



Weather & Climate Summary Western Arctic Parklands Summer 2018

Kotzebue Summer Weather 2018

Summer 2018 tied (with 2016) as the 2nd warmest summer on record in Kotzebue with a seasonal average temperature of 55.0°F, which is 4.3°F warmer than normal. The precipitation total for the summer was normal with a total of 4.27 inches.

June 2018 was the 2nd warmest on record. Out of the ten warmest Junes on record, eight have occurred in the last 15 years. The mean monthly temperature was 52.9°F. Normal is 45.7°F. Temperatures were the warmest during the beginning of the month with daily anomalies 8°F to 16°F warmer than normal. The high temperature for the month topped out at 70°F on the solstice. Precipitation was near-normal in June with 0.63 inches, most of which fell mid-month. Normal June rainfall is 0.58 inches.

July was warmer and wetter than normal. The average monthly temperature of 58.5°F was 3.9°F warmer than the 1981-2010 normal and ranked as the 10th warmest on record. The end of the month was the warmest period with high temperatures of 72°F on July 29 and 31. Precipitation for the month was above normal with 1.89 inches for the month, 130% of normal. The most significant rain event was on July 10 with 0.86 inches, a daily record.

Temperatures cooled off in the first week of August with highs in the 50s and occasional light rain. The average temperature for the month ended up at 53.5°F, 1.8°F warmer than normal. Heavy rain on the 1st (0.85 inches) and the 24th-26th (0.69 inches) made up most of the 1.75 inches of total precipitation in August. Overall, the month was 80% of normal for precipitation (Figures 1 and 2; Tables 1 and 2).

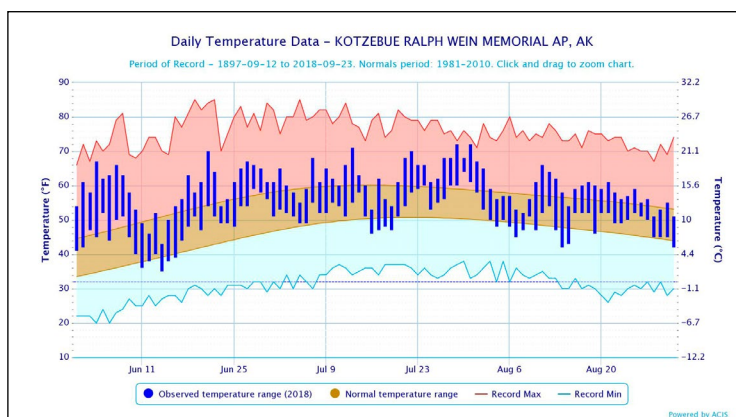


Figure 1. Summer 2018 daily temperatures at Kotzebue showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars).

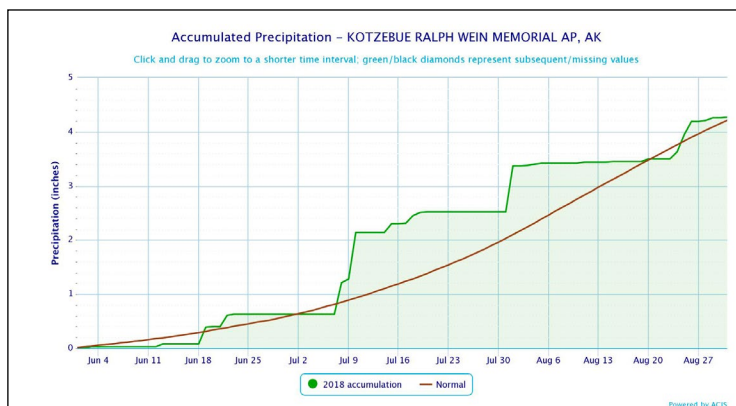


Figure 2. Summer 2018 accumulated precipitation at Kotzebue (green) compared to normal (brown line).

Table 1. Temperature: Summer 2018 average monthly temperatures compared to the 1981-2010 normal.

Summer 2018	Average Monthly Temp (°F)	1981-2010 Normal (°F)	Departure from Normal (°F)	Monthly High (°F / Date)	Monthly Low (°F / Date)
June	52.9	45.7	+7.2	70 / June 21	35 / June 14
July	58.5	54.6	+3.9	72 / July 29 & 31	46 / July 16
August	53.5	51.7	+1.8	67 / Aug 1	42 / Aug 14 & 31

Summer Season Temperature Departure from Normal: +4.3°F.

Table 2. Precipitation: Summer 2018 monthly precipitation totals compared to normal.

Summer 2018	Total Monthly Precip. (in.)	1981-2010 Normal (in.)	Departure from Normal (in.)	Greatest 24 -hr. total (in. / Date)	# Days with ≥ 0.01 in. water
June	0.63	0.58	+0.05	0.31 / June 19	6
July	1.89	1.45	+0.44	0.86 / July 10*	8
August	1.75	2.18	-0.43	0.85 / Aug 1	13

Summer Season Precipitation Departure from Normal: +0.06 inches (101% of normal); *Daily Record.

What About the Ocean?

Summer ocean surface temperatures in waters surrounding the Seward Peninsula were more than 4°C above normal and the warmest on record dating back to 1901 (Figure 4). Zooming out, sea surface temperatures in the Central and Eastern Bering Sea region were also much warmer than normal. Nine of the ten warmest summers have occurred in the last two decades (Figure 5). Arctic-wide, the annual sea ice minimum occurred in September 2018 and ranks as the 6th lowest in the 39-year satellite record. Researchers are documenting rarely seen species of invertebrates, fish, and marine mammals and fewer individuals for some common marine species in these ocean waters indicating changes throughout the food web. For the third consecutive year, a seabird die-off event has been documented in the northern Bering and southern Chukchi Sea and 2018 marks the seventh mass die-off in Alaska since 2013. Scientists are working hard to understand the linkages between the climate, ocean, and terrestrial ecosystems.

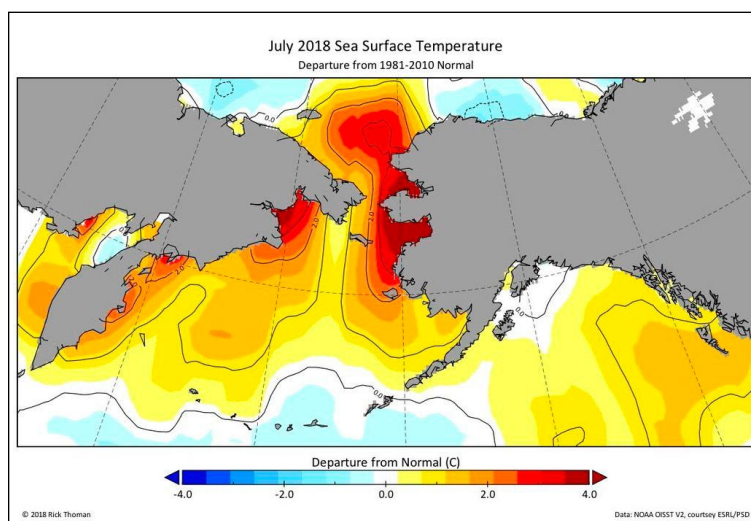


Figure 3. Sea surface temperature departure from normal July 2018. The northern Bering Sea ranked as the warmest summer on record since 1901. Graphic courtesy Rick Thoman, NOAA.

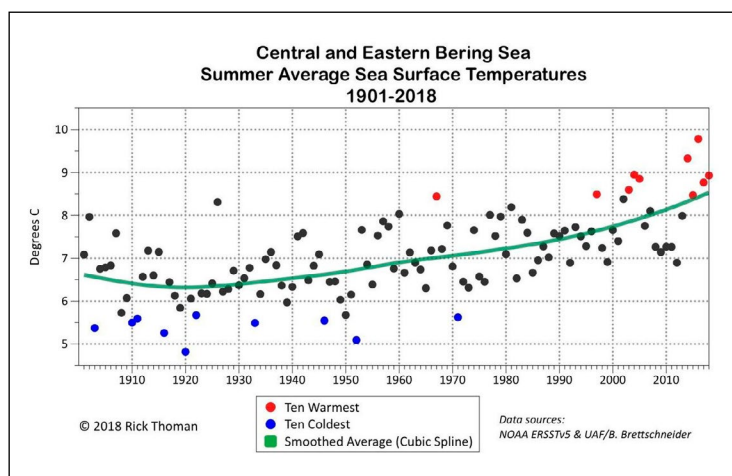


Figure 4. Summer sea surface temperatures for Central and Eastern Bering Sea, 1901-2018. The ten warmest summers are indicated in red. Graphic courtesy Rick Thoman and Brian Brettschneider, NOAA.

Climate Monitoring in the Western Arctic Parklands

NPS climate stations in the Western Arctic Parklands complement the long-term record from the National Weather Service station in Kotzebue. NPS stations are located at Tahinichok and Mt. Noak in Cape Krusenstern, at Asik, Kugururok, Sisiak, Kaluich, Imelyak, and Howard Pass in Noatak, and at Salmon River in Kobuk Valley.

More Information

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