

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/Summer 2020

Weather & Climate Summary Yukon-Charley Rivers National Preserve Spring/Summer 2020

Kandik River, Yukon-Charley Rivers Preserve. NPS Photo.

Eagle Spring/Summer Weather 2020

Spring

Overall, spring was cooler and wetter than normal. The average temperature was 0.8°F below the 1981-2010 normal. It was a snowy spring in Eagle with a total of 21.3 inches. The snowy spring was followed by one of the driest Mays on record. Total spring precipitation (melted snow and rain) ended up at 110% of normal.

It was a cold and snowy March. The average monthly temperature was 3.2°F colder than normal. The temperatures bottomed out on March 5 and 6 at -43°F. It was the 3rd wettest March on record with just over 19 inches of snow (with a water equivalent of 1.31 inches). The average temperature for April was 2.1°F cooler than normal. An additional two inches of snow fell during the month and rain was recorded in the latter half of the month. May was warmer than normal and much drier than normal. Two new daily high temperatures were recorded on May 8 (72°F) and May 10 (81°F). May 27 was the only day in May with measurable precipitation. It was the 2nd driest May on record in 92 years. The melt-out date at the Eagle site was ~May 1; only a trace (<1 inch) of snow was recorded from April 24 through April 30.

Table 1. Spring/Summer 2020 average monthly temperatures compared to the 1981-2010 normal. *Note: Italicized values from Eagle Airport.*

Spring/ Summer 2020	Average Monthly Temp (°F)	1981-2010 Normal (°F)	Departure from Normal (°F)
March	4.0	7.2	-3.2
April	26.8	28.9	-2.1
May	49.0	46.1	+2.9
June	55.7	57.9	-2.2
July	56.2	60.4	-4.5
August	54.8	53.6	+1.0

Spring Temperature Departure from normal: -0.8°F

Summer Temperature Departure from normal: -1.9°F

Summer

Summer was cooler and wetter than normal. There were data issues with the Eagle NWS COOP site in summer 2020, so we used the nearby Eagle airport data for comparisons to normal (1998-2020). The average summer temperature was 1.9°F cooler than normal. The summer rainfall total was 8.28 inches, 138% of normal.

June was cool and wet. It was the 2nd wettest June on record (1998-2020) with 3.36 inches, twice as much rain as normal. The second half of the month was particularly wet, there was only one day without measurable rainfall between June 15 and 30. Interestingly, the coolest and wettest part of June was around summer solstice. July was cooler than normal, the third coolest on record (1998-2020). There were 11 days in July where the minimum temperatures were <40°F, the normal daily low temperatures for July are in the 46°F to 49°F range. Although the record is shorter for the Eagle Airport site (dating back to 1998) it was still impressive that there were two record low temperatures for the month on July 3rd (30°F) and July 12 (32°F). July rainfall was close to normal with 2.35 inches. August was 1°F warmer than normal and wetter than normal (124% of normal). See Table 1 and 2; Figure 1 and 2.

Table 2. Spring/Summer 2020 monthly precipitation totals compared to normal. *Note: Italicized values from Eagle Airport.*

Spring/ Summer 2020	Total Monthly Precip. (in.)	1981-2010 Normal (in.)	Departure from Normal (in.)
March	1.31	0.38	+0.93
April	0.56	0.26	+0.30
May	0.04	1.10	-1.06
June	3.36	1.64	+1.72
July	2.35	2.43	+0.10
August	2.39	1.92	+0.47

Spring Precipitation Departure from normal: +0.17 in. (109%)

Summer Precipitation Departure from normal: +2.29 in. (138%)

Note: For the seasonal graphs we used the Eagle NWS COOP site for spring and the Eagle Airport site for summer. Unfortunately, the airport site does not record snowfall and had many missing values in spring and the NWS COOP site had data issues in summer. So, the best possible data summary required the use of both sites.

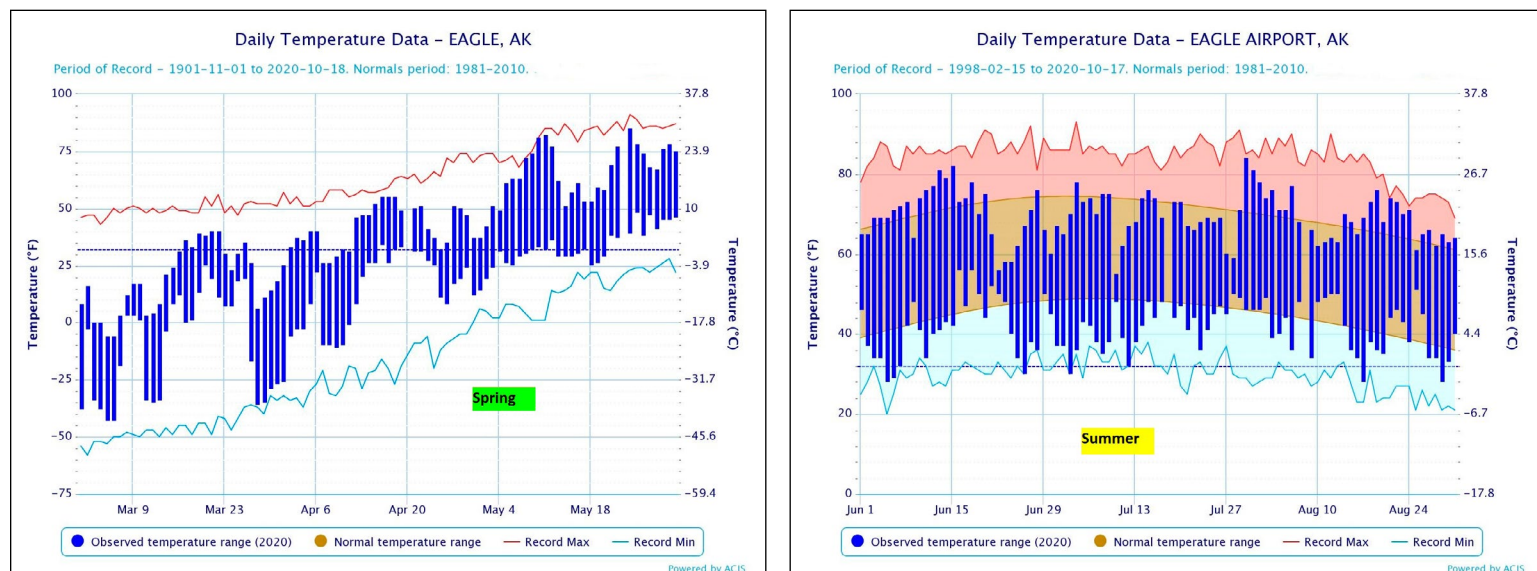


Figure 1. Graph on left: Spring (Mar 1-May 31) daily temperatures at Eagle NWS COOP site (1901-2020). Graph on right: Summer (Jun 1 – Aug 31) daily temperatures at Eagle Airport (1998-2020) showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars).

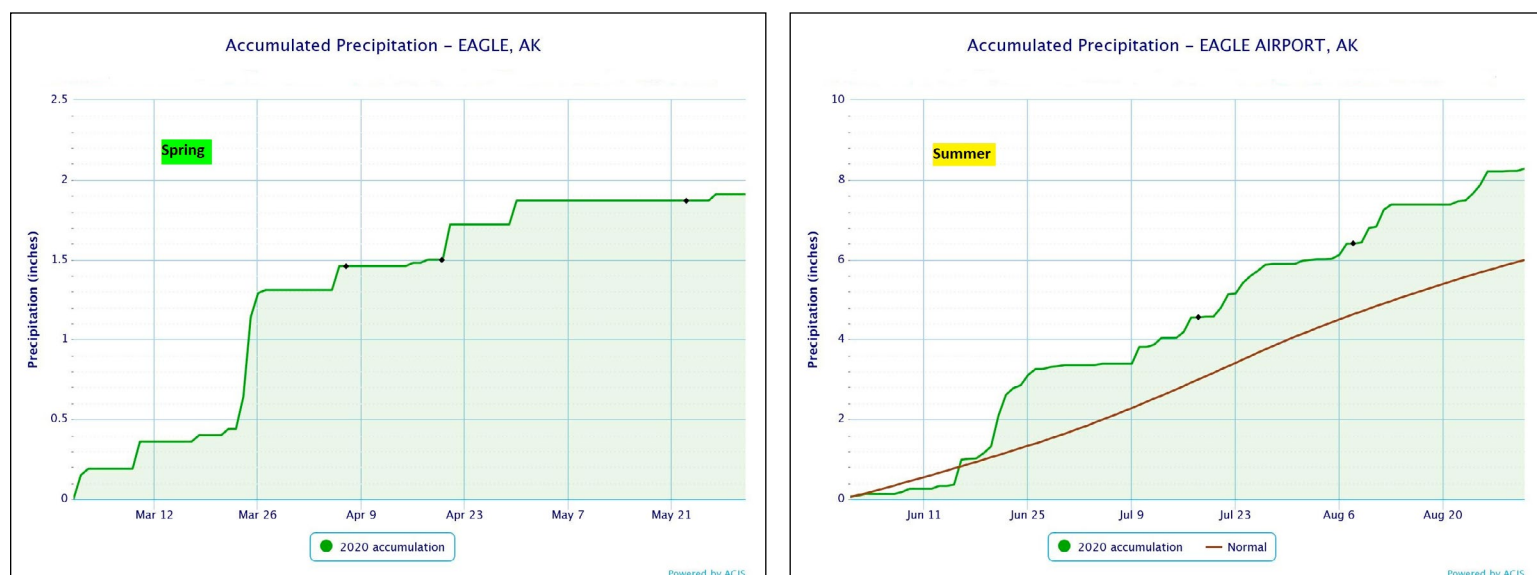


Figure 2. Graph on left: Spring 2020 accumulated precipitation at the NWS Eagle COOP site (green). Graph on right: Summer 2020 accumulated precipitation at the Eagle Airport site (green) compared to normal (brown line).



Cathedral Creek, Yukon-Charley Rivers National Preserve. NPS Photo.

Spring Snow in Yukon-Charley Rivers

We measure daily snow depth at the Upper Charley and Coal Creek weather stations in Yukon-Charley Rivers National Preserve. For the 2019-2020 season, the snow depth peaked at 22 inches on March 19 at the Upper Charley site. The wind is constantly sculpting and shifting any snow that falls at this treeline site (Figure 3).

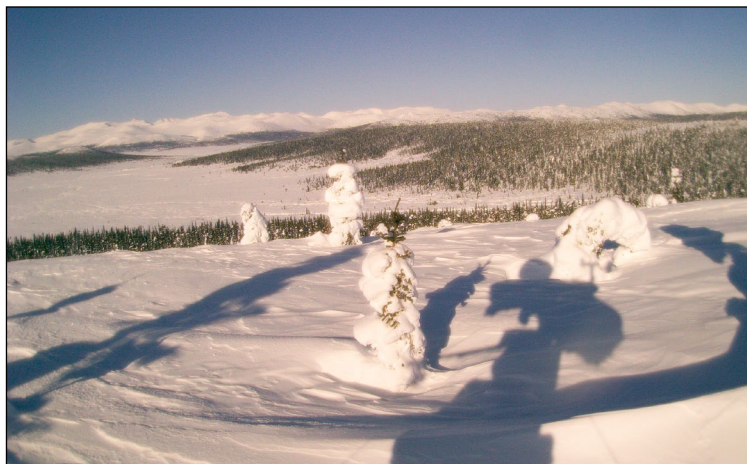


Figure 3. Sculpted snow at the Upper Charley weather station in Yukon-Charley Rivers NP, March 2020. Image from the phenology camera on site.

In contrast, the Coal Creek site is in a forested valley where the spring winds in 2020 were calm more than 45% of the time and the average wind speed was <2 mph. Peak snow for the season was 33 inches on March 26. During the April 1 snow survey at Coal Creek there was 30 inches of snow on the ground with a snow water equivalent (SWE) of 5.5 inches – this was the deepest snowpack and highest SWE recorded at this site to date (2007-2020). Figure 4 shows the snowpack development at both sites for the 2019-2020 season.

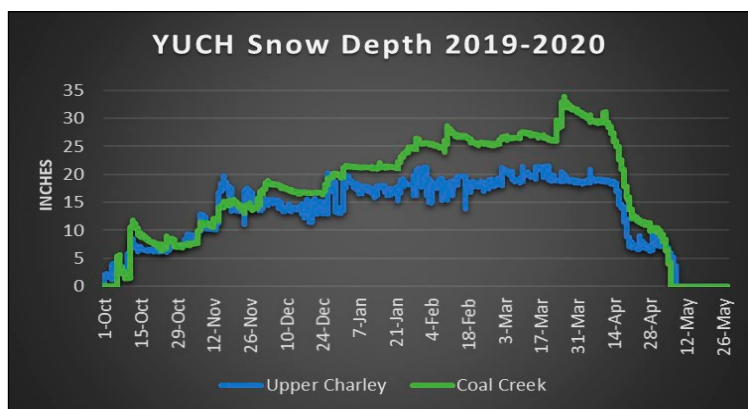


Figure 4. Snow depth at Upper Charley (blue line) and Coal Creek (green line) in Yukon-Charley Rivers Preserve, 2019 -2020 season.

Wet Summer in Interior Alaska

The northeast interior of Alaska is one of the driest regions in the state and most of the annual precipitation falls as rain in summer. Eagle, on average, gets ~6 inches of summer rain. Summer of 2020 was wetter than normal for most of the eastern central interior region, including the Coal Creek and Upper Charley sites in Yukon-Charley Rivers NP. It was the

(Wet Summer..., continued) wettest summer to date at Upper Charley with a total of 9.45 inches captured in the rain gauge. June was the wettest month of the summer with 4.35 inches, followed by August with 3.09 inches. It was the third wettest summer at Coal Creek behind 2019 and 2011 with 8.50 inches.

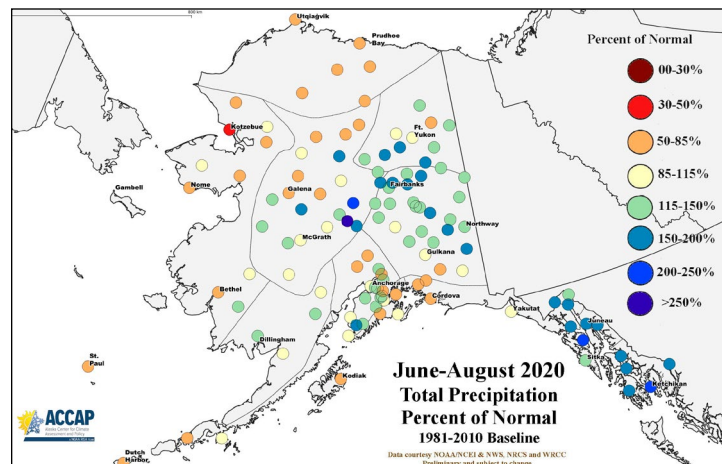


Figure 5. Summer 2020 precipitation across Alaska. Graph courtesy of ACCAP <https://uaf-accap.org/>.

Cooler Summer Temperatures

The average summer temperature at Coal Creek was 55.5°F, two degrees cooler than the 16-year average (2005-2020) and the coolest it has been since 2008. Chilly in comparison to last year when the summer season was ~3°F warmer (Figure 6).

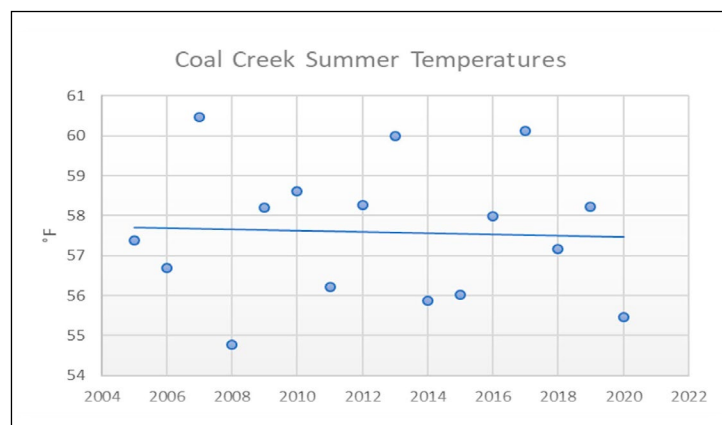


Figure 6. Average summer temperatures at Coal Creek 2005-2020.

More Information

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Current Weather in Yukon-Charley Rivers

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

