

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

Winter 2024

Weather & Climate Summary Wrangell-St. Elias National Park & Preserve Winter 2024

Kennecott in Winter. NPS Photo/Mike Townsend.

Winter Season 2023-2024

Winter 2023-2024 was colder and snowier than normal in Gulkana. The winter season (Dec-Jan-Feb) was 4.3°F colder than the 1991-2020 normal due to a cold January. Each month of the season was wetter than normal, but December was the snowiest. It was the wettest (snowiest) December on record (tied with 1955). December of 2022 was the second wettest. The total precipitation (melted snow and rain) for the winter was 5.09 inches, more than twice as much as normal (Table 1 and 2, Figures 1 and 2).

December

December was warmer and snowier than normal. The average monthly temperature was 1.0°F warmer than normal at 0.8°F with three days that climbed above freezing. The last week of the month was the coolest compared to normal. The 3.07 inches of total precipitation that fell in December was nearly four times the normal amount. In nearby Glennallen, 40 inches of snow was recorded for December. Almost half of that fell during a warm, wet storm mid-month (note: snowfall is not measured in Gulkana).

January

January was cold with above normal precipitation. The average temperature for the month was 5.7°F colder than normal. The second half of the month was well below normal with the minimum daily temperatures dipping below -30°F. The first three weeks of the month were relatively dry, with most of the snow falling toward the end of the month after temperatures moderated. The total precipitation (melted snow) for January was 1.21 inches, 165% of normal. An additional 6.7 inches of snow fell in Glennallen in January. The snow depth at the end of the month was 30 inches.

February

February had near normal temperatures and slightly above normal precipitation. The month started out cold with average daily temperatures > 30°F colder than normal. The minimum temperature on February 3 was -44°F the coldest day of the winter. Temperatures warmed mid-month reaching 42°F on February 20th, a record high for that day and 86 degrees warmer than the coldest day of the month. Precipitation was 124% of normal for Gulkana, with a monthly snowfall total of 7.6 inches for Glennallen.

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

Winter 2023-2024	Average Monthly Temp (°F)	1991-2020 Normal (°F)	Departure from Normal (°F)
December	0.8	-0.2	+1.0
January	-9.1	-3.4	-5.7
February	5.7	5.6	+0.1

Winter Temperature Departure from normal: -1.5°F

Table 2. Gulkana monthly precipitation totals compared to normal.

Winter 2023-2024	Total Monthly Precip. (in.)	1991-2020 Normal (in.)	Departure from Normal (in.)
December	3.07	0.78	+2.29
January	1.21	0.73	+0.48
February	0.81	0.65	+0.16

Winter Precipitation Departure from normal: +2.93 in. (236% of normal).

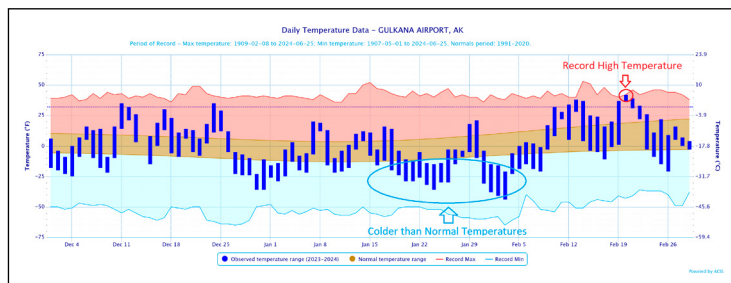


Figure 1. Winter 2023-2024 daily temperatures at Gulkana showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars). Data from: <http://xmacis.rcc-acis.org/>.

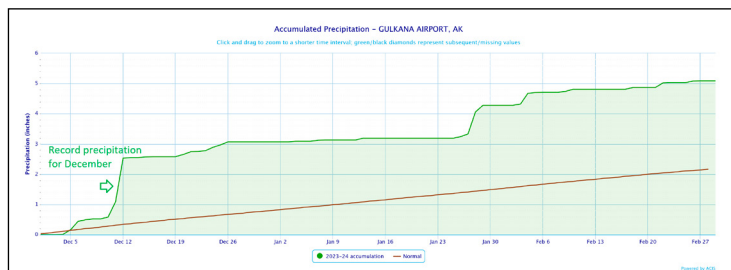


Figure 2. Winter 2023-2024 accumulated precipitation at Gulkana (green) compared to normal (brown line). Data: <http://xmacis.rcc-acis.org/>.

Yakutat Winter Season 2023-2024

This past winter was warmer than normal with near normal precipitation in Yakutat. The winter season was 1.9°F warmer than the 1991-2020 normal. There were three daily record high temperatures. One in December (12/24 at 46°F), one in January (1/29 at 48°F), and one in February (2/16 at 48°F). The normal winter precipitation total is 36.64 inches, this winter the total was 36.81. December was wetter than normal, while January and February were drier than normal.

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). [Click here](#) for current weather from these locations.

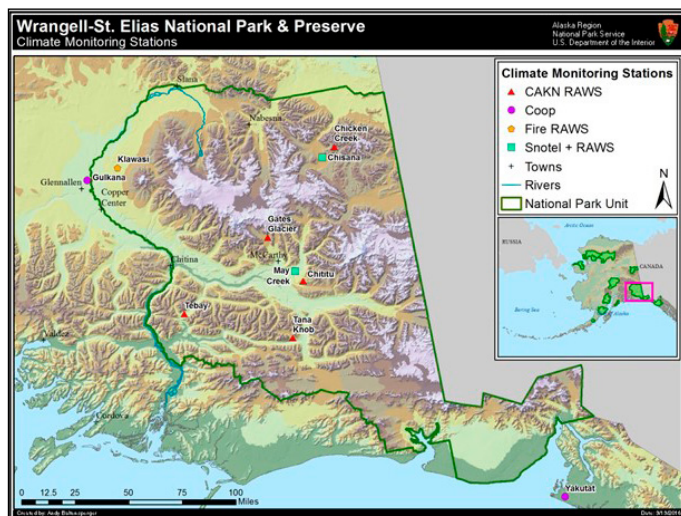


Figure 3. Central Alaska Network climate stations in Wrangell – St. Elias National Park and Preserve.

Snowy Winter at May Creek

It was another snowy/wet season at May Creek near the town of McCarthy. In February the snow water equivalent (SWE), the amount of water in the snowpack, was at a record high (Figure 4). Peak SWE occurred on April 7 with 8.5 inches of water, which is 3.0 inches more than the median value. The cumulative precipitation (rain and melted snow) from October 1 through the end of February was 9.8 inches, four inches more than the median value for that date. Chisana snow water equivalent and cumulative precipitation was near average.

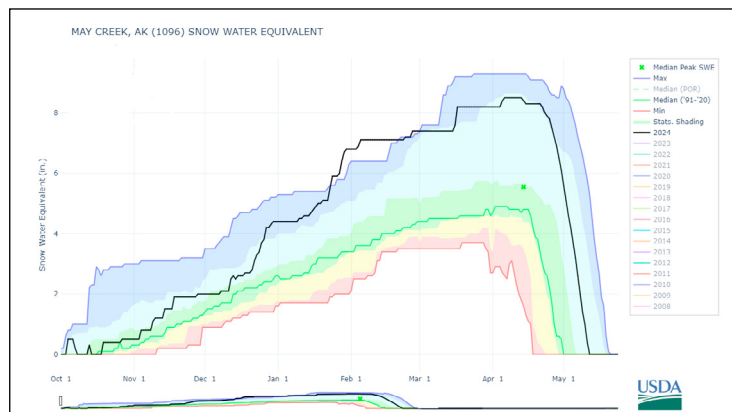


Figure 4. Snow water equivalent October 1, 2023 through June 1, 2024 at May Creek (black line) in relation to other years on record back to 2008.

Mountain Snow

The peak seasonal snow depth often exceeds 6 feet at the Tana Knob site in the Chugach Mountains (3,460'). This winter the peak was closer to 7.5 feet. At the Gates Glacier site in the Wrangell Mountains (4,360') the peak snow depth was 5 feet this season. Figure 5 shows a photo of the site with one of the deeper snowpacks on record in 2020. In contrast to these higher elevation sites, May Creek (1610') had a peak snow depth of 38 inches (~3 feet) this season.



Figure 5. Peak snow at the Gates Glacier site in April 2020 with 89 inches of snow on the ground (photos stored on site and retrieved each summer).

More Information

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<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](#)