

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 Wrangell-St. Elias National Park & Preserve Fall 2023

Wrangell Mountains in the fall. NPS photo/Tom Vandenberg

Glenallen Fall Season 2023

Fall 2023 was warmer and much wetter than normal in Glenallen. The fall season was 2.6°F warmer than the 1991-2020 normal. It only tilted warmer due to November temperatures. September and October were cooler than normal. Each month of the fall season was wetter than normal, with October having the largest departure from normal. The total precipitation (rain and melted snow) for the fall season was 6.17 inches, 179% of normal and the third wettest on record behind 2022 with 7.66 inches and 1990 with 7.22 inches (Table 1 and 2, Figures 1 and 2). We used the Glenallen KCAM record that dates back to 1965 because there were large data gaps for the Gulkana Airport station this season.

September

September was cooler and wetter than normal. The average monthly temperature was 1.1°F cooler than normal at 42.3°F. The last week of the month was the coolest compared to normal with low temperatures near 20°F, which is about 5°F cooler than normal. The rainfall total for September was 2.16 inches, 153% of normal.

October

October temperatures remained on the cool side, and it was much wetter than normal. October ended up 1.1°F cooler than the normal at 25.0°F. The third week of the month was well below normal with the minimum daily temperatures dipping below 0°F. The first three weeks of the month were much wetter than normal with a mix of rain and snow. The high temperatures were above freezing through the third week of the month so the snow that fell did not stick around. A total of 7.7 inches of snow was measured, but on October 31 there was only an inch on the ground. The total precipitation (rain and melted snow) for October was an impressive 2.59 inches, 305% of normal!

November

November was warmer and wetter than normal. It was the 8th warmest November (1965-2023) with an average temperature of 15.2°F, 10°F warmer than normal. Most of the month was warmer than normal except for a very cold four day period during the third week when the temperatures dipped to -35°F. The daily temperatures warmed dramatically after that and temperatures during the last week of the month were almost 30°F warmer than normal! The snowfall total for November was 18 inches with a water content of 1.42 inches, just 0.23 inches above normal.

Table 1. Glenallen 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	42.3	43.4	-1.1
October	25.0	26.1	-1.1
November	15.2	5.1	+10.1

Fall Temperature Departure from normal: +2.6°F

Table 2. Glenallen fall 2023 monthly precipitation totals compared to normal.

Fall 2023	Total Monthly Precip. (in.)	1991-2020 Normal (in.)	Departure from Normal (in.)
September	2.16	1.41	+0.75
October	2.59	0.85	+1.74
November	1.42	1.19	+0.23

Fall Precipitation Departure from normal: +2.72 in. (179% of normal).

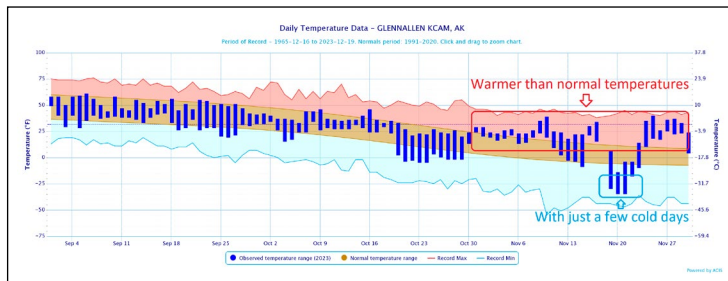


Figure 1. Fall 2023 daily temperatures at Glenallen showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars). Data from: <http://xmacis.rcc-acis.org/>.

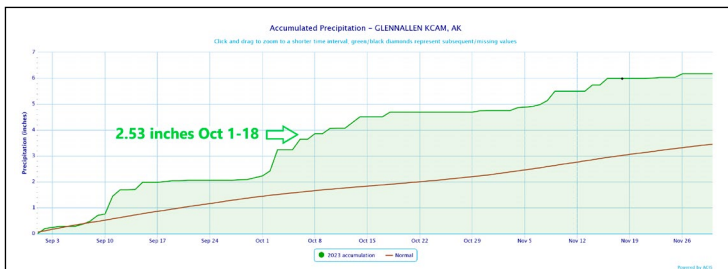


Figure 2. Fall 2023 accumulated precipitation at Glenallen (green) compared to normal (brown line). Data from: <http://xmacis.rcc-acis.org/>.

Yakutat Fall Season 2023

Fall 2023 was warmer and wetter than normal in Yakutat. The fall season was 2.0°F warmer than the 1991-2020 normal. The normal fall precipitation total is 51 inches, this fall the total was just shy of 56 inches.

Central Alaska Inventory and Monitoring Network Climate Stations

We operate climate stations in Wrangell – St. Elias National Park and Preserve to help understand short and long term trends in weather and climate (Figure 3).

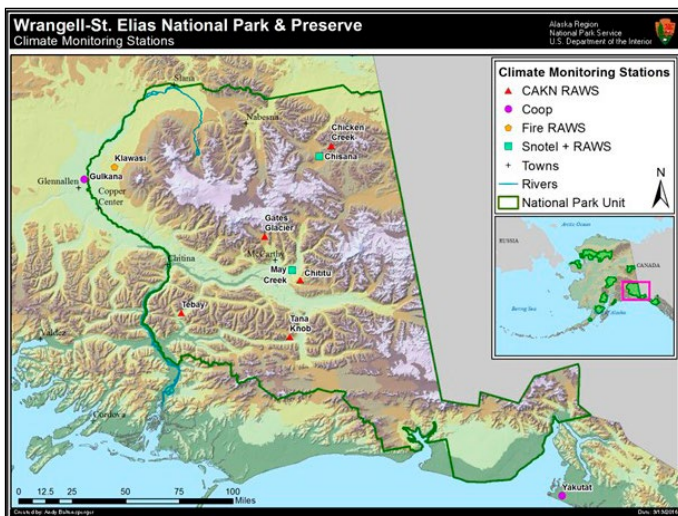


Figure 3. Central Alaska Network climate stations in Wrangell – St. Elias National Park and Preserve.

Bring on the Snow

It was a wet and snowy start to the cold season at May Creek with almost 5 inches of accumulated precipitation

(melted snow and rain) for the start of the 2024 water year, which started on October 1. We use water years to look at precipitation trends to capture the entire winter season. This was the third wettest start to a water year behind 2023 and 2016 (Figure 4). We started measuring snow and rain at May Creek in 2008.

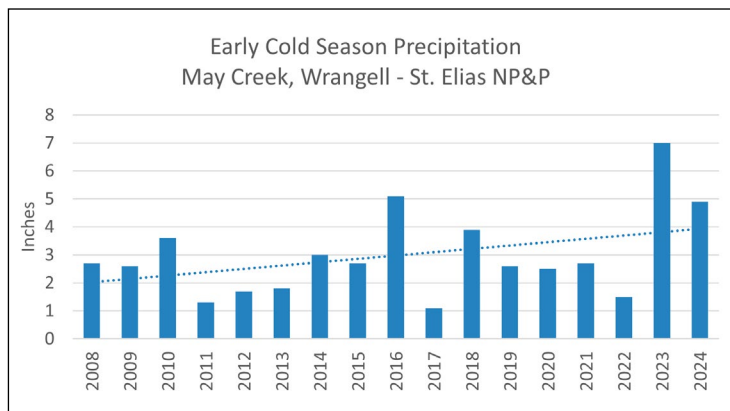


Figure 4. Precipitation accumulation for the start of the water year (October 1 through November 30) each year since 2008.

Capturing the Extremes

The Tana Knob station captured a storm that rolled through the park in early November. On November 8th more than two feet of snow accumulated at the site in less than 12 hours. By evening there was 32 inches of snow on the ground. The next day the temperature warmed to 38°F and the winds gusted to 43 mph. Over the next few days, with warmer temperatures and scouring winds, the snow depth decreased from 32 inches to 19 inches. During that same storm, the Chititu climate station located on a ridge just south of May Creek recorded a peak wind gust of 76 mph (Figure 5).

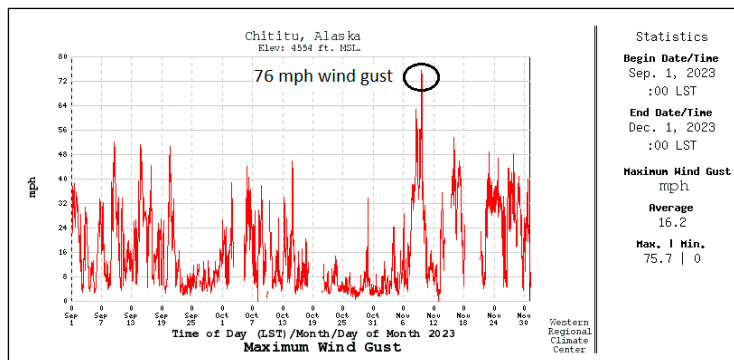


Figure 5. Peak wind gusts at the Chititu climate station in Wrangell – St. Elias NP&P September 1 – November 30, 2023.

More Information

Pam_Sousanes@nps.gov; ph 907-455-0677
Kenneth_Hill@nps.gov; ph 907-455-0678

<https://www.nps.gov/im/cakn/climate.htm>
[Current weather in Wrangell-St. Elias National Park & Preserve](#)

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](#)