



Bering Land Bridge N Pres. • Cape Krusenstern NM
Gates of the Arctic NP & Pres. • Kobuk Valley NP • Noatak N Pres.

Fall 2023

Weather & Climate Summary Western Arctic Parklands Fall 2023

Hiker on tundra with fall colors. NPS Photo

Kotzebue Fall Weather 2023

Overall, fall was warmer and much wetter than normal in Kotzebue. Weather highlights for the season include a wet first week of September and a wetter than normal fall season overall. This follows the wettest water year on record for Kotzebue (October 2022 - September 2023; more about this on page 2). The average temperature for the 2023 fall season was 28.7°F, which is 1.7°F above the 1991-2020 normal. Fall precipitation (rain and melted snow) totaled 5.63 inches, 2.32 inches above normal and the 5th wettest fall on record (Table 1 and 2, Figures 1 and 2).

September

It was a cool, wet September. The average temperature for the month was 1.8°F cooler than normal at 41.3°F. The first few weeks were the coolest compared to normal, with colder than normal overnight lows. The precipitation total for September was more than double the normal amount. The total rainfall was 3.30 inches, normal is 1.42 inches. The first few days of the month were the wettest with a total of 2.23 inches of rain falling between September 1 – 5, already exceeding the normal monthly total only five days into the month. This was the highest 5-day precipitation total on record for any September. The highest daily rainfall total was on the 5th with 0.93 inches.

October

October was warmer and wetter than normal. The month started out cool, but the last week of the month was much warmer than normal. On October 30th the daily high temperature reached 34°F, which is 11°F warmer than the normal high. The average monthly temperature ended up 0.7°F warmer than normal. The total precipitation was 1.45 inches, which is 136% of normal.

November

November was warmer and wetter than normal. The average temperature for the month was 17.1°F, which is 6.3°F above normal. It was the 7th warmest November on record. The last week of November had daily temperatures that ranged from 11 to 19 degrees F warmer than normal. November precipitation was just above normal with 0.88 inches, normal is 0.82 inches.

Table 1. Kotzebue 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	43.1	-1.8
October	27.6	26.9	0.7
November	17.1	10.8	+6.3

Fall Temperature Departure from normal: +1.7°F

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

Fall 2023	Total Monthly Precip. (in.)	1991-2020 Normal (in.)	Departure from Normal (in.)
September	3.30	1.42	+1.88
October	1.45	1.07	+0.38
November	0.88	0.82	+0.06

Fall Precipitation Departure from normal: +2.32 in. (170% of normal).

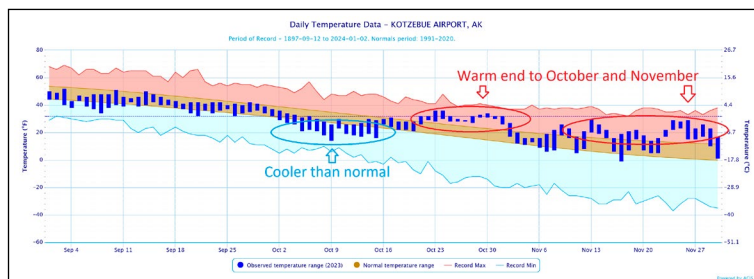


Figure 1. Fall 2023 daily temperatures at Kotzebue showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars). Data from: <http://xmacis.rcc-acis.org/>.

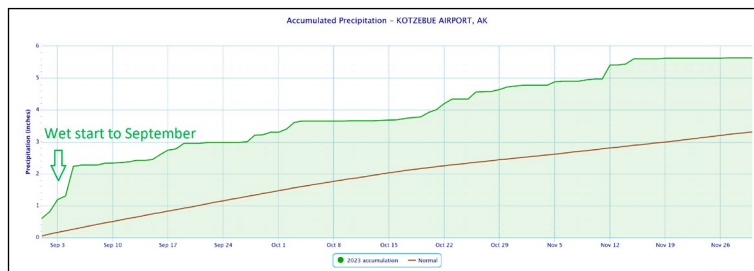


Figure 2. Fall 2023 accumulated precipitation at Kotzebue (green) compared to normal (brown line). Data from: <http://xmacis.rcc-acis.org/>

Wettest Year to Date

September 30th marked the end of the 2023 water year. It was the wettest (water) year on record for Kotzebue with an annual total of 18.32 inches (Figure 3). The 1991-2020 normal is 11.36 inches. Across most of the Western Arctic parks it was the wettest year since 1940 (dark blue areas on Figure 4).

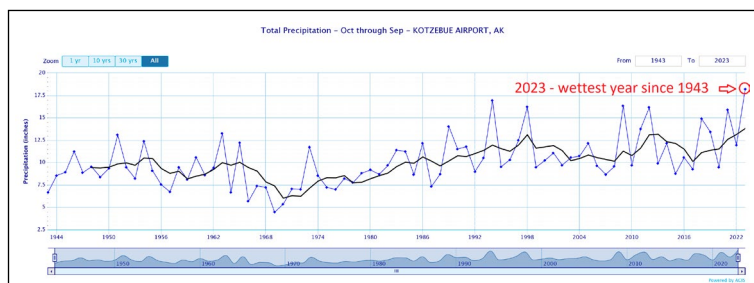


Figure 3. Kotzebue total annual precipitation (October 1 – September 30) from 1943-2023. Data from: <https://xmacis.rcc-acis.org/> (rcc-acis.org)

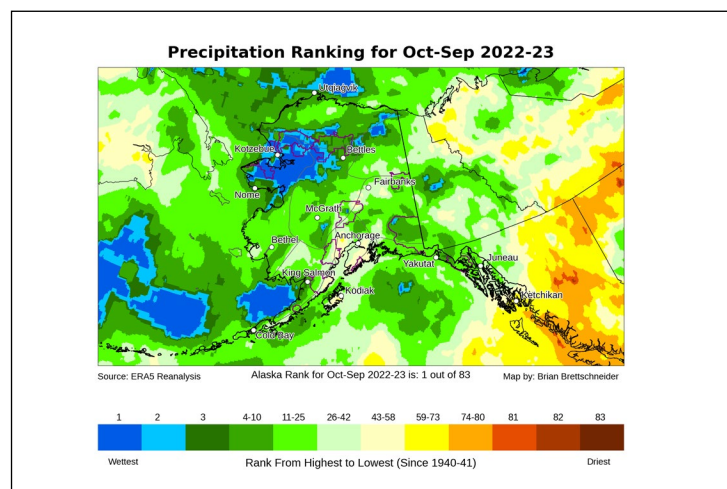


Figure 4. Statewide precipitation ranking map (back to 1940) for the 2023 water year (October 1 – September 30). Map courtesy of Brian Brettschneider. Dark blue shading indicates the wettest year on record.

Arctic Network Climate Stations

We monitor weather and climate in the Western Arctic Parklands to help understand seasonal weather patterns and shifting climate averages (Figure 5). We have ten years of data from most of these locations, including the Asik climate station perched on a mountain above the Agashashok River in Noatak National Preserve.



Figure 5. Arctic Inventory and Monitoring Network climate stations in the Western Arctic Parklands.

The fall season average temperature at the Asik climate station was 26.3°F, which is half a degree below the average. September and October were cooler than average while November was warmer than average. The fall season temperatures have been relatively stable over the past decade at the Asik site (Figure 6). To put this in context, this past decade had the warmest fall season temperatures in Kotzebue since (continuous) records began in 1950.

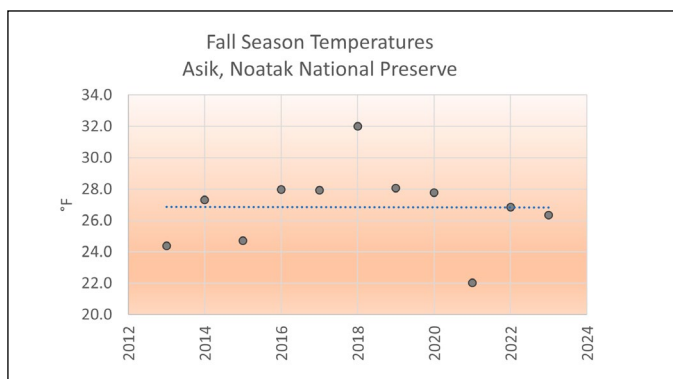


Figure 6. Fall season average temperatures at the Asik climate station in Noatak National Preserve 2013-2023.

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](#)