



— BUREAU OF —
RECLAMATION



WY Conditions & Outlooks:

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

April 20, 2023

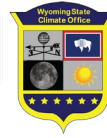


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Presentation Outline

- **Current Conditions:** Overview
 - SWE
 - Streamflow
 - Reservoir Supply
- **Outlooks:** Temperature & Precipitation
 - Flood Potential
- **Highlight of the Month**
 - Grass-Cast
- **Questions**



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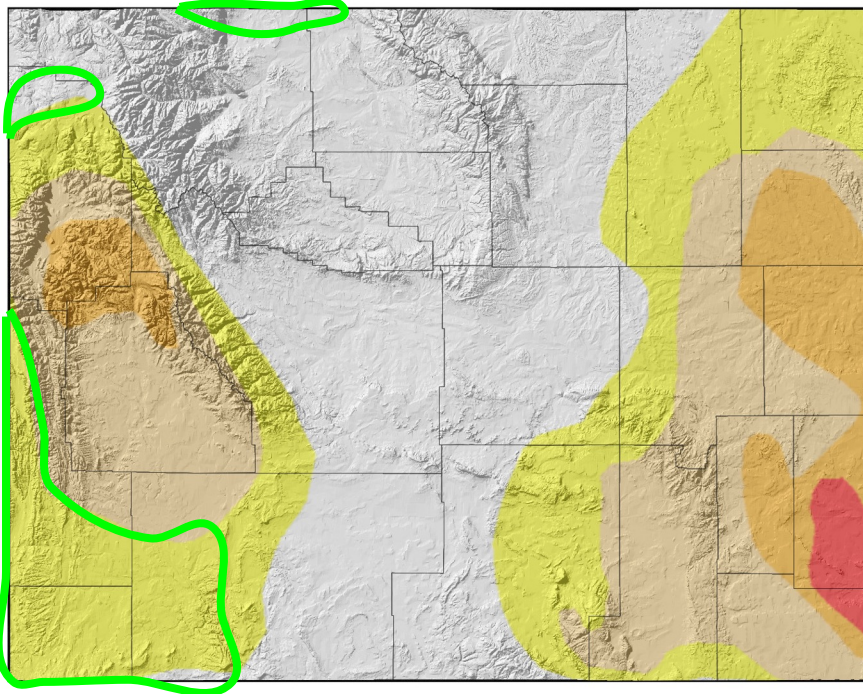
Current Conditions

US Drought Monitor for April 18, 2023

(Released Thursday, April 20, 2023)

Valid 8 a.m. EDT

US Drought Monitor for 18 Apr 2023



US Drought Monitor	
24.16%	D0 Abnormally Dry
22.38%	D1 Moderate Drought
7.64%	D2 Severe Drought
1.28%	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>

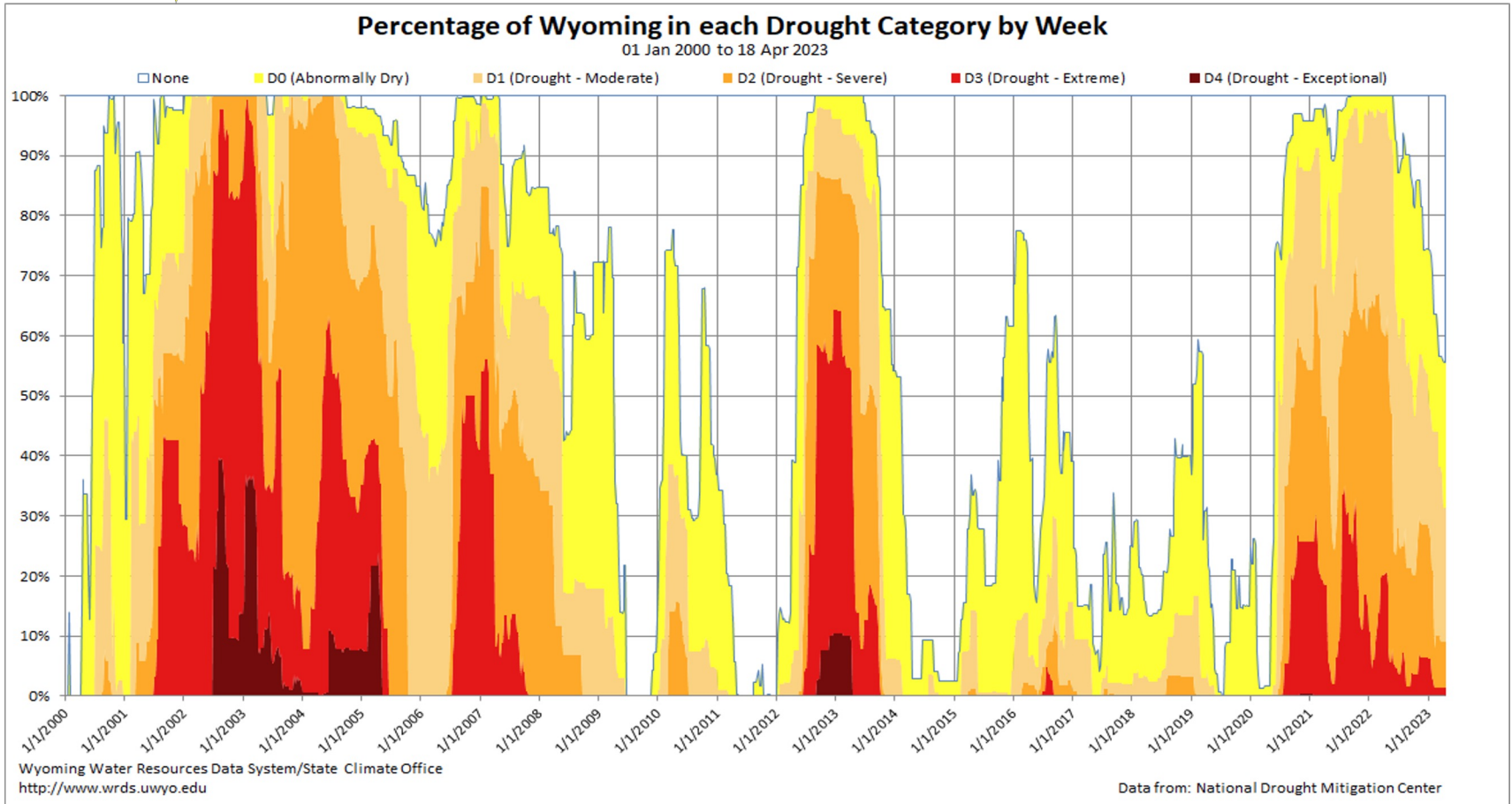
Map Layout Created 20 Apr 2023 <http://www.wrds.uwyo.edu>

<https://droughtmonitor.unl.edu>



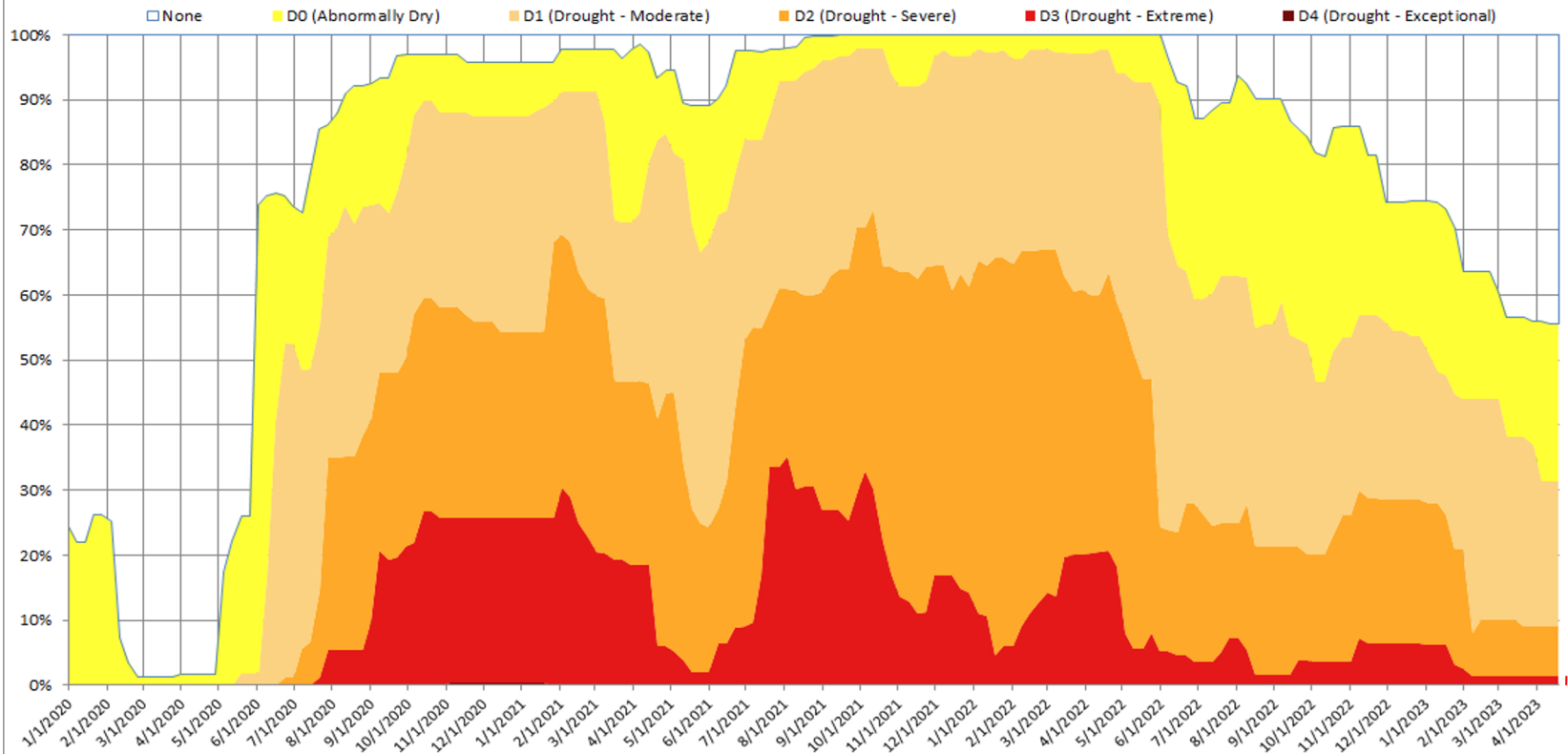
droughtmonitor.unl.edu

Wyoming Area Affected: 55.46% D0-D4 ; 31.3% D1-D4



Percentage of Wyoming in each Drought Category by Week

01 Jan 2020 to 18 Apr 2023



44.54%

1.28%

14-Day Precipitation Percentile (06 Apr 2023 to 19 Apr 2023)

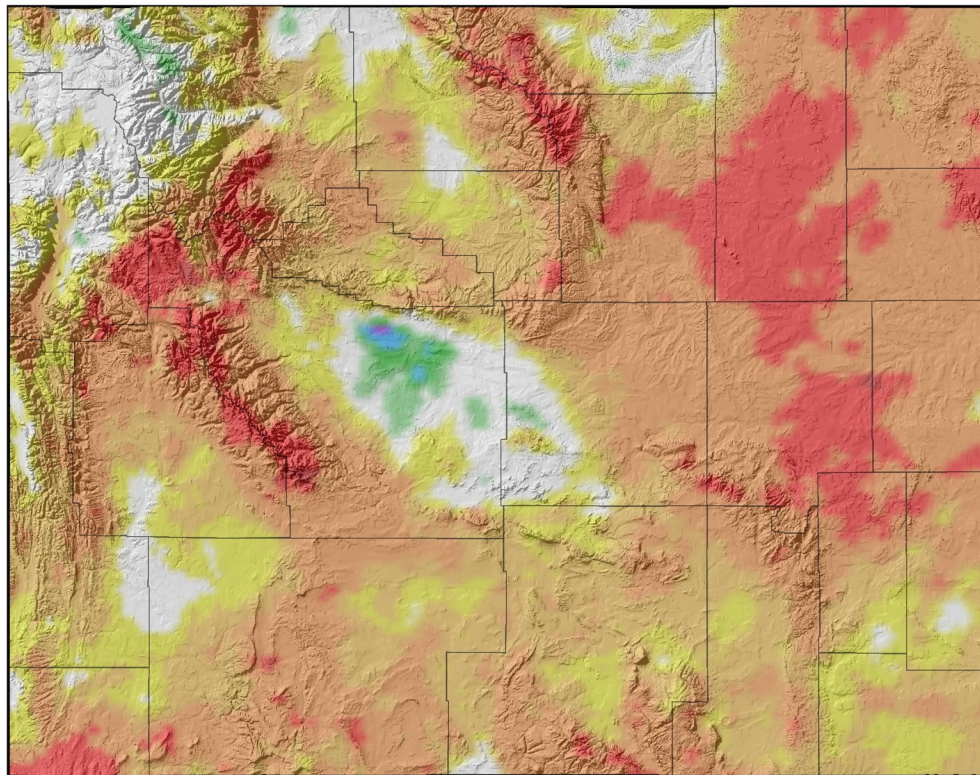
14-Day Precipitation (Percentile) for 06 Apr 2023 to 19 Apr 2023

Above Median:

- Central Wind Basin

Below Median (Areas of Concern):

- Teton, Sublette, Fremont Nexus
- North Central/East
- South Central
- Southwest



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)

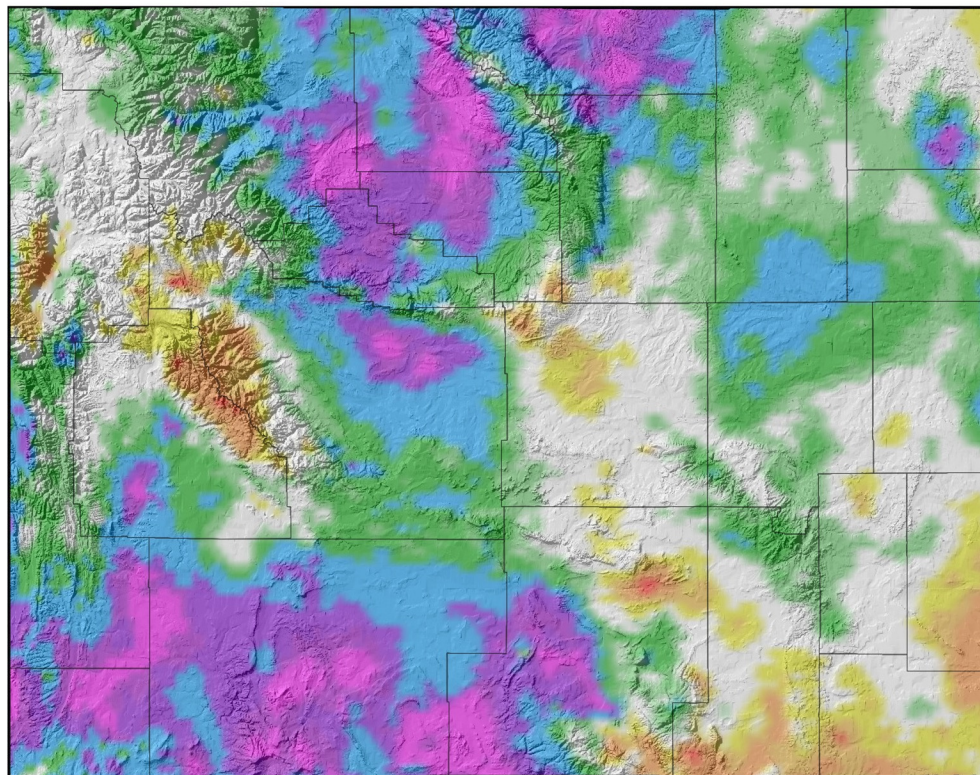
90-Day Precipitation (Percentile) for 20 Jan 2023 to 19 Apr 2023

Above Median:

- Much of Wyoming

Below Median (Areas of Concern):

- Northern Winds
- Tetons
- Southern Bighorns
- Southeast



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

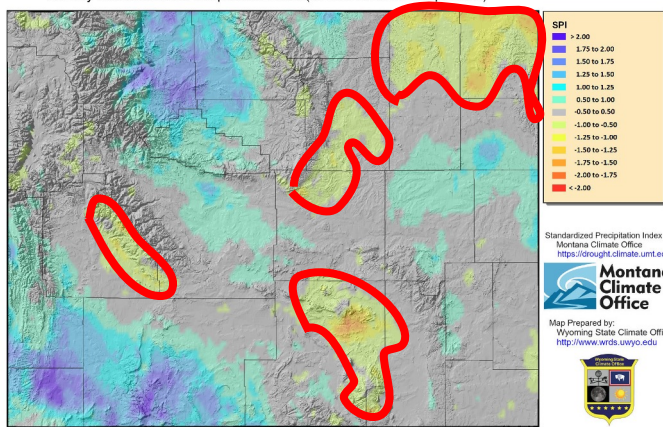


Map Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



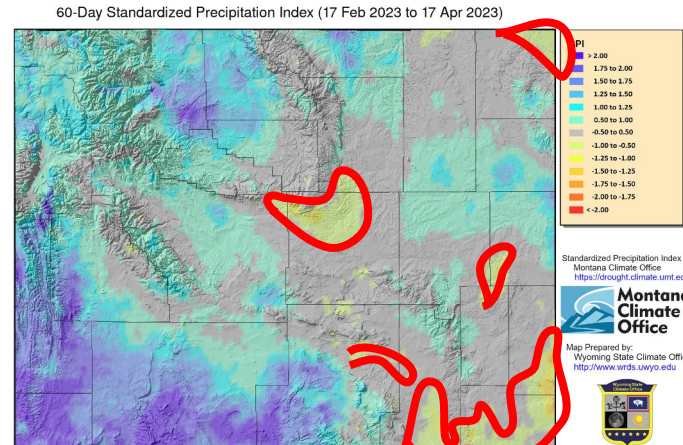
Provisional data, subject to revision

30-Day
→
March 19 -
April 17



Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 19 Apr 2023 <http://www.wrds.uwyo.edu>

60-Day
→
Feb 17 -
April 17



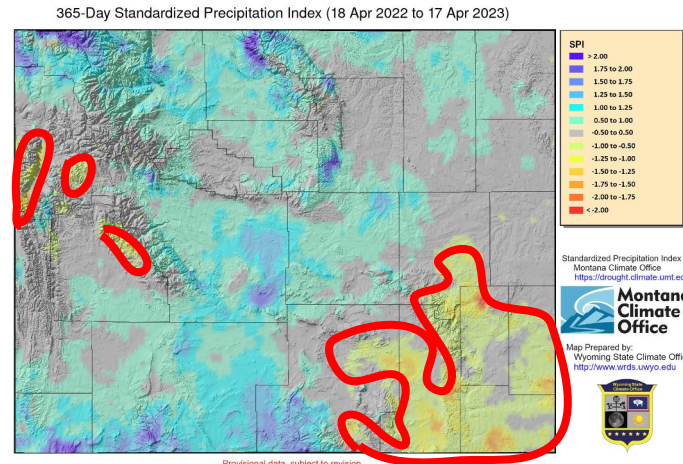
Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 19 Apr 2023 <http://www.wrds.uwyo.edu>

Standardized Precipitation Index (SPI)

Short term: Northeast, Carbon/Johnson Counties (and surrounding), Western Winds. Bighorn Basin, Southwest

Long term: Southeast, central, much of north Areas of Winds/Tetons, Southeast

1-Year
→

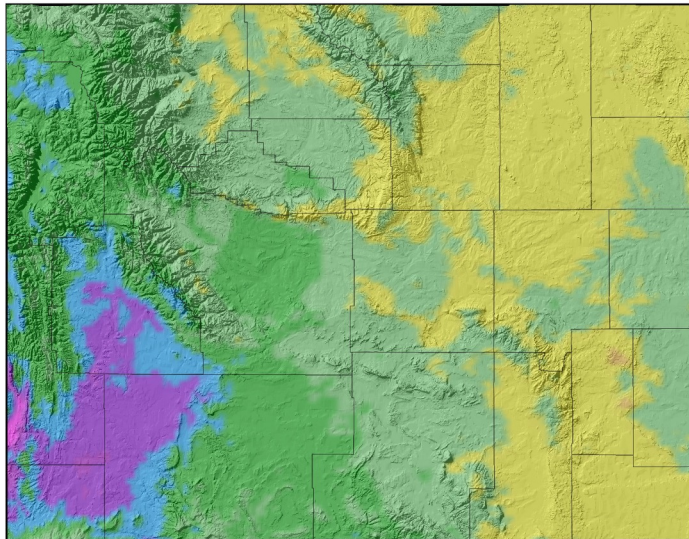


Standardized Precipitation Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 19 Apr 2023 <http://www.wrds.uwyo.edu>

14-Day Average **Minimum** Temperature (06 Apr to 19 Apr)

- Average minimums mostly still below freezing
- Western Quarter of State: 0-15F
- Highest average lows just over the freezing mark

14-Day Average Minimum Temperature (Departure from 1991-2020 Average) for 06 Apr 2023 to 19 Apr 2023



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

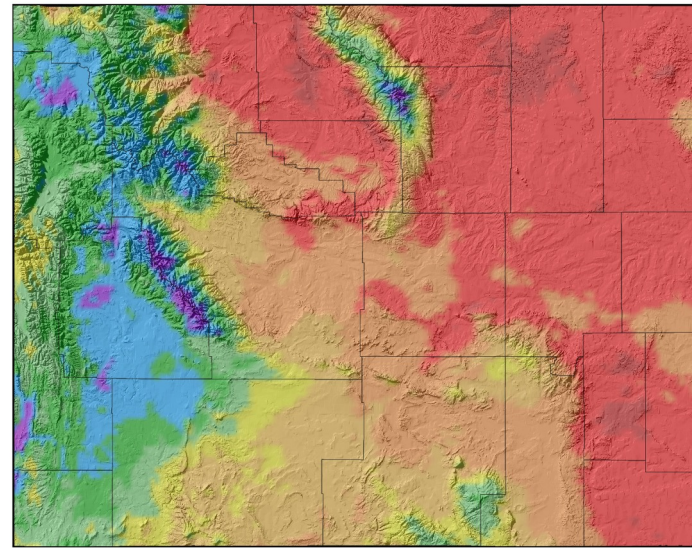


Map Prepared by:
Wyoming State Climate Office
<http://www.wrds.uwyo.edu>



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



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

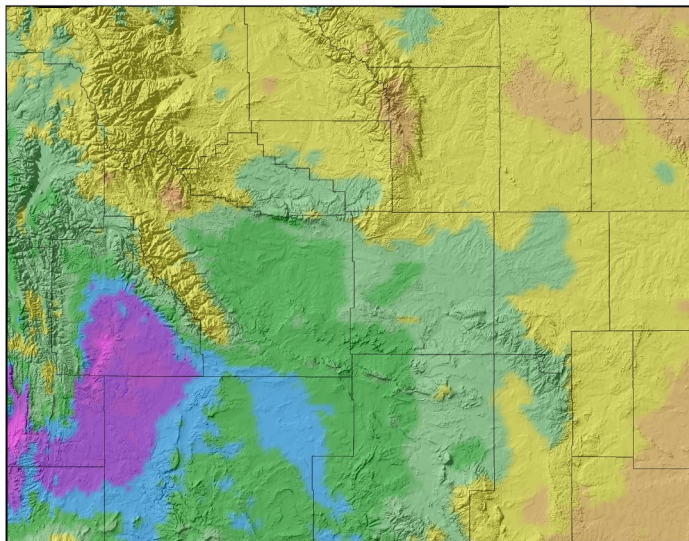
14-Day **Departure from Normal** Average **Minimum** Temperature

- Below average except some eastern areas and northern Bighorn Basin
- Green, Bear 5-15F below average
- Rest west of Divide 3-6F below average
- Rest east of Divide 0-3F below average

14-Day Average **Maximum** Temperature (06 Apr to 19 Apr)

- Highs >32F (even if just barely)
- East/BH warm, Upper Green & High Elev, coolest

14-Day Average Maximum Temperature (Departure from 1991-2020 Average) for 06 Apr 2023 to 19 Apr 2023



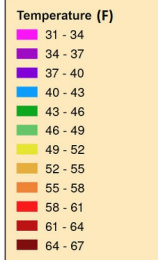
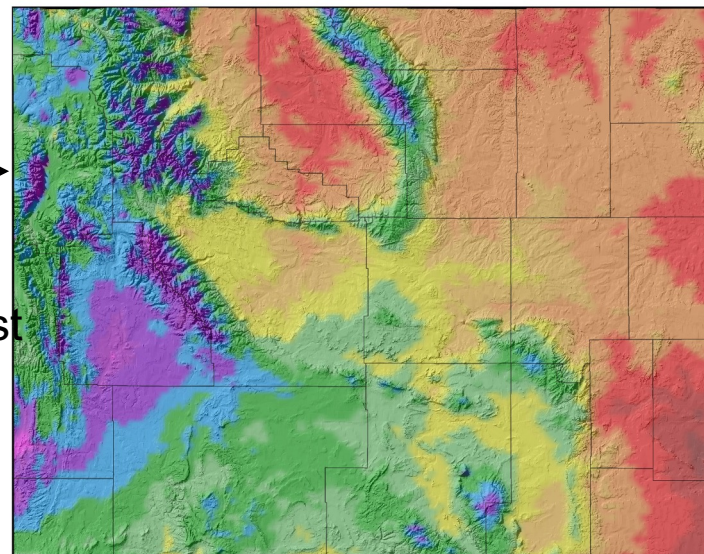
Temperature Data
PRISM Climate Group
<http://prism.oregonstate.edu>



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



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



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Map Created 20 Apr 2023 <http://www.wrds.uwyo.edu>
Temperature averages created from PRISM daily tempWYerature grids

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

- Southwest 5-15F below average
- Rest of SW quarter 3-6F below average
- North and east 0-3F above average except far NE/SE up to 6F above average

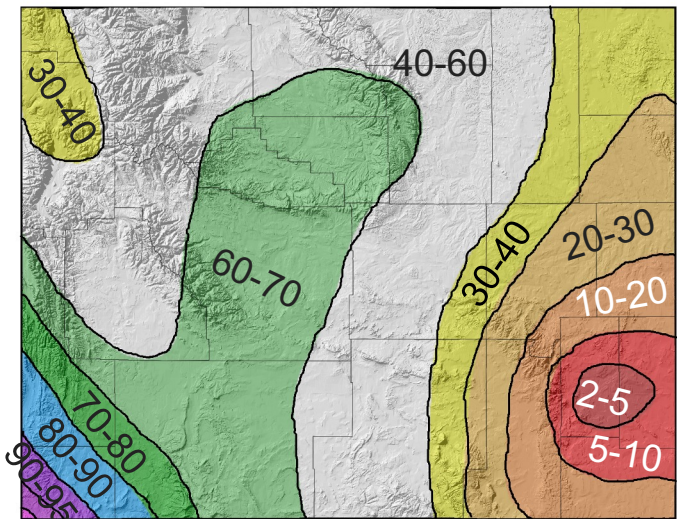
Soil Moisture Percentile

Two Weeks Ago

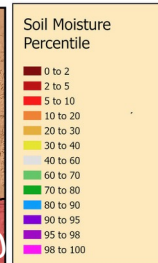
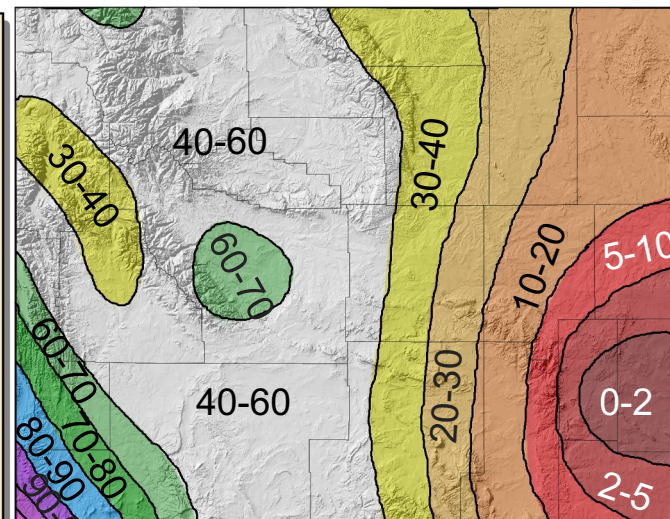
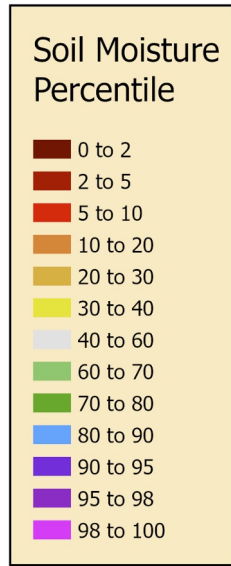
19 April 2023

Soil Moisture Percentile for 06 Apr 2023

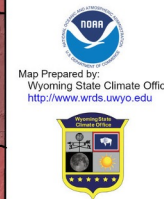
60-70 Soil Moisture Percentile for 19 Apr 2023



Soil Moisture Percentile
Climate Prediction Center



Soil Moisture Percentile
Climate Prediction Center



Provisional data, subject to revision

Provisional data, subject to revision

Modeled Soil Moisture Percentile https://www.cpc.ncep.noaa.gov/products/GIS/GIS_DATA/USDM_Products/soil_soil_percentile.php
Map Created 07 Apr 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 20 Apr 2023 <http://www.wrds.uwyo.edu>

98-100

Improvement in northwest, but

Worsening in east and central

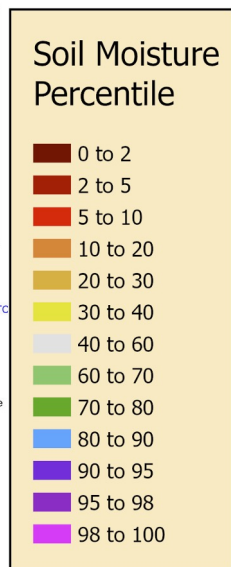
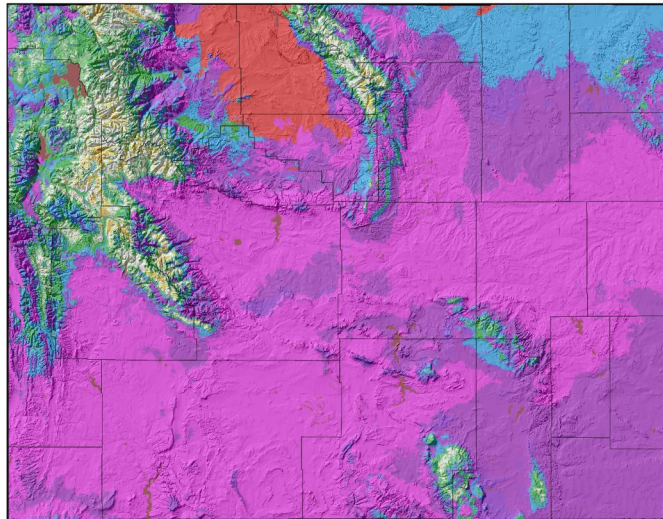
Snow

Two Weeks Ago

April 20, 2022

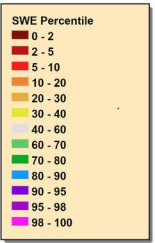
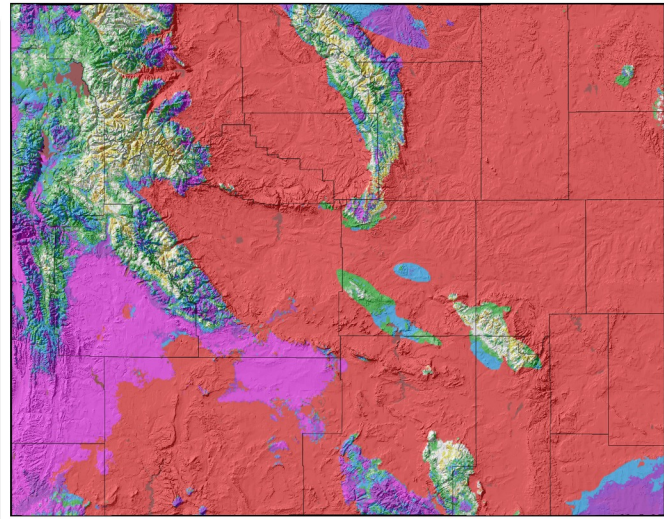
Snow Water Equivalent Percentile for 06 Apr 2023 (2004-2021 Period)

Snow Water Equivalent Percentile for 20 Apr 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>



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

Map Prepared by:
Wyoming State Climate Office
<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 06 Apr 2023 - <http://www.wrds.uwyo.edu>

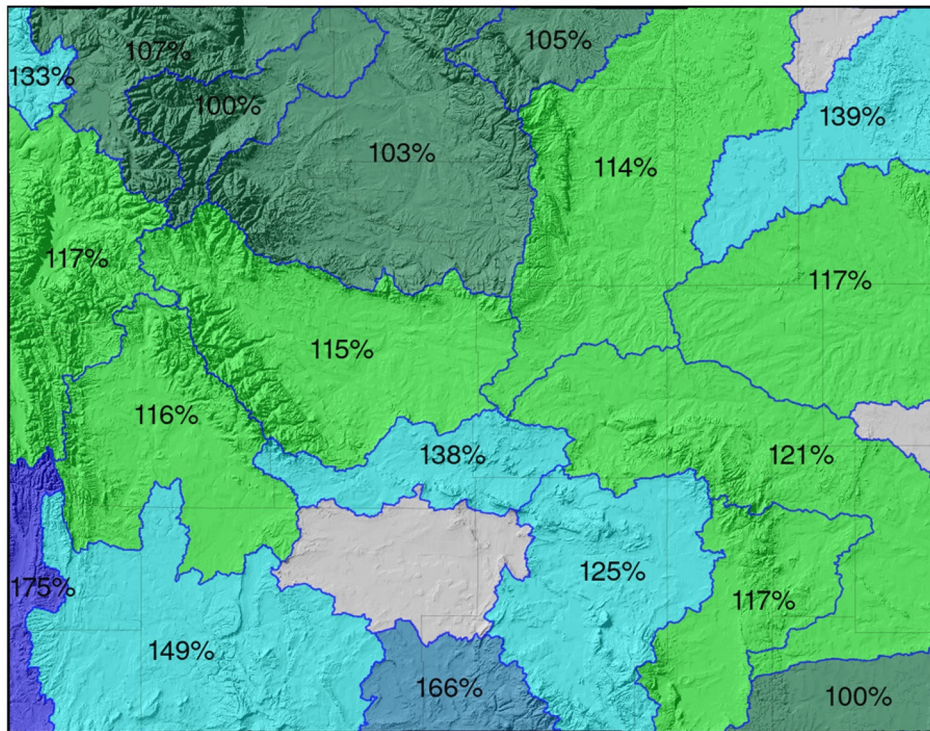
Modeled Snow Water Equivalent from National Operational Hydrologic Remote Sensing Center. 2004. Snow Data Assimilation System (SNODAS) Data Products at NSIDC, Version 1. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center.
doi: <https://doi.org/10.7265/N5TB14TC>
Daily Percentiles and Percents created by Wyoming State Climate Office
Map Created 20 Apr 2023 - <http://www.wrds.uwyo.edu>

Losses everywhere as the melt-out progresses.

Snow

April 20, 2023

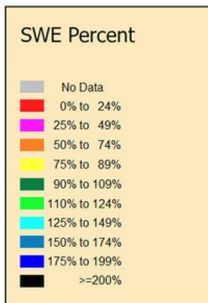
Snow Water Equivalent Percent of Median (1991-2020) 20 Apr 2023



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 20 Apr 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.



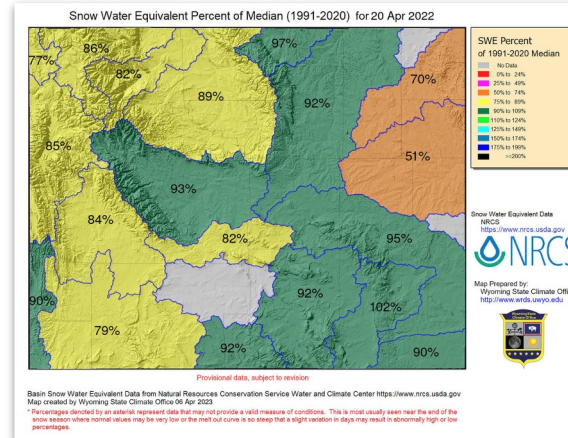
Snow Water Equivalent Data
NRCS
<https://www.nrcs.usda.gov>



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

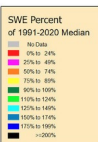


April 20, 2022



Provisional data, subject to revision

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Map Prepared by:
Wyoming State Climate Office
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Snow

April 20, 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	09 Apr 2023	6.0	11	-1.2	83%	29 Mar IMG	7.2 IMG	2.9	26 Apr IMG
Tongue	09 Apr 2023	12.8	-23	-0.6	96%	02 May IMG	13.4 IMG	11.6	09 Jun IMG
Shoshone	09 Apr 2023	18.1	-15	0.0	100%	24 Apr IMG	18.1 IMG	17.7	29 Jun IMG
Bighorn	09 Apr 2023	12.0	-16	0.3	103%	25 Apr IMG	11.7 IMG	11.2	19 Jun IMG
Laramie	08 Apr 2023	17.3	-11	1.4	109%	19 Apr IMG	15.9 IMG	14.9	12 Jun IMG
Powder	08 Apr 2023	11.6	-9	1.0	109%	17 Apr IMG	10.6 IMG	10.2	08 Jun IMG
Wind	08 Apr 2023	15.6	-14	1.6	111%	22 Apr IMG	14.0 IMG	14.8	25 Jun IMG
Yellowstone	20 Apr 2023	23.6	-4	2.4	111%	24 Apr IMG	21.2 IMG	23.6	02 Jul IMG
Upper Green	08 Apr 2023	18.2	-5	2.2	114%	13 Apr IMG	16.0 IMG	17.4	18 Jun IMG
Lower North Platte	09 Apr 2023	14.7	-6	1.9	115%	15 Apr IMG	12.8 IMG	13.2	29 May IMG
Upper North Platte	09 Apr 2023	29.2	-7	4.8	120%	16 Apr IMG	24.4 IMG	28.0	26 Jun IMG
Cheyenne	07 Apr 2023	9.2	5	1.7	123%	02 Apr IMG	7.5 IMG	4.9	30 Apr IMG
Snake	08 Apr 2023	25.5	-4	4.9	124%	12 Apr IMG	20.6 IMG	25.3	28 Jun IMG
Madison	09 Apr 2023	29.4	-6	5.6	124%	15 Apr IMG	23.8 IMG	28.5	24 Jun IMG
Sweetwater	08 Apr 2023	19.8	-10	4.8	132%	18 Apr IMG	15.0 IMG	18.5	05 Jun IMG
Lower Green	09 Apr 2023	18.4	0	4.8	135%	09 Apr IMG	13.6 IMG	16.9	12 Jun IMG
Belle Fourche	07 Apr 2023	9.5	5	2.6	138%	02 Apr IMG	6.9 IMG	5.1	30 Apr IMG
Upper Bear	09 Apr 2023	25.9	-3	9.3	156%	12 Apr IMG	16.6 IMG	24.8	15 Jun IMG
Little Snake	09 Apr 2023	32.1	3	11.6	157%	06 Apr IMG	20.5 IMG	29.0	19 Jun IMG

Data from Natural Resources Conservation Service SnoTel Network

Good-Bye La Niña...Hello El Niño?

- Dec-Feb Saw the end of La Niña
- For the period Jan-Mar the index rose to -0.4, which is above the threshold of -0.5 for La Niña conditions
- ENSO Neutral...for now

But...62% chance that by May-Jul period we will be in weak El Niño

El Niño summers (May-Sep) in Wyoming (your mileage may vary, i.e., not all El Niño events are equal)

Normal temperatures with slight tendency to below normal

Above normal precipitation

El Niño winters (Nov-Mar) in Wyoming (see caveat above)

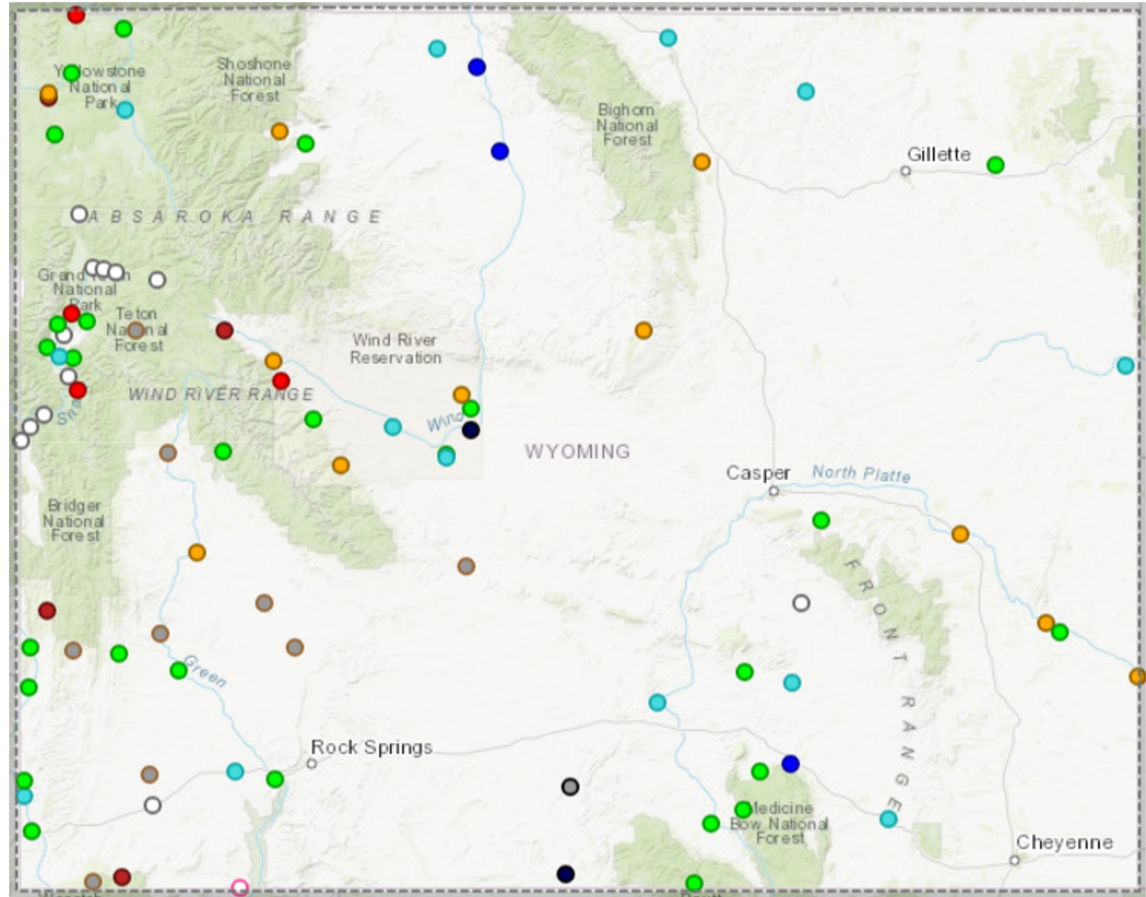
Above normal temperatures especially the farther north one goes

Stronger episodes sometimes see a bit less than normal precip in the west

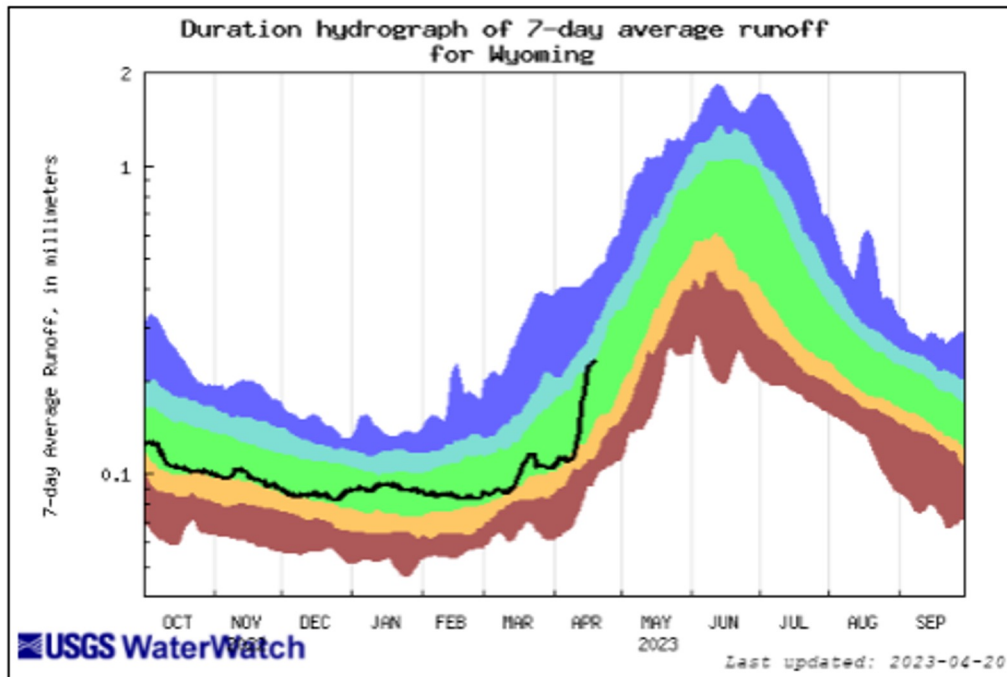
Streamflow Status







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



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

Spring Streamflows

- Most sites out of ice-affect (grey)
- Some sites fed by low-elevation snow melt are higher.
- The mid to high elevation snowpack that supplies most of the annual volume of water has not melted.

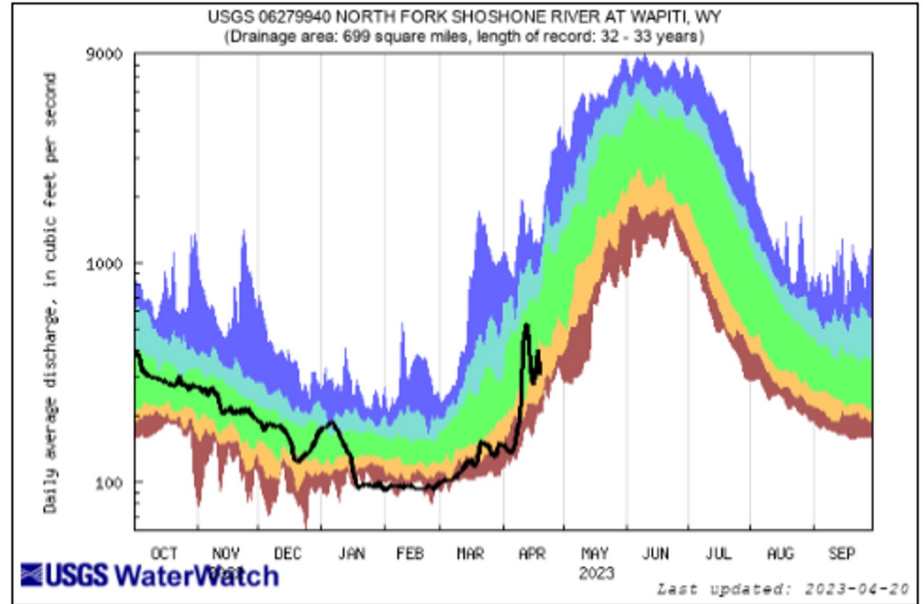
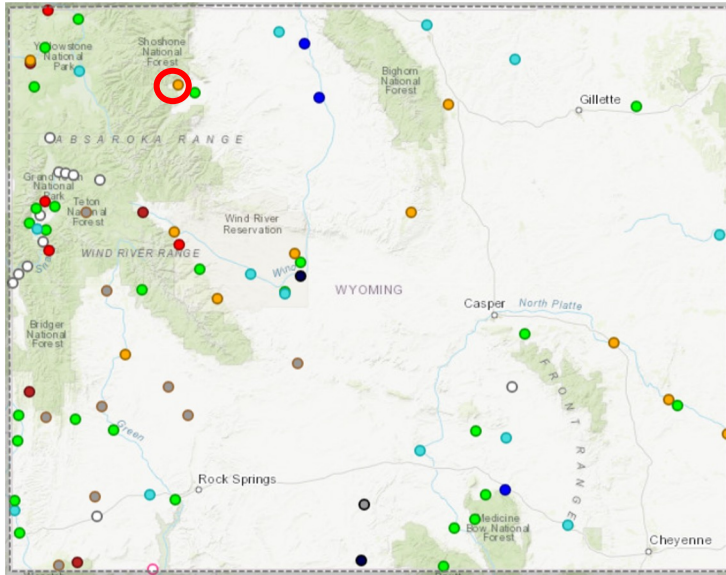
<https://dashboard.waterdata.usgs.gov/>

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

North Fork Shoshone River, WY

Last updated Apr 20, 2023

Select WY Streamflows



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

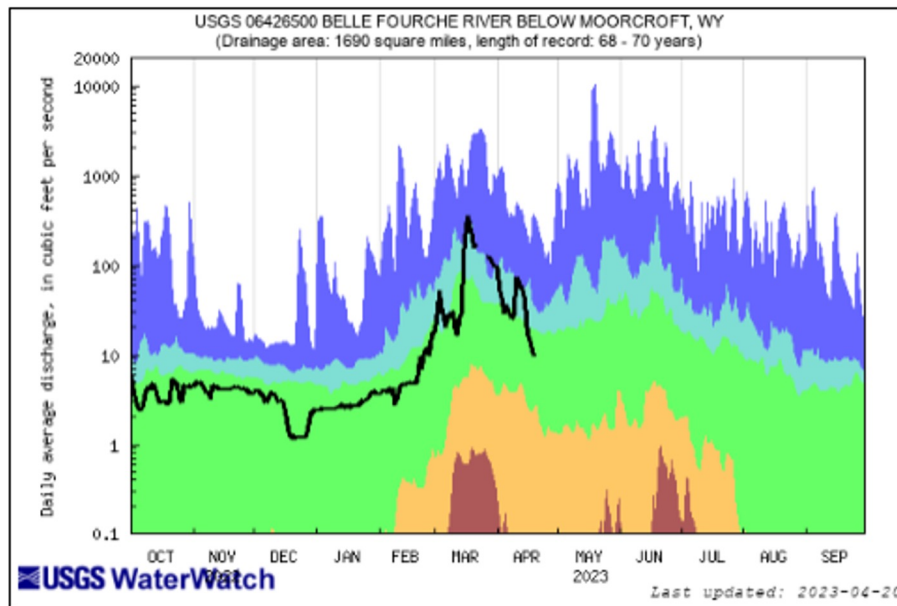
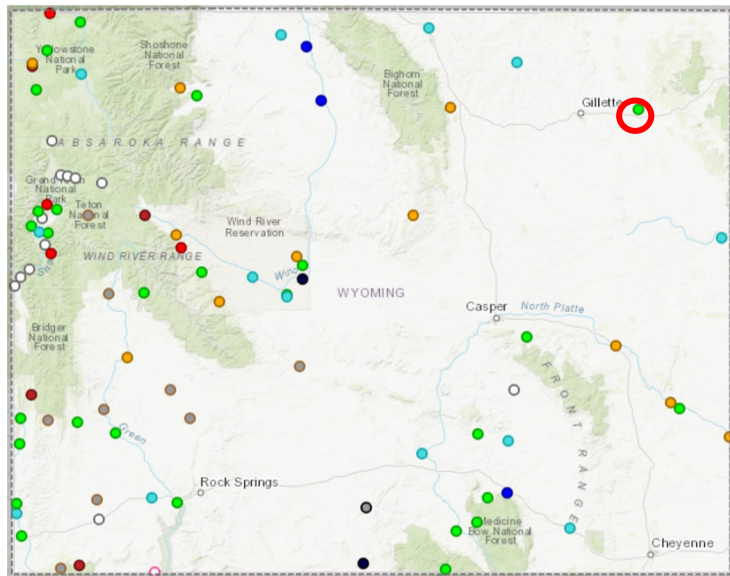
<https://waterdata.usgs.gov/>

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

Belle Fourche below Moorcroft, WY

Last updated Apr 20, 2023

Select WY Streamflows



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

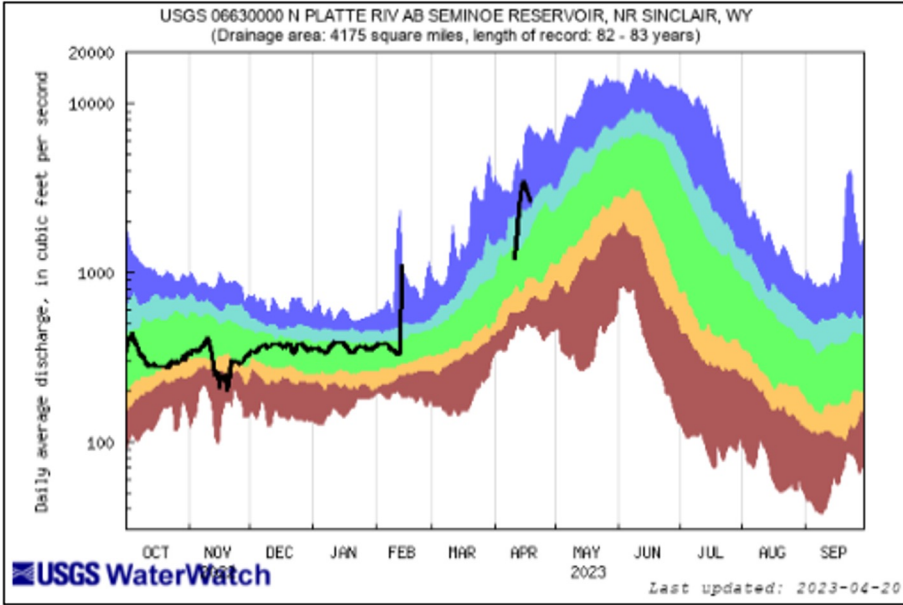
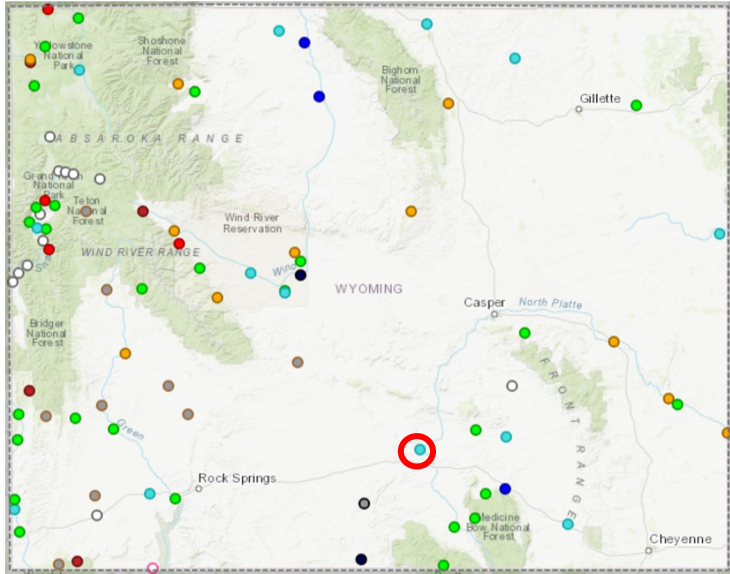
<https://waterdata.usgs.gov/>

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

North Platte River ab Seminoe Reservoir, WY

Last updated Apr 20, 2023

Select WY Streamflows



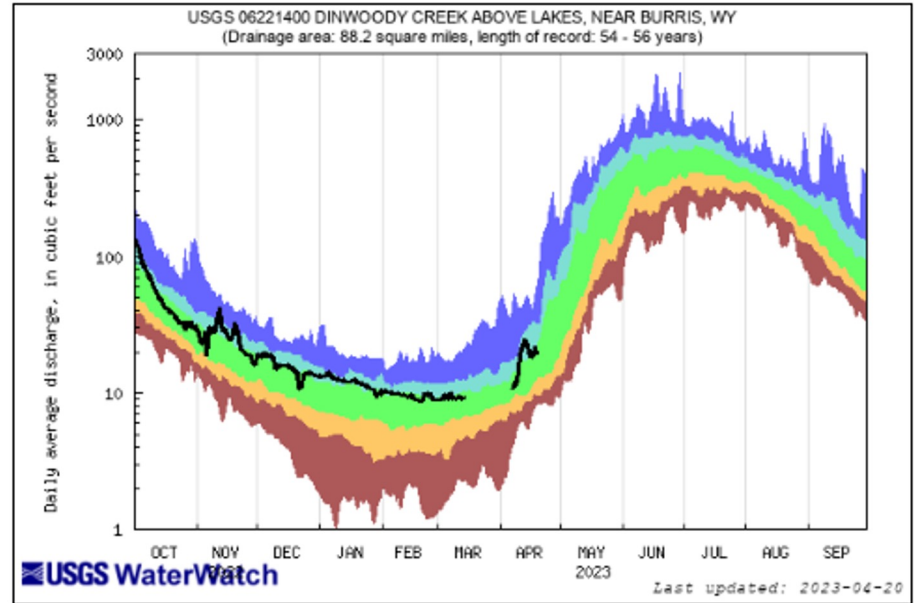
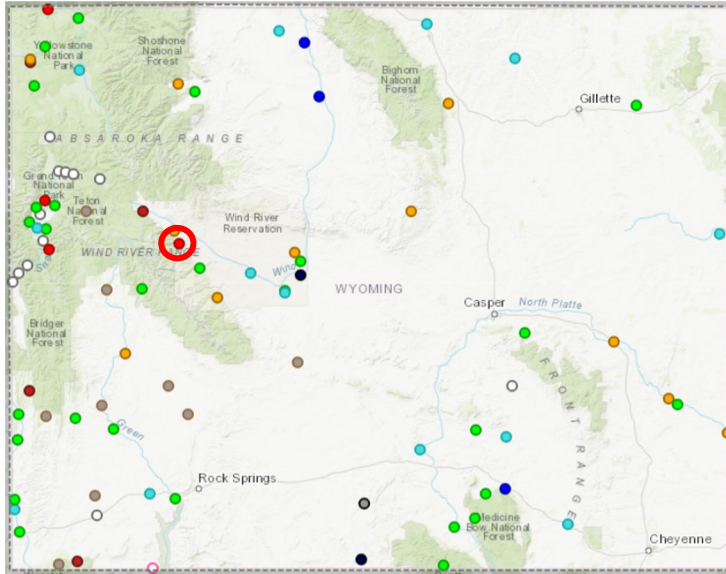
<https://dashboard.waterdata.usgs.gov/>

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

Explanation - Percentile classes

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

Select WY Streamflows



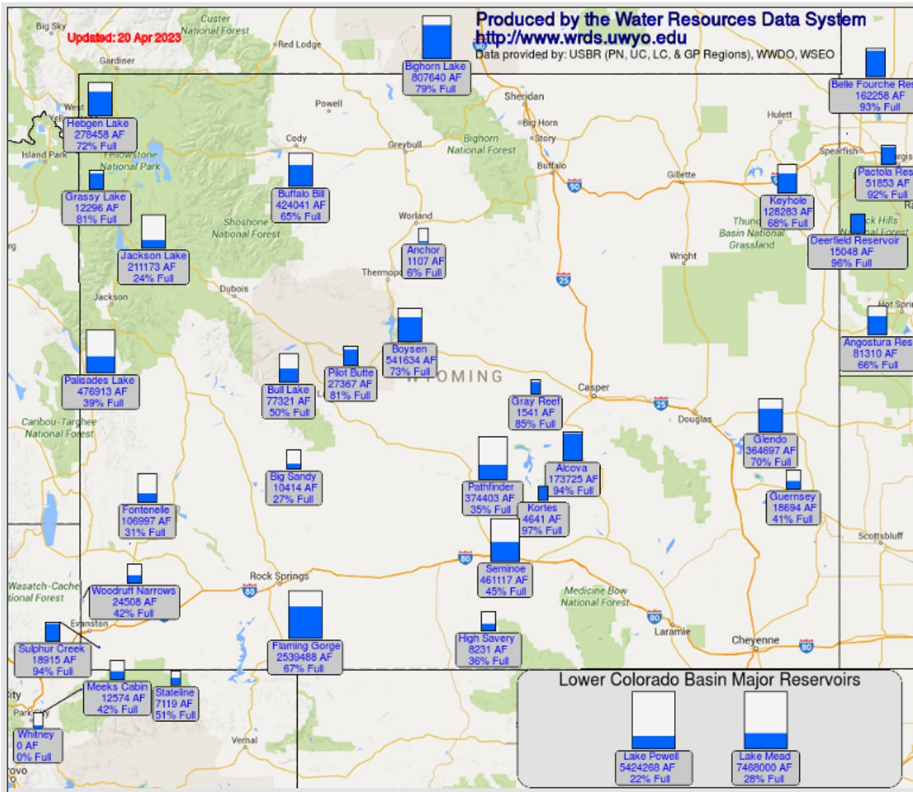
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<https://waterdata.usgs.gov/>

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

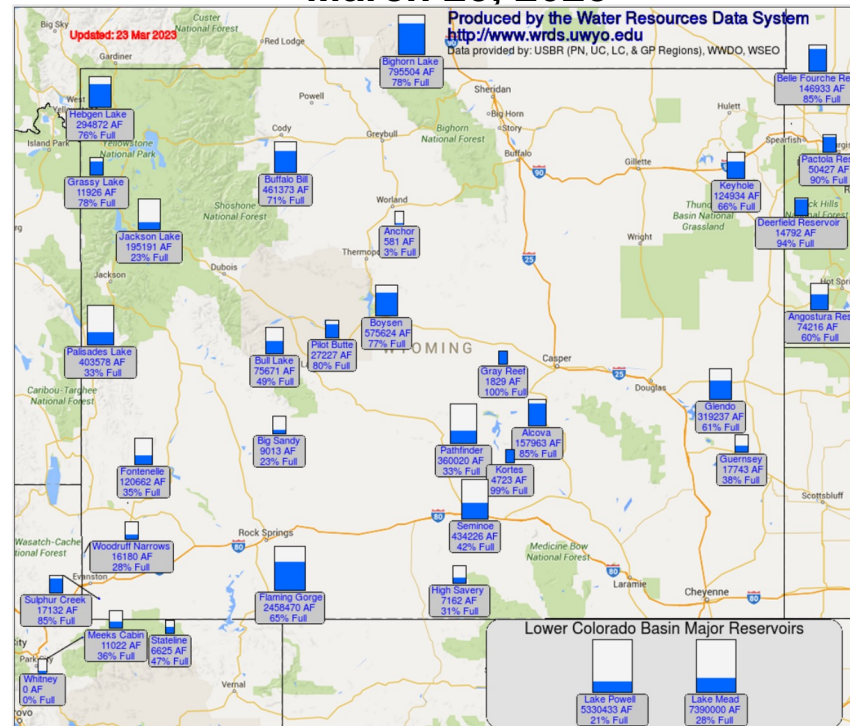
April 20, 2023



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

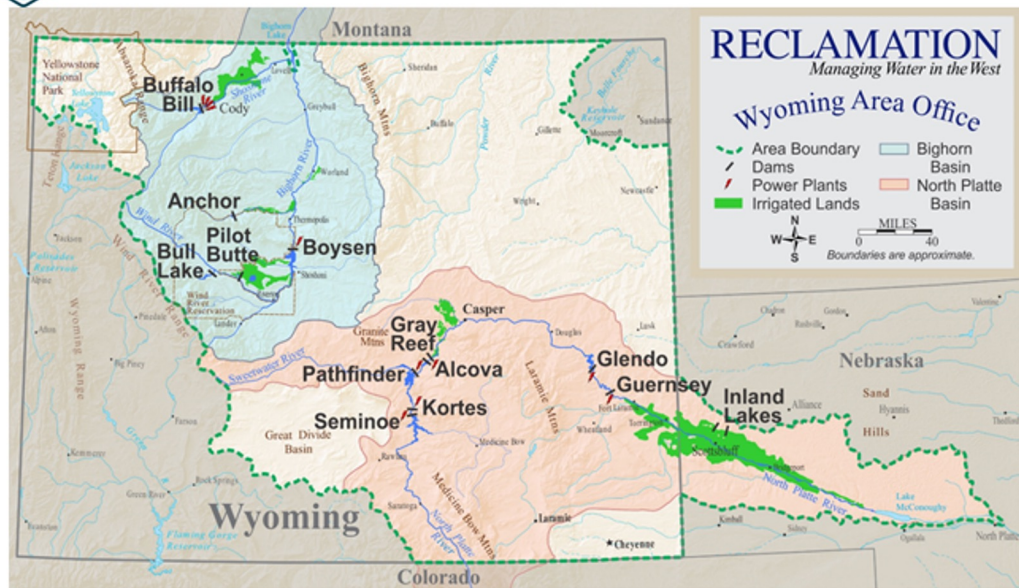
- Slight increases/decreases in reservoirs

March 23, 2023





Current Reservoir Conditions: Bighorn System

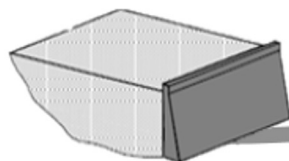


As of April 17, Bighorn System: 68% of Full, 102% of Average

<u>Reservoir</u>	<u>Content</u>	<u>Capacity</u>	<u>% of Full</u>	<u>% of Avg</u>
Bull Lake	77,000	152,500	51%	98%
Buffalo Bill	428,986	646,600	66%	104%
Boysen	547,756	741,600	74%	101%



BUFFALO BILL RESERVOIR (BBR)
 Top 644126 af, 5393.5 ft
 Current 428986 af, 5364.4 ft
 To fill 215140 af, 29.1 ft
 Computed Inflow 499 cfs
 Total Outflow 1142 cfs



1450 cfs

Forecast April – July Runoff:

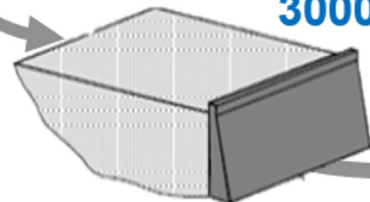
Buffalo Bill: 750,000 AF 100% of average

Boysen: 750,000 AF 123% of average

BOYSEN RESERVOIR (BOYR)
 Top 741594 af, 4725.0 ft
 Current 547756 af, 4713.8 ft
 To fill 193838 af, 11.2 ft
 Computed Inflow 1715 cfs
 Total Outflow 2400 cfs

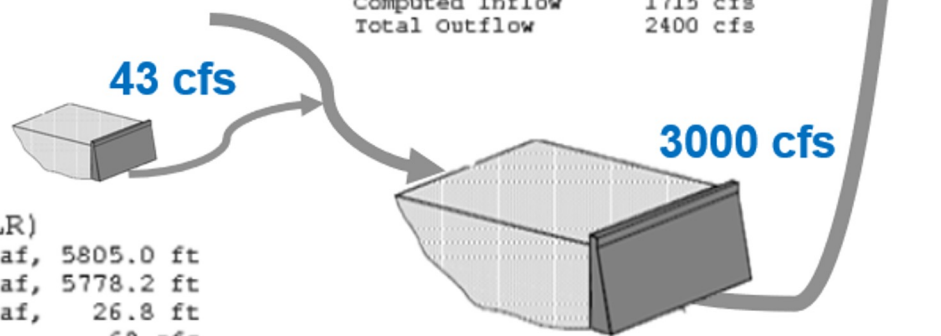


43 cfs



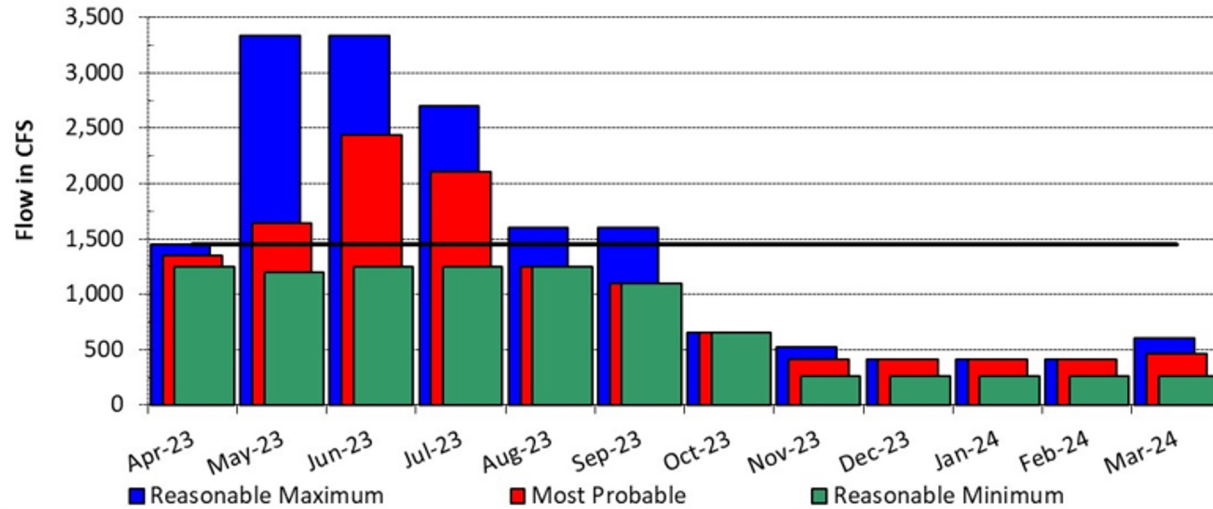
3000 cfs

BULL LAKE (BLR)
 Top 152459 af, 5805.0 ft
 Current 77000 af, 5778.2 ft
 To fill 75459 af, 26.8 ft
 Computed Inflow 68 cfs
 Total Outflow 43 cfs

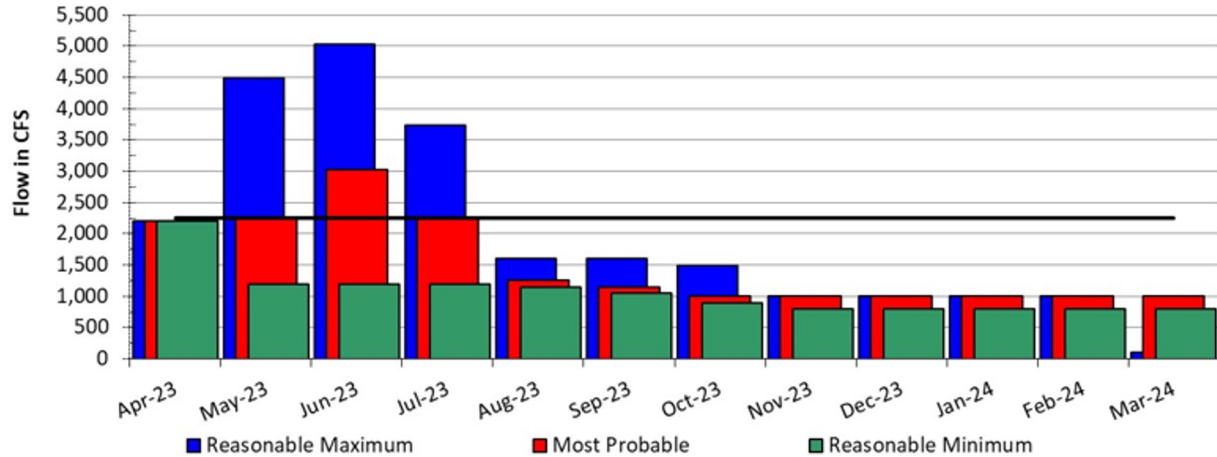


Reservoir Release Plans

BUFFALO BILL RESERVOIR RELEASES



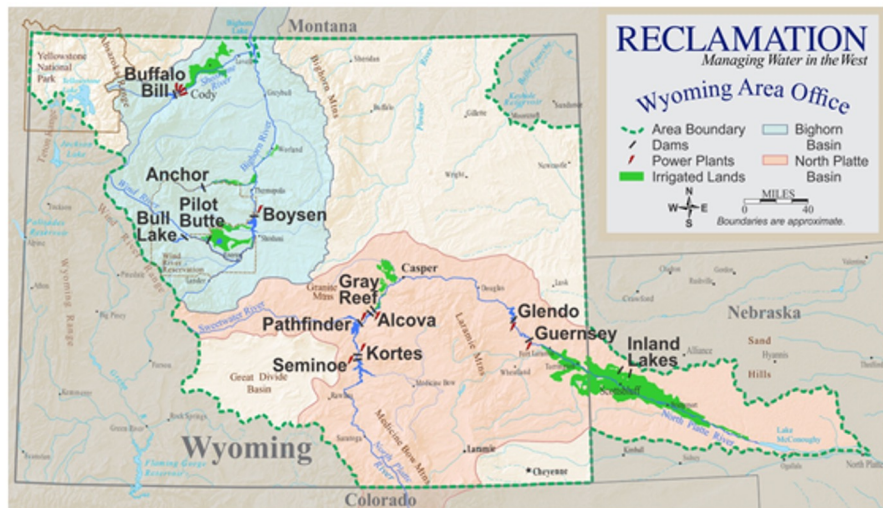
BOYSEN RESERVOIR RELEASES



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



Current Reservoir Conditions: North Platte System



Forecast April – July Runoff:

Forecast Point

Runoff (AF)

% of Avg

Seminoe

950,000

132

Sweetwater above Pathfinder

80,000

150

Alcova to Glendo

120,000

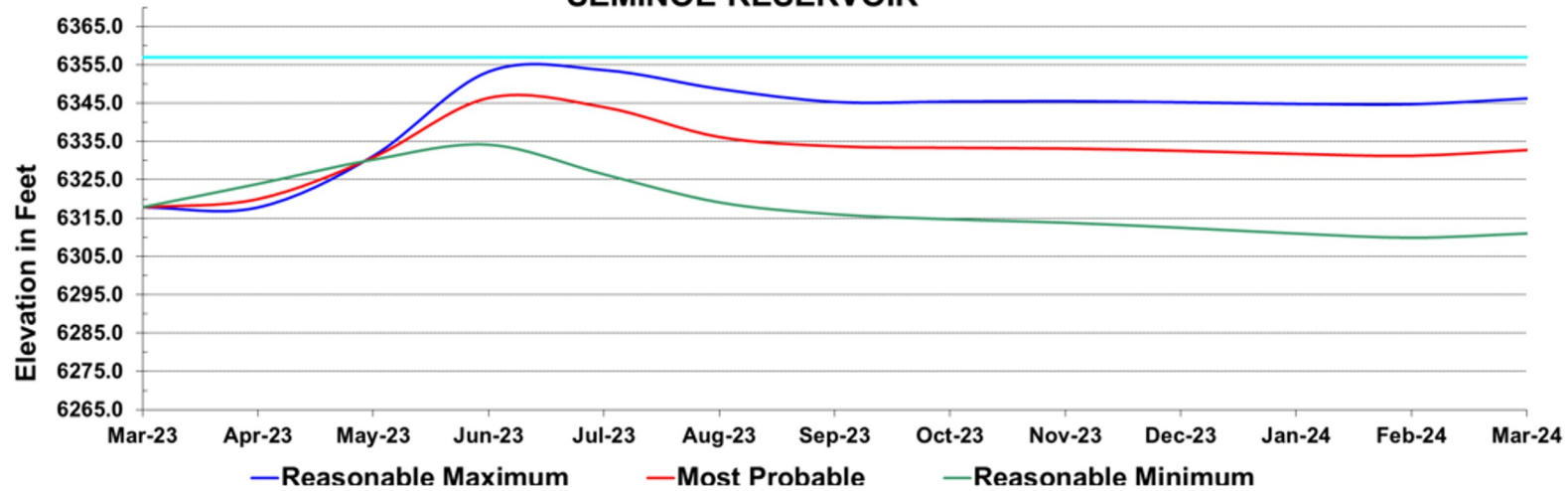
83

As of April 17, North Platte System:

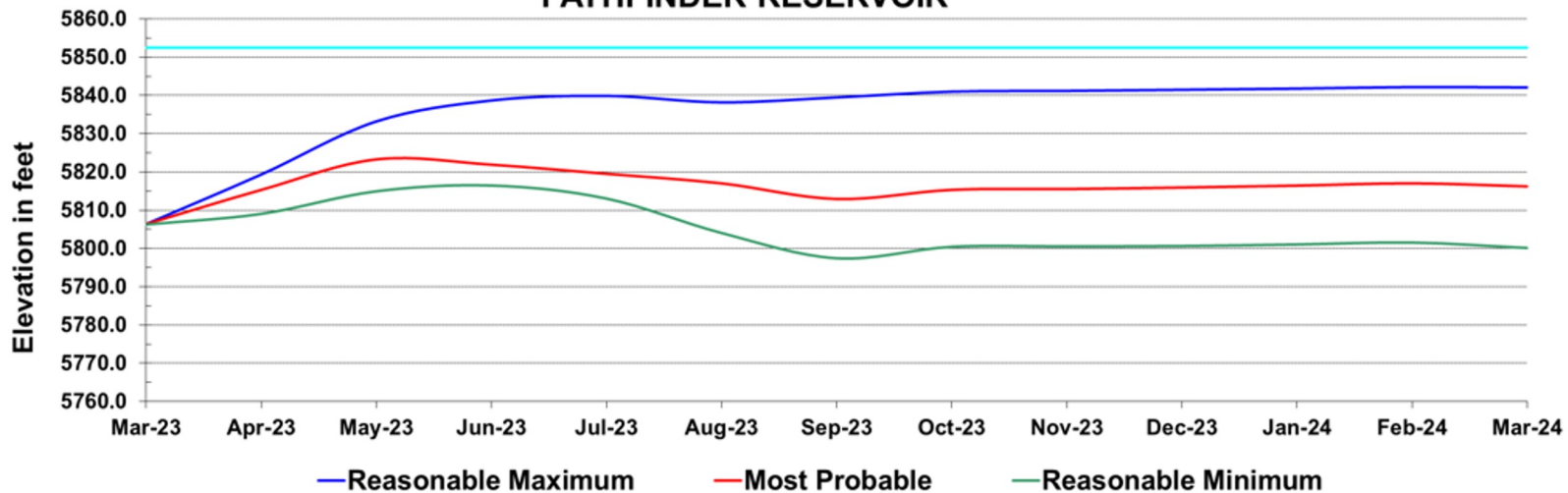
45% of Full, 83% of Average

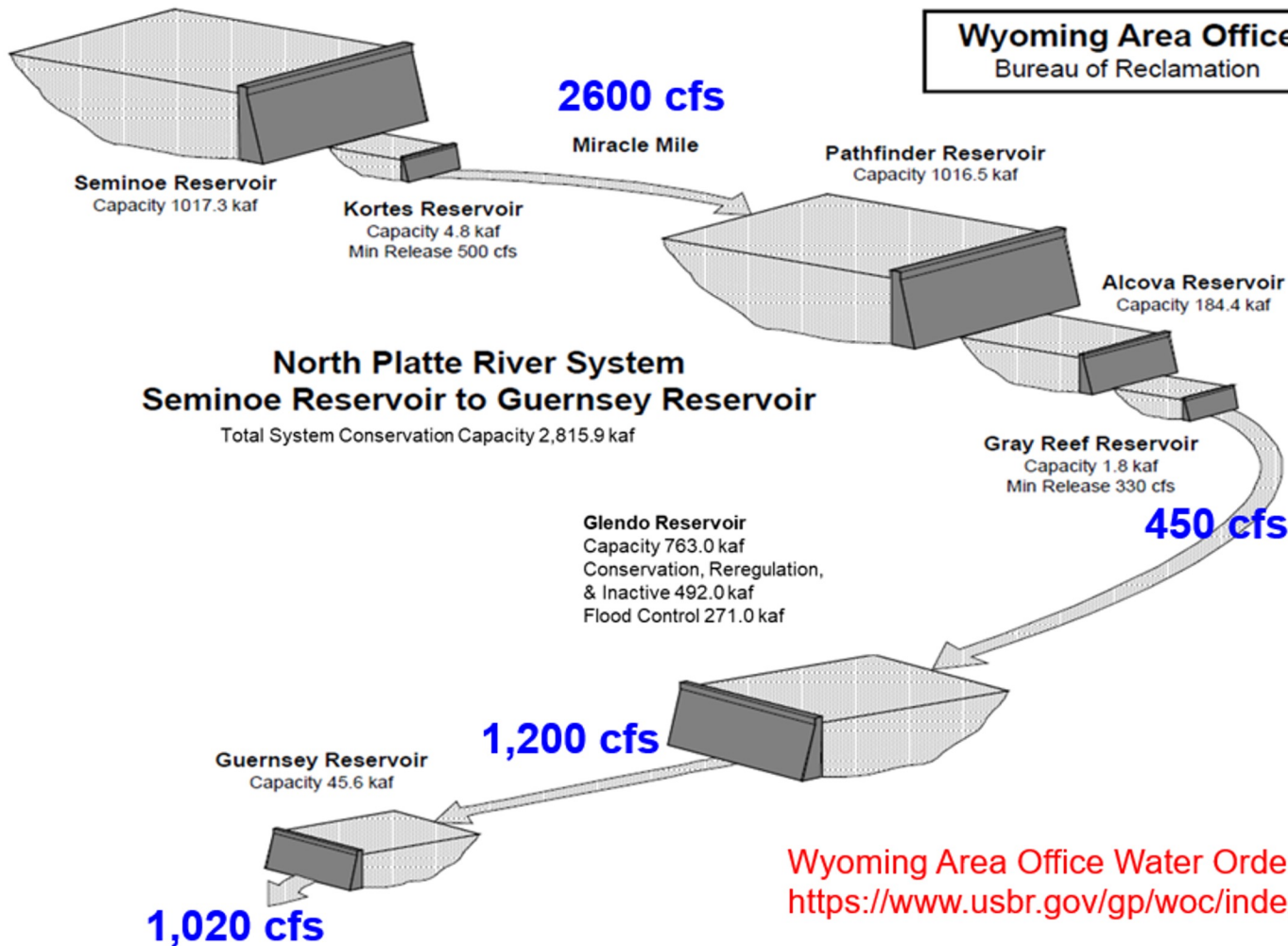
<u>Reservoir</u>	<u>Content (AF)</u>	<u>Capacity</u>	<u>% of Full</u>	<u>% of Avg</u>
Seminoe	456,823	1,017,300	45%	86%
Pathfinder	363,778	1,070,000	34%	62%
Glendo	360,861	492,000	73%	88%

SEMINOE RESERVOIR



PATHFINDER RESERVOIR





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



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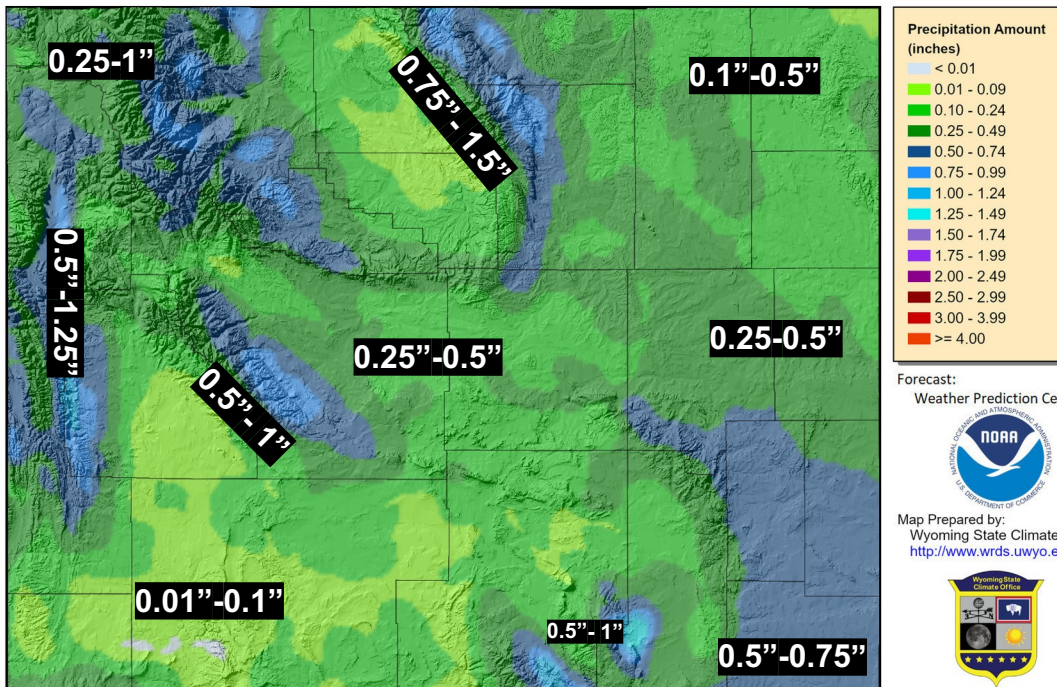
Forecasts & Outlooks



7-Day Total Precipitation Forecast

April 20 - 27

7-Day Quantitative Precipitation Forecast 20 Apr 2023



Provisional data, subject to revision

- Scattered light to briefly moderate snow showers Today through Saturday for SE/Central/West WY
- Drier Sunday and warming.
- Mix of rain/snow showers Monday into Tuesday, and clearing north to south Wednesday next week.

Forecast:
Weather Prediction Center



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





- Warming trend starting Saturday and continues into next week.

Maximum Temperature Forecast

	4/20 Thu		4/21 Fri				4/22 Sat				4/23 Sun				4/24 Mon				4/25 Tue				4/26 Wed				4/27 Thu				Maximum
	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	
Casper	40	37	33	39	44	43	32	36	45	45	34	46	55	54	41	53	60	57	46	42	47	44	38	44	50	50	38	50	58	56	60
Cheyenne	42	40	25	40	44	42	28	34	39	37	29	42	51	50	36	52	57	55	41	43	45	43	32	42	48	47	35	49	56	53	57
Cody	39	38	30	37	39	37	30	36	43	43	35	46	54	53	42	50	54	51	41	44	48	46	39	48	53	53	41	52	59	56	59
Douglas	44	39	26	41	46	43	27	34	45	44	30	46	55	54	38	54	61	57	41	41	45	43	33	42	52	51	37	50	57	56	61
Evanston	30	29	18	30	34	34	28	32	37	35	23	34	45	44	30	40	45	43	33	35	41	38	30	37	45	43	31	41	49	48	49
Jackson	34	34	27	31	36	36	28	33	39	39	28	36	45	45	33	39	46	44	34	38	47	46	34	40	48	47	35	43	51	50	51
Lander	42	41	29	39	43	41	29	33	41	41	31	41	50	50	37	47	54	53	39	40	44	43	35	41	49	50	37	48	56	55	56
Laramie	37	35	22	35	40	38	26	32	38	36	26	40	47	46	33	49	53	49	37	40	43	40	31	40	46	45	33	47	53	50	53
Rawlins	36	34	25	29	39	39	28	32	40	37	29	40	46	46	35	46	50	48	38	40	43	41	34	41	48	48	37	46	52	51	52
Riverton	45	41	30	41	46	46	32	36	46	46	35	43	55	55	39	48	59	57	42	42	49	46	37	43	54	54	40	51	63	61	63
Rock Springs	37	35	26	36	40	40	32	36	43	44	32	40	49	50	36	46	53	51	38	40	47	46	36	41	50	50	36	45	54	53	54
Sheridan	38	34	25	32	38	36	24	33	43	41	28	42	53	52	36	47	55	52	38	40	46	44	34	45	55	53	38	49	57	53	57
Thermopis	44	41	32	39	47	46	36	39	48	49	39	49	58	58	45	53	60	59	46	45	50	49	42	48	56	57	44	53	61	61	61

*Table values in °F
 **Created: 10 am MDT Thu 4/20/2023
 ***Values are maximums over the period beginning at the time shown.

- Pockets of scattered snow showers Thu-Sat. Rain precipitation chances increase early to mid-week.

Weather Forecast

	4/20 Thu		4/21 Fri				4/22 Sat				4/23 Sun				4/24 Mon				4/25 Tue				4/26 Wed				4/27 Thu						
	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm	6pm	12am	6am	12pm
Casper	☁️25%	☁️20%	5%	5%	10%	☁️30%	☁️20%	5%	5%	0%	0%	5%	5%	5%	10%	35%	60%	45%	50%	70%	45%	20%	15%	25%	15%	15%	20%	30%	30%	30%	30%		
Cheyenne	☁️20%	☁️15%	5%	5%	25%	☁️50%	☁️45%	30%	35%	☁️15%	5%	0%	0%	10%	15%	10%	10%	40%	60%	45%	50%	65%	50%	35%	30%	30%	15%	10%	10%	25%	30%		
Cody	☁️40%	☁️25%	5%	35%	50%	☁️30%	10%	5%	10%	0%	0%	0%	5%	10%	5%	15%	50%	55%	35%	40%	35%	20%	5%	5%	15%	20%	20%	30%	25%	25%			
Douglas	☁️40%	☁️20%	10%	5%	20%	10%	10%	5%	5%	0%	0%	0%	0%	5%	5%	5%	25%	50%	45%	50%	60%	40%	25%	20%	20%	15%	15%	15%	25%	30%			
Evanston	☁️25%	5%	5%	50%	45%	☁️35%	5%	5%	0%	0%	0%	5%	5%	10%	15%	35%	50%	20%	20%	20%	15%	5%	5%	5%	5%	5%	5%	10%	10%	10%			
Jackson	☁️15%	10%	☁️60%	☁️75%	☁️65%	☁️35%	10%	25%	10%	0%	5%	☁️20%	☁️25%	10%	☁️30%	70%	80%	50%	40%	45%	35%	20%	10%	10%	15%	15%	15%	25%	25%	20%			
Lander	☁️30%	15%	5%	10%	40%	☁️45%	25%	10%	10%	0%	0%	0%	0%	5%	10%	15%	35%	45%	45%	50%	50%	30%	10%	10%	10%	10%	10%	15%	20%	25%			
Laramie	☁️25%	☁️25%	☁️20%	☁️20%	☁️45%	☁️60%	☁️40%	☁️35%	☁️35%	10%	0%	0%	10%	10%	10%	10%	40%	55%	40%	50%	65%	45%	25%	25%	25%	15%	10%	15%	25%	30%			
Rawlins	☁️25%	☁️15%	10%	☁️25%	☁️40%	☁️40%	10%	10%	10%	0%	0%	0%	5%	10%	10%	35%	40%	40%	30%	45%	60%	25%	10%	10%	15%	10%	10%	15%	25%	25%			
Riverton	☁️40%	☁️40%	5%	10%	10%	☁️45%	☁️25%	10%	5%	0%	0%	0%	0%	5%	5%	10%	25%	45%	45%	50%	45%	25%	10%	10%	10%	10%	10%	15%	20%	20%			
Rock Springs	☁️25%	0%	15%	☁️45%	☁️40%	5%	0%	0%	0%	0%	0%	0%	0%	5%	5%	15%	30%	20%	20%	30%	30%	10%	5%	5%	5%	5%	5%	5%	10%	10%			
Sheridan	☁️50%	☁️30%	15%	10%	15%	☁️15%	5%	5%	10%	0%	0%	0%	5%	10%	5%	10%	40%	65%	55%	55%	60%	25%	15%	10%	25%	15%	20%						
Thermopis	☁️50%	☁️55%	5%	5%	20%	☁️55%	35%	20%	15%	0%	0%	0%	5%	5%	5%	10%	40%	60%	50%	60%	55%	30%	15%	10%	20%	20%	20%	25%	30%	30%			

*Created: 10 am MDT Thu 4/20/2023. Shows most impactful weather for the period beginning at the time shown. Weather symbols display where Probability of Precipitation ≥ 0%.

- Rain + - Wintry Mix + - Snow +



6-10 Day Temp & Precip Outlook

https://bit.ly/CPC6_10Day

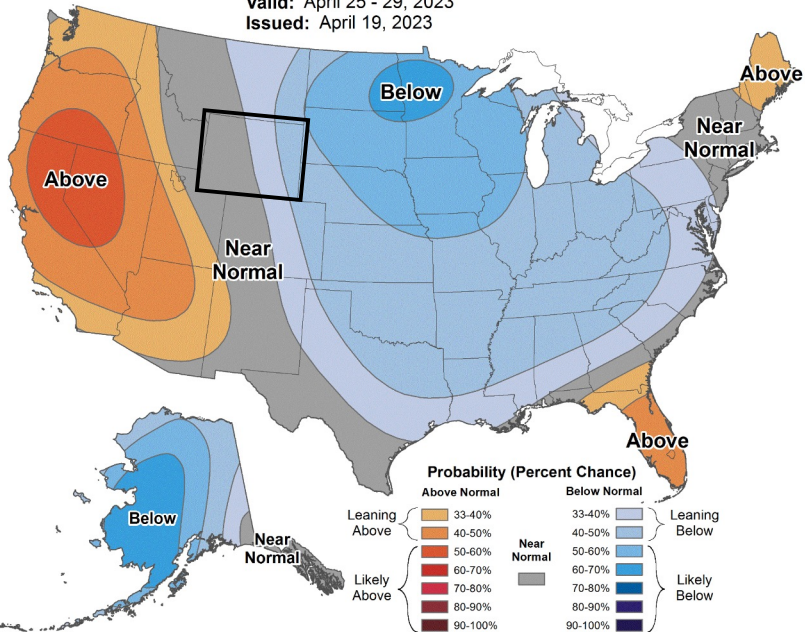
April 25 - April 29



6-10 Day Temperature Outlook



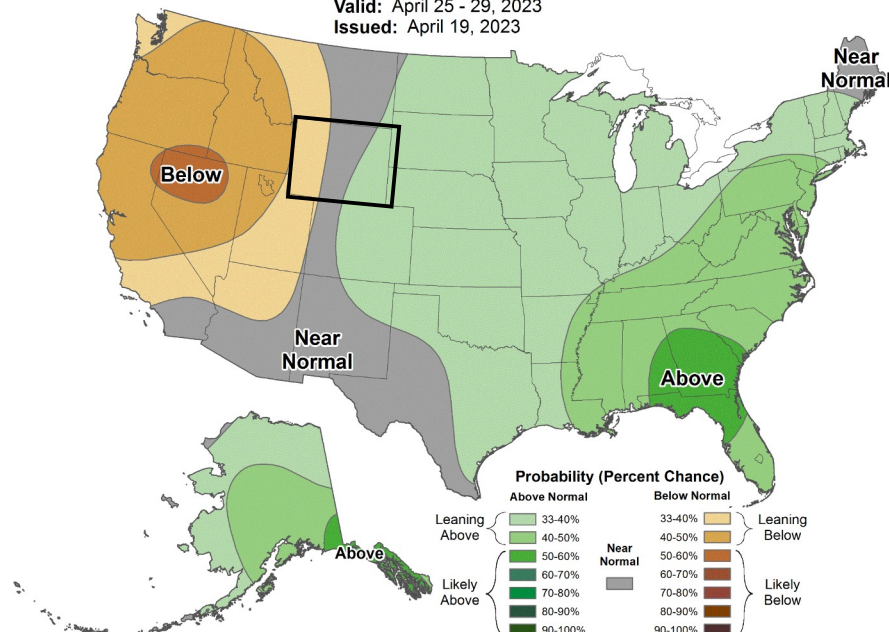
Valid: April 25 - 29, 2023
Issued: April 19, 2023



6-10 Day Precipitation Outlook



Valid: April 25 - 29, 2023
Issued: April 19, 2023



Weak signal for below normal temperatures in east WY, favored near equal chances to be normal for west WY.

Slightly favored above normal precipitation for east WY and slightly below normal precipitation in western WY



8-14 Day Temp & Precip Outlook

https://bit.ly/CPC8_14Day

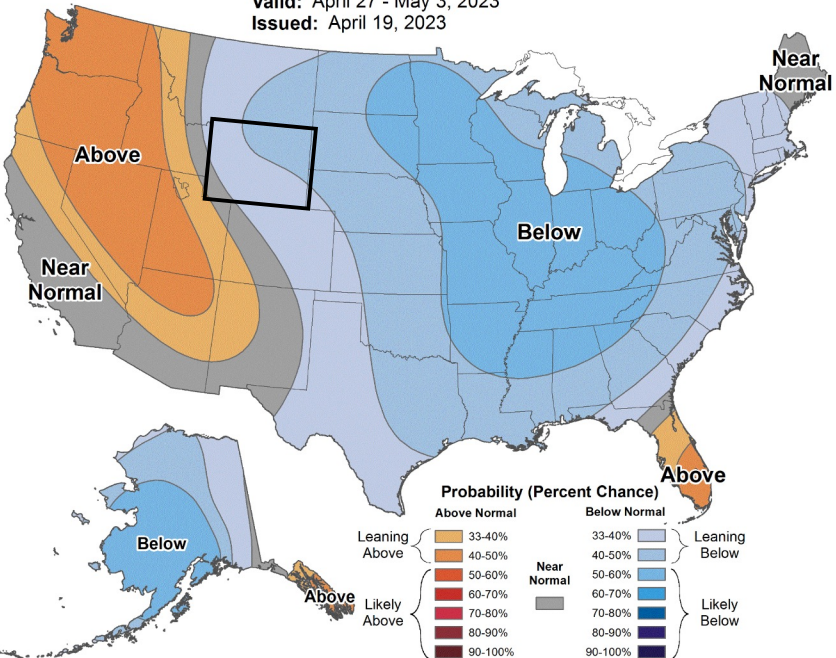
April 27 - May 3



8-14 Day Temperature Outlook



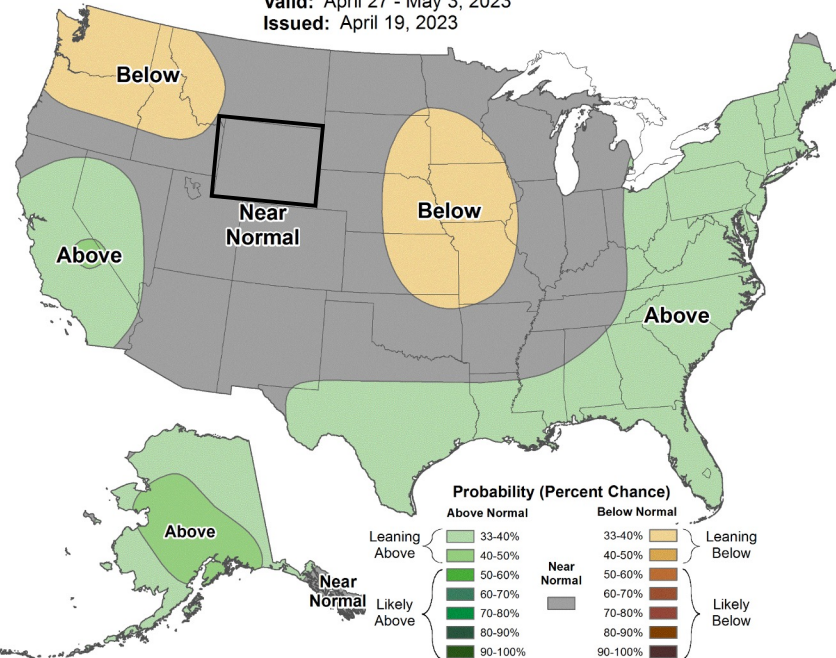
Valid: April 27 - May 3, 2023
Issued: April 19, 2023



8-14 Day Precipitation Outlook



Valid: April 27 - May 3, 2023
Issued: April 19, 2023



Favored likely slightly colder than normal to continue for much of Wyoming.

Near normal precipitation for the majority of Wyoming.



3-Month Temp & Precip Outlook

https://bit.ly/CPC_Seasonal

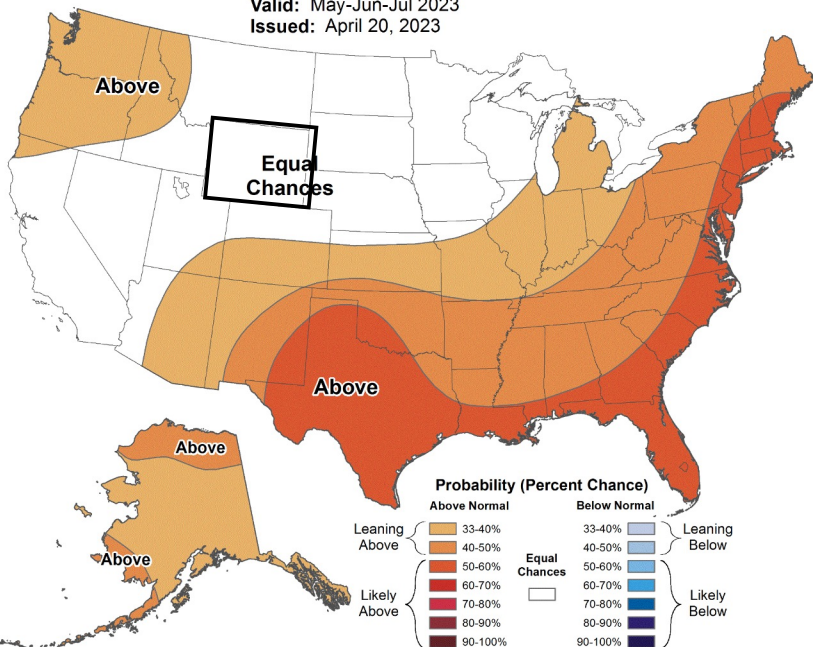
May - June - July 2023



Seasonal Temperature Outlook



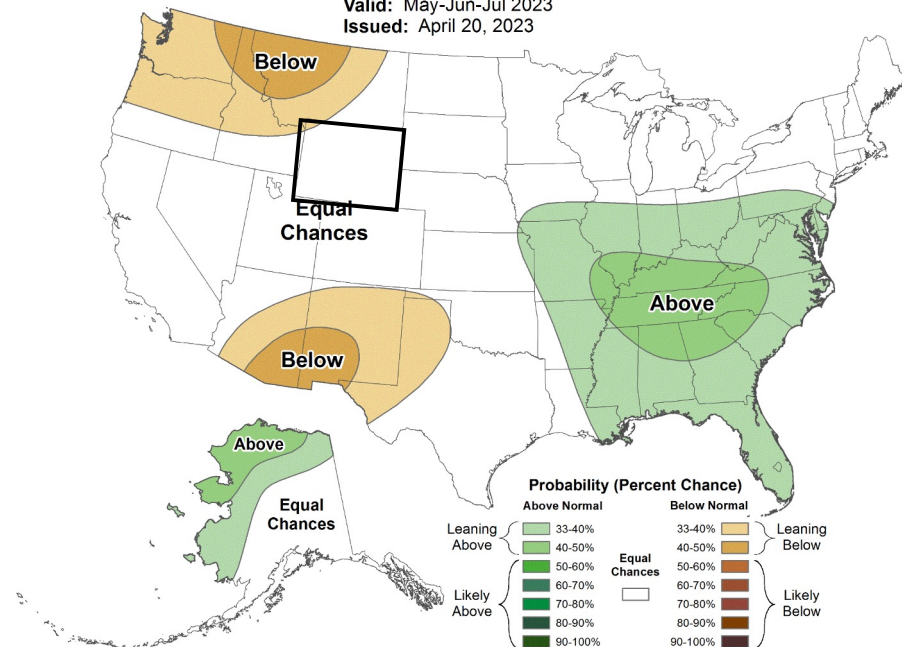
Valid: May-Jun-Jul 2023
Issued: April 20, 2023



Seasonal Precipitation Outlook



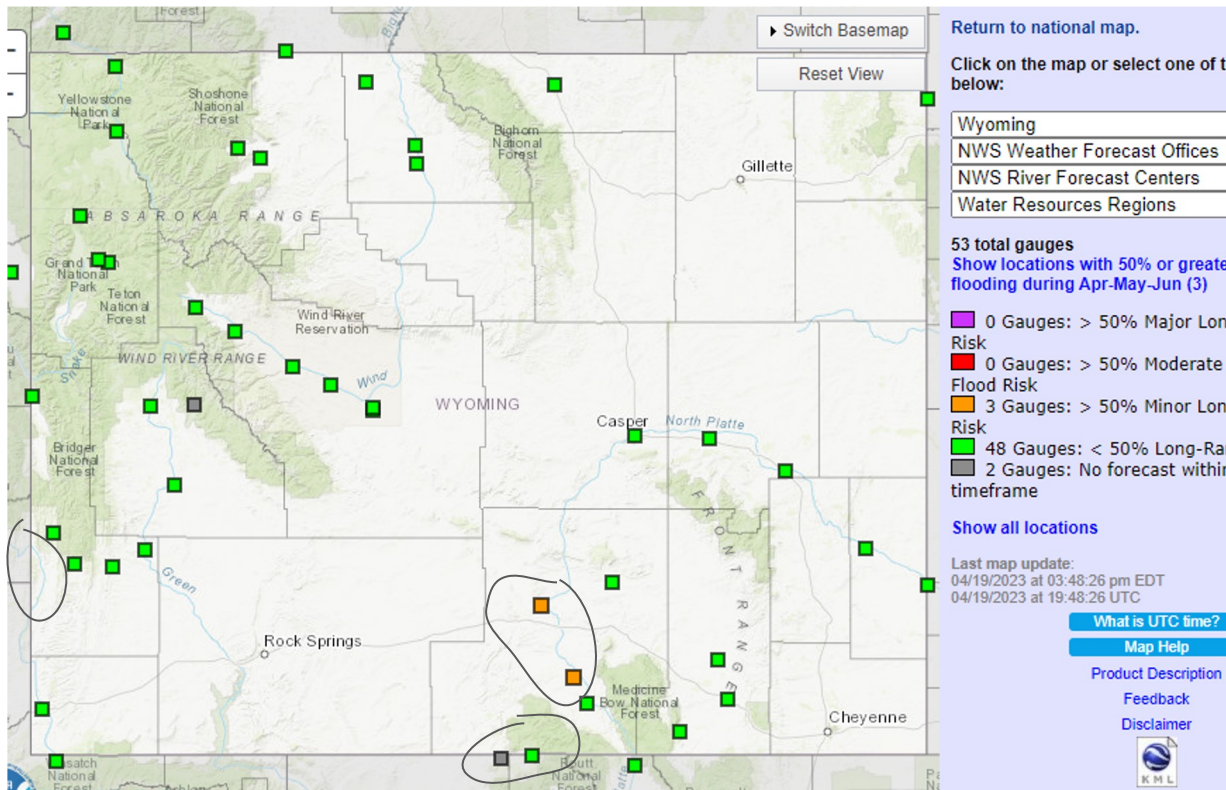
Valid: May-Jun-Jul 2023
Issued: April 20, 2023



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 and the Bear River

Other rivers of some concern:

- Popo Agie
- Little Snake

NOAA released U.S. Spring Outlook on 16 March.

NOAA US Spring Outlook & Flood Risk:

<https://bit.ly/40kkZ21>

NWS Long Range River Flood Outlooks: <https://bit.ly/3AgAyy0>



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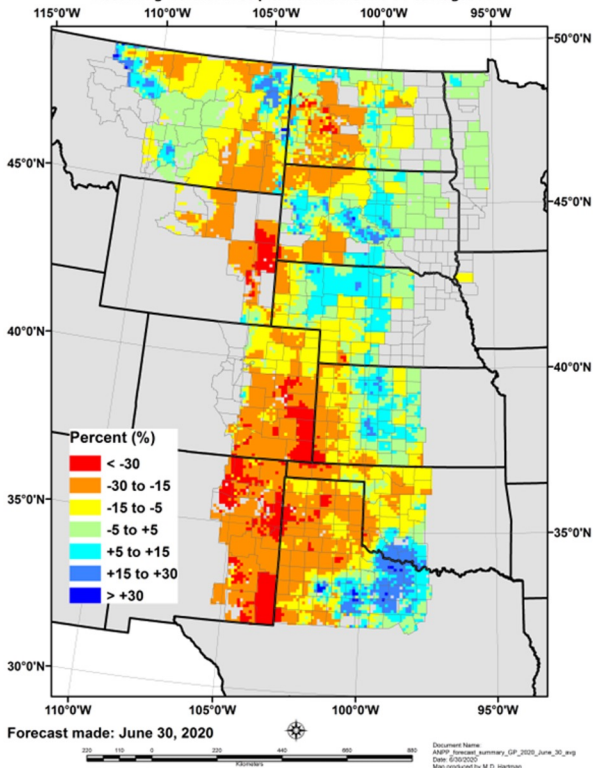


Highlight of the Month ...

Grass-Cast

Grass-Cast: Grassland Productivity Forecast

Percent Change in 2020 Predicted ANPP compared to 1982-2019 mean ANPP
Assuming Normal Precipitation from June 30 to August 31

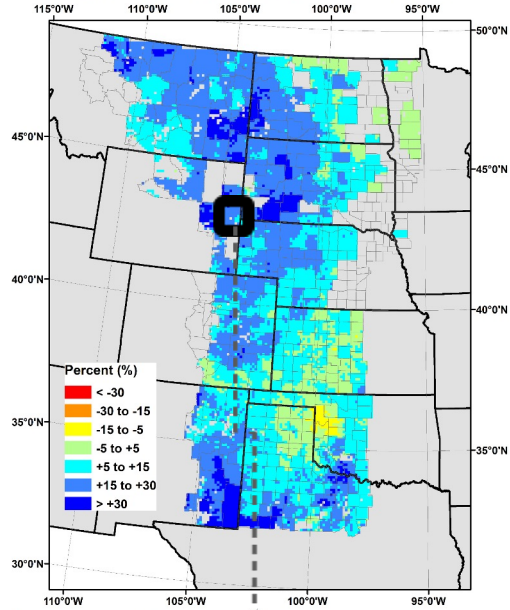


Based on
observed weather to date
 + **future weather scenarios...**
 we expect
grassland productivity
 in *your* area...
 to be **X%** **higher** or **lower** than
 your area's long-term average.

April 18, 2023: “What if precip thru Aug is...”

Above-Normal

Percent Change in 2023 predicted ANPP compared to 36-year mean ANPP
Assuming ABOVE NORMAL precipitation from April 18 to August 31



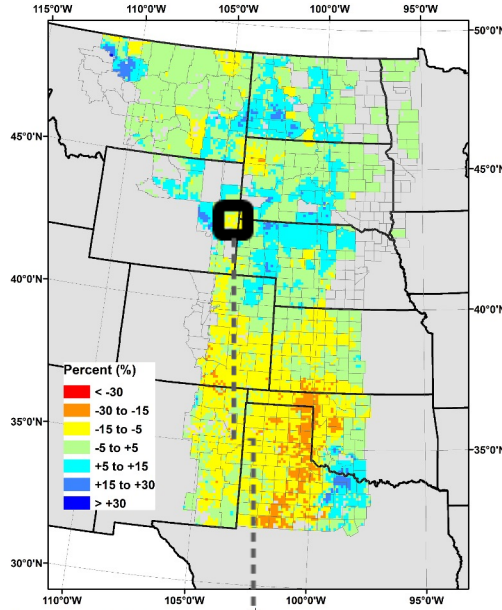
Forecast made: April 18, 2023

Disclaimer: ANPP forecast summary, GP, 2023, Apr. 18, above
Date: 4/18/2023
Map produced by M.D. Helmer

Blue: If precip is above-normal, we expect **15% to 30% more** pounds per acre than the area's 38-year average.

Near-Norm

Percent Change in 2023 predicted ANPP compared to 36-year mean ANPP
Assuming NORMAL precipitation from April 18 to August 31



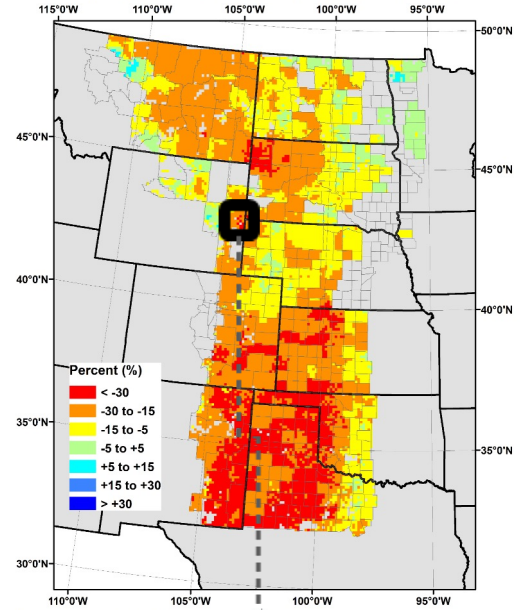
Forecast made: April 18, 2023

Disclaimer: ANPP forecast summary, GP, 2023, Apr. 18, near
Date: 4/18/2023
Map produced by M.D. Helmer

Yellow: If precip is near-normal, we expect **5% to 15% less** pounds per acre.

Below-Norm

Percent Change in 2023 predicted ANPP compared to 36-year mean ANPP
Assuming BELOW NORMAL precipitation from April 18 to August 31



Forecast made: April 18, 2023

Disclaimer: ANPP forecast summary, GP, 2023, Apr. 18, below
Date: 4/18/2023
Map produced by M.D. Helmer

Orange: If precip is below-normal, we expect **15% to 30% less** pounds per acre.

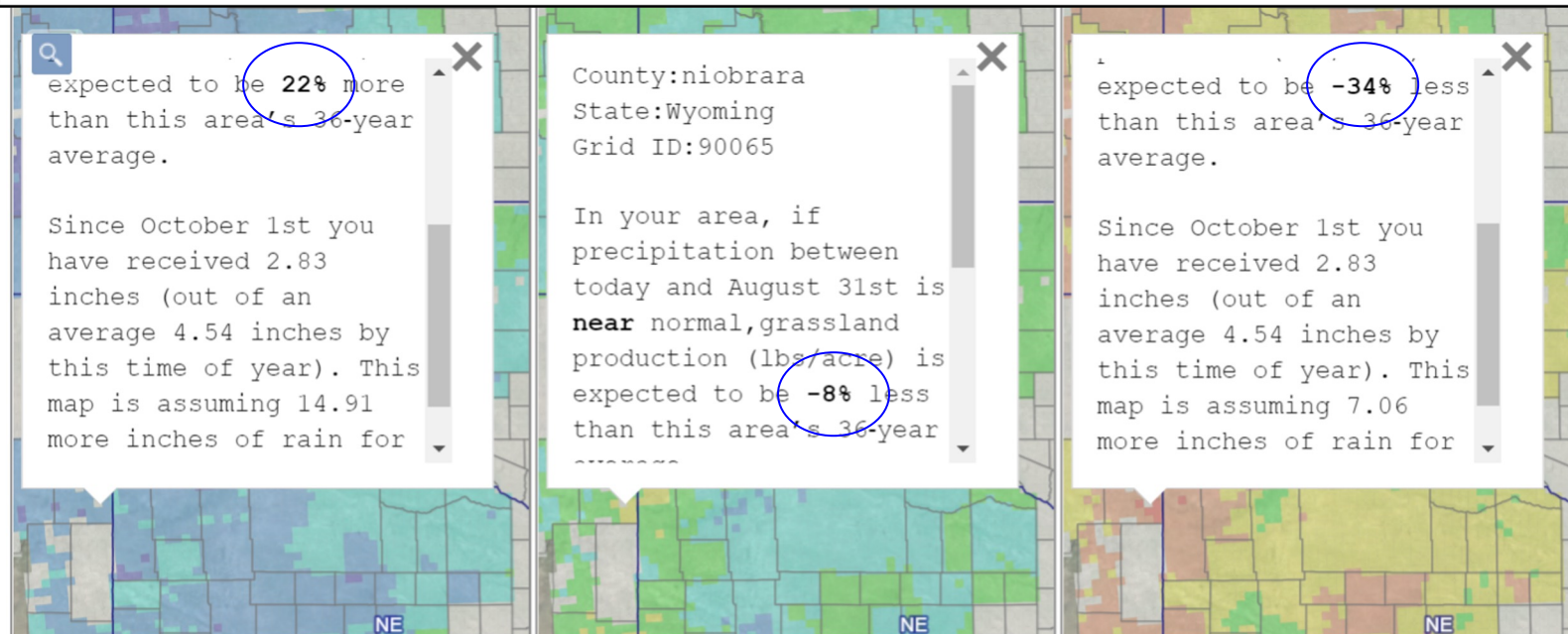
Outlook

<https://grasscast.unl.edu>
Zoomable to 6-mile x 6-mile areas

Static Image

Zoomable

% Change in Grassland Production for Your Area this Summer Compared to Its 38-yr Average



G-C is a
Total
Prodct'n
Forecast,

NOT a
Grazeable
Prodct'n
Forecast

Which map is more likely? See the seasonal precipitation outlook at

Outlook

<https://grasscast.unl.edu>
Zoomable to 6-mile x 6-mile areas

Static Image

Zoomable

% Change in Grassland Production for Your Area this Summer Compared to Its 38-yr Average

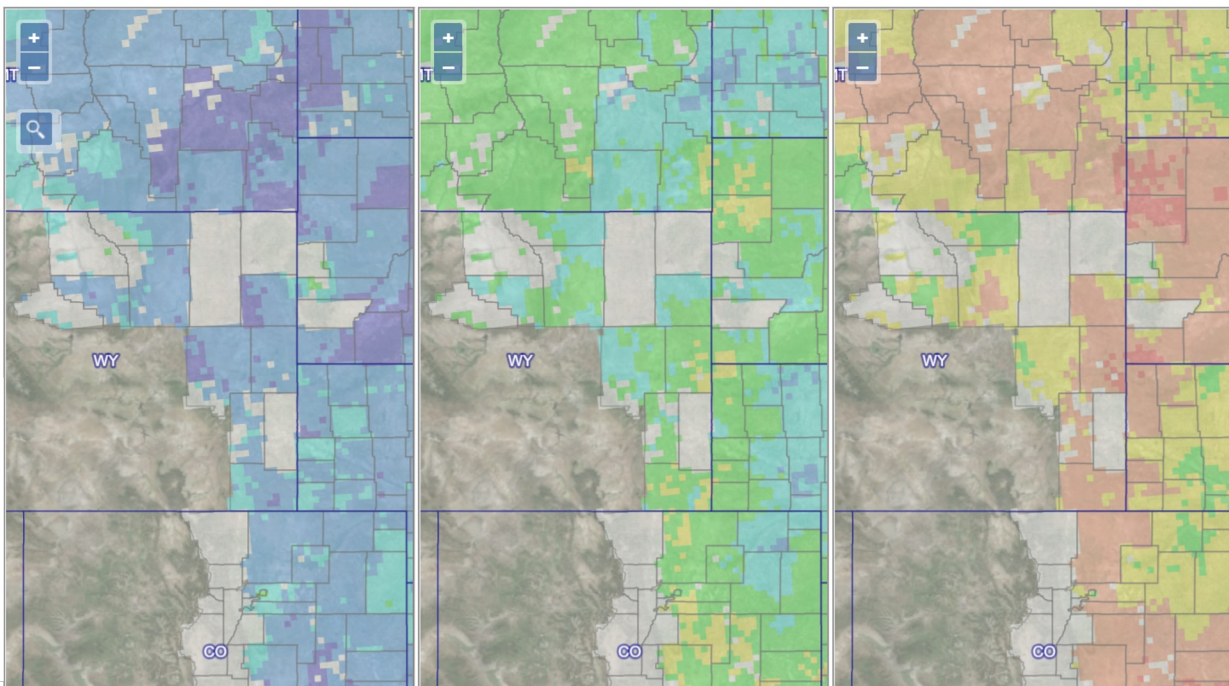
How to Read the Maps

Grass-Cast Handout

Science Webinars

Acknowledgements

Historical Productivity



Visit the website to see the latest maps, which are updated every 2 weeks!





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Get Involved!
Submit a *Condition Monitoring
Observer Report*



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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!