



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

Anaktuvuk River, Gates of the Arctic National Park and Preserve. NPS photo, Ken Hill.

Bettles Spring Weather 2019

Spring Highlights: Second warmest spring on record. March was much warmer and much snowier than normal. The average spring temperature was 6.5°F warmer than normal at 30.6°F. 2019 was the second warmest spring on record following 1998 at 31.5°F with records going back to 1951. The snowfall total for the spring (Mar-Apr-May) was 32 inches, normal is 17 inches. Total precipitation (including rain and melted snow) was 3.07 inches, which is 149% of normal.

The total snowfall for 2018-2019 was 162 inches (July 1 - June 30), the second snowiest season on record for Bettles. This was not far behind the 171 inches that fell during 1992-1993, the snowiest season on record (Figures 1 and 2; Tables 1, 2, and 3).

March was the warmest on record in Bettles. Statewide it was also the warmest March on record. On St. Patrick's Day (March 17) the high temperature reached 40°F, a new daily record high. The average temperature for the month was 18.2°F, compared to a normal of 4.4°F. Just over 22 inches of snow fell during the month, 13 inches more than normal and ranking as the 7th snowiest March on record. The daily high temperatures were above freezing for the last 10 days of March, averaging about 16 °F warmer than normal.

Temperatures, although warmer than normal, were at least closer to normal in April. April temperatures averaged 3.5°F warmer than normal. A new record high temperature was set on April 1 at 46°F. Normally we would expect about 6 inches of snow in April this year 9 inches fell over the course of the month. The melted snow accounted for 0.50 inches of water, which is ~83% of normal.

May was warmer than normal by 2.5°F with an average monthly temperature of 46.7°F. On May 1 there was 33 inches of snow on the ground; it took another 21 days for that snowpack to melt-out for the season. The first snow free date of 2019 was May 21, the latest melt-out date since the spring of 2013. The average melt-out date in Bettles is May 11.

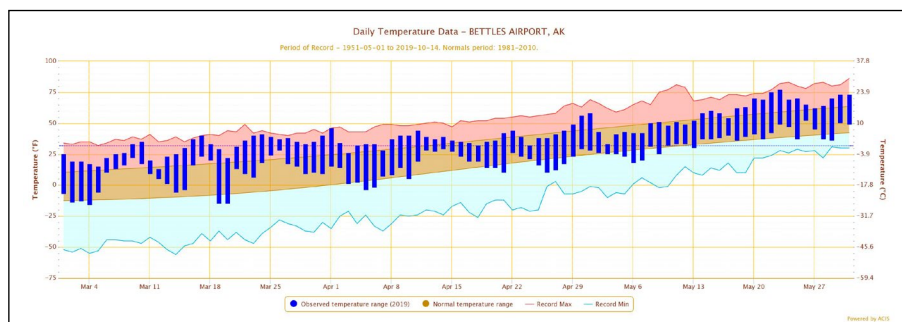


Figure 1 (top left). Spring 2019 daily temperatures at Bettles showing record maximum (red), record minimum (blue), normal (brown) and 2019 observed range (blue bars). <http://xmacis.rcc-acis.org/>

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

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

Spring 2019	Average Monthly Temp (°F)	1981-2010 Normal (°F)	Departure from Normal (°F)	Monthly High (°F / Date)	Monthly Low (°F / Date)
March*	18.2	4.4	+13.8	41 / Mar 24	-16 / Mar 4
April	26.8	23.3	+3.5	56 / Apr 30	-4 / Apr 5
May	46.7	44.4	+2.3	77 / May 23	18 / May 6

Spring Season Temperature Departure from Normal: +6.5°F. *Warmest on record.

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

Spring 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
March	1.80	0.58	+1.22	0.47 / Mar 12	12
April	0.50	0.60	-0.10	0.09 / 17, 20, 23	10
May	0.77	0.88	-0.11	0.14 / May 27	14

Spring Season Precipitation Departure from Normal: +1.01 inches (149% of normal).

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

Spring 2019	Total Monthly Snowfall (in.)	1981-2010 Normal (in.)	Departure from Normal (in.)	Greatest 24-hr snowfall total (in. / Date)	Cumulative snow-fall since 1-July in.
March	22.3	9.3	+13.0	5.9 / Mar 12	130.6
April	9.0	6.3	+2.7	1.9 / Apr 20	152.9
May	0.4	1.3	-0.9	0.4 / May 3	161.9

State of the Climate – Spring 2019

The recent increase in Alaska annual average temperatures is alarming. Each of the last 5 years is among the warmest (Figure 3).

We are breaking temperature records left and right; this spring March 2019 ranked as record warmest over most of the state. A major factor influencing Alaska temperatures is the warmer than normal ocean temperatures off the coast of Alaska and lack of sea ice.

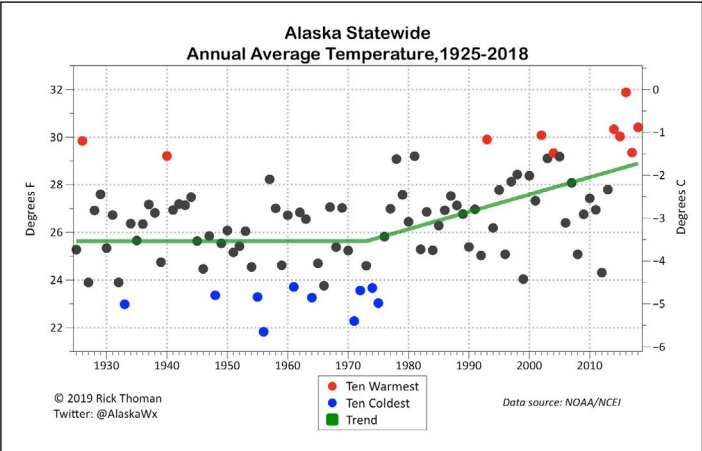


Figure 3. Alaska statewide temperatures. Graph courtesy of Rick Thoman ACCAP (<https://accap.uaf.edu/>).

Spring Temperatures and Snow in the Park

Spring 2019 was either the warmest or second warmest spring since 2012 at the park weather stations.

While the snow depth in Bettles hovered around 41 inches in March, the weather station above Pamichtuk Lake averaged ~ 9 inches. Photos from the camera on site show that new snow doesn’t stick around long on this ridge above 3,000’ (Figure 4).

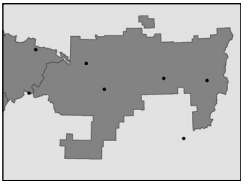


Figure 4. Pamichtuk Lake weather station on March 14 (left) with peak snow for the month (~ 12 in.), and three days later half of that is scoured away by winds (right).

More Information

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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](#)