



WY Conditions & Outlooks:

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

September 16, 2021



Presentation Outline

- Current Conditions
- Outlooks
- How to Get Involved



Current Conditions

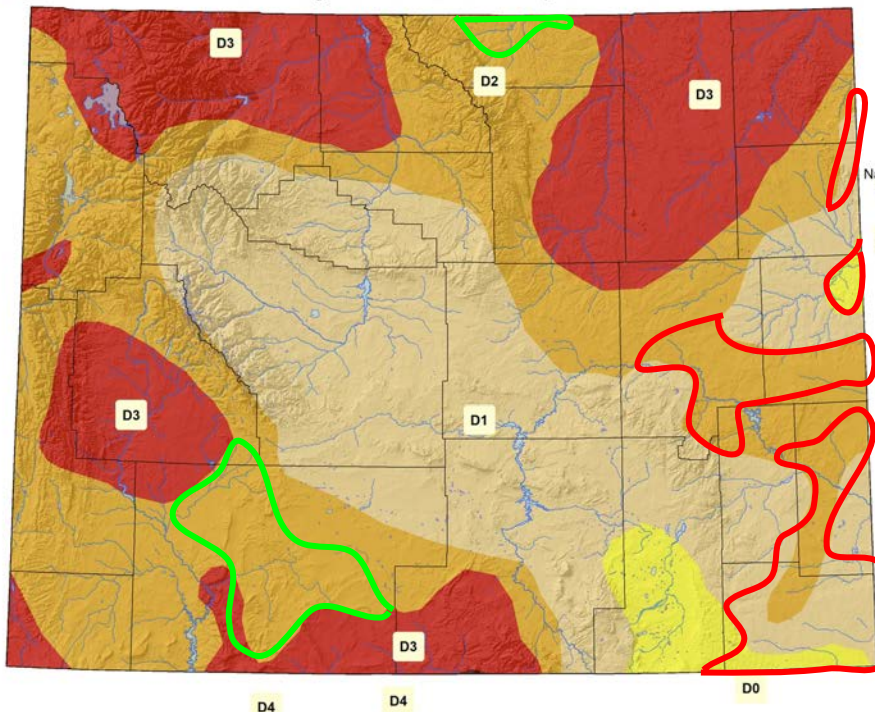
US Drought Monitor for September 14, 2021

(Released Thursday, September 16, 2021)

Valid 8 a.m. EDT

D4

US Drought Monitor as of 14 September 2021



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

Improvements in Sweetwater County along with north-central Sheridan County since the last webinar followed by several **degradations** over eastern Wyoming.

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>



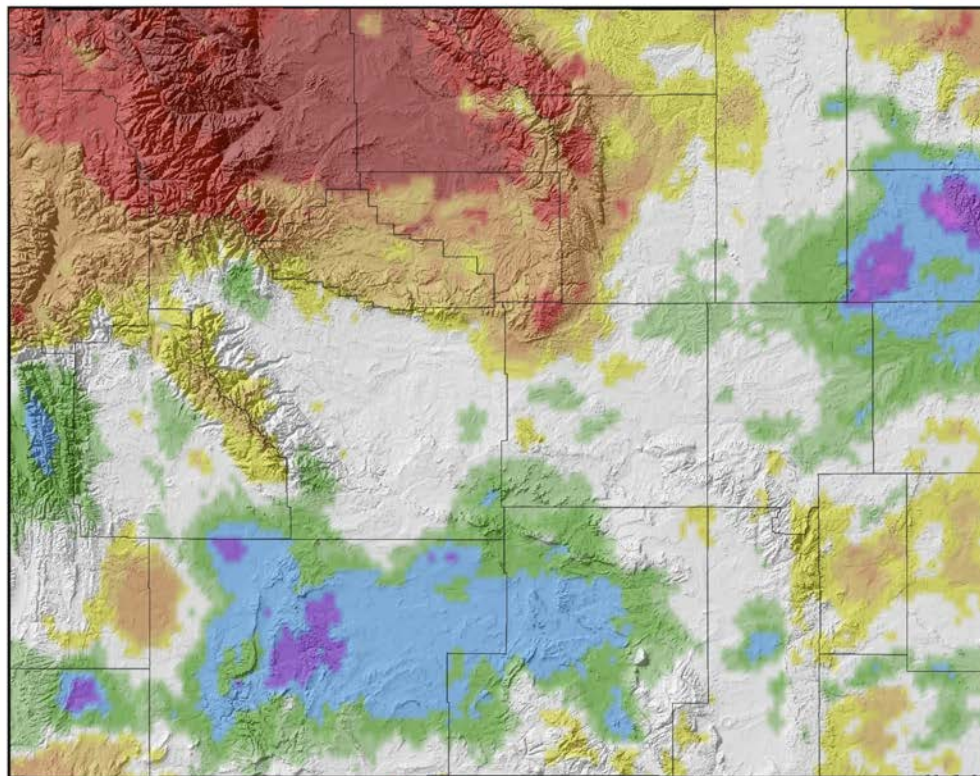
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D4 (Exceptional Drought)	0 to 2

<https://drought.wyo.gov>



14-Day Precipitation Percentile (02 Sep 2021 to 15 Sep 2021)

14-Day Precipitation (Percentile) for 02 Sep 2021 to 15 Sep 2021



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:

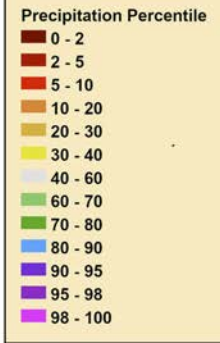
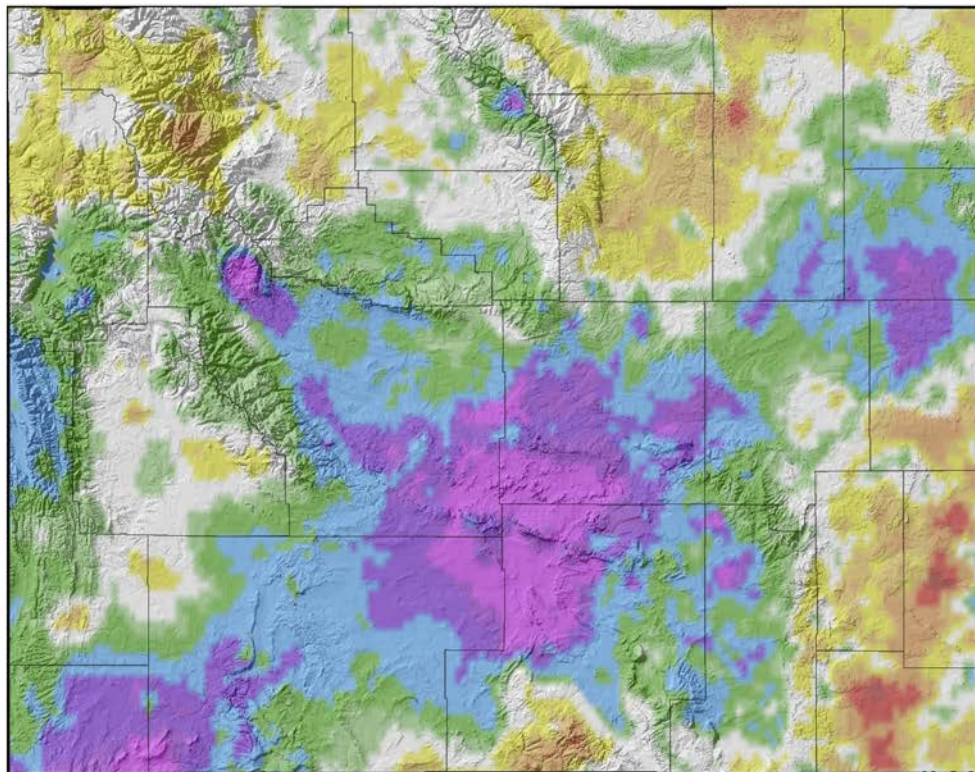
- Weston County
- Sweetwater County
- Carbon County
- Minor other areas

Below Median (Areas of Concern):

- Northwest and North Central

90-Day Precipitation Percentile (18 Jun 2021 to 15 Sep 2021)

90-Day Precipitation (Percentile) for 18 Jun 2021 to 15 Sep 2021



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



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



Provisional data, subject to revision

Daily precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University,
<http://prism.oregonstate.edu>
Map Created 16 Sep 2021 <http://www.wrds.uwyo.edu>
Daily percentiles created from PRISM daily precipitation grids

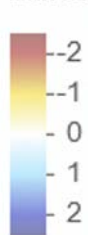
Above Median:

- Southwest
- Weston/Niobrara/S Campbell
- Northern Lincoln County
- Fremont, Sweetwater, Natrona, Carbon Albany Counties area

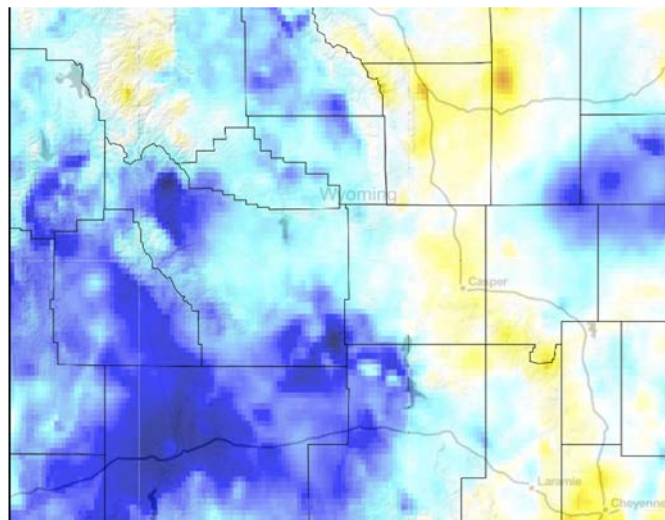
Below Median (Areas of Concern):

- Laramie County
- Goshen County
- South Central Carbon County
- Johnson County
- Campbell County

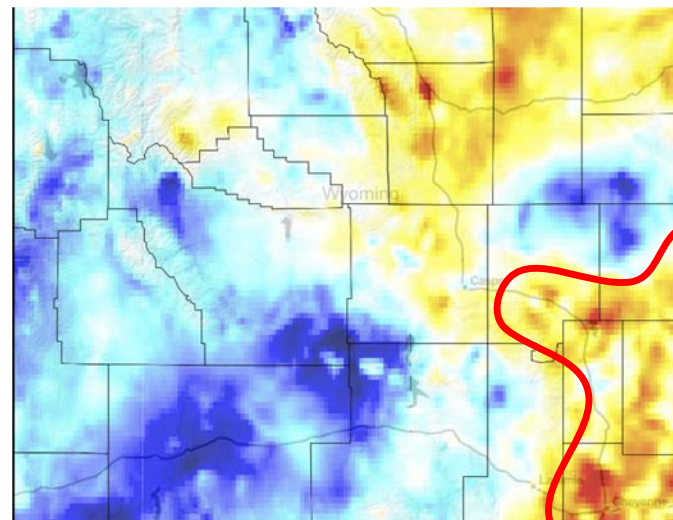
Current SPI



30-Day



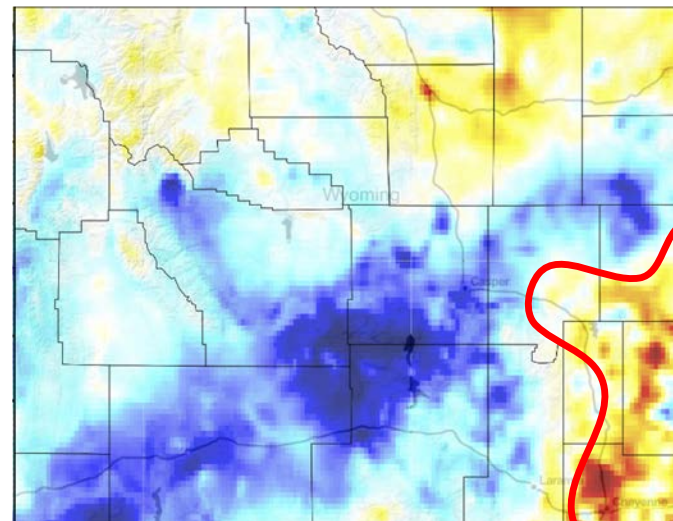
60-Day

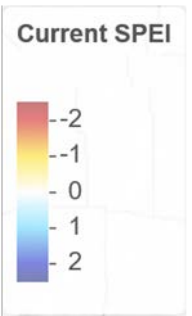


Standardized Precipitation Index (SPI)

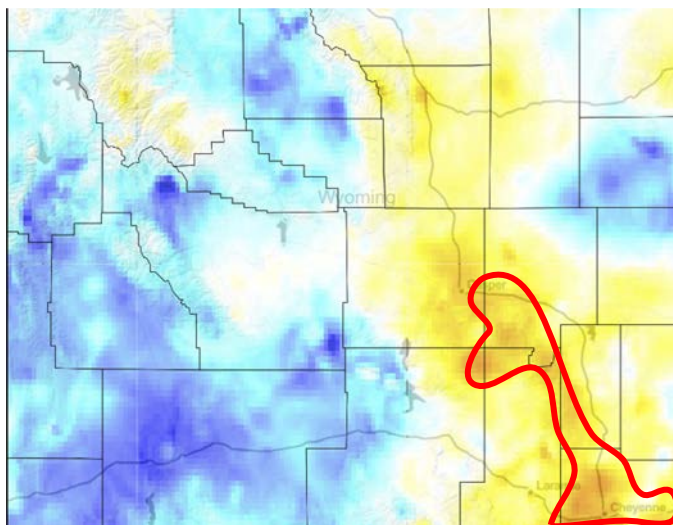
- Long-term dryness resulted in drought expansion in eastern Wyoming.

90-Day

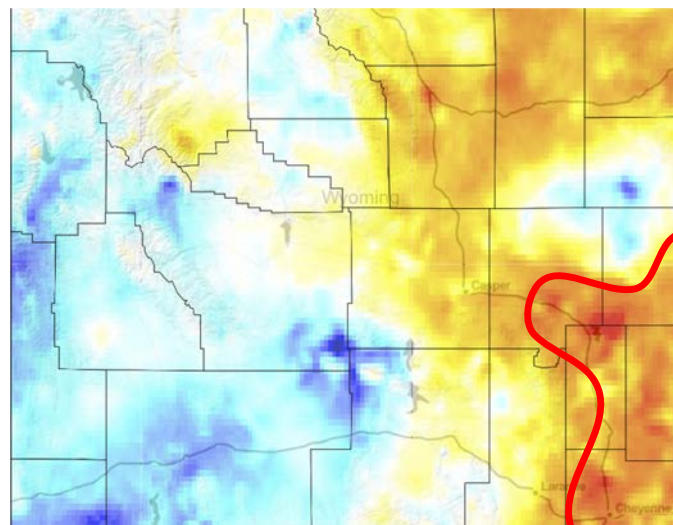




30-Day



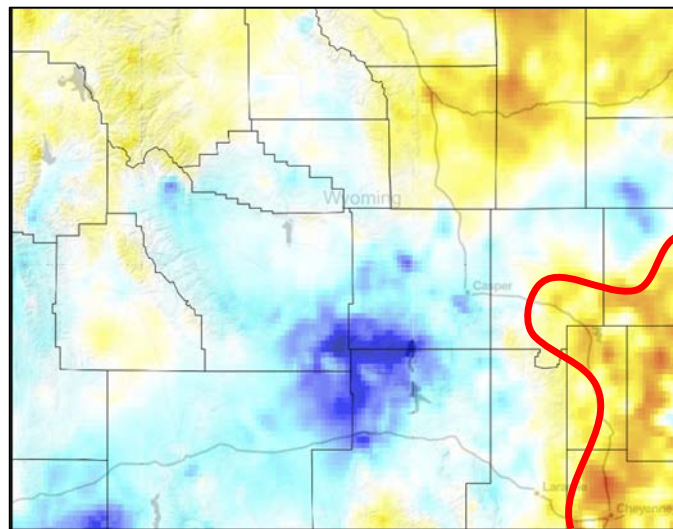
60-Day



Standardized Precipitation Evapotranspiration Index (SPEI)

- Long-term dryness resulted in drought expansion in eastern Wyoming.

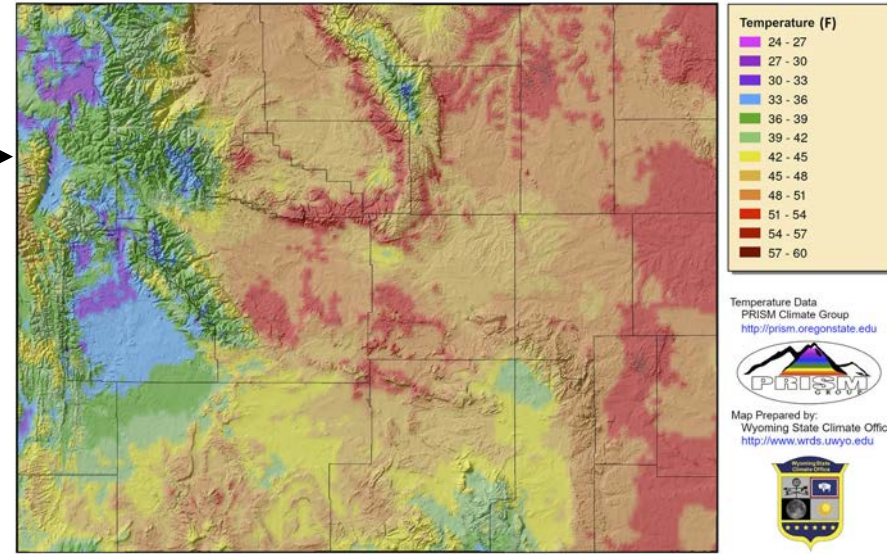
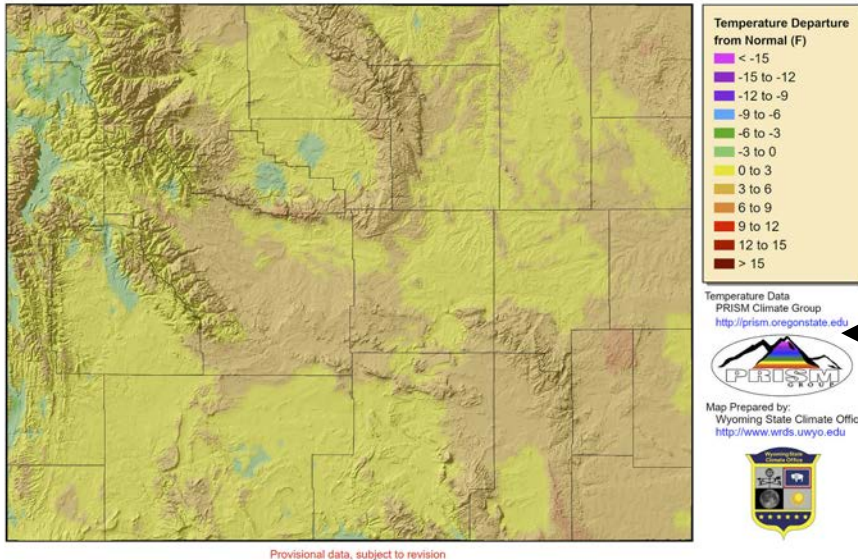
90-Day



14-Day Average Minimum Temperature (02 Sep to 15 Sep)

- Higher elevation nighttime lows starting to dip below freezing

14-Day Average Minimum Temperature (Departure from 1991-2020 Average) for 02 Sep 2021 to 15 Sep 2021



Daily Temperature data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>
Map Created 16 Sep 2021 <http://www.wrds.uwyo.edu>
Temperature averages created from PRISM daily temperature grids

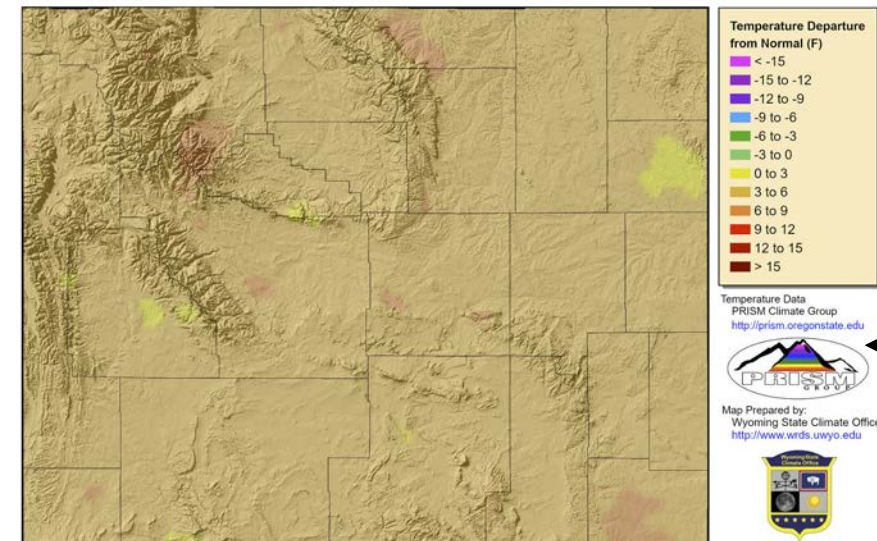
14-Day *Departure from Normal* Average Minimum Temperature

- Up to 6F above average
- Scattered areas in northwest and elsewhere to 3F below average

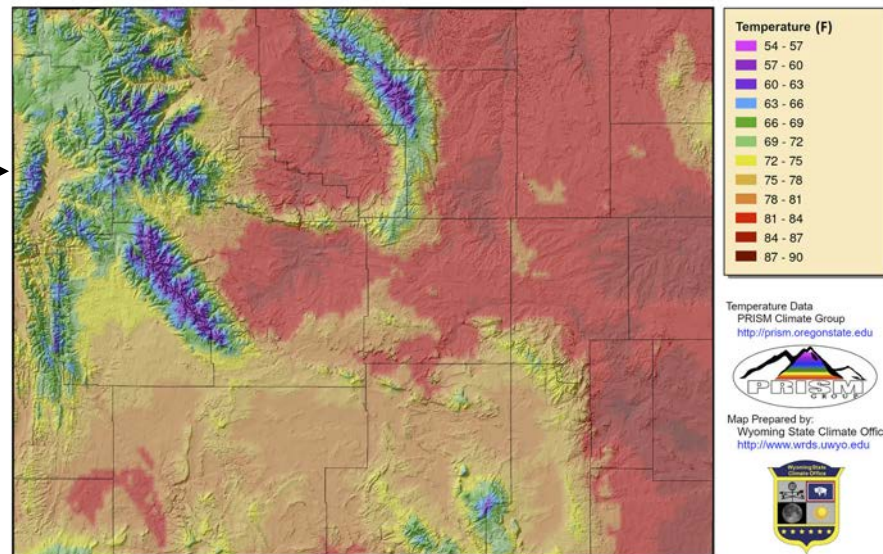
14-Day Average **Maximum** Temperature (02 Sep to 15 Sep)

- Lowest Daytime highs in upper 50s
- 80s in east. plains & Wind/Bighorn Basins

14-Day Average Maximum Temperature (Departure from 1991-2020 Average) for 02 Sep to 15 Sep 2021



14-Day Average Maximum Temperature for 02 Sep 2021 to 15 Sep 2021



Daily Temperature data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, <http://prism.oregonstate.edu>
Map Created 16 Sep 2021 <http://www.wrds.uwyo.edu>
Temperature averages created from PRISM daily temperature grids

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

- Mostly 3-6F above average

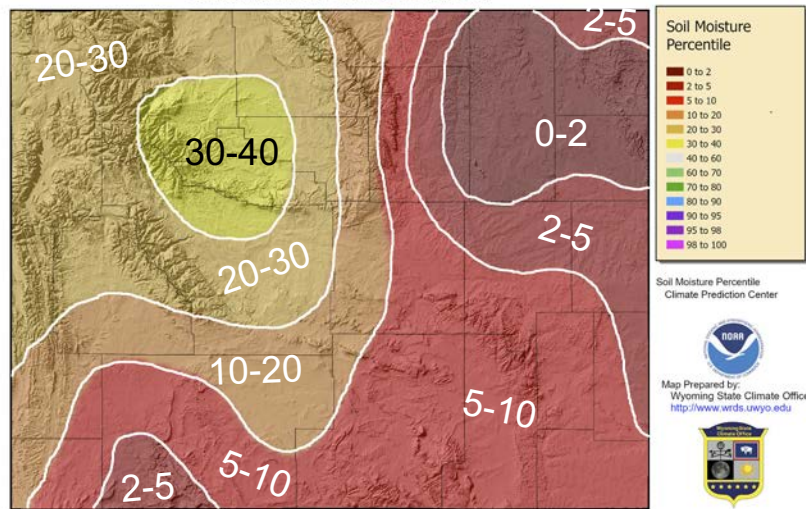
Soil Moisture Percentile

Two Weeks Ago
02 Sep 2021

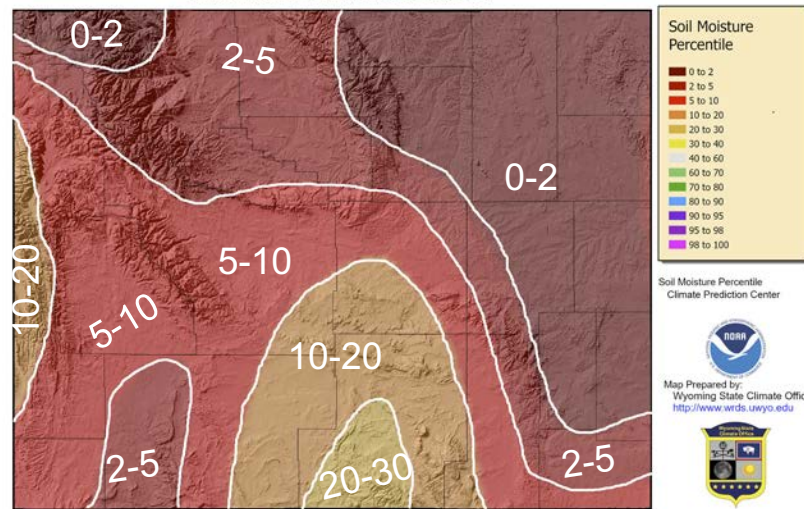
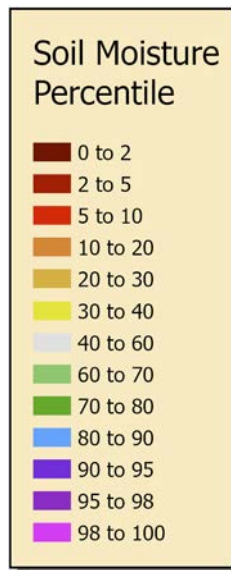
Soil Moisture Percentile for 02 Sep 2021

15 Sep 2021

Soil Moisture Percentile for 15 Sep 2021



Provisional data, subject to revision

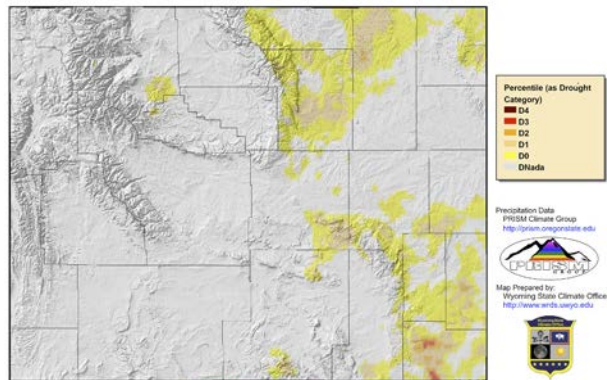


Provisional data, subject to revision

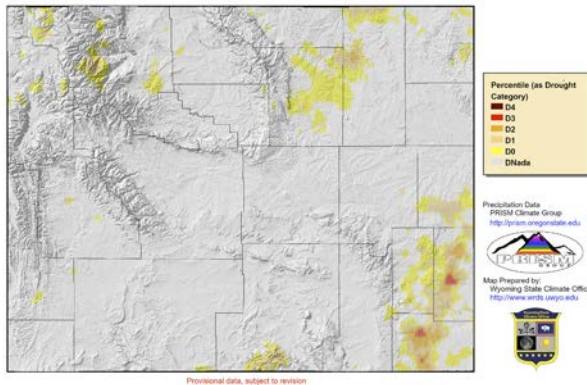
Modeled Soil Moisture Percentile https://www.cpc.ncep.noaa.gov/products/GIS/GIS_DATA/USDM_Products/soil/soil_percentile.php
Map Created 16 Sep 2021 <http://www.wrds.uwyo.edu>

Input to the US Drought Monitor

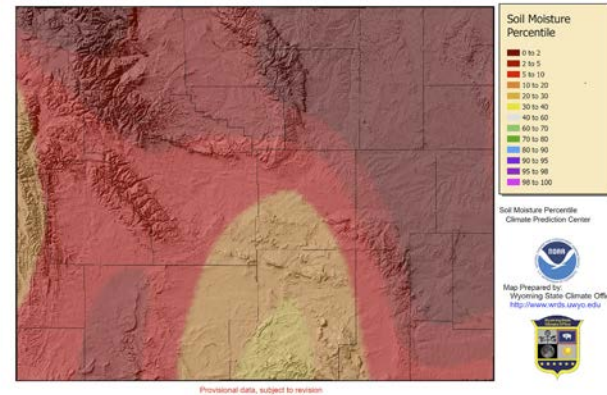
60-Day Precipitation Percentile (as Drought Category) for 18 Jul 2021 to 15 Sep 2021



90-Day Precipitation Percentile (as Drought Category) for 18 Jun 2021 to 15 Sep 2021



Soil Moisture Percentile for 15 Sep 2021

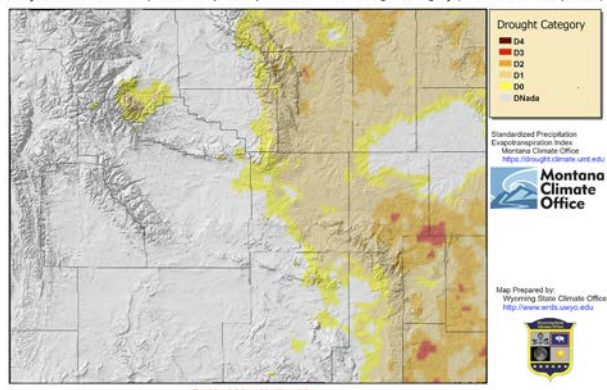


Daily precipitation data from PRISM Climate Group. Copyright ©2021, PRISM Climate Group, Oregon State University.
Map Created 16 Sep 2021 <http://www.wrds.wyo.edu>
Daily percentiles created from PRISM daily precipitation grids.

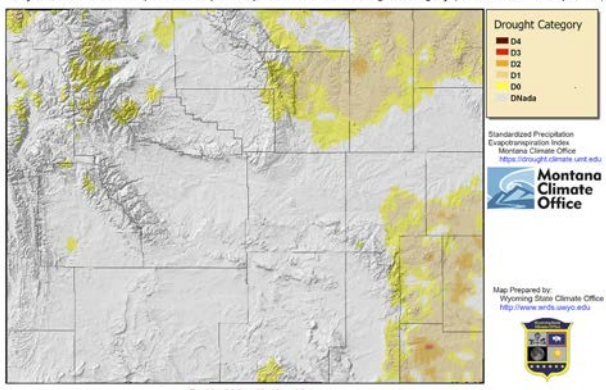
Daily precipitation data from PRISM Climate Group. Copyright ©2021, PRISM Climate Group, Oregon State University.
<http://prism.oregonstate.edu>
Map Created 16 Sep 2021 <http://www.wrds.wyo.edu>
Daily percentiles created from PRISM daily precipitation grids.

Modelled Soil Moisture Percentile https://www.cpc.ncep.noaa.gov/products/GIS/GIS_DATA/USDM_Products/soilmoist_percentile.php
Map Created 16 Sep 2021 <http://www.wrds.wyo.edu>

60-Day Standardized Precipitation Evapotranspiration Index as Drought Category (17 Jul 2021-14 Sep 2021)



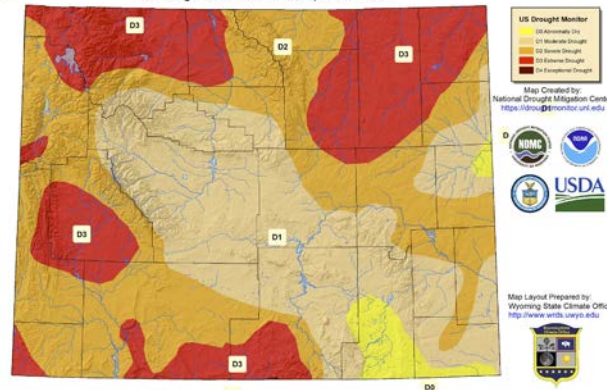
90-Day Standardized Precipitation Evapotranspiration Index as Drought Category (17 Jun 2021-14 Sep 2021)



Standardized Precipitation Evapotranspiration Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 16 Sep 2021 <http://www.wrds.wyo.edu>

Standardized Precipitation Evapotranspiration Index Created by Montana Climate Office <https://drought.climate.umt.edu>
Map Created 16 Sep 2021 <http://www.wrds.wyo.edu>

US Drought Monitor as of 14 September 2021



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>



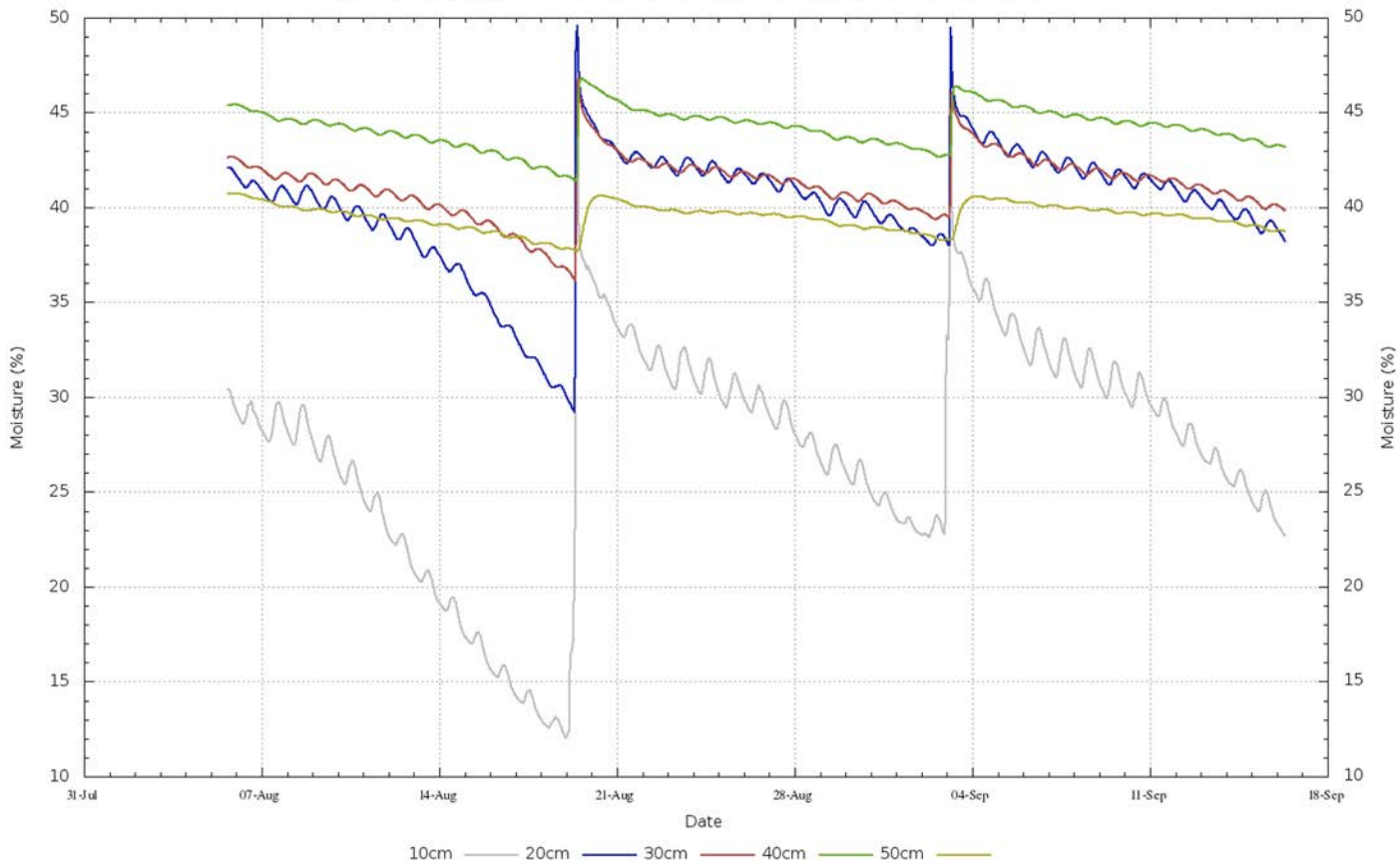
Soil Moisture at Thunder Basin Grasslands

Campbell/Converse County Line Area

Thunder Basin Grasslands - 2021-09-16 07:30:00 (Created Thu Sep 16 08:35:02 MDT 2021)

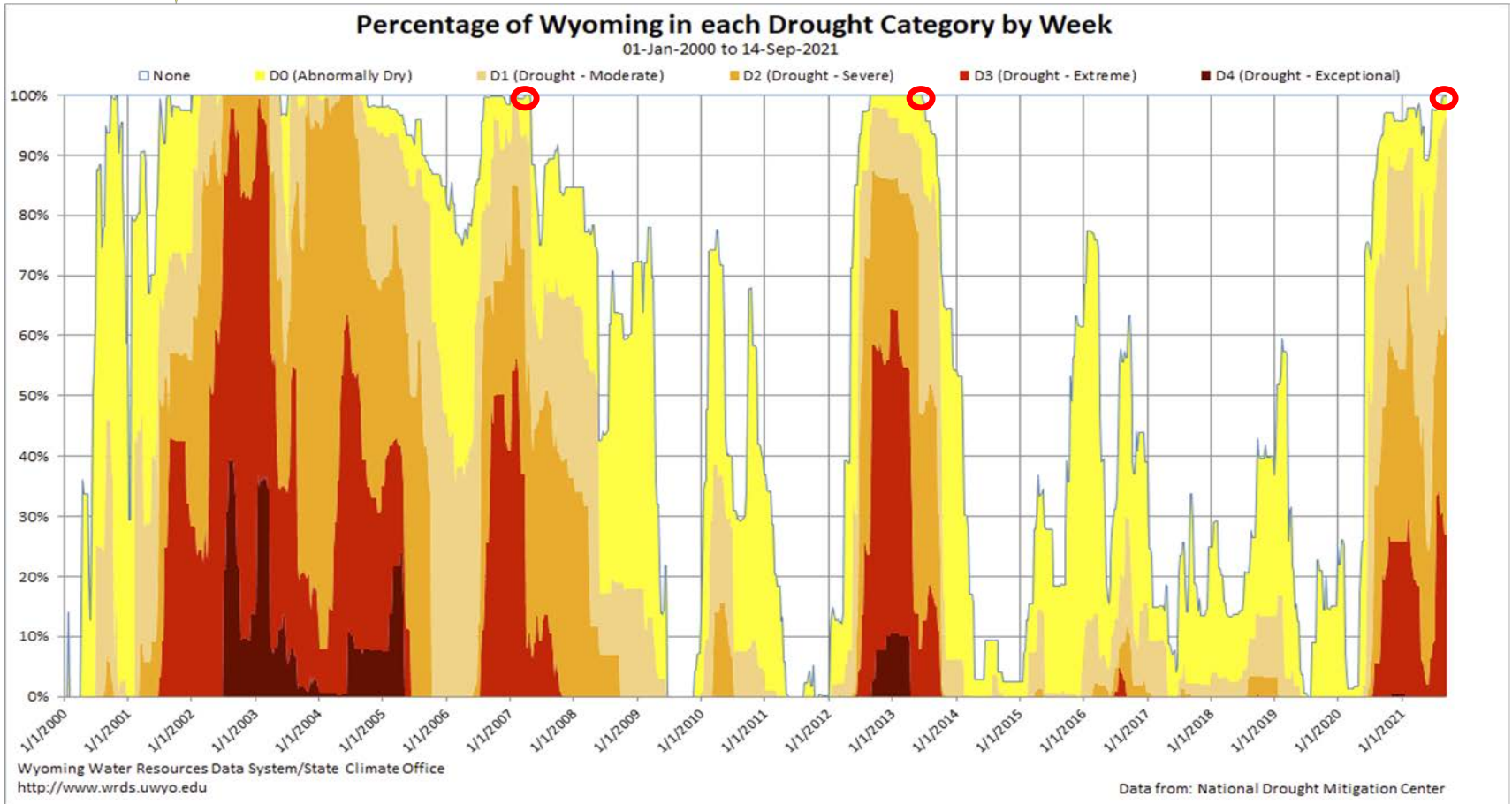
Precip on 18-19 Aug
and 02-03 Sep
caused some
increases

Drops off quick in
upper 10cm/4"





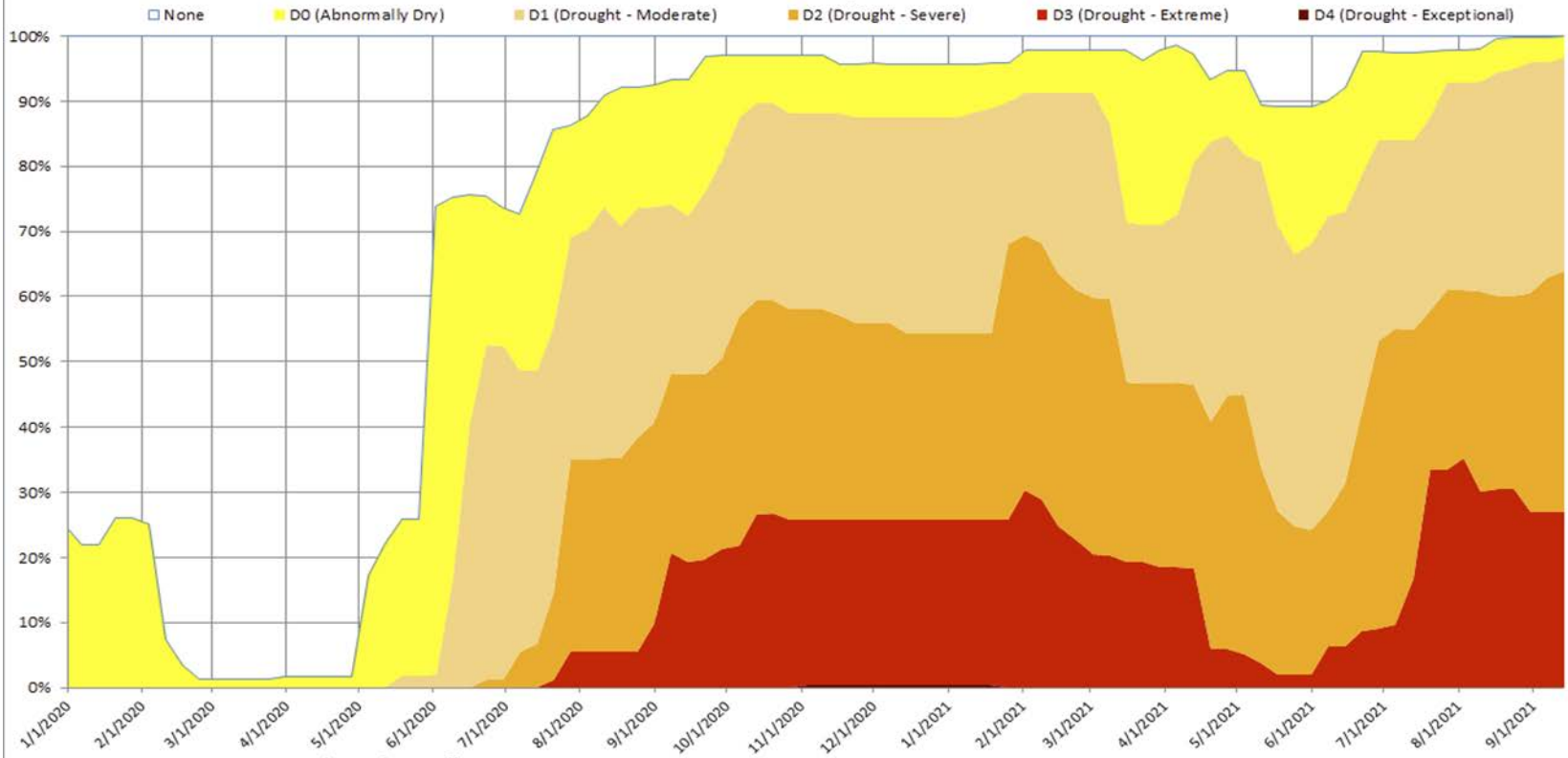
Wyoming Area Affected: 100% D0-D4 ; 96.76% D1-D4





Percentage of Wyoming in each Drought Category by Week

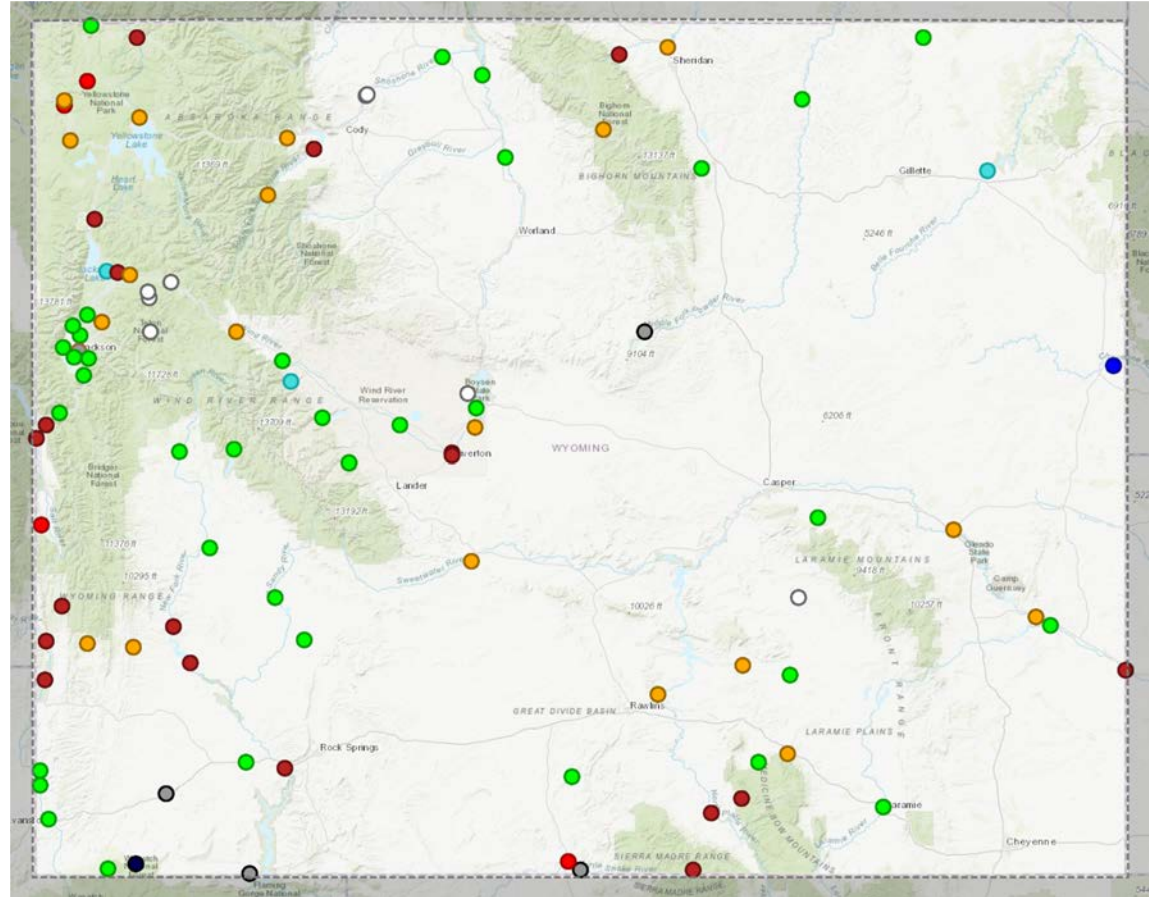
01-Jan-2020 to 14-Sep-2021



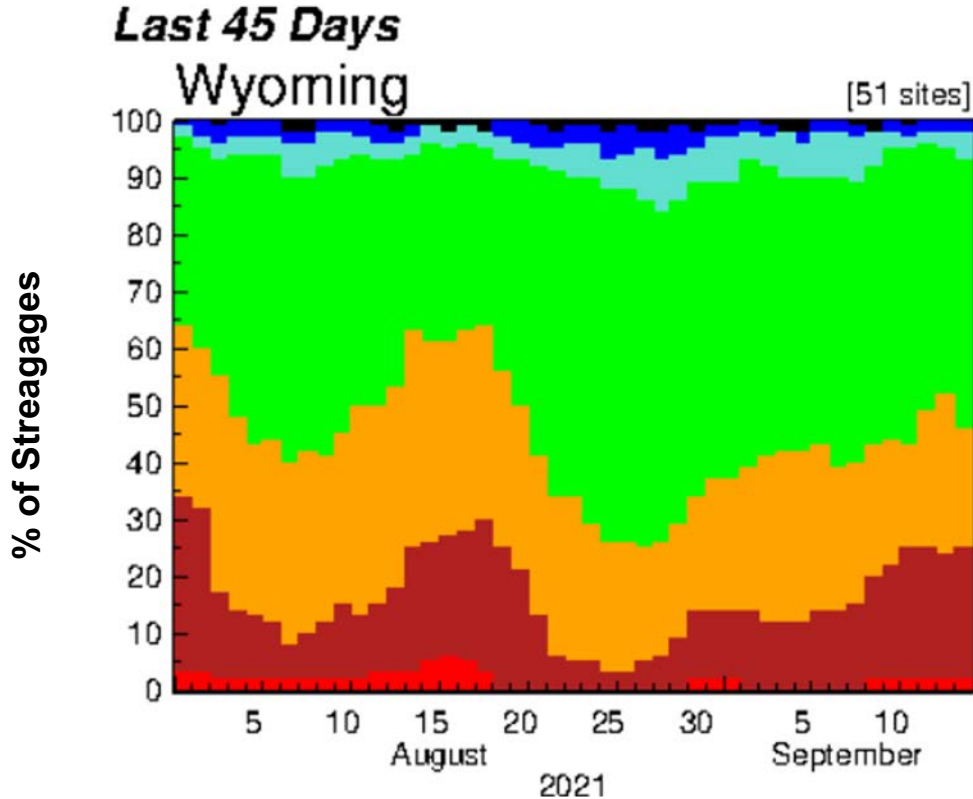
Stream Flow Status

Streams: Flow status

- All-Time Low for this Day (0th percentile (minimum))
- Much Below Normal (<10th percentile)
- Below Normal (10th – 24th percentile)
- Normal (25th – 75th percentile)
- Above Normal (76th – 90th percentile)
- Much Above Normal (>90th percentile)
- All-Time High for this Day (100th percentile (maximum))
- Not Flowing (0 cubic feet per second)
- Above NWS Flood Stage (See Comments)
- Not Ranked (See Comments)



Flow Trends since early August











Only sites with 30 yrs record and no missing values.

Trend during last 3 weeks is towards more streams being significantly below their long-term average flow

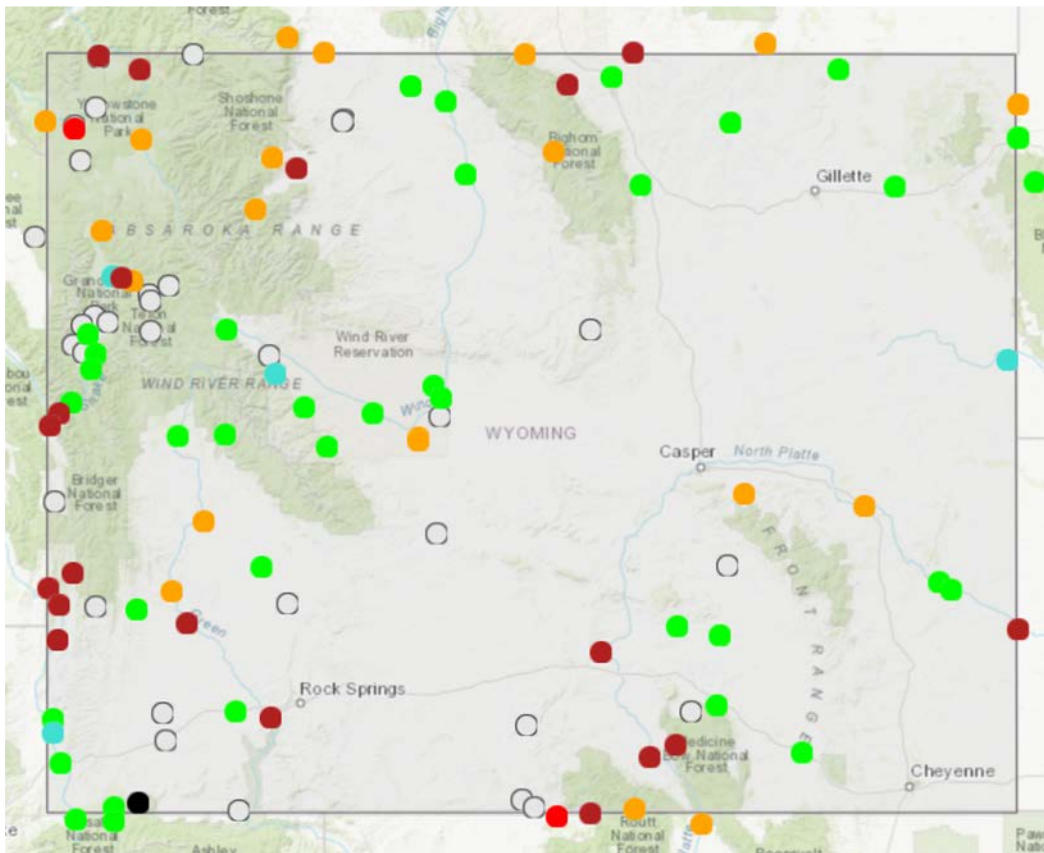
Still slightly better than a month ago

Lowest relative to their average

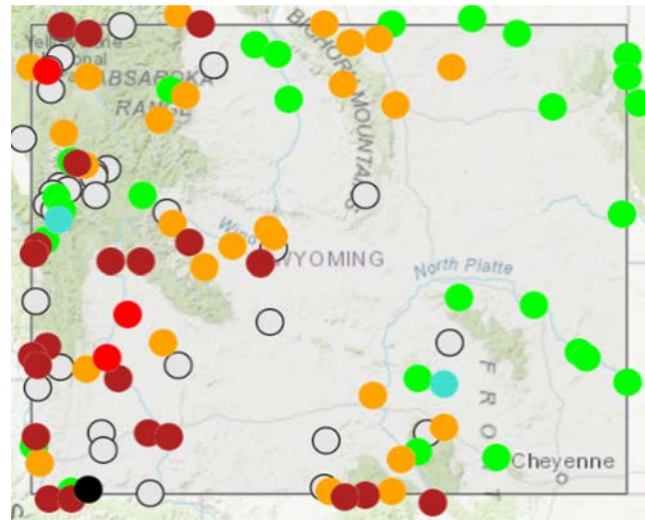
- Firehole River near West Yellowstone
- North Brush Creek near Saratoga

Explanation - Percentile classes							
							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

7-Day Avg Compared to last Month (Sep 16)



Aug 18



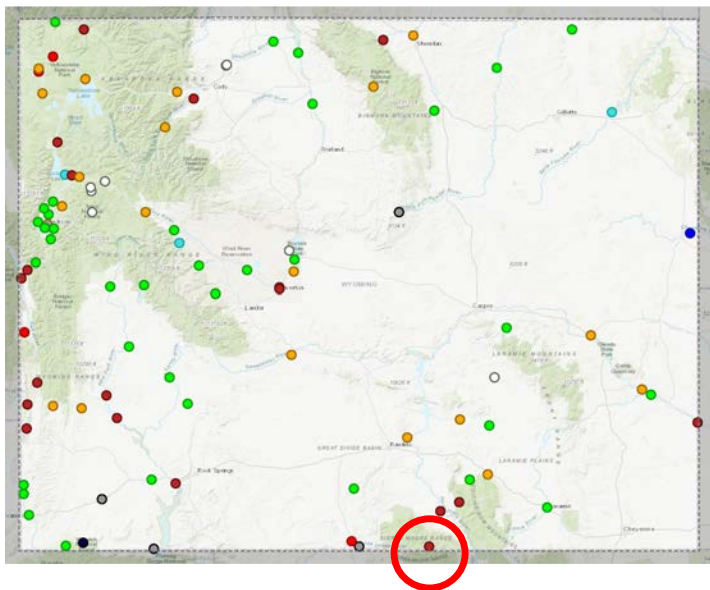
Explanation - Percentile classes

Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

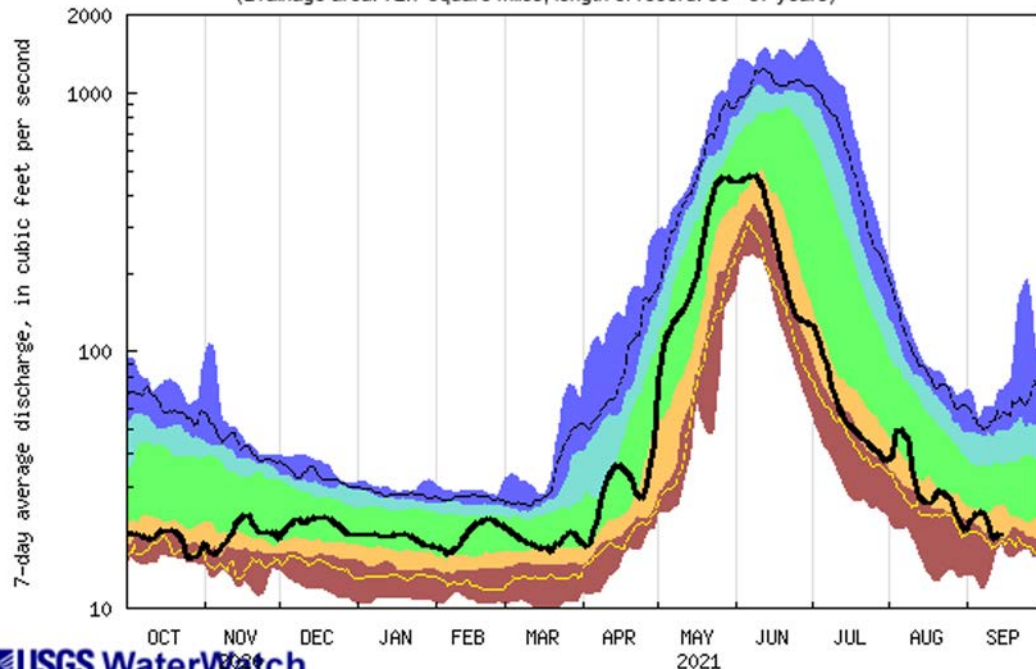
<https://waterwatch.usgs.gov>

Most locations improved slightly from last month

Select WY Streamflows



USGS 06623800 ENCAMPMENT RIVER AB HOG PARK CR, NR ENCAMPMENT, WY
(Drainage area: 72.7 square miles, length of record: 56 - 57 years)



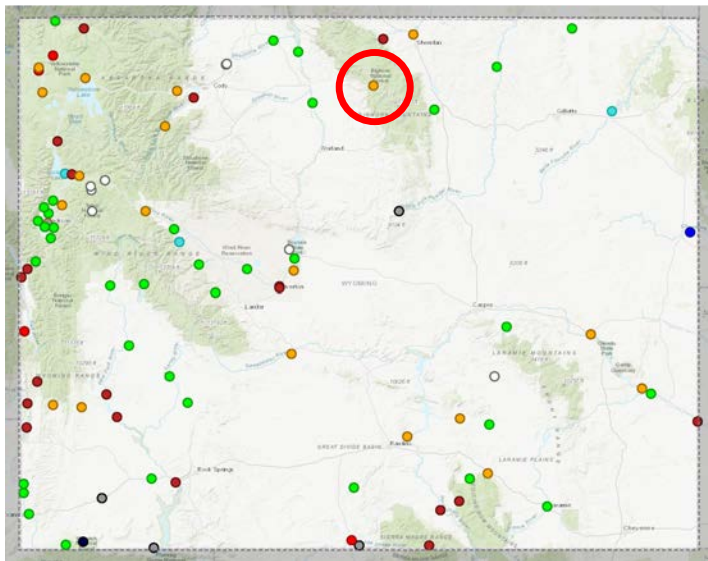
USGS WaterWatch

Last updated: 2021-09-16

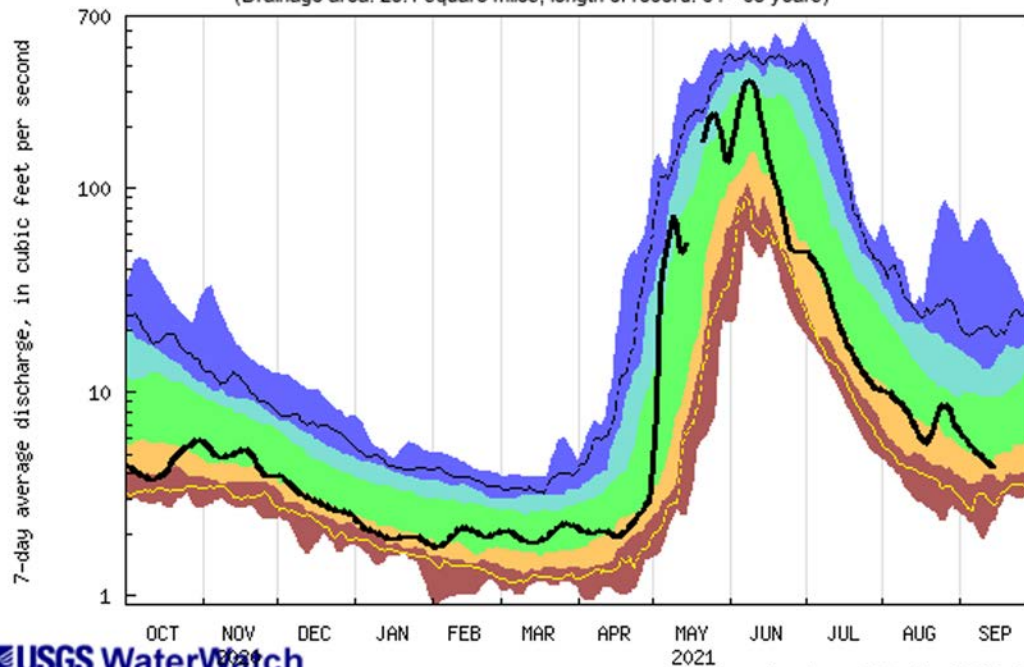
<https://dashboard.waterdata.usgs.gov/>
<https://waterdata.usgs.gov/>

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



USGS 06278300 SHELL CREEK ABOVE SHELL CREEK RESERVOIR, WY
(Drainage area: 23.1 square miles, length of record: 64 - 65 years)



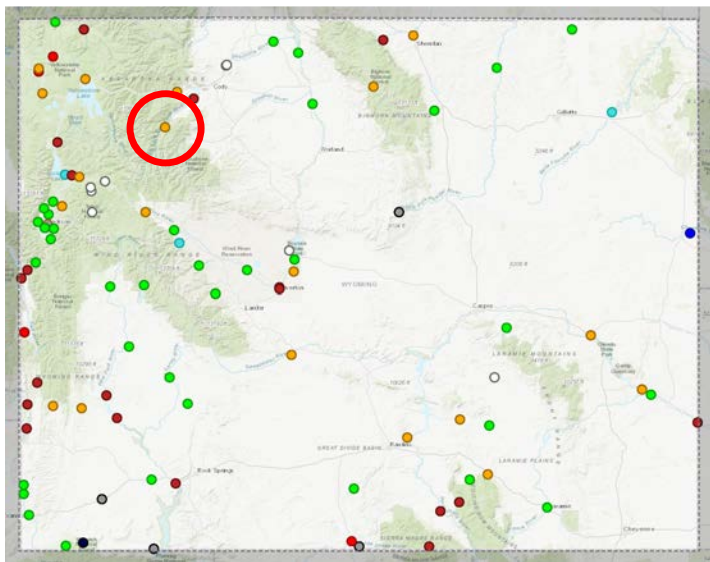
USGS WaterWatch

Last updated: 2021-09-16

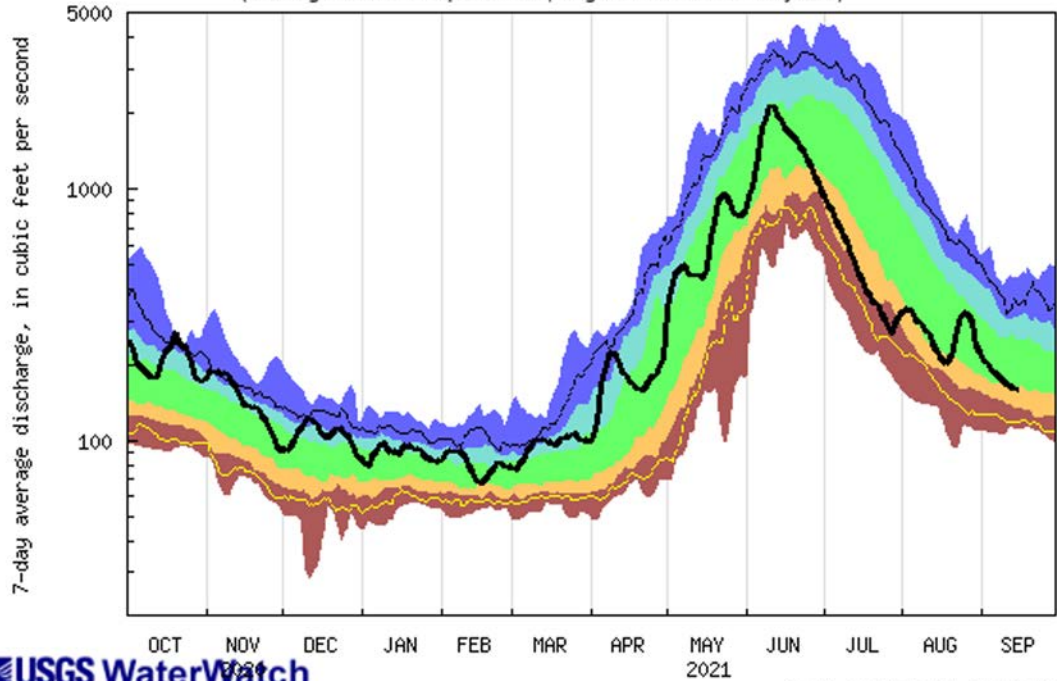
<https://dashboard.waterdata.usgs.gov/>
<https://waterdata.usgs.gov/>

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

Select WY Streamflows



USGS 06280300 SOUTH FORK SHOSHONE RIVER NEAR VALLEY, WY
(Drainage area: 297 square miles, length of record: 62 - 64 years)



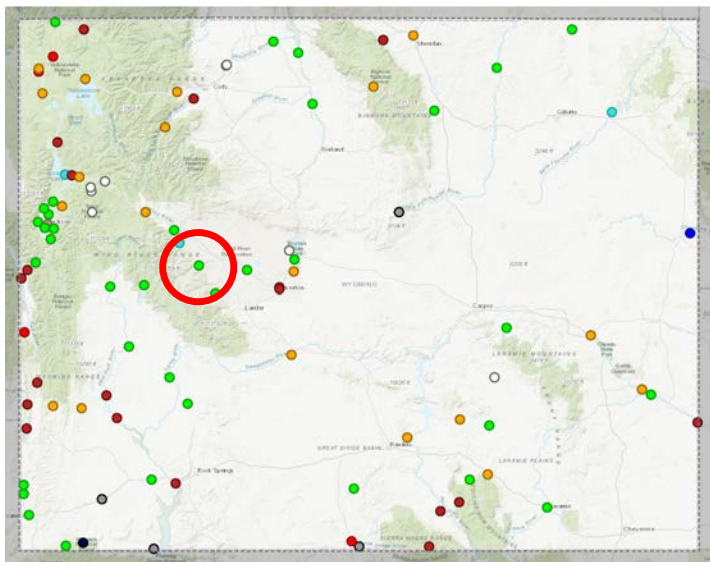
USGS WaterWatch

Last updated: 2021-09-16

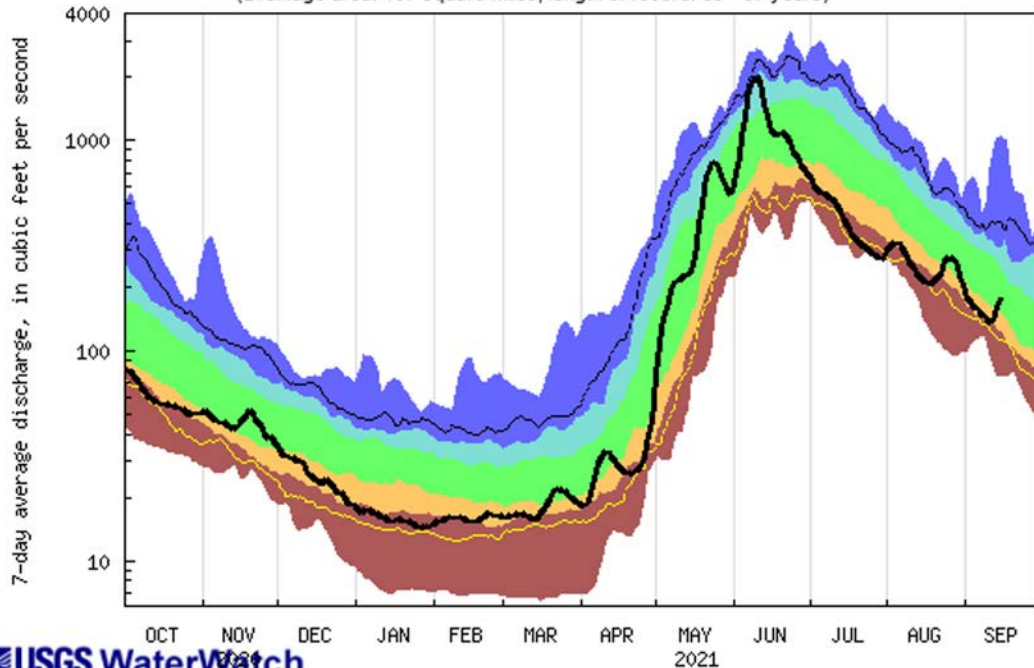
<https://dashboard.waterdata.usgs.gov/>
<https://waterdata.usgs.gov/>

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

Select WY Streamflows



USGS 06224000 BULL LAKE CREEK ABOVE BULL LAKE, WY
(Drainage area: 187 square miles, length of record: 65 - 67 years)



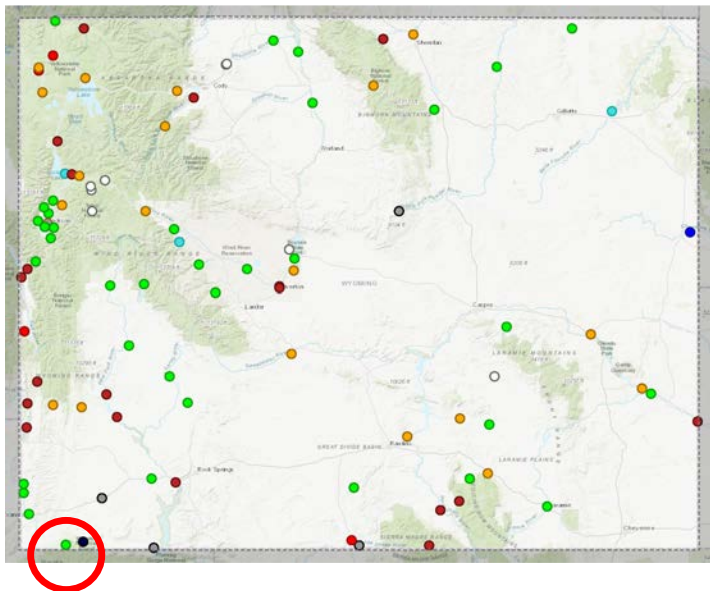
USGS WaterWatch

Last updated: 2021-09-16

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

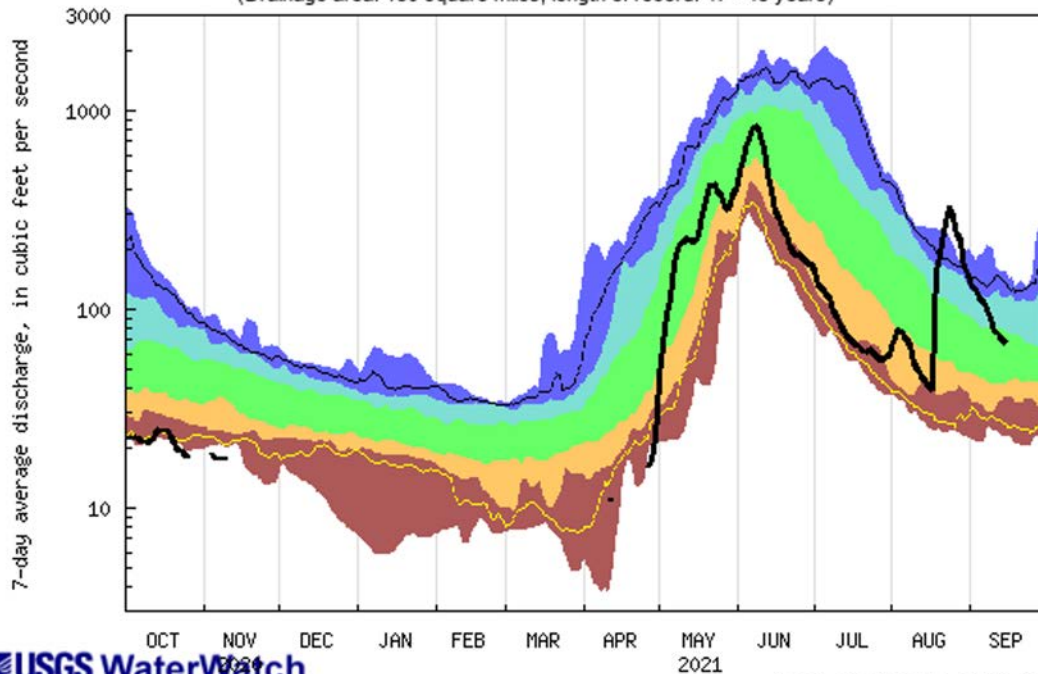
Explanation - Percentile classes						
	-----			-----		
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile -highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

Select WY Streamflows



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

USGS 09217900 BLACKS FORK NEAR ROBERTSON, WY
 (Drainage area: 130 square miles, length of record: 47 - 48 years)

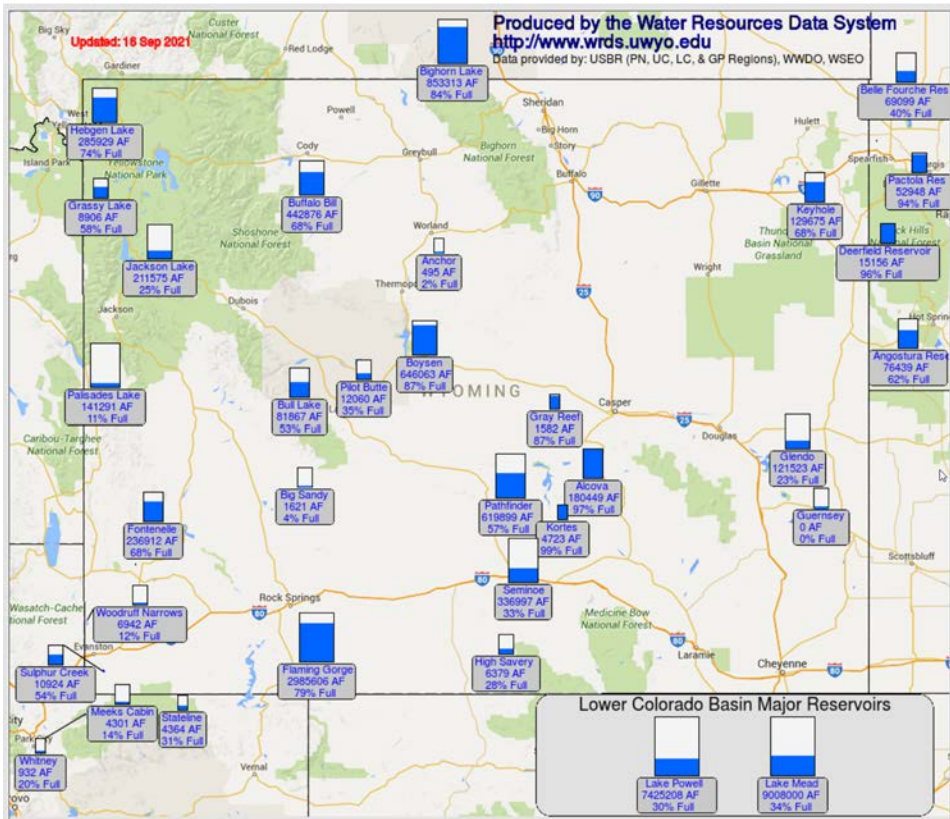


USGS WaterWatch

Last updated: 2021-09-16

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

WY Reservoirs (Updated 09/16/21)



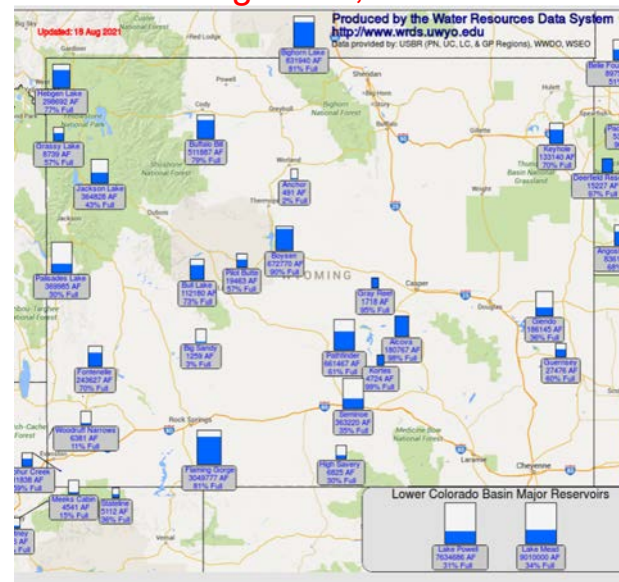
September 16, 2021

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

Compared to August

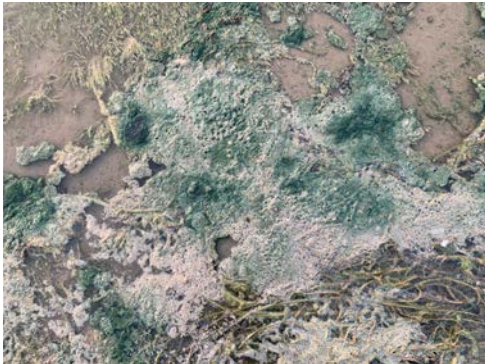
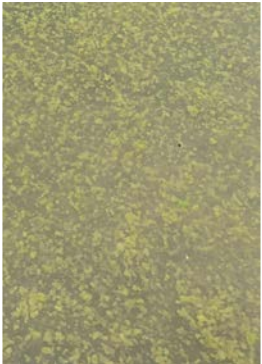
- Most reservoirs decreased slightly in volume of water
- No significant changes

August 18, 2021



Harmful Cyanobacterial Blooms

- Dense concentrations of cyanobacteria (also known as blue green algae)
- Thrive in warm, nutrient rich waterbodies
- Appear as surface scums, clumps, and/or diffuse in water column
- Can produce toxins that can affect the nervous system, liver, kidneys, and skin
- Can affect recreation, wildlife, drinking water, and agriculture



Harmful Cyanobacterial Bloom Action Plan for Publically Accessible Waterbodies in Wyoming



- Developed by the WDEQ, the WDH, the WLB, resource management agencies, and other stakeholders
- Identify potential HCBs in Wyoming surface waters and inform collaborators and the public of the potential health risks

STEP 1: Surveillance and Reporting

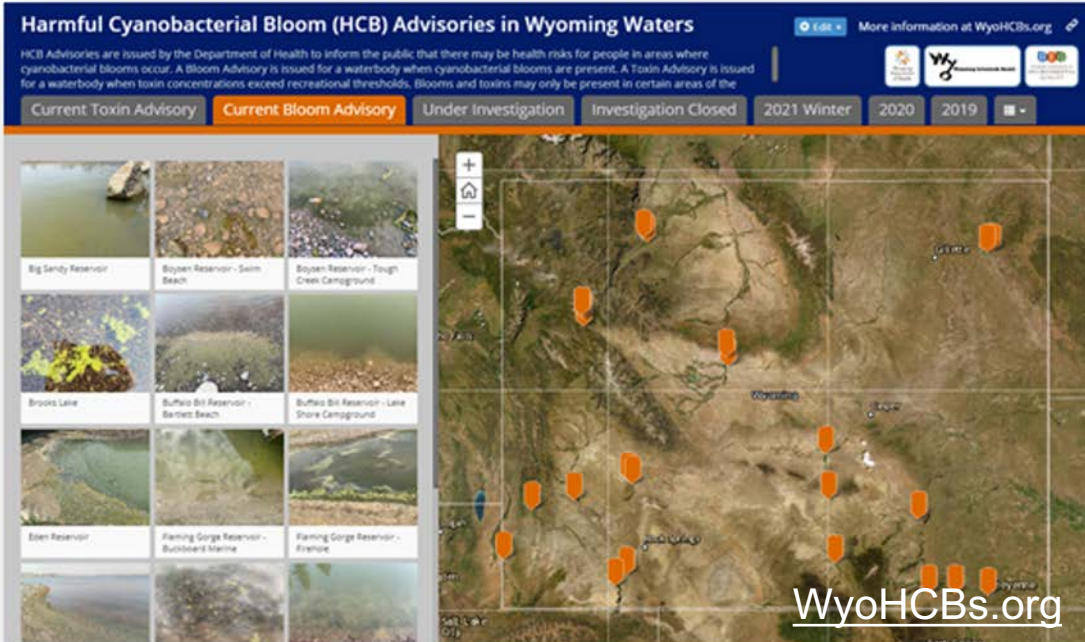
STEP 2: Optional Preliminary Screening

STEP 3: Data Collection and Issuing Advisories

STEP 4: Lifting Advisories

Current Bloom Advisories in Wyoming

The WDH issues a Bloom Advisory when cyanobacteria abundance exceeds 20,000 cells/mL.



- Big Sandy Reservoir
- Boysen Reservoir
- Brooks Lake
- Buffalo Bill Reservoir
- Eden Reservoir
- Flaming Gorge Reservoir
- Fontenelle Reservoir
- Glendo Reservoir
- West Granite Springs Reservoir
- Kemmerer City Reservoir
- Keyhole Reservoir
- Leazenby Lake
- Ocean Lake
- Pathfinder Reservoir
- Pelham Lake
- Rainbow Lake
- Saratoga Lake
- Seminoe Reservoir
- Sloans Lake
- Upper Jade Lake
- Viva Naughton Reservoir
- Wheatland Reservoir #3
- Woodruff Narrows

Current Toxin Advisories in Wyoming

The WDH issues a Toxin Advisory when toxins exceed recreational thresholds.

The screenshot displays the 'Harmful Cyanobacterial Bloom (HCB) Advisories in Wyoming Waters' website. The header includes the title and a link to 'More information at WyoHCBs.org'. Below the header is a navigation bar with tabs for 'Current Toxin Advisory', 'Current Bloom Advisory', 'Under Investigation', and 'Investigation Closed', along with year filters for '2021 Winter', '2020', and '2019'. The main content area features a grid of six thumbnail images showing cyanobacterial blooms in various water bodies, with labels: 'Saratoga Lake', 'Leazenby Lake (Hundred Springs Reservoir)', 'Keyhole Reservoir - Wind Creek', 'Keyhole Reservoir - Rocky Point', and 'Woodruff Narrows Reservoir'. A large satellite map of Wyoming is shown on the right, with red shield icons indicating the locations of the advisories. The website URL 'WyoHCBs.org' is visible at the bottom of the map.

- Leazenby Lake (Hundred Springs Reservoir)
- Keyhole Reservoir
- Saratoga Reservoir
- Woodruff Narrows Reservoir

If You Encounter a Bloom

- Do not swim or come in contact with green water, scums, or clumps
- Do not ingest water from a bloom
- Rinse fish with clean water and eat only the fillet portion
- Avoid water spray from a bloom
- Do not allow pets or livestock to drink water near a bloom, eat bloom material, or lick fur after contact

- Report the bloom to DEQ
- Report any HCB related illnesses to WDH



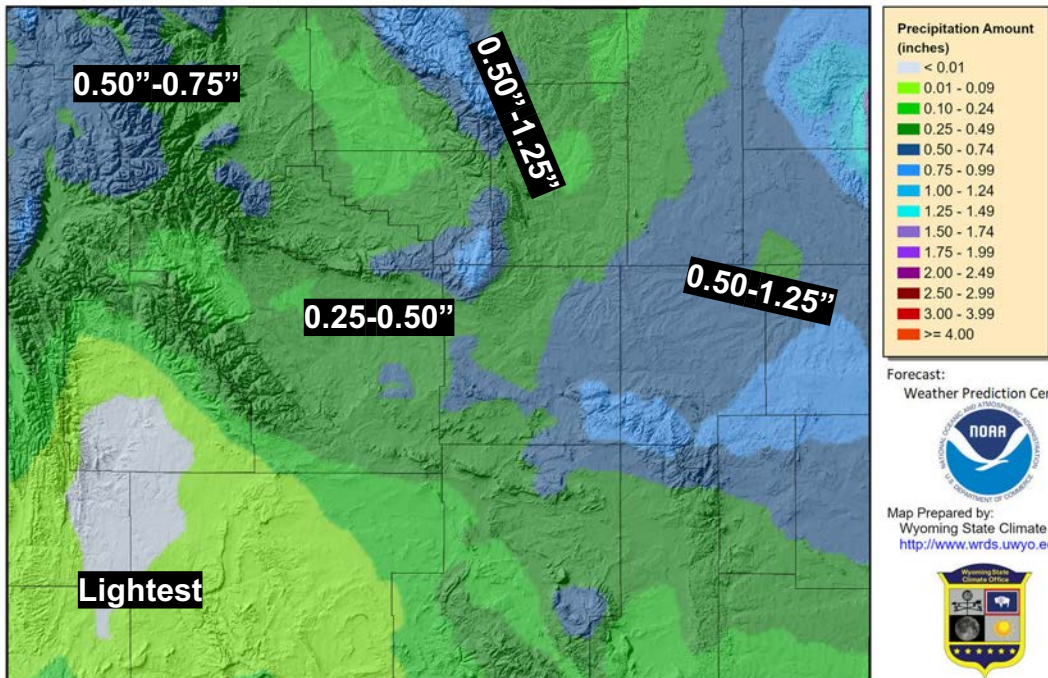


Forecasts & Outlooks



7-Day Quantitative Precipitation Forecast Sept 16 - 22

7-Day Quantitative Precipitation Forecast 16 Sep 2021



Provisional data, subject to revision

Forecast:
Weather Prediction Center



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



Quantitative Precipitation Forecast = Liquid Precipitation Forecast

- Late Sunday through Monday
- Widespread rain for the northeast 2/3rds of state
- Heaviest mtns and northeast/east central
- Mountain snow above 7-8k FT
- Temperatures start warm over the weekend, then trend down to near/below normal temps next week

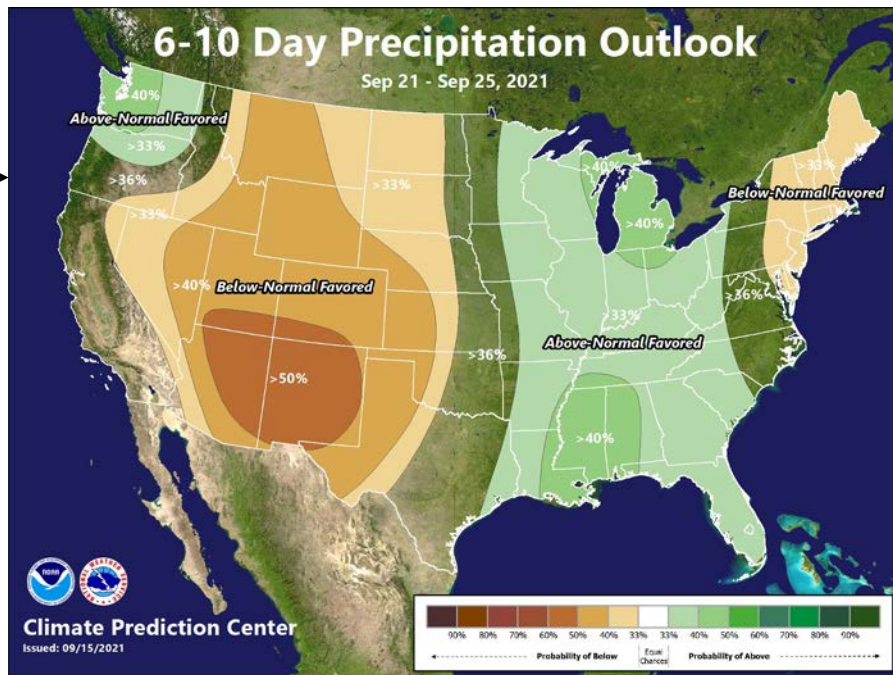
The Quantitative Precipitation Forecast shows the liquid amount of forecasted precipitation over the next 7 days
The Forecast is created by the National Weather Service Weather Prediction Center
Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, National Centers for Environmental Prediction,
and Weather Prediction Center - <https://www.wpc.ncep.noaa.gov>
Map Layout Created 16 Sep 2021 <http://www.wrds.uwyo.edu>

<https://bit.ly/3bZXQeN>



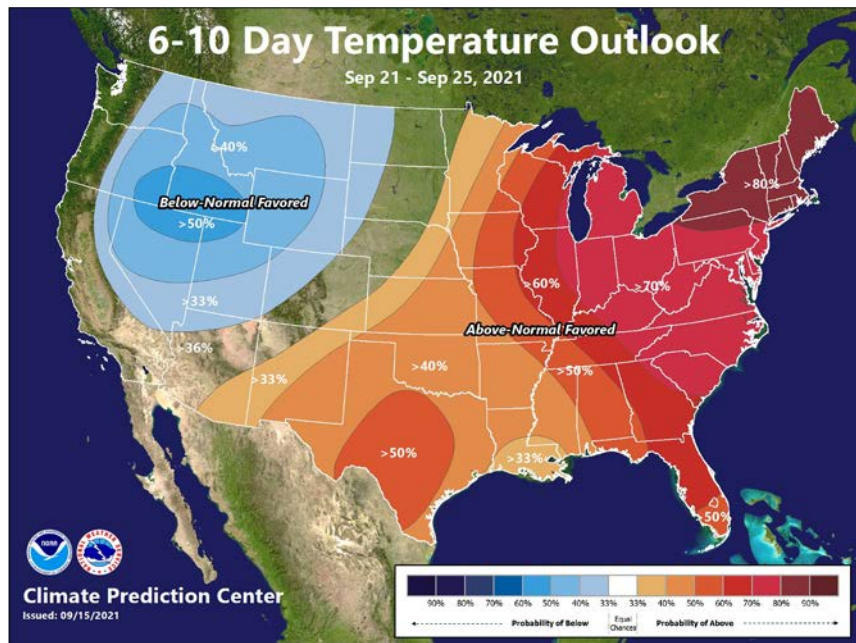
6-10 Day Precipitation September 21 - 25

- Probability = Chance
- **Below normal** chances of precipitation favored



6 - 10 Day Temperatures

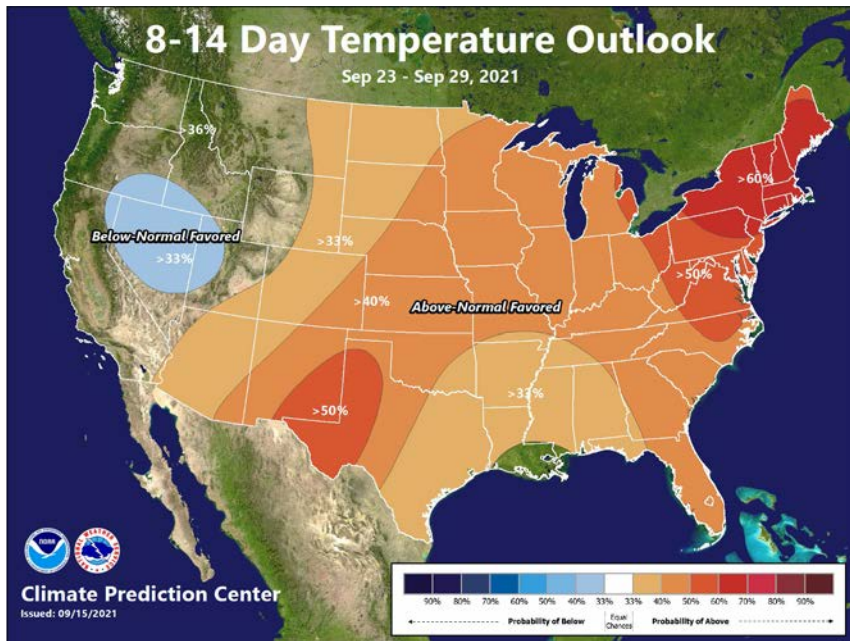
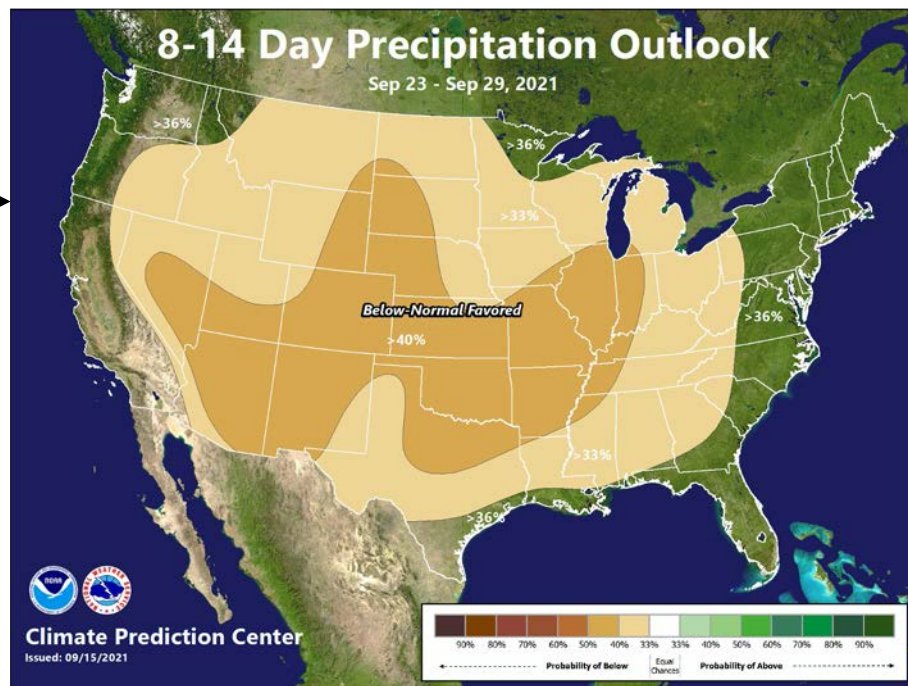
- Mixture of **Below normal** chances favored





8-14 Day Precipitation September 23 - 29

- Probability = Chance
- **Below normal** precipitation favored



8 - 14 Day Temperatures

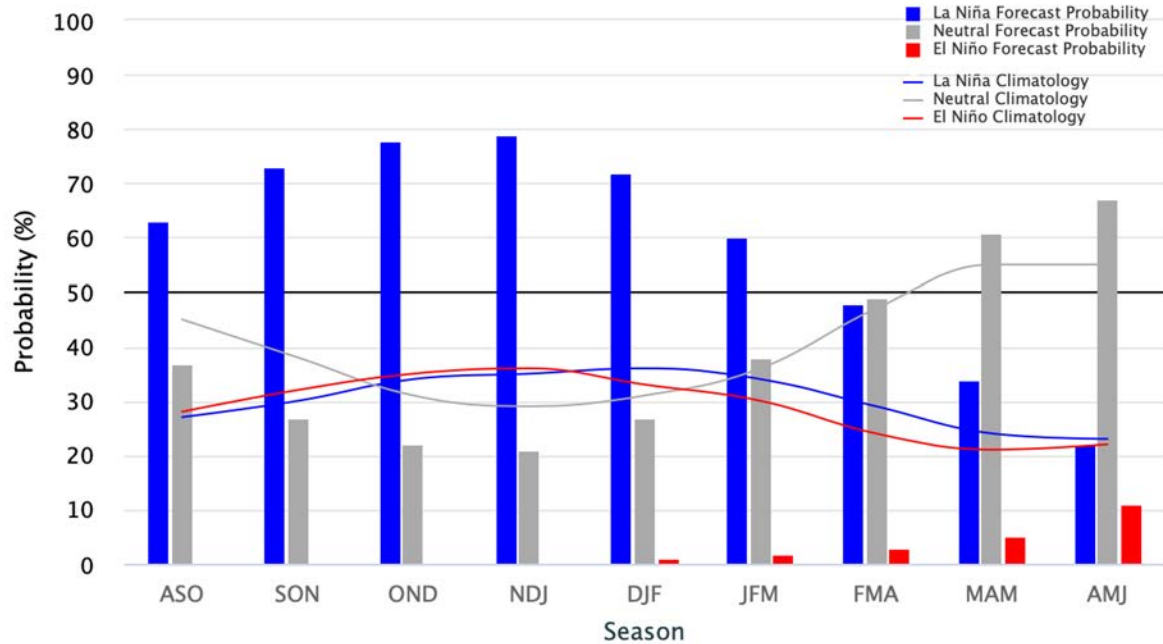
- **Above Normal** temperatures favored for eastern WY, more normal west.



- Note: WY's weather is not as strongly connected to ENSO due to our distance from the ocean
- High probability of a second La Nina in a row.
- Official Winter Outlook released in Oct

Early-September 2021 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: $-0.5\text{ }^{\circ}\text{C}$ to $0.5\text{ }^{\circ}\text{C}$





Fuels Status: Energy Release Component

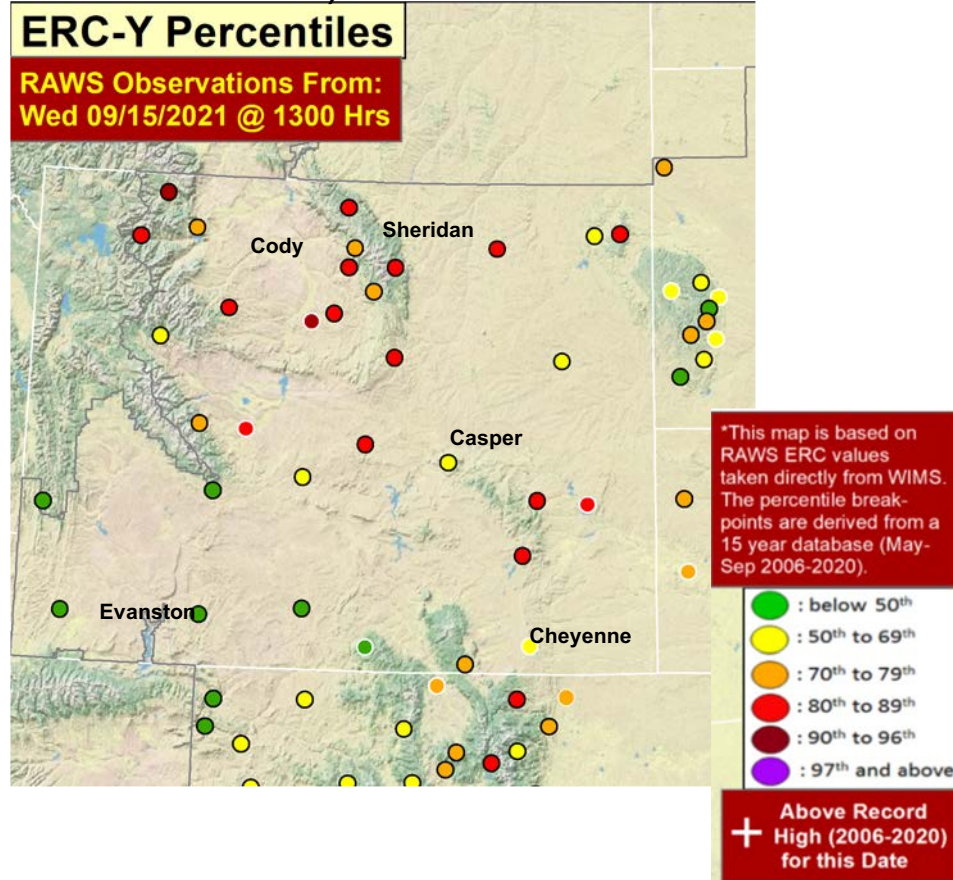
(Observation 08/18/21)

ERC= Energy Release Component

- Potential total energy released per unit area within flaming zone of fire.
- Combines live & dead fuel moistures from all size classes.
- Percentiles based on May-September values from last 15 years.

Currently in Wyoming

- Northern/ Central Wyoming (Bighorn Basin) values are high.
- Most stations reporting above average ERC values.
- Direct Correlation to Drought!
- Low elevation fuels cured where moisture has been lacking. Periodic moisture in other areas keeping things green.
- Snow next week?



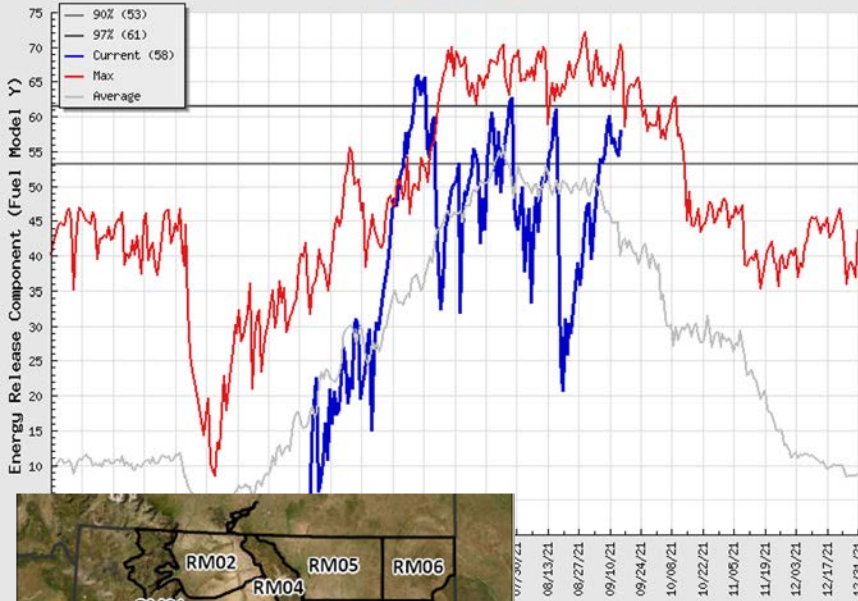


Fuels Status: Energy Release Component

(Observation 09/15/21)

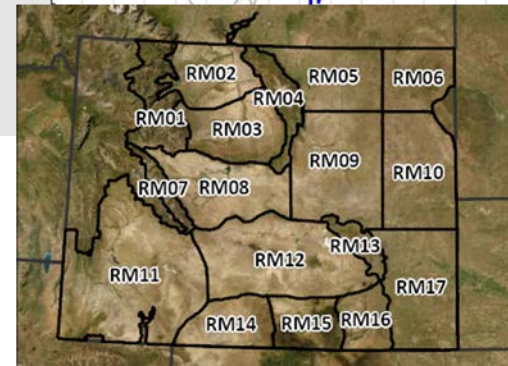
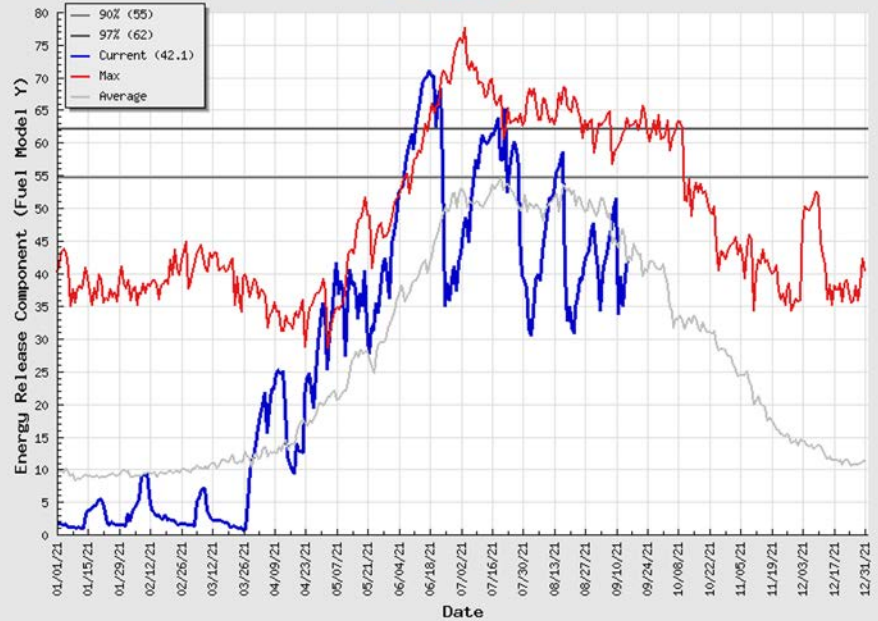
RM02 - N. Big Horn Basin

Valid Date: 15-Sep-2021



RM11 - Great Divide Basin

Valid Date: 15-Sep-2021



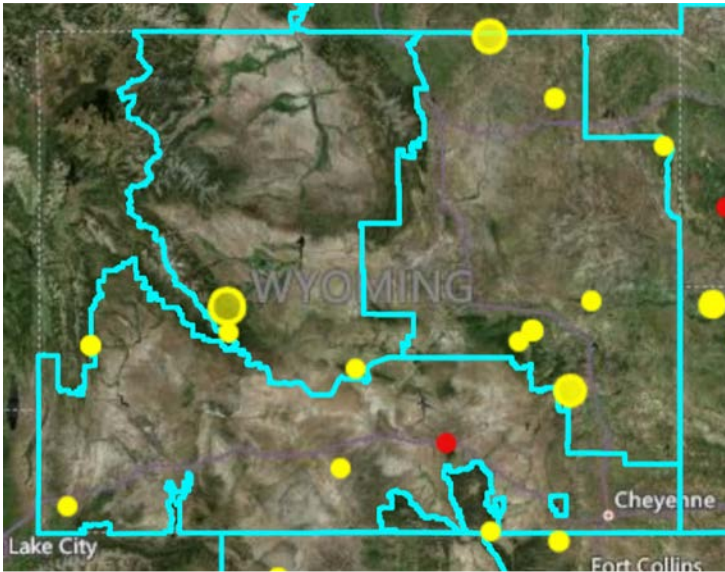
https://gacc.nifc.gov/rmcc/predictive/erc_bi_100_1000_map.htm



2021 Wildfire Activity to Date

A National Picture

Issued 09/15/21



Active Incident Resource Summary							
GACC	Incidents	Cumulative Acres	Crews	Engines	Helicopters	Total Personnel	Change in Personnel
AICC	0	0	0	0	0	0	0
NWCC	19	672,755	120	279	41	5,406	-200
ONCC	10	2,037,738	157	575	70	9,388	-150
OSCC	5	54,028	26	66	27	1,108	47
NRCC	22	383,891	22	110	11	1,505	3
GBCC	6	70,666	10	15	10	505	38
SWCC	0	0	0	0	0	0	0
RMCC	6	13,048	7	19	8	329	12
EACC	2	28,154	0	15	2	276	4
SACC	4	1,177	0	12	0	38	8
Total	74	3,261,457	342	1,091	169	18,555	-240

Wyoming Fires

Issued 09/15/21

New Fires Initial Attack Age < 30 hrs ●

Ongoing Fires Age < 10 days & Updated < 5 days ●

Prescribed Fires Age < 10 days & Updated < 5 days ●

- Fire occurrence has been limited.
- Initial Attack efforts remain successful.

<https://www.nifc.gov/nicc/sitreprt.pdf>

<https://gacc.nifc.gov/rmcc/index.php>



Current Large Fires Burning in WY

UPDATED NIMS 209 REPORTED INCIDENTS

PRIORITY	INCIDENT NAME	ST	UNIT	IC	START DATE	SIZE	SIZE CHANGE 24 HRS	% CTN	TOTAL PERS	PERS CHANGE 24 HRS
1	<u>Sand Creek</u>	WY	SHF	IMT3 Warder	9/9	907	0	30%	197	+12
2	<u>Crater Ridge</u>	WY	BHF	ICT4 Vasey, DeFord (T)	7/17	6,750	+16	68%	40	0

Sand Creek, Shoshone National Forest. IMT3 Warder. 13 miles W of Lander, WY. Burning in timber (litter and understory), grass and brush. Minimal fire behavior with creeping, smoldering and backing. Road and area closures in effect.

Crater Ridge, Bighorn National Forest. ICT4 Vasey, DeFord (T). 31 miles W of Sheridan, WY. Burning in timber (litter and understory), heavy logging slash, and grass. Active fire behavior with group torching, smoldering and creeping. Road, area, and trail closures in effect. Potential threat to residences.



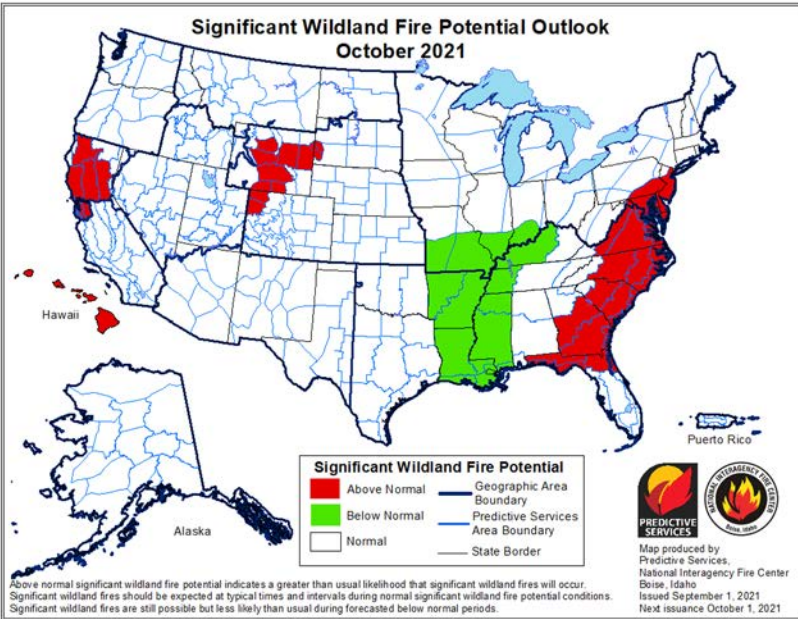
Wildland Fire Outlooks

September 2021

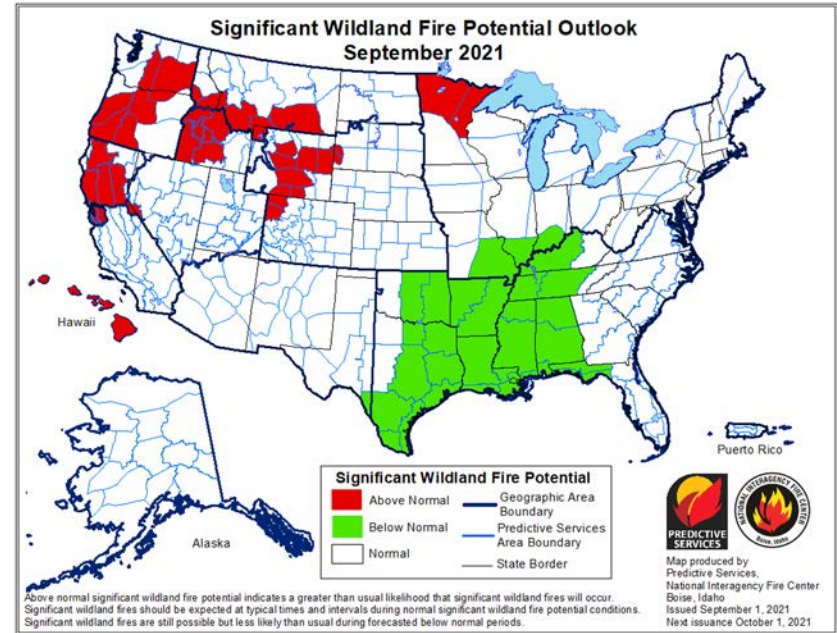
Issued **September 1, 2021**

- No major shift in Danger from last month to this month. Still significant for WY.
- Maintaining the 1-2 months fire occurrence ahead of schedule.

Significant Wildland Fire Potential Outlook
October 2021



Significant Wildland Fire Potential Outlook
September 2021



October 2021

- Most of Wyoming remains in Above Normal Significant Wildfire potential through October.
- Concerning due to potential length of fire season.

<https://bit.ly/3wmjzlC>



How to get involved ...

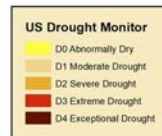
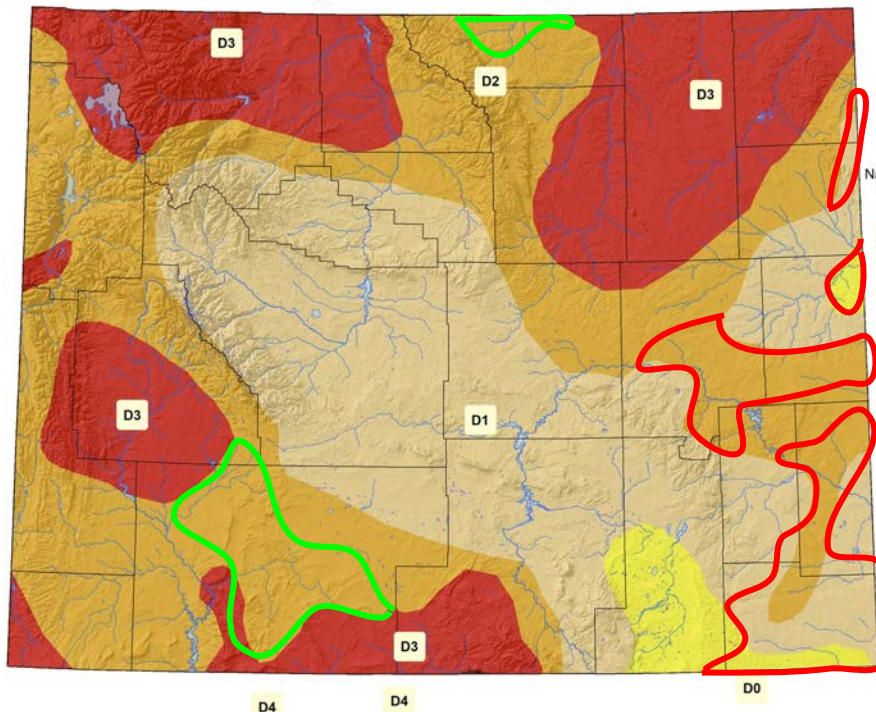
US Drought Monitor for September 14, 2021

(Released Thursday, September 16, 2021)

Valid 8 a.m. EDT

D4

US Drought Monitor as of 14 September 2021



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

Improvements in Sweetwater County along with north-central Sheridan County since the last webinar followed by several **degradations** over eastern Wyoming.

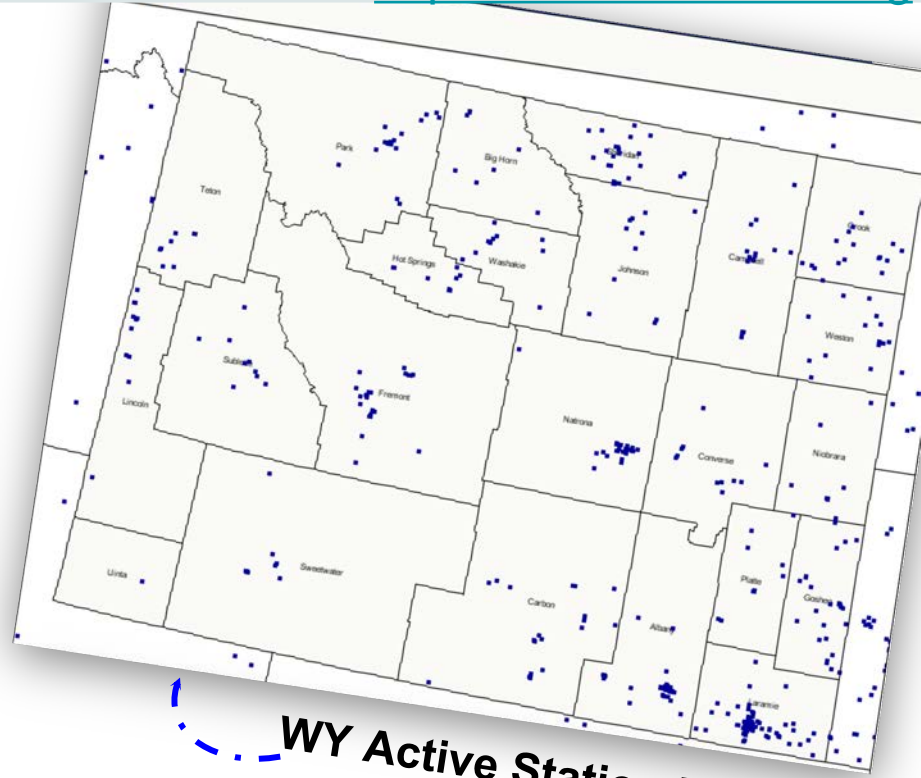
The U.S. Drought Monitor, is a weekly map of drought conditions produced jointly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln. The U.S. Drought Monitor website is hosted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



CoCoRaHS Mapping System

<https://www.cocorahs.org>

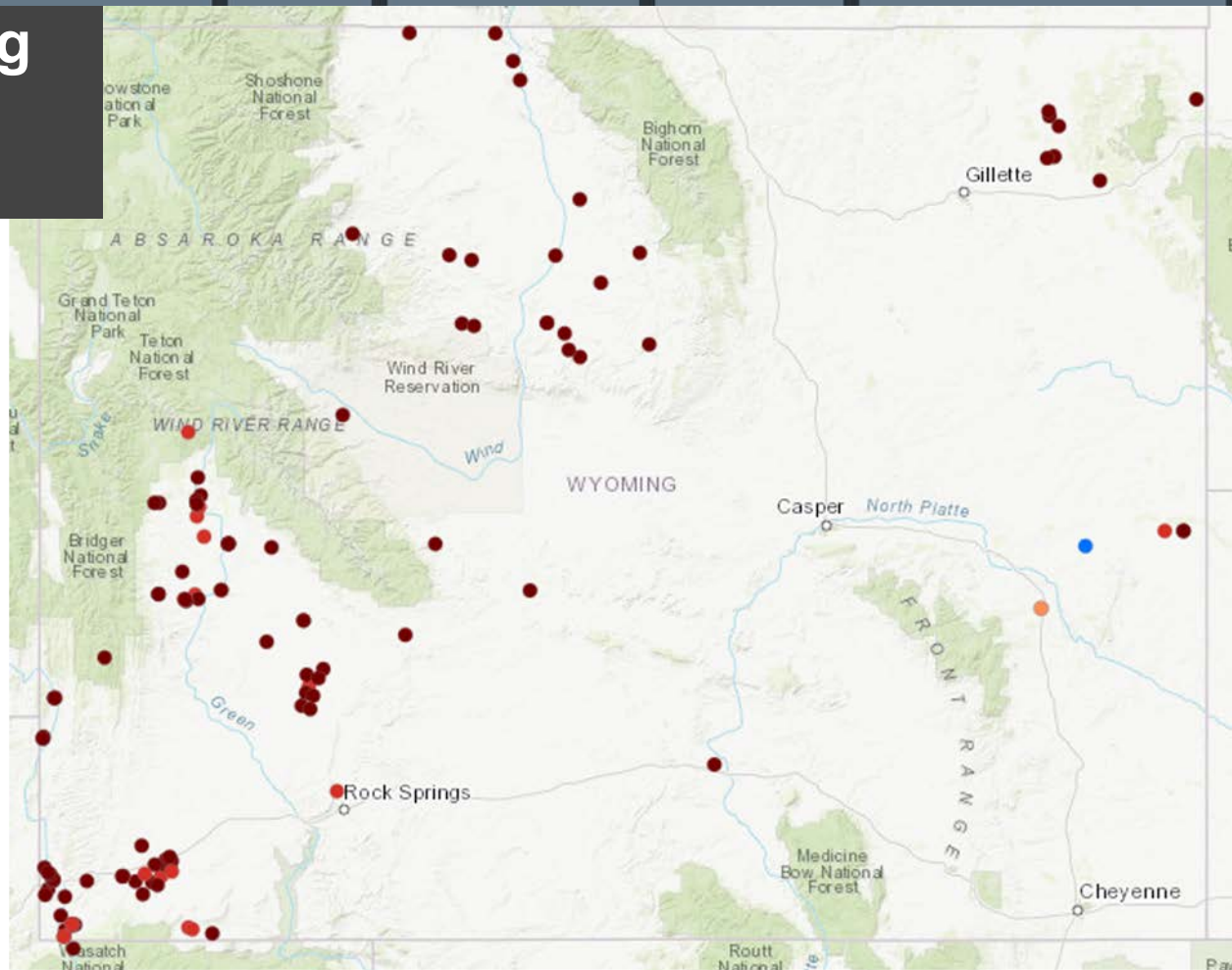
**September 16, 2021:
24-hour precip as of ~ 7 am**



Condition Monitoring Observer Reports

<https://bit.ly/CMOReports>

- Severely Dry
- Moderately Dry
- Mildly Dry
- Near Normal
- Mildly Wet
- Moderately Wet
- Severely Wet



Condition Monitoring Observer Reports

<https://bit.ly/CMOReports>

- Comparison photos
- Regular reporting is helpful (e.g., monthly)
- **Note:** Reports and photos are available to the public.

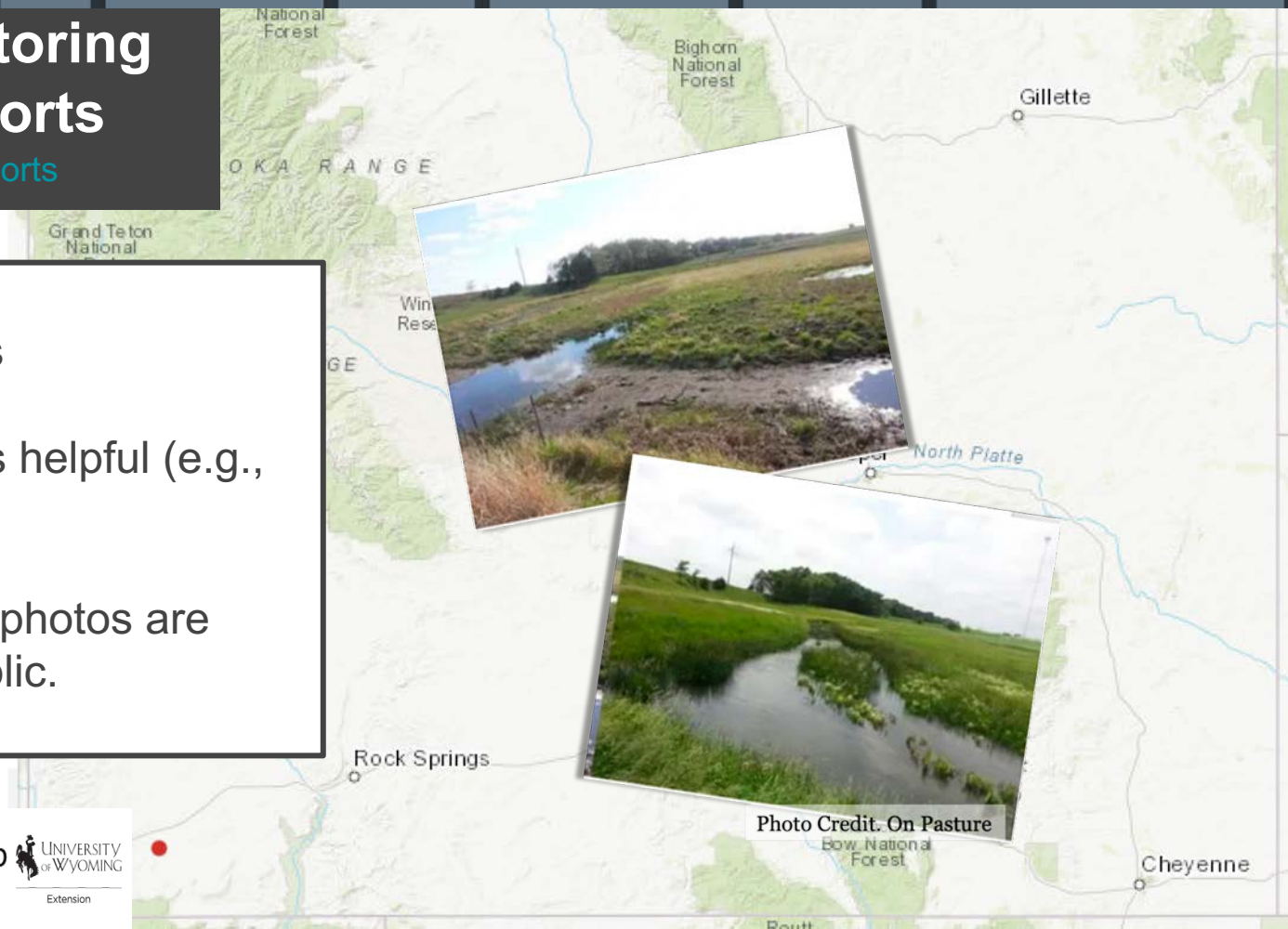


Photo Credit. On Pasture



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WY Drought Info & Resources

<https://drought.wyo.gov>

WYDEQ: Harmful Cyanobacterial Blooms

<https://www.wyohcbs.org/>

WGFD: Fire Restriction Tracker

https://bit.ly/wgfd_fireban

CoCoRaHS

<https://www.cocorahs.org>

Condition Monitoring Observer Reports (CMOR)

<https://bit.ly/CMORreports>

Thank you! Questions?