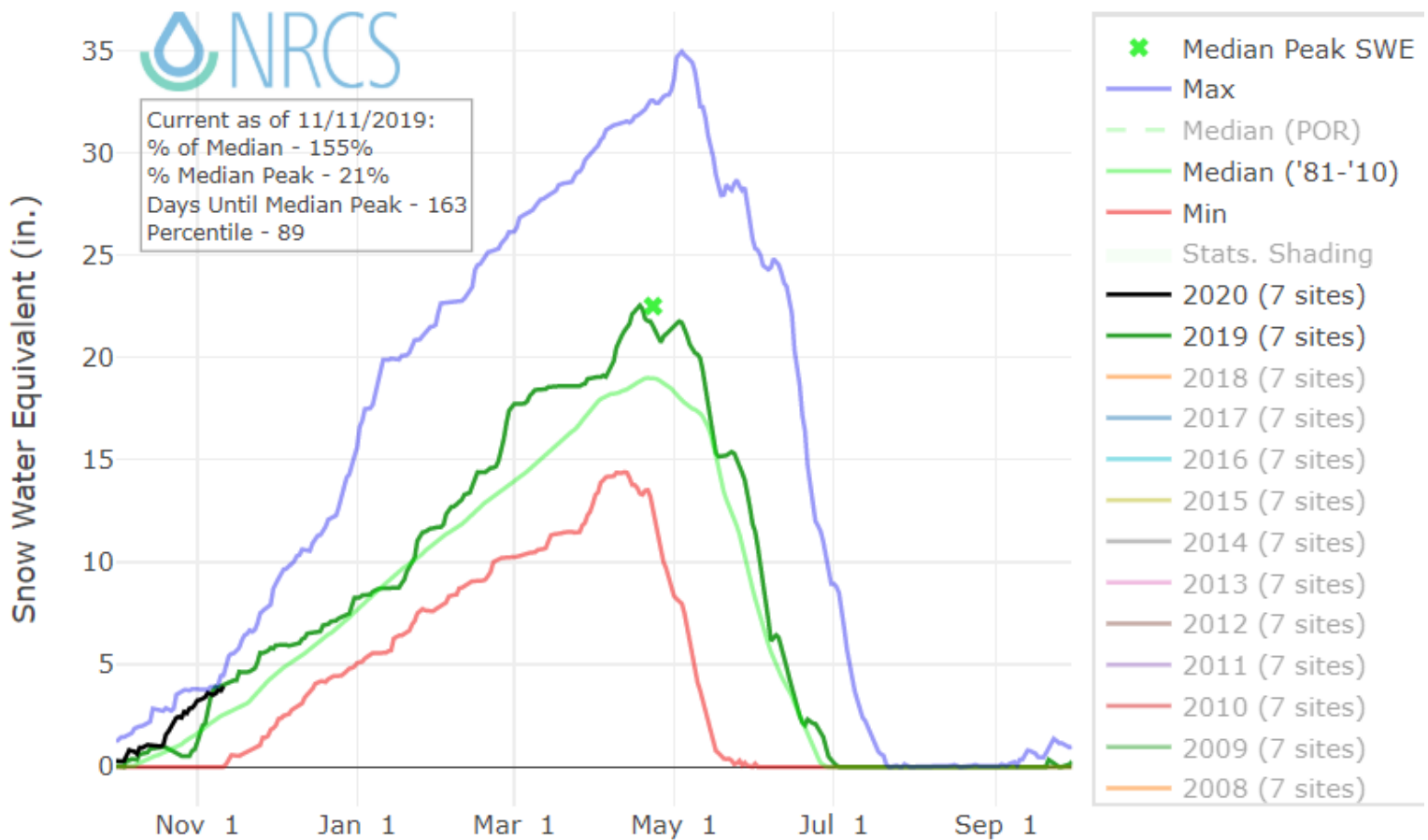


Gallatin County Water Supply Outlook

November 2019

Snowpack Data

Gallatin River Basin



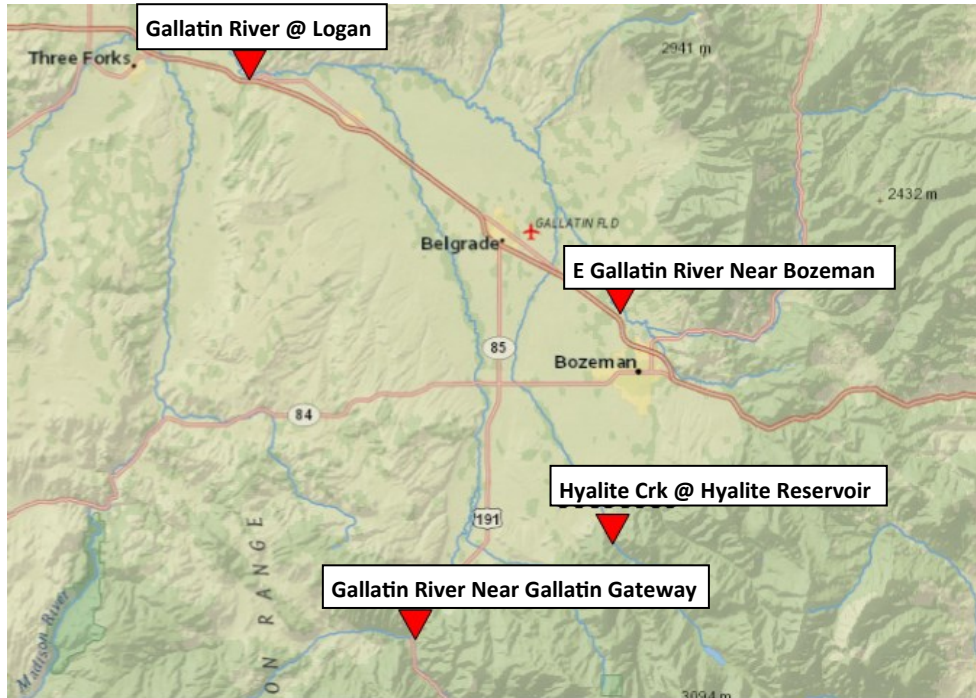
SNOWPACK SUMMARY:

*Data is current as of November 11

Snowpack is normal within the Gallatin River Basin. We currently have 3.9 inches of SWE. Last year we had 4.1 inches on this date.

Streamflow Data

Gallatin River Watershed



November 12 Gallatin Watershed Streamflow

Station Name	2019 Discharge (cfs)	% Normal	Normal Discharge (cfs)	2018 Discharge (cfs)	Period Of Record (Yrs)
Gall At Logan	874	107	821	902	103
E Gall near Bozeman	125	244	51	62.5	4
Hyalite Cr	Ice	Affected	28	31.8	65
Near Gallatin Gate-way	445	115	388	365	89

STREAMFLOW SUMMARY

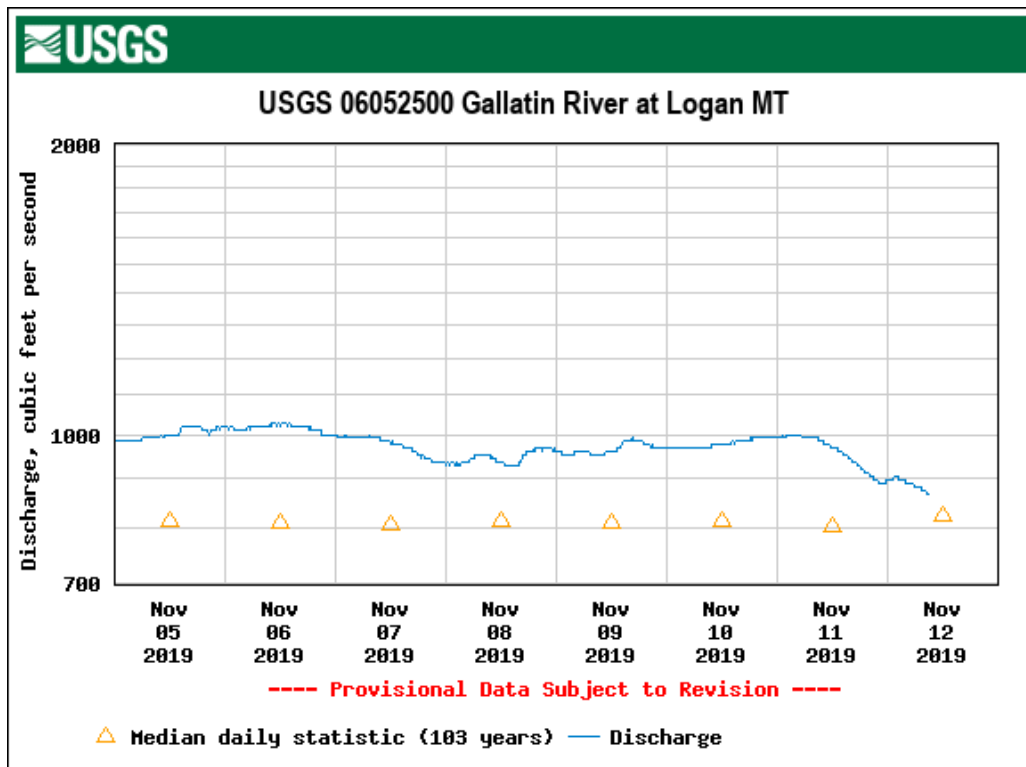
*Data current as of November 12

Streamflow is currently normal - above normal throughout the Gallatin River Watershed. Hyalite Creek is currently affected by ice at the measurement site. The rest of the gaging stations are over 100% of normal according to their periods of records.

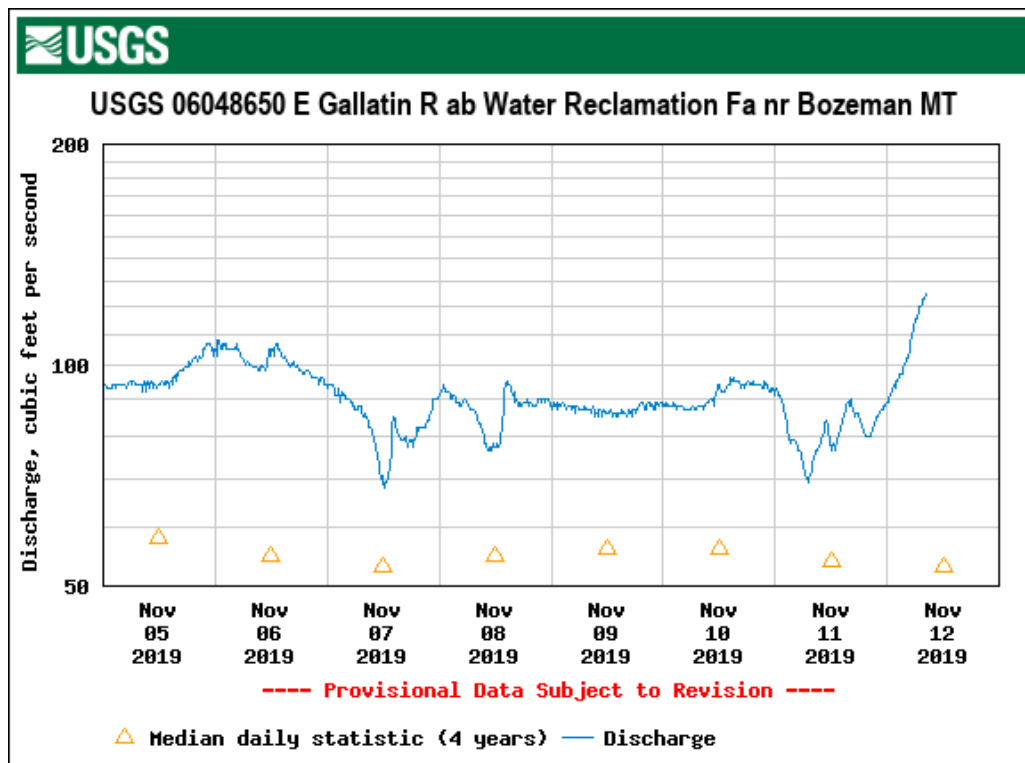
Review next page for detailed station information

Streamflow Data

Gallatin River Watershed



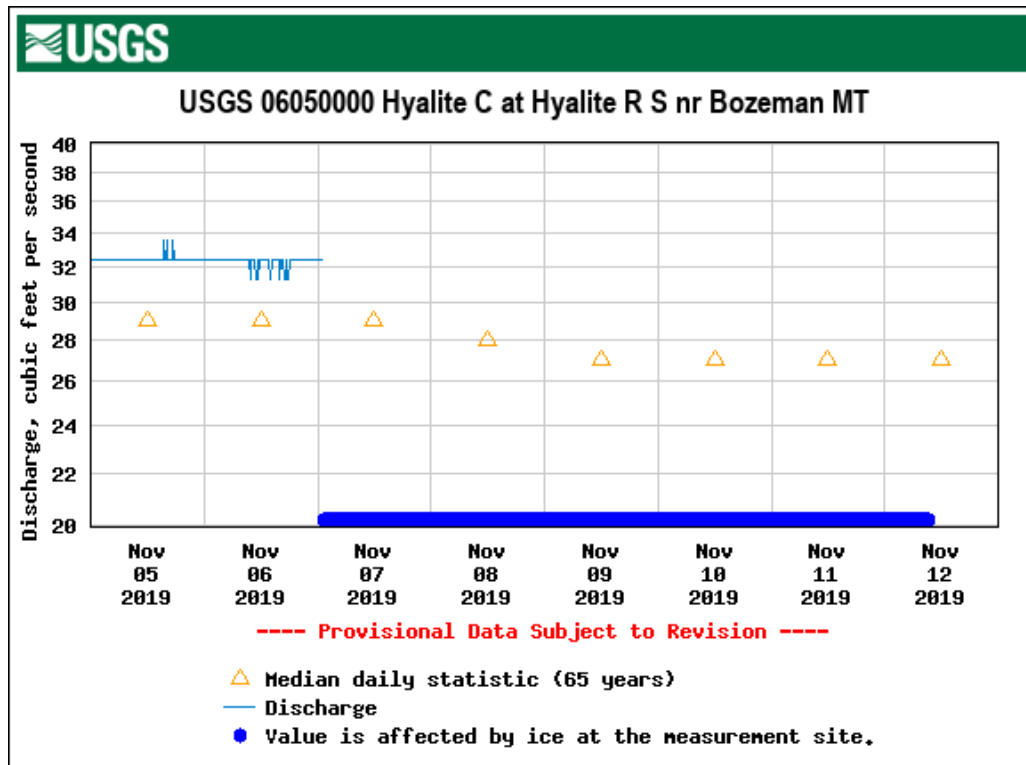
Nov 12, 8:00:00—Discharge is classified as normal (874 cfs | 107% normal)



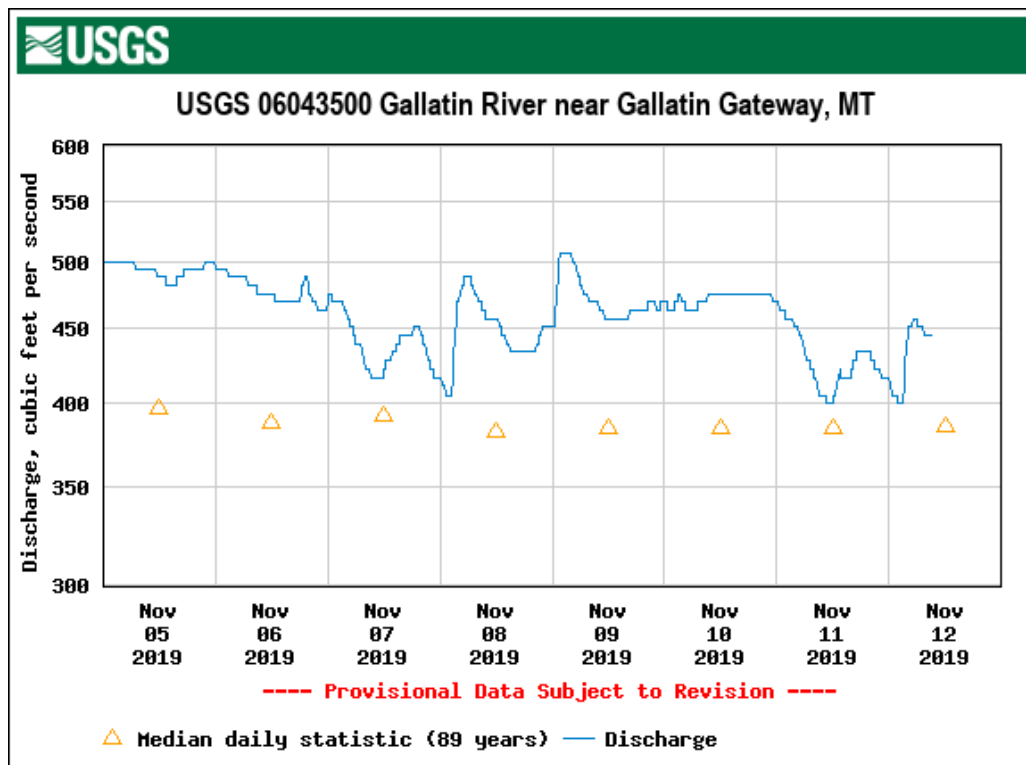
Nov 12, 8:30:00—Discharge is classified as not-ranked (125 cfs | 244% normal)

Streamflow Data

Gallatin River Watershed



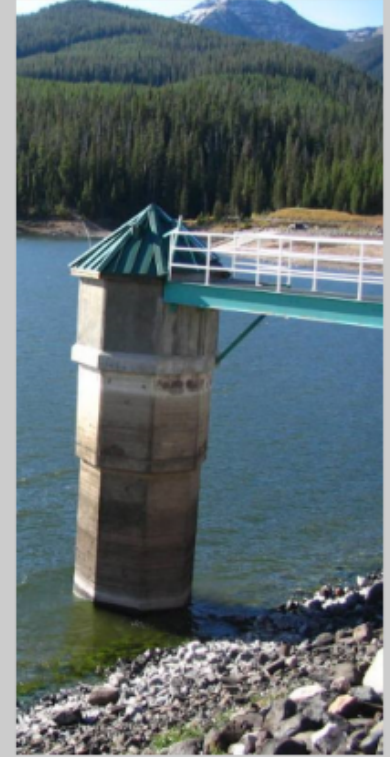
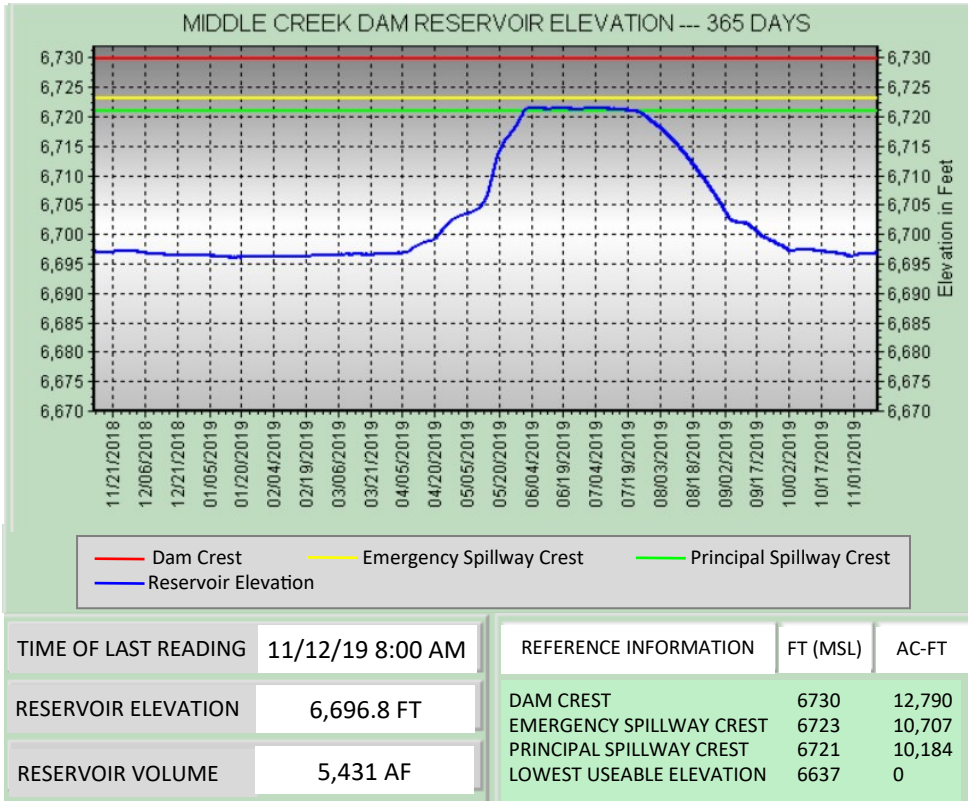
Nov 12, 8:30:00—Discharge is currently affected by ice



Nov 12, 8:00:00—Discharge is classified as Above Normal (457 cfs | 118% normal)

Water Storage Data

Middle Creek Dam, Hyalite Reservoir



STATION LOCATION	TIME OF LAST READING	STAGE (FT)	DISCHARGE (CFS)
EAST FORK OF HYALITE ABOVE RESERVOIR	11/12/19 8:15:00 AM	1.2 FT	7.3 CFS
WEST FORK OF HYALITE ABOVE RESERVOIR	11/12/19 8:15:00 AM	1.2 FT	12.2 CFS
MIDDLE CREEK BELOW RESERVOIR	11/12/19 7:45:00 AM	0.9 FT	24.7 CFS

****PROVISIONAL DATA SUBJECT TO REVISION****

RESERVOIR SUMMARY

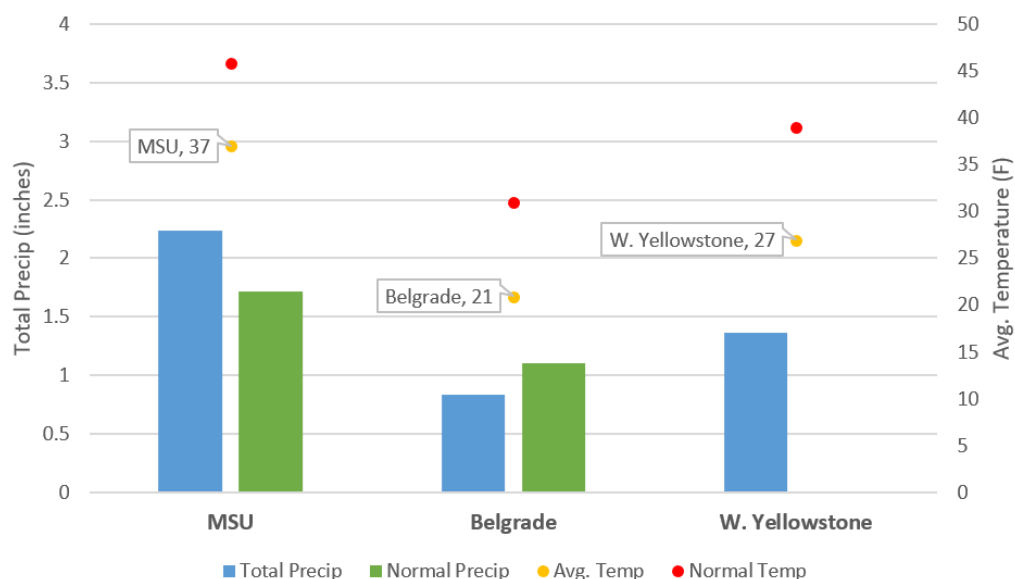
*Data current as of November 12

Middle Creek Dam elevation is 6,697 ft. The elevation has remained constant since last month. The elevation is below the principal spillway crest (6,721 ft.). Reservoir volume is 5,431 acre.ft.; 51 acre-ft. less than October.

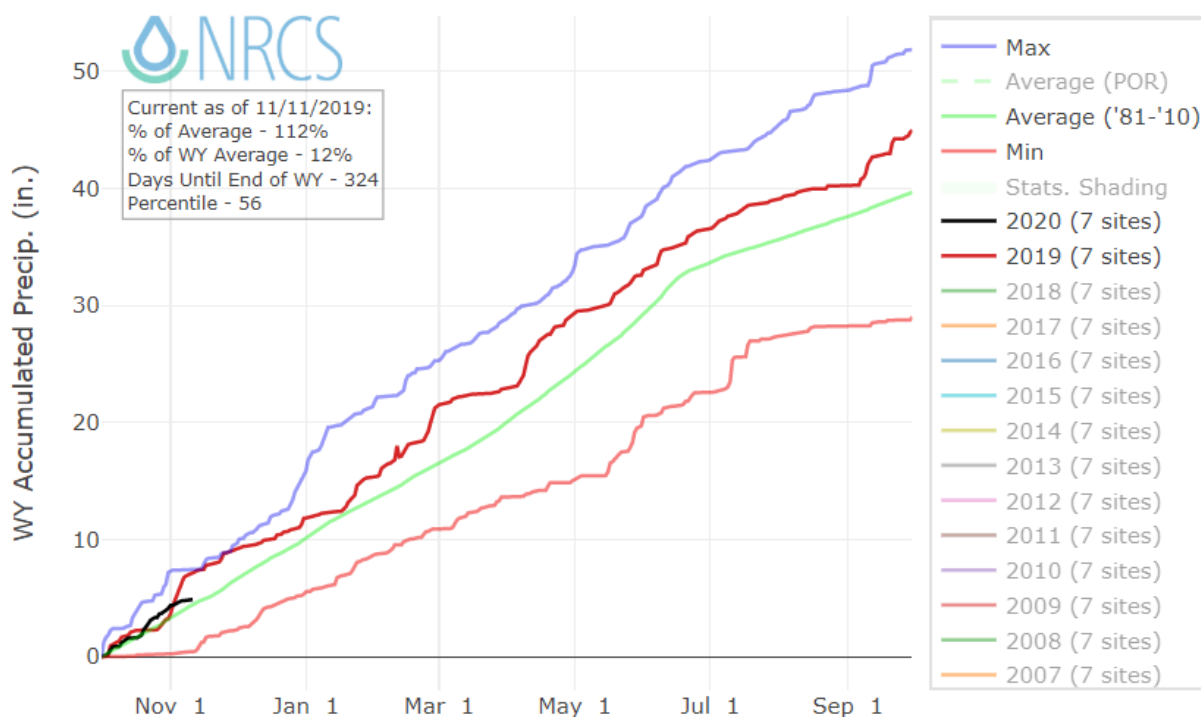
Climate Data

Gallatin County

October 2019



October 2019—Graph depicting ACIS climate data.



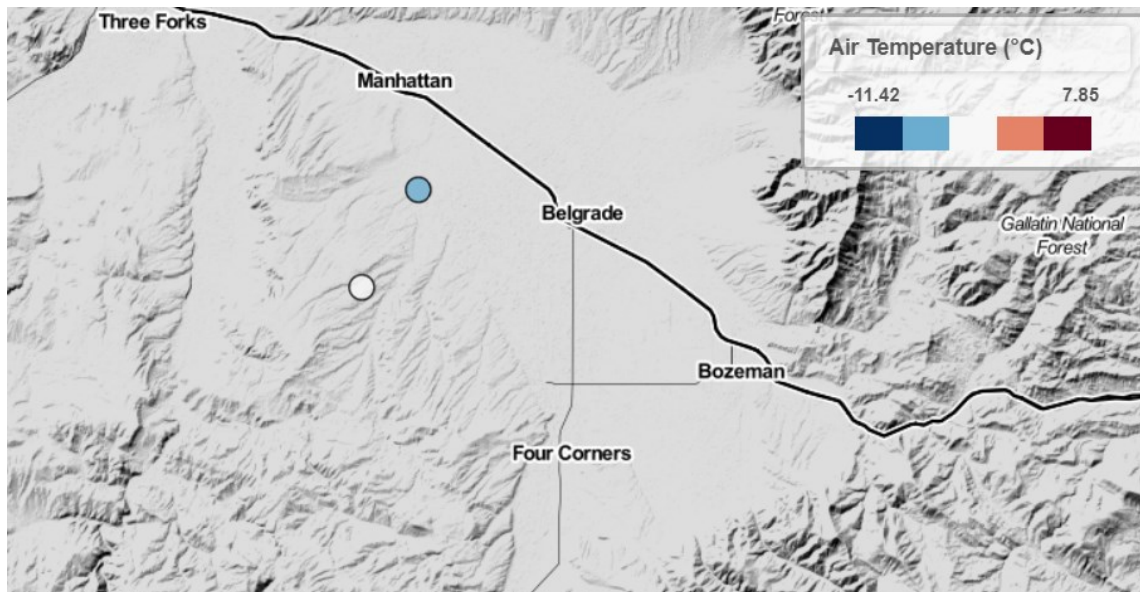
Gallatin River Basin Precipitation for WY2020 is currently 4.9 inches. We have collected 3.2 more inches since October. WY2019 total precipitation for the Gallatin River Basin ended with 45 inches. The average is around 40 inches/year. Total precipitation on November 11, 2018 was 7.2 inches.

PRECIP & TEMP SUMMARY

Gallatin River Basin precipitation continues to remain average. Temperatures have been nearly 10 degrees colder than average during October. Bozeman received more precipitation than average and Belgrade was below normal precipitation. West Yellowstone collected 1.36 inches.

Soil Moisture Data

Mesonet Stations



Manhattan Soil Probe Depth (in)	Soil Temp (°F)	Soil Water Content (%)
4" - Surface	33°	22%
8" - Shallow rooting	34°	29%
20" - deep rooting	38°	7%

Churchill Soil Probe Depth (in)	Soil Temp (°F)	Soil Water Content (%)
4" - Surface	34°	24%
8" - Shallow rooting	36°	30%
20" - deep rooting	42°	24%

SOIL MOISTURE SUMMARY

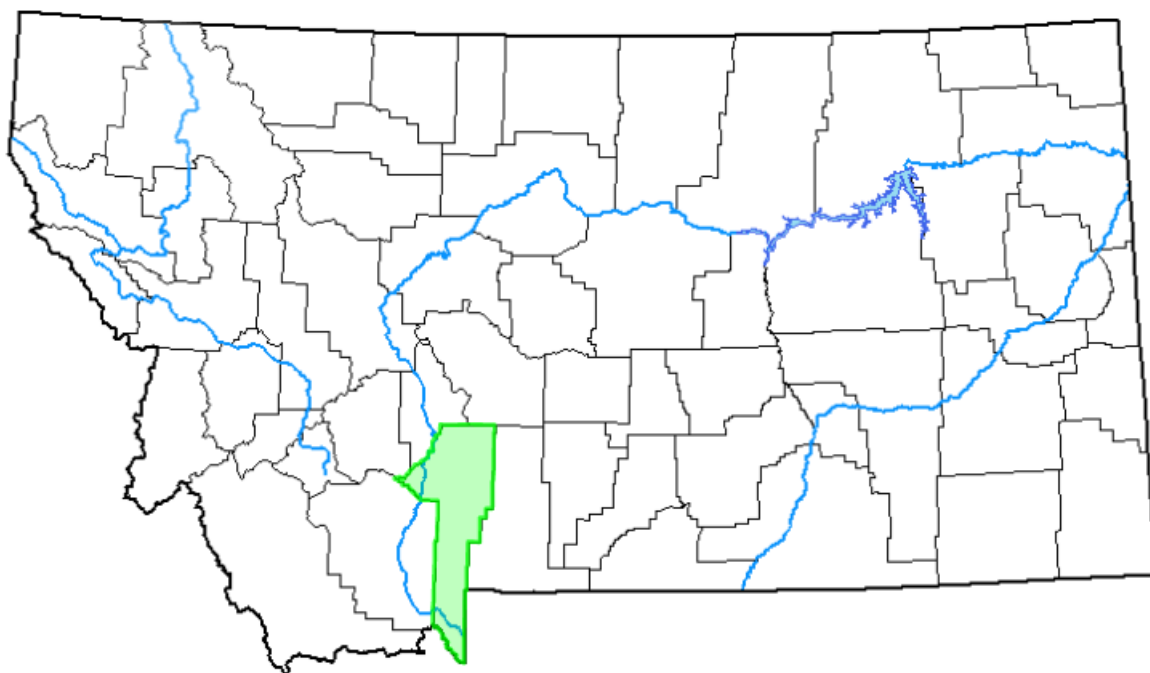
*Data current as of November 12

Gallatin County is categorized as near average according to the Montana drought status by county map released September 12.

Soil water content has remained consistent throughout the past month at both Mesonet stations. At the end of October, temperatures began dropping at both stations and have started to remain more constant since the beginning of November.

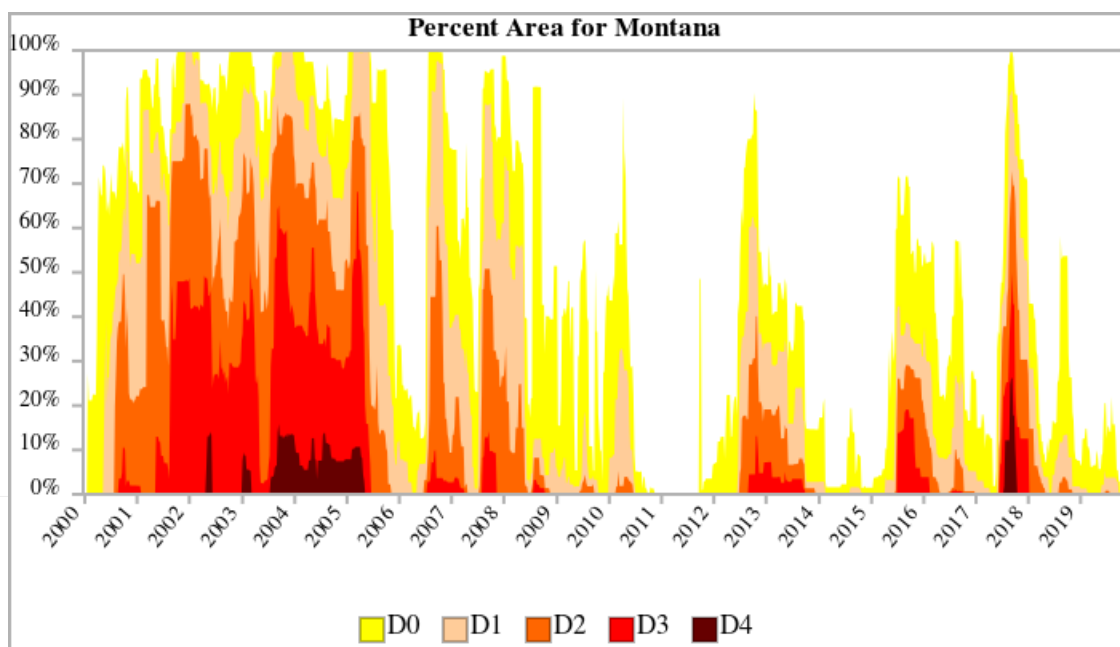
Drought Index Data

Gallatin River Watershed



Intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data



DROUGHT INDEX SUMMARY:

*Data is current as of November 5

0.00% of Montana is experiencing any drought currently at this time.

Gallatin County is currently normal and is listed as none on the drought intensity scale.

Gallatin County Water Supply Outlook

Source Information & Helpful Links

Gallatin Conservation District:

- [Archive of Reports](#)
- [Understanding the Gallatin Water Supply Outlook Report Guide](#)

Snowpack:

- [USDA / NRCS Interactive Map](#)
- [NRCS Montana Basin Wide Products](#)
- [NRCS / NWCC National Water & Climate Center](#)

Streamflow:

- [USGS Real Time Streamflow](#)
- [State of Montana Gaging Stations](#)
- [DNRC Water Right Query System](#)

Water Storage:

- [DNRC Water Projects—Middle Creek Real Time Data](#)
- [Middle Creek Early Warning System](#)
- [BOR—Montana Lakes and Reservoirs](#)
- [DNRC State Water Projects—Reservoir Storage Data](#)

Climate:

- [ACIS Database](#)
- [NRCS Montana Basin-Wide Products](#)
- [US Climate Data](#)

Soil Moisture:

- [Montana Mesonet](#)
- [DNRC Drought Status by County](#)

Drought:

- [US Drought Portal](#)
- [US Drought Monitor](#)

Helpful Partner Websites:

- [Association of Gallatin Agricultural Irrigators](#)
- [Department of Natural Resources & Conservation](#)
- [Gallatin County MSU Extension Office](#)
- [Gallatin Local Water Quality District](#)
- [Gallatin River Task Force](#)
- [Gallatin Watershed Council](#)
- [Montana Fish, Wildlife, & Parks](#)
- [Natural Resource Conservation Services](#)
- [One Montana](#)