Presentation Outline

- **Current Conditions:** Overview
  - Streamflow
  - Reservoir Supply
  - Water Calls and Allocations

- **Outlooks:** Temperature & Precipitation
  - Fuels’ Status & Wildland Fire Outlook

- **Questions**
Current Conditions
US Drought Monitor for June 14, 2022
(Released Thursday, June 16, 2022)
Valid 8 a.m. EDT

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

https://droughtmonitor.unl.edu

https://youtu.be/45MQ1GB-uTc
14-Day Precipitation Percentile (02 Jun 2022 to 15 Jun 2022)

Above Median:
- Northwest
- Northeast

Below Median (Areas of Concern):
- Southeast
- Bighorns and Bighorn Basin
- Fremont County

Above Median (Areas of Concern):
- Northwest

Daily precipitation data from PRISM Climate Group, Copyright ©2021, PRISM Climate Group, Oregon State University, http://prism.oregonstate.edu
Map Created 16 Jun 2022 http://www.wrds.uwyo.edu
Daily percentiles created from PRISM daily precipitation grids
90-Day Precipitation Percentile (18 Mar 2022 to 15 Jun 2022)

Above Median:
- Much of north and central Wyoming

Below Median (Areas of Concern):
- Tetons
- Sublette County (esp Winds)
- Southern Lincoln County
- Western Sweetwater County
- Southeast

Above Median (Areas of Concern):
- Northwest
Standardized Precipitation Evapotranspiration Index (SPEI)

Medium-term wetness, longer-term dryness with areas improving in the southeast.

https://drought.climate.umt.edu
14-Day Average Minimum Temperature (02 Jun to 15 Jun)

- Lows still below 32°F at Higher Elevs
- Upper 40s parts of north and east

14-Day Departure from Normal Average Minimum Temperature

- +/- 3°F Statewide with few areas as much as 6°F above average
14-Day Average Maximum Temperature (02 Jun to 15 Jun)

- Average Max above mid-30sF statewide
- Low to Mid 70sF Southeast

14-Day Departure from Normal Average Maximum Temperature (Departure from 1991-2020 Average) for 02 Jun 2022 to 15 Jun 2022

- North 0F to 6F below average
- South 0F to 3F above average
- Southeast 3F to 6F above average
- Though lower than normal basinwide, snowpack stayed longer in season.
- Some Snotels did reach or exceed median snowpack.
Snow Temperature at 0900 MDT on 12 June 2022
National Operational Hydrologic Remote Sensing Center Analysis

Snowpack at or just under 32F.
- Warmer temperatures especially at night quickly melting snow.

- Streams already filling with snowmelt.

- Melting snow and rain the previous week led to increased soil moisture.

- Heavy rains 11-13 June fell on melting snowpack and saturating ground.
Snow Melt in inches during 11 June 2022
National Operational Hydrologic Remote Sensing Center Analysis
Snow Melt in inches during 13 June 2022
National Operational Hydrologic Remote Sensing Center Analysis
Several long-term stream gauges saw record high flows.
Gardiner, MT
Lamar River near Tower Ranger Station (USGS Gauge 06188000)

Yellowstone River at Corwin Springs, MT (USGS Gauge 06191500)
Average Daily Flows in Cubic Feet per Second - Lamar River near Tower Ranger Station
Flows (3-Day Average) in Cubic Feet per Second - Lamar River near Tower Ranger Station
Flows (5-Day Average) in Cubic Feet per Second - Lamar River near Tower Ranger Station
Gardiner, MT
Lamar River near Tower Ranger Station (USGS Gauge 06188000)

Yellowstone River at Corwin Springs, MT (USGS Gauge 06191500)
Flows (3-Day Average) in Cubic Feet per Second - Yellowstone River at Corwin Springs MT
Conditions better compared to one month ago except Uinta, Lincoln, southern Teton Counties
Deteriorating, though, having reached a peak around 05-06 May.
Same or Worse compared to 05-06 May except Park and Northeast

http://www.wrds.uwyo.edu/Soil/Current_SoilMoisture_Ptile.html
Wyoming Area Affected: 92.69% D0-D4; 64.56% D1-D4

A decrease of 28.03% from last Webinar
38-week period with entire state in a “D” category ended 07 Jun 2022

http://www.wrds.uwyo.edu/drought/droughttimeline.html
Current Streamflow Conditions (16 June 2022)

Streamflow Status

- Above flood stage
- All-time high for this day (maximum)
- Much above normal >90th percentile
- Above normal 76th – 90th percentile
- Normal 25th – 75th percentile
- Below normal 10th – 24th percentile
- Much below normal <10th percentile
- All-time low for this day (minimum)
- Not flowing
- Not ranked
- Measurement flag
- Recent measurement unavailable

https://dashboard.waterdata.usgs.gov/
Select WY Streamflows

Lamar River near Tower Ranger Station YNP
Last updated June 16, 2022

https://dashboard.waterdata.usgs.gov/
https://waterdata.usgs.gov/
Select WY Streamflows

North Fork Shoshone River at Wapiti, WY
Last updated June 16, 2022

https://dashboard.waterdata.usgs.gov/
https://waterdata.usgs.gov/
Select WY Streamflows

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

https://waterdata.usgs.gov/

Bighorn River at Kane, WY
Last updated June 16, 2022
Powder River at Arvada, WY
Last updated June 16, 2022

USDGS 06317000 POWDER RIVER AT ARVADA, WY
(Drainage area: 6050 square miles, length of record: 89 - 90 years)

Daily average discharge, in cubic feet per second

Hours
(JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC)

0.1
1
10
100
1000
3000

USGS WaterWatch

Explanation - Percentile classes

Flow

Much below Normal
Below normal
Normal
Above normal
Much above normal

https://dashboard.waterdata.usgs.gov/
https://waterdata.usgs.gov/
Select WY Streamflows

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

Green River at Below Fontenelle Reservoir, WY
Last updated June 16, 2022

USGS 09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, WY
(Drainage area: 4280 square miles, length of record: 57 - 58 years)

Daily average discharge, in cubic feet per second

[Graph showing discharge trends over time]

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
16 Jun 2022

Compared to May

- Increase in storage in most reservoirs

http://www.wrds.uwyo.edu/surface_water/teacups.html
Current Reservoir Conditions: North Platte System

Forecast April – July Runoff:

<table>
<thead>
<tr>
<th>Forecast Point</th>
<th>Runoff (AF)</th>
<th>% of Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminole</td>
<td>510,000</td>
<td>72%</td>
</tr>
<tr>
<td>Sweetwater above Pathfinder</td>
<td>35,000</td>
<td>66%</td>
</tr>
<tr>
<td>Alcova to Glendo</td>
<td>95,000</td>
<td>66%</td>
</tr>
</tbody>
</table>

As of June 14, North Platte System:
61% of Full, 90% of Average

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Content (AF)</th>
<th>Capacity</th>
<th>% of Full</th>
<th>% of Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminole</td>
<td>506,000</td>
<td>1,017,300</td>
<td>50%</td>
<td>71%</td>
</tr>
<tr>
<td>Pathfinder</td>
<td>701,500</td>
<td>1,070,000</td>
<td>66%</td>
<td>107%</td>
</tr>
<tr>
<td>Glendo</td>
<td>415,200</td>
<td>492,000</td>
<td>84%</td>
<td>84%</td>
</tr>
<tr>
<td>Guernsey</td>
<td>27,400</td>
<td>45,600</td>
<td>60%</td>
<td>87%</td>
</tr>
</tbody>
</table>
Current Reservoir Conditions: Bighorn System

As of June 14, Bighorn System: 89% of Full, 96% of Average

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Content</th>
<th>Capacity</th>
<th>% of Full</th>
<th>% of Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bull Lake</td>
<td>125,300</td>
<td>152,500</td>
<td>82%</td>
<td>109%</td>
</tr>
<tr>
<td>Buffalo Bill</td>
<td>560,500</td>
<td>646,600</td>
<td>87%</td>
<td>106%</td>
</tr>
<tr>
<td>Boysen</td>
<td>686,900</td>
<td>741,600</td>
<td>93%</td>
<td>111%</td>
</tr>
</tbody>
</table>

https://www.usbr.gov/gp-bin/hydromet_teacup.pl
**Forecast April – July Runoff:**
Buffalo Bill: 660,000 AF 89% of average
(April – June 14 Runoff: 378,300 AF)

Boysen: 525,000 AF 87% of average
(April – June 14 Runoff: 286,600 AF)

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Welcome to the HYDROMET Data System

Program Information

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

Daily Data Quick Plot

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

- **Parameter:**
  - QD Daily Mean Total Discharge (cfs)

- **Station Code (start typing to search for a station):** GLER

- **Submit**
WY SEO Divisions and Superintendents
Contact information for calls and administration

Division 1
Cory Rinehart, 307-532-2248

Division 2
David Schroeder, 307-674-7012

Division 3
Joshua Fredrickson, 307-856-0747

Division 4
Kevin Payne, 307-279-3441
Division 1
1. May 1, 2022 BOR call on North Platte limits Irrigation Pumpers, between Pathfinder and Guernsey, to 6,600 acre feet every 2 weeks, likely to be on through summer.
1. May 6, 2022 call on Jack Creek and tribs, District 6, to a priority date of Spring 1882.
1. May 23, 2022 call on Bates Creek, District 11, to a priority date of 8/9/1886.
1. June 2, 2022 call on Bear Creek and tribs, District 2, to a priority date of 7/7/1891
Division 2
1. May 14, 2022 Call on Big Goose Creek, District 4
1. Some flooding near Sheridan and Buffalo
Division 3
1. All calls suspended at this time.
Division 4

1. April 29, 2022, call on North Piney Creek, District 10, to a priority date of 5/1/1888

1. May 9, 2022, call on Central Bear River, District 2, multiple dates for interstate call

1. May 16, 2022, call on Fish Creek, District 10, to a priority date of 7/13/1889

1. May 17, 2022, call on Blacks Fork River, District 15, to a priority date of 6/20/1910

1. May 27, 2022, call on South Piney Creek, District 10, to a priority date of 12/31/1886

1. June 8, 2022, call on Smith’s Fork, District 3, to a priority date of 3/2/1935
Contact Information for Calls/Administration

Division 1 Superintendent–Cory Rinehart, 532-2248

Division 2 Superintendent–David Schroeder, 674-7012

Division 3 Superintendent–Joshua Fredrickson, 856-0747

Division 4 Superintendent–Kevin Payne, 279-3441
Forecasts & Outlooks
7-Day Total Precipitation Forecast
June 16 - June 23

- Warm to near Record Temperatures Friday and Saturday with slight cool down Sunday.
- Scattered showers Friday - Sunday across portions of the state.
- Slightly below average temperatures Monday behind cool front.
- Warming again through mid-next week.

Note: Forecast includes “Snow Water Equivalent” ≈ Rain + Melted Snow

https://bit.ly/7_dayQPForecast
Above normal temperatures favored, especially east WY

Favored Slightly below normal central & west to near normal east
Above normal temperatures favored, especially east WY

Favored Slightly below normal central & west to near normal east
Above normal temperatures favored, especially south/southwest WY

Favored Slightly below normal central & west to near normal east
Lamar River Near Tower Falls
June 9 - June 19 Observations & Forecast

- Heavy rains on a rich snowpack resulted in record flooding in the Lamar and Yellowstone Rivers.
- 2 to 6 inches of rain were recorded in the area. High temps elsewhere brought high river levels across western WY.
- All entrances to Yellowstone closed 6/14 and 6/15, at least.
- Another round of rainfall, near record warmth aiding snowmelt, will likely result in additional rise/streamflow.
Fuel Moistures and Energy Release Component

Energy Release Component (ERC)

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

1000-Hour Fuel Moisture (1000-hr FM)

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

100-Hour Fuel Moisture (100-hr FM)- 1” to 3” Dead Fuels
10-Hour Fuel Moisture (10-hr FM)- ¼” to 1” Dead Fuels
1-Hour Fuel Moisture (1-hr FM)- 0” to ¼” Dead Fuels

Live Fuel Moisture- Fuels transition from dormancy to green-up in the spring and early summer, then back to dormancy in the fall.
Energy Release Component
Current Status as of 06/15/2022

- Values are relative to this date in history.
- South-East Wyoming 80th+ Percentiles
- Rest of Wyoming still quite green. Lower ERCs due to live fuel component.
Energy Release Component
Current Status as of 06/16/2022

- Values are relative to this date in history.
- Colorado ERC Values - Many areas above 90th and other areas 97th+

*This map is based on RAWS ERC values taken directly from WIMS. The percentile breakpoints are derived from a 15 year database (May-Sep 2006-2020).
Energy Release Component
Current Status: Ft. Laramie/Cheyenne (valid 6/15/22)
Energy Release Component
Current Status: Laramie (valid 6/15/22)
Energy Release Component
Current Status: Shoshone (valid 6/15/22)
Seasonal Outlooks

Significant Wildland Fire Potential Outlook
June 2022

Significant Wildland Fire Potential Outlook
July 2022

[Map showing regions with high fire potential]
Seasonal Outlooks

Significant Wildland Fire Potential Outlook
August 2022

Above normal significant wildland fire potential indicates a greater than usual likelihood that significant wildland fires will occur. Significant wildland fires should be expected at typical times and intervals during normal significant wildland fire potential conditions. Significant wildland fires are still possible but less likely than usual during forecasted below normal periods.
How to get involved ...
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Improvements and degradations in the last month. Recent precipitation is starting to erode some of the areas but longer term dryness is filling in others.

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

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://droughtmonitor.unl.edu
Condition Monitoring Observer Reports


- Severe Dry
- Moderately Dry
- Mildly Dry
- Near Normal
- Mildly Wet
- Moderately Wet
- Severely Wet
Condition Monitoring Observer Reports


- Comparison photos → resource conditions
- Regular reporting is helpful (e.g., monthly)
- **Note:** Reports and photos are available to the public.
June 16, 2022:
24-hour precip as of ~ 7 am

https://www.cocorahs.org
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