

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 Denali National Park & Preserve Fall 2023

Fall colors in Denali. NPS Photo/Pam Sousanes

Denali Park HQ Fall Season 2023

Fall 2023 was warmer and wetter than normal at Denali Park HQ. The fall season was 2.2°F warmer than the 1991-2020 normal. The total precipitation (rain and melted snow) for the fall season was 3.79 inches, 111% of normal (Table 1 and 2, Figures 1 and 2).

September

September was cooler and slightly wetter than normal. The average monthly temperature was 1.8°F cooler than normal at 39.0°F. Low temperatures dipped into the low 20s and upper teens during the third week of the month, about 5°F colder than normal. The rainfall total for September was 2.04 inches, 117% of normal. Most of that rain fell during the first half of the month.

October

October was near normal in terms of temperature and precipitation. October ended up 0.2°F warmer than normal at 24.9°F. The 'snow on' date was October 4th; this marks the first day of persistent snow for the season. It was about two weeks earlier than the long-term average (back to 1943). A total of 14.3 inches of snow fell during the month, normal is 9.4 inches. The total precipitation (rain and melted snow) for October was 1.04 inches, 124% of normal.

November

November was warmer than normal while the precipitation was near normal. The average monthly temperature was 8.1°F warmer than normal at 17.9°F. Most of the month was warmer

than normal except for a few cold days during the third week of the month. The daily temperatures warmed dramatically after that and temperatures during the last week of the month were 20 to 30°F warmer than normal! The high temperatures climbed above freezing every day during the last week. The snowfall total for November was 13 inches with a water content of 0.71 inches, just 0.13 inches shy of normal.

Table 1. Denali Park HQ 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	39.0	40.8	-1.8
October	24.9	24.7	+0.2
November	17.9	9.8	+8.1

Fall Temperature Departure from normal: +2.2°F

Table 2. Denali Park HQ fall 2023 monthly precipitation totals compared to normal.

Fall 2023	Total Monthly Precip. (in.)	1991-2020 Normal (in.)	Departure from Normal (in.)
September	2.04	1.74	+0.30
October	1.04	0.84	+0.20
November	0.71	0.84	-0.13

Fall Precipitation Departure from normal: +0.37 in. (111% of normal)

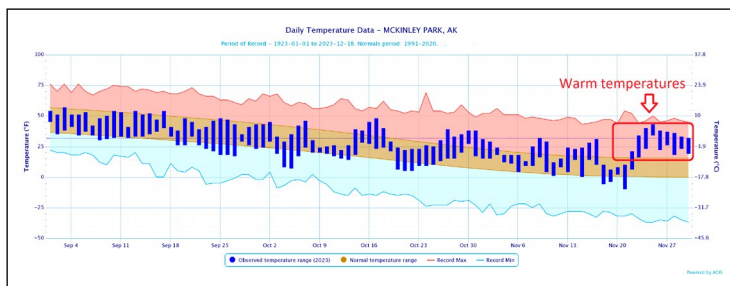


Figure 1. Fall 2023 daily temperatures at Denali Park HQ showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars). Data from: <http://xmacis.rcc-acis.org/>.

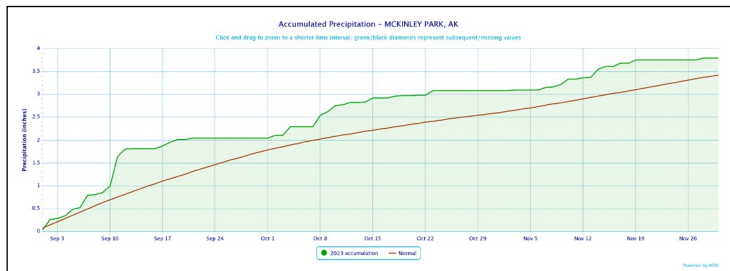


Figure 2. Fall 2023 accumulated precipitation at Denali Park HQ (green) compared to normal (brown line). Data from: <http://xmacis.rcc-acis.org/>.

Talkeetna Fall Season 2023

Talkeetna was warmer than normal, and the total precipitation was near normal. The fall season was 1.2°F warmer than the 1991-2020 normal. The normal fall precipitation total is 9.66 inches, this fall the total was 8.34 inches. We used Amber Lake data for November (16 miles SE); the Talkeetna Airport data were missing.

Central Alaska Inventory and Monitoring Network Climate Stations

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

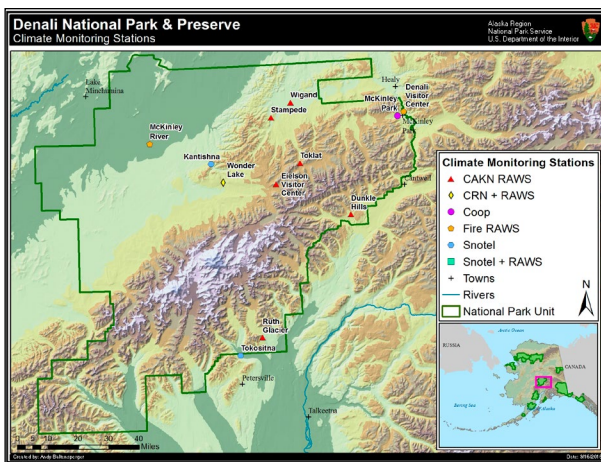


Figure 3. Central Alaska Network climate stations in Denali National Park and Preserve.

Warm November in Broad Pass

The Dunkle Hills site is south of the Alaska Range in the Broad Pass area near the West Fork of the Chulitna River. Fall

of 2023 was about 1°F warmer than average with records going back to 2005. Like park headquarters, September and October were cooler than average while November was warmer than average. The average November temperature at Dunkle Hills is 12.1°F, this November was above average at 18.7°F (Figure 4).

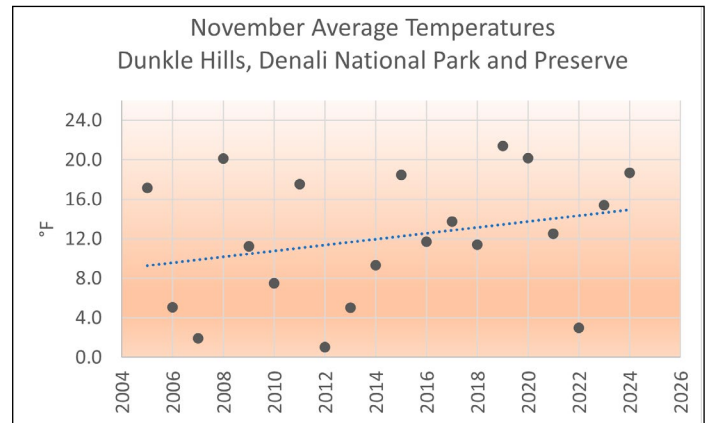


Figure 4. Average November temperatures at Dunkle Hills over the period of record 2005-2023.

Early Season Snow at Dunkle Hills

We measure snow depth continuously through the winter with acoustic distance sensors on each climate station. Dunkle Hills had 21 inches of snow at the end of November, 7 inches above the median value. The deepest end-of-November snowpack was 69 inches in 2019. Another big year was 2015 with 46 inches on November 30. Most of the Central Interior and Cook Inlet regions of Alaska had higher than average fall precipitation totals in 2023 (green shaded areas in Figure 5).

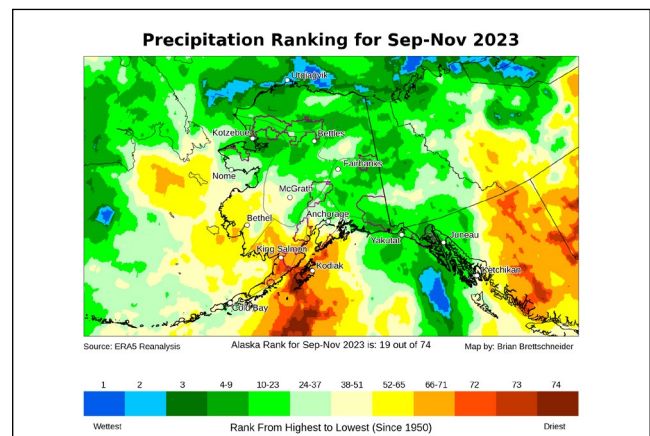


Figure 5. Statewide precipitation ranking map (back to 1940) courtesy of Brian Brettschneider. Blue and green shading indicates a wetter fall season.

More Information

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<https://www.nps.gov/im/cakn/climate.htm>

[Current weather in Denali](#)

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](#)