

Detail 2022

Detail 2021

Detail 2020

Detail 2019

Detail 2018

About/How To Use

CMOR Year to Date

| CMOR Main Page | | Submit a Report |



The attributes table "options" let you write custom queries and export to csv

Date Filter

CMOR Reports year to date

Year to Date

Past 7 Days

Past 30 Days

Select a Date Range

Select a Date

and

Select a Date Range

Select a Date

Options

Select a state/territory:	Select a county:	How dry or wet is it?	How much experience do you have with conditions there?	How many times in the past have you seen it like this?	Other	When was it like this in the past?	When was it most recently like this?	How localized or widespread are the conditions you are reporting?	How are crop conditions at this time?	Planting Status	Harvest Status	How are range conditions at this time?	Generator issues	Other	Description and/or caption information	photo_exists
North Dakota	Stark	Mildly Dry	20 or more years	Twice or more			2020	This report is for both Stark and Billings County	Fair - Less than normal crop condition. Yield loss is a		Normal	Fair - Pastures are providing generally adequate feed			NATIONAL DROUGHT MITIGATION CENTER	

2085 features 0 selected

Filters showing only poor and very poor range conditions

Condition Monitoring Observer Reports (CMOR)

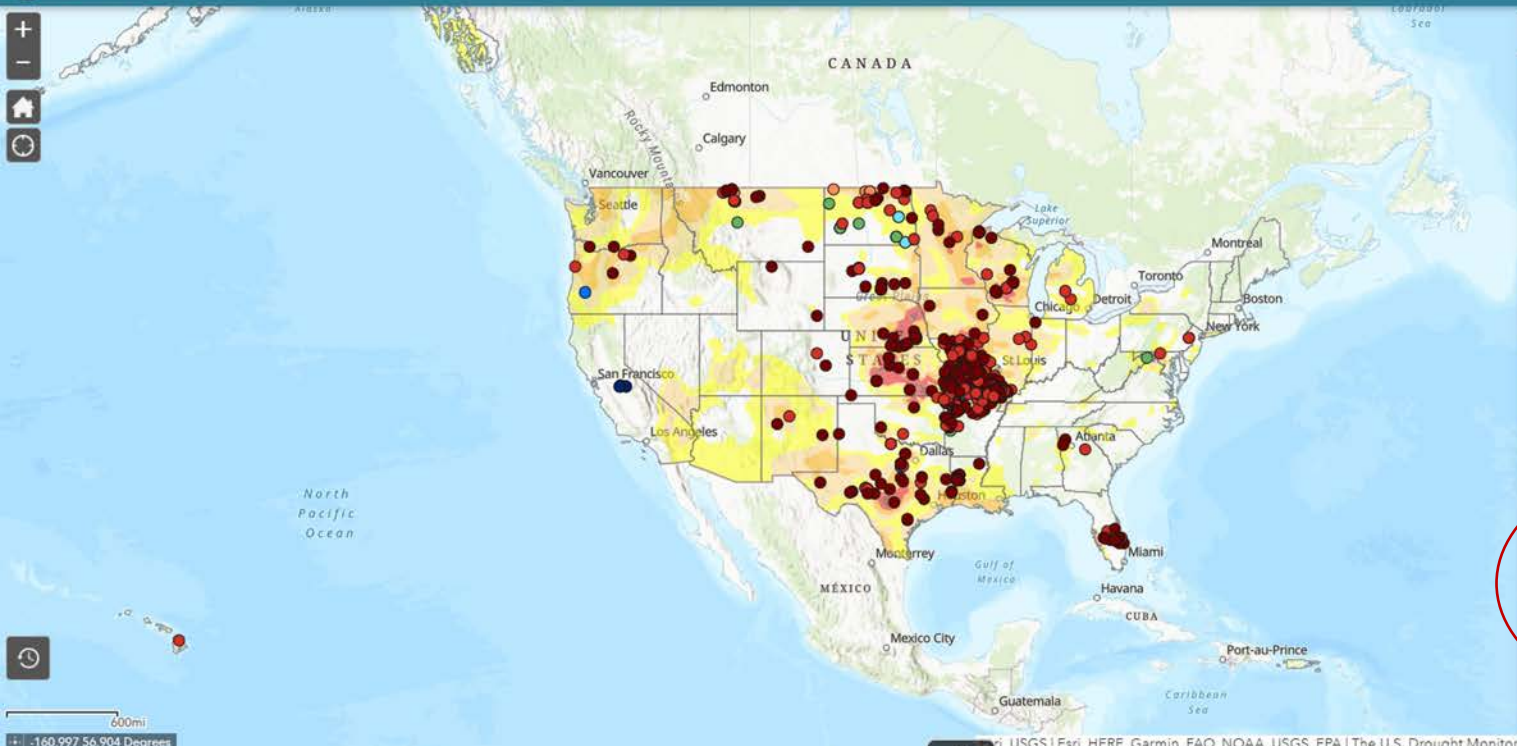
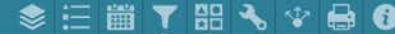
National Drought Mitigation Center, University of Nebraska



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CMOR Year to Date

[| CMOR Main Page |](#) [| Submit a Report |](#)



Crop/Range Conditions

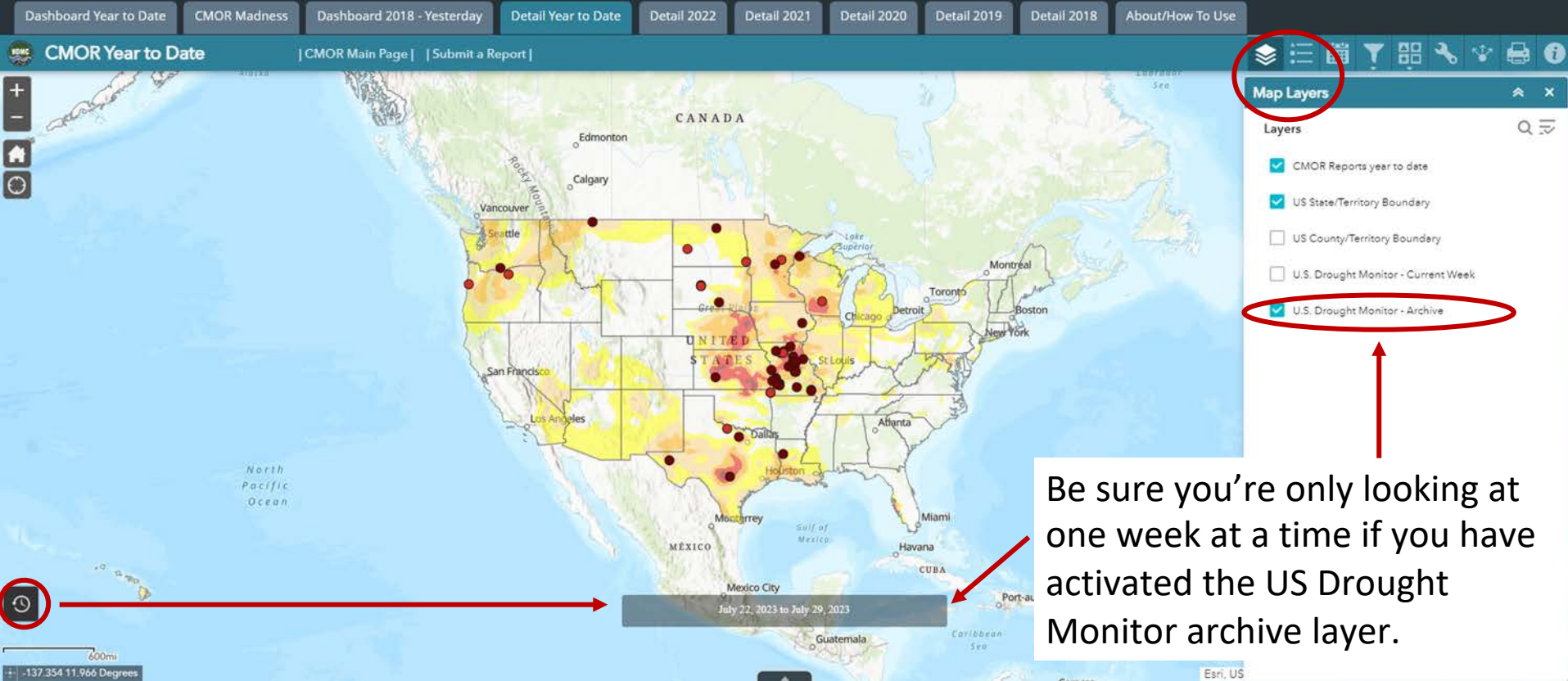
- Crop Conditions: Poor - Heavy degree of loss of yield potential which can be caused by excess soil moisture, drought, disease, etc.
- Crop Conditions: Very Poor - Extreme degree of loss to yield potential, complete or near crop failure.
- Range Conditions: Excellent - Pastures are supplying feed in excess of what is normally expected at the current time of year.
- Range Conditions: Good - Pastures are providing adequate feed supplies for the current time of year.
- Range Conditions: Fair - Pastures are providing generally adequate feed but still less than normal for the time of year.
- Range Conditions: Poor - Pastures are providing marginal feed; supplemental feeding required.
- Range Conditions - Very Poor: Pastures provide very little or no feed. Supplemental feeding is required to maintain livestock condition.

NATIONAL DROUGHT MITIGATION CENTER

U.S. Drought Monitor: current (most recent) or archive
To compare USDM and CMOR reports, activate USDM
archive layer at right, and time slider, below left. View
defaults to beginning of year.

Condition Monitoring Observer Reports (CMOR)

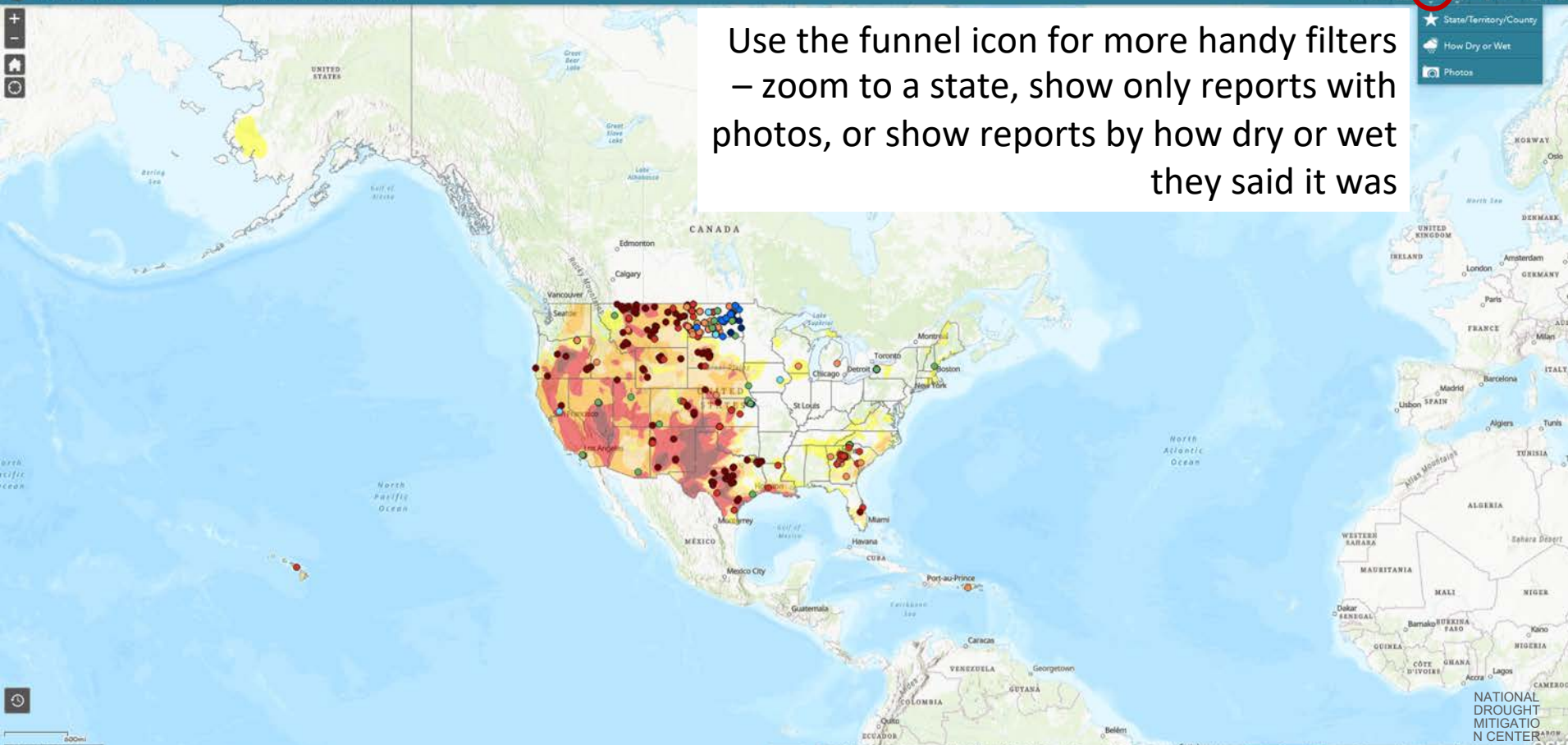
National Drought Mitigation Center, University of Nebraska

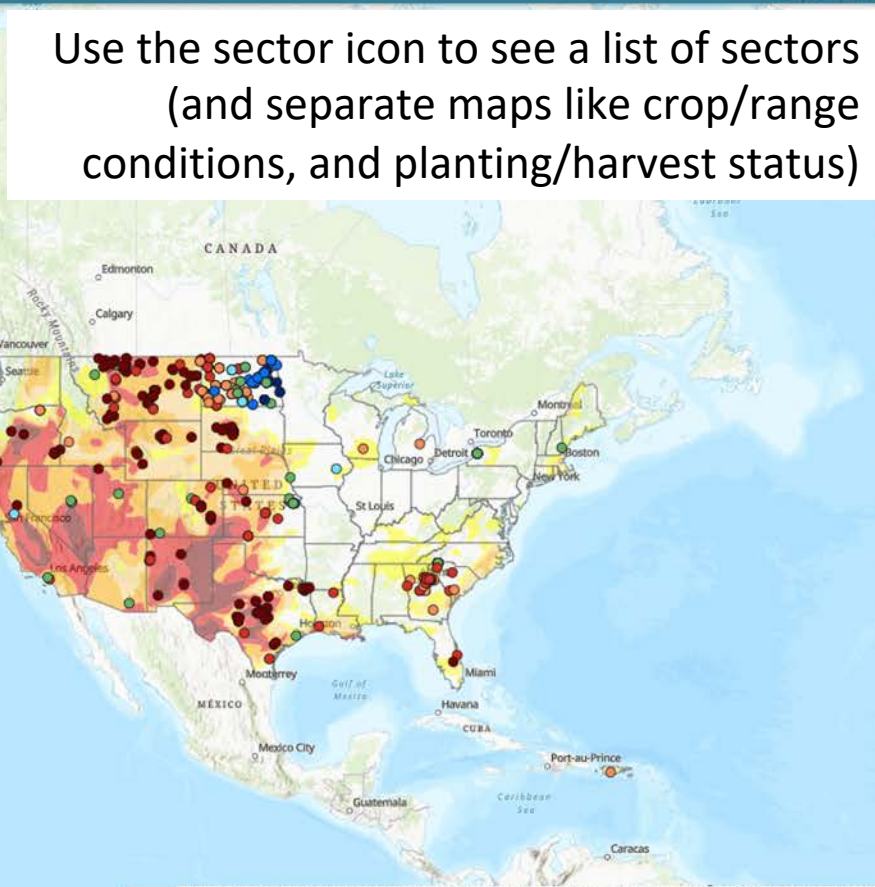
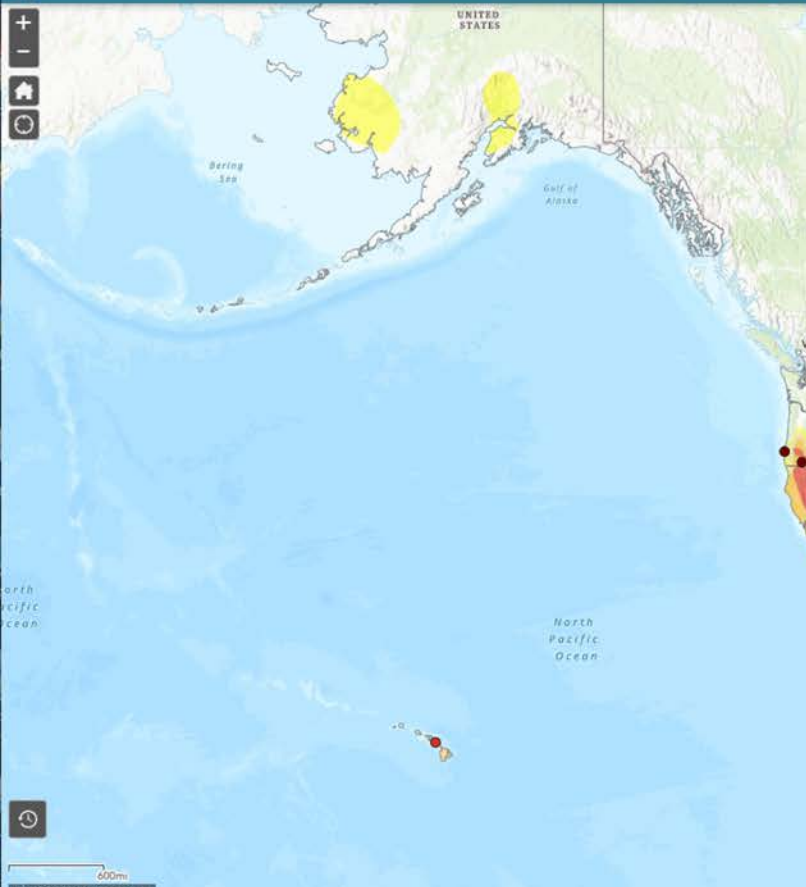


Be sure you're only looking at one week at a time if you have activated the US Drought Monitor archive layer.

- State/Territory/County
- How Dry or Wet
- Photos

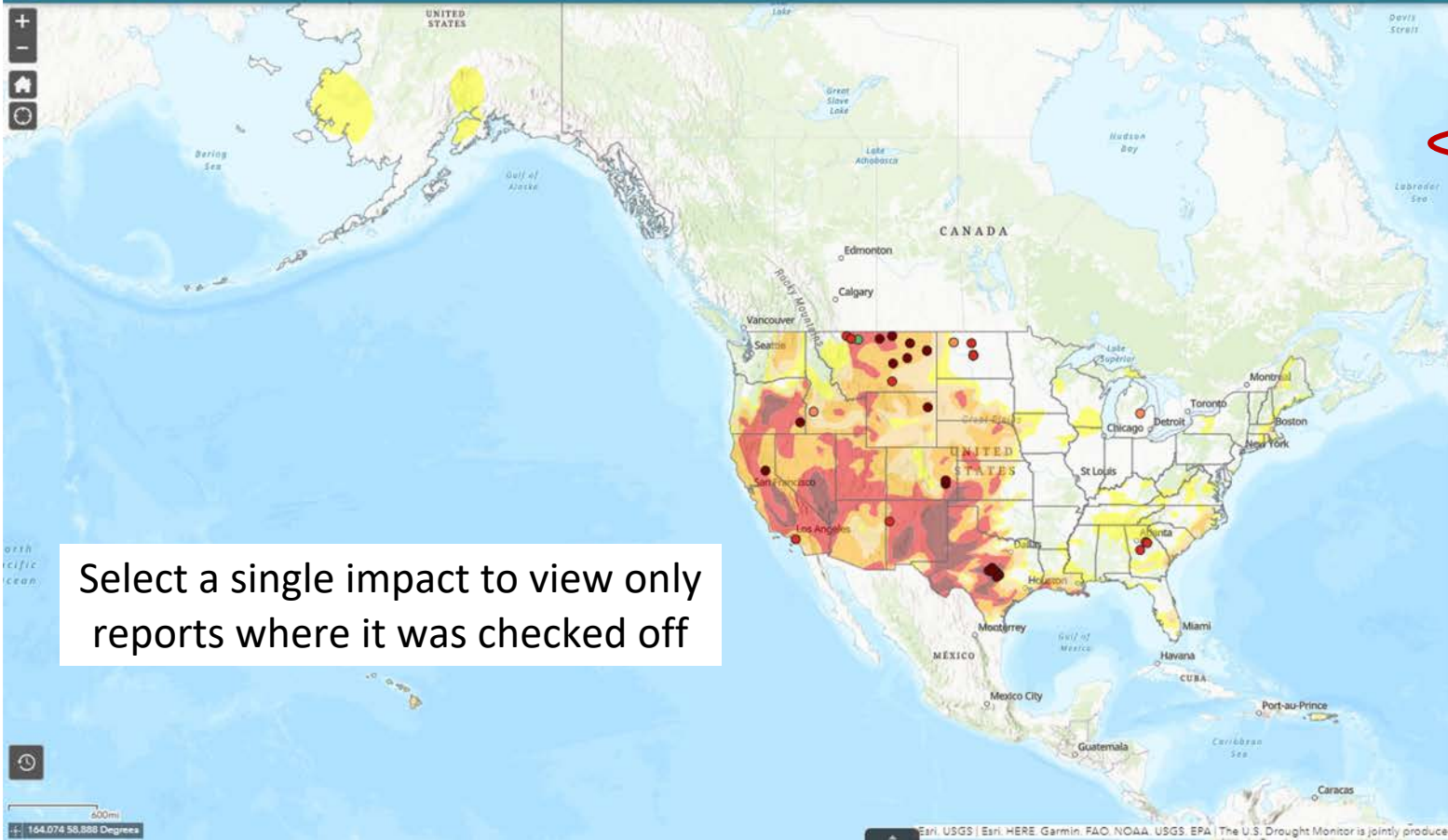
Use the funnel icon for more handy filters – zoom to a state, show only reports with photos, or show reports by how dry or wet they said it was





Use the sector icon to see a list of sectors (and separate maps like crop/range conditions, and planting/harvest status)

- Normal or Wet Conditions
- Crop/Range Conditions
- Planting/Harvest Status
- Crop Production
- Livestock Production
- Municipal Water Supply
- Community Hydropower
- Public and Community Health
- Household
- Recreation and Tourism
- Other Business or Industry
- Fire
- Forestry
- Wildlife Habitat
- Freshwater Fish
- Spawning Fish

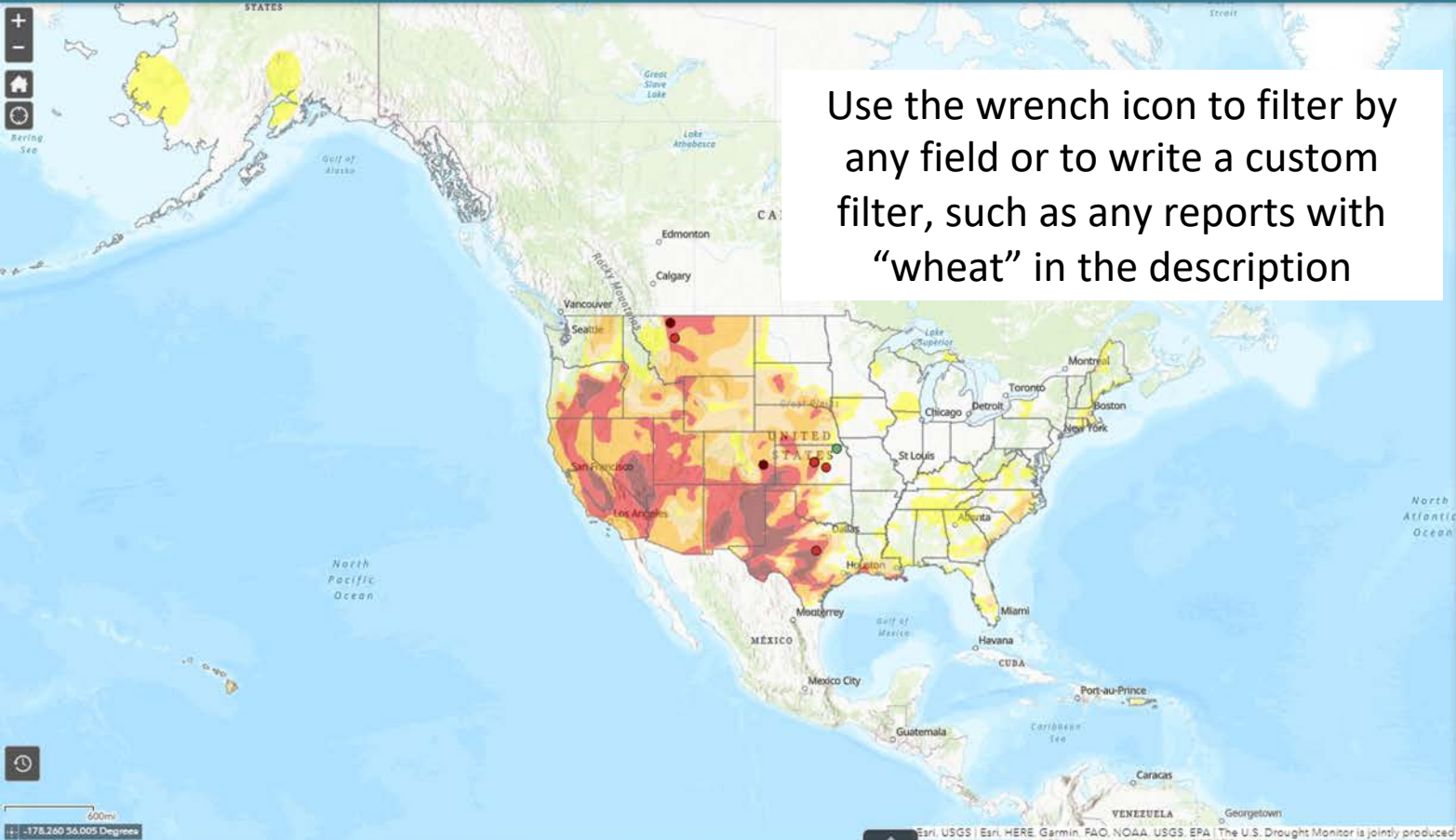


Public and Community Health

CMOR Reports year to date

- All Public and Community Health Impacts
- Air quality, dust, pollen**
- More vector-borne disease
- Special meetings or activities held
- Ceremonies or festivals cancelled
- Less food for subsistence
- Garden needs more water or yields less
- People relocating
- Stress
- Increased algal blooms
- Public and Community Health - Other

Select a single impact to view only reports where it was checked off



Use the wrench icon to filter by any field or to write a custom filter, such as any reports with “wheat” in the description

Custom Filter

Custom filter

Layer: CMOR Reports year to date

Display features in the layer that match the following expression

Description and/or caption information (String)

contains

Case sensitive

+ Add expression

Questions,
comments?
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— BUREAU OF —
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The WY Conditions Monitoring Team (WCMT) organized and hosted this webinar. The WCMT is a collaborative effort of state, federal, tribal, and university partners that monitor conditions & impacts throughout WY weekly – and communicate this info to the U.S. Drought Monitor & others.

Learn more at:

<https://drought.wyo.gov>

Thank you!