

Arctic Network

National Park Service
U.S. Department of the Interior

Alaska Region
Inventory & Monitoring Program



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

Fall 2018

Weather & Climate Summary Gates of the Arctic National Park & Preserve Fall 2018

Arrigetch Peaks, Gates of the Arctic National Park & Preserve. Photo: NPS, Ken Hill.

Bettles Fall Weather 2018

Fall Highlights: Third warmest fall on record. Fall season snowfall ~71% of normal.

Overall, fall 2018 was much warmer than normal with the strongest departures in October and November. The average fall temperature was 7.4°F warmer than normal at 26.9°F. 2018 ranks as the third warmest fall with records going back to 1951. Total precipitation (rain and melted snow) was 3.48 inches, 90% of normal. Snowfall accumulation for the fall season was 22 inches, normal is 31 inches (Figures 1 and 2; Tables 1, 2, and 3).

September was warmer than normal with an average temperature of 43.0°F, compared to a normal of 40.6°F. The high temperature reached 55°F on both the first and last day of September. It was a record high for September 30th. On September 29 it reached 56°F, also a record high. A total of 1.23 inches of rain fell during the month; almost all of that during a 3-day window between the 19th and 22nd. Normal precipitation for September is 1.91 inches. There was no snow in September; the 1981-2010 average is 2.5 inches.

It was the fourth warmest October on record with an average monthly temperature of 28.7°F, almost 10°F warmer than normal. Record high temperatures were set on six consecutive days from September 29th through October 4th! It was also very warm the third week of October with temperatures more than 20°F warmer than normal. Precipitation was above normal for the month with 1.52 inches of rain and melted snow, which is 146% of normal. Snowfall was just below normal with a total of 11.2 inches for the month, normal is 12.4 inches.

Warm temperatures continued into November. The month ended up 10°F warmer than normal. Snowfall was lighter than normal with a total of 10.8 inches falling during the month, normal is 16.1 inches. The water equivalent of the snow was 0.73 inches, 80% of normal.

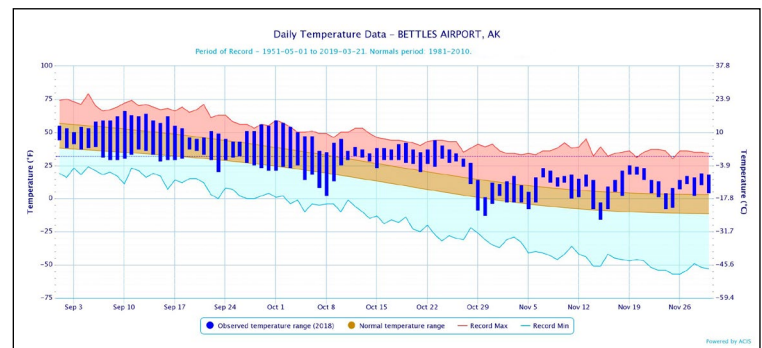


Figure 1. Fall 2018 daily temperatures at Bettles showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars). <http://xmacis.rcc-acis.org/>

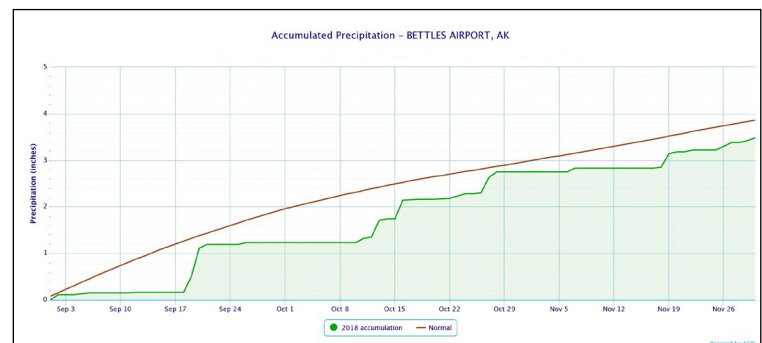


Figure 2. Fall 2018 accumulated precipitation (green) at Bettles compared to normal (brown line). <http://xmacis.rcc-acis.org/>

Table 1. Temperature: Fall 2018 average monthly temperatures compared to the 1981-2010 normal.

Fall 2018	Average Monthly Temp (°F)	1981-2010 Normal (°F)	Departure from Normal (°F)	Monthly High (°F / Date)	Monthly Low (°F / Date)
September	43.0	40.6	+2.4	66 / Sep 10	20 / Sep 23
October	28.7	18.9	+9.8	59* / Oct 1	-13 / Oct 30
November	9.0	-1.0	+10.0	25 / Nov 19	-16 / Nov 15

Fall Season Temperature Departure from Normal: +7.4°F ; *Record daily high

Table 2. Precipitation: Fall 2018 monthly precipitation totals compared to normal.

Fall 2018	Total Monthly Precip. (in.)	1981-2010 Normal (in.)	Departure from Normal (in.)	Greatest 24 -hr. total (in. / Date)	# Days with >=0.01 in. water
September	1.23	1.91	-0.68	0.61 / Sep 20	8
October	1.52	1.04	+0.48	0.40 / Oct 16	14
November	0.73	0.91	-0.18	0.29 / Nov 19	9

Fall Season Precipitation Departure from Normal: -0.38 inches (90% of normal).

Table 3. Snowfall: Fall 2018 monthly snowfall totals compared to normal.

Fall 2018	Total Monthly Snowfall (in.)	1981-2010 Normal (in.)	Departure from Normal (in.)	Greatest 24-hr snowfall total (in. / Date)	Cumulative snowfall since 1-July in.
September	0.0	2.5	-2.5	–	0.0
October	11.2	12.4	-1.2	5.3 / Oct 27	11.2
November	10.8	16.1	-5.3	3.5 / Nov 19	22.0

Gates of the Arctic Fall Warmth

Fall 2018 was warm in the mountains of Gates of the Arctic National Park and Preserve. We have been recording data continuously in the park since 2012. All of the high elevation climate stations recorded the warmest fall to date. At the Chimney Creek climate station (3,700') it was 6.5°F warmer in 2018 than the 2012-2017 fall season average (Figure 3). Average fall temperatures at all of the NPS climate stations in the park have increased over the past seven years.

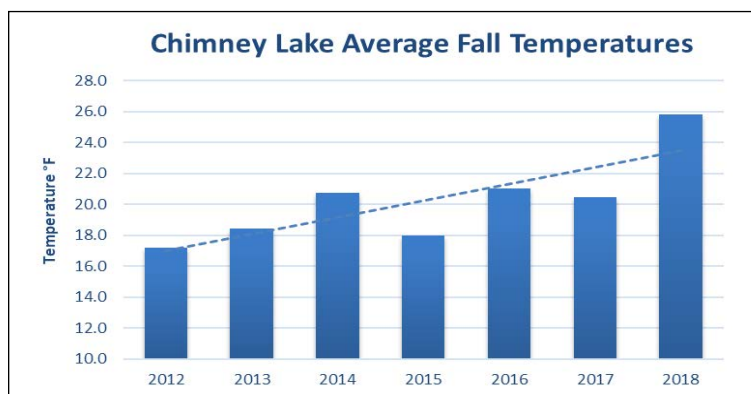


Figure 3. Fall temperatures at Chimney Lake climate station in Gates of the Arctic National Park and Preserve 2012-2018.

Statewide Fall Warmth

2018 was the 2nd warmest fall on record for Alaska with records dating back to 1925. The west coast of Alaska was the warmest on record (Figure 4). The decline in sea ice over the past several years has been a factor in the recent statewide warming trend.

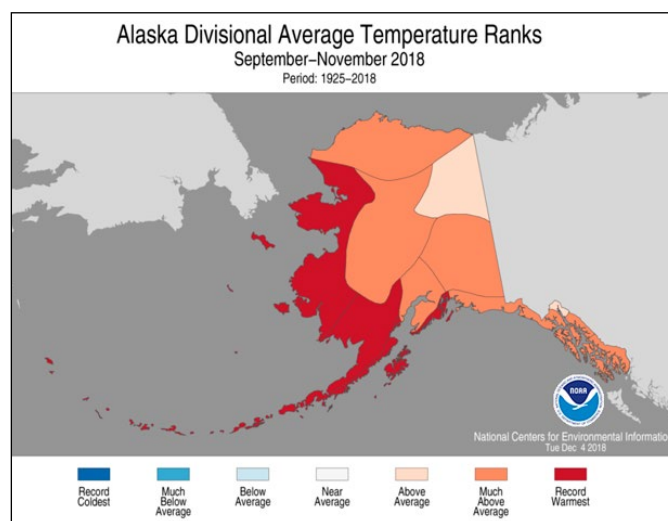


Figure 4. Record warm fall along Alaska's west coast for 2018. Graph courtesy of NCEI (<https://www.ncdc.noaa.gov/cag>).

More Information

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[Current Weather in Gates of the Arctic NP & Pres.](#)

<http://science.nature.nps.gov/im/units/arcn>

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