Blackfoot Water Supply Report
April 8, 2021

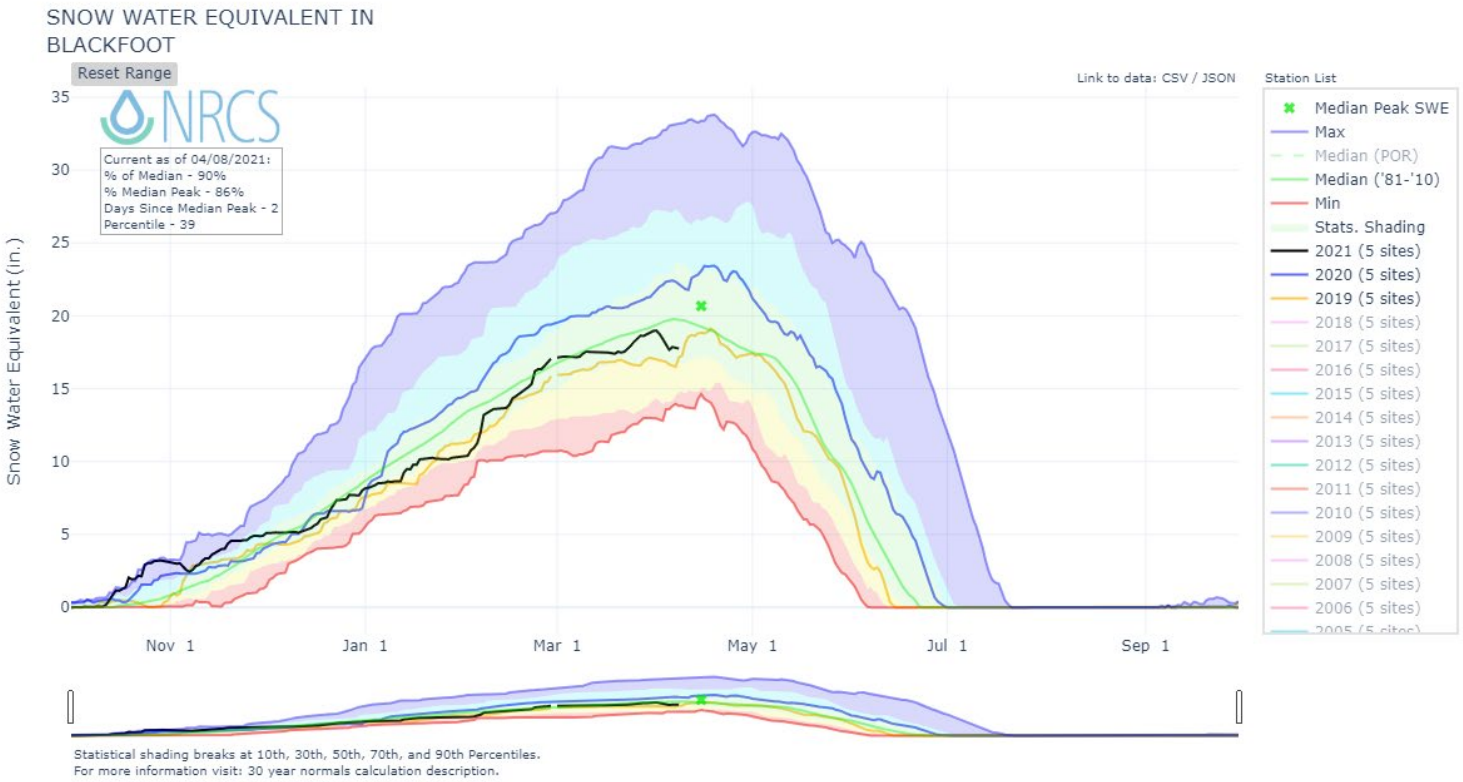
Montana Water Supply Report data as of April 7, 2021 (from NRCS):
https://www.nrcs.usda.gov/wps/portal/nrcs/mt/snow/

Just when it seemed like the snowpack was on the right track to rebound from the dry December and January, March yielded substantially different weather patterns than the cold and wet conditions experienced during February. Snowpack percentages on March 1 were at a high point for the year, boosted by well above normal snowfall leading to near to above normal snowpack for almost all Montana river basins. "Unfortunately, March weather started off on the opposite trajectory. Warm, dry air spilled into the state during the first week of the month and many mountain SNOTEL sites matched record daily average temperatures on March 5," said Lucas Zukiewicz, USDA Natural Resources Conservation Service (NRCS) water supply specialist for Montana. The weather patterns of the first week foreshadowed the weather patterns for the month. While seasonal temperatures returned for brief periods, monthly temperatures recorded at most mountain locations were above normal for March.

During March, precipitation at both mountain and valley locations was well below average. "For the most part, only the last week of March saw widespread accumulation of mountain snowpack, and after a three-week hiatus it did little to salvage monthly snow totals," said Zukiewicz. Snowpack percentages on April 1 have declined in all river basins in Montana since March 1. "This year's silver lining has been the boost to the snowpack during February. While totals right now aren't quite as pretty as they were at the beginning of the month, many river basins continue to have near to slightly below normal snowpack on April 1," continued Zukiewicz. However, this is not the case for all river basins in the state. Snowpack in some of the river sub-basins located in northwestern Montana have declined from near normal to below normal on April 1. Southwestern river basins, which have been below normal throughout the snow season, have snowpack which has further declined through March.

Streamflow forecasts issued by the NRCS on April 1 for spring and summer runoff have also decreased since last month, and the decreases are notable in some river basins. "Forecasts for spring and summer runoff in Montana are the lowest in the Red Rock, Ruby, and Madison River basins. In these areas, well below average flows can be anticipated unless the remainder of spring and summer yield above average precipitation, and more seasonal temperatures," said Zukiewicz. Not all areas of the state are expected to be below normal for runoff this year, and many regions of the state still have chances of near average flows for the coming runoff season. "As always, our runoff prospects and timing are directly tied to the weather experienced in the coming two to three months," said Zukiewicz. Mountain snowpack historically peaks at mid and high elevations during April, so the coming month will be critical to Montana's water resources this summer and beyond. "A return to normal temperatures and wetter weather patterns would be more than welcome at this point to slow the transition of the mountain snowpack towards melt and satisfy the existing soil moisture deficits present in many valley and plains locations," said Zukiewicz.

BLACKFOOT RIVER BASIN SNOW WATER EQUIVALENT



Black line: 2021 Water Year **Green line: 30-year median**

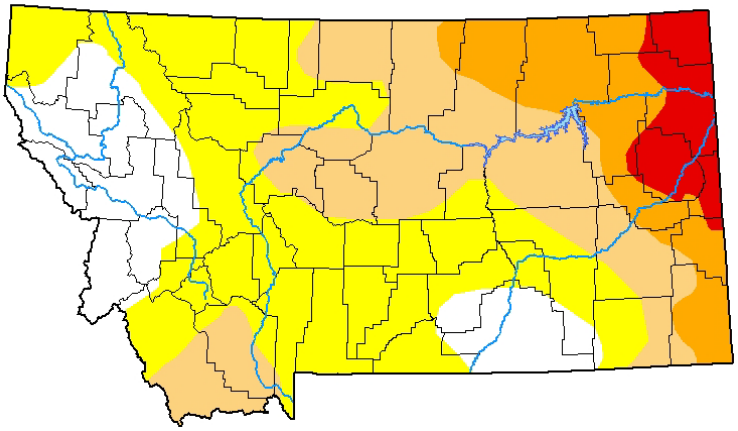
Blue line: 2020 Water Year **Gold line: 2019 Water Year**

Reservoir Storage

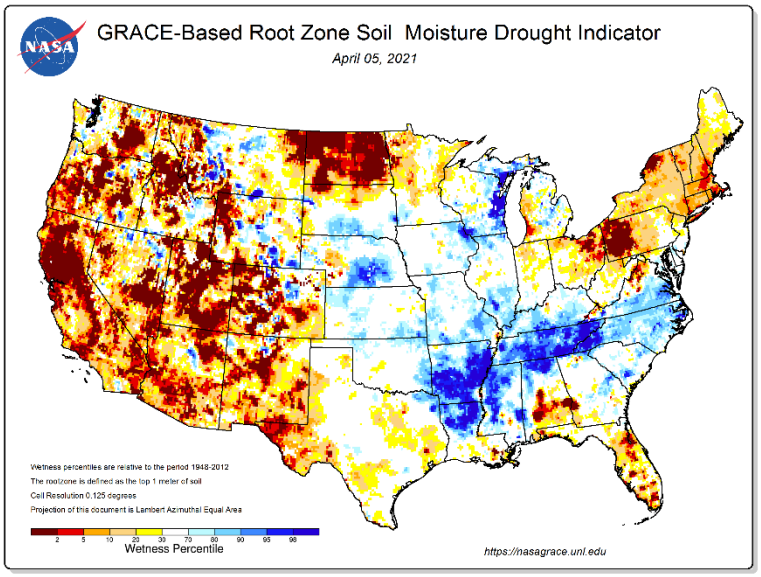
Reservoir storage is currently above average for this time of year in Western Montana reservoirs and about equal to the levels at this time last year.

UPPER CLARK FORK RIVER BASIN	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)	Current % Capacity	Last Year % Capacity	Average % Capacity	Current % Average	Last Year % Average
East Fork Rock Creek Res	9.7	9.9	9.1	16.0	61%	62%	57%	107%	109%
Georgetown Lake	27.9	28.3	27.8	31.0	90%	91%	90%	100%	102%
Lower Willow Creek Reservoir			3.0	4.9			61%		
Nevada Creek Res	10.0	8.7	7.7	12.6	79%	69%	61%	130%	113%
Basin-wide Total	47.6	46.9	44.6	59.6	80%	79%	75%	107%	105%
# of reservoirs	3	3	3	3	3	3	3	3	3

Montana Drought Monitor – April 5, 2021



National Root Zone Soil Moisture – April 5, 2021



Drought Intensities

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

Montana SNOTEL Snow Water Equivalent: April 8, 2021

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 Thursday, April 08, 2021

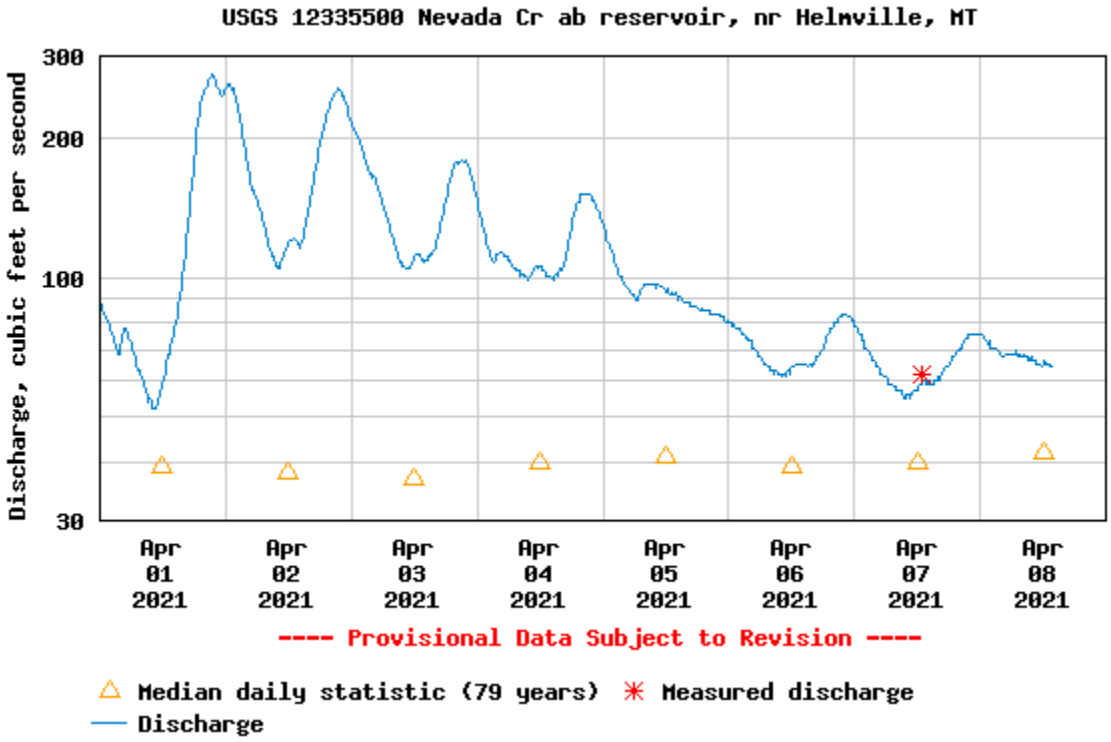
Basin Site Name	Elev (ft)	Snow Water Equivalent			Water Year-to-Date Precipitation		
		Current (in)	Median (in)	Pct of Median	Current (in)	Average (in)	Pct of Average
UPPER CLARK FORK RIVER BASIN							
Barker Lakes	8250	12.8	14.7	87	13.5	16.5	82
Basin Creek	7180	5.8	8.1	72	-M	10.0	*
Black Pine	7210	10.4	9.9	105	13.0	13.6	96
Combination	5600	3.6	3.9	92	8.4	9.1	92
Copper Bottom	5200	2.6	N/A	*	17.7	15.7	113
Copper Camp	6950	25.5	N/A	*	25.5	31.6	81
Lubrecht Flume	4680	0.1	0.5	20	11.9	10.2	117
Nevada Ridge	7020	13.9	14.2C	98	15.5	16.0C	97
N Fk Elk Creek	6250	10.5	10.7	98	16.1	14.0	115
North Fork Jocko	6330	35.4	42.2	84	44.6	47.1	95
Peterson Meadows	7200	8.8	10.3	85	10.6	12.1C	88
Skalkaho Summit	7250	19.6	22.2	88	24.5	22.4	109
Stuart Mountain	7400	28.9	31.1C	93	27.9	31.1C	90
Warm Springs	7800	22.8	20.0	114	20.1	22.5	89
Basin Index (%)				**92**			**95**

April 8, 2021, USGS Real Time Flow Conditions

Nevada Creek above Reservoir

Discharge, cubic feet per second

Most recent instantaneous value: 64.2 04-08-2021 13:45 MDT

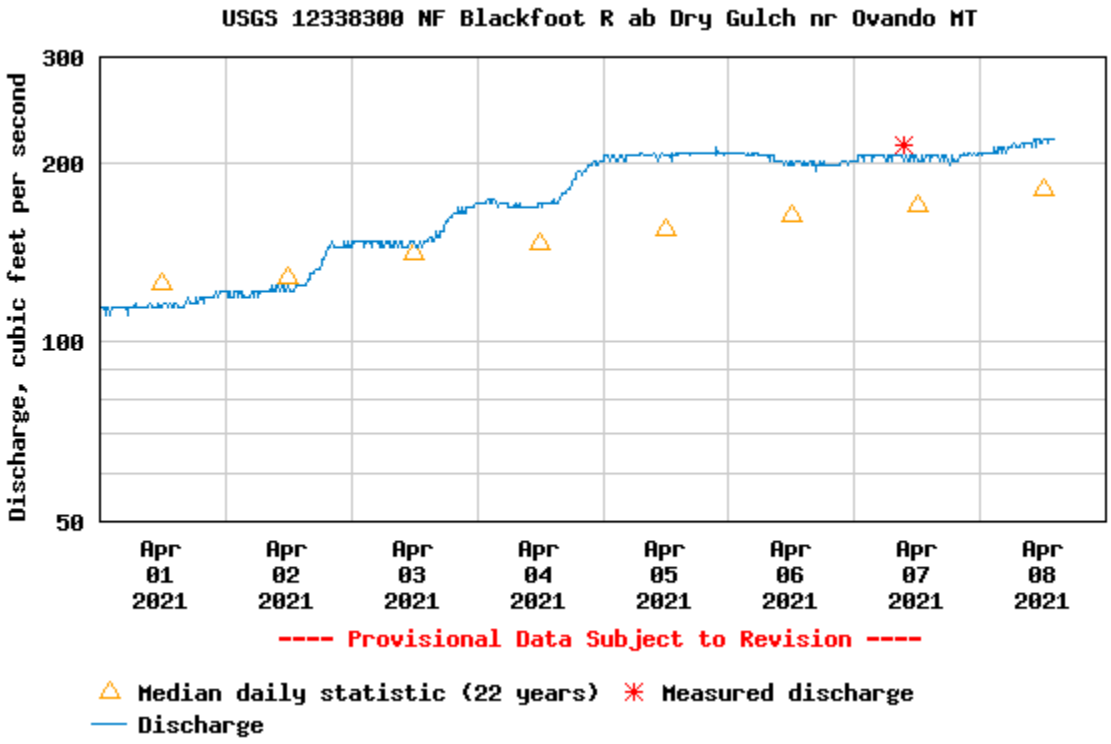


Daily discharge, cubic feet per second -- statistics for Apr 8 based on 80 water years of record more

Min (1941)	25th percen-tile	Median	Most Recent Instantaneous Value Apr 8	Mean	75th percen-tile	Max (2019)
10.0	23	42	64.2	72	82	537

North Fork Blackfoot

Discharge, cubic feet per second
Most recent instantaneous value: 219 04-08-2021 14:00 MDT



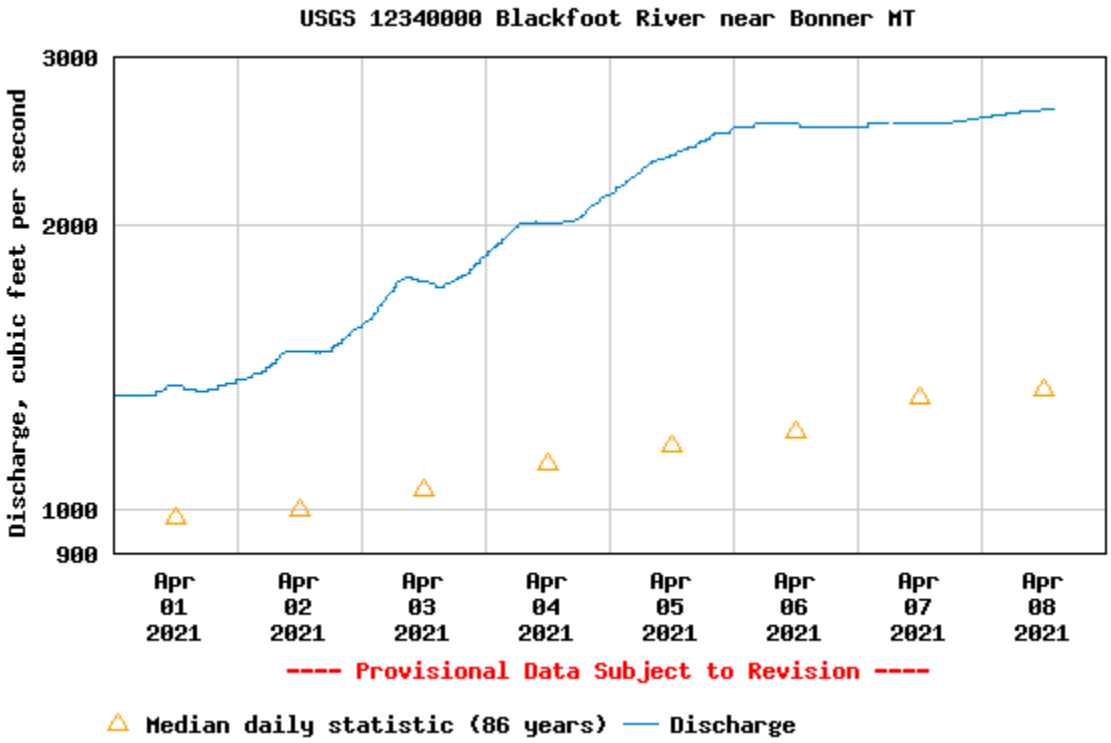
Daily discharge, cubic feet per second -- statistics for Apr 8 based on 22 water years of record more

Min (2008)	25th percen-tile	Median	Most Recent Instantaneous Value Apr 8	Mean	75th percen-tile	Max (2017)
80.7	117	181	219	219	260	597

Blackfoot River at Bonner

Discharge, cubic feet per second

Most recent instantaneous value: 2650 04-08-2021 13:45 MDT

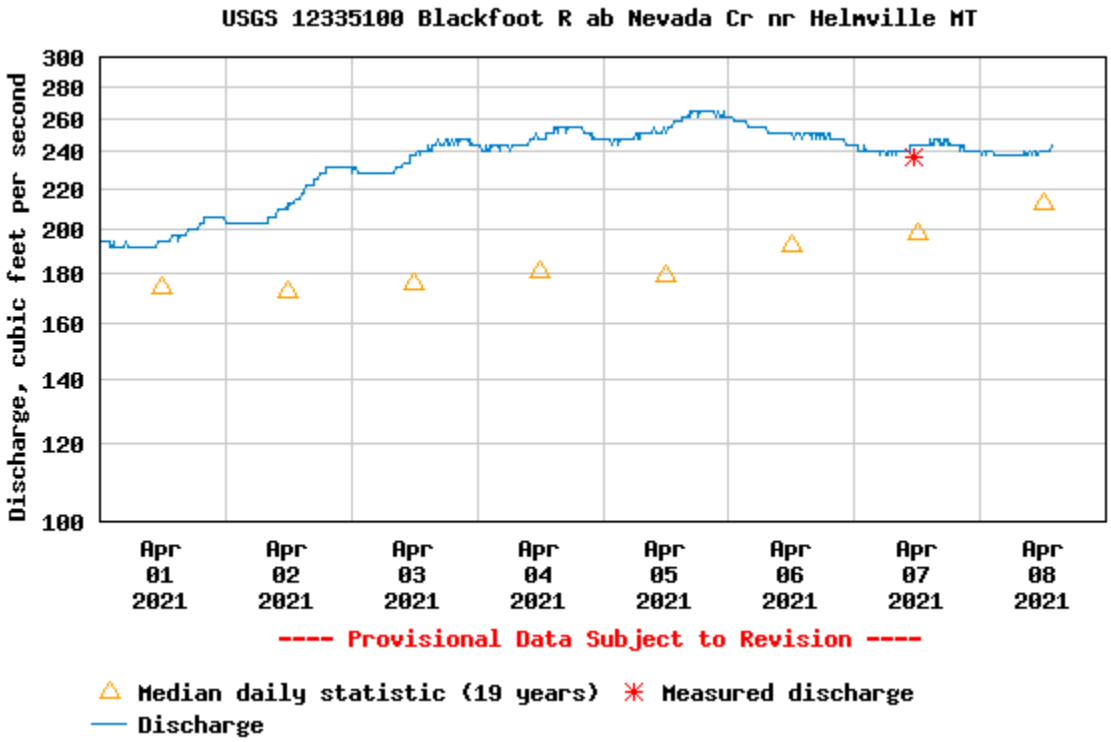


Daily discharge, cubic feet per second -- statistics for Apr 8 based on 86 water years of record more

Min (1905)	25th percen-tile	Median	Mean	75th percen-tile	Most Recent Instantaneous Value Apr 8	Max (1960)
415	922	1340	1580	2220	2650	3840

Blackfoot River above Nevada Creek

Discharge, cubic feet per second
Most recent instantaneous value: 244 04-08-2021 13:45 MDT



Daily discharge, cubic feet per second -- statistics for Apr 8 based on 19 water years of record more

Min (2008)	25th percen-tile	Median	Most Recent Instantaneous Value Apr 8	Mean	75th percen-tile	Max (2017)
117	150	213	244	250	319	594

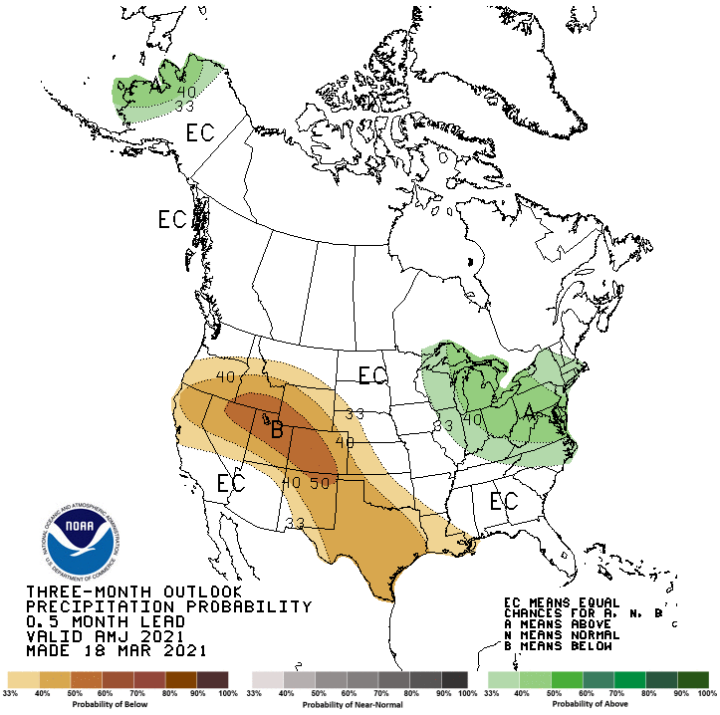
Three-Month Outlook
April 2021

From

National Weather Service Climate Prediction Center

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

Higher chance for below average precipitation for April through June.



Higher chance for normal to above normal temperatures from April through June.