Post Creek Water Supply Forecast

March 1, 2025

Snowpack Conditions

Click figures to link to plots

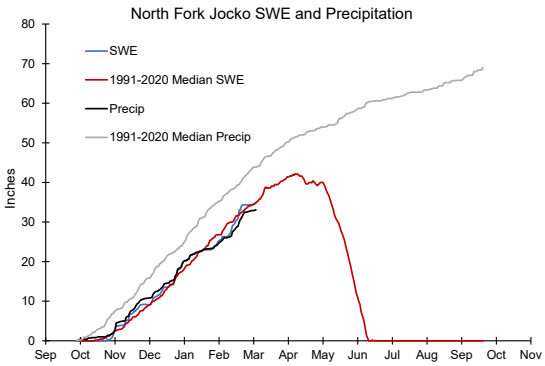


Figure 1: North Fork Jocko (Elev. at 6330 ft) SWE and precipitation.

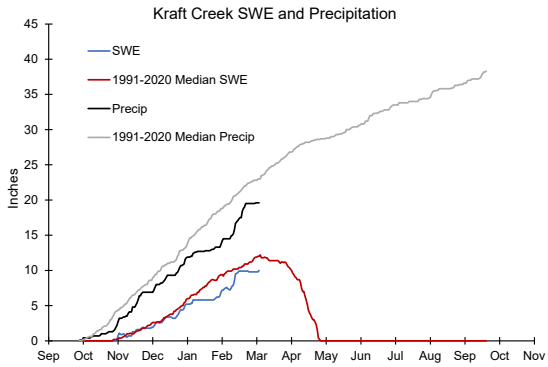


Figure 2: Kraft Creek (Elev. at 4750 ft) SWE and precipitation.

– Snowpack conditions (Snow Water Equivalent or SWE) at the Natural Resource Conservation Service (NRCS) North Fork Jocko and Kraft Creek SNOTEL sites are **trending right about normal** as of March 1. **North Fork Jocko is 103% of the median** (Figure 1) and **Kraft Creek is at 91% of the median** (Figure 2). SWE has tracked a fairly normal accumulation pattern all winter at both sites except for dry spells in January and the end of February which are very visible at the lower elevation Kraft Creek site. Precipitation in general has been below average, following below average fall moisture. Based on snowpack and precipitation, March conditions are projecting average water supply, although conditions still have several months to develop. As of March 1, the mountains should have accumulated almost (80%) of the winters total snow at higher elevations and will peak later this month at lower elevations.

Streamflow and Reservoir Conditions

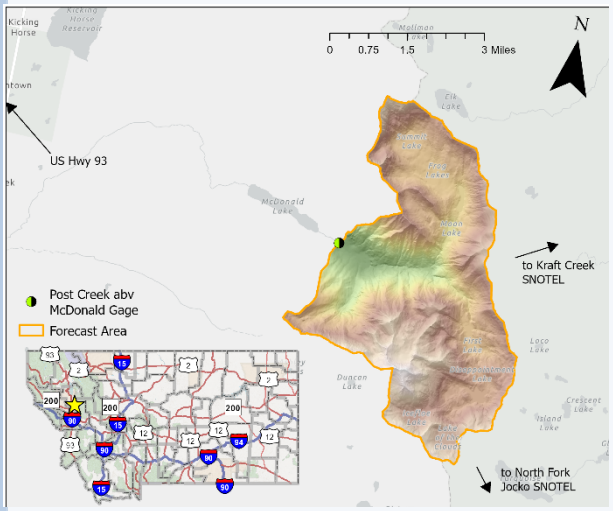
– The Confederated Salish and Kootenai (CSKT) Water Resources Program operates a real-time stream gage on Post Creek, 4860 Post Creek abv McDonald Reservoir. The gage is operational but is not currently reading flow, due to ice/winter conditions.

- **Active Storage in McDonald Lake is currently 890 / 8258 acre-ft (~11%)**

Weather Outlook

– The National Weather Service (NWS) **one-month outlook indicates above average 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 (typically warmer and drier for Montana) or La Niña (typically colder and wetter) could develop and influence weather in Montana. Currently, La Niña conditions exist with cooler sea surface temperatures in the Central Pacific. ENSO is projected (~66% chance) to transition to ENSO-neutral in the next 3 months, meaning **wet conditions could develop through May creating favorable water supply conditions**.

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 March 1 water supply forecast predicts a **normal to above normal volume of 24,206 acre-feet** (Figure 3) of water from snowmelt, or **104% of normal**. ***This is the estimated flow only from snowmelt***. Current information indicates that the 2025 flow from accumulated snowpack is predicted to be like conditions observed in 2006 and 2009. The uncertainty in the March forecast is generally highest because the mountains can still accumulate snow for the next several months. Based on the uncertainty of the prediction, there is a **90% chance snowmelt runoff will exceed 18,494 acre-feet (80% of normal)** and a **10% chance snowmelt runoff will exceed 32,699 acre-feet (141% of normal).**

If there is a normal amount (12.8 inches) of rain from April 1 – July 31, the total runoff is predicted to be 32,431 acre-feet. This is **861 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, 2025 could be more like 2005. The **effects of excess rain are visualized in Figure 4** as inches above normal.

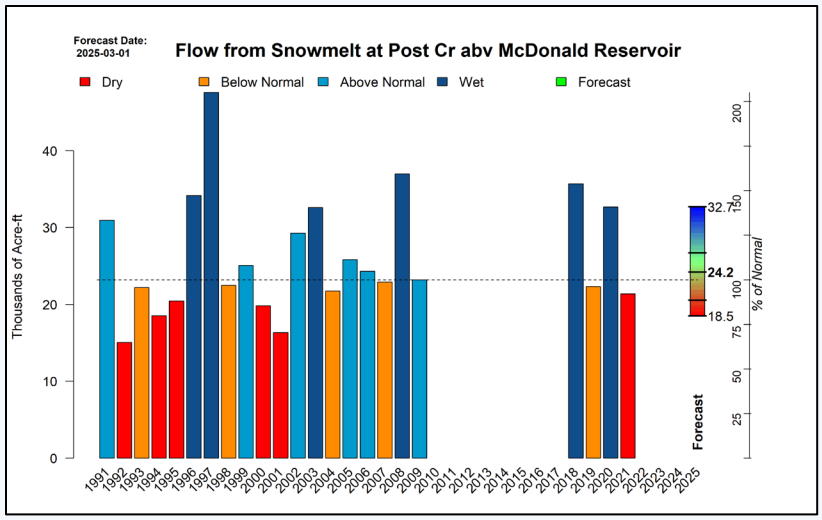


Figure 3: Historical snowmelt runoff and 2025 prediction.

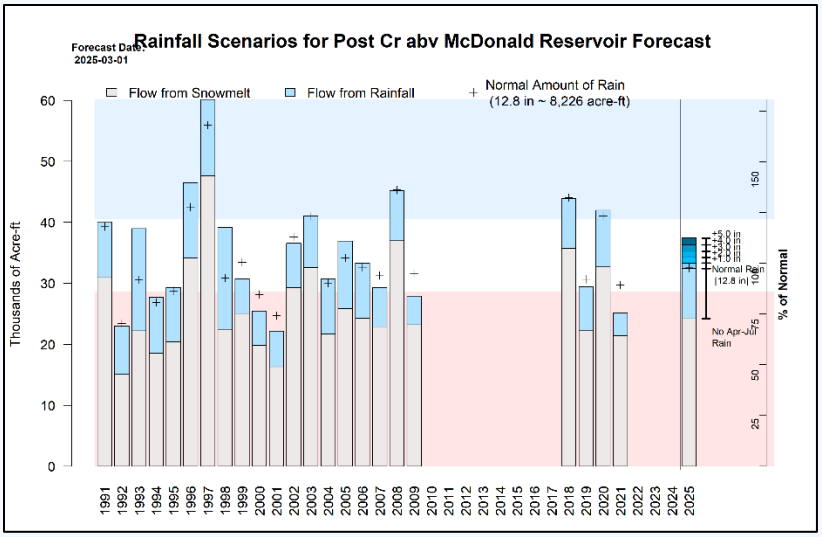


Figure 4: Proportion of flow from snowmelt vs. rain and the effects of April 1 – July 31 rain on predicted flow.

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.

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