

Centennial Valley Water Report - December 2023

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

Greetings from the Centennial Valley Association!

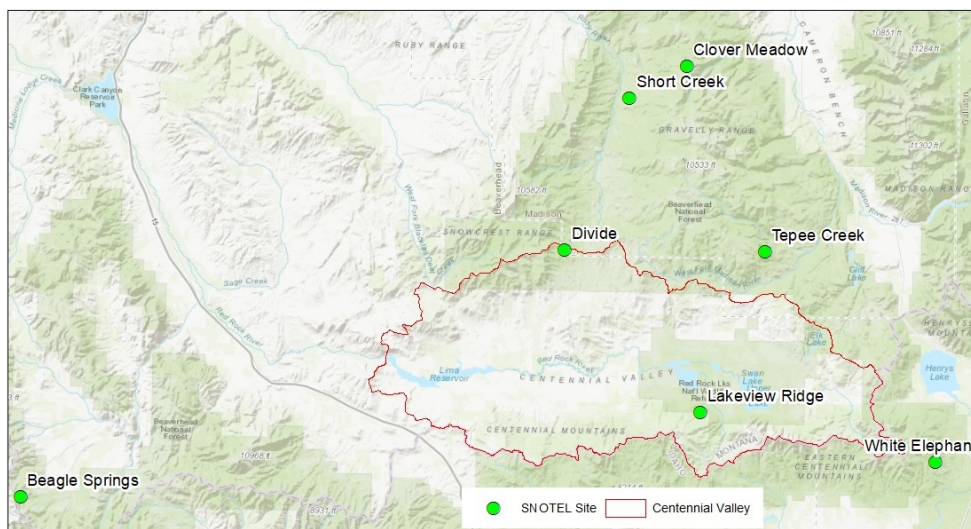
Happy New Year! We hope you enjoyed the holidays and wish you the best in 2024! We are also wishing for the best for the snowpack in 2024. Milder temperatures and below normal precipitation has contributed to record-low snowpack across the state of Montana ([NRCS](#)). Montana State University assistant professor Eric Sproles indicated that this year's warm, dry weather is what we would expect given that the Pacific Ocean is in an El Niño phenomenon ([KBZK Bozeman](#)). El Niño results in milder winters in the northern United States and wetter conditions in the Gulf. However, Montana will begin seeing arctic air pushing in on January 10th, with windchill values of 20 below in southwestern Montana by Friday morning (National Weather Service). Be prepared for frigid weather!

For December, the BLM RAWS site indicated that the average high for the month was 33.4°F and the average low was 7.3°F. At the end of the day on December 31st, 2023, the Jefferson River Basin reported 53% of median for snow water equivalent (SWE), and the Red Rock River subbasin reported 62% of median for SWE. As of January 7th, 2024, the Jefferson River basin reported 51% of median for SWE and the Red Rock River subbasin reported 60% of median for SWE. Though these percentages are low and nerve-racking, the Jefferson and Madison (56% of median SWE on January 7th, 2024) river basins are doing better than other river basins in the state, which are seeing percent of median SWE between 25—48%. Please think snowy thoughts for all of Montana!

Snowpack and Precipitation Data - As of December 31st, 2023

There are seven Natural Resources Conservation Service (NRCS) SNOTEL sites that surround the Centennial Valley (below). Percent of median for precipitation for the month of December ranged from 76% (Short & Tepee Creek) to 87% (Divide). Percent of median for snow water equivalent was not looking great at the end of December, with all sites falling below 70% of median for snow water equivalent, with the exception of Beagle Springs (80%). In December, all SNOTEL sites received over 0.5" of precipitation for the month. White Elephant received the most precipitation (3.6"), and Short Creek received the least precipitation (0.8").

Source: [NRCS Report Generator](#)



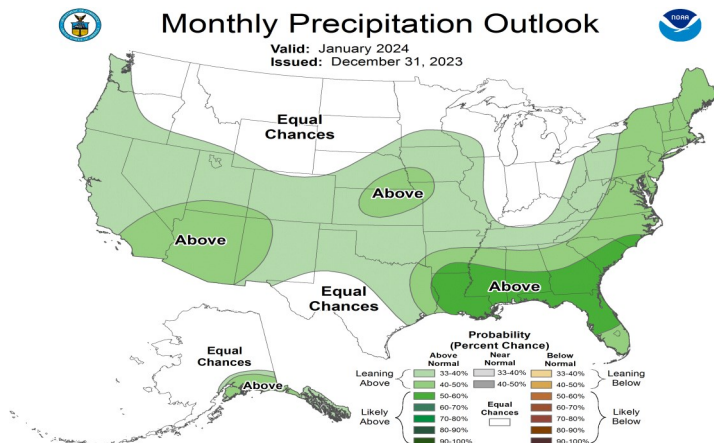
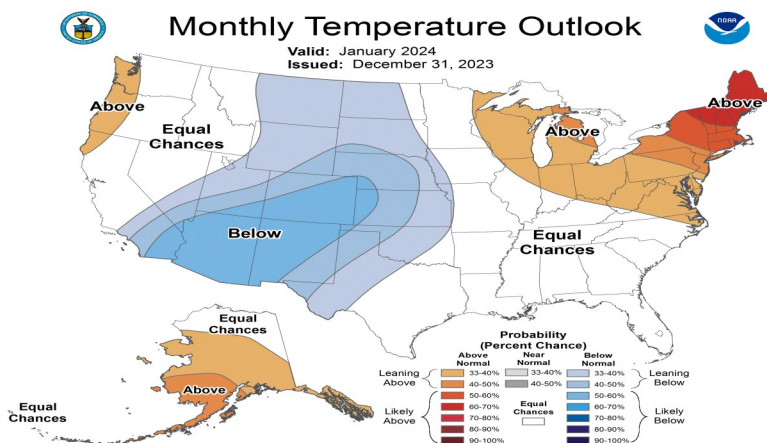
Snowpack and Precipitation Data - End of Day Values for December 31st, 2023

	Precipitation Accumulation (in)	Median Precipitation Accumulation (1991-2020) (in)	Precipitation Accumulation % of Median (1991-2020)	Snow Water Equivalent (in)	Median Snow Water Equivalent (1991-2020)	Snow Water Equivalent % of Median (1991-2020)	Snow Depth (in)
Beagle Springs (8,850 ft)	4.2	5.0	84%	3.2	4.0	80%	16.0
Clover Meadow (8,600 ft)	7.1	8.4	85%	4.6	7.3	63%	20.0
Divide (7,800 ft)	4.7	5.4	87%	2.5	4.4	57%	10.0
Lakeview Ridge (7,400 ft)	5.6	7.0	80%	1.2	4.5	27%	6.0
Short Creek (7,000 ft)	3.2	4.2	76%	0.8	2.6	31%	4.0
Tepee Creek (8,000 ft)	5.4	7.1	76%	3.8	6.1	62%	14.0
White Elephant (7,710 ft)	11.4	13.6	84%	7.5	10.8	69%	27.0
Red Rock BLM RAWS	0.23"	-	-	-	-	-	-
Lakeview Rain Gauge	0.01"	-	-	-	-	-	-

Precipitation and Temperature Outlook – January 2024

For the month of January, southwest and western Montana have equal chances of being above or below normal for temperature, while central and eastern Montana will has a 33-40% chance of below normal temperatures. For precipitation, the month of January the entire state has an equal chance of being above or below normal for precipitation.

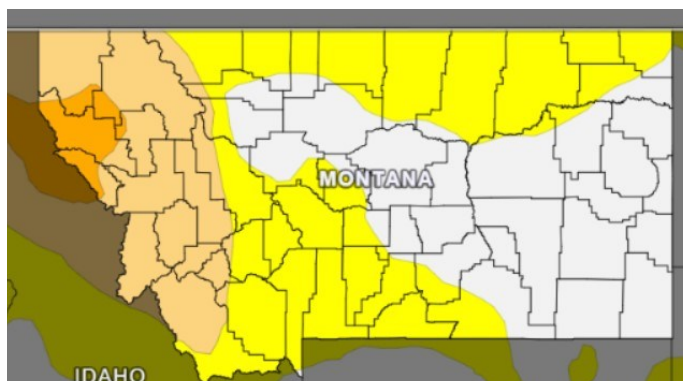
Source: [NWS NOAA Climate Prediction Center](https://www.noaa.gov/climate-prediction-center)



Drought Data - December 2023

During the month of December, ~21% of the state is experiencing a drought designation, while ~40% of the state is experiencing abnormally dry conditions. Mineral, Sanders, and portions of Lincoln and Flathead counties are experiencing severe drought. In Beaverhead County, 62% of the county is experiencing moderate drought, which is a 62% increase from November. The Red Rock watershed and Centennial Valley are experiencing abnormally dry conditions.

Source: [National Integrated Drought Information System](https://www.nidms.gov/)

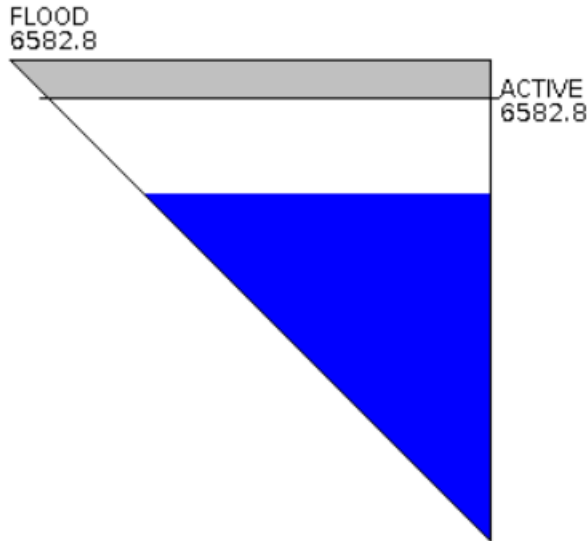


Lima Reservoir Data - As of January 7th, 2024

The Lima Reservoir currently has a pool elevation of 6576.3 feet and is 60.7% full. The reservoir inflow is -30.2 CFS and the outflow is 12.2 CFS.

Source: [Bureau of Reclamation](#)

Water Users Irrigation Company Current Reservoir Data for Lima Reservoir, MT



Daily Reservoir Data as of 01/07/2024

Pool Elevation is 6576.3 Feet
Reservoir Storage is 51060.1 Acre-Feet
Reservoir Inflow is -30.2 CFS
Reservoir Outflow is 12.2 CFS
Reservoir is 60.7 % 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.*

Record-Low Snowpack Widespread Throughout Montana, Report Shows

Eric Larson, a water supply specialist with the Natural Resources Conservation Service (NRCS), indicated to the Montana Free Press that snowpack had a good start in October, but has since flatlined in November and December. About half of the basins, including the Upper Missouri, are posting record-low totals. Though low precipitation usually plays a major role in subpar snowpack, temperature is also a contributing factor this year. Cooler temperatures are needed to prevent melting of the snowpack we have. Read the full article via the link below.

Link: <https://montanafreepress.org/2024/01/05/record-low-snowpack-widespread-throughout-montana-report-shows/?fbclid=IwAR0IkTOGFAf4QIZ36frTVws0uNnX5guTv17IbSCO78Hhpvt0TAfNuoNV0Fs>

Montana Introduces New Drought Plan for Better Water Supply Resilience

The Montana Department of Natural Resources and Conservation (DNRC) updated the Montana Drought Management Plan, the first update in nearly three decades. The plan includes different ways to improve drought preparedness, groundwork for future improvements, and stakeholder-generated recommendations for resources. Read more via the link below.

Link: <https://nbcmontana.com/newsletter-daily/montana-introduces-new-drought-plan-for-better-water-supply-resilience>

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



Helpful Links:

[Montana Drought Status Percentage](#)
[NRCS SNOTEL Report Generator](#)
[USGS Streamflow Data](#)
[Lima Reservoir](#)
[Palmer Drought Severity Index](#)
[BLM Weather Station](#)