



# Centennial Valley Water Report - June 2022

Please contact [drought@centennialvalleyassociation.org](mailto:drought@centennialvalleyassociation.org) if you have any questions, comments, or suggestions.

## Greetings from the Centennial Valley Association!

Continued rain and cooler temperatures across much of southwest Montana helped eliminate the drought conditions status moving into July! According to the [National Integrated Drought Information System](#), 0% of people are affected by drought in Beaverhead County, which is down 100% from the month of May. Mean temperatures in the Centennial Valley were around normal for the month of June, with other areas in Beaverhead County seeing mean temperatures 1-2° below normal ([West Wide Drought Tracker](#)). Weather stations in Lakeview (south-side) and the Sandhills (north-side) indicated June’s average high temperatures were 52.9° and 66°, respectively. The Jefferson River Basin was 105% of median for precipitation at the end of June ([NRCS](#)). The Red Rock subbasin of the Jefferson River Basin, which includes the Centennial Valley landscape, was 107% of median for precipitation. While this is some happy news, July predictions are indicating a warm up with unclear precipitation models. Continue to keep your fingers crossed for rain!

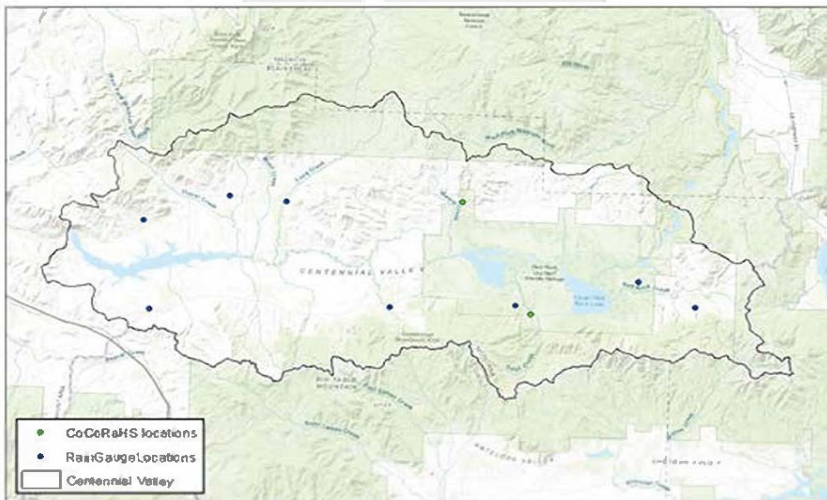
There is a Governor’s Drought and Water Supply Advisory Committee and Montana Drought Task Force meeting on Wednesday, July 6<sup>th</sup> from 9:30am-12pm at the Montana DNRC Headquarters in Helena or via [Zoom](#). CVA and The Nature Conservancy are also seeking an additional Field Technician to join the Team in late July through the end of October! The announcement can be found on our [website](#).

## Precipitation Data - June 2022

Shannon set up the remaining CVA rain gauges and they are actively collecting data. Despite those gauges missing the first week of the month, the majority show that more than a half an inch of precipitation fell. Areas around Lakeview experienced the most rainfall, recording over five inches of precipitation! Only around Lakeview saw this significant precipitation on the valley floor, while most other sites were reporting between a half inch to over two inches of precipitation. The Alaska Basin gauge reported extremely low precipitation for the month (0.14”). Rains between June 11-13<sup>th</sup> contributed to most of the rainfall around the Valley.

\*Please note: \* Rain gauges were not installed until June 7<sup>th</sup> and 8<sup>th</sup>.

### Rain Gauge Locations

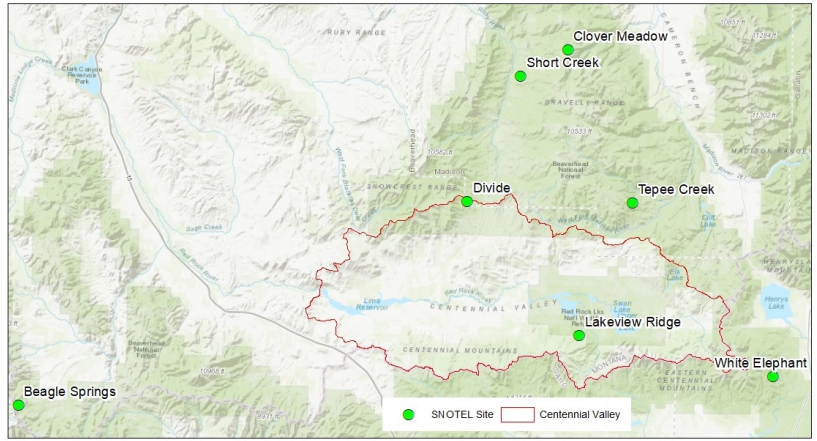


Source: CVA & Partner Monitoring

Rain Gauge Name	Precipitation Accumulation in inches (end of period values)
Elk Lake Road	2.14
Alaska Basin	0.14*
RRLNWR CoCoRaHS	5.90
Lakeview	5.31
South Valley Road	1.16*
Monida Hill	1.12*
Lima Dam	0.81*
Wolverine	0.78*
Long Creek	0.60*
TNC CoCoRaHS	1.58
<a href="#">Red Rock BLM RAWS</a>	1.19

## Snowpack and Precipitation Data - As of June 30<sup>th</sup>, 2022

There are seven Natural Resources Conservation Service (NRCS) SNOTEL sites that surround the Centennial Valley (right). Summer is here, and the precipitation that fell over the month of June came in the form of rain. Snow has been melting off, with none of the sites reporting any snow depth. However, White Elephant reported 0.1" of snow water equivalent from June 27-30<sup>th</sup>. Percent median for precipitation accumulation ranges between 95% (White Elephant) and 137% (Short Creek). White Elephant and Lakeview Ridge received the most precipitation accumulation in June, adding 6.1" and 4" respectively to their accumulation totals for the water year. All other SNOTEL sites saw at least two inches added to their accumulation totals for the water year.

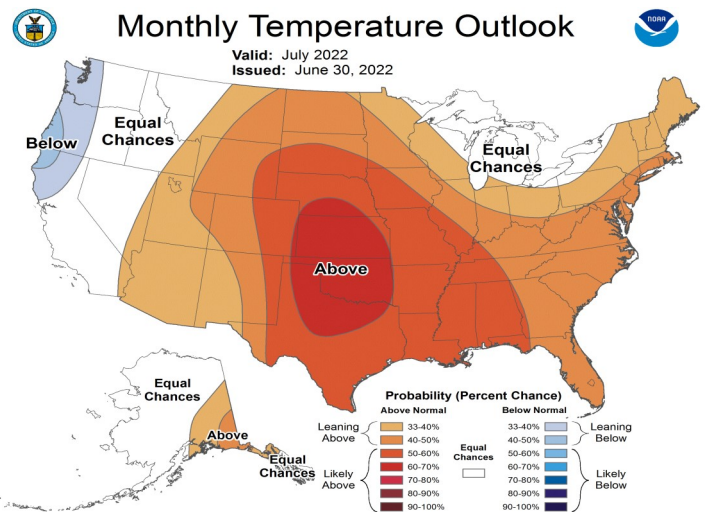
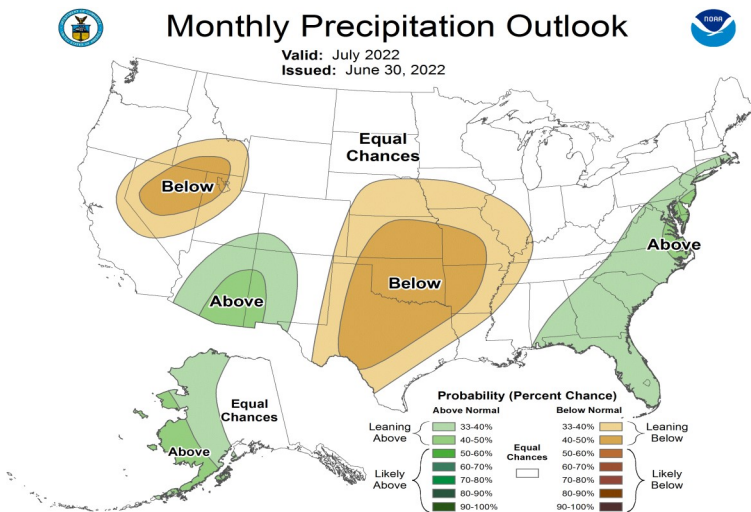


Source: [NRCS Report Generator](#)

	Precipitation Accumulation (in)	Median Precipitation Accumulation (1991-2020) (in)	Precipitation Accumulation % of Median (1991-2020)
Beagle Springs (8,850 ft)	19.8	18.2	109%
Clover Meadow (8,600 ft)	31.3	26.9	116%
Divide (7,800 ft)	23.1	19.4	119%
Lakeview Ridge (7,400 ft)	29.2	22.6	129%
Short Creek (7,000 ft)	19.5	14.2	137%
Tepee Creek (8,000 ft)	25.9	22.9	113%
White Elephant (7,710 ft)	39.0	41.2	95%

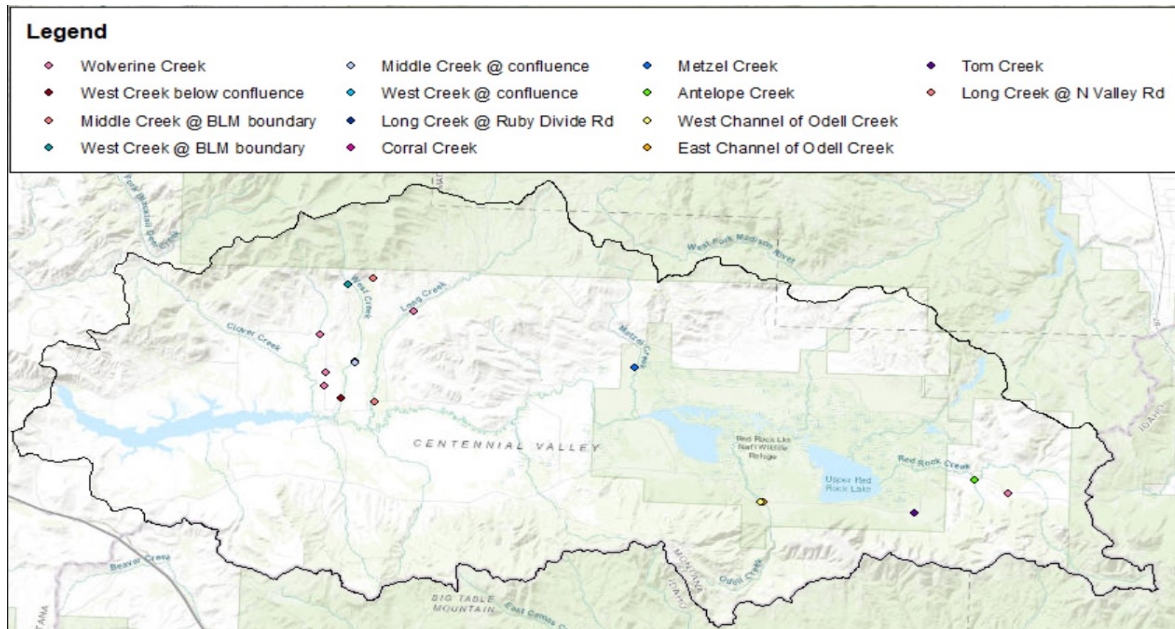
## Precipitation and Temperature Outlook – July 2022

The precipitation outlook for the entire state of Montana is indicating an equal chance for above or below normal precipitation for the month of July. The temperature outlook has a 33% to 40% chance of being above normal to the east, including most of the Centennial Valley, while southwest and western Montana have equal chances of being above or below normal temperatures. Source: [NWS NOAA Climate Prediction Center](#)



## Streamflow Data - June 2022

MT Fish, Wildlife, and Parks (FWP) has several streamflow monitoring sites throughout the valley. CVA also has an additional site of our own. Data loggers were installed in May, and FWP is out monitoring sites once or twice per month. The table below highlights earlier June readings and what the readings were in mid-June of 2021. Please note that all data is provisional.

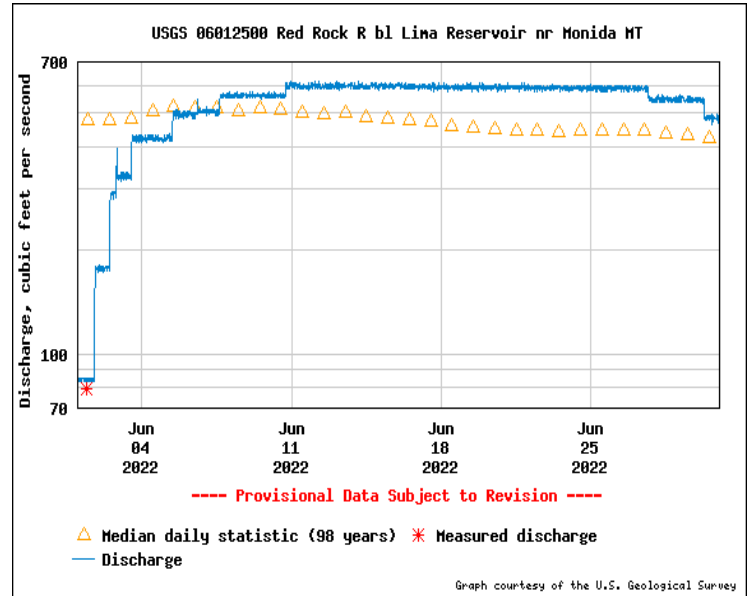
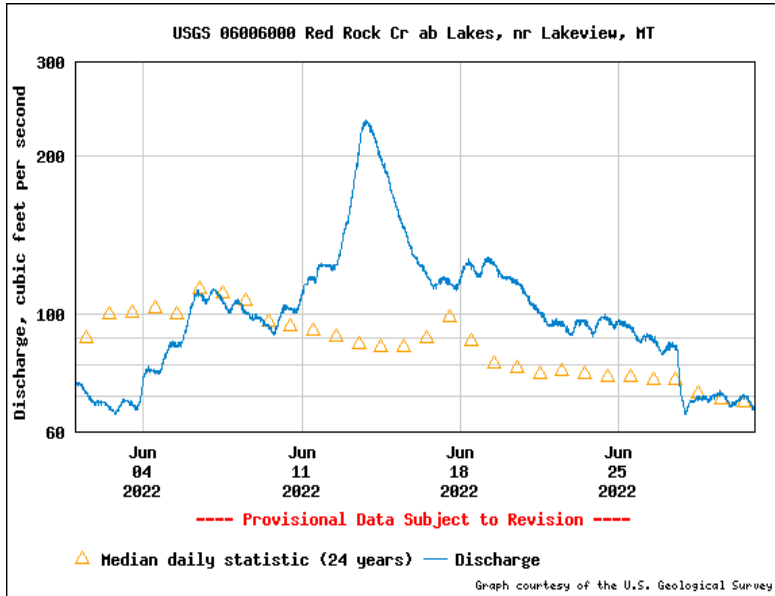


Streamflow Site	Current Reading			Previous Readings		
	Date	Flow Rate (CFS)	Stream gage height (ft)	Date	Flow Rate (CFS)	Stream gage height (ft)
West Creek below confluence	6/2/22	8.83	0.80	06/10/21	3.70	0.45
West Creek @ confluence	6/2/22	0.18	0.31	06/10/21	1.72	0.62
West Creek @ BLM Boundary	6/2/22	8.73	0.86	06/10/21	5.15	-
Middle Creek @ confluence	6/2/22	7.38	0.55	06/10/21	0.51	0.21
Middle Creek @ BLM Boundary	6/2/22	16.94	0.91	06/10/21	8.38	-
Long Creek @ Ruby Divide Rd	6/1/22	42.50	0.95	06/14/21	8.94	0.39
Long Creek @ N. Valley Rd	6/1/22	29.93	1.44	06/14/21	1.38	0.21
Metzel Creek	6/2/22	8.73	0.57	06/14/21	3.74	-
Odell Creek	6/2/22	72.90	-	06/14/21	21.62	-
Tom Creek	6/2/22	11.26	0.85	06/15/21	0.97	0.16
Antelope Creek	6/3/22	1.69	0.19	06/15/21	0.21	0
Corral Creek	6/3/22	3.58	0.46	06/15/21	1.16	-
Wolverine Creek	-	-	-	-	-	-

## USGS Stream Gage Data - June 2022

Below are the graphs that represent the streamflow of Red Rock Creek and Red Rock River for the month of June. As of July 2<sup>nd</sup>, at 9:30am, the stream gage at Red Rock Creek near Lakeview is at 3.35 feet and discharging around 66.7 CFS. This is a decrease from June 5<sup>th</sup>, when the site was at 3.66 feet and discharging around 87.5 CFS. As of July 2<sup>nd</sup>, at 9:30am, the stream gage at Red Rock River near Lima Reservoir is at 3.21 feet and discharging around 479 CFS. This is a decrease from June 5<sup>th</sup>, when the site was at 3.26 feet and discharging around 498 CFS.

Source: [USGS Streamflow Data](#)

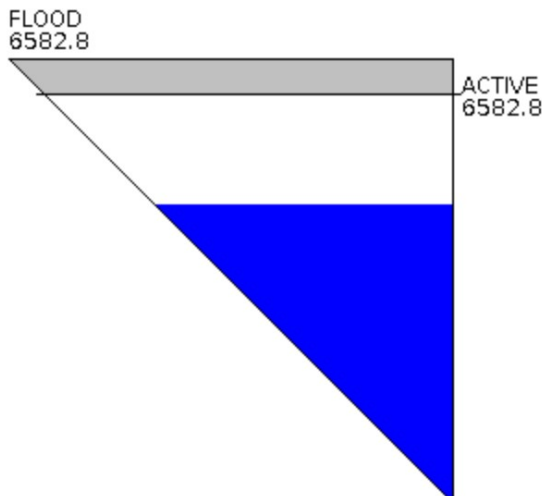


## Lima Reservoir Data - As of July 1<sup>st</sup>, 2022

The Lima Reservoir currently has a pool elevation of 6574.6 feet and is 52.5% full. The reservoir inflow is 262.1 CFS and the outflow is 483.6 CFS. On June 4<sup>th</sup>, 2022, the Lima Reservoir had a pool elevation of 6576.7 feet and was 62.7% full. The reservoir inflow was 293.4 CFS and the outflow was 420.6 CFS.

Source: [Bureau of Reclamation](#)

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



### Daily Reservoir Data as of 07/01/2022

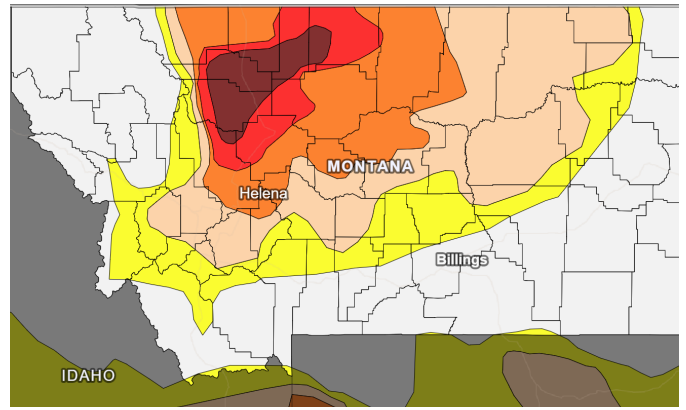
Pool Elevation is 6574.6 Feet  
 Reservoir Storage is 44160.2 Acre-Feet  
 Reservoir Inflow is 262.1 CFS  
 Reservoir Outflow is 483.6 CFS  
 Reservoir is 52.5 % Full\*  
 Reservoir Flood Control Pool is filled 0.0 %

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

## Drought Data - July 2022

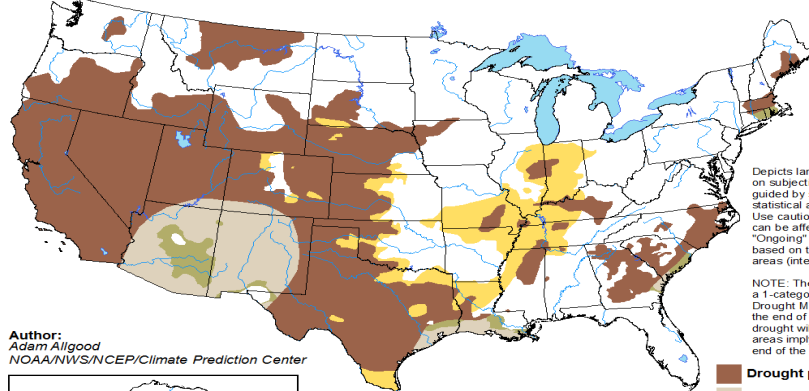
Continued moisture in June helped remove drought status from much of the state, including the Centennial Valley! As of June 28<sup>th</sup>, 55.3% of Montana is experiencing some level of drought, with 10.4% of the state experience extreme or exceptional drought. In Beaverhead County, 30.5% of the county is experiencing abnormally dry conditions. This is a huge improvement from May, when 75.26% of the county was facing extreme drought. The south side of the Centennial Valley is included in the abnormally dry status.

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



## U.S. Monthly Drought Outlook Drought Tendency During the Valid Period

Valid for July 2022  
Released June 30, 2022



Author:  
Adam Aitgood  
NOAA/NWS/NCEP/Climate Prediction Center

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).  
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely

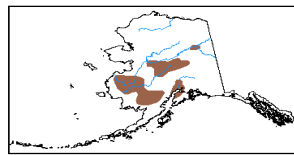


<http://go.usa.gov/3eZGd>

## Drought Outlook – July 2022

Drought classifications have been removed for southwest Montana and much of the state. Unfortunately, Montanans in north-central and parts of northeastern Montana will see drought persist in July, as will southern Idaho.

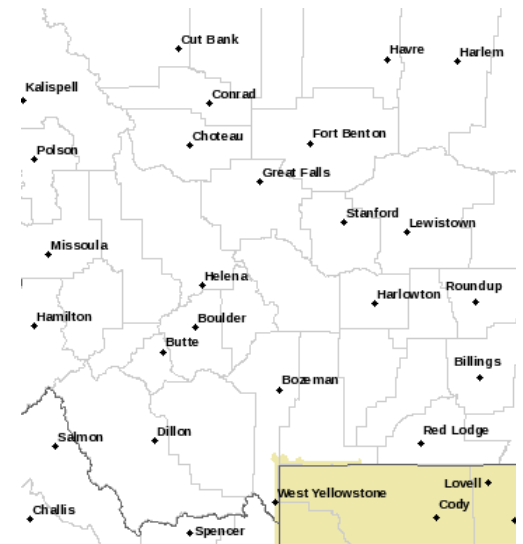
Source: [NWS NOAA Climate Prediction Center](https://www.weather.gov/mot/)



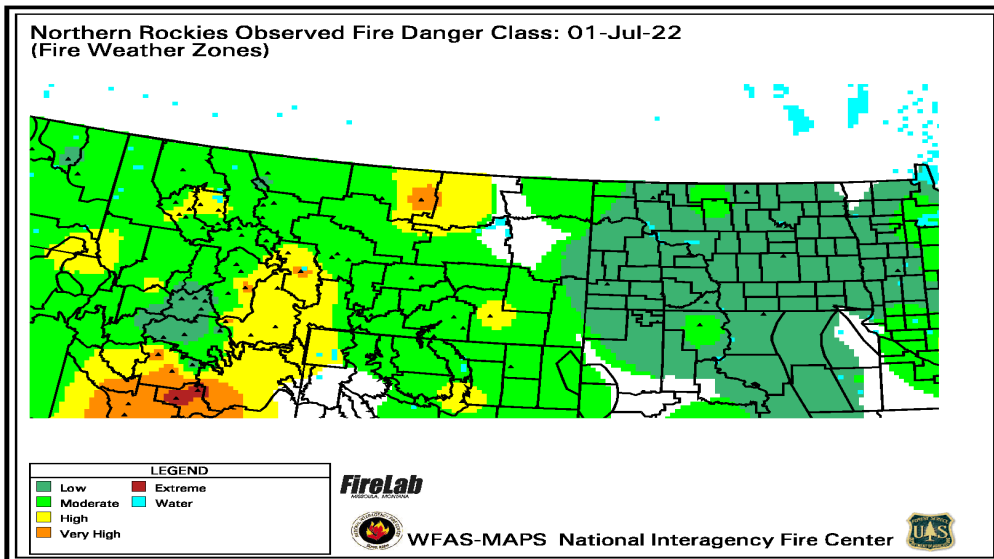
## Fire Weather Conditions - July 1<sup>st</sup>, 2022

Southwest Montana is at a high fire danger classification, with predictions lowering danger to a moderate classification in the coming days. According to the National Weather Service, there is nothing of significant concern across southwestern Montana. Yellowstone and Wyoming have a hazardous weather outlook, specifically for scattered thunderstorms, with gusty winds and hail.

Sources: [US Forest Service Wildland Fire Assessment System](https://www.fs.fed.us/landfire/); [National Weather Service](https://www.weather.gov/)



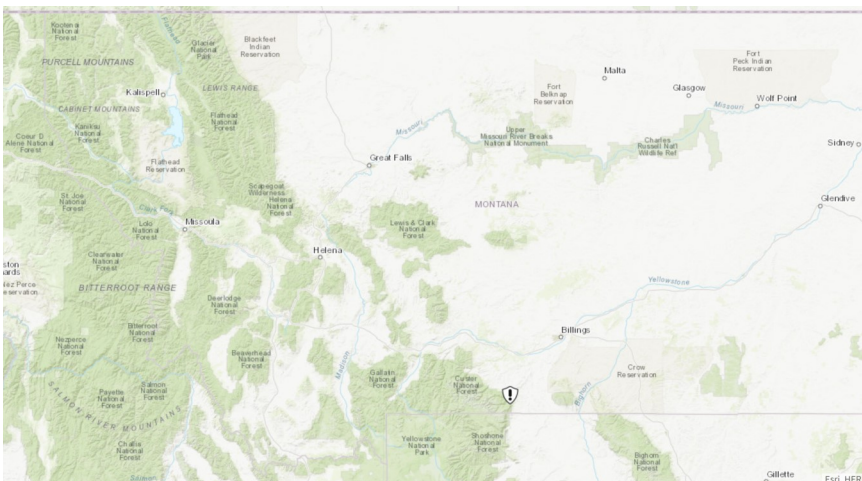
Hazardous Weather Outlook



## **Fire Report - June 2022**

As of the end of June, the [Incident Information System](#) did not have any significant fires to report in Montana, Idaho, or Wyoming. However, on June 29<sup>th</sup>, lightning caused a fire in the Tobacco Root Mountains, south of Whitehall, named the Brown's Gulch Fire. The fire is approximately 5-acres and found in cliffs and rock spree, making access complex and unsafe. Responding crews were Harrison and Whitehall Fire Departments, Beaverhead-Deerlodge National Forest, and Montana DNRC. It is currently 60% contained.

The Incident Information System is reporting on the flooding in Carbon County. On June 12<sup>th</sup>, Rock Creek and the Clarks Fork of the Yellowstone River experienced historic flooding, impacting homes, bridges, and roads. FEMA has provided disaster funding to the State to supplement recovery efforts. If you would like to help the community, you can donate to the [Red Lodge Area Community Foundation](#).



### **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](https://gacc.nifc.gov/nrcc/predictive/weather_Day1.jpg)

Northern Rockies Significant Fire Potential: [https://fsapps.nwcc.gov/psp/npsg/data/conus-sevenday/d1\\_0.png](https://fsapps.nwcc.gov/psp/npsg/data/conus-sevenday/d1_0.png)

AirNow Smoke Map: <https://gispub.epa.gov/airnow/>

## **Two Montana State Students Receive National Recognition**

Two undergraduate students at MSU received national recognition for their research on a cumulative health risk assessment of exposure to well water contaminants across different watersheds in Montana.

Article: [https://www.montana.edu/news/22157/two-montana-state-students-receive-national-recognition-for-environmental-health-research?mc\\_cid=1c478fd5fd&mc\\_eid=c9f9c4d6bc](https://www.montana.edu/news/22157/two-montana-state-students-receive-national-recognition-for-environmental-health-research?mc_cid=1c478fd5fd&mc_eid=c9f9c4d6bc)

Shannon Wilkey



## **Researchers Develop Low-Cost Gel that Absorbs Water from Desert Air**

University of Texas researchers developed a sustainable polymer gel film that could aid water scarcity in two-thirds of the global population. The gel is able to produce about 1.5-gallons of water in a day in environments with less than 15% relative humidity.

Article: <https://thedailytexan.com/2022/06/23/ut-austin-researchers-develop-low-cost-gel-that-absorbs-water-from-desert-air/>

## **Montana's Wet Spring Has Improved Drought Conditions**

Montana is coming off its fourth driest year on record, but the wet spring improved drought conditions.

Article: <https://www.mtpr.org/montana-news/2022-06-22/montanas-wet-spring-has-improved-drought-conditions>

If you have any questions, comments, or trouble interpreting the data, please contact [drought@centennialvalleyassociation.org](mailto: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](#)