Centennial Valley Water Report — June 2023

Please contact drought@centennialvalleyassociation.org if you have any questions, comments, or suggestions.

Greetings from the Centennial Valley Association!

Centennial Valley Association (CVA), The Nature Conservancy, and Montana State University field crews have been busy across the Centennial Valley, with many of the staff starting in mid– to late-May. CVA is fortunate to have two Field Technicians this summer, who are assisting with the field projects CVA hosts, such as invasive weed management and the Water and Drought Awareness Program. Help us welcome back Shannon Wilkey, who was on the Team last season, and Anna Haight, who joined our Team this year!

The Centennial Valley had a significant winter this past year, which helped move the area out of drought status. Weather also greeted the area with a good amount of spring rains, setting us up for a green spring and early summer! Snow is still holding out in our north facing slopes and temperatures have not been extremely high. In June, the average temperature on the valley floor was 64.6°F in the Sandhills (BLM RAWS) and 51.6°F in Lakeview (Tempest Weather Station). As temperatures continue to rise into the summer, please remember to adhere to any fire weather risk advisories and limit open flame during dry, windy times of the year.

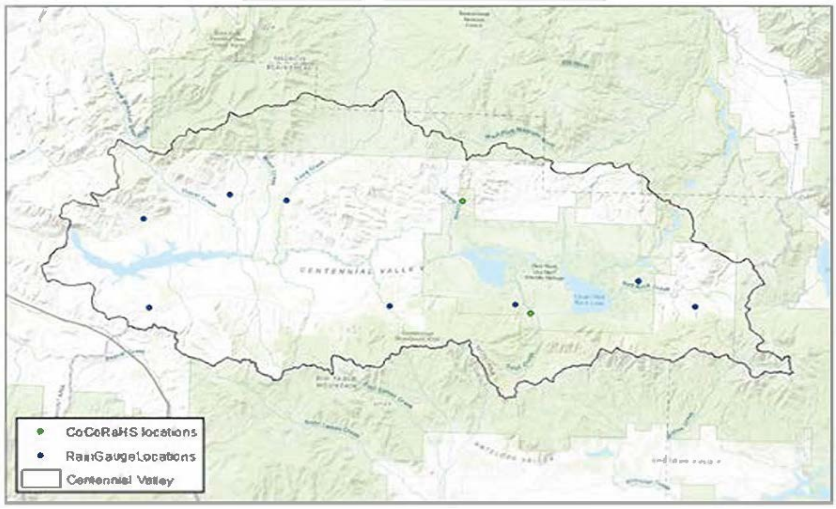
At the end of June, the Jefferson River Basin reported 110% of median for the water year, and the Red Rock subbasin, which includes the Centennial Valley, was 108% of median for the water year (NRCS). While we are looking better than past years, continue to think for a small rain storm here and there for July!

Precipitation Data - June 2023

We had a rainy June in the Centennial Valley, and across the state. The rain with the cool temperatures has helped keep the grass green and creeks flowing. There were significant rain events in the start, middle, and end of the month. The Tempest Weather Station, manned by community members in Lakeview, received the most documented precipitation at 5.01". The CVA rain gauge at Elk Lake Road received the least amount of documented precipitation at 0.84". Unfortunately, our Wolverine rain gauge has not been repaired since last summer. We will work on repairs in house or possibly purchase a new rain gauge for the area, if funding allows.

**Please note that the Lakeview and RAWS stations reflect the full month of May totals. The CVA rain gauges were installed in late May, so their totals reflect May 22nd—31st.

Rain Gauge Locations

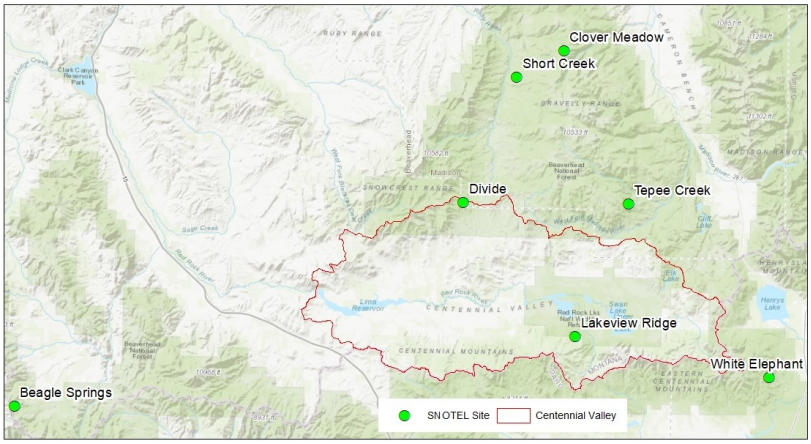


Rain Gauge Name	June Precipitation Accumulation in inches (end of period values)	May Precipitation Accumulation in inches (end of period values)
Elk Lake Road	0.84	1.09
Alaska Basin	1.61	1.31
Lakeview	5.01	3.71**
South Valley Road	2.06	1.05
Monida Hill	1.32	0.91
Lima Dam	2.81	1.43
Wolverine	-	-
Long Creek	1.77	0.68
Red Rock BLM RAWS	1.79	1.36**

Source: CVA & Partner Monitoring

Snowpack and Precipitation Data - As of June 30th, 2023

There are seven Natural Resources Conservation Service (NRCS) SNOTEL sites that surround the Centennial Valley (right). The SNOTEL site reports for precipitation accumulation for the water year are still looking great! Percent median for precipitation accumulation for the month of June were all above 100%, with Beagle Springs just hovering over the mark at 103% and Short Creek at 130%. With the exception of the Divide SNOTEL, all of the SNOTELs received more precipitation in June than in the month of May! For the month of June, Clover Meadows received the most precipitation accumulation at 5.6", and Divide and Tepee Creek tied for the least amount of precipitation accumulation at 2.6".



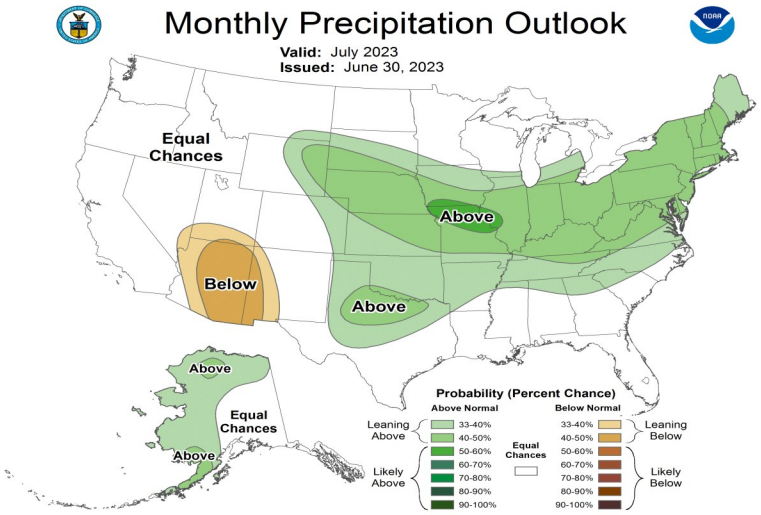
Source: NRCS Report Generator

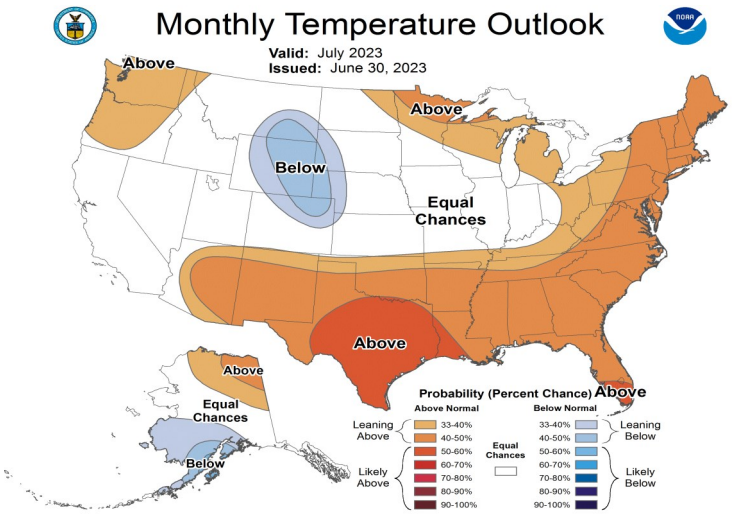
	Total Precipitation Accumulation for the Water Year (in)	Median Precipitation Accumulation (1991-2020) (in)	Precipitation Accumulation % of Median (1991-2020)
Beagle Springs (8,850 ft)	18.8	18.2	103%
Clover Meadow (8,600 ft)	30.7	26.9	114%
Divide (7,800 ft)	23.2	19.4	120%
Lakeview Ridge (7,400 ft)	26.1	22.6	115%
Short Creek (7,000 ft)	18.4	14.2	130%
Tepee Creek (8,000 ft)	25.5	22.9	111%
White Elephant (7,710 ft)	45.5	41.2	110%

Precipitation and Temperature Outlook – July 2023

Both the monthly precipitation and temperature outlooks for July have equal chances of being above or below normal for this time of year. However, the 8-14 day forecast NOAA issued on July 13th indicates that west, central, and southwest Montana have a 60-70% chance of being above normal temperatures. The Centennial Valley's precipitation outlook for the next 8-14 days predicts 33-40% chance of below normal precipitation.

Source: NWS NOAA Climate Prediction Center



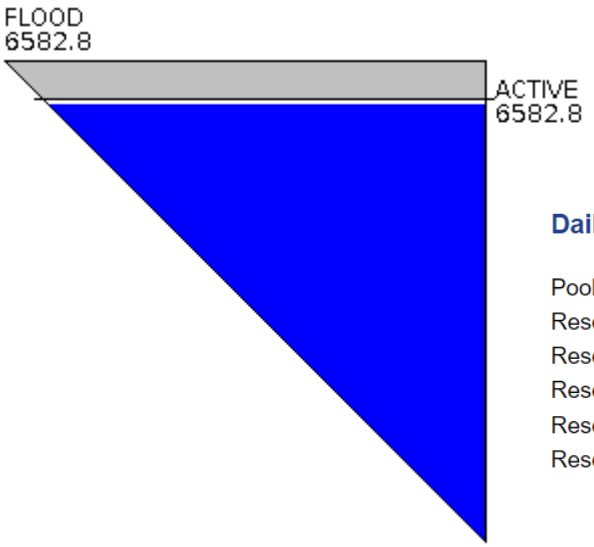


USGS Stream Gage Data — June 2023

Below are the graphs that represent the streamflow of Red Rock Creek and Red Rock River for the month of June. On June 30th, at 11:45pm, the stream gage at Red Rock Creek near Lakeview was at 3.66 feet and discharging around 87.5CFS. This is a decrease from May 31st, when the site was at 4.46 feet and discharging around 154 CFS. On June 30th, at 11:00pm, the stream gage at Red Rock River near Lima Reservoir was at 2.91 feet and discharging around 377 CFS. This is a decrease from May 31st, when the site was at 3.92 feet and discharging around 761 CFS.
Source: USGS Streamflow Data

Lima Reservoir Data - As of July 12, 2023

The Lima Reservoir currently has a pool elevation of 6582.3 feet and is 96.7% full. The reservoir inflow is 283.8 CFS and the outflow is 283.8 CFS.
Source: Bureau of Reclamation



Daily Reservoir Data as of 07/12/2023

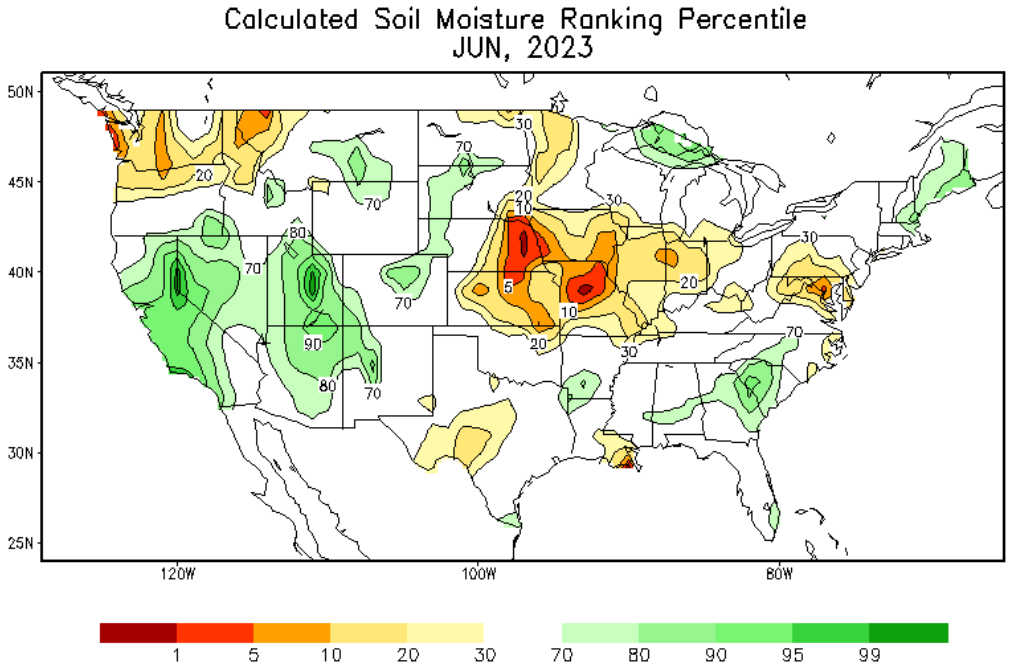
Pool Elevation is 6582.3 Feet
Reservoir Storage is 81258.7 Acre-Feet
Reservoir Inflow is 283.8 CFS
Reservoir Outflow is 283.8 CFS
Reservoir is 96.7 % Full*
Reservoir Flood Control Pool is filled 0.0 %

** Reservoir is considered "full" when pool elevation is at top of active conservation pool. Percentage is based on total reservoir volume below that level.*

Soil Moisture Conditions — June 2023

Soil moisture is the total amount of water, including water vapor, in unsaturated soil. Soil moisture represents the water that resides in the pores of soil. In the Centennial Valley, the soil moisture was in the 30-70% percentile for the month of June. This percentile indicates that the soil is not dry, but does not have a significant increase in soil moisture.

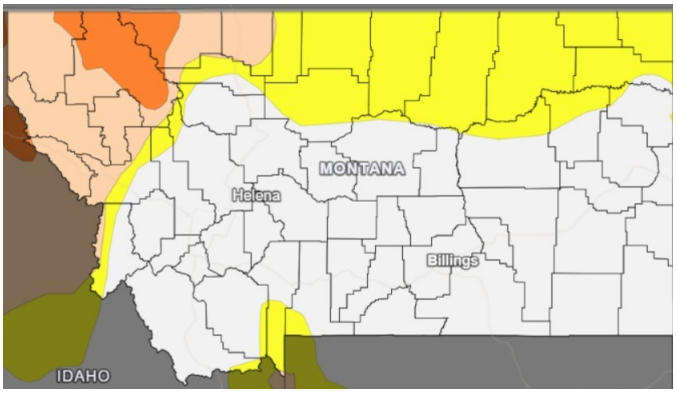
Sources: Climate Prediction Center



Drought Data — July 2023

As of July 11th, drought status across the state is looking very good in comparison to previous years, with 24% of Montanans experiencing abnormally dry conditions, including Alaska Basin in the Centennial Valley. Unfortunately, 3.5% of Montanans near Glacier are experiencing severe drought. In Beaverhead County, no one is affected by drought conditions! May was drier than normal, being the 43rd driest year on record, down 0.42" from normal.

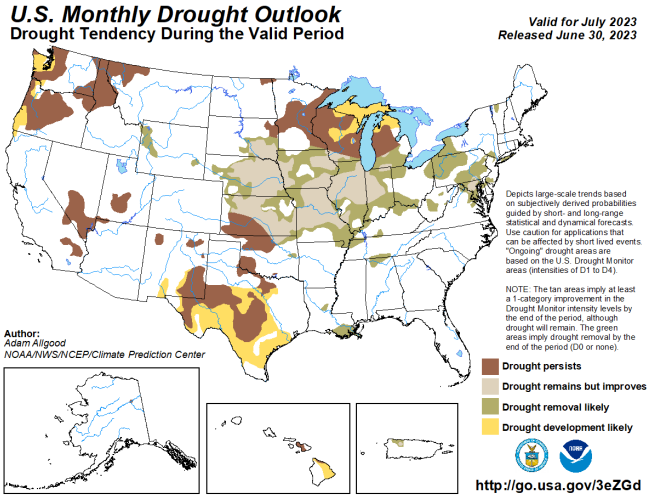
Source: National Integrated Drought Information System



Drought Outlook – July 2023

Montanans in the very northwestern corner of the state will experience persisting drought conditions for the month of July. For the rest of the state, drought is not predicted.

Source: NWS NOAA Climate Prediction Center



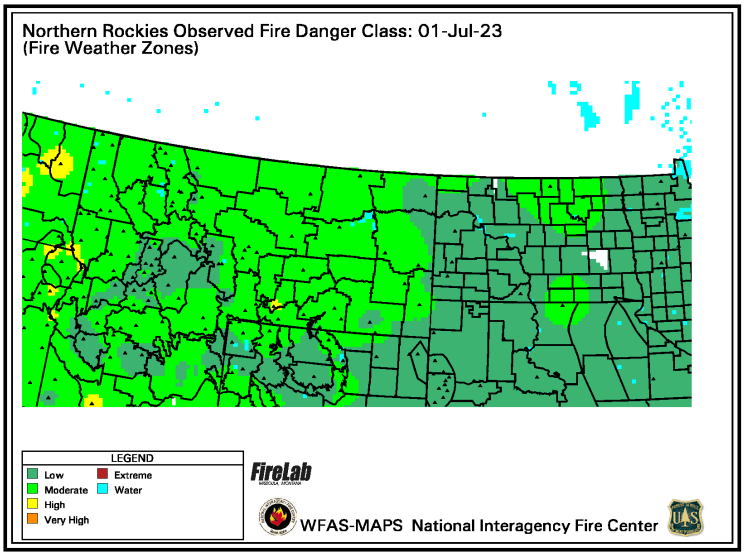
Fire Weather Conditions - July 1st, 2023

Southwest Montana is at a moderate fire danger classification, with the forecast maintaining that status for the coming days. According to the National Weather Service, there is nothing of significant concern across southwestern Montana.

Sources: US Forest Service Wildland Fire Assessment System; National Weather Service

More Fire Resources

DNRC Interactive Fire Map: https://gis.dnrc.mt.gov/apps/firemap/
Montana Wildfire News: https://www.npr.org/podcasts/490249415/montana-wildfire-news
Northern Rockies Fire Weather Daily Outlook: https://gacc.nifc.gov/nrcc/predictive/weather_Day1.jpg
Northern Rockies Significant Fire Potential: https://fsapps.nwcg.gov/psp/npsg/data/conus-sevenday/d1_0.png
AirNow Smoke Map: https://gispub.epa.gov/airnow/



If you have any questions, comments, or trouble interpreting the data, please contact drought@centennialvalleyassociation.org!

CENTENNIAL VALLEY ASSOCIATION

Helpful Links:

Montana Drought Status Percentage
NRCS SNOTEL Report Generator
USGS Streamflow Data
Lima Reservoir
Palmer Drought Severity Index
BLM Weather Station