



Weather & Climate Summary Gates of the Arctic National Park & Preserve Fall 2019

Rock Ptarmigan, Gates of the Arctic National Park and Preserve. NPS photo, Zak Richter.

Bettles Fall Weather 2019

Highlights: Third wettest and seventh warmest fall season (September-November) on record. Record 2-day snowfall total of 25 inches November 26-27.

Fall started off with above normal temperatures the first two weeks of September and a record high of 70°F on the 7th. Wet weather cooled things off mid-month with 3.4 inches of wet snow containing 0.88 inches of water on the 17th. Cooler than normal weather persisted for another 10 days, culminating with a low monthly temperature of 16°F on the 26th. The last few days of the month were 5 to 10 degrees warmer than normal and wet; 0.71 inches of rain fell September 29-30. Overall September was 2.6°F warmer than normal and precipitation was 115% of normal.

October was 5.6°F warmer than normal with an average monthly temperature of 24.5°F. This was largely driven by extreme warmth the last five days of the month with daily highs on the 27th (35°F, a record), 28th, (38°F), and 29th (41°F). Total precipitation for the month was 2.57 inches, 247% of normal and the 4th wettest October on record. More than half of this came in the first part of the month as either rain or wet snow. The snow-on date (≥ 1 inch) was October 6, just a few days later than normal.

The first three weeks of November flip-flopped between warm and cold with almost no snowfall. Temperatures bottomed out at -17°F on the 18th and 19th. The last week of November was an exciting one for Bettles, with temperatures up to 28°F warmer than normal and a two-day record-breaking snowfall event. Total snowfall for November 26-27 was 25 inches. Liquid equivalent precipitation for

the last week of the month was over 2.5 inches, bringing the November total to 287% of normal and the 5th wettest November on record. Overall, fall 2019 was 5.1°F warmer than normal and precipitation was 191% of average (Figures 1 and 2; Tables 1, 2, and 3).

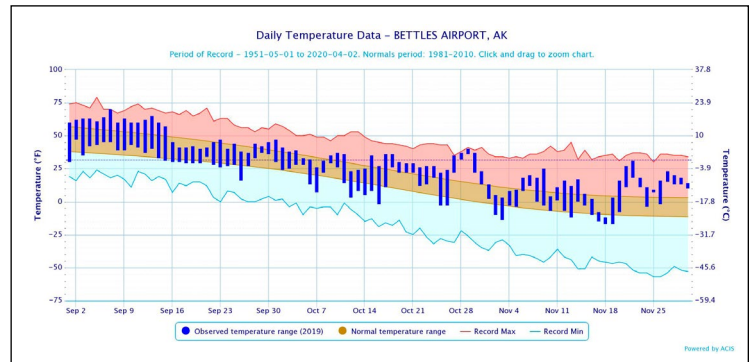


Figure 1 (top left). Fall 2019 daily temperatures at Bettles showing record maximum (red), record minimum (blue), normal (brown) and 2019 observed range (blue bars). <http://xmacis.rcc-acis.org/>

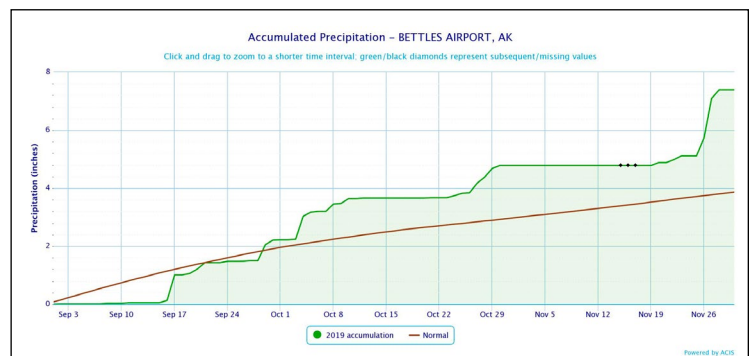


Figure 2 (left). Fall 2019 accumulated precipitation (green) at Bettles compared to normal (brown line). <http://xmacis.rcc-acis.org/>

Table 1. Temperature: Fall 2019 average monthly temperatures compared to the 1981-2010 normal.

Fall 2019	Average Monthly Temp (°F)	1981-2010 Normal (°F)	Departure from Normal (°F)	Monthly High (°F / Date)	Monthly Low (°F / Date)
September	43.2	40.6	+2.6	70 / Sep. 7*	16 / Sep. 26
October	24.5	18.9	+5.6	47 / Oct. 1	-3 / Oct. 25, 26
November	6.0	-1.0	+7.0	31 / Nov. 22	-17 / Nov. 18, 19

Fall Season Temperature Departure from Normal: +5.1°F; *Record daily high.

Table 2. Precipitation: Fall 2019 monthly precipitation totals compared to normal.

Fall 2019	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	2.21	1.91	+0.30	0.88 / Sep. 17*	12
October	2.57	1.04	+1.53	0.79 / Oct. 4*	17
November	2.61	0.91	+1.70	1.36 / Nov. 27*	6

Fall Season Precipitation Departure from Normal: +3.53 inches (191% of normal). *Record daily high.

Table 3. Snowfall: Fall 2019 monthly snowfall totals compared to normal.

Fall 2019	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	3.7	2.5	+1.2	3.4 / Sep. 17	3.7
October	13.2	12.4	+0.8	2.9 / Oct. 27	16.9
November	31.6	16.1	+15.5	14.9 / Nov. 27*	48.5

Fall Season Snowfall Departure from Normal: +15.5 inches (196% of normal) . *Record daily high.

Bettles Record Snowfall

The total snowfall in Bettles November 26-27 was 25.0 inches, breaking the old 2-day record of 23.8 inches set in 1973 (Figure 3). The event also broke the 3-day (28.4 inches) and 4-day (28.6 inches) snowfall records. Continuous snowfall records at Bettles date back to 1951.

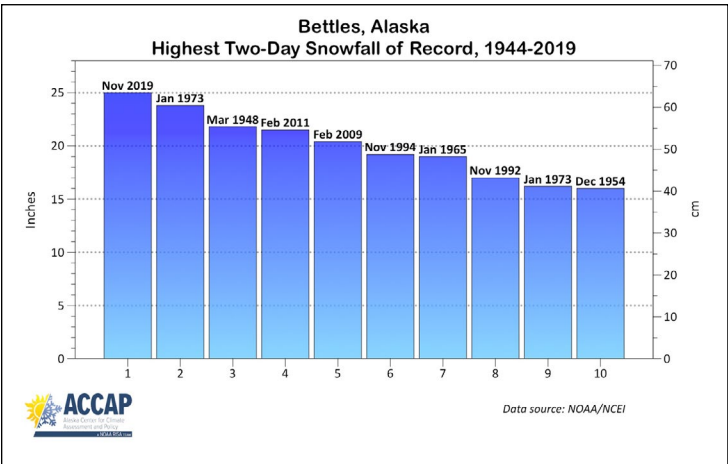


Figure 3. Ten highest 2-day snowfall events at Bettles, 1951-2019. Graphic by Rick Thoman @AlaskaWx.

Statewide Trend in Fall Temperatures

The statewide trend over the past 50 years shows warming over the entire state with the greatest increases in fall temperatures in the central interior, west coast, and north slope regions of Alaska (Figure 4). The decline in sea ice over the past several years has been a factor in the recent statewide warming trend.

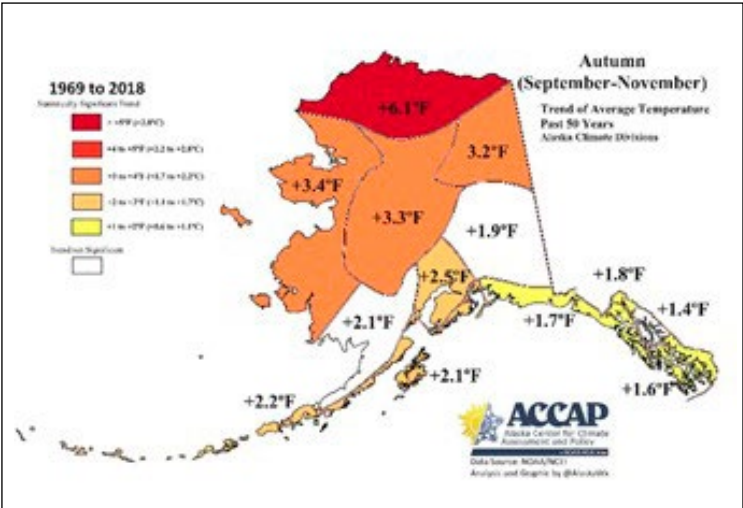


Figure 4. Fall temperature trends over the past 50 years across Alaska. Analysis and graphic by Rick Thoman @AlaskaWx.

More Information

Pam.Sousanes@nps.gov;
ph 907-455-0677

Kenneth.Hill@nps.gov;
ph 907-455-0678

[Current Weather in Gates of the Arctic](#)

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

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](#)