



Weather & Climate Summary Western Arctic Parklands Fall 2019

Kotzebue Fall Weather 2019

Highlights: It was the 8th warmest and 11th wettest fall season (September-November) since continuous records began in 1935. Chukchi Sea ice extent was the lowest of the satellite record (1979-) as of the end of the fall season. November marks the 27th consecutive month with above normal temperatures in Kotzebue. See Figures 1 and 2; Table 1 and 2.

September 2019 had an average temperature of 46.1°F, 3.8°F warmer than normal. The first two weeks were warmer than normal with a monthly high of 61°F on the 12th. Temperatures were near or below normal the 16th to the 26th before a wet finish to the month and over an inch of rain the last five days of September. Total monthly precipitation was 2.16 inches, 137% of average.

With no ice in the Chukchi Sea, Kotzebue temperatures remained moderate through October. Every day of the month was warmer than normal with the strongest anomalies during the last week. Highs of 40°F on both the 27th and 28th were daily records. Overall, October was 6.6°F above average making it the 8th warmest October on record. Warm, southerly flow the first and last weeks of the month provided most of the precipitation in October. Overall, precipitation was 147% of normal with 1.48 inches. The first snowfall didn't occur until October 26. Total snowfall was 3.7 inches; normal is 6.1 inches. At the end of the month, the Chukchi Sea ice extent was the lowest of record (Figure 3).

November temperatures were more variable and cold temperatures mid-month allowed ice to rapidly form in the Chukchi Sea and Kotzebue Sound. The low temperature for the month was -1°F on the 18th and 25th. Precipitation was

Musk Oxen, Noatak National Preserve. NPS photo, Doug Demarest.

just above normal with 0.74 inches. Most of that came in a powerful storm on the 26th with east winds gusting to 56 mph, a high of 32°F and 0.47 inches of precipitation.

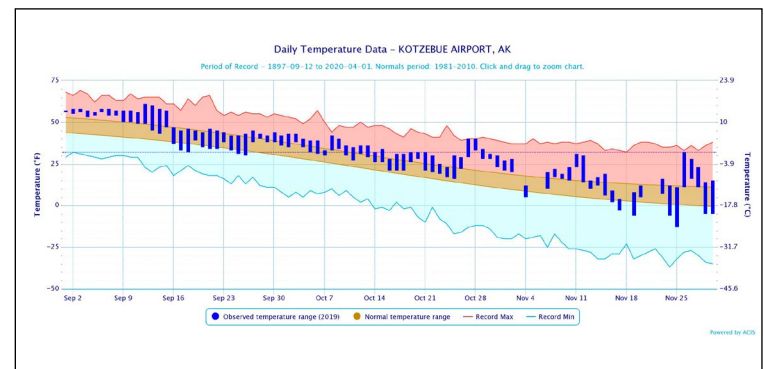


Figure 1. Fall 2019 daily temperatures at Kotzebue showing record maximum (red), record minimum (blue), normal (brown) and 2019 observed range (blue bars). <http://xmacis.rcc-acis.org/>

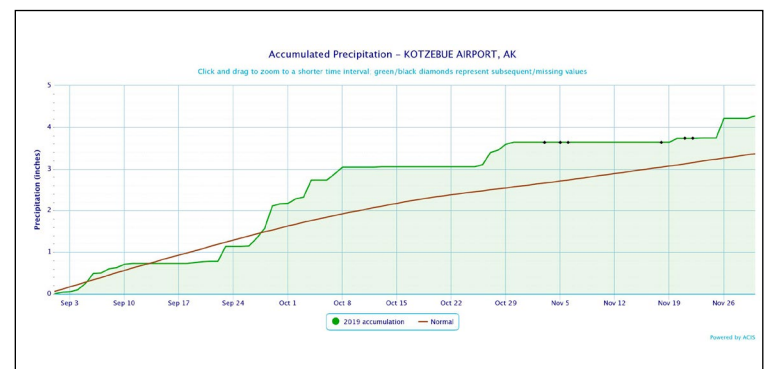


Figure 2. Fall 2019 accumulated precipitation (green) at Kotzebue compared to normal (brown line). <http://xmacis.rcc-acis.org/>

Table 1. Kotzebue 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*	46.1	42.3	+3.8	55 / Sep. 12	36.5 / Sep. 26, 27
October	30.9	24.3	+6.6	40.5 / Oct. 3	20 / Oct. 24
November	12.5	9.1	+3.4	27 / Nov. 11	-1 / Nov. 18, 25

Fall Season Temperature Departure from Normal: +4.6°F. *September 1-9 data corrected by -4.0 F due to faulty sensor.

Table 2. Kotzebue 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	2.16	1.58	+0.58	0.54 / Sep. 29	19
October	1.48	1.01	+0.47	0.41 / Oct. 4	12
November	0.74	0.63	+0.11	0.47 / Nov. 26	6

Fall Season Precipitation Departure from Normal: +1.16 (136% of normal).

Sea Ice

Arctic sea ice had another rough year coming in at the second lowest extent arctic-wide (satellite records began in 1979). Regionally, the combined Chukchi plus Beaufort ice extent was the 4th lowest on record. Despite rapid growth as temperatures cooled in mid-November, a warm storm with south winds halted sea ice growth in the Chukchi Sea in late November, and began eating away at the thin, young ice. As of December 1, 2019, Chukchi Sea ice extent was the lowest of record.

Sisiak Wind

The November 26 storm event which rocked Kotzebue and stalled ice growth in the Chukchi Sea (Figure 3) was also recorded at the NPS I&M weather station at Sisiak, 50 miles east of Kelly Ranger Station on the Noatak River. The gust of 62 mph on the 26th was the second highest gust recorded at the site since 2012 (Figure 4). The max gust in Kotzebue during the event was 53 mph.

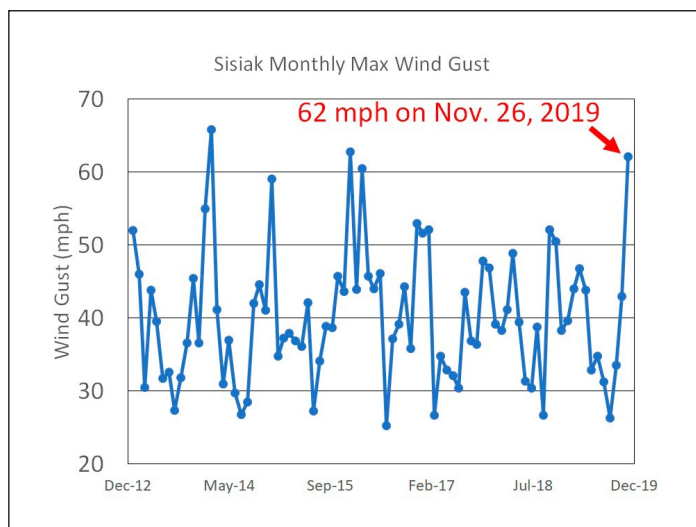


Figure 4. Maximum monthly wind gust at Sisiak climate station 2013-2019.

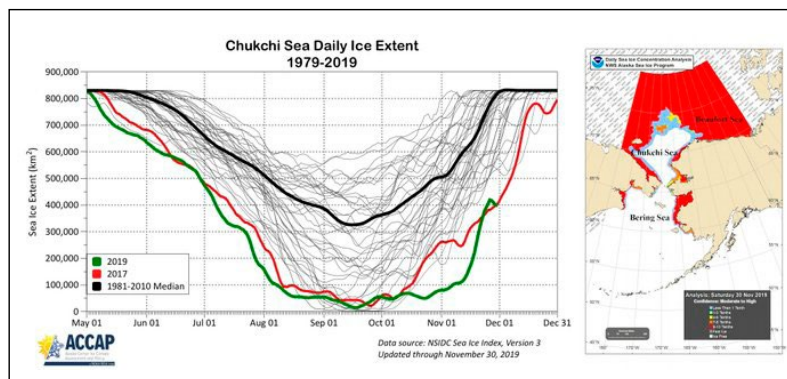


Figure 3. Chukchi Sea daily ice extent. Figure courtesy Rick Thoman/ACCAP.

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

