



Weather & Climate Summary Gates of the Arctic National Park & Preserve Fall 2023

Caribou in fall. Gates of the Arctic National Park and Preserve. NPS Photo/
Kyle Joly.

Bettles Fall Weather Summary 2023

Overall, fall was warmer and wetter than normal in Bettles. Weather highlights for the season include a wet first half of September and a warm November. The average temperature for the 2023 fall season was 25.7°F, which is 4.8°F above the 1991-2020 normal. It was the 4th warmest fall on record with records back to 1951. Fall precipitation (rain and melted snow) totaled 5.66 inches, 1.21 inches above normal (Table 1 and 2, Figures 1 and 2).

September

September temperatures were near normal and the precipitation total for the month was above normal. The average temperature for the month was 0.1°F warmer than normal at 41.3°F. The September temperatures were unremarkable with daily highs and lows in the normal temperature range for most of the month. The total rainfall for the month was 3.16 inches, normal is 2.13 inches. It was all rain with only a trace amount of snow recorded on the 27th. The rainfall total had already exceeded the monthly normal amount by September 11. The highest daily rainfall total was on September 3 with 0.54 inches.

October

October was warmer and drier than normal. The month started out cool, but the last week was much warmer than normal. On October 31 the daily high temperature reached 33°F, 16°F warmer than the normal high. The average monthly temperature ended up 1.1°F warmer than normal. The total precipitation was 1.04 inches, which is 89% of normal. The snowfall total was just below normal at 11 inches, normal is 12 inches.

November

Almost the entire month of November was warmer than normal. The monthly precipitation total (melted snow and rain) was 126% of normal. The average temperature for the month was 13.4°F, which is an impressive 13.1°F above normal. It was the 3rd warmest November on record and the warmest November in over 20 years. November precipitation was above normal with 1.46 inches. Total snowfall was 26.7 inches, normal is 19.1 inches of snow with 1.15 inches of water content.

Table 1. Bettles 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	41.3	41.2	+0.1
October	22.4	21.3	+1.1
November	13.4	0.3	+13.1

Fall Temperature Departure from normal: +4.8°F

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

Fall 2023	Total Monthly Precip. (in.)	1991-2020 Normal (in.)	Departure from Normal (in.)
September	3.16	2.13	+1.03
October	1.04	1.17	-0.13
November	1.46	1.15	+0.31

Fall Precipitation Departure from normal: +1.21 in. (127% of normal).

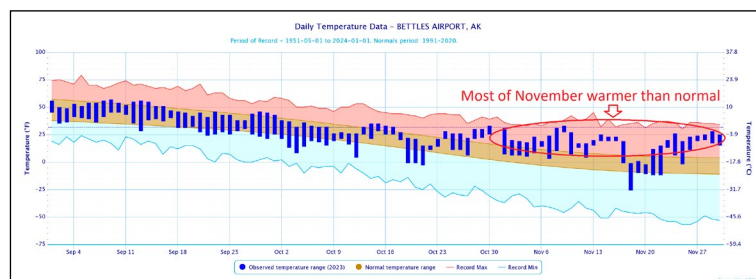


Figure 1. Fall 2023 daily temperatures at Bettles showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars). Data from: <http://xmacis.rcc-acis.org/>.

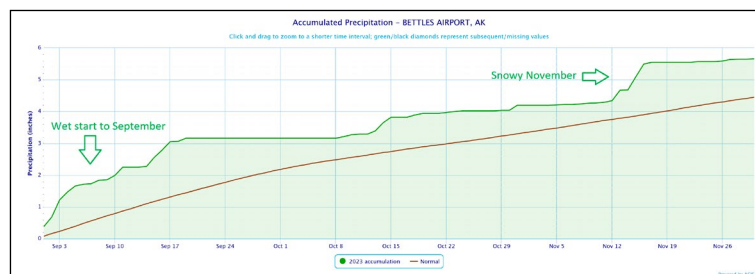


Figure 2. Fall 2023 accumulated precipitation at Bettles (green) compared to normal (brown line). Data from: <http://xmacis.rcc-acis.org/>

2023: Another Wet Year

September 30th marked the end of the 2023 water year. We use the water year (October 1 -September 30) to look at precipitation trends to capture the entire winter season. The 2023 total annual precipitation for Bettles was 18.74 inches, the 12th wettest on record. The 1991-2020 normal is 16.01 inches. Each of the last six years has been wetter than normal. Most of northwest Alaska, including Gates of the Arctic National Park and Preserve, was much wetter than normal this past year and in some areas it was the wettest year since 1940 (dark blue areas on Figure 3).

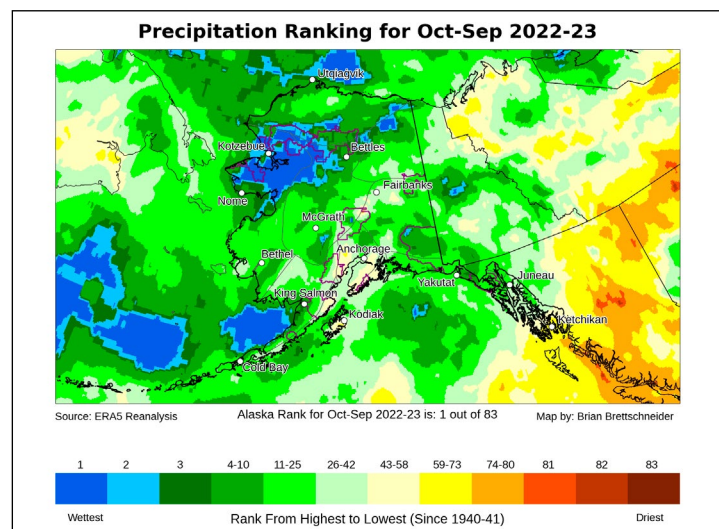


Figure 3. Statewide precipitation ranking map (back to 1940) for the 2023 water year (October 1 – September 30). Map courtesy of Brian Brettschneider using ERA5 reanalysis data. Dark blue shading indicates the wettest year on record.

Arctic Network Climate Stations

We monitor weather and climate in Gates of the Arctic to help

understand seasonal weather patterns and shifting climate averages (Figure 4).



Figure 4. Arctic Inventory and Monitoring Network climate stations in Gates of the Arctic National Park and Preserve. Click here to get the [Current Weather in Gates of the Arctic](#).

The fall season average temperature at the Chimney Lake climate station was 20.3°F, which is also the 11-year average for this site. September and October were cooler than average while November was warmer than average. The average November temperature is 8.7°F, this November was 3°F warmer than average. The fall season temperatures have been relatively stable over the past decade at Chimney Lake (Figure 5). To put this in context, this past decade had the warmest fall season temperatures in Bettles since records began in 1951.

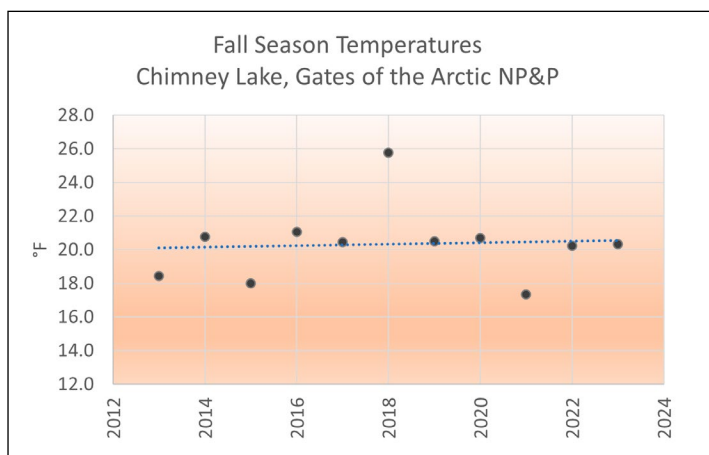


Figure 5. Fall season average temperatures at the Chimney Lake climate station in Gates of the Arctic National Park and Preserve 2013-2023.

More Information

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

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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 ARCN climate stations are available at [NPS Data Store](#)