















WY Conditions & Outlooks:

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

July 28, 2022

















Presentation Outline

- Current Conditions: Overview
 - Streamflow
 - Reservoir Supply
 - Water Calls and Allocations
- Outlooks: Temperature & Precipitation
 - Fuels' Status & Wildland Fire Outlook
- Questions

















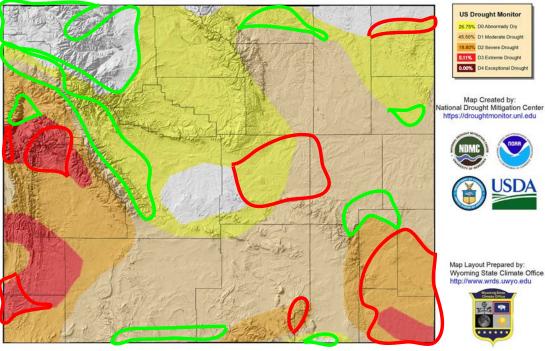
Current Conditions

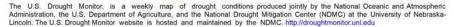


US Drought Monitor for July 26, 2022

(Released Thursday, July 28, 2022) Valid 8 a.m. EDT

US Drought Monitor for 26 Jul 2022





Map Layout Created 28 Jul 2022 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 and degradations since the last webinar. Recent precipitation is helping some areas but a lack of it is causing a worsening in others.











14-Day Precipitation Percentile (14 Jul 2022 to 27 Jul 2022)

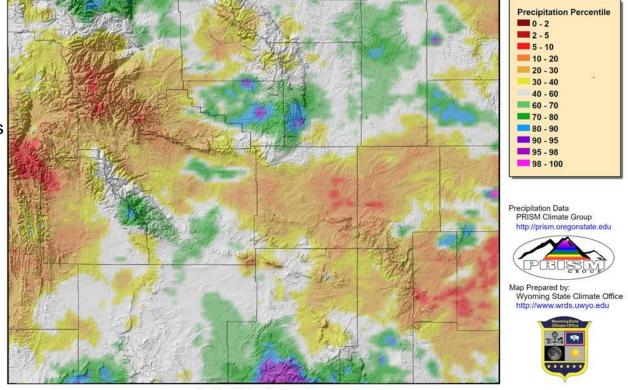
14-Day Precipitation (Percentile) for 12 Jul 2022 to 25 Jul 2022

Above Median:

- South
- Southern Bighorn Basin and Mtns

Below Median (Areas of Concern):

- Teton/Lincoln/Park
- Central
- Platte/Goshen



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 26 Jul 2022 http://www.wrds.uwyo.edu Daily percentiles created from PRISM daily precipitation grids



90-Day Precipitation Percentile (29 Apr 2022 to 27 Jul 2022)

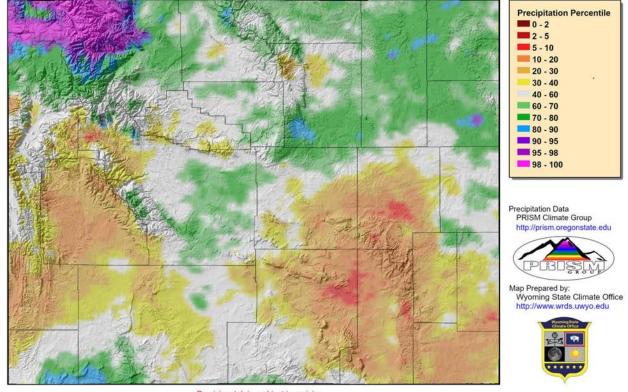
90-Day Precipitation (Percentile) for 29 Apr 2022 to 27 Jul 2022

Above Median:

- Northern tier, especially Park Co
- Southwest (SW Sweetwater/ SE Uinta)

Below Median (Areas of Concern):

- Southwest
- Sublette/Southern Lincoln



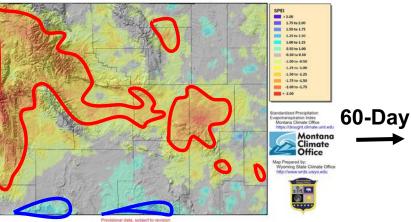
Provisional data, subject to revision

Daily precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, http://prism.oregonstate.edu

Map Created 28 Jul 2022 http://www.wrds.uwyo.edu
Daily percentiles created from PRISM daily precipitation grids

30-Day

30-Day Standardized Precipitation Evapotranspiration Index (27 Jun 2022 to 26 Jul 2022)



Standardized Precipitation Evapotranspiration Index Created by Montana Climate Office https://drought.climate.umt.edu

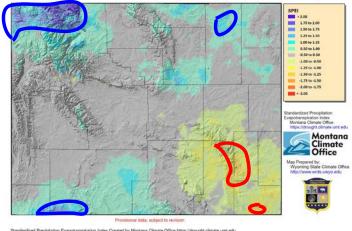
Standardized Precipitation Evapotranspiration Index (SPEI)

Map Created 28 Jul 2022 http://www.wnds.uwyo.edu

Shorter-term dryness with areas improving in the far southeast.

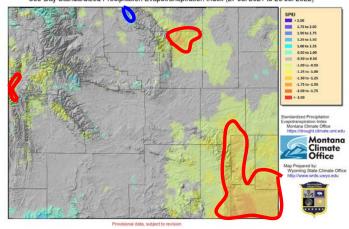


60-Day Standardized Precipitation Evapotranspiration Index (28 May 2022 to 26 Jul 2022)



Standardized Precipitation Evapotranspiration Index Created by Montana Climate Office https://drought.climate.umt.edu Map Created 28 Jul 2022 http://www.wrds.uwvo.edu

365-Day Standardized Precipitation Evapotranspiration Index (27 Jul 2021 to 26 Jul 2022)



Standardized Precipitation Evapotranspiration Index Created by Montana Climate Office https://drought.climate.umt.edu

Map Created 28 Jul 2022 http://www.wrds.uwyo.edu

Temperature (F) 31 - 34 34 - 37 37 - 40

52 - 55

Temperature Data

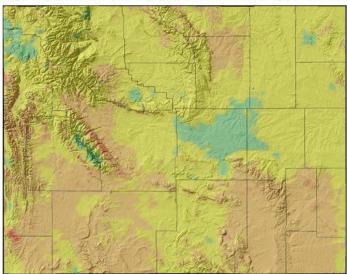
PRISM Climate Group http://prism.oregonstate.edu



14-Day Average Minimum Temperature (14 Jul to 27 Jul)

- Highest in Low Elev North and Plains
- Plains and Fremont Co/Bighorn Basin 60s

14-Day Average Minimum Temperature (Departure from 1991-2020 Average) for 14 Jul 2022 to 27 Jul 2022





Temperature Departure



Map Prepared by: Wyoming State Climate Office http://www.wrds.uwvp.edu



Wyoming State Climate Office 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 28 Jul 2022 http://www.wrds.uwyo.edu Temperature averages created from PRISM daily temperature grids 14-Day Departure from Normal **Average Minimum Temperature**

Provisional data, subject to revision

 Up to 6F above average except central and far northwest, high elevation Winds



14-Day Average Maximum Temperature (14 Jul to 27 Jul)

- >60F statewide
- 90F+ for Max much of plains

14-Day Average Maximum Temperature (Departure from 1991-2020 Average) for 14 Jul 2022 to 27 Jul 2022



http://www.wrds.uwyo.edu

Wyoming State Climate Office

Temperature Departure

from Normal (F) < -15 -15 to -12 -12 to -9

-3 to 0 0 to 3 3 to 6

6 to 9

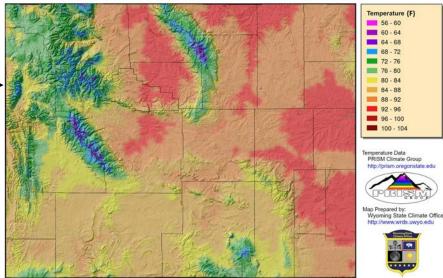
9 to 12

12 to 15

Temperature Data PRISM Climate Group http://prism.oregonstate.edu

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 28 Jul 2022 http://www.wds.uwyo.edu Temperature waragas created from PRISM day't temperature grids



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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 28 Jul 2022 http://www.wds.wyo.edu Temperature severages created from PRISM daily temperature grids

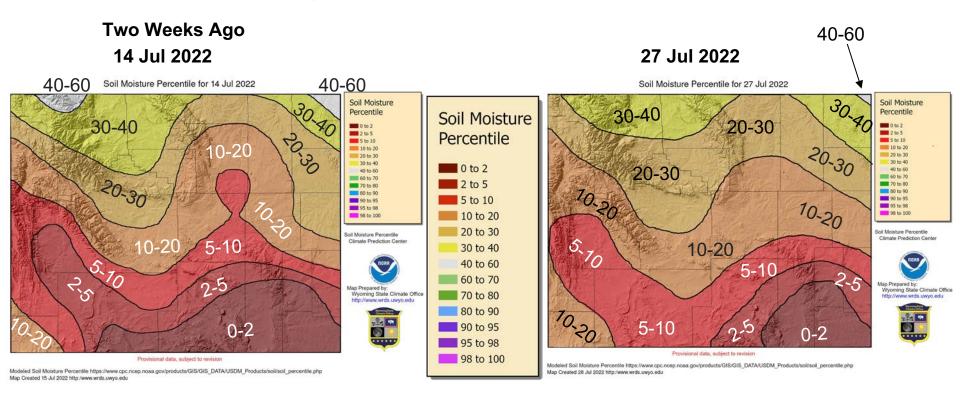
14- Day *Departure from* Normal

Average Maximum

- North and east 3-6F above Temperature
- Southwest quarter/Central 0-3F above average
- Some minor parts of southwest 0-3F below



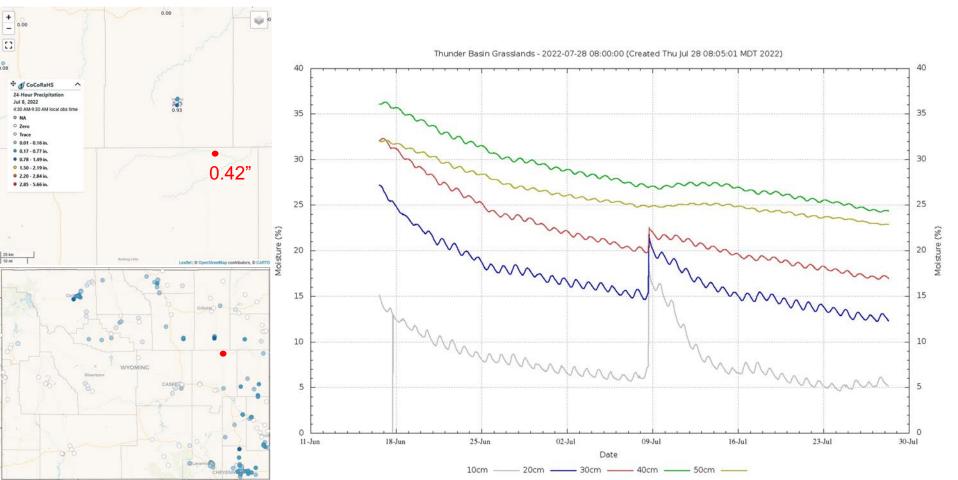
Soil Moisture Percentile



Conditions deteriorating in northern half of the state in last two weeks Some slight improvement in south central Wyoming

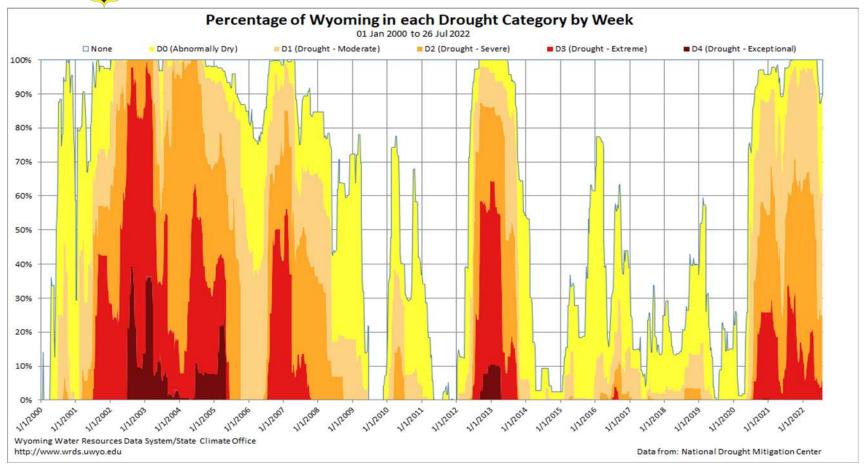


Soil Moisture at Thunder Basin Grasslands

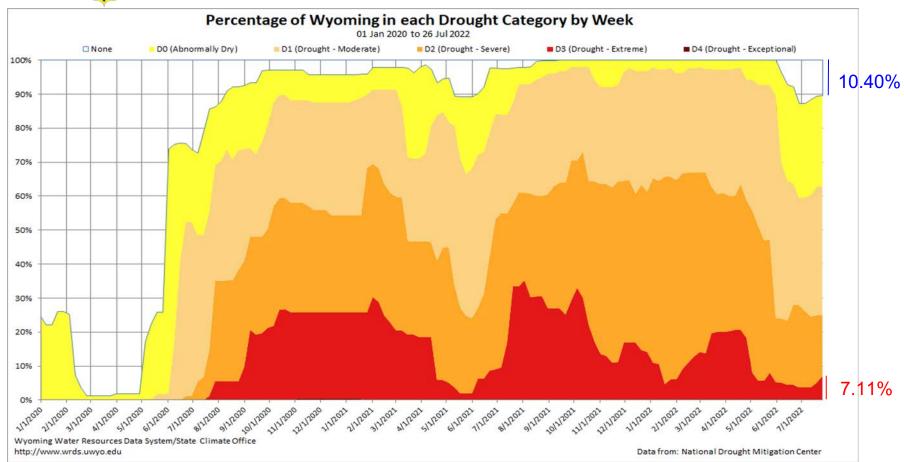




Wyoming Area Affected: 89.60% D0-D4; 62.89% D1-D4





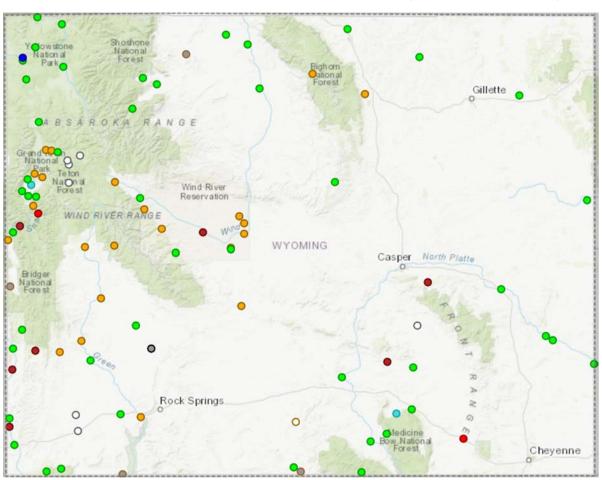




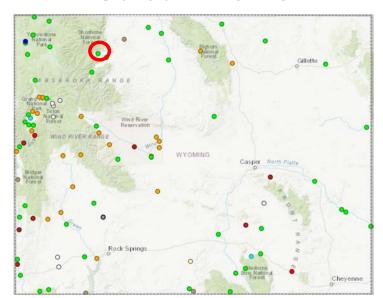
Current Streamflow Conditions (July 28, 2022)

Streamflow Status



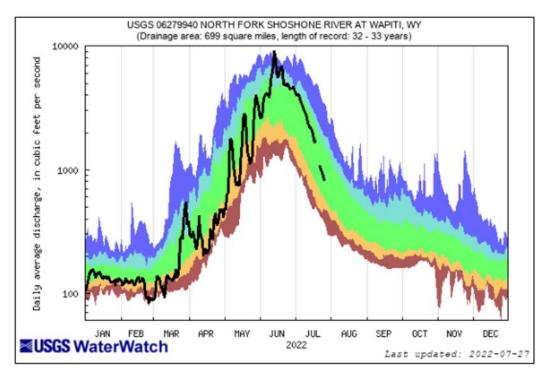






North Fork Shoshone River at Wapiti, WY

Last updated July 28, 2022

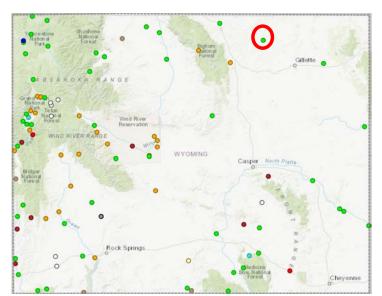


https://dashboard.waterdata.usgs.gov/

https://waterdata.usgs.gov/

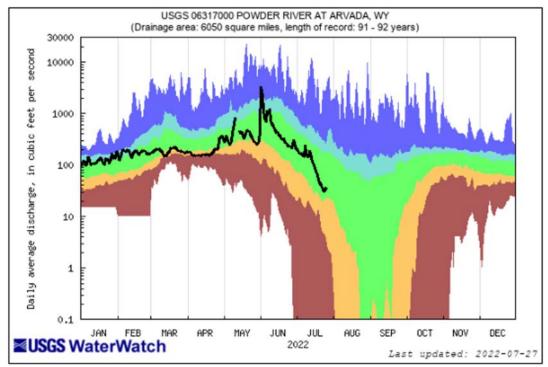
	E	xplana	tion - Pe	ercentile	classes	S	
							_
lowest- 10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest	Flow
Much below Normal		Below normal	Normal	Above normal	Much a	above normal	Flow





Powder River at Arvada, WY

Last updated July 28, 2022

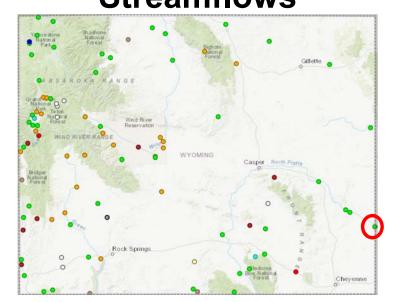


https://dashboard.waterdata.usgs.gov/

https://waterdata.usgs.gov/

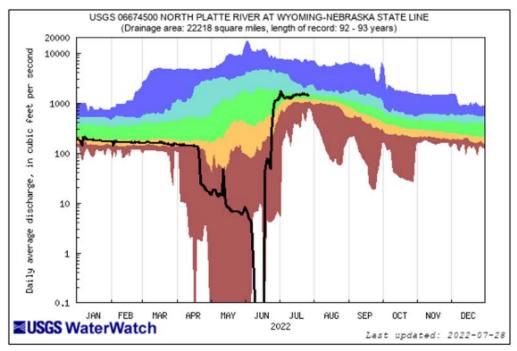
	E	xplana	tion - Pe	ercentile	classes	S	
lowest- 10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest	Flow
Much below	Normal	Below normal	Normal	Above normal Much above normal		1104	





North Platte River at WY-NE State Line

Last updated July 28, 2022

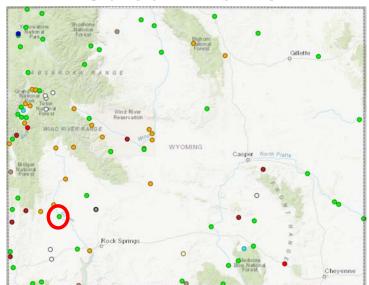


https://dashboard.waterdata.usgs.gov/

https://waterdata.usgs.gov/

	E	xplana	tion - Pe	ercentile	classes	S	
lowest- 10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest	Flow
Much below	Normal	mail Below Normal Above normal Ma		Mucha	bove normal	1100	



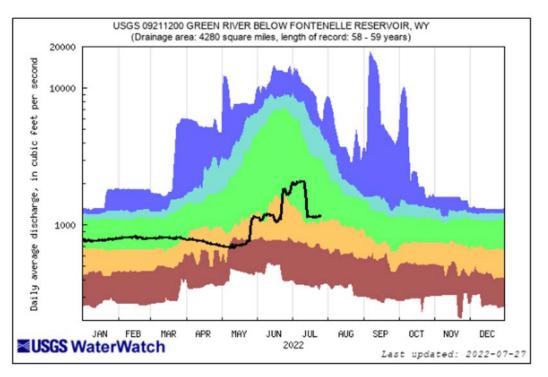


https://dashboard.waterdata.usgs.gov/

https://waterdata.usgs.gov/

Green River at Below Fontenelle Reservoir, WY

Last updated July 28, 2022

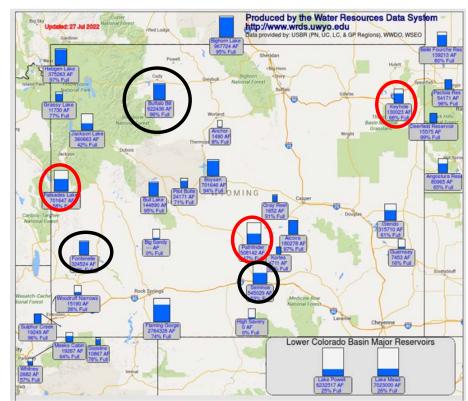


	E	xplana	tion - Pe	ercentile	classes	S	
							_
lowest- 10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest	Flow
Much below Normal		Below normal	Normal	Above normal	Much a	bove normal	Flow



WY Reservoirs (July 28, 2022)

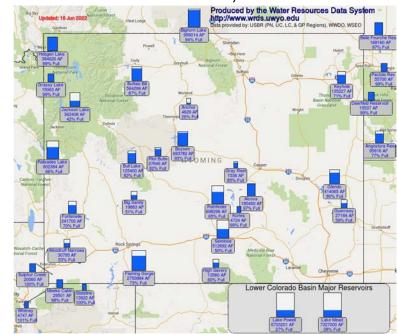
July 28, 2022



http://www.wrds.uwyo.edu/surface water/teacups.html

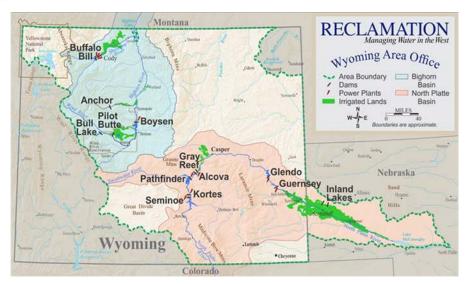
- Some increases Black
- Some decreases- Red
- Many reservoirs did not fill to full

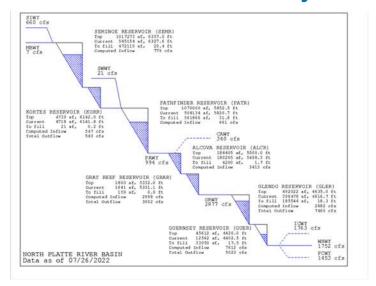
June 16, 2022





Current Reservoir Conditions: North Platte System

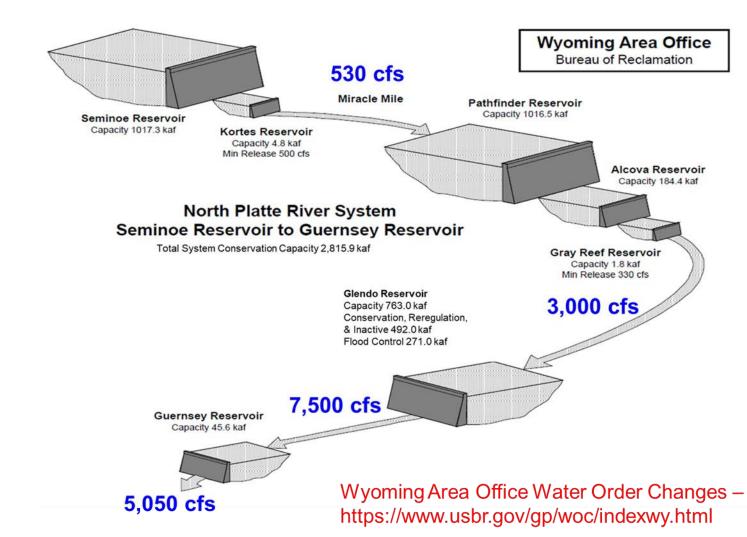




As of July 25, North Platte System: 56% of Full, 80% of Average

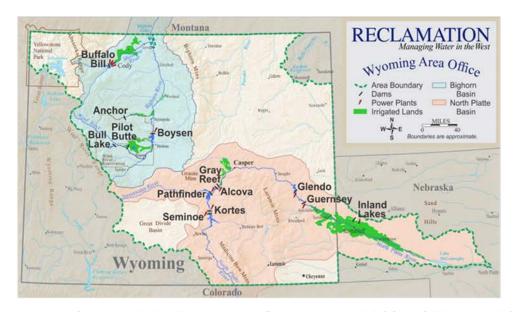
Reservoir	Content (AF)	<u>Capacity</u>	% of Full	% of Avg
Seminoe	472,400	1,017,300	54%	76%
Pathfinder	513,900	1,070,000	48%	83%
Glendo	315,700	492,000	64%	85%
Guernsey	4,500	45,600	16%	88%

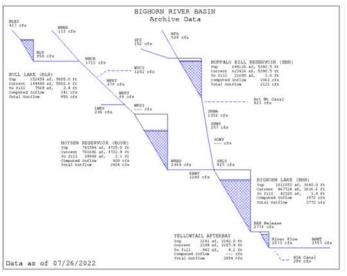






RECLAMATION Current Reservoir Conditions: Bighorn System



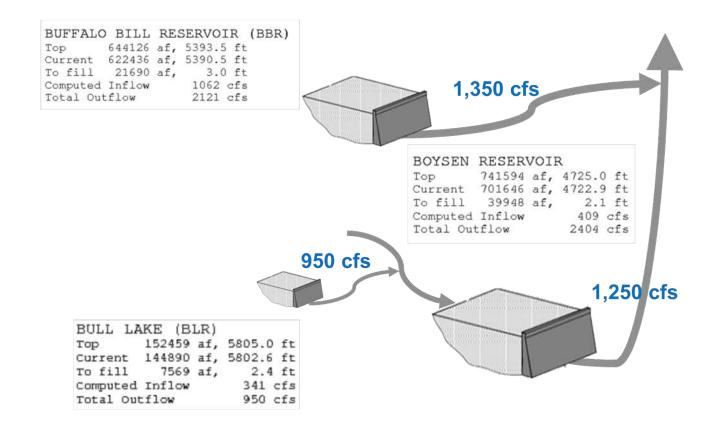


https://www.usbr.gov/gp-bin/hydromet_teacup.pl

As of July 26, Bighorn System: 89% of Full, 96% of Average

Reservoir	Content	<u>Capacity</u>	% of Full	% of Avg
Bull Lake	144,890	152,500	95%	108%
Buffalo Bill	622,440	646,600	96%	107%
Boysen	701,650	741,600	95%	110%







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About Us

Area Offices

Multimedia

Programs & Activities

Reservoirs, Dams & Hydropower

AgriMet

Boat Ramps HydroMet

· Map of Stations by

- Type
- · Map of Stations by
- Instant Data Requests
- Daily Data Requests
- Monthly Data Requests
- TEACUP Reservoir Models
- Automated Retrieval
- Documentation Inflow Computations and
- Plots Daily Data Analysis
- Annual Cumulative and Historical Average

Power Levels

Projects & Facilities

Recreation

Safety of Dams

Welcome to the HYDROMET Data System

Program Information

The Bureau of Reclamation operates a network of automated hydrologic and meteorologic monitoring stations (HydroMet) located throughout the Missouri Basin Region. The HydroMet network collects remote field data and transmits it via satellite to provide real-time water management capability. HydroMet data is then integrated with other sources of information to provide streamflow forecasting and current runoff conditions for river and reservoir operations, Please read this important Disclaimer about the real-time, PROVISIONAL data displayed on these pages.



Bighorn Lake from atop Yellowtail Dam

Station Information

- · Map of Stations by Type
- · Map of Stations by State
- · Station Specific Data Links

Data Request Forms

Analysis and Models

· Inflow Computations and Plots

· Annual Cumulative and Historical

Average Plots (QNAPLT)

Daily Data Analysis

- Instant Data Requests
- · Daily Data Requests
- Monthly Data Requests (RES070)
- TEACUP Reservoir Models
- · Hydromet Data Query
- · Automated Retrieval Documentation (PDF)
- Hydromet Tools Public Version (PDF)

Missouri Basin and Arkansas-Rio Grande-Texas Gulf Regions

Reclamation / Missouri Basin and Arkansas-Rio Grande-Texas Gulf / HydroMet / Daily Data / Daily Data Quick Plot

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- Documentation Inflow Computations and
- Plots D. .. D. .

Daily Data Quick Plot

This form outputs an interactive graph displaying daily data. Daily data is obtained once per day and data from the previous day is available after 5:25 AM on the current day. Enter a date range, station, and parameter and then submit your request.

- Start Date (YYYY-MM-DD): 2022-05-01
- End Date (YYYY-MM-DD): 2022-06-14
- . Station Code (start typing to search for a station): GLER
- . List of parameters at the selected site: QD Daily Mean Total Discharge (cfs)

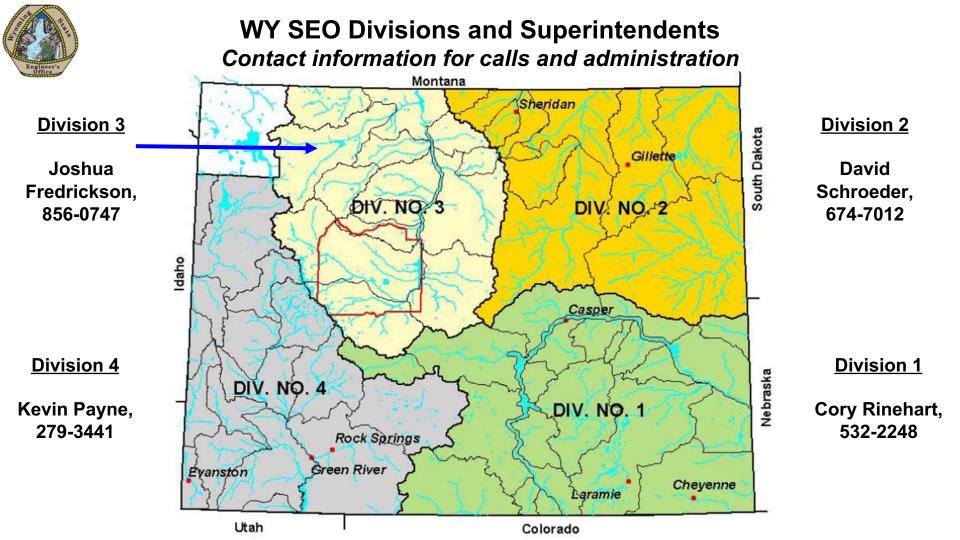
Parameter: QD

Submit

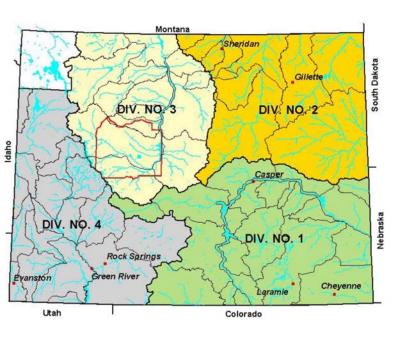


-GLER OD

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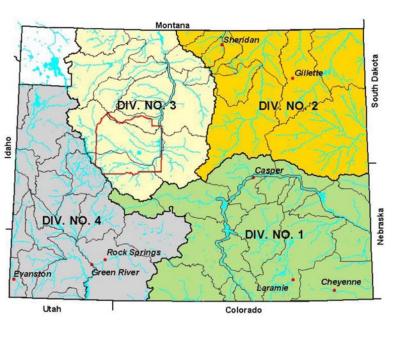






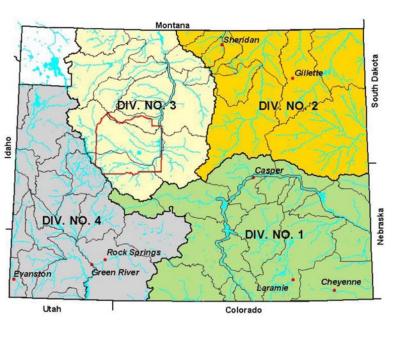
- 1. May 1, 2022 BOR call on North Platte limits Irrigation Pumpers, between Pathfinder and Guernsey, to 6,600 acre feet every 2 weeks, likely to be on through summer.
- 1. June 4, 2022 call on Bear Creek and tribs, Dist 2, to a priority date of 7/7/1891.
- 1. June 15, 2022 call on Horseshoe Creek and tribs, Dist 3, to a priority date of 4/05/1879.
- 1. June 24, 2022 call on Laramie River and Tribs, Dist 3, 4A, 4B, 4C, to a priority date of 12/31/1881.





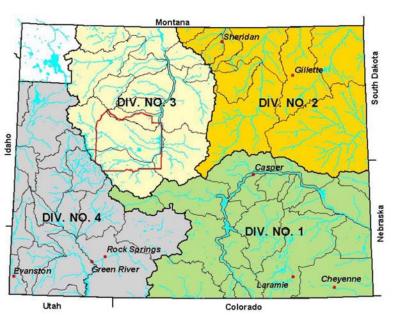
- 5. June 26, 2022 call on Laramie River and Tribs, Dist 3, 4A, 4B, 4C, to a priority date of 5/23/1883 and priority No. 17 of Laramie River Court Decree.
- 6. June 27, 2022 call on Laramie River and Tribs, Dist 3, 4A, 4B, 4C, to a priority date of 12/31/1875.
- 7. June 29, 2022 call on Rattlesnake Creek and tribs, Dist 16 to a priority date of 4/1885.
- 8. June 29, 2022 call on Rattlesnake Creek and tribs, Dist 16 to a priority date of 12/19/1889.
- 9. July 11, 2022 call on Bates Creek, Dist 11, to a priority date of 8/9/1886.





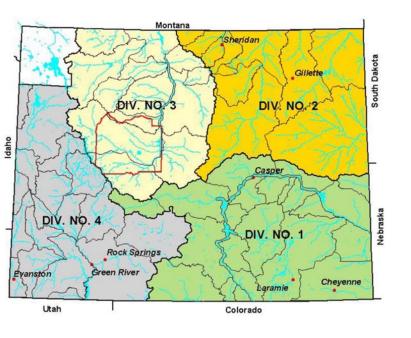
- 1. May 14, 2022 Call on Big Goose Creek, Dist 4, to a priority date of 9/18/1962.
- 2. July 12, 2022 Call on Little Goose Creek, Dist 4, to a priority date of 4/15/1880.
- 3. July 12, 2022 Call on Lower Clear Creek, Dist 9, to a priority date of summer 1884.
- 4. July 12, 2022 Call on Piney Creek, Dist 9 to a priority date of summer 1884.
- 5. July 13, 2022 Call on Upper Clear Creek, Dist 2, to a priority date of spring 1883.
- 6. July 21, 2022 Call on Lower Clear Creek, Dist 2, to a priority date of 4/30/1882.





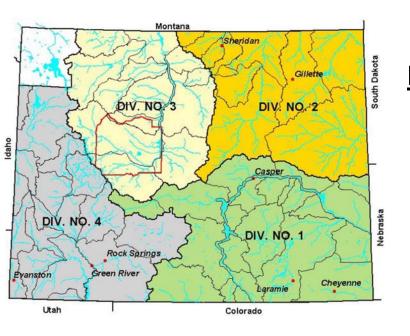
- 7. 7/18/22 Distribution of Dull Knife Reservoir water to shareholders.
- 7. 7/15/22 Distributions of Willow Park and Cloud Peak Reservoirs water to shareholders.
- 7. 7/22/22 Distribution of Kearney Lake Reservoir water to shareholders.
- 7. 7/20/22 Shepherding Keyhole Reservoir water to WY/SD state line while apportioning Wyoming's 10% compact allocation.





- 1. April 8, 2022, Call on Owl Creek, Dist 5, to a priority date of Fall 1885.
- 1. May 6, 2022, Call on Grass Creek, Dist 14, to a priority date of Spring 1903.
- 1. June 30, 2022, Call on Gooseberry Creek, Dist 13, to a priority date of 12/21/1906.
- 1. July 12, 2022, Call on Greybull River, Dist 8, to a priority date of 6/20/1888 and 6/18/1900.





- 5. July 18, 2022, Call on Cottonwood Creek, Dist 14, to a priority date of 11/10/1904.
- 5. July 25, 2022, Call on Medicine Lodge Creek and Paint Rock Creek, Dist 12, to a priority date of 7/26/1906 and 6/8/1906.

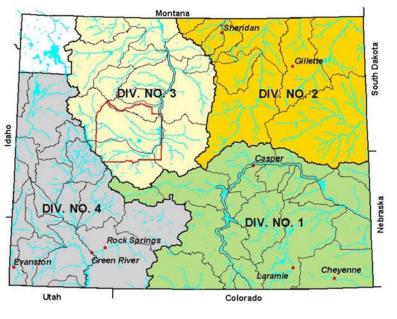


DIV. NO.3 DIV. NO. 2 DIV. NO. 4 DIV. NO. 1 Rock Springs Cheyenne

Colorado

- 1. April 29, 2022, call on North Piney Creek, Dist 10, to a priority date of 5/1/1888.
- May 9, 2022, call onf Central Bear River, Dist 2, multiple dates for interstate call.
- 1. May 16, 2022, call on Fish Creek, Dist 10, to a priority date of 7/13/1889.
- 1. May 17, 2022, call on Blacks Fork River, Dist 15, to a priority date of 6/20/1910.
- May 27, 2022, call on South Piney Creek, Dist 10, to a priority date of 12/31/1886.
- 1. June 6, 2022, call on Burnt Fork, Dist 14, to a priority date of 5/9/1901.





- 7. June 8, 2022, call on Smith's Fork, Dist 3, to a priority date of 3/2/1935.
- 7. June 13, 2022, call on Middle Piney, Dist 10, to a priority date of 6/30/1885.
- 7. June 13, 2022, call on Birch Creek, Dist 12, to a priority date of 6/1/1907.



Contact Information for Calls/Administration

Division 1 Superintendent—Cory Rinehart, 532-2248

Division 2 Superintendent—David Schroeder, 674-7012

Division 3 Superintendent-Joshua Fredrickson, 856-0747

Division 4 Superintendent-Kevin Payne, 279-3441

















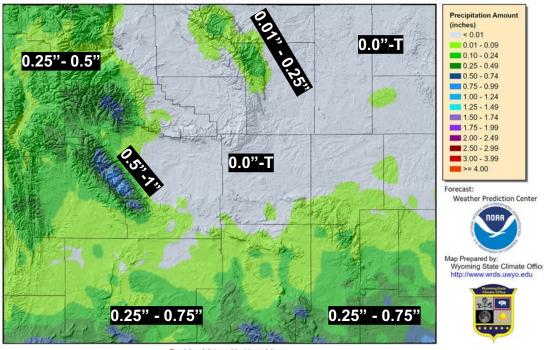
Forecasts & Outlooks



7-Day Total Precipitation Forecast

July 28 - August 4





 Cooler today then slow warming trend into weekend and next week.

- Isolated to scattered showers today, Friday, and Saturday.
- Lower rain shower coverage late weekend into Monday.
- Precipitation chances increase again Tuesday in West & SE WY.
- Localized higher rainfall amounts of >1" possible leading to flash flooding, potentially on Mullen Burn Scar.

Provisional data, subject to revision

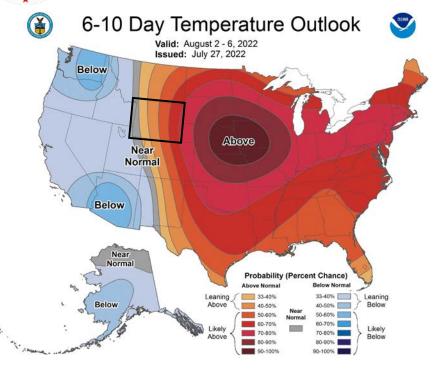
The Quantitative Precipitation Forecast shows the liquid amount of forecasted precipitation over the next 7 days. The Forecast is created by the National Weather Service Weather Prediction Center.

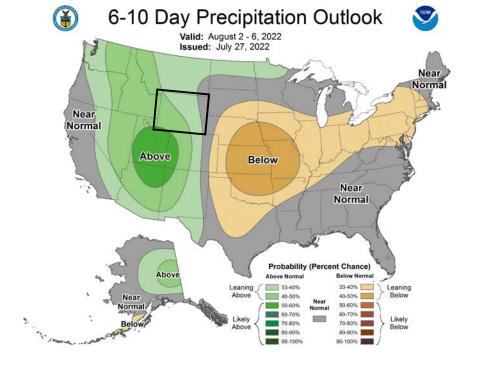
Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, National Centers for Environmental Prediction, and Weather Prediction Center - https://www.wpc.ncep.ncaa.gov



6-10 Day Temp & Precip Outlook

Aug 2 - Aug 6





Above normal temperatures favored, especially east WY

Favored Slightly above normal central & west to near normal east

Normal

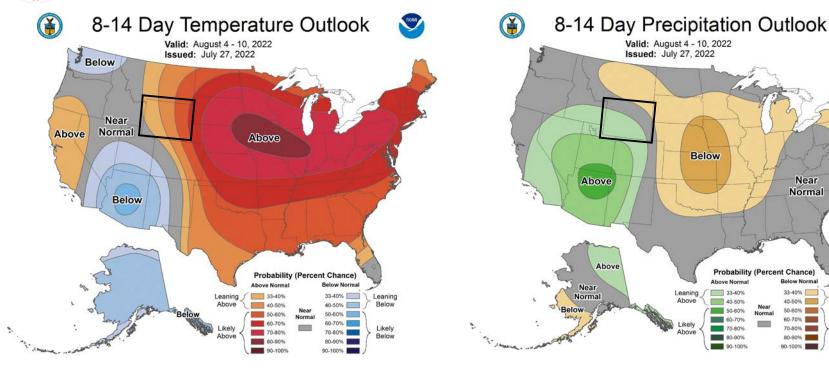
Below

Near Normal



8-14 Day Temp & Precip Outlook

Aug 4 - Aug 10



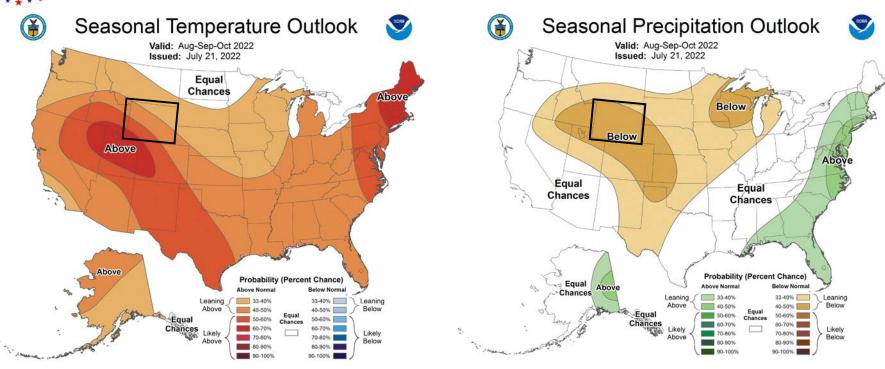
Above normal temperatures favored, especially East WY

Favored Slightly above normal Southwest to near normal Northeast



3-Month Temp & Precip Outlook

August - September - October 2022



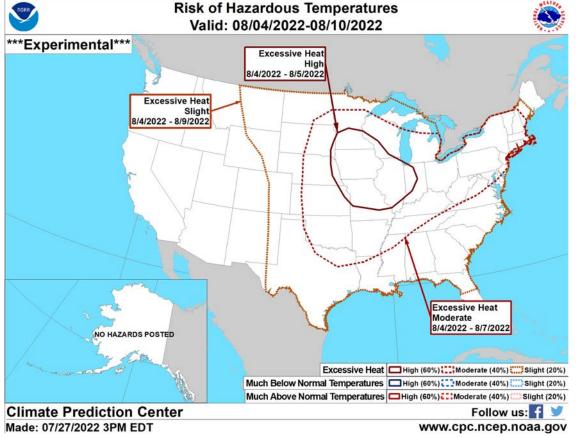
Above normal temperatures favored, especially south/southwest WY

Favored below normal across much of WY



NWS Climate Prediction Center

8-14 Long Range Hazard Outlook



CPC Link: https://bit.ly/3zFP82z

Central and East
Wyoming will be on
west edge of well
above normal
temperatures that will
be focused across
the Mid-West U.S.

Slight Risk of Excessive Heat Aug 4 - August 10



Fuel Moistures and Energy Release Component

Energy Release Component (ERC)

- A number related to the available energy (BTU) per unit area (square foot) within the flaming front at the head of a fire.
- It may also be considered a composite fuel moisture value as it reflects the contribution that all live and dead fuels have to potential fire intensity.
- Generally expressed as a Percentile.

1000-Hour Fuel Moisture (1000-hr FM)

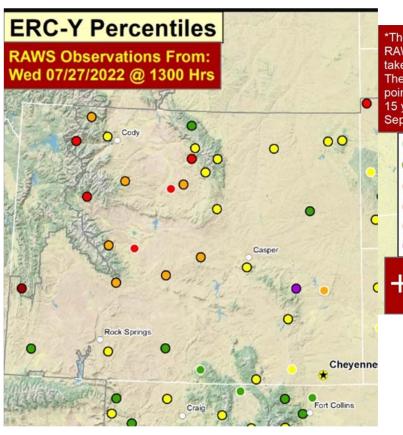
- General indicator of drought and correlates with fire danger for a Fire Danger Rating Area
- Represents the modeled moisture content in dead fuels in the 3 to 8 inch diameter class
- The 1000-hr FM value is based on a running 7-day computed average using length of day, daily temperature and relative humidity extremes (maximum and minimum values) and the 24-hour precipitation duration values.

100-Hour Fuel Moisture (100-hr FM)- 1" to 3" Dead Fuels
10-Hour Fuel Moisture (10-hr FM)- 1/4" to 1" Dead Fuels
1-Hour Fuel Moisture (1-hr FM)- 0" to 1/4" Dead Fuels

Live Fuel Moisture- Fuels transition from dormancy to green-up in the spring and early summer, then back to dormancy in the fall.



Current Status as of 07/27/2022



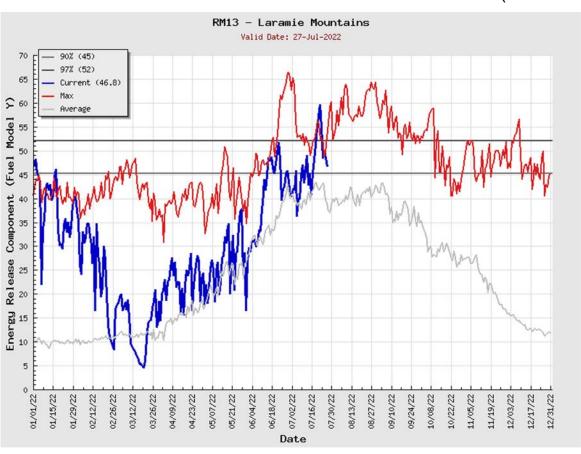
*This map is based on RAWS ERC values taken directly from WIMS. The percentile breakpoints are derived from a 15 year database (May-Sep 2006-2020).

- : below 50th : 50th to 69th
 - : 80th to 89th
 - 97th and above
- + Above Record High (2006-2020) for this Date

- Values are relative to this date in history.
- NW and W Wyoming showing the highest Percentiles- Mostly 80th and Above
- Reprieve in SW Wyoming.

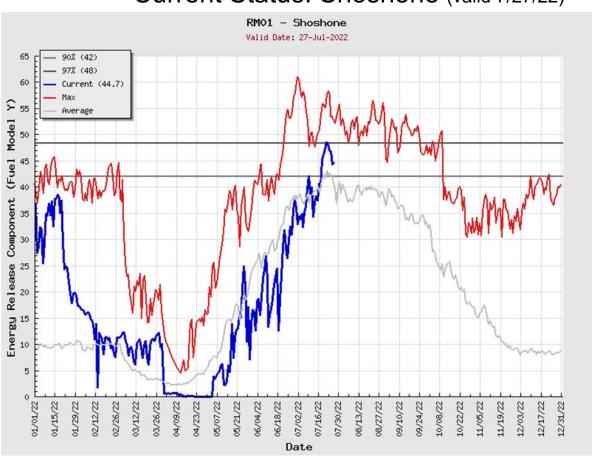


Current Status: Laramie Mountains (valid 7/27/22)



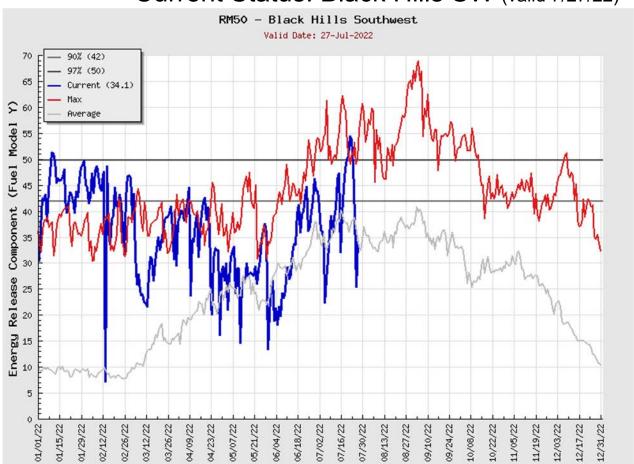


Current Status: Shoshone (valid 7/27/22)



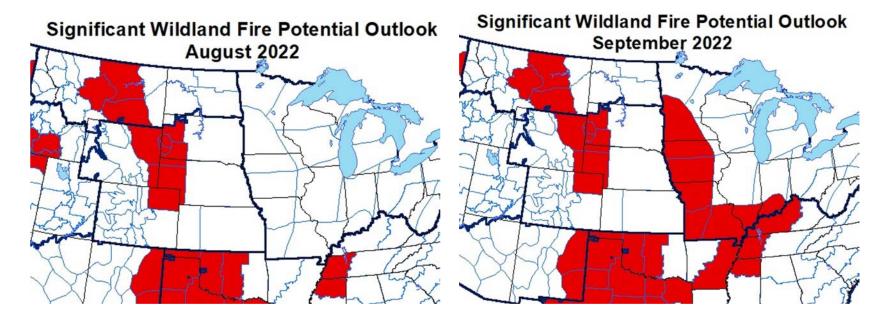


Current Status: Black Hills SW (valid 7/27/22)





Seasonal Outlooks



















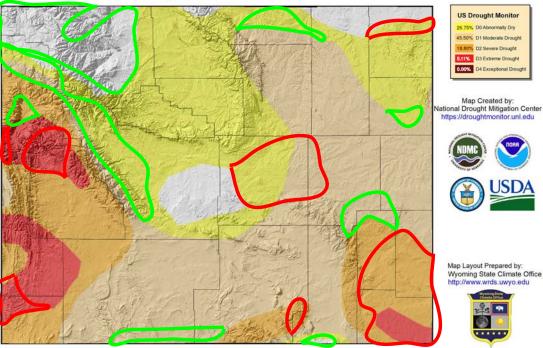
How to get involved ...



US Drought Monitor for July 26, 2022

(Released Thursday, July 28, 2022) Valid 8 a.m. EDT

US Drought Monitor for 26 Jul 2022



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 and degradations in the last month. Recent precipitation is starting to erode some of the areas but longer term dryness is filling in others.

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 28 Jul 2022 http://www.wrds.uwyo.edu











farmers.gov

Has your agricultural operation been impacted by drought? USDA offers programs that can help with recovery as well as those that can help you manage risk and build resilience on your operation.

Emergency Relief Program (ERP)

USDA announced that commodity and specialty crop producers impacted by natural disaster events in 2020 and 2021 will soon begin receiving emergency relief payments totaling approximately \$6 billion through the Farm Service Agency's (FSA) new Emergency Relief Program (ERP) to offset crop yield and value losses.

On This Page

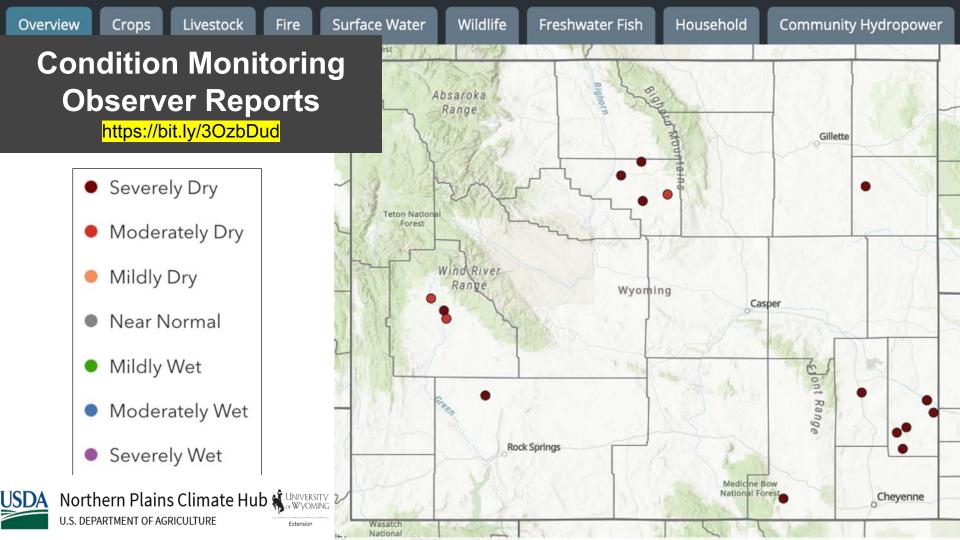
Recovery on Your Operation

Impacts of Drought

■ Protect Your Operation

■ Reporting Losses

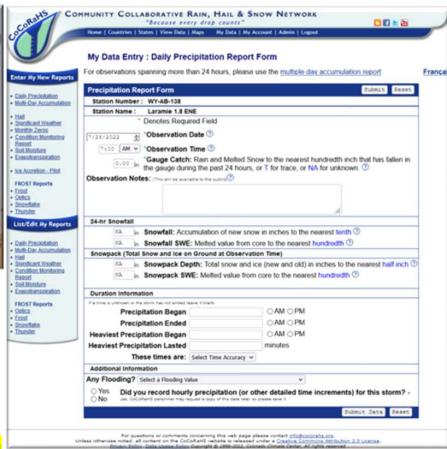
Latest News





CoCoRaHS - Community Collaborative Rain, Hail, & Snow Network







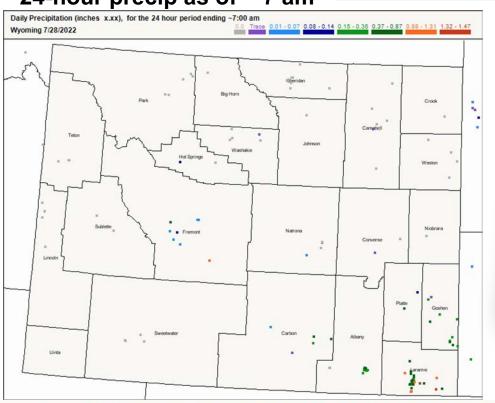


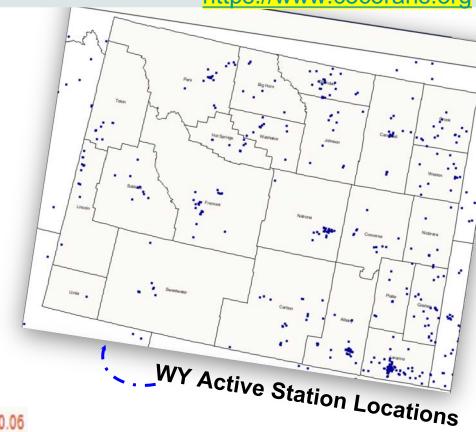
July 28, 2022: 24-hour precip as of ~ 7 am



CoCoRaHS Mapping System

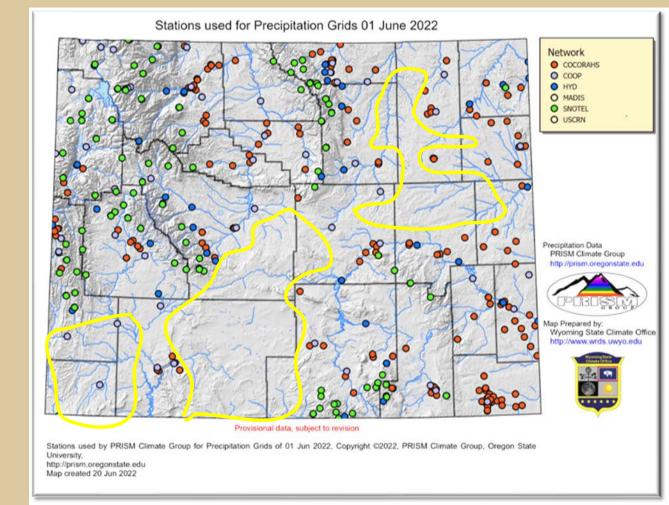
https://www.cocorahs.org







Different networks of stations and their locations for the data used to generate Precipitation Grids for 01 June 2022



















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The Wyoming 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 the state on a weekly basis
– and communicate this information to
the U.S. Drought Monitor among
others.

Learn more at:

https://drought.wyo.gov

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Thank you! Questions?