

Central Alaska Network

National Park Service
U.S. Department of the Interior

Alaska Region
Inventory & Monitoring Program



Denali NP & Pres. • Wrangell-St. Elias NP & Pres. • Yukon-Charley Rivers N Pres.

Spring 2019

Weather & Climate Summary Wrangell-St. Elias National Park & Preserve Spring 2019

NPS photo by Ken Hill.

Gulkana and Yakutat Weather Spring 2019

The long-term climate records from Gulkana and Yakutat allow us to put the spring of 2019 into context.

In Gulkana it was the 2nd warmest spring on record behind 2016. Total precipitation in Gulkana was just above normal for spring of 2019.

In Yakutat it was the 3rd warmest spring behind 2016 and 1981. Precipitation was 78% of normal.

Spring Temperatures

March: In Gulkana, nine new daily record high temperatures were set during the last few weeks of March. It was the 2nd

warmest March on record, behind 1965. In Yakutat, six new daily high temperature records were set and it ranked as the 4th warmest March since records began in 1917. Statewide it was the warmest March on record.

April: Temperatures in April were also above the long-term average, but not quite as far from normal as March. Gulkana was ~4°F warmer than normal, while Yakutat was just under 3°F warmer than normal. There were three new daily high temperature records set in Gulkana and two in Yakutat in April.

May: Gulkana was 2.5°F warmer than normal, while Yakutat was almost 4°F warmer than normal. At 48.4°F, it was the 5th warmest May on record at Yakutat (Figure 1, Table 1).

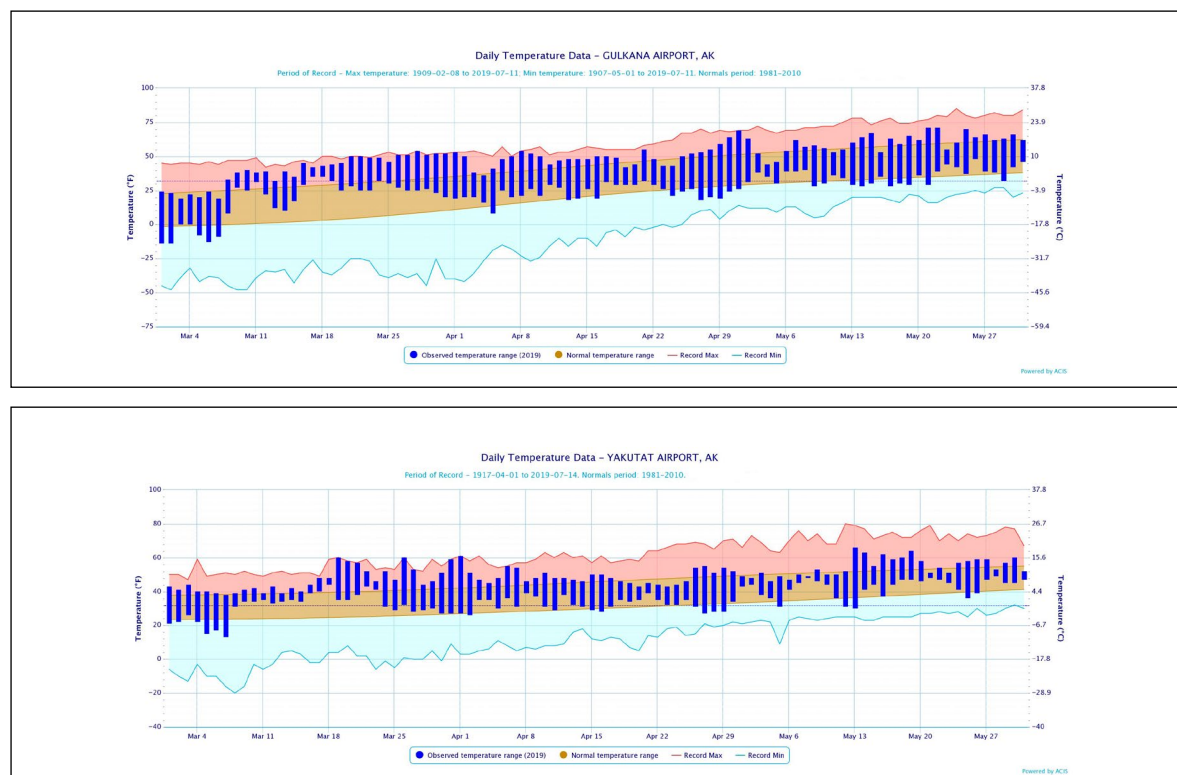


Figure 1. Spring 2019 daily temperatures at Gulkana (top) and Yakutat (bottom) showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars).

Table 1. Temperature: Gulkana and Yakutat (next page) Spring 2019 temperatures compared to 1981-2010 normals.

Gulkana Spring 2019	Average Monthly Temp (°F)	1981-2010 Normal (°F)	Departure from Normal (°F)	Monthly High (°F / Date)	Monthly Low (°F / Date)
March	28.3	15.6	+12.7	54* / Mar 28	-14 / Mar 1,2
April	35.9	31.8	+4.1	64 / Apr 30	8 / Apr 5
May	47.7	45.2	+2.5	71 / May 21, 22	26 / May 1

Spring Season Temperature Departure from Normal: +6.4°F; *Record daily high.

Yakutat Spring 2019	Average Monthly Temp (°F)	1981-2010 Normal (°F)	Departure from Normal (°F)	Monthly High (°F / Date)	Monthly Low (°F / Date)
March	38.5	32.0	+6.5	60* / Mar 19, 26	13 / Mar 7
April	40.6	37.8	+2.8	61* / Apr 1	26 / Apr 2
May	48.4	44.7	+3.7	66 / May 13	30 / May 13

Spring Season Temperature Departure from Normal: +4.3°F; *Record daily high.

Spring Precipitation 2019 in Wrangell-St. Elias

We were disappointed to learn that snow is no longer being measured at the Yakutat Airport site. Another long and valuable climate record that has been discontinued in the state of Alaska. The snowfall and snow depth measurements at Gulkana ended in 1999. Fortunately, liquid precipitation (rain and melted snow) is still being measured at both Yakutat and Gulkana. The snowfall information will be missed.

For Gulkana, spring precipitation was just above normal with most of the surplus coming as May rain with 0.77 inches May 2-3. The total accumulation for the current water year was trending lower than normal until May. The total spring precipitation for Gulkana was 4.43 inches, very close to the expected normal of 4.67 inches.

Total annual precipitation at Yakutat has been trending far below normal since about October of 2018. From October 1 through May 31st a total of 86.17 inches has fallen at Yakutat, normal is 105.67 inches. For the spring season (Mar-Apr-May) Yakutat precipitation was 78% of normal, with April being the driest month, when compared to normal (Figure 2, Table 2).

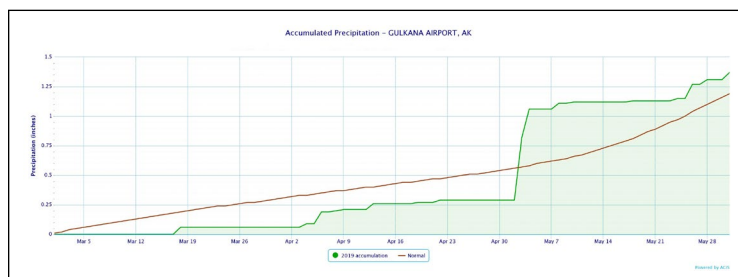


Figure 2. Spring 2019 accumulated precipitation (green) at Gulkana (top) and Yakutat (bottom) compared to normal (brown line).

Table 2. Precipitation: Gulkana (top) and Yakutat (bottom) Spring 2019 precipitation totals compared to 1981-2010 normals.

Gulkana 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	0.06	0.30	-0.24	0.06 / Mar 18	1
April	0.23	0.24	-0.01	0.10 / Apr 6	7
May	1.08	0.65	+0.43	0.53* / May 3	9

Spring Season Departure from Normal: : +0.18 inches (115% of normal). *Record daily high.

Yakutat 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	9.54	11.04	-1.50	1.90 / Mar 18	15
April	6.37	9.19	-2.82	0.81 / Apr 8	18
May	6.36	8.21	-1.85	1.98 / May 8	22

Spring Season Departure from Normal: -6.17 inches (78% off normal).

Climate Monitoring in Wrangell-St. Elias

The NPS climate stations in Wrangell-St. Elias have been collecting climate data for over a decade as part of the Central Alaska Network climate monitoring program. The NPS stations complement long-term records available from the National Weather Service stations in Gulkana and Yakutat.

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 (Figure 4). A major factor influencing Alaska temperatures is the warmer than normal ocean temperatures off the coast of Alaska. As a result of the warmer waters and persistent southerly storm tracks, sea ice extent around Alaska reached record low extents in spring 2019 (Figure 5).

The mountainous regions of Wrangell-St. Elias are also warming. Spring temperatures at the Gates Glacier site in the Wrangell Mountains have been increasing since the first measurement was taken in 2005 (Figure 6).

The snowpack at the Gates Glacier site was not nearly as abundant as last year, but it was similar to 2017. The peak snowpack occurred in late March with 60 inches. The melt-out started in late April and the ground beneath the weather

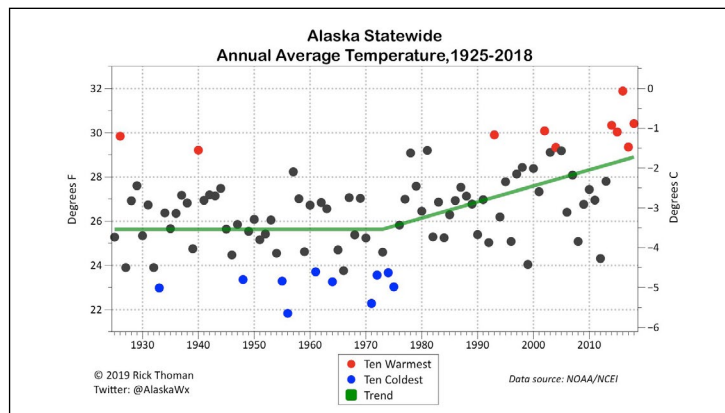


Figure 3. Alaska statewide temperatures. Graph courtesy of Rick Thoman ACCAP (<https://uaf-accap.org/>).

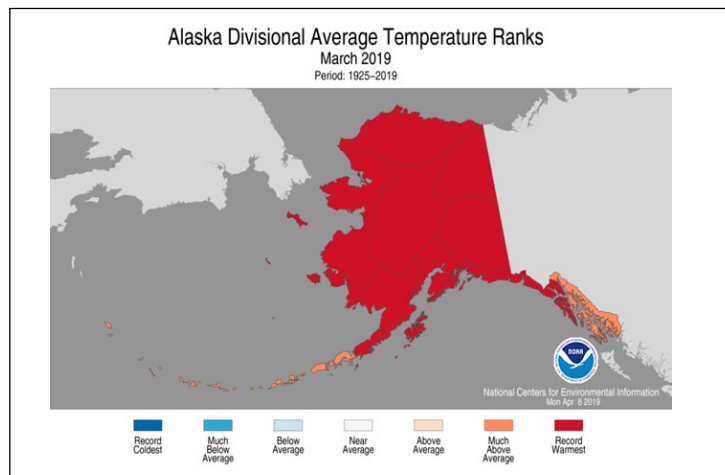


Figure 4. March 2019 ranked as warmest on record for most of Alaska (<https://www.ncdc.noaa.gov/cag/>).

station was snow free on May 27. The melt-out was much earlier than normal on the valley floor. There was no snow at the Chokosna snow survey site on March 30! This has only happened twice during the 26 year record, the other year with 0 inches of snow on March 1 was 2016. The average is 15 inches. The difference between the 2018 melt-out and this year is highlighted in the photos taken at the Wrangell-St. Elias Visitor Center in Copper Center (Figure 7).

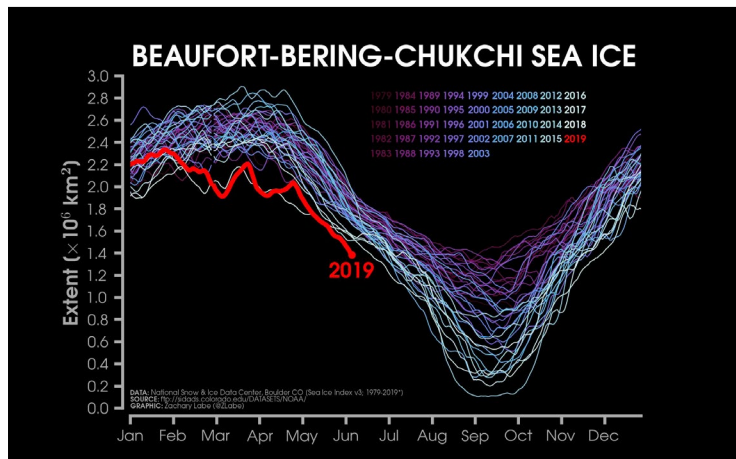


Figure 5. Sea ice extent around Alaska has been at or near record lows for 2019. Graph courtesy of Zach Labe (@ZLabe).

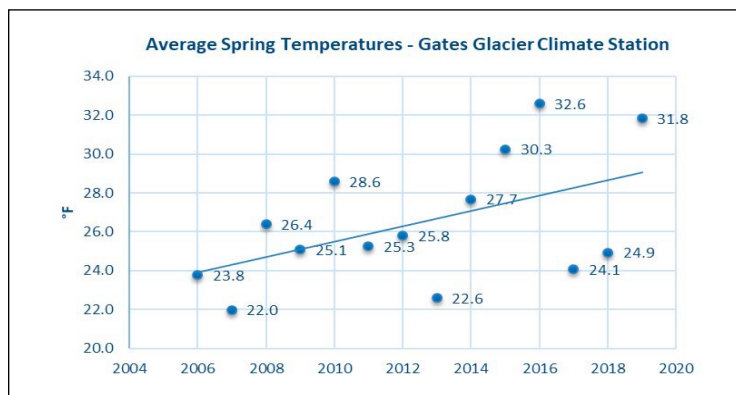


Figure 6. Average spring temperatures at Gates Glacier weather station.



Figure 7. Snow depth at park headquarters in Copper Center on April 5, 2018 (far left) and April 2, 2019 (left). NPS photos courtesy of Jamie Hart.

More Information

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<https://www.nps.gov/im/cakn/index.htm>

Current weather in Wrangell-St. Elias

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](https://www.nps.gov/im/cakn/index.htm)

