



— BUREAU OF —
RECLAMATION



WY Conditions & Outlooks:

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

March 23, 2023



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RECLAMATION

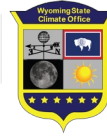


Extension



Presentation Outline

- **Current Conditions: Overview**
 - SWE
 - Streamflow
 - Reservoir Supply
- **Outlooks: Temperature & Precipitation**
- **Highlight of the Month**
 - CoCoRaHS
- **Questions**



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RECLAMATION

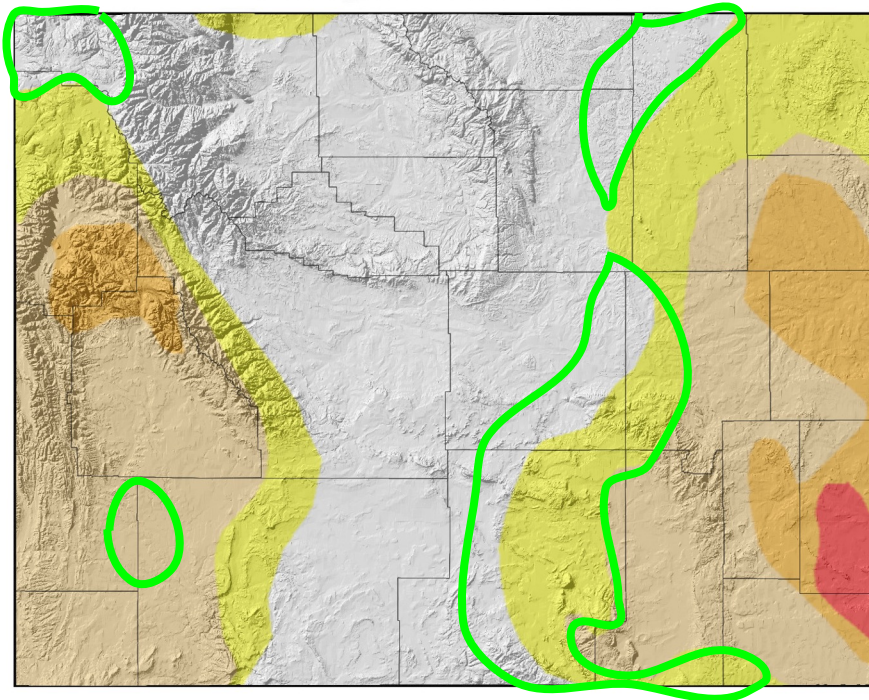


Current Conditions

US Drought Monitor for March 21, 2023

(Released Thursday, March 23, 2023)
Valid 8 a.m. EDT

US Drought Monitor for 21 Mar 2023



US Drought Monitor	
20.81%	D0 Abnormally Dry
24.97%	D1 Moderate Drought
22.14%	D2 Severe Drought
8.45%	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>

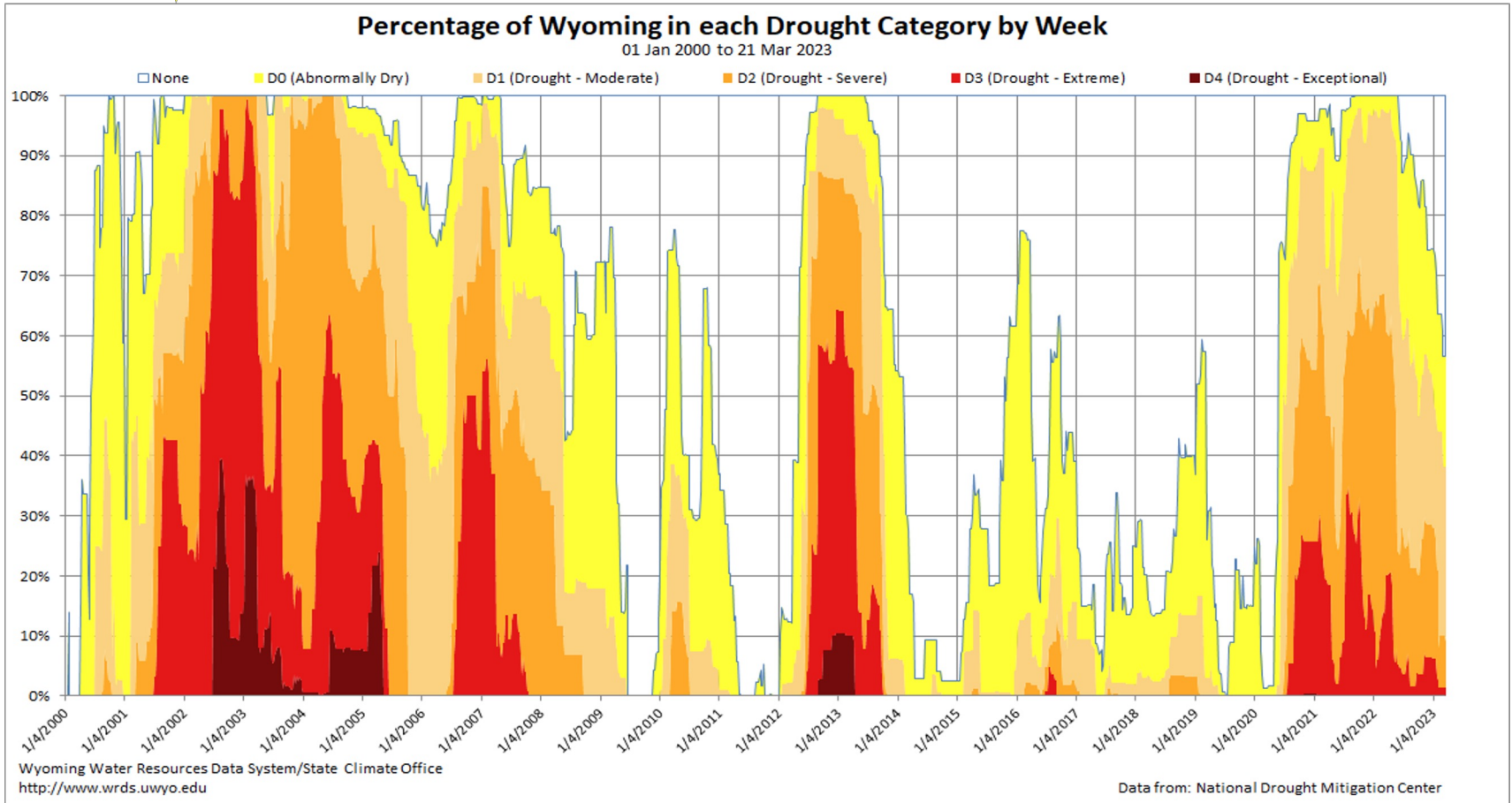
Improvements since the last webinar. Recent snows have led to some large areas of improvements.

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 23 Mar 2023 <http://www.wrds.uwyo.edu>

<https://droughtmonitor.unl.edu>

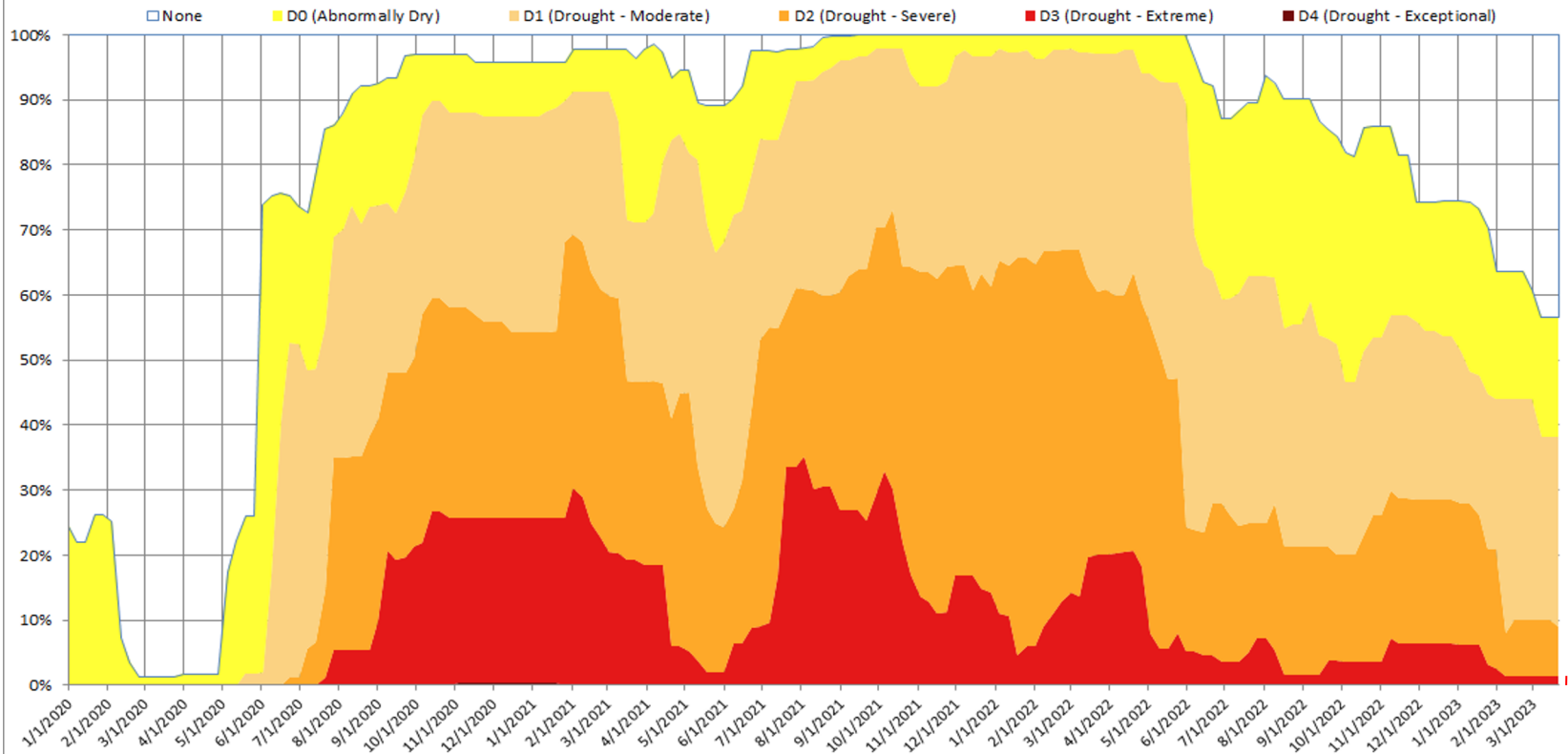
Wyoming Area Affected: 56.48% D0-D4 ; 38.11% D1-D4





Percentage of Wyoming in each Drought Category by Week

01 Jan 2020 to 21 Mar 2023



43.52%

1.29%

14-Day Precipitation Percentile (09 Mar 2023 to 22 Mar 2023)

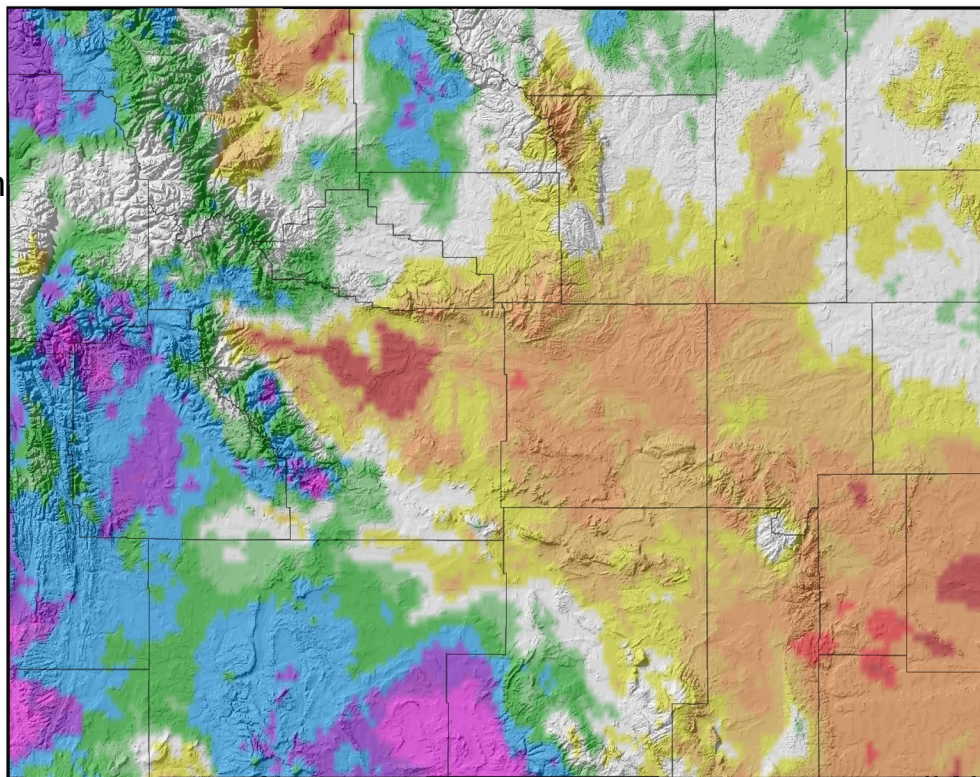
14-Day Precipitation (Percentile) for 09 Mar 2023 to 22 Mar 2023

Above Median:

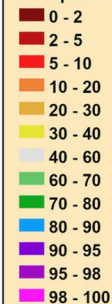
- West except Wind Basin and eastern Park County
- Far northern Johnson and eastern Sheridan Counties

Below Median (Areas of Concern):

- Central Wyoming
- Southeast Wyoming
- Eastern Park County
- Bighorns



Precipitation Percentile



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



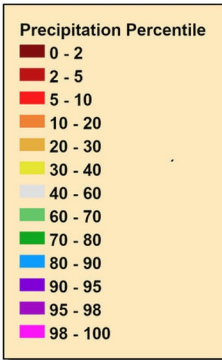
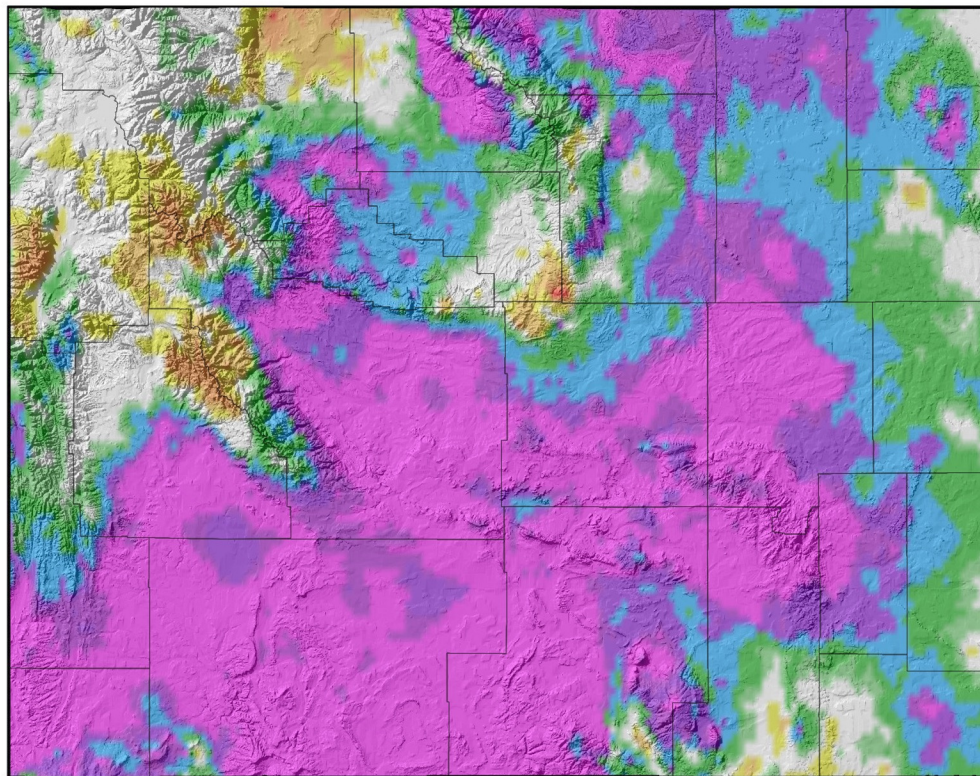
Map Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



Provisional data, subject to revision

90-Day Precipitation Percentile (23 Dec 2022 to 22 Mar 2023)

90-Day Precipitation (Percentile) for 23 Dec 2022 to 22 Mar 2023



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

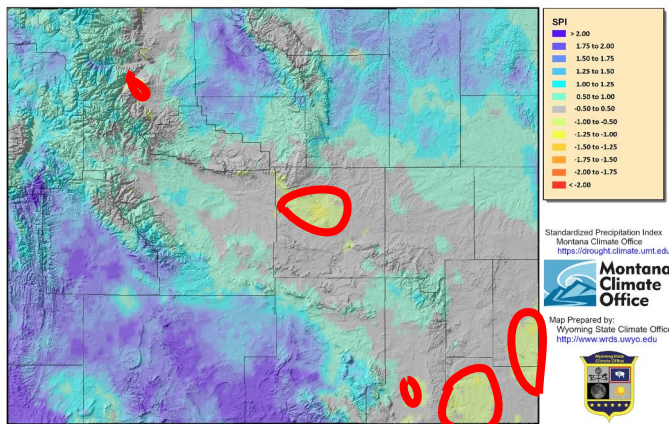
Above Median:

- Much of Wyoming

Below Median (Areas of Concern):

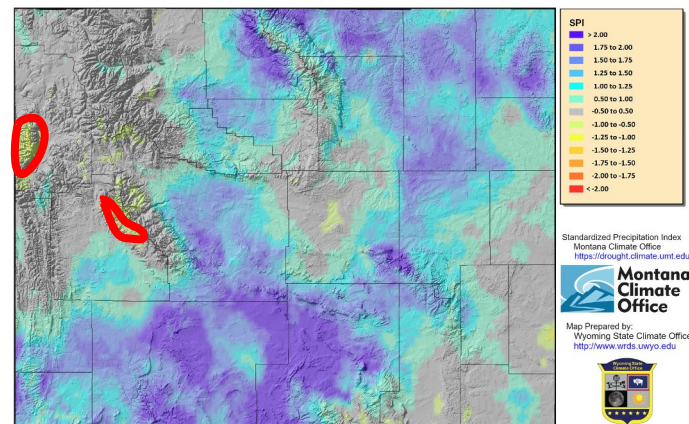
- Northwest
- Northeastern Park County
- Southern Bighorns

30-Day



Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 23 Mar 2023 <http://www.wrds.uwyo.edu>

60-Day

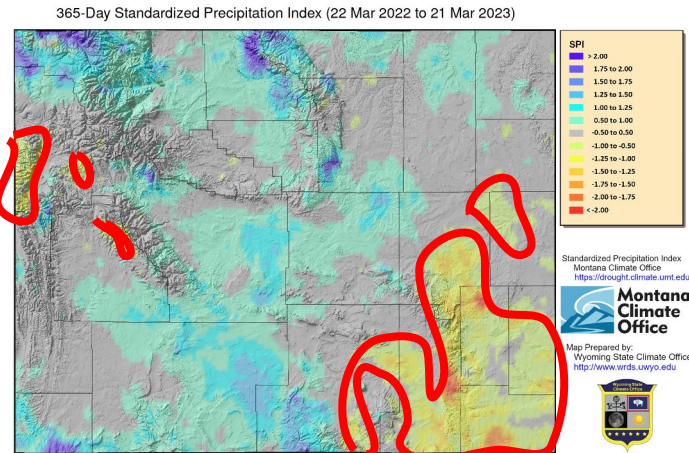


Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 23 Mar 2023 <http://www.wrds.uwyo.edu>

Standardized Precipitation Index (SPI)

Short term: Central and Southeast. Much of North and Southwest
Long term: Southeast. Areas of Winds/Tetons

1-Year

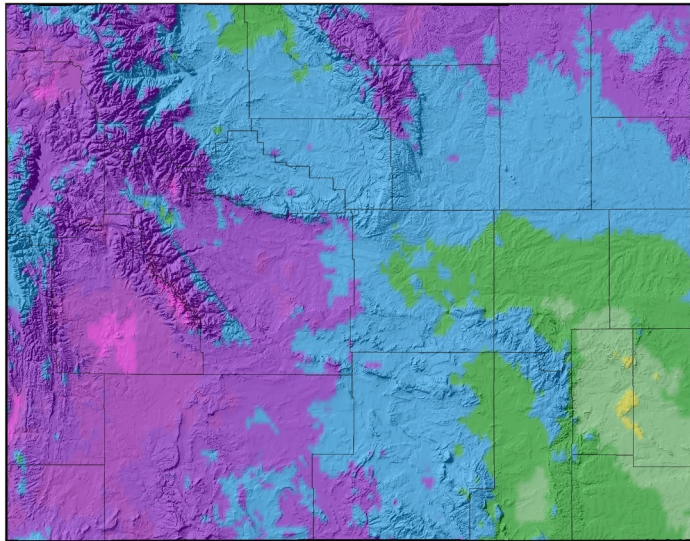


Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 23 Mar 2023 <http://www.wrds.uwyo.edu>

14-Day Average Minimum Temperature (09 Mar to 22 Mar)

- Average minimums still below freezing
- Upper Green and Yellowstone Plateau <0F
- Highest average lows in southeast

14-Day Average Minimum Temperature (Departure from 1991-2020 Average) for 09 Mar 2023 to 22 Mar 2023

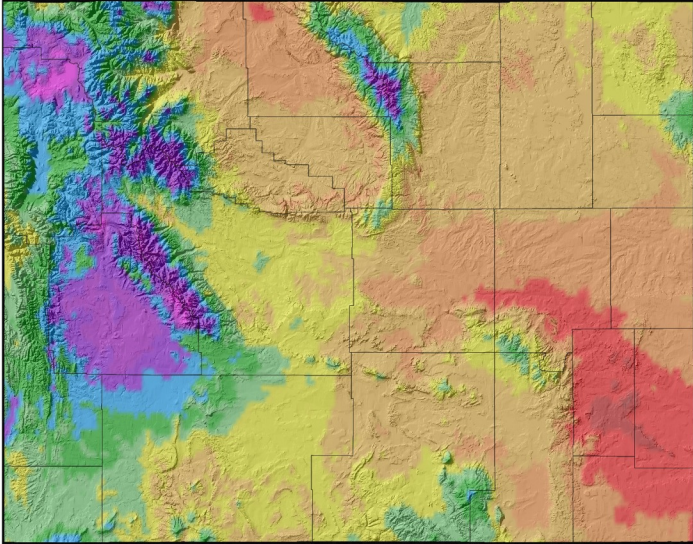


Temperature Data
PRISM Climate Group
<http://prism.oregonstate.edu>

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

Provisional data, subject to revision

Daily Temperature data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>
Map Created 23 Mar 2023 <http://www.wrds.uwyo.edu>
Temperature averages created from PRISM daily tempWYerature grids



Temperature Data
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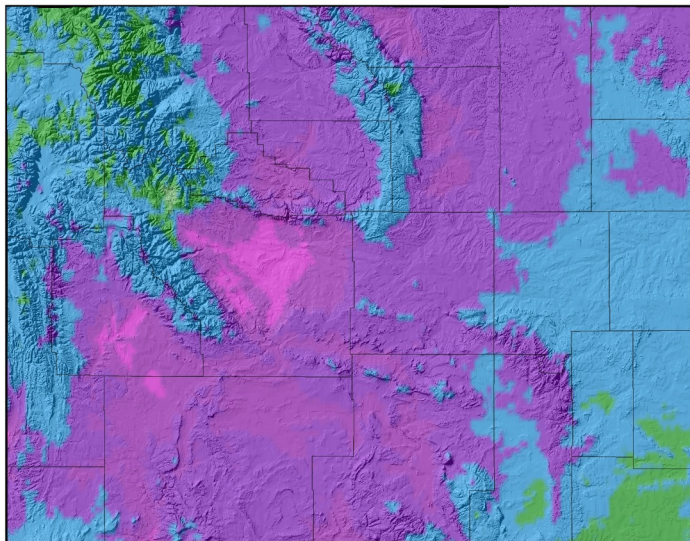
14-Day *Departure from Normal* Average Minimum Temperature

- Below average except border areas between Goshen and Platte Counties (up to 3F abv avg)
- Southeast up to 6F below average
- Rest 6F to >15F below average
- West & far northeastern tier greatest departure

14-Day Average **Maximum** Temperature (09 Mar to 22 Mar)

- Most Low Elev areas, highs >32F
- SE warmest, Upper Green & High Elev, **coolest**

14-Day Average Maximum Temperature (Departure from 1991-2020 Average) for 09 Mar 2023 to 22 Mar 2023



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

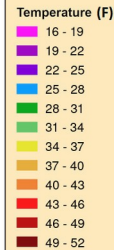
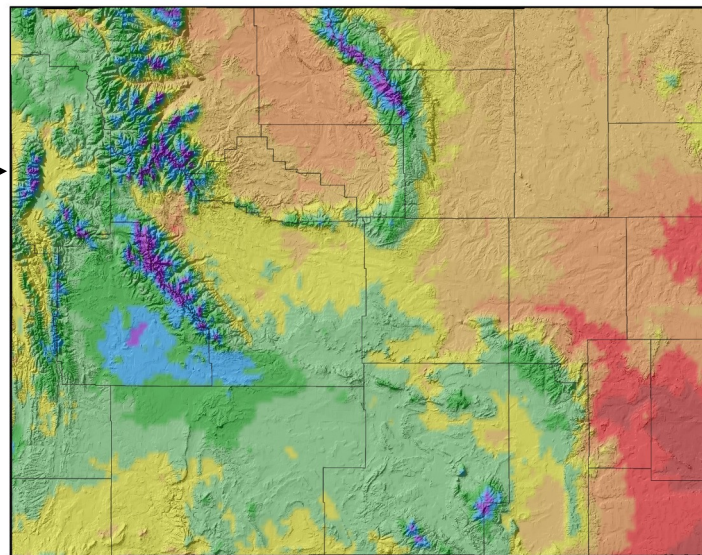


Map Prepared by:
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Provisional data, subject to revision

14-Day Average Maximum Temperature for 09 Mar 2023 to 22 Mar 2023



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



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



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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 23 Mar 2023 <http://www.wrds.uwyo.edu>
Temperature averages created from PRISM daily tempWYerature grids

14- Day *Departure from Normal* Average **Maximum** Temperature

- Below average statewide
- Far NW and SE 3F to 6F below average
- Parts Upper Green and Wind >15F below average
- Remainder 6F to 15F below average

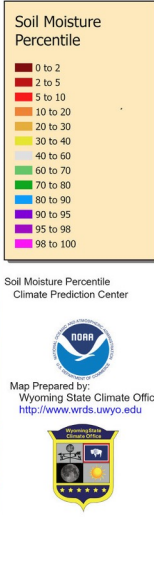
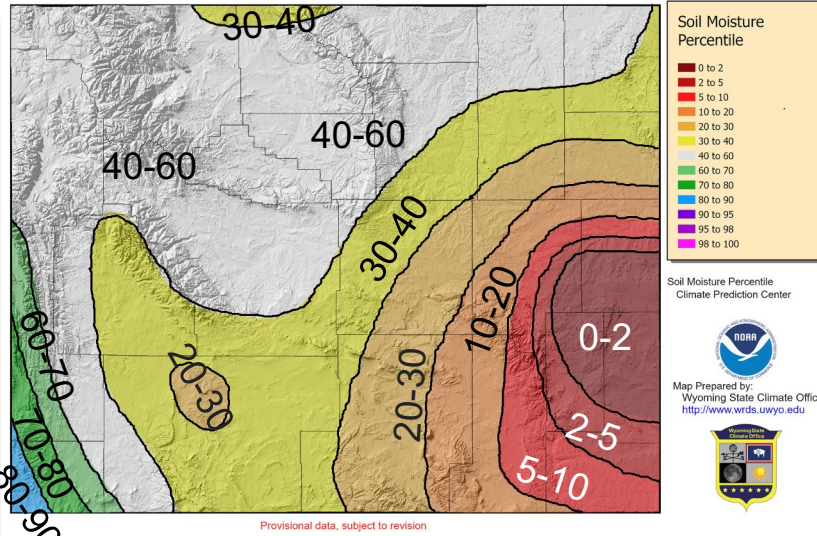
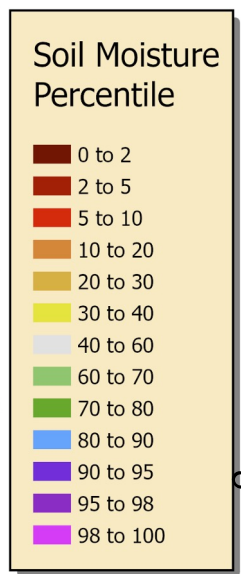
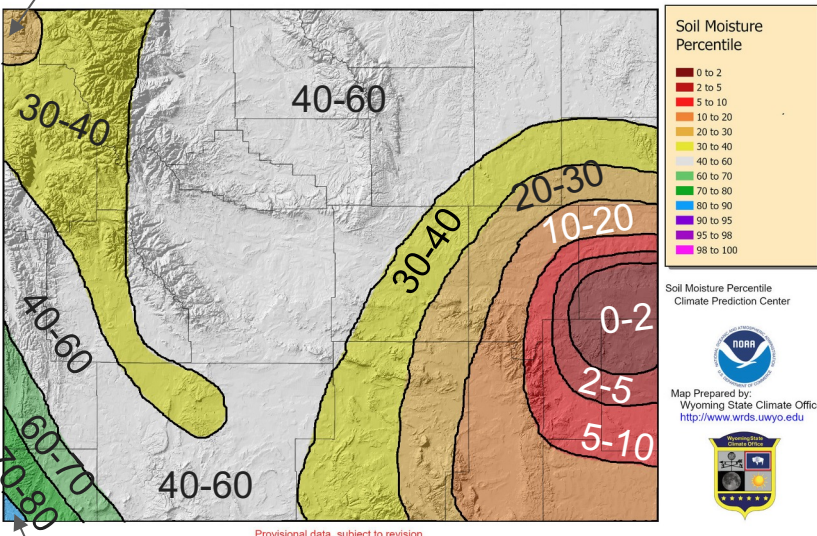
Soil Moisture Percentile

Two Weeks Ago

22 March 2023

20-30 Soil Moisture Percentile for 09 Mar 2023

Soil Moisture Percentile for 22 Mar 2023



Modeled Soil Moisture Percentile https://www.cpc.ncep.noaa.gov/products/GIS/GIS_DATA/USDM_Products/soil/soil_percentile.php
Map Created 10 Mar 2023 <http://www.wrds.uwyo.edu>

Modeled Soil Moisture Percentile https://www.cpc.ncep.noaa.gov/products/GIS/GIS_DATA/USDM_Products/soil/soil_percentile.php
Map Created 23 Mar 2023 <http://www.wrds.uwyo.edu>

80-90

Improvement in far southwest and northwest, but
worsening in east and south central

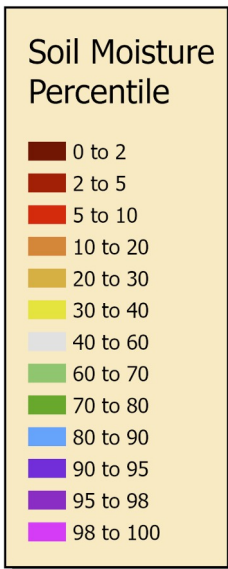
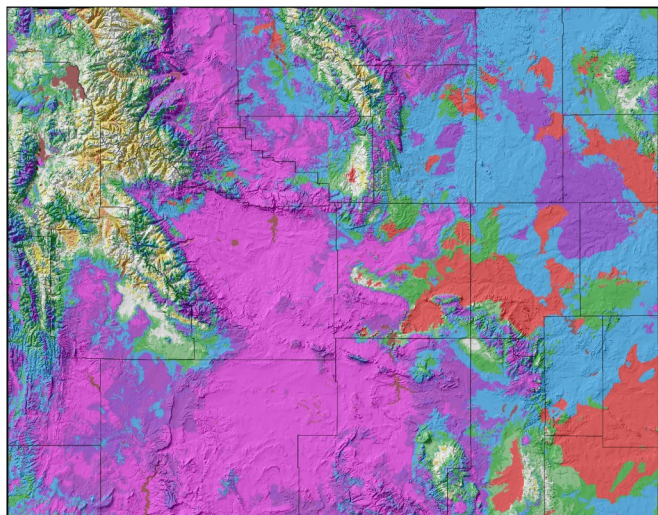
Snow

Two Weeks Ago

March 23, 2023

Snow Water Equivalent Percentile for 09 Mar 2023 (2004-2021 Period)

Snow Water Equivalent Percentile for 23 Mar 2023 (2004-2021 Period)

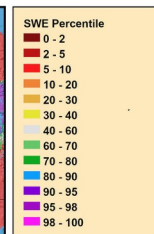
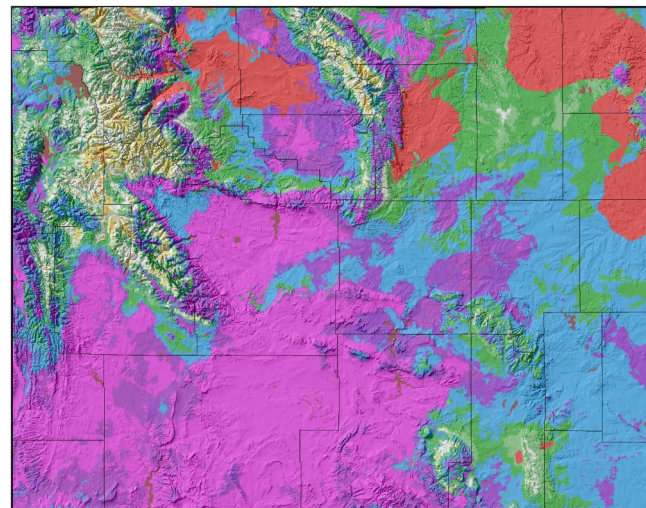


Snow Water Equivalent
NOHRSC
<https://doi.org/10.7265/N5TB14TC>

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



Provisional data, subject to revision



Snow Water Equivalent
NOHRSC
<https://doi.org/10.7265/N5TB14TC>

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



Provisional data, subject to revision

Modeled Snow Water Equivalent from National Operational Hydrologic Remote Sensing Center, 2004. Snow Data Assimilation System (SNODAS) Data Products at NSIDC, Version 1. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center.
doi: <https://doi.org/10.7265/N5TB14TC>.
Daily Percentiles and Percents created by Wyoming State Climate Office
Map Created 09 Mar 2023 - <http://www.wrds.uwyo.edu>

Modeled Snow Water Equivalent from National Operational Hydrologic Remote Sensing Center, 2004. Snow Data Assimilation System (SNODAS) Data Products at NSIDC, Version 1. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center.
doi: <https://doi.org/10.7265/N5TB14TC>.
Daily Percentiles and Percents created by Wyoming State Climate Office
Map Created 23 Mar 2023 - <http://www.wrds.uwyo.edu>

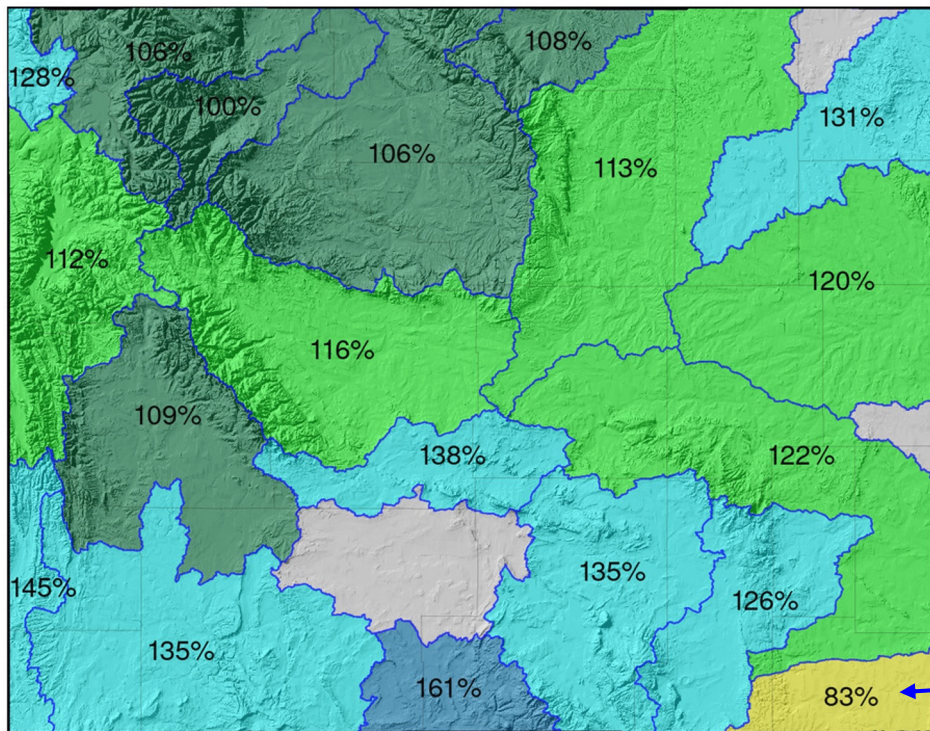
Losses in the Northeast and Bighorn Basin.

Improvements in the Southwest and East Central

Snow

March 23, 2023

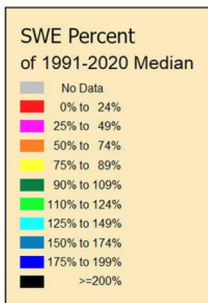
Snow Water Equivalent Percent of Median (1991-2020) for 23 Mar 2023



Provisional data, subject to revision

Basin Snow Water Equivalent Data from Natural Resources Conservation Service Water and Climate Center <https://www.nrcs.usda.gov>
 Map created by Wyoming State Climate Office 23 Mar 2023

* Percentages denoted by an asterisk represent data that may not provide a valid measure of conditions. This is most usually seen near the end of the snow season where normal values may be very low or the melt out curve is so steep that a slight variation in days may result in abnormally high or low percentages.



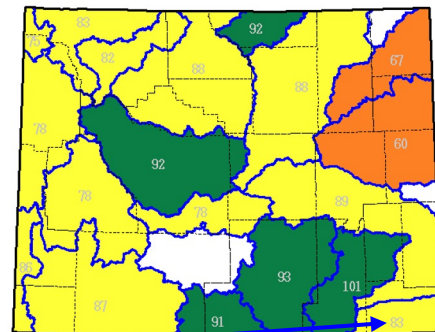
Snow Water Equivalent Data
 NRCS
<https://www.nrcs.usda.gov>

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



March 22, 2023

SWE % of Median as of Wednesday, 23 March 2022



Produced by the Wyoming Water Resources Data System: <http://www.wrds.uwyo.edu>

Snow

March 23, 2023

























































Peak Snow Water Equivalent Dates and Totals by Basin With Meltout Dates

This year's "to-date" peak snow water equivalent (SWE) compared to median.

Red indicates **earlier** peak date or **lower** SWE compared to median

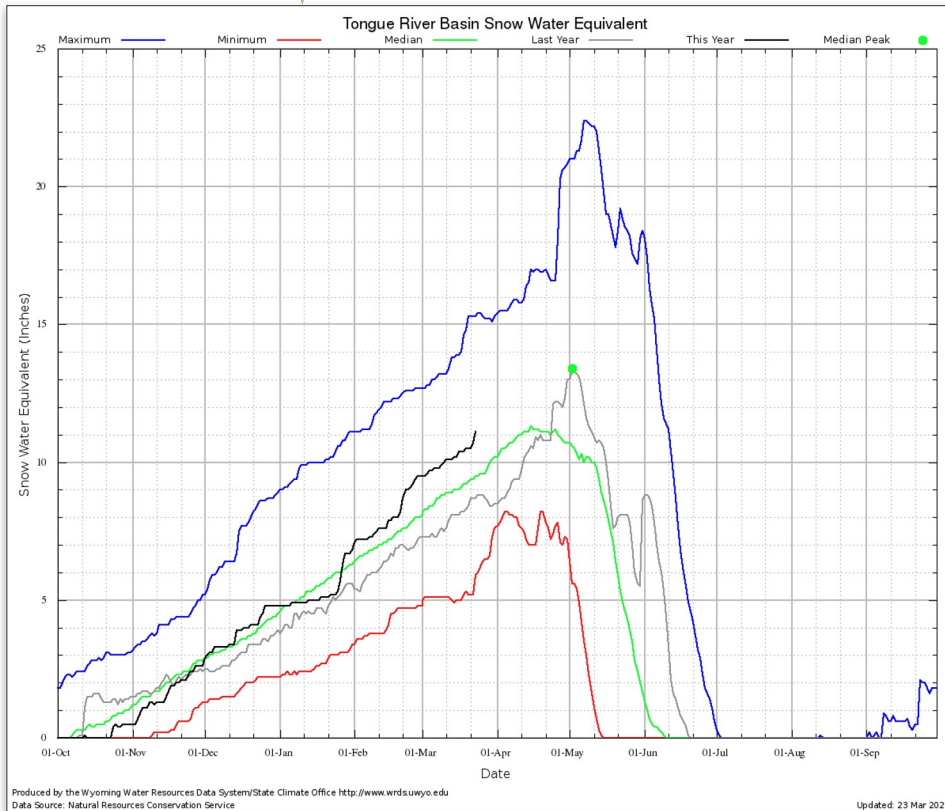
Blue indicates **later** peak date or **higher** SWE compared to median

[Click Column Headers to Sort](#)

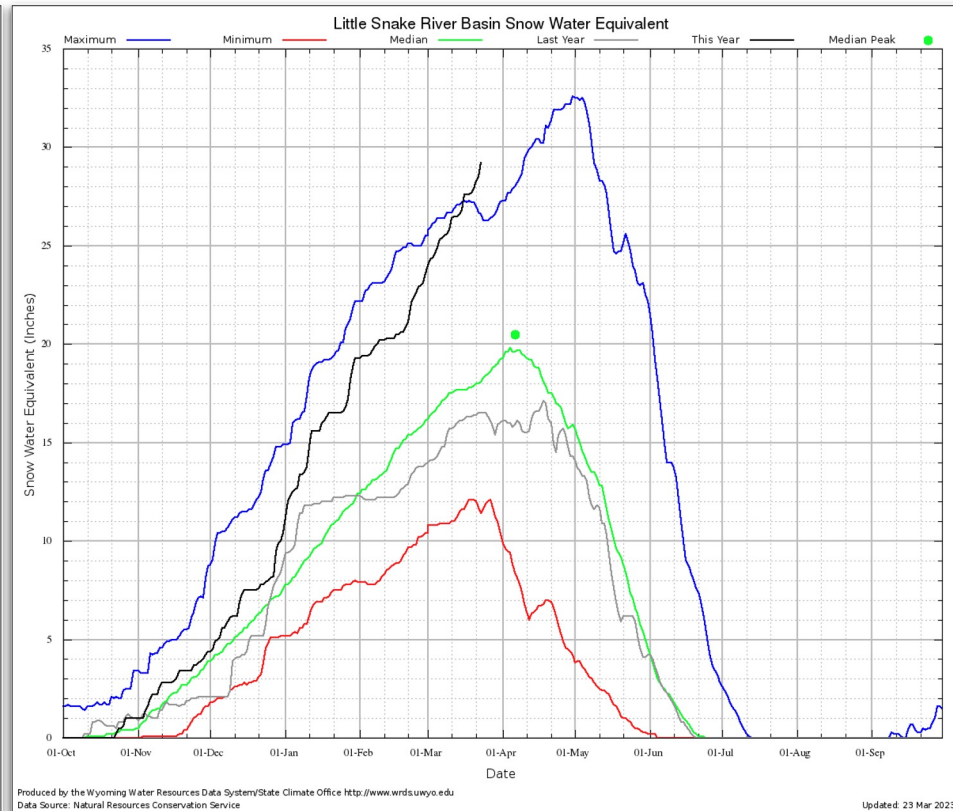
1	2	3	4	5	6	7	8	9	10
Basin Click to View Chart	This Year Peak Date	This Year Peak SWE (inches)	Days Early/Late	Peak SWE Dif (inches)	Percent of Median Peak SWE	Median Peak Date	Median Peak SWE (inches)	Current SWE	Median Meltout Date
South Platte	23 Mar 2023	5.4	-6	-1.8	75%	29 Mar 	7.2 	5.4	26 Apr 
Tongue	23 Mar 2023	11.1	-40	-2.3	83%	02 May 	13.4 	11.1	09 Jun 
Bighorn	23 Mar 2023	10.0	-33	-1.7	85%	25 Apr 	11.7 	10.0	19 Jun 
Shoshone	23 Mar 2023	15.7	-32	-2.4	87%	24 Apr 	18.1 	15.7	29 Jun 
Powder	23 Mar 2023	9.5	-25	-1.1	90%	17 Apr 	10.6 	9.5	08 Jun 
Wind	23 Mar 2023	13.0	-30	-1.0	93%	22 Apr 	14.0 	13.0	25 Jun 
Laramie	23 Mar 2023	15.1	-27	-0.8	95%	19 Apr 	15.9 	15.1	12 Jun 
Lower North Platte	23 Mar 2023	12.2	-23	-0.6	95%	15 Apr 	12.8 	12.2	29 May 
Yellowstone	23 Mar 2023	20.6	-32	-0.6	97%	24 Apr 	21.2 	20.6	02 Jul 
Upper Green	23 Mar 2023	15.7	-21	-0.3	98%	13 Apr 	16.0 	15.7	18 Jun 
Snake	23 Mar 2023	22.2	-20	1.6	108%	12 Apr 	20.6 	22.2	28 Jun 
Cheyenne	23 Mar 2023	8.2	-10	0.7	109%	02 Apr 	7.5 	8.2	30 Apr 
Madison	23 Mar 2023	26.1	-23	2.3	110%	15 Apr 	23.8 	26.1	24 Jun 
Upper North Platte	23 Mar 2023	26.9	-24	2.5	110%	16 Apr 	24.4 	26.9	26 Jun 
Lower Green	23 Mar 2023	15.1	-17	1.5	111%	09 Apr 	13.6 	15.1	12 Jun 
Sweetwater	23 Mar 2023	17.0	-26	2.0	113%	18 Apr 	15.0 	17.0	05 Jun 
Belle Fourche	23 Mar 2023	8.2	-10	1.3	119%	02 Apr 	6.9 	8.2	30 Apr 
Upper Bear	23 Mar 2023	21.4	-20	4.8	129%	12 Apr 	16.6 	21.4	15 Jun 
Little Snake	23 Mar 2023	29.2	-14	8.7	142%	06 Apr 	20.5 	29.2	19 Jun 

Data from Natural Resources Conservation Service SnoTel Network

Snow Water Equivalent by Basin (23 Mar 2023)



Tongue River Basin (83% of Median Peak SWE)

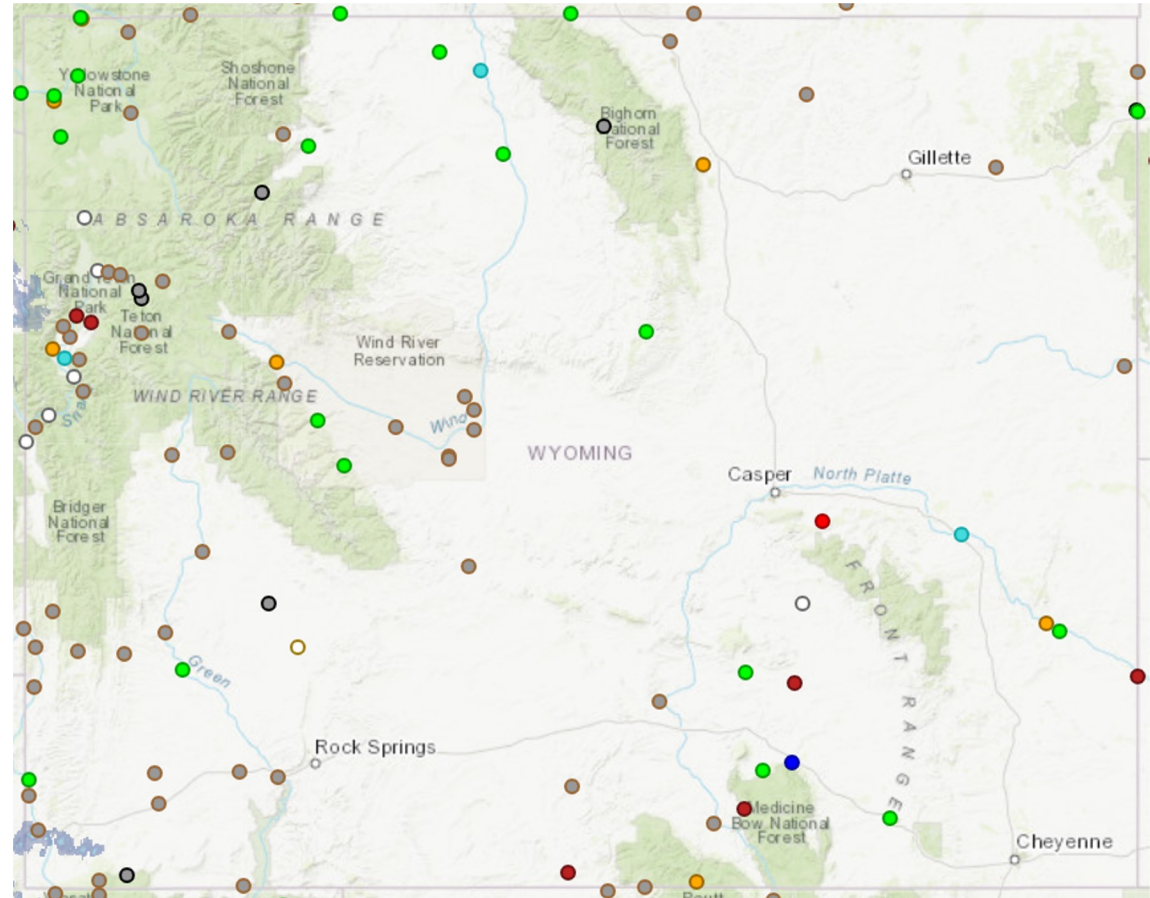


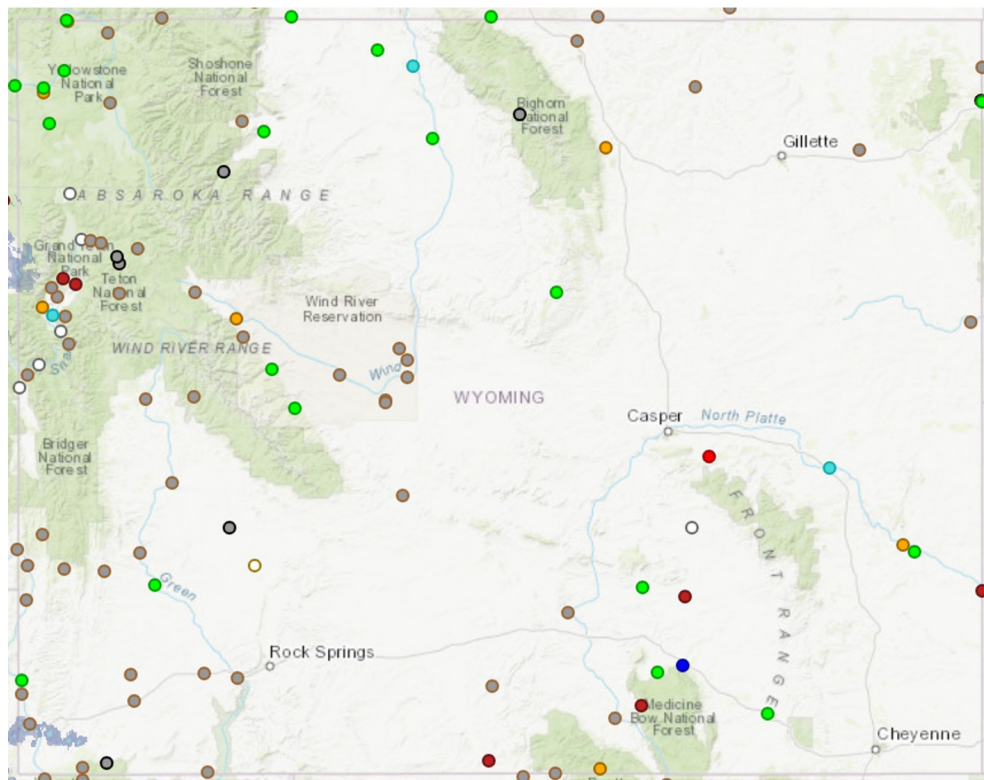
Little Snake River Basin (142% of Median Peak SWE)

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



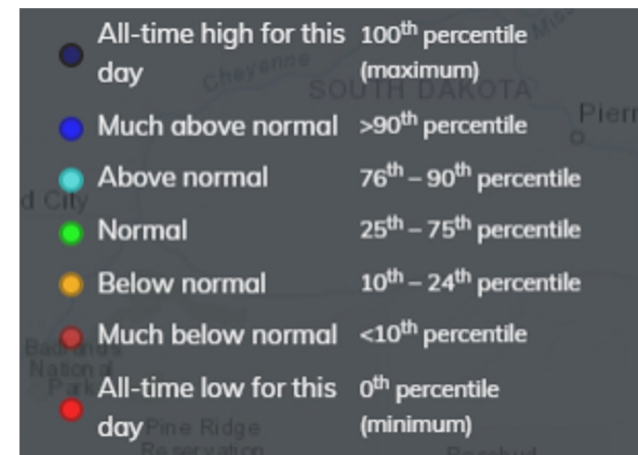


<https://dashboard.waterdata.usgs.gov/>

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

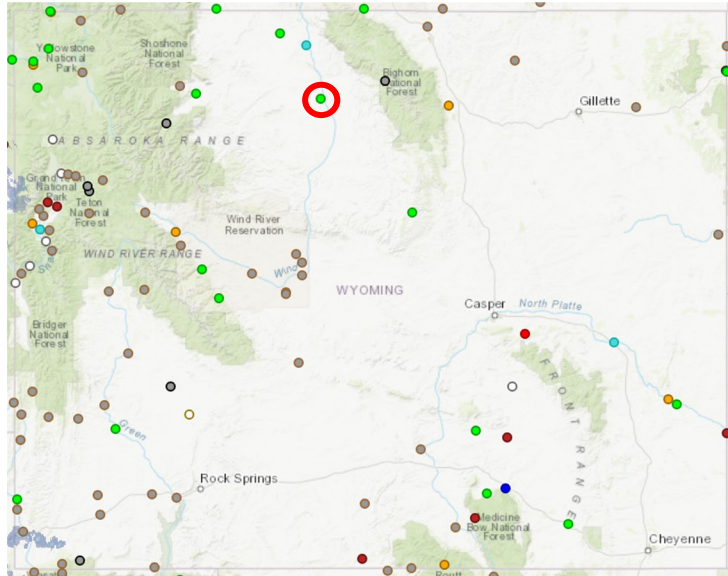
Early Spring Streamflows

- Winter is generally a time of low flow
- Most sites still ice-affected (grey)
- A few sites coming up from low-elevation snow melt
- Still a mix of conditions, with sites from much below to much above normal



Select WY Streamflows

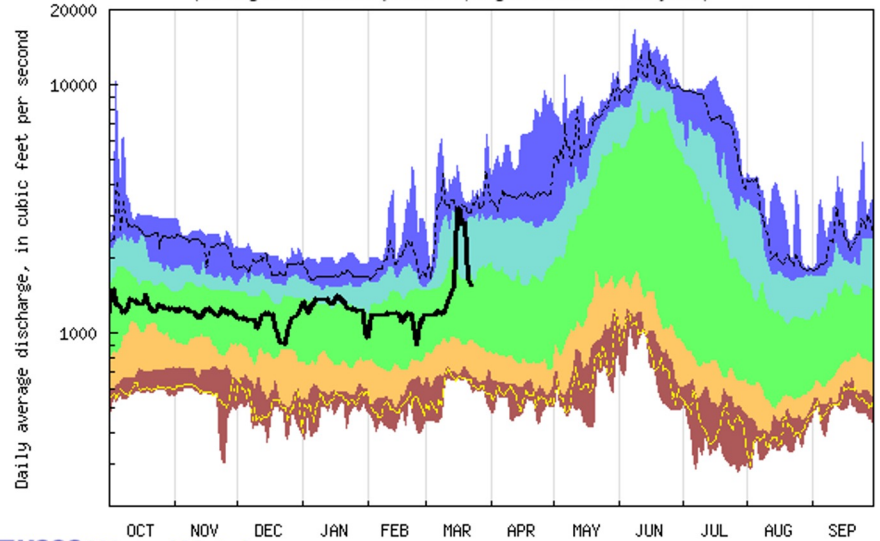
Bighorn River at Basin, WY Last updated Mar 22, 2023



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

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

USGS 06274300 BIGHORN RIVER AT BASIN, WY
(Drainage area: 13223 square miles, length of record: 38 - 39 years)

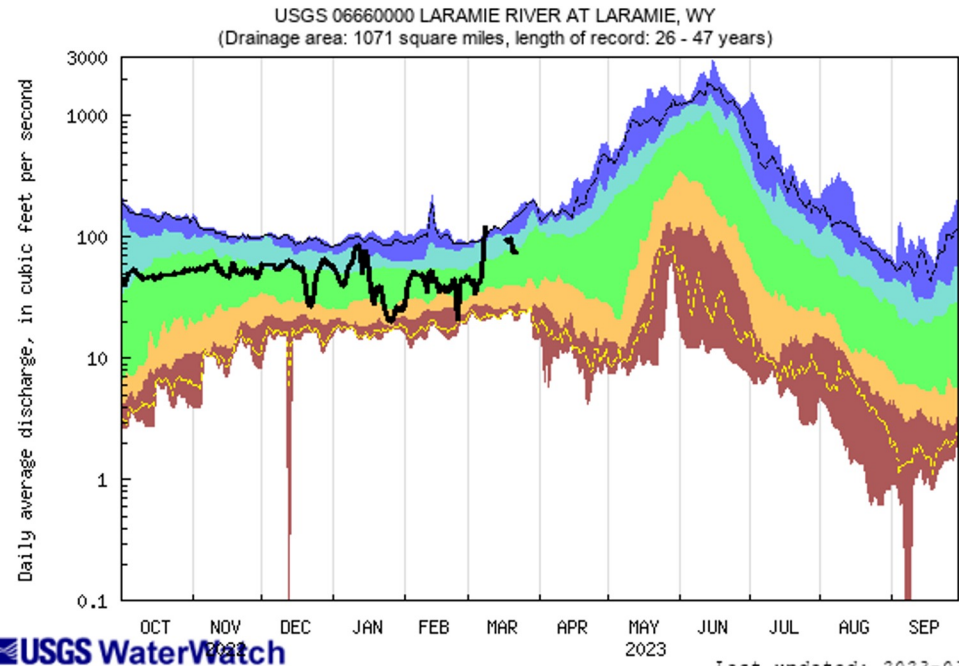
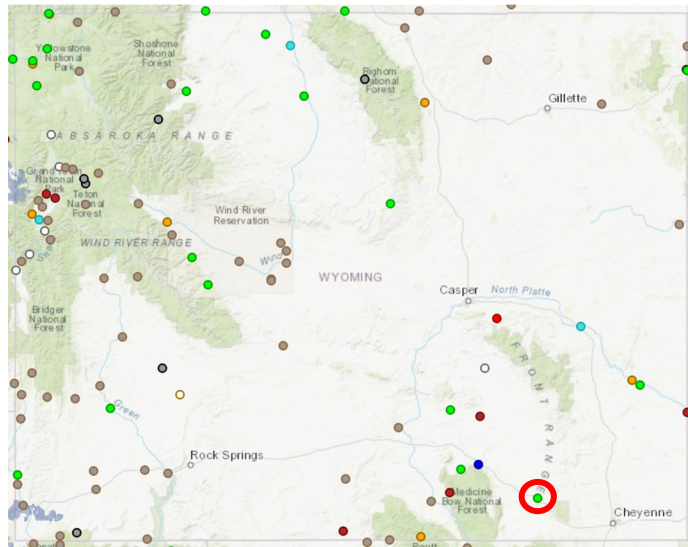


USGS WaterWatch

Last updated: 2023-03-23

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



Last updated: 2023-03-23

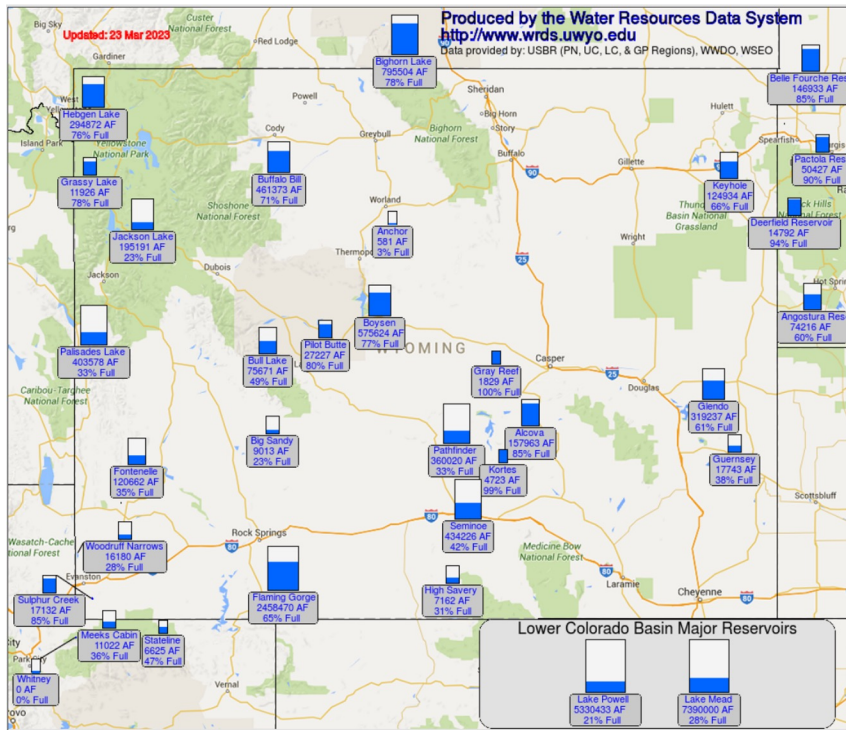
<https://dashboard.waterdata.usgs.gov/>

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

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

WY Reservoirs

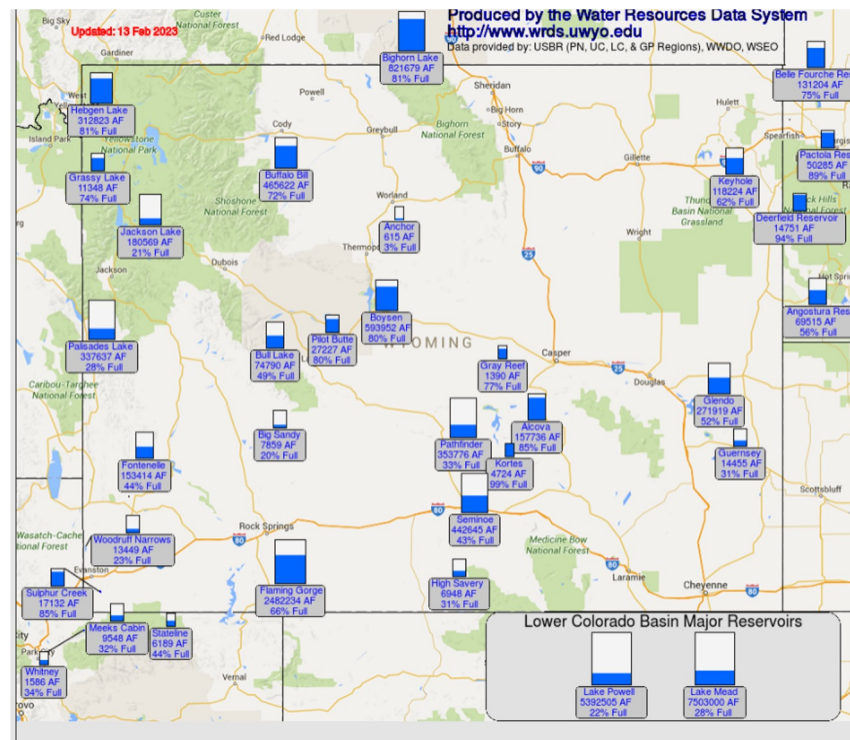
Mar 23, 2023



http://www.wrds.uwyo.edu/surface_water/teacups.html

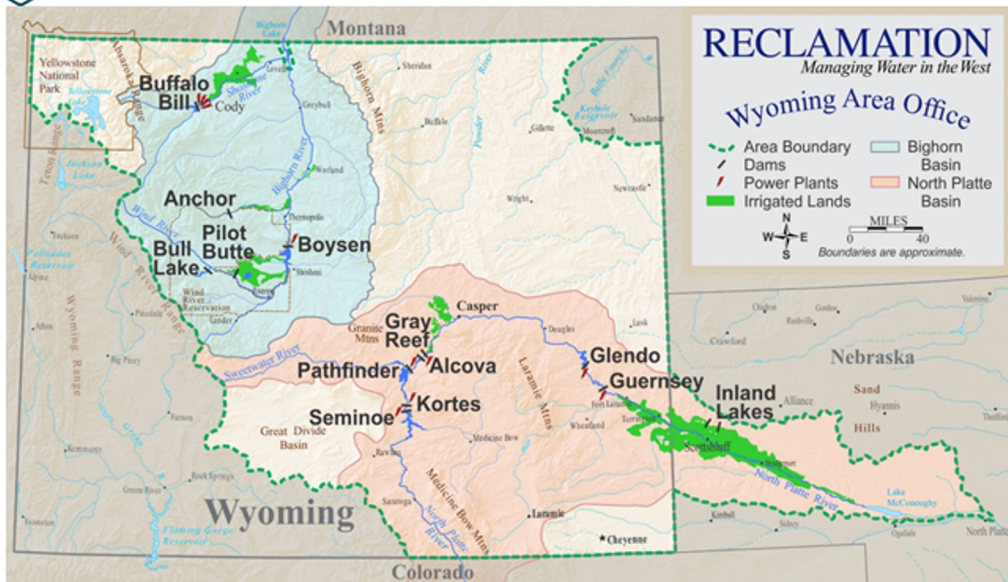
- Slight increases at most reservoirs

Feb 16, 2023





Current Reservoir Conditions: Bighorn System

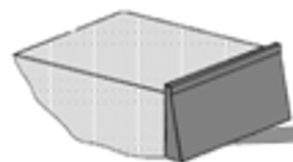


As of March 21, Bighorn System: 72% of Full

<u>Reservoir</u>	<u>Content</u>	<u>Capacity</u>	<u>% of Full</u>	<u>% of Avg</u>
Bull Lake	75,622	152,500	50%	98%
Buffalo Bill	463,150	646,600	72%	101%
Boysen	575,310	741,600	78%	105%



BUFFALO BILL RESERVOIR (BBR)
 Top 644126 af, 5393.5 ft
 Current 463150 af, 5369.3 ft
 To fill 180976 af, 24.2 ft
 Computed Inflow 197 cfs
 Total Outflow 590 cfs

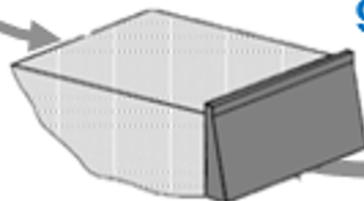


700 cfs

BOYSEN RESERVOIR (BOYR)
 Top 741594 af, 4725.0 ft
 Current 575310 af, 4715.6 ft
 To fill 166284 af, 9.4 ft
 Computed Inflow 917 cfs
 Total Outflow 917 cfs



25 cfs



900 cfs

BULL LAKE (BLR)
 Top 152459 af, 5805.0 ft
 Current 75622 af, 5777.7 ft
 To fill 76837 af, 27.3 ft
 Computed Inflow 40 cfs
 Total Outflow 28 cfs

Forecast April – July Runoff:

Buffalo Bill: 700,000 AF 94% of average

Boysen: 800,000 AF 131% of average

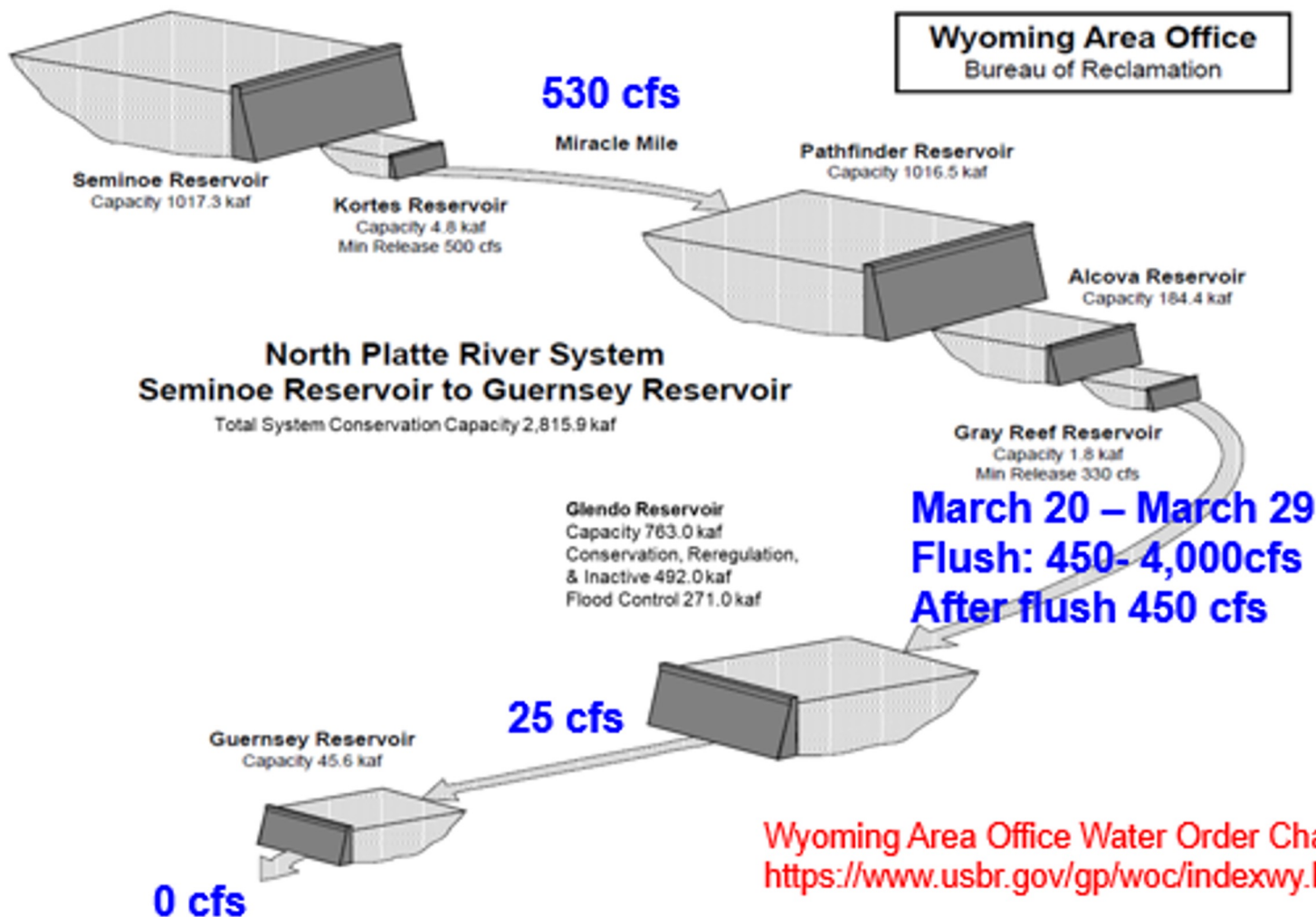


Forecast April – July Runoff:

<u>Forecast Point</u>	<u>Runoff (AF)</u>	<u>% of Avg</u>
<u>Seminoe</u>	870,000	121
Sweetwater above Pathfinder	80,000	150
<u>Alcova to Glendo</u>	150,000	103

As of March 20, North Platte System: 44% of Full, 74% of Average

<u>Reservoir</u>	<u>Content (AF)</u>	<u>Capacity</u>	<u>% of Full</u>	<u>% of Avg</u>
Seminoe	434,100	1,017,300	42%	81%
Pathfinder	363,200	1,070,000	34%	59%
Glendo	315,300	492,000	64%	86%
Guernsey	17,700	45,600	39%	98%





— BUREAU OF —
RECLAMATION



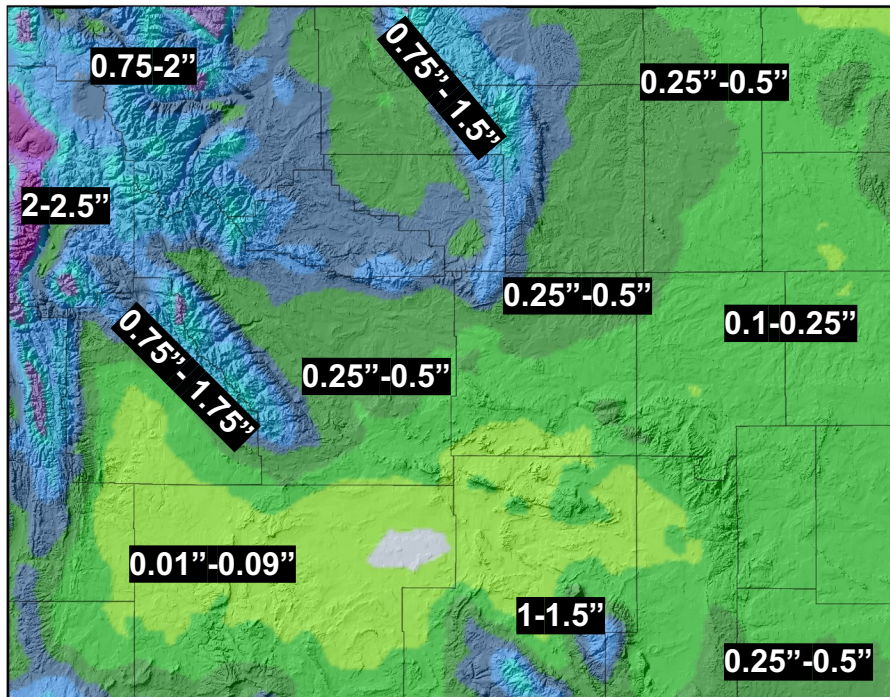
Forecasts & Outlooks



7-Day Total Precipitation Forecast

March 23 - 30

7-Day Quantitative Precipitation Forecast 23 Mar 2023



Provisional data, subject to revision



Forecast:
Weather Prediction Cen



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



- The west will see very few breaks in the snow showers.
- Northern Wyoming will see quite a bit of snow with the next storm Friday afternoon / evening through Saturday night.
- There will be a break in the snow Monday to Tuesday, with the next storm moving in on Wednesday.

https://bit.ly/7_dayQPFforecast



6-10 Day Temp & Precip Outlook

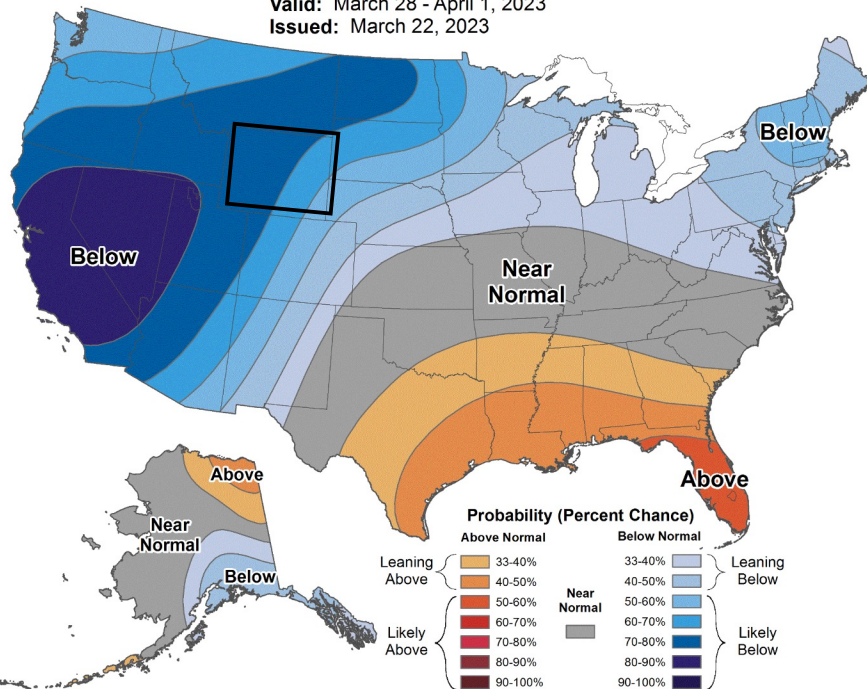
https://bit.ly/CPC6_10Day

March 28 - April 1

6-10 Day Temperature Outlook



Valid: March 28 - April 1, 2023
Issued: March 22, 2023



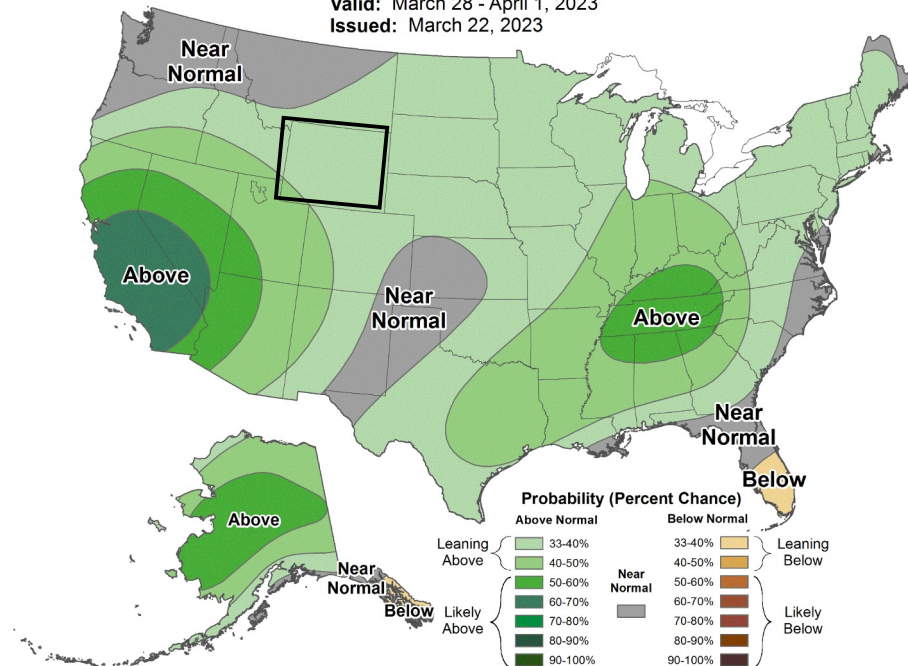
Strong signal for below normal temperatures, especially across western Wyoming



6-10 Day Precipitation Outlook



Valid: March 28 - April 1, 2023
Issued: March 22, 2023



Slightly favored above normal precip Wyoming



8-14 Day Temp & Precip Outlook

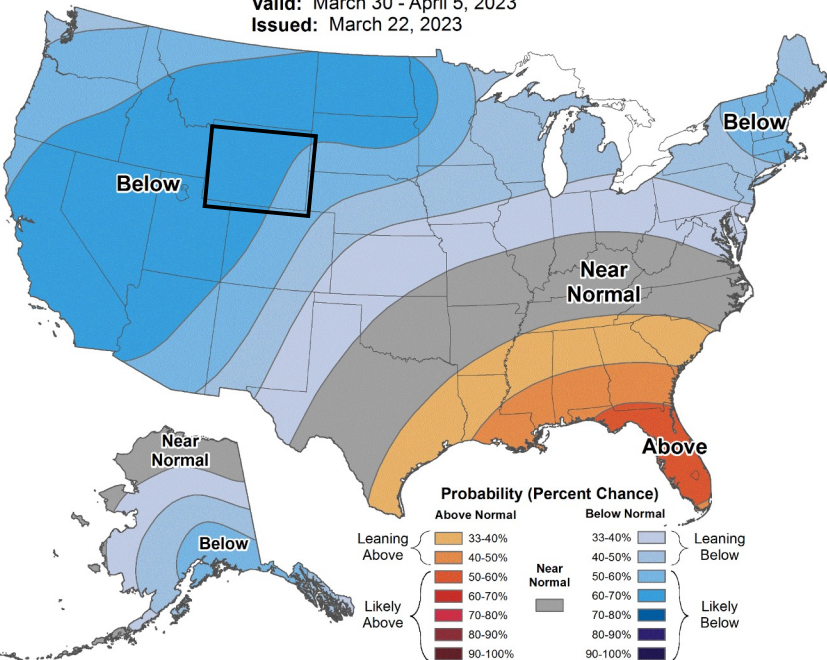
https://bit.ly/CPC8_14Day

March 30 - April 5

8-14 Day Temperature Outlook



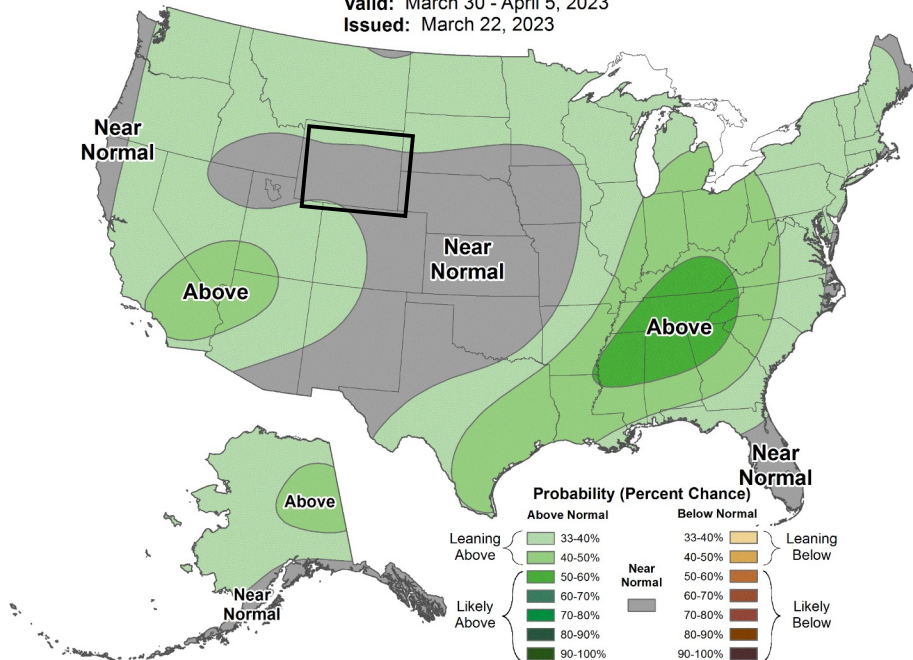
Valid: March 30 - April 5, 2023
Issued: March 22, 2023



8-14 Day Precipitation Outlook



Valid: March 30 - April 5, 2023
Issued: March 22, 2023



Favored likely colder than normal to continue for all of Wyoming.

Near normal precipitation for the majority of Wyoming.



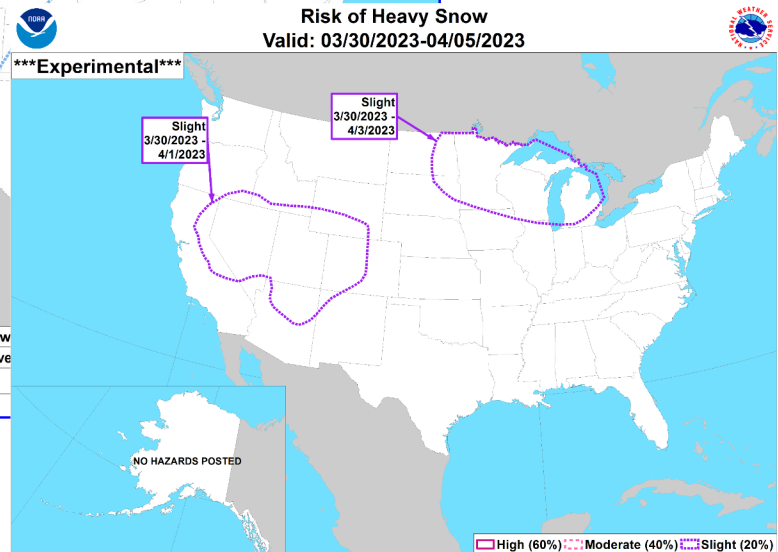
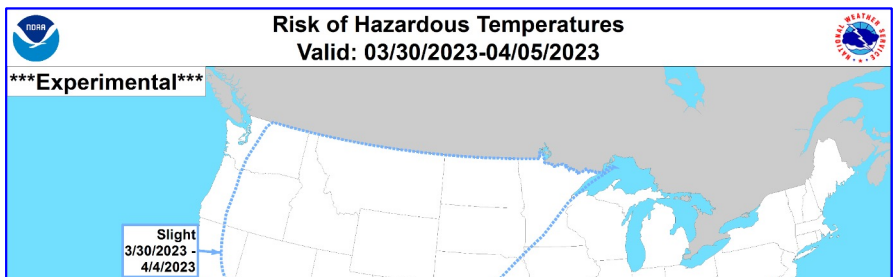
NWS Climate Prediction Center

8-14 Long Range Hazard Outlook

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

Risk & Confidence of cold temperatures is Slight across Wyoming through the beginning of April.

Risk of Heavy Snow amounts is Slight across southern Wyoming



Climate Prediction Center
Made: 03/22/2023 3PM EDT

Climate Prediction Center
Made: 03/22/2023 3PM EDT
Follow us:
www.cpc.ncep.noaa.gov



3-Month Temp & Precip Outlook

https://bit.ly/CPC_Seasonal

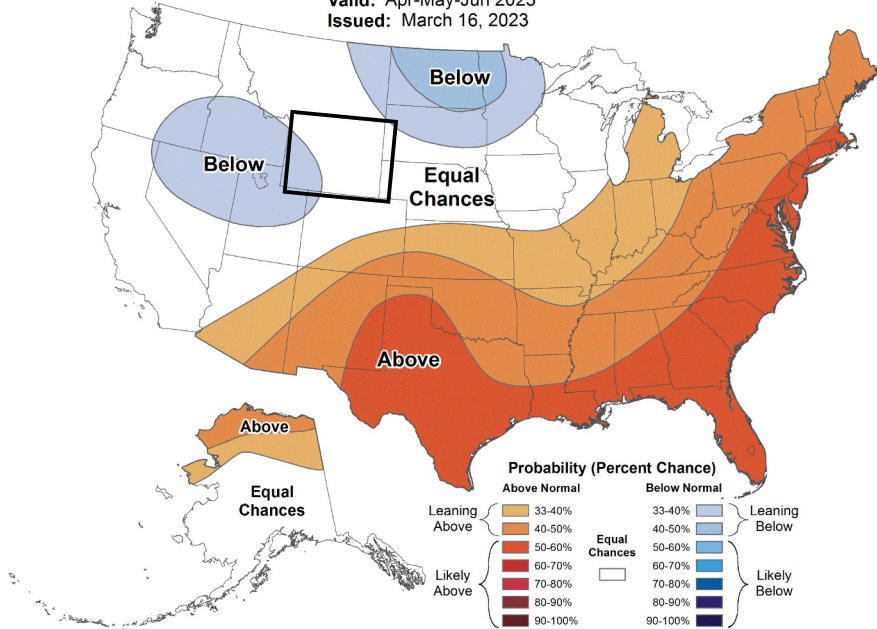
April - May - June 2023



Seasonal Temperature Outlook



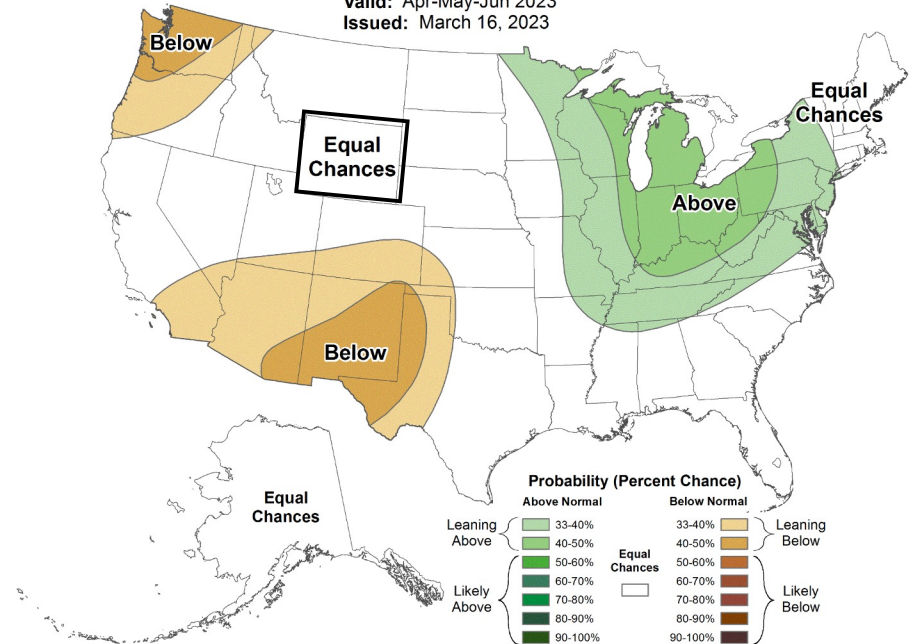
Valid: Apr-May-Jun 2023
Issued: March 16, 2023



Seasonal Precipitation Outlook



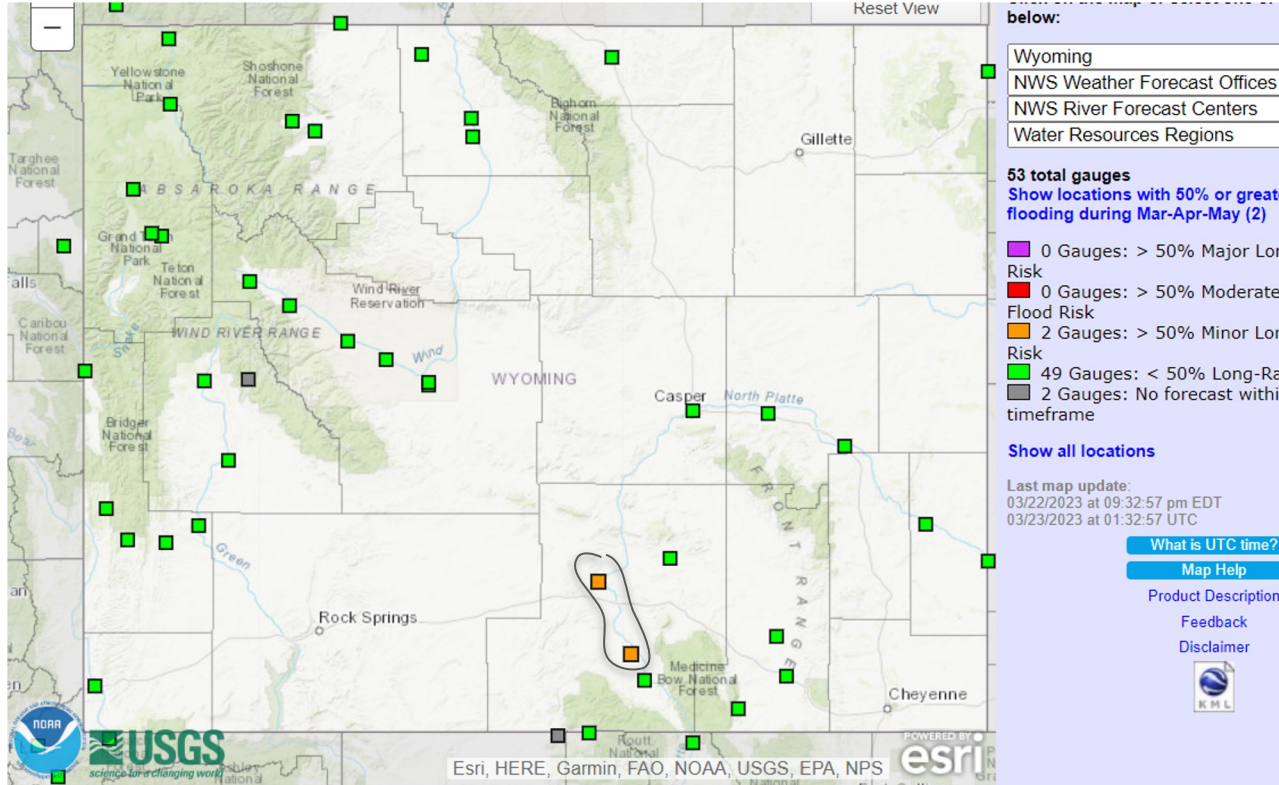
Valid: Apr-May-Jun 2023
Issued: March 16, 2023



Equal chances for most of WY =
climatology is the best forecast



National Weather Service April-May-June Flood Potential



Minor flooding likely along the North Platte River

Other rivers of some concern:

- Popo Agie
- Little Wind
- lower Laramie
- Snake
- Little Snake
- Bear

NOAA released U.S. Spring Outlook on 16 March



— BUREAU OF —
RECLAMATION



Highlight of the Month ...

CoCoRaHS

*The Community Collaborative Rain, Hail,
and Snow Network*

What is CoCoRaHS?

CoCoRaHS is a network of volunteer precipitation observers

Measuring precipitation in 50 States

...and Canada

...and the Bahamas

Largest provider of Daily Precipitation Observations in the country

CoCoRaHS was born in response to the Fort Collins, Colorado flood of 1997



STORM TOLL
Deaths - 5 confirmed
Injuries - 40
Missing - 16
Rescued - 160
Damages - Tens of millions of dollars at Colorado State University, \$1.5 million to \$2 million to city roads and bridges; \$1 million to city parks and trails; no estimate for private property.

Source: Emergency Officials
All information as of 1 a.m. today

Wednesday
City death toll at 5; damage in millions

July 30th 1997



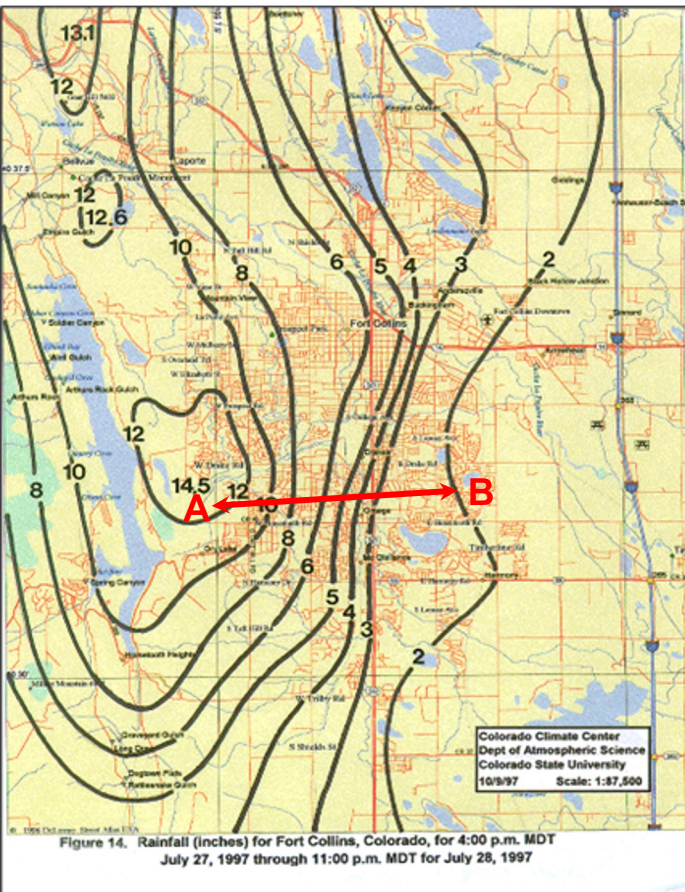
The flood pointed out:

1. The **extreme local variations** in rainfall possible from convective storms.
2. The important role **individuals can play** in measuring, mapping and reporting precipitation.

Distance between **A** and **B** = 5 miles

A = 14.5 inches

B = 2.0 inches

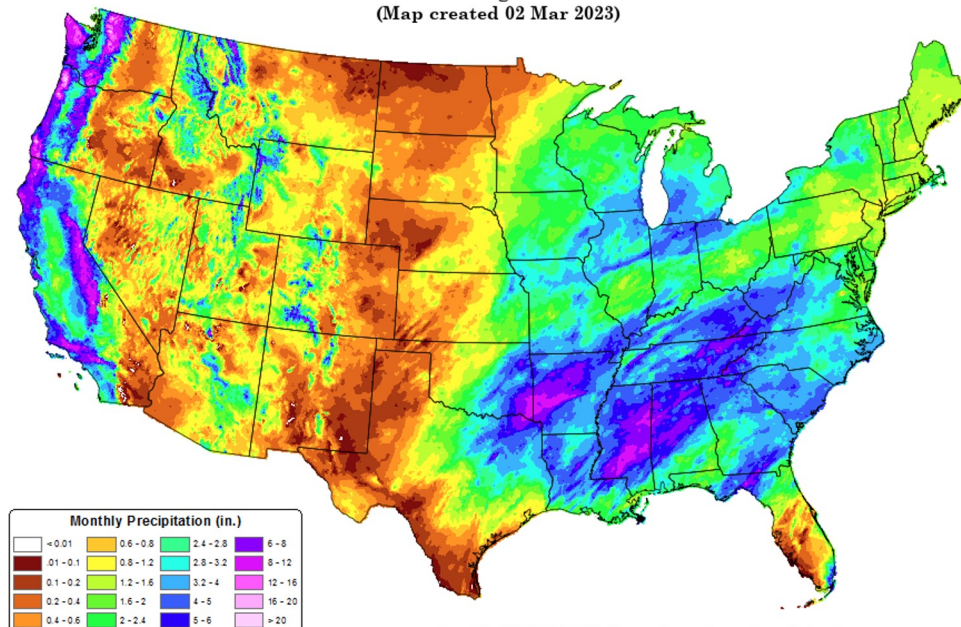


Why CoCoRaHS?



Henry Reges

Total Precipitation: Feb 2023
Period ending 28 Feb 2023
(Map created 02 Mar 2023)



Copyright (c) 2023, PRISM Climate Group, Oregon State University

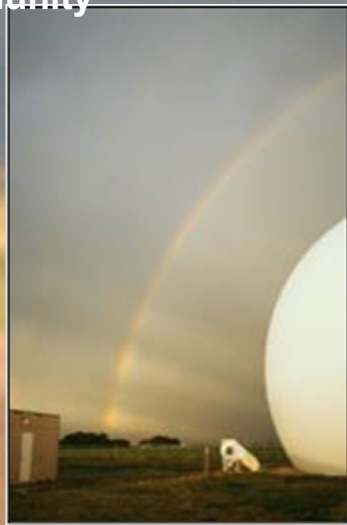
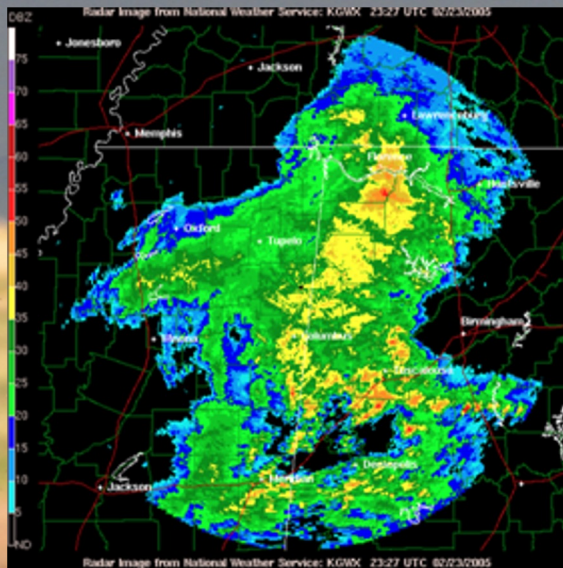
Precipitation varies considerably - both locally and nationally. Rain gauges are relatively far apart – CoCoRaHS is high density and starts to fill gaps

CoCoRaHS Data are used by many

- National Weather Service
- Other Meteorologists
- Hydrologists
- Emergency Managers
- City Utilities
 - Water supply
 - Water conservation
 - Storm water
- Insurance adjusters
- USDA—Crop production
- Engineers
- Scientists studying storms
- Mosquito control
- Ranchers and Farmers
- Outdoor & Recreation

• Teachers and Students

- ⇒ Geoscience education tool
- ⇒ Taking measurements
- ⇒ Analyzing data
- ⇒ Organizing results
- ⇒ Conducting research
- ⇒ Helping the community



Setting up your Gauge

COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
"Because every drop counts"

Welcome to CoCoRaHS! "Volunteers working together to measure precipitation across the nations."

CoCoRaHS March Madness 2023
March 1-31, 2023
How many new volunteers can you recruit in your state?

Reports received today 3/21/2023 as of 12:06 PM EDT	Daily	Multistep	Sip/WX	Hail	Condition	ET
	9,302	101	0	0	16	7

24-hour Precipitation Mar 21, 2023
4:30-9:30 am local obs time

- NA
- Zero
- Trace
- 0.00 - 0.04 in.
- 0.04 - 0.21 in.
- 0.21 - 0.44 in.
- 0.44 - 0.65 in.
- 0.63 - 0.84 in.
- 0.84 - 2.10 in.

COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
"Because every drop counts"

Become a CoCoRaHS Observer

Observer Information

First Name:
Last Name:
Home Phone:
Day Phone:
Email:
Confirm Email:

Postal Address

Address:
State: Alabama
County: Select County
City:
Zip:

Station Location Information

Station Information:

Location Description: (example: Gauge located at the 3rd house South of Fifth Ave on Vine.)

Same as Postal Address

Station Address

Address:
State: Alabama
County: Select County
City:
Zip:

Location Coordinates: (if available) in decimal degrees.

Latitude (40.5993):
Longitude (-105.1152):

Additional Information

How did you find out about CoCoRaHS?

Are you 18 years old or younger? Yes No

Age:
Parent or Guardian Name:
Grade:

Rain gauge
You will need a high capacity 4" diameter rain gauge to participate in this network.



Leaving it in the box ranks as one of the all-time least effective places to have it

cocorahs.org

Reporting your Precipitation

My Data Entry : Daily Precipitation Report Form

For observations spanning more than 24 hours, please use the [multiple day accumulation report](#). [Français](#)

Precipitation Report Form [Submit] [Reset]

Station Number : WY-AB-138

Station Name : Laramie 1.8 ENE
* Denotes Required Field

Observation Date : 3/16/2023

Observation Time : 7:00 AM

Gauge Catch: Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours, or T for trace, or NA for unknown.

Observation Notes: (This will be available to the public.)

24-hr Snowfall

NA in. **Snowfall:** Accumulation of new snow in inches to the nearest tenth

NA in. **Snowfall SWE:** Melted value from core to the nearest hundredth

Snowpack (Total Snow and Ice on Ground at Observation Time)

NA in. **Snowpack Depth:** Total snow and ice (new and old) in inches to the nearest half inch

NA in. **Snowpack SWE:** Melted value from core to the nearest hundredth

Duration Information

If a time is unknown or the storm has not ended leave it blank.

Precipitation Began [] AM PM

Precipitation Ended [] AM PM

Heaviest Precipitation Began [] AM PM

Heaviest Precipitation Lasted [] minutes

These times are: Select Time Accuracy []

Additional Information

Any Flooding? Select a Flooding Value []

Yes **Did you record hourly precipitation (or other detailed time increments) for this storm?** If yes, CoCoRaHS personnel may request a copy of this data later, so please save it.

No

[Submit Data] [Reset]

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How much precip in the gauge? Enter it.

Winter: Do NOT enter the amount of snow, enter the value after it is melted.

Allow it to melt naturally, measure it
Add hot water, melt it, subtract the melt
Weigh it.

Add comments if you like.

How much snow fell?

How much snow on the ground?

When did precipitation start? When did it stop?

Simple form. Your zero is pre-filled, just change it to the amount you read and submit it. Winter precipitation takes a bit more effort.

Reporting your Conditions

CoCoRaHS
COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
"Because every drop counts"

[Home](#) | [Countries](#) | [States](#) | [View Data](#) | [Maps](#) | [My Data](#) | [My Account](#) | [Admin](#) | [Logout](#)

My Data Entry : Condition Monitoring Report Form

Condition Monitoring Report Form
Submit Data Reset

Station Number : WY-AB-138
Station Name : Laramie 1.8 ENE

Condition monitoring reports are submitted on a regular (weekly, biweekly, monthly) basis to share information about the effects of local precipitation on the environment and society. By submitting reports on a regular basis, you create a baseline to see change through time, such as seasonal differences or changes caused by more or less precipitation. Please refer to the [Condition Monitoring training slide show](#) for more information.
** indicates required field*

Report Date *

Condition Scale Bar
More information on the scale bar
Clear Scale Bar

Severely Dry	Moderately Dry	Mildly Dry	Near Normal	Mildly Wet	Moderately Wet	Severely Wet
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

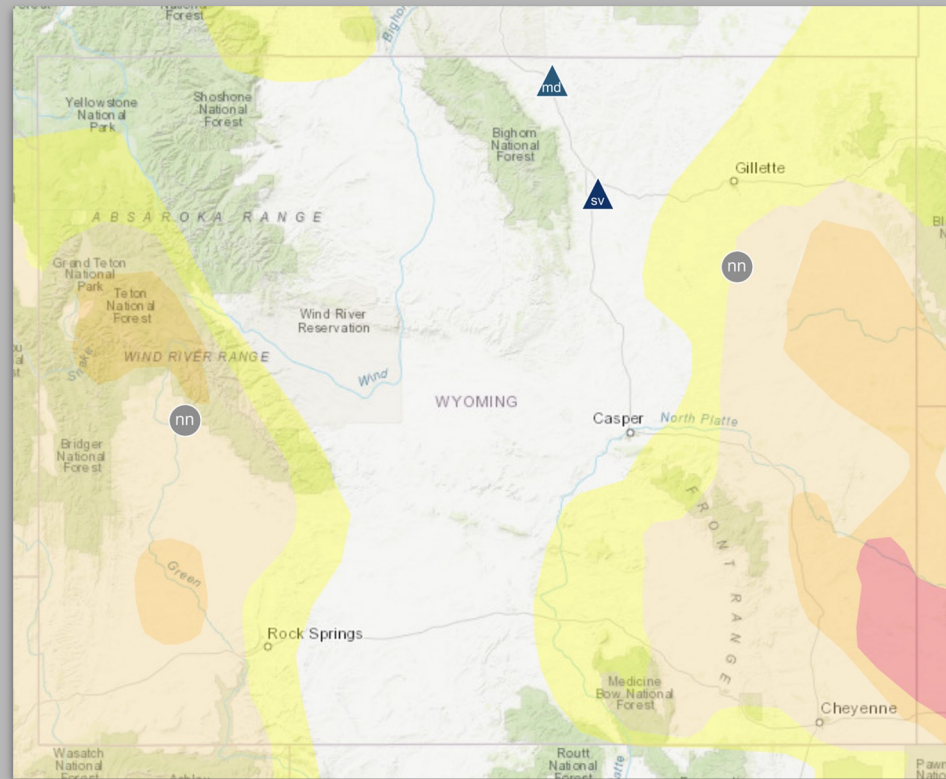
Description
 Please provide a description of how dry, normal or wet conditions are affecting you, your livelihood, your activities, etc. *

Report Categories
 Please check at least one report category. If you check a category, please provide supporting information in the description. [More information on condition monitoring categories.](#)

- General Awareness
- Agriculture
- Business & Industry
- Energy
- Fire
- Plants & Wildlife
- Relief, Response & Restrictions
- Society & Public Health
- Tourism & Recreation
- Water Supply & Quality

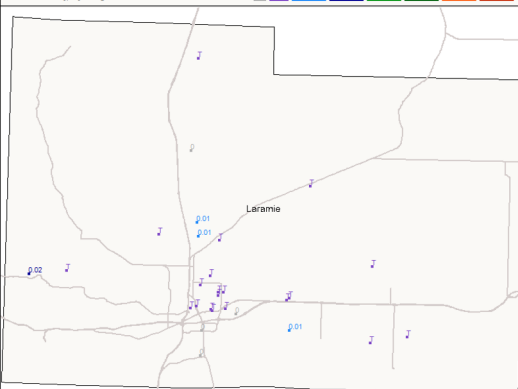
Submit Data Reset

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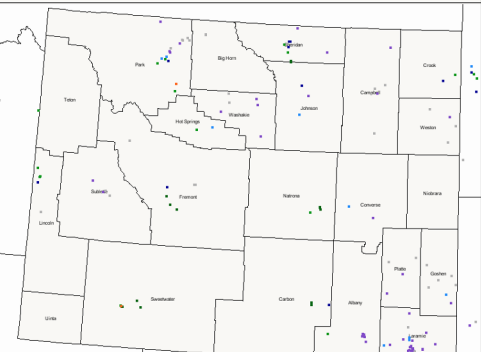


Viewing your (and others) Data

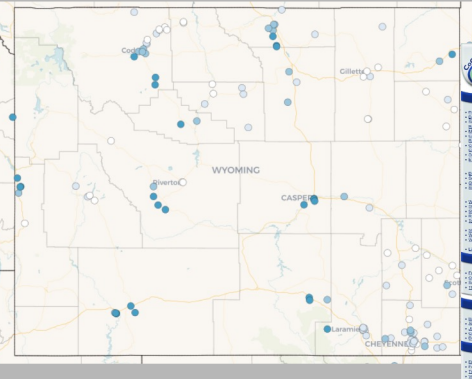
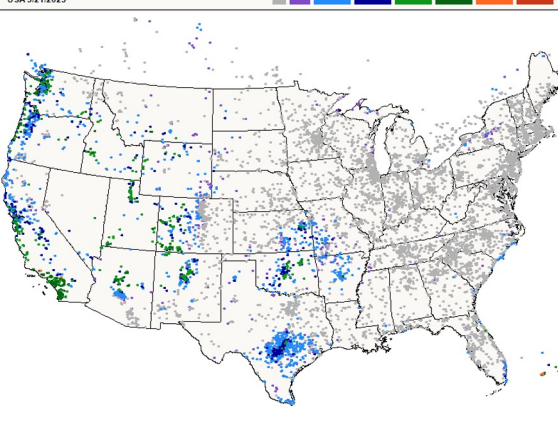
Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am
Laramie County Wyoming 3/16/2023



Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am
Wyoming 3/16/2023



Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am
USA 3/16/2023



COMMUNITY COLLABORATIVE RAIN, HAIL, & SNOW NETWORK

View Data - List Daily Precipitation Reports

Search Daily Precipitation Reports

Location: USA | Station Name: ALL COCORAHS | State Name: ALL STATES

Start Date: 3/16/2023 | End Date: 3/16/2023

Precip Value: All Fields | Operator: []

Showing 1 - 10 of 133 Records.

TIME	Obs	Station	Station Name	Station Elev	Obs	Stat	Stat	Stat	Stat	Stat	Stat	Stat	Stat	Stat	Stat	Stat	Stat	Stat
3/16/2023 1:43 AM	WV-LM47	Cheyenne 6.03	Cheyenne 6.03	5,300	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 6:00 AM	WV-LM46	Cheyenne 20.04C	Cheyenne 20.04C	5,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 6:00 AM	WV-LM45	Cheyenne 10.100F	Cheyenne 10.100F	5,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 6:00 AM	WV-LM42	Presidio 1.03 NW	Presidio 1.03 NW	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 6:00 AM	WV-LM41	Hot Springs 1.13 S	Hot Springs 1.13 S	5,700	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 6:00 AM	WV-LM40	Newcastle 3.03	Newcastle 3.03	5,000	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 6:00 AM	WV-LM39	Deer Creek 1.03 NW	Deer Creek 1.03 NW	5,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 6:00 AM	WV-LM38	Centerville 1.10 NW	Centerville 1.10 NW	5,300	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM37	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM36	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM35	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM34	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM33	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM32	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM31	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM30	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM29	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM28	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM27	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM26	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM25	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM24	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM23	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM22	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM21	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM20	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM19	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM18	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM17	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM16	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM15	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM14	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM13	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM12	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM11	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM10	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM09	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM08	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM07	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM06	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM05	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM04	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM03	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM02	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/16/2023 7:00 AM	WV-LM01	Laramie 1.03 C	Laramie 1.03 C	7,100	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Showing 1 - 10 of 133 Records.

Viewing your (and others) Data

STATION LIST
OVERVIEW
CHARTS
DAYS IN WATER YEAR
DAILY PRECIP OBS
MULTIDAY PRECIP OBS
HAIL OBS

Station Overview

Station Number: WY-FM-21
 Station Name: Lander 5.7 SW
 Elevation: 6088 ft.

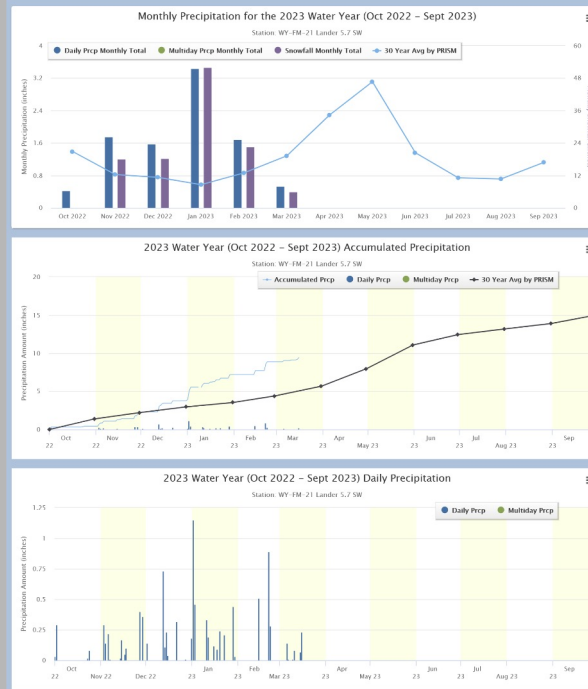
[Download as Excel File](#)

Station Location

County: Fremont, WY
 Latitude: 42.762989
 Longitude: -108.793333

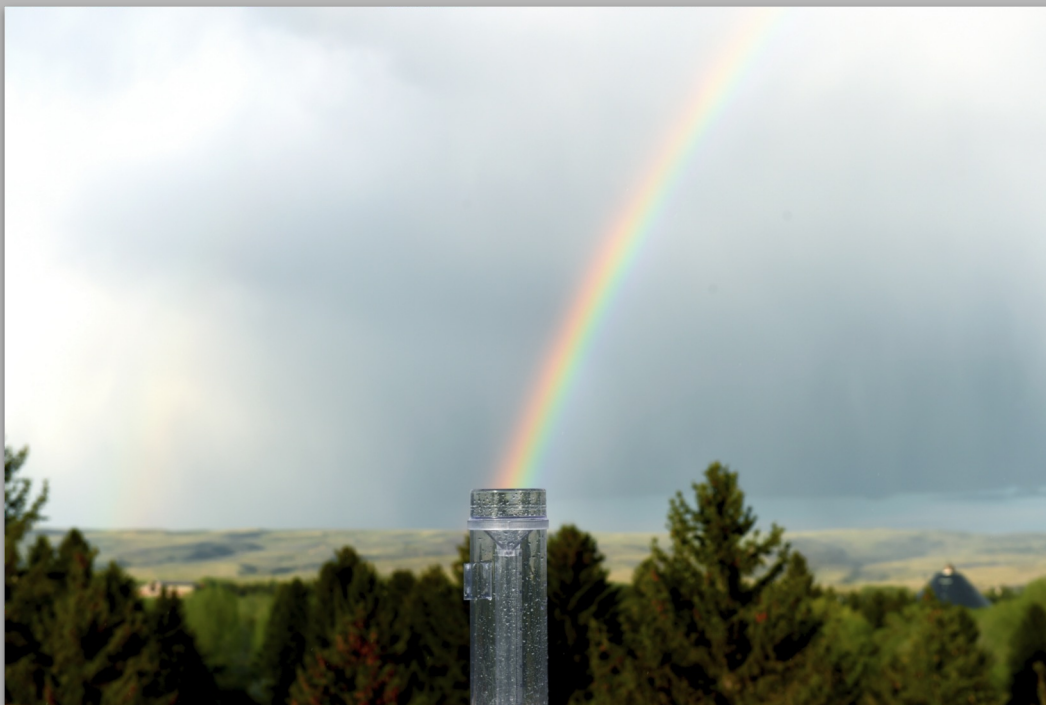
Water Year Overview

Year-Month	30 Yr Avg by PRISM	Total Precip Sum	Days Covered by All Obs	Daily Precip Sum	Daily Precip Count	Multiday Precip Sum	Days Covered by Multiday Obs	Multiday Precip Count	Days with Precip	Days with Trace	Total Snow
Oct 2022	1.39	0.42	31	0.42	31	0.00	0	0	4	0	
Nov 2022	0.82	1.76	30	1.76	30	0.00	0	0	10	5	1
Dec 2022	0.75	1.58	31	1.58	31	0.00	0	0	7	1	1
Jan 2023	0.57	3.44	30	3.44	30	0.00	0	0	11	1	5
Feb 2023	0.86	1.68	28	1.68	28	0.00	0	0	3	2	2
March 2023	1.28	0.54	16	0.54	16	0.00	0	0	6	1	
April 2023	2.29	0.00	0	0.00	0	0.00	0	0	0	0	
May 2023	3.11	0.00	0	0.00	0	0.00	0	0	0	0	
June 2023	1.36	0.00	0	0.00	0	0.00	0	0	0	0	
July 2023	0.74	0.00	0	0.00	0	0.00	0	0	0	0	
Aug 2023	0.71	0.00	0	0.00	0	0.00	0	0	0	0	
Sept 2023	1.12	0.00	0	0.00	0	0.00	0	0	0	0	
Totals:	15.00	9.42	166	9.42	166	0.00	0	0	41	10	11



Tables, downloadable spreadsheets, charts, comparison to PRISM normals, and more.

Help Us - Join CoCoRaHS



cocorahs.org

See your data on the map. Compare your data to PRISM



— BUREAU OF —
RECLAMATION



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Get Involved!

Submit a [Condition Monitoring Observer Report](#)



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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>

Thank you! Questions?