Blackfoot Water Supply Report
February 7, 2019

Montana Water Supply Report as of February 1st, 2019 (from NRCS):
https://www.nrcs.usda.gov/wps/portal/nrcs/mt/snow/waterproducts/basin/

Overview

Snowpack conditions generally improved across Montana during January, but some regions still remain below, to well below normal for snowpack on Feb 1. The first two weeks of the month were dominated by high pressure in many basins east of the Divide, while western basins saw snow trickle in during the first week, then transitioned to high pressure during the second week. The bulk of the improvements in snowpack totals were from the storm system that began during the third week of January, where significant snow totals fell in central basins along and east of the Divide and in southwestern and south-central Montana. Snowpack in some of these regions was well below normal and this storm helped to improve conditions from Jan 1.

Currently, the Headwaters Mainstem (Missouri) River basin (111%) has the best snowpack in the state on Feb 1, with the Gallatin River basin (106%) in a close second. Basins along the Divide in the central part of the state are near normal for snowpack on this date, while basins in northern and extreme southwestern Montana remain below normal. Improvements were made from Jan 1 in these regions but were not enough to make up for deficits experienced earlier in the winter.

El Nino models now indicate that sea surface temperatures will cool over the coming months, meaning this will not be classified a "strong" El Nino winter. What has been anomalous this winter have been our monthly temperatures, which have been above average throughout the winter months. Hopefully the latest storm trajectories will continue to deliver snowfall as we progress towards spring, but above average temperatures can significantly impact spring and summer runoff. The most recent long-range outlooks issued by the Climate Prediction Center for the February – April time period suggest that this could be the case.

Upper Clark Fork Basin

Mountain and Valley Precipitation
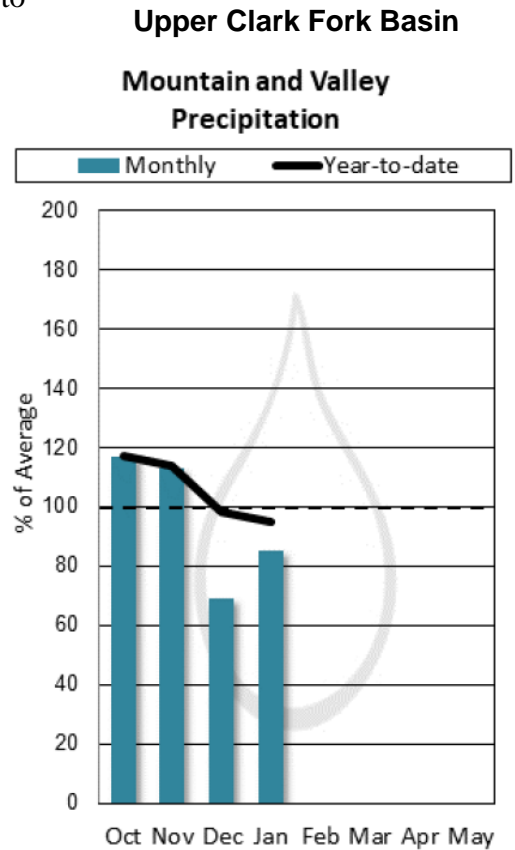
Upper Clark Fork River Basin Overview

There aren't a lot of areas in the state that can boast a "normal" snowpack for Feb. 1, but the Upper Clark Fork River basin is one of the few. Significant early season snowfall from late October into early November boosted snow totals early and has kept many of the snowpack monitoring locations in the southern half of the basin near to slightly above normal for Feb. 1. January snowfall, in general, was near to above average, largely in part to the storms that came through during the latter half of the month. Nevada Ridge SNOTEL, which was record low on Jan. 1 added 1.9" of Snow Water Equivalent (SWE) to the snowpack from January 17-28, bringing it to 86% of normal on Feb 1. Great news for Nevada Reservoir water users. A few areas received below normal snowfall, the Sapphire Range feeding Rock Creek and the Swan Range recorded low January totals (68% -76%). It is these areas in the Rock Creek and Blackfoot River basins that have below normal snowpack on February 1st. Looking forward, there is still a lot of winter left for things to improve in these regions, and the overall snowpack is right where we expect it to be in most areas on Feb. 1. Overall, water year-to-date precipitation in the Upper Clark Fork River basin is above average.
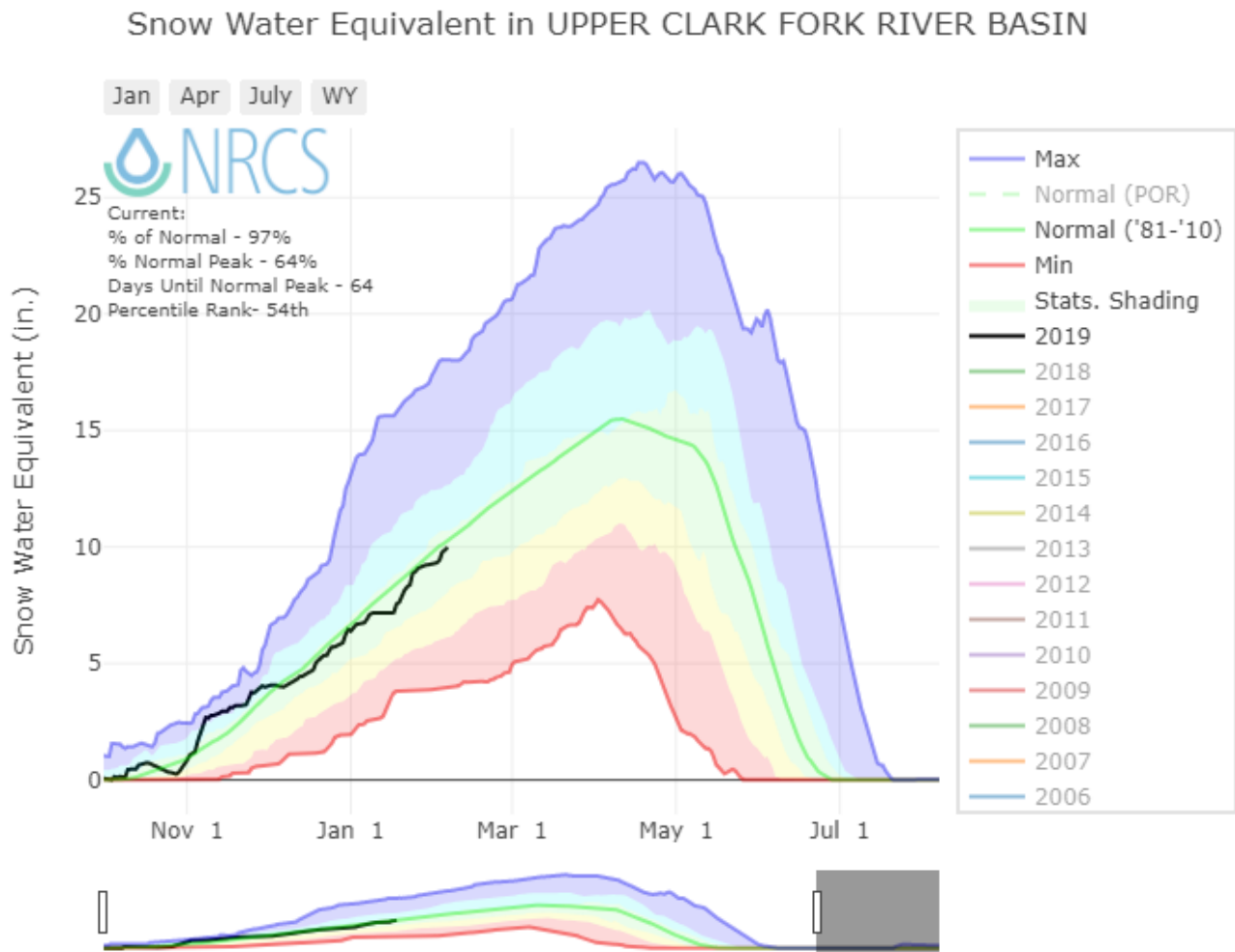
Reservoir Storage

Most smaller irrigator-controlled reservoirs are typically filled from 40% to 80% of capacity on Feb. 1, meaning spring and summer runoff are still critical to summer operations when demand is high. So, while above average carryover storage certainly helps to insulate water users in the summer months, it is rarely enough if dry weather patterns take hold during the spring and early summer months when precipitation is critical. There's no indication yet that operators will have trouble filling most reservoirs given current snowpack conditions, but it is something to keep in mind as spring and summer approach should conditions take a turn for the worse.
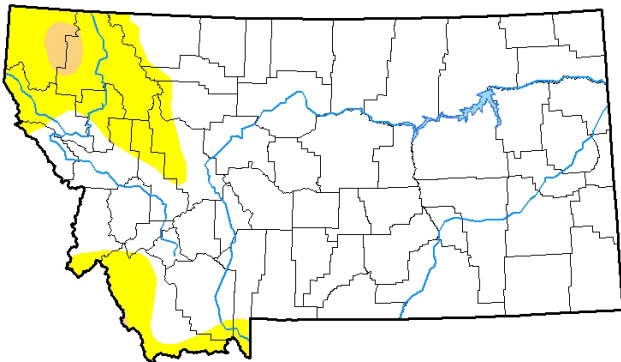
Reservoir Storage	Percentage of Average	Percentage of Capacity (Total)	Last Year Percentage of Average
Basin-Wide Storage	107%	73%	105%

*See Reservoir Storage Table for storage in individual reservoirs

Montana Drought Monitor – Feb. 7, 2019

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 – Feb. 4, 2019

GRACE-Based Root Zone Soil Moisture Drought Indicator
February 04, 2019

Wetness percentiles are relative to the period 1948-2012
The rootzone is defined as the top 1 meter of soil
Cell Resolution 0.125 degrees
Projection of this document is Lambert Azimuthal Equal Area

Wetness Percentile

http://nasagrace.unl.edu
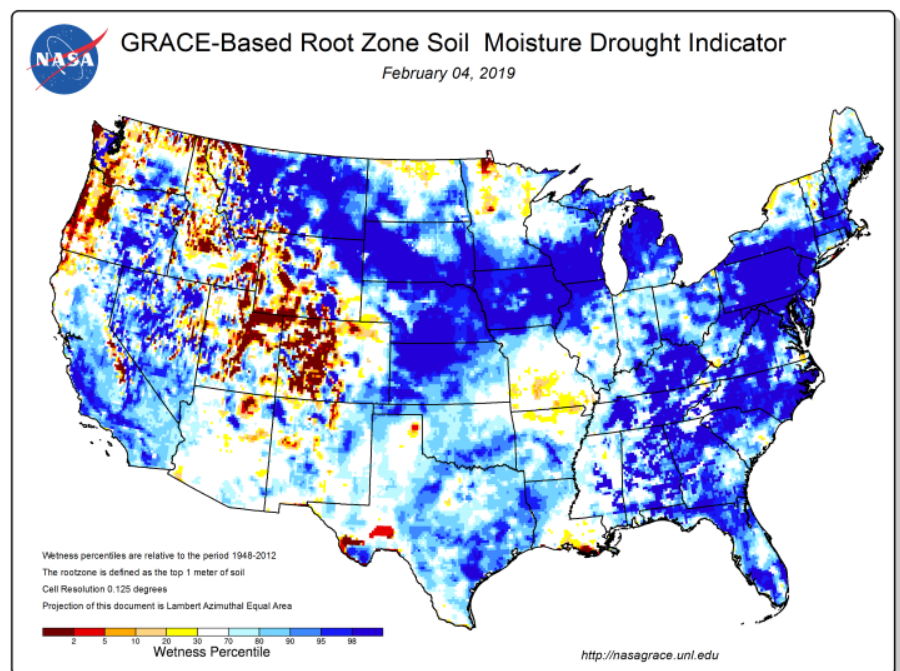
Montana SNOTEL Snow Water Equivalent: February 7, 2019

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	8.6	8.4	102	9.2	10.2	90
Basin Creek	7180	4.6	4.7	98	7.2	5.9	122
Black Pine	7210	7.7	6.5	118	9.7	8.8	110
Combination	5600	4.1	3.3	124	7.0	6.4	109
Copper Bottom	5200	5.7	N/A	*	8.7	11.3	77
Copper Camp	6950	13.5	N/A	*	–M	22.4	*
Lubrecht Flume	4680	4.4	4.0	110	9.3	7.2	129
Nevada Ridge	7020	8.2	9.2c	89	10.1	11.2c	90
N Fk Elk Creek	6250	6.8	7.0	97	10.7	9.3	115
North Fork Jocko	6330	22.3	28.2	79	34.2	34.6	99
Peterson Meadows	7200	6.5	5.7	114	7.2	7.3c	99
Rocker Peak	8000	10.2	8.5	120	10.3	8.9	116
Skalkaho Summit	7250	13.3	14.5	92	14.2	15.4	92
Stuart Mountain	7400	18.2	21.5c	85	20.2	22.2c	91
Warm Springs	7800	14.8	12.8	116	15.9	14.8	107
Basin Index (%)				**97**			**100**

February 7, 2019, USGS Real Time Flow Conditions

Nevada Creek
Discharge, cubic feet per second
NO READINGS DUE TO ICE

North Fork Blackfoot
Discharge, cubic feet per second
NO READINGS DUE TO ICE

Blackfoot River at Bonner
Discharge, cubic feet per second
NO READINGS DUE TO ICE

Three-Month Outlook
February 7, 2019

From
National Weather Service Climate Prediction Center
http://www.cpc.ncep.noaa.gov/

Equal chances for average, above and below average precipitation for February through April.

Higher chance to experience above normal temperatures from February through April.