USGS
science for a changing world

MONTANA STREAMFLOW CONDITIONS

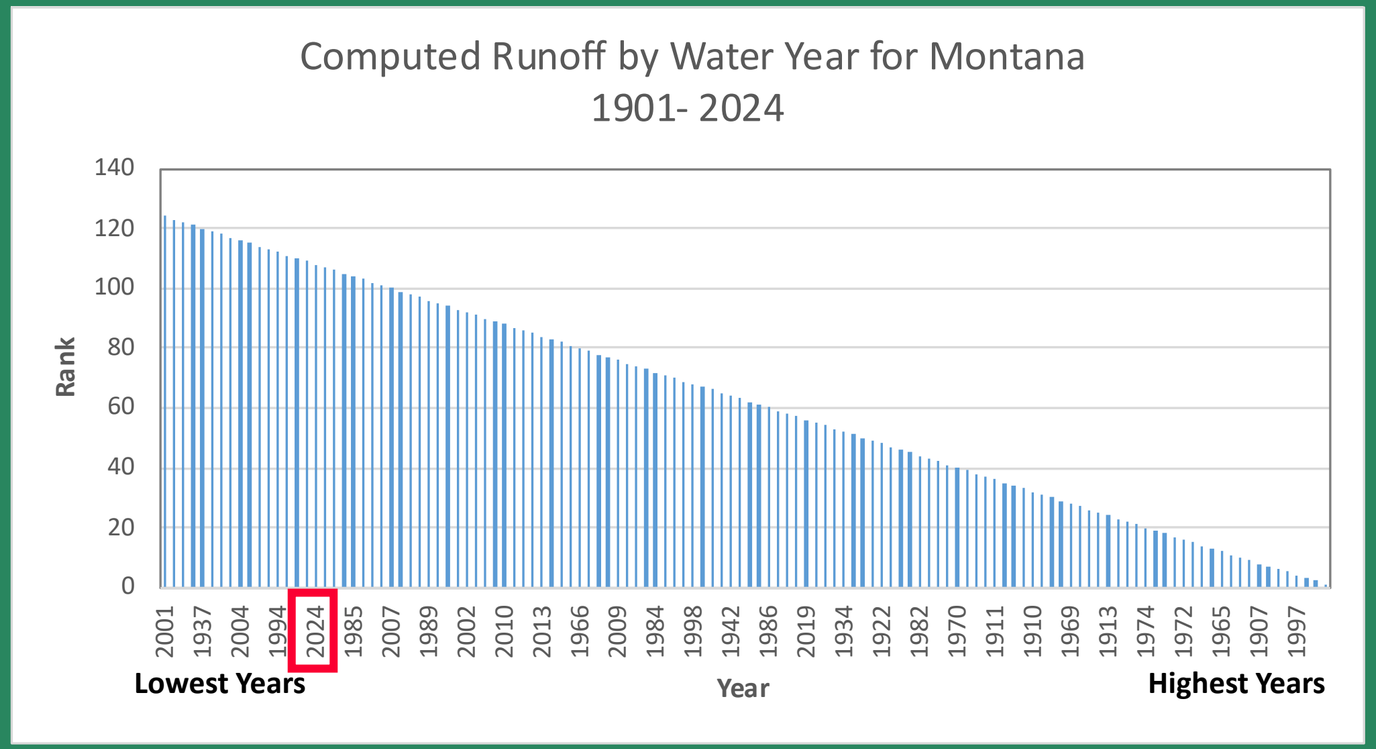
Drought and Water Supply Advisory Committee Meeting
June 4, 2025

U.S. Department of Interior
U.S. Geological Survey
Wyoming –Montana Water Science Center

A LOOK BACK AT 2024

- Computed Runoff: Ranked 108 of 124
- Low Flows (7– Day Averages)
  - 6 Sites- Records Set*
  - 10 Sites- Record Tied*

  * Filtered for sites w/ 10 or more years of record.

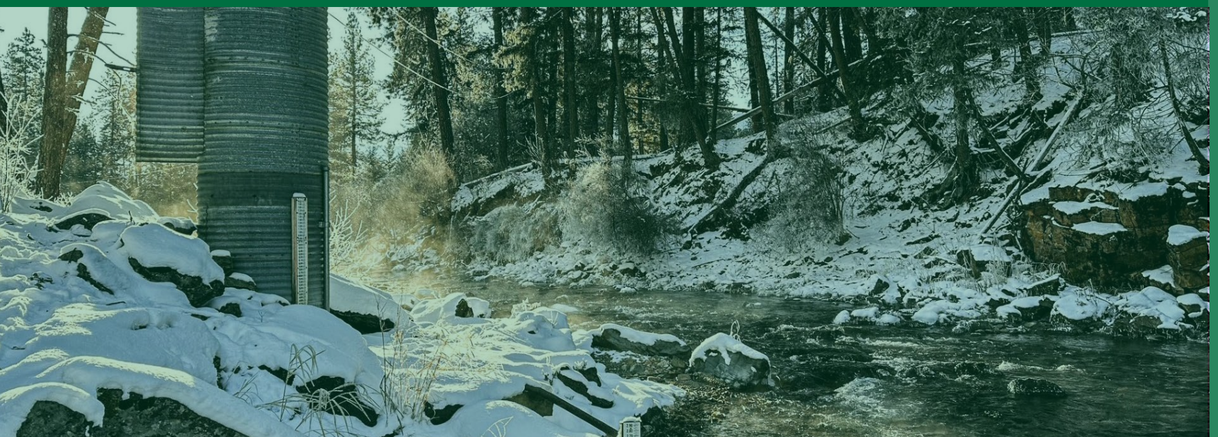


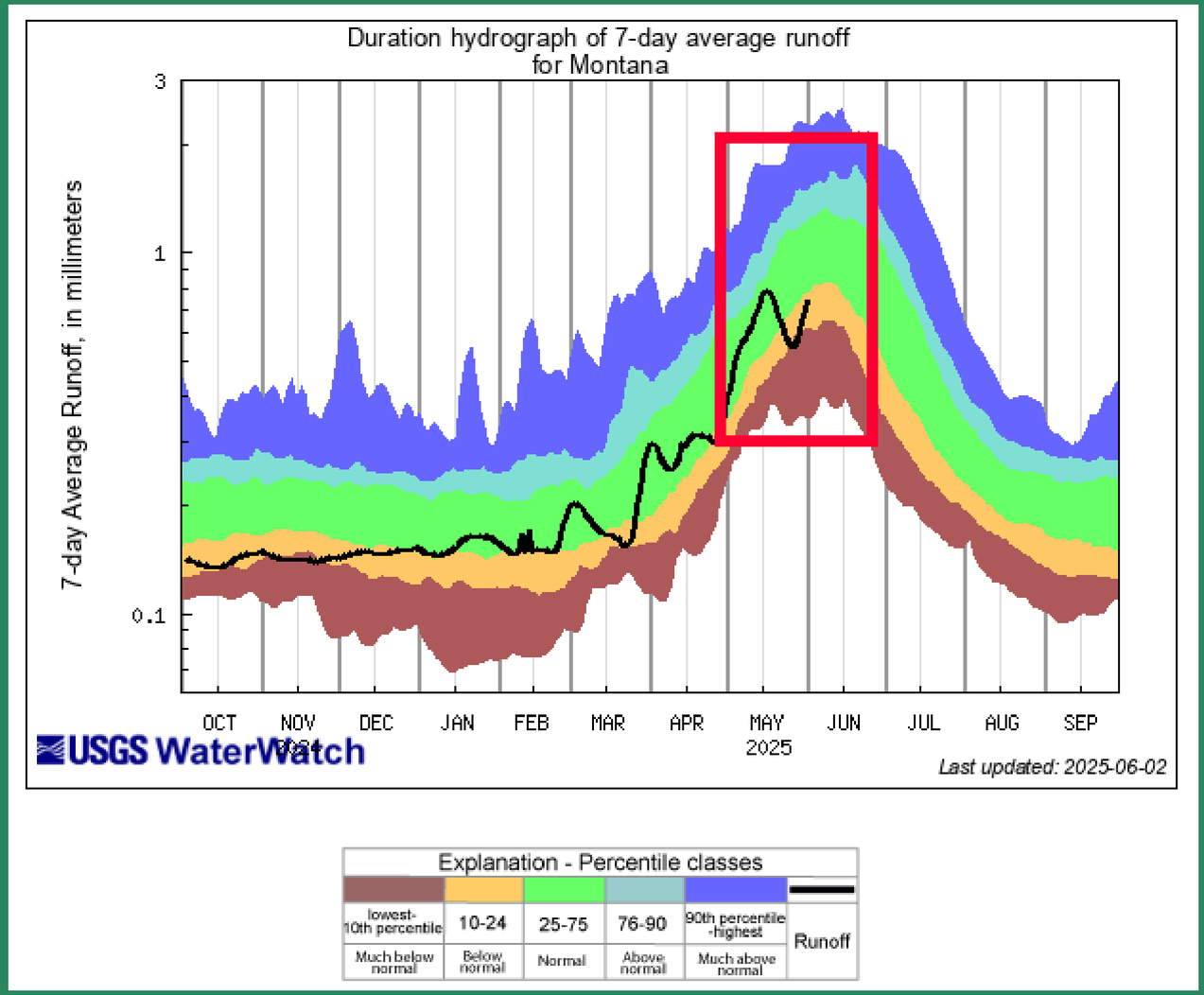
Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Source: USGS WaterWatch. Annual Summary by State and 7-day below Normal Streamflow https://waterwatch.usgs.gov/

WHERE WE ARE IN THE WATER YEAR

- At the peak or past the peak?
- Widespread rain could increase flows.
- Time of “good” water supply.



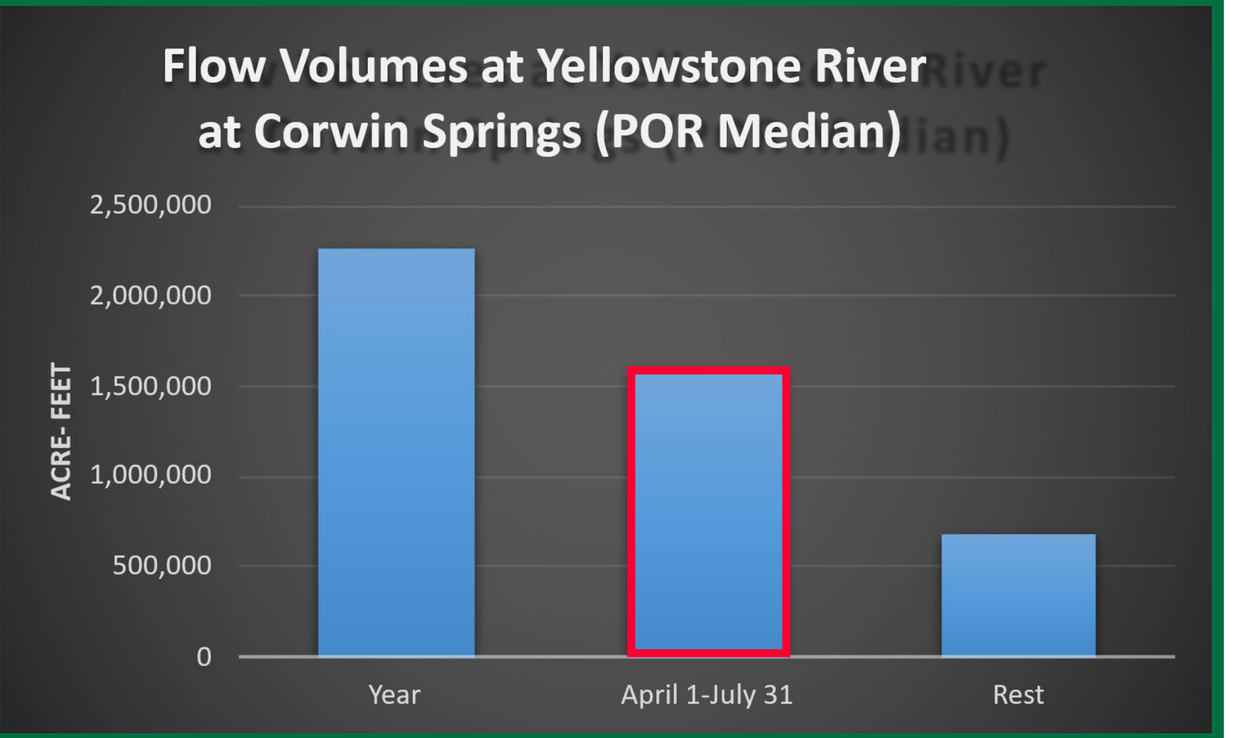


Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Source: USGS WaterWatch Area-Based Runoff Duration Hydrograph
http://waterwatch.usgs.gov/

SIGNIFICANCE OF RUNOFF

- Most of year's water accumulation
- Cumulative April 1 July 31 flow as a % of the year (POR Median)
  - Yellowstone at Corwin- 69%
  - Gallatin at Gateway- 67%
  - Blackfoot at Bonner - 71 %
  - MF Flathead nr W. Glacier- 80%



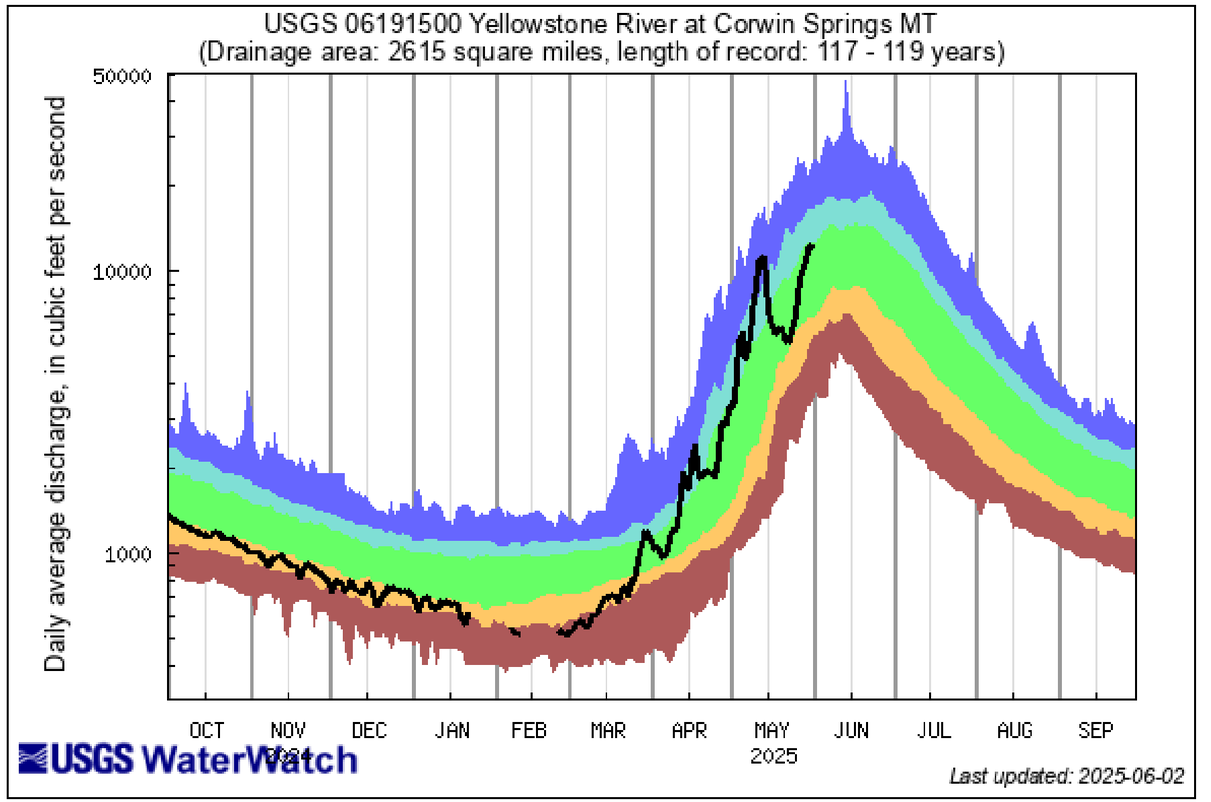
Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Source: USGS Water Data for the Nation
https://waterdata.usgs.gov/

USGS
science for a changing world

PROLONGED DROUGHT

- Last Year's Drought Can affect this year's water supply.
  - Baseflow is precipitation that fell days, weeks, years ago.
- How long and how much are not easily answered.



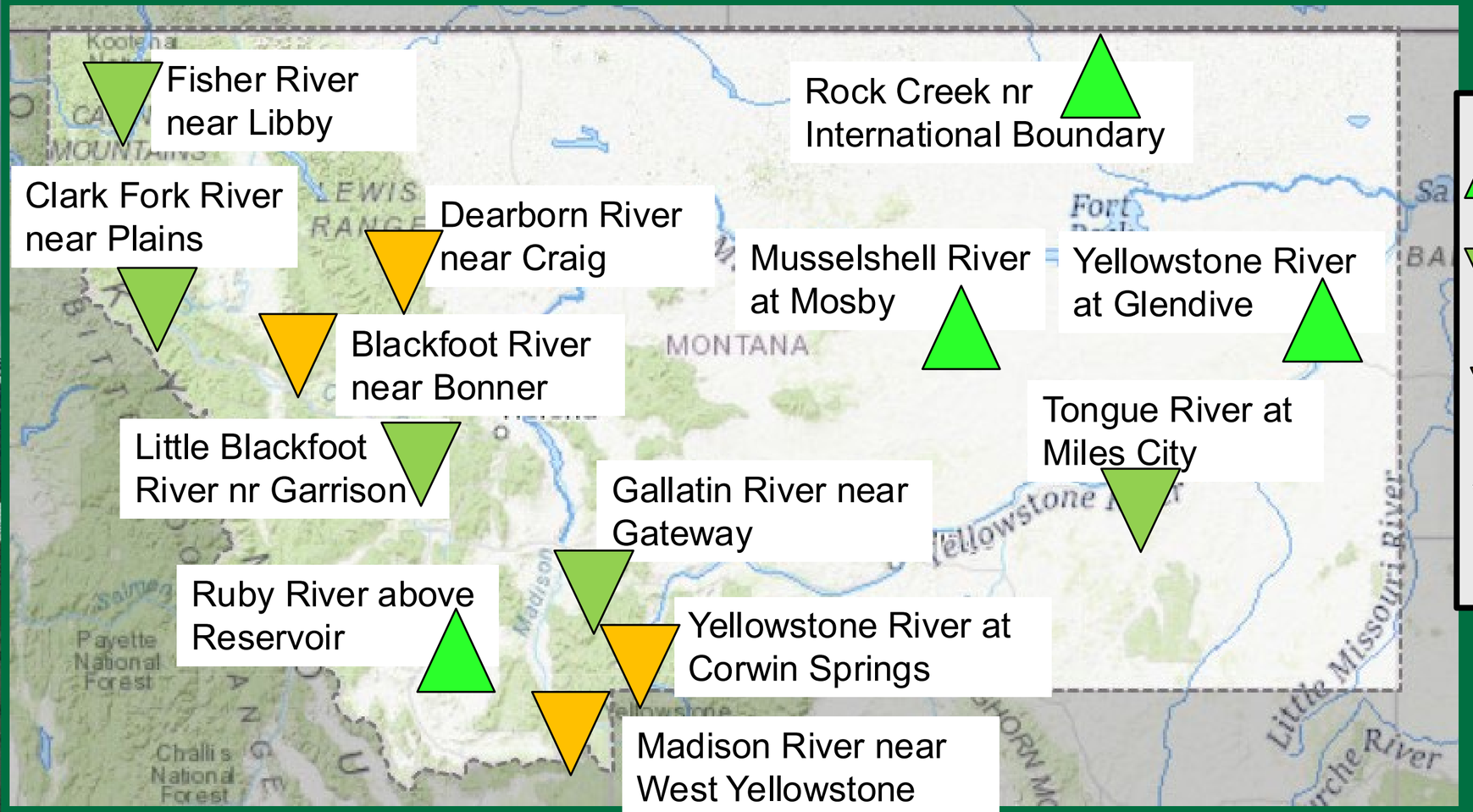
Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Source: USGS Public Domain./ Water Watch
https://www.usgs.gov/media/images/conceptual-groundwater-flow-diagram
https://waterwatch.usgs.gov/

USGS
science for a changing world

OCT 1, 2024- MAR 31, 2025: STREAMFLOW

(Cumulative flow, compared to period of record statistics)

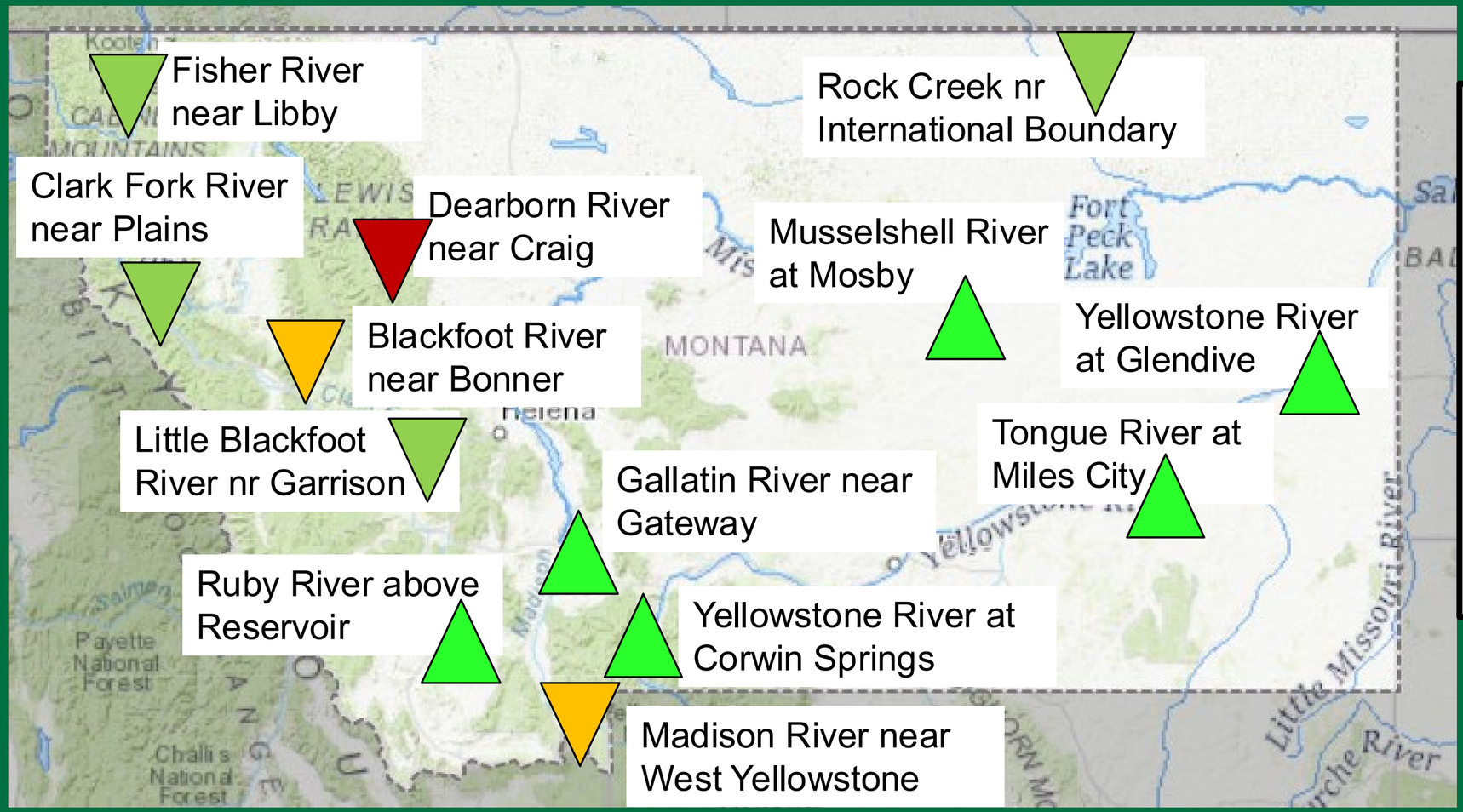


Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Source: USGS Water Data for the Nation
https://waterdata.usgs.gov/

APR 1, 2025- JUNE 1, 2025: STREAMFLOW

(Cumulative flow, compared to period of record statistics)



- Above the Median
- Below the Median
- Below the 25th percentile
- Below the 10th percentile

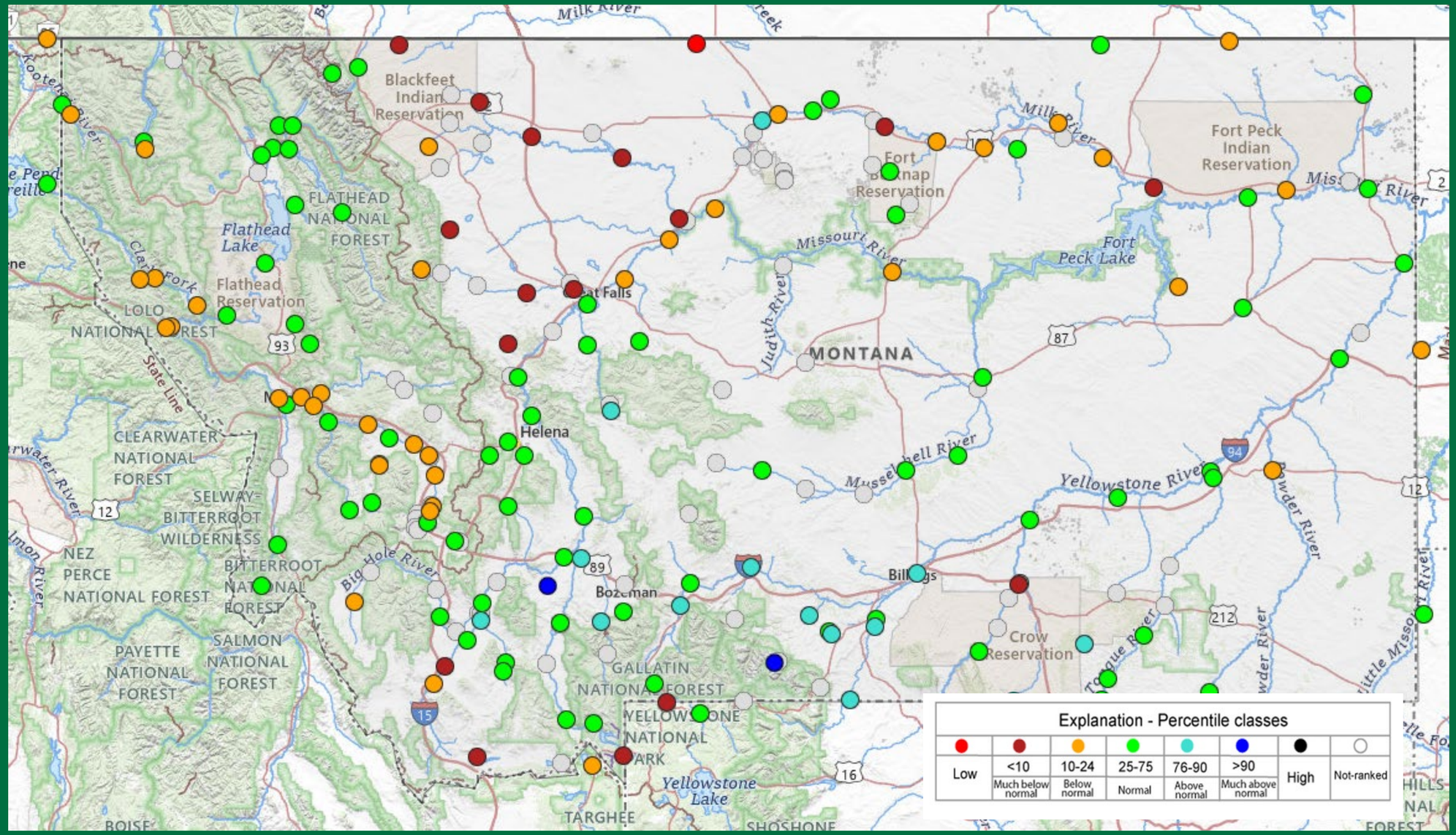
Preliminary Information-Subject to Revision. Not for Citation or Distribution.

Source: USGS Water Data for the Nation
https://waterdata.usgs.gov/

USGS
science for a changing world

28 DAY AVERAGE STREAMFLOW FOR JUNE 01, 2025

Average of near peak flows



Preliminary Information-Subject to Revision. Not for Citation or Distribution.

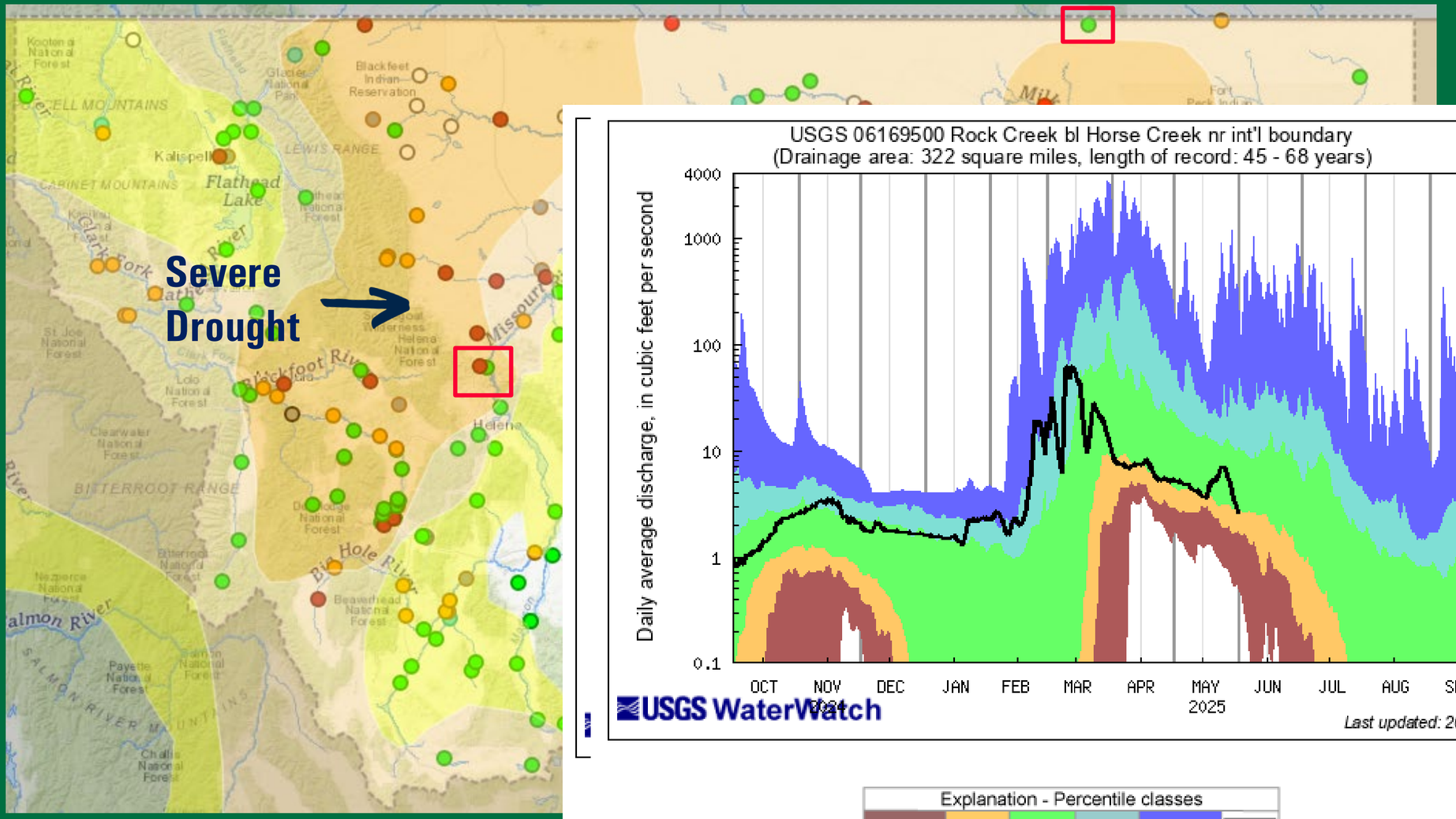
Source: USGS WaterWatch 28 Day Average Flow

http://waterwatch.usgs.gov

USGS science for a changing world

SELECT GAGES WITHIN DROUGHT AREAS

Drought Classification as of May 29, 2025



Preliminary Information-Subject to Revision. Not for Citation or Distribution

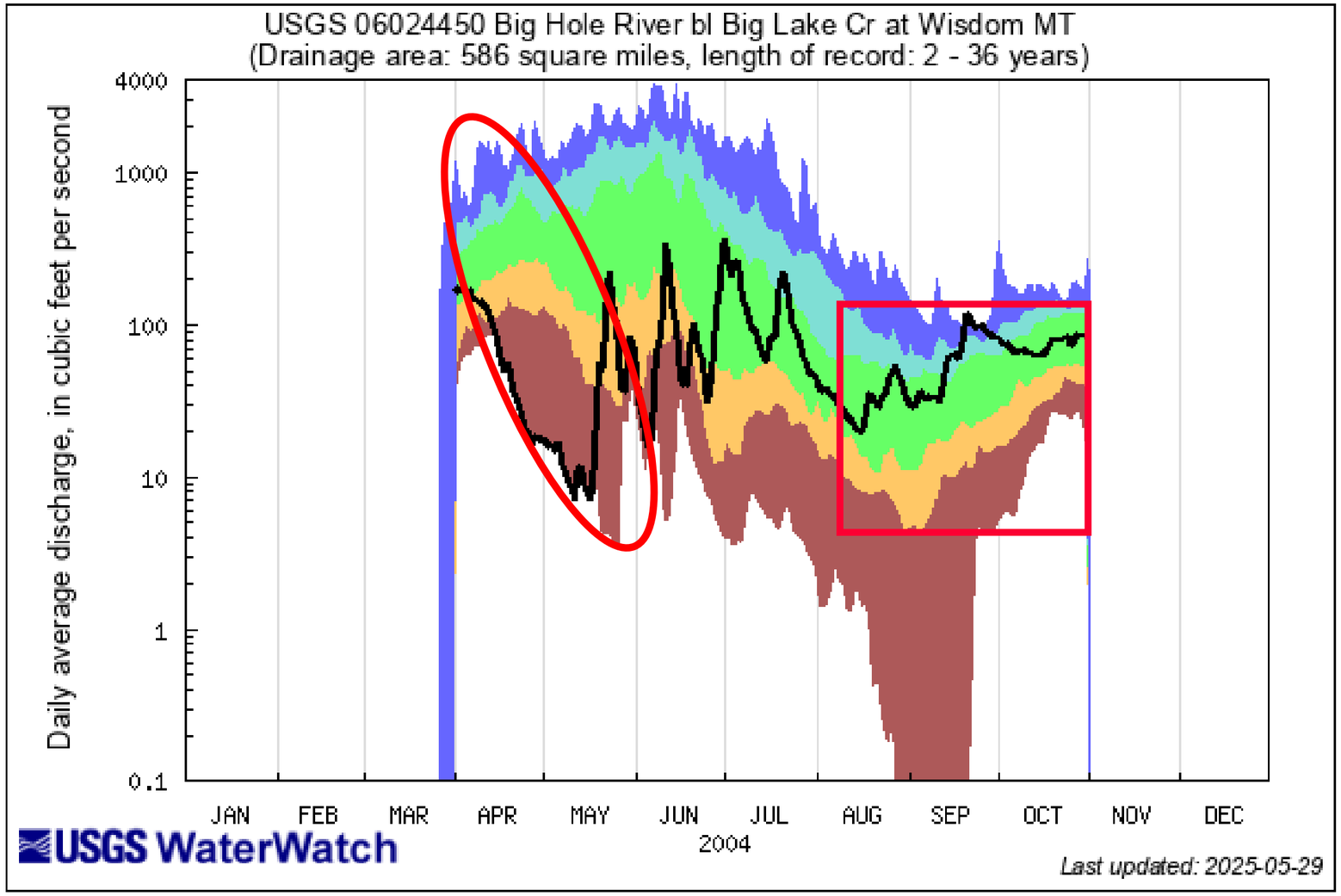
Source: National Water Information Dashboard. https://dashboard.waterdata.usgs.gov/app/nwd/en/

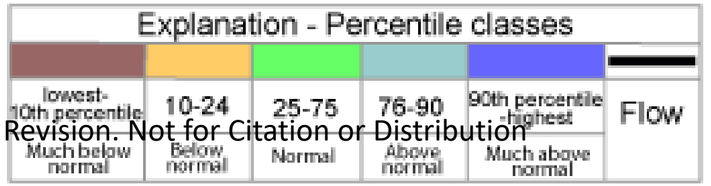
USGS WaterWatch Site Duration Hydrograph http://waterwatch.usgs.gov/

USGS science for a changing world

GLASS HALF FULL

- Reasonable Snowpack.
  - Except the Rocky Mountain Front.
- May and June rains.
- There's always a chance.





Preliminary Information-Subject to Revision. Not for Citation or Distribution

Source:

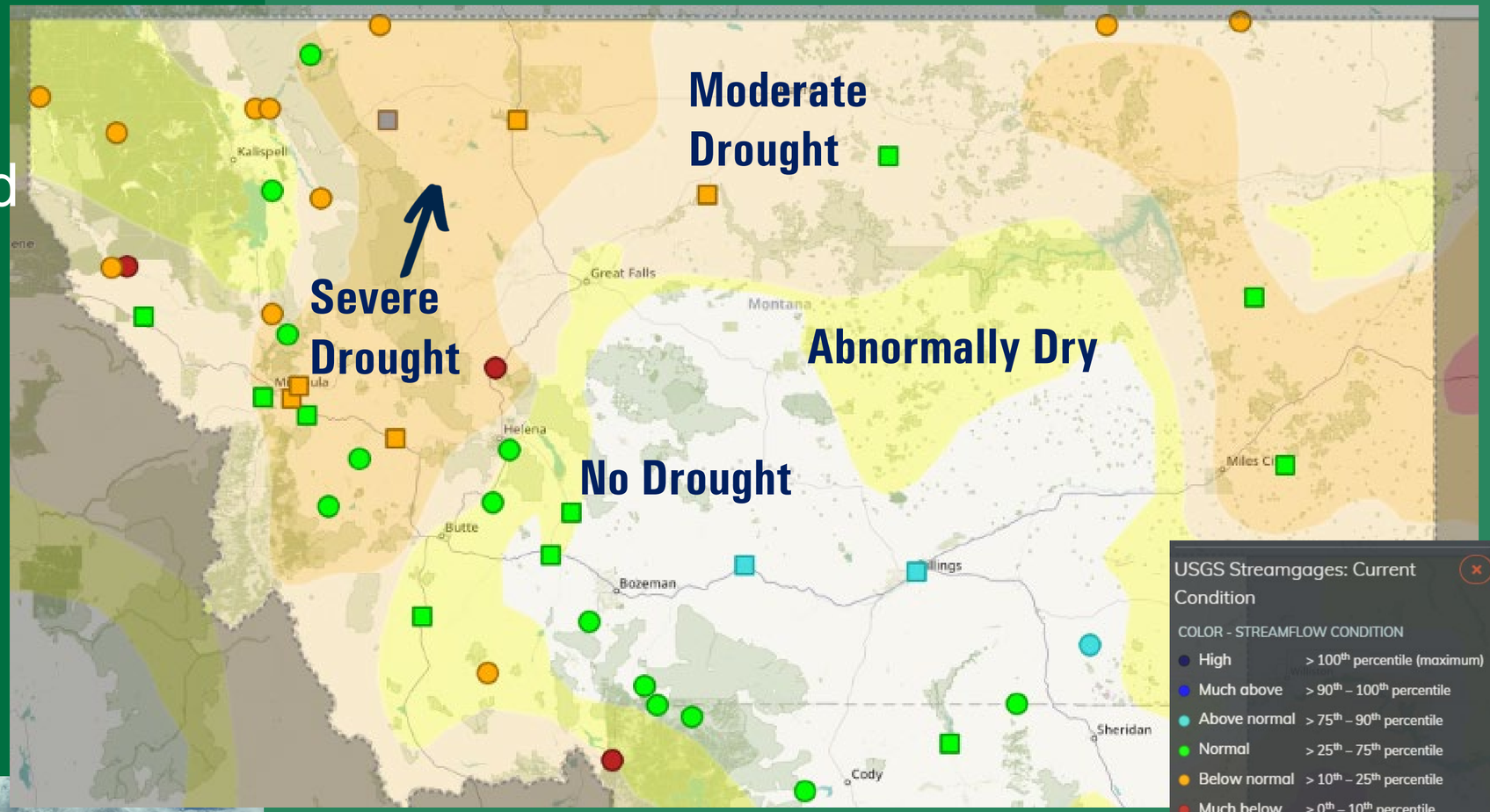
USDA- NRCS- NWCC Interactive Map

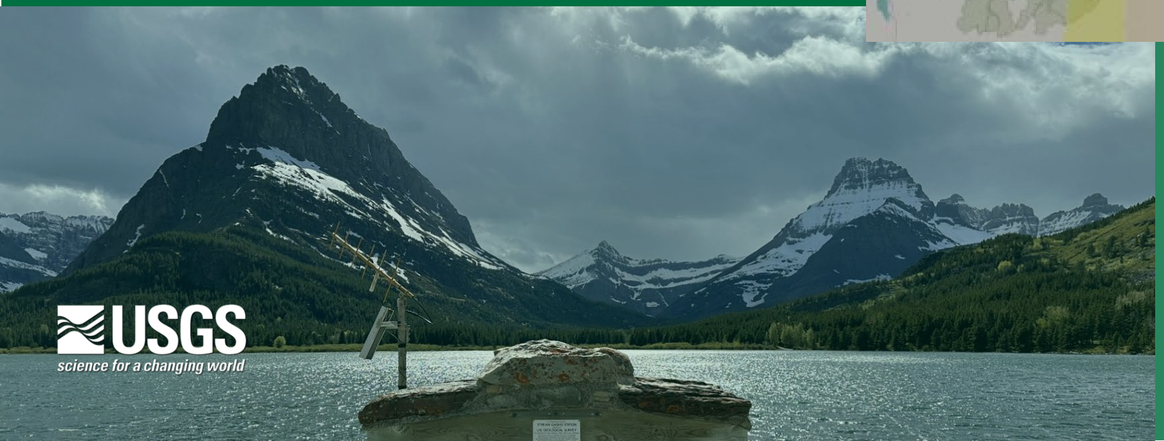
USGS WaterWatch Site Duration Hydrograph http://waterwatch.usgs.gov/

USGS science for a changing world

WY-MT DROUGHT VIEWER

- Common Period of Record
  - 1991-2020
- Sentinel Gages
- Water Supply Indicator Gages

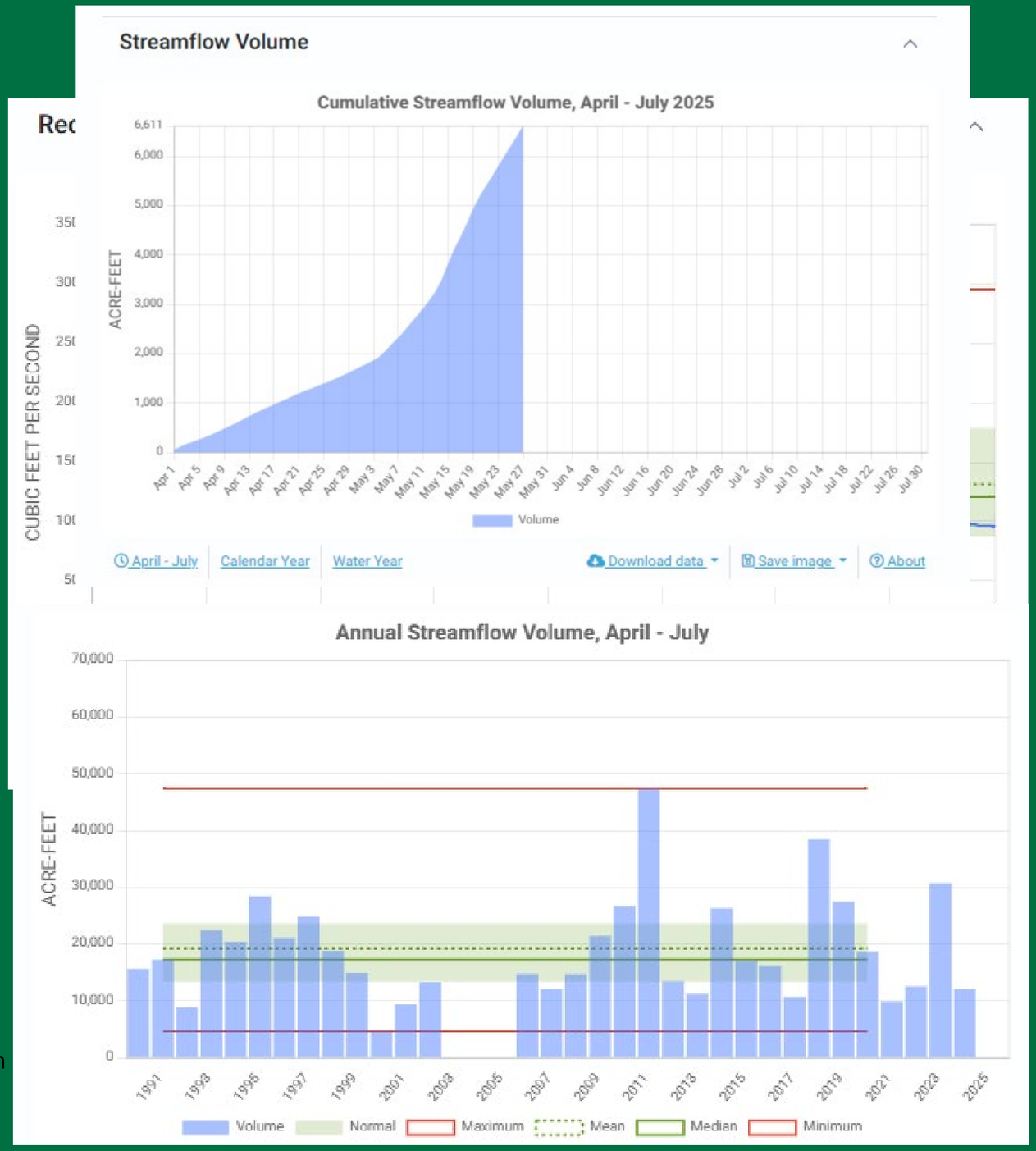




Preliminary Information-Subject to Revision. Not for Citation or Distribution
Source: USGS WY-MT Drought Viewer
https://webapps.usgs.gov/wy-mt-drought-viewer/

WY-MT DROUGHT VIEWER

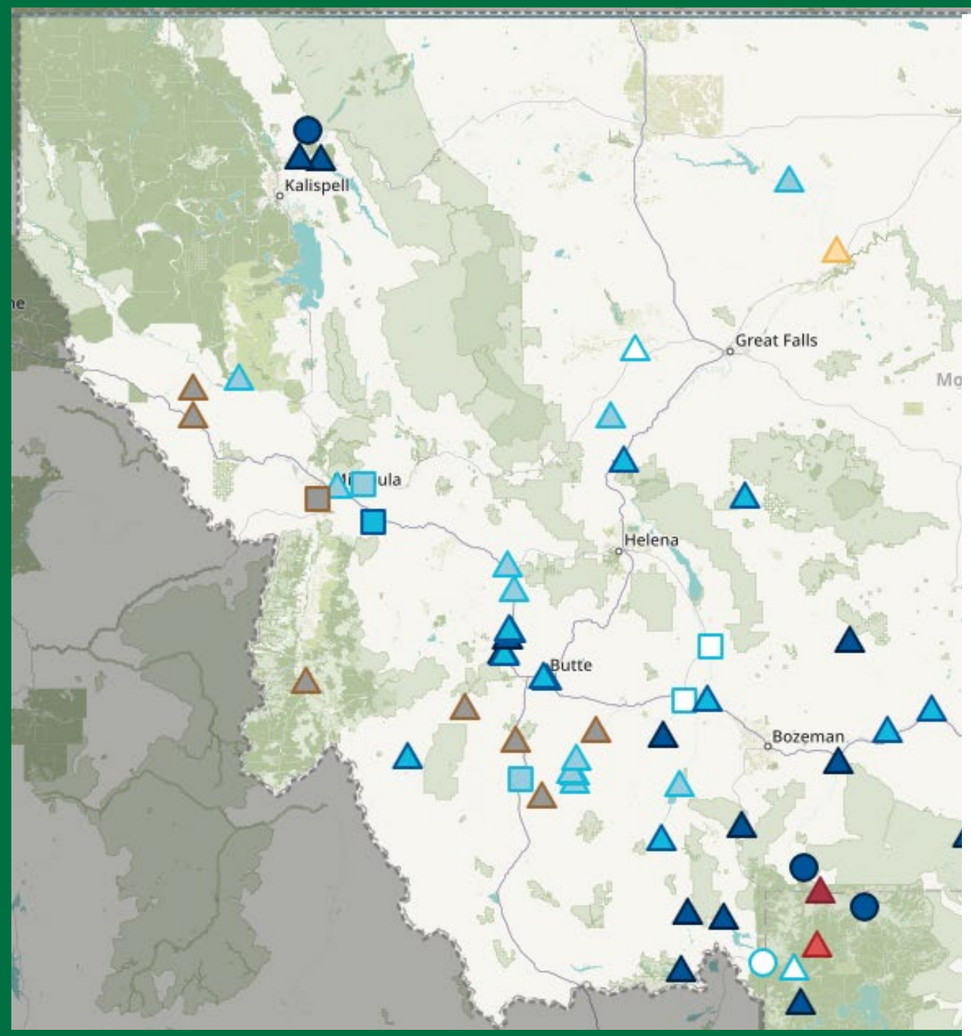
- Streamflow Visualization.
- Cumulative Volume
  - (April 1- July 31)
    - Current year
    - Historic

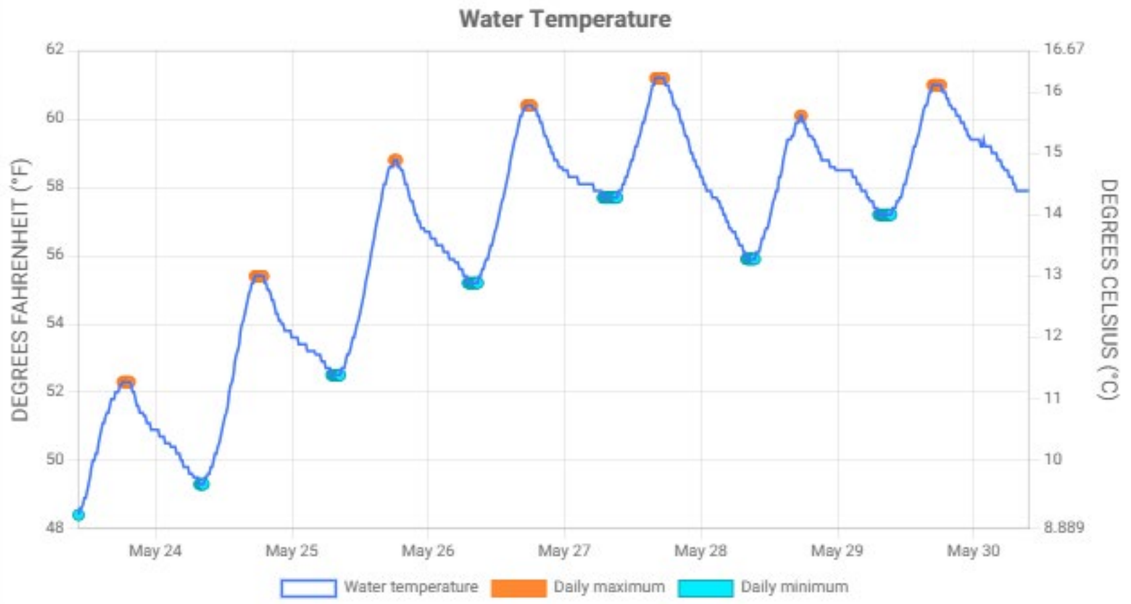


USGS science for a changing world

Preliminary Information-Subject to Revision. Not for Citation or Distribution
Source: USGS WY-MT Drought Vieser
https://webapps.usgs.gov/wy-mt-drought-viewer/

WY-MT DROUGHT VIEWER - Temperature





Past 1 day | 2 days | 3 days | 1 week | Download data | Save image | About

Date	Max (°F)	Min (°F)
2025-05-23	52.3	48.4
2025-05-24	55.4	49.3
2025-05-25	58.8	52.5
2025-05-26	60.4	55.2
2025-05-27	61.2	57.7
2025-05-28	60.1	55.9
2025-05-29	61	57.2

67 sites collecting water temperature data

USGS science for a changing world

Contact/Links

Wyoming-Montana Water Science Center

- Aaron Fiaschetti- Hydrologist (afiaschetti@usgs.gov)
- (406) 457-5927

https://webapps.usgs.gov/wy-mt-drought-viewer/

https://www.usgs.gov/centers/wy-mt-water

Photos by Brett Price, Kannon Welhouse, and Joshua Donnelly , U.S. Geological Survey
Kayak Measurement of Clark Fork River near Plains
ADCP measurement Clark Fork River by Missoula
Swiftcurrent Gage House
Flathead Polson Cableway
Milk River at Eastern Crossing