

# Post Creek Water Supply Forecast

May 1, 2024

## Snowpack Conditions

Click figures to link to plots

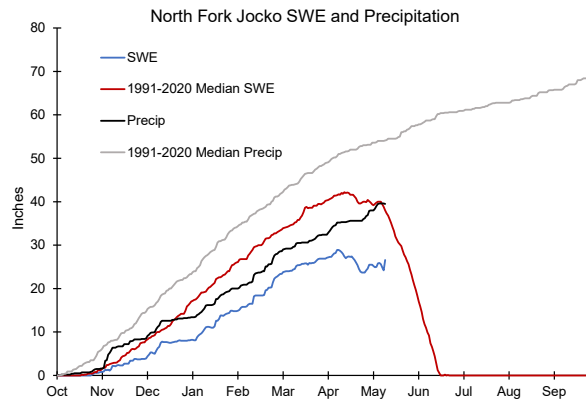


Figure 1: North Fork Jocko (Elev. at 6330 ft) SWE and precipitation.

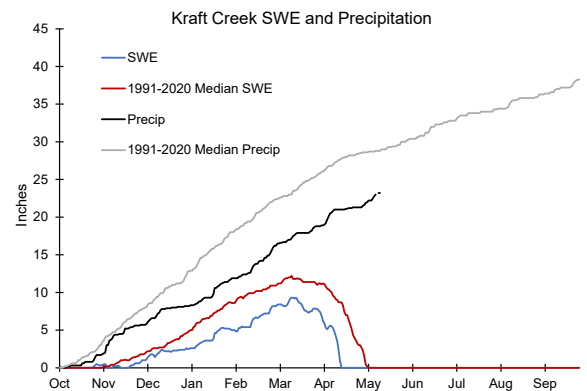


Figure 2: Kraft Creek (Elev. at 4750 ft) SWE and precipitation.

– Snowpack conditions (Snow Water Equivalent or SWE) at the Natural Resource Conservation Service (NRCS) [North Fork Jocko and Kraft Creek SNOTEL](#) sites are **trending far below normal** as of May 1. **North Fork Jocko is 62% of the median** (Figure 1) and **Kraft Creek was melted out by mid-April as opposed to April 29 – May 2 as is normal** (Figure 2). Based on snowpack and precipitation, conditions are looking poor for water supply if there is not a reversal of precipitation patterns. Precipitation has increased sharply in the first two weeks of May and long-term predictions show that May and June have a high probability of normal precipitation but that may not be enough to overcome the current deficit. As of May 1, SWE is declining at most elevation ranges due to warming temperatures.

## Streamflow and Reservoir Conditions

– The Confederated Salish and Kootenai (CSKT) Water Resources Program operates a real-time stream gage on Post Creek, [4860](#) Post Creek abv McDonald Reservoir. The last reading from the gage on April 2 was 16.5 cfs.

- **Active Storage in McDonald Lake is currently 2487 / 8258 acre-ft (30%)**

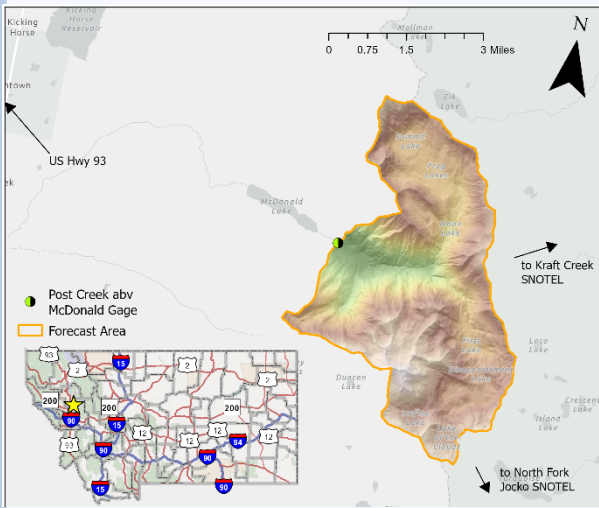
## Weather Outlook

– The National Weather Service (NWS) **one-month outlook indicates normal precipitation and normal temperatures** for Northwestern Montana. The El Niño Southern Oscillation (ENSO) index, is a measure of whether equatorial Pacific Ocean conditions known as El Niño (warm and dry for Montana) or La Niña (cold and wet) could develop and influence weather across much of Montana. Currently, El Niño conditions have existed most of the winter with warmer sea surface temperatures. ENSO is projected (~70-80% chance) to transition to ENSO-neutral during the month of May, meaning **warm/dry conditions may transition to normal conditions between now and June.**



**Disclaimer:** The DNRC snowmelt runoff forecast follows NRCS methodology using statistical best practices and professional judgment. Like any forecast it contains uncertainty. Please consider the stated error and documentation associated with each model when using the predicted flow in your decision-making process.

# Forecast Area



## Forecast Period is April 1 – July 31

All predicted and displayed values are calculated for this period.

On a normal year, 33,292 acre-feet of water flows by the Post Cr abv McDonald gage from April 1 – July 31 (based on the median of the total annual flow from 1991 to 2021). **Approximately 23,199 acre-feet (or 70%) of this flow is from snowmelt** built up at high elevations during the winter and spring. The remainder of flow is from rain events between April 1 and July 31. The normal rainfall in the forecast area during this period is 12.8 inches but can vary considerably. **The median rainfall (12.8 in) produces about 8,226 acre-feet of runoff based on DNRC rainfall runoff model estimates.**

# Runoff Forecast

The May 1 water supply forecast predicts a **below normal volume of 15,776 acre-feet** (Figure 3) of water from snowmelt, or 68% of normal. **\*\*This is the estimated flow only from snowmelt\*\***. Current information indicates that the 2024 flow from accumulated snowpack is predicted to be like conditions observed in 1994 and 2001. Based on the uncertainty of the prediction, there is a **90% chance snowmelt runoff will exceed 12,312 acre-feet (53% of normal)** and a **10% chance snowmelt runoff will exceed 21,051 acre-feet (91% of normal)**.

**If there is a normal amount (12.8 inches) of rain from May 1 – July 31, the total runoff is predicted to be 22,458 acre-feet. This is 10,834 acre-feet less than normal.** Any excess rain (more than 12.8 inches) could increase the volume substantially (Figure 4). If it rains 17.8 or more inches during the forecast period, 2024 could be more like 2006. **The effects of excess rain are visualized in Figure 4 as inches above normal.**

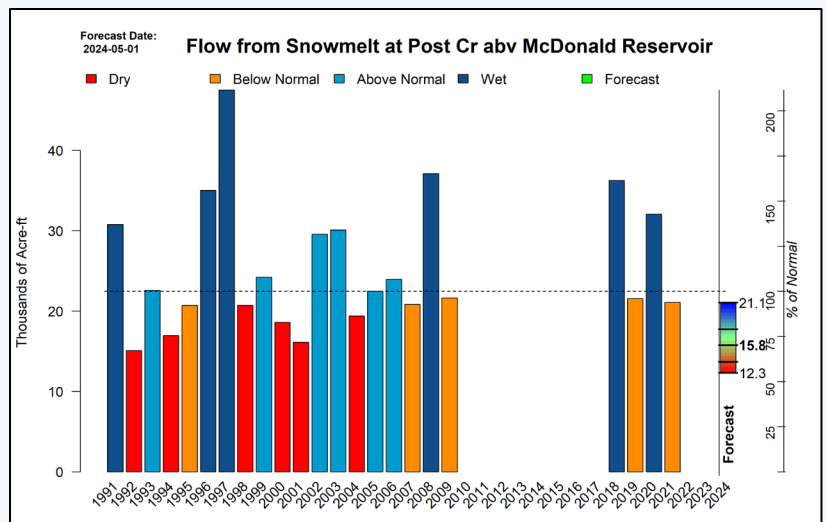


Figure 3: Historical snowmelt runoff and 2024 prediction.

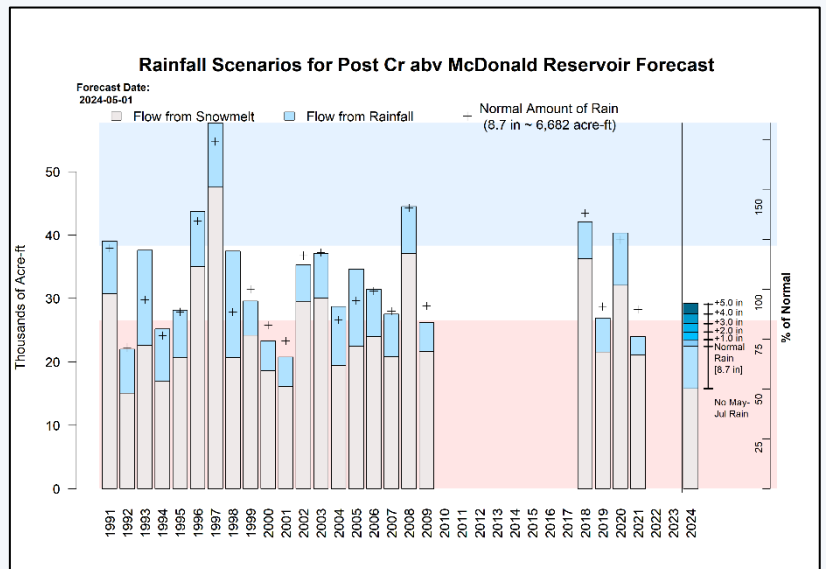


Figure 4: Proportion of flow from snowmelt vs. rain and the effects of May 1 – July 31 rain on predicted flow.



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