

Blackfoot Water Supply Report

March 10, 2018

Montana Water Supply Report as of March 1st, 2018 (from NRCS):

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/mt/snow/waterproducts/basin/?cid=stelprdb1237267>

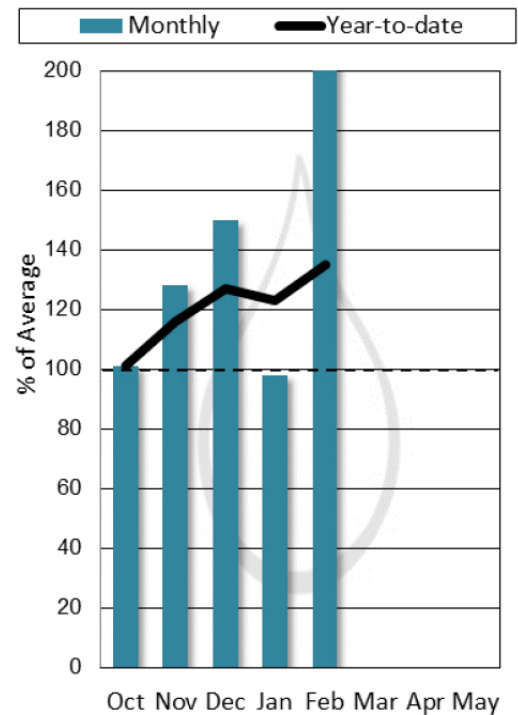
Overview

There are a lot of impressive stats to cite this month. 25 SNOTEL sites set new records for February snowfall totals, and 21 sites were the second highest recorded. Measurement locations along the Divide experienced the highest increases in Snow Water Equivalent (SWE), with most records occurring in the Upper Clark, Sun-Teton-Marias, Upper Missouri and Yellowstone River basins. For March 1, 15 measurement locations are the highest on record and 12 sites are the second highest on record. Many measurement locations across the state have already exceeded the normal peak snow water for the year due to the above normal snowfall this winter. Above normal snowpack totals in almost all river basins indicates that there should be more than adequate water for irrigation in most river basins, barring anomalously dry or warm conditions occur before spring runoff and during the summer months. There is some growing concern that the abundant snowfall this winter could become a problem as we enter spring and summer. As we transition into the more typical spring storm patterns basins east of the Divide are climatologically favored during March through May with regards to precipitation. If we continue to build on the record snowpacks in some areas, the spring weather will be critical in managing the timing and volumes of water in the rivers during runoff. On April 1st we should have a better handle on where the basins stand and will know if the persistent wet weather patterns have relented, or will persist through spring.

Upper Clark Fork River Basin Overview

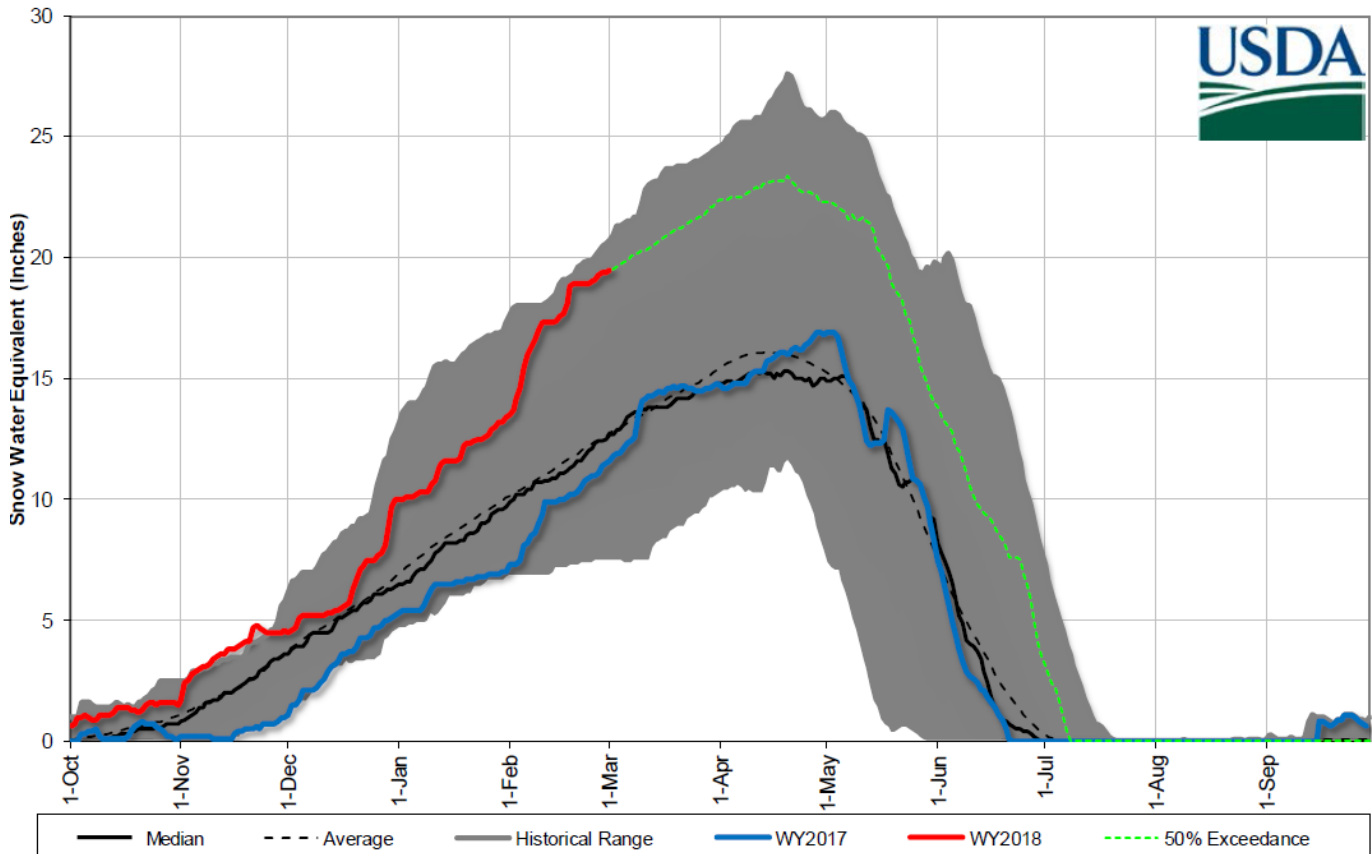
It has been dumping snow in the Upper Clark Fork River basin, and February was no exception. Five snowpack measurement locations set new records for February snowfall totals, and nine others were the second highest on record. Currently, six snow survey sites within the watershed have their highest March 1 snowpack on record, and six more have their second highest snowpack on record. Typically all SNOTEL sites within the basin reach their maximum snowpack for season sometime in April. This year all SNOTEL sites within the basin exceeded their normal snow water peaks sometime in February, more than two months early. The record snowpack totals in the basin have resulted in forecasts for April 1-July 31 that ranges from 148% to 190% of average. The median forecast for the Clark's Fork at Missoula is 164%. There will be a significant amount of water coming out of the mountains this year so a close eye should be kept on the weather this spring, as it will undoubtedly play a critical role in the timing and volumes of water in the rivers and streams.

Upper Clark Fork Basin
Mountain and Valley
Precipitation



Upper Clark Fork River Basin Snowpack with Non-Exceedence Projections

Based on provisional SNOTEL daily data as of 3/1/2018



Upper Clark Fork River Basin Data Summary

Snowpack

CLARK FORK ab FLINT CREEK

FLINT CREEK

ROCK CREEK

CLARK FORK ab BLACKFOOT

BLACKFOOT

Basin-Wide

	Percent of 1981-2010 Normal (Median)	Last Year Percentage of Normal (Median)
CLARK FORK ab FLINT CREEK	168%	93%
FLINT CREEK	157%	104%
ROCK CREEK	148%	95%
CLARK FORK ab BLACKFOOT	162%	95%
BLACKFOOT	158%	97%
Basin-Wide	159%	95%

Precipitation

Mountain Precipitation

Valley Precipitation

Basin-Wide Precipitation

	Monthly Percentage of Average	WYTD Percentage of 1981-2010 Average*	WYTD Last Year Percentage of Average
Mountain Precipitation	203%	133%	107%
Valley Precipitation	199%	187%	140%
Basin-Wide Precipitation	203%	135%	108%

*Water Year-to-Date (WYTD) Precipitation is October 1st - Current

Reservoir Storage

Overall, reservoir storage across the state is near to above average for March 1. Only two reservoirs in the state are well below average for this time. Both Gibson (25%) and Pishkun (24%) are very low for this date, but abundant snowpack above these reservoirs should help them to fill before irrigation water is needed from them this summer. Snowpack across the state is above normal this year, but the snow season is far from over. For now streamflow forecasts and reservoir inflows look to be above average during the April 1 – July 31 period.

Reservoir Storage	Percentage of Average	Percentage of Capacity (Total)	Last Year Percentage of Average
Basin-Wide Storage	106%	74%	101%







**See Reservoir Storage Table for storage in individual reservoirs*

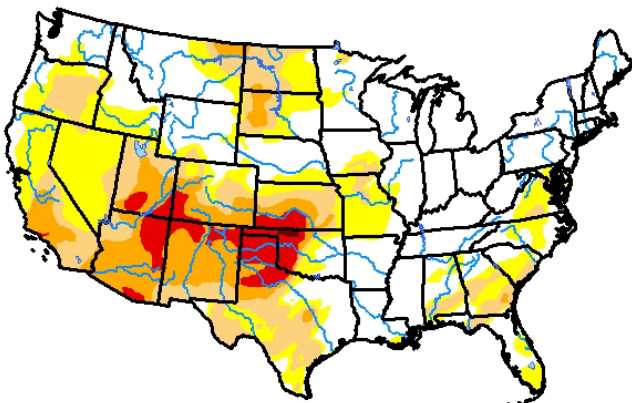
End of Month Storage

	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	% Average	% Capacity
East Fork Rock Creek Res	8.5	8.7	8.3	15.6	103%	55%
Georgetown Lake	27.5	28.6	27.6	31.0	100%	89%
Lower Willow Creek Reservoir			2.2	4.9		
Nevada Creek Res	8.0	4.7	5.6	12.6	142%	63%

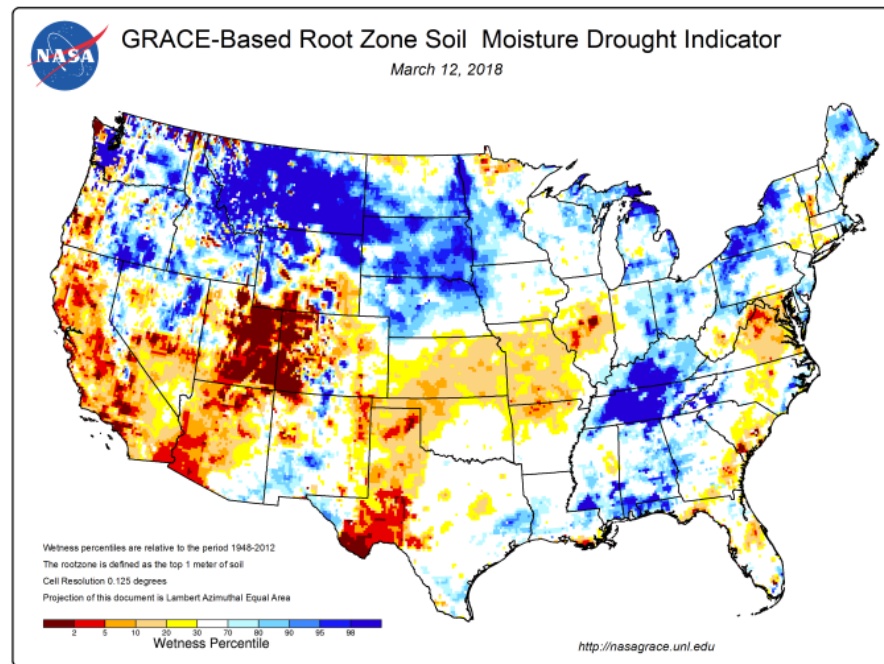
Montana Drought Monitor – March 8, 2018

Drought Intensities

-  None: No Drought
-  D0: Abnormally Dry
-  D1: Moderate Drought
-  D2: Severe Drought
-  D3: Extreme Drought
-  D4: Exceptional Drought



National Root Zone Soil Moisture–Mar. 12, 2018



Snow Water Equivalent: March 14, 2018

Montana SNOTEL Snow/Precipitation Update Report							
Based on Mountain Data from NRCS SNOTEL Sites							
Provisional data, subject to revision							
Data based on the first reading of the day (typically 00:00) for Wednesday, March 14, 2018							
Basin Site Name	Elev (ft)	Snow Water Equivalent			Water Year-to-Date Precipitation		
		Current (in)	Median (in)	Pct of Median	Current (in)	Average (in)	Pct of Average
UPPER CLARK FORK RIVER BASIN							
Barker Lakes	8250	17.6	11.5	153	13.9	13.3	105
Basin Creek	7180	9.6	6.1	157	7.3	7.7	95
Black Pine	7210	15.3	8.7	176	17.6	11.4	154
Combination	5600	7.0	4.4	159	11.5	7.9	146
Copper Bottom	5200	13.2	N/A	*	21.6	14.1	153
Copper Camp	6950	37.1	N/A	*	29.8	28.1	106
Lubrecht Flume	4680	9.3	4.7	198	14.7	8.8	167
Nevada Ridge	7020	22.1	12.5 _c	177	18.6	13.9 _c	134
N Fk Elk Creek	6250	15.8	9.6	165	17.1	11.8	145
North Fork Jocko	6330	51.8	36.0	144	-M	42.1	*
Peterson Meadows	7200	13.6	8.1	168	13.7	9.6 _c	143
Rocker Peak	8000	19.6	10.8	181	17.9	11.4	157
Skalkaho Summit	7250	25.9	18.8	138	23.7	19.6	121
Stuart Mountain	7400	36.4	27.2 _c	134	35.1	27.5 _c	128
Warm Springs	7800	31.0	16.5	188	27.0	19.1	141
Basin Index (%)		157			132		

March 14, 2018, USGS Real Time Flow Conditions

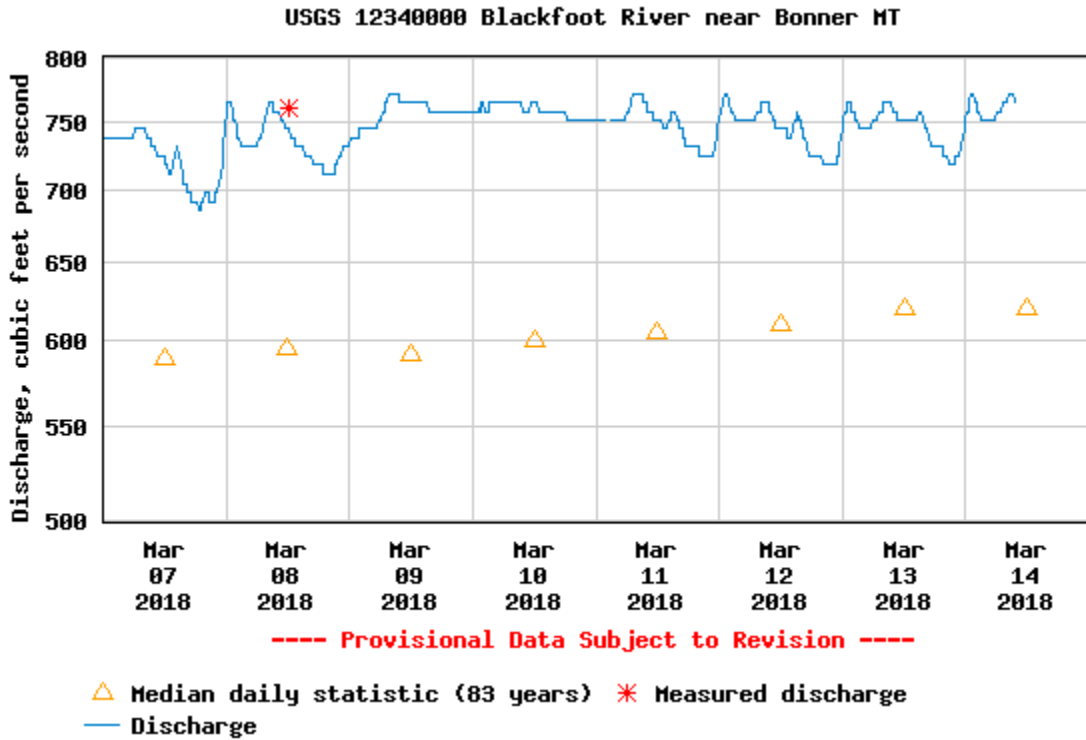
Nevada Creek (above Reservoir)

Discharge, cubic feet per second: NO READINGS DUE TO ICE

Blackfoot River at Bonner

Discharge, cubic feet per second

Most recent instantaneous value: 765 03-14-2018 09:45 MDT



Daily discharge, cubic feet per second -- statistics for Mar 14 based on 83 years of record [more](#)

Min (1988)	25th percentile	Median	Mean	Most Recent Instantaneous Value Mar 14	75th percentile	Max (1986)
367	510	620	746	765	825	2460

Three-Month Outlook March 14, 2018

From
National Weather Service Climate Prediction Center

<http://www.cpc.ncep.noaa.gov/>

Higher chance for above average precipitation
for March through May.

Higher chance to experience **below normal**
temperatures from March through May.

