

# Central Alaska Network

National Park Service  
U.S. Department of the Interior

Alaska Region  
Inventory & Monitoring Program



Denali NP & PRES • Wrangell-St. Elias NP & PRES • Yukon-Charley Rivers N PRES

Fall 2023

## Weather & Climate Summary Yukon-Charley Rivers National Preserve Fall 2023

Termination dust in September, Yukon-Charley Rivers National Preserve.  
NPS Photo /Pam Sousanes

### Eagle Fall 2023 Weather Summary

Overall, fall was warmer and wetter than normal. Weather highlights for the season include a snowy October and a warm November. The average temperature for the 2023 fall season was 27.9°F, which is 4.3°F above the 1991-2020 normal. The fall precipitation total of 4.40 inches was 151% of normal. This was the sixth wettest fall on record for Eagle (Table 1 and 2, Figures 1 and 2).

#### September

September was warmer and wetter than normal. The average monthly temperature was +0.8°F warmer than normal, with the warmest temperatures of the month occurring during the second week. The average daily temperatures were ~11°F warmer than normal September 10-12. September rainfall totaled 1.74 inches, which is 139% of normal.

#### October

The average temperature for October was 24.9°F which is 0.4°F warmer than normal. Total precipitation was well above normal with 1.70 inches of rain and melted snow for the month. A total of 17.3 inches of snow fell in October, normal is 9.9 inches. The first day of persistent snow was on October 3. This snow cover will last throughout the cold season and eventually melt-out in late spring.

#### November

November was much warmer than normal, and the snowfall total was a few inches above normal. The average monthly temperature was 11.8°F warmer than normal at 15.6°F. It

was the 10th warmest November on record. The warmest days were November 9 and 10 when the daily highs were well above freezing and approaching daily records. There were only a few days mid-month when the temperatures dropped below normal. The snowfall total was 13.5 inches with a water content of 0.96 inches. Normal snowfall for November is 11.5 inches with 0.72 inches of water content.

Table 1. Fall 2023 average monthly temperatures compared to the 1991-2020 normal.

| Fall 2023 | Average Monthly Temp (°F) | 1991-2020 Normal (°F) | Departure from Normal (°F) |
|-----------|---------------------------|-----------------------|----------------------------|
| September | 43.3                      | 42.5                  | +0.8                       |
| October   | 24.9                      | 24.5                  | +0.4                       |
| November  | 15.6                      | 3.8                   | +11.8                      |

Fall Temperature Departure from normal: +4.3°F

Table 2. Fall 2023 monthly precipitation totals compared to normal.

| Fall 2023 | Total Monthly Precip. (in.) | 1991-2020 Normal (in.) | Departure from Normal (in.) |
|-----------|-----------------------------|------------------------|-----------------------------|
| September | 1.74                        | 1.25                   | +0.49                       |
| October   | 1.70                        | 0.94                   | +0.76                       |
| November  | 0.96                        | 0.72                   | +0.24                       |

Fall Precipitation Departure from normal: +1.49 inches (151%)

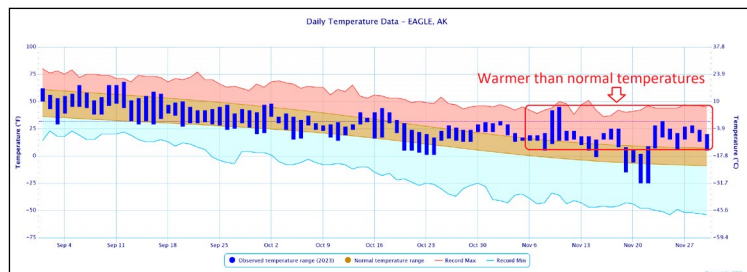


Figure 1. Fall 2023 daily temperatures at Eagle showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars). <http://xmacis.rcc-acis.org/>

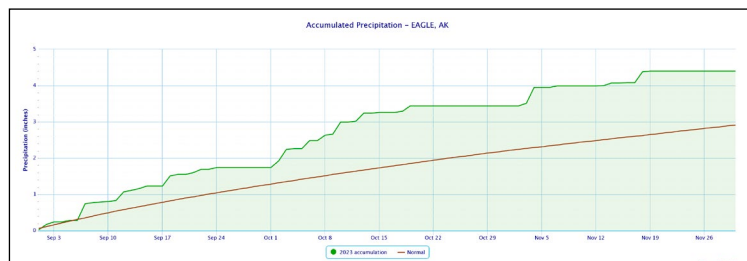


Figure 2. Fall 2023 accumulated precipitation at Eagle (green) compared to normal (brown line). <http://xmacis.rcc-acis.org/>

## Central Alaska Inventory and Monitoring Network Climate Stations

We have been monitoring weather at additional sites in Yukon-Charley Rivers to help understand daily, monthly, and seasonal weather patterns and shifting climate averages in the park (Figure 3).

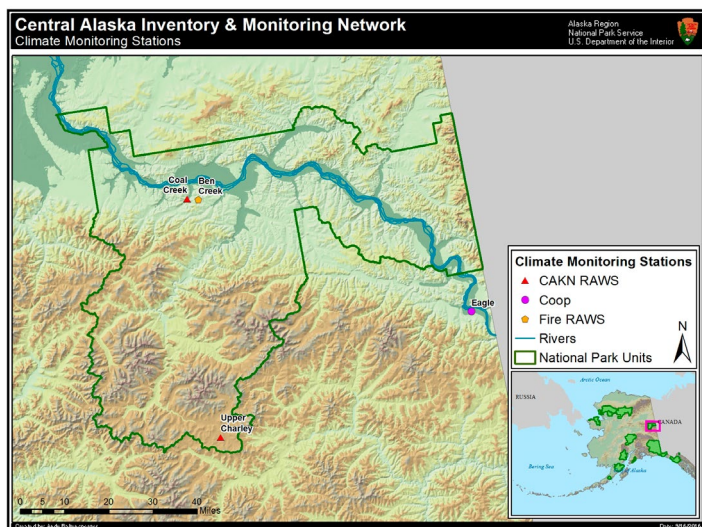


Figure 3. Central Alaska Inventory and Monitoring Network climate stations in Yukon-Charley Rivers National Preserve.

## Start of the Snow Season

We measure snow depth continuously throughout the cold season at the remote sites with an acoustic distance sensor. October 6th marked the first day of persistent snow cover at the Coal Creek site for the 2023-2024 season. This was three days later than Eagle. By the end of October there was five inches of snow on the ground and by December 1st nine inches covered the ground. This is below average for this site;

the average snow depth on December 1st is 13 inches with records going back to December 2004 (Figure 4).

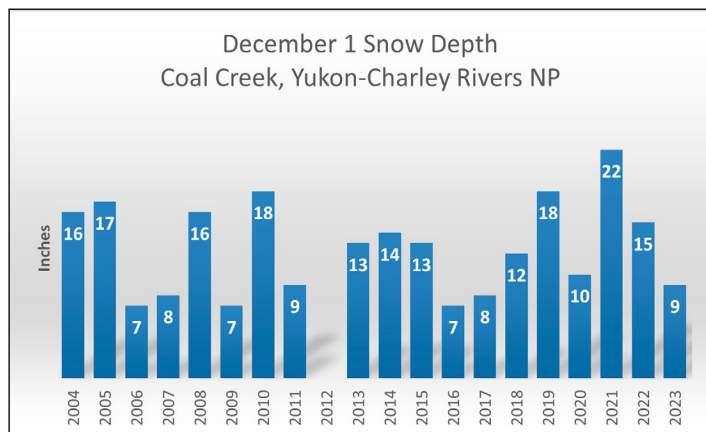


Figure 4. December 1st snow depth at Coal Creek in Yukon-Charley Rivers National Preserve 2004-2023.

## Warm Fall Seasons

This was one of the warmest fall seasons on record at Coal Creek. At 25.1°F it was tied with 2022 as the second warmest fall since 2005. Only 2019 was warmer. Like Eagle, September was cooler than average in the Preserve while October and November were warmer than the 19-year average. The average November temperature at Coal Creek is -0.8°F; this November was well above average at 11.6°F. November temperatures have increased significantly at Coal Creek, and this was the warmest November on record (Figure 5).

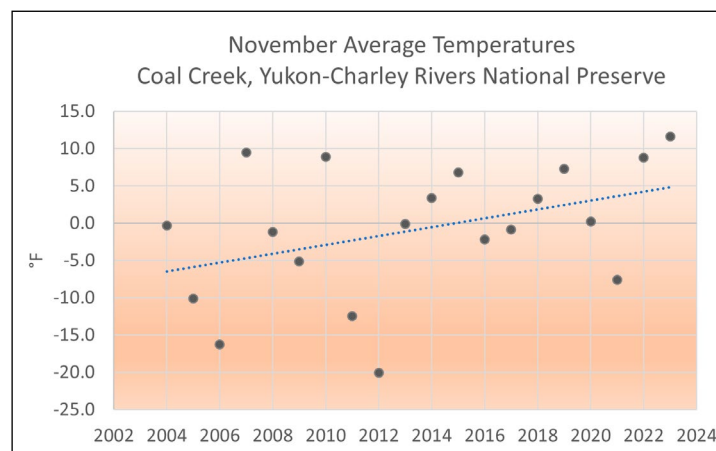


Figure 5. Average November temperatures have increased significantly at Coal Creek over the period of record 2004-2023 (using the Mann-Kendall trend test).

## More Information

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<https://www.nps.gov/im/cakn/climate.htm>  
[Current weather in Yukon-Charley Rivers](#)

Data disclaimer: Please note that the near-real time data used to generate these reports is subject to change. QA/QC data from the NPS CAKN climate stations are available at [NPS Data Store](#)