



Weather & Climate Summary Western Arctic Parklands Fall 2017

Kotzebue Fall 2017 Weather

It was a memorable fall in northwest Alaska with warm temperatures, impressive snowfall, and record low sea ice extent (1979-2017) in the Chukchi Sea. This year tied with 2016 for the 3rd warmest fall on record in Kotzebue. The seasonal average temperature of 30.3°F was 5.1°F warmer than normal. It was also the 3rd wettest fall on record with 6.15 inches of precipitation for September through November. With a cumulative total of 40.4 inches of snowfall for the autumn season, 2017 ranked as the 2nd snowiest. Climate data recording began as early as 1897 in Kotzebue, but between 1897 and 1948 most years have extensive periods of missing data.

September was near-normal for both temperature and precipitation. The average monthly temperature was 43.2°F, normal is 42.3°F. The high temperature for the month was 59°F on September 5. Precipitation was about normal for the month with a total of 1.62 inches, normal is 1.58 inches. Almost all of the precipitation fell during the first two weeks of the month. Only a trace of snowfall was recorded on the 29th.

October was warmer and wetter than normal. The average monthly temperature of 29.9°F was 5.6°F warmer than the 1981-2010 normal. October 2017 ranks as the 10th warmest on record and out of the ten warmest October's on record, seven have occurred since 2002. Precipitation for the month was also well above normal with 1.94 inches (192% of normal), ranking as the 5th wettest on record. Snowfall total was 8.6 inches, normal is 6.1 inches.

The first two weeks of November started off warm with maximum temperatures at or above freezing on many days. Temperatures remained above normal until the last week of the month. The average temperature for November was 17.9°F, the 5th warmest on record. Normal is only 9.1°F. It was the wettest November on record with 2.59 inches of precipitation (liquid

equivalent) recorded and 31.8 inches of snowfall. On the 21st, 10.8 inches of new snowfall was measured (daily record). (Figures 1 and 2; Tables 1, 2, and 3).

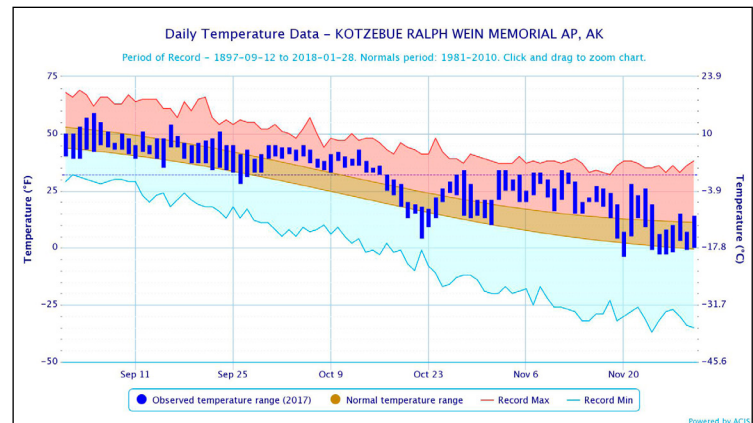


Figure 1. Fall 2017 daily temperatures at Kotzebue showing record maximum (red), record minimum (blue), normal (brown) and observed range (blue bars).

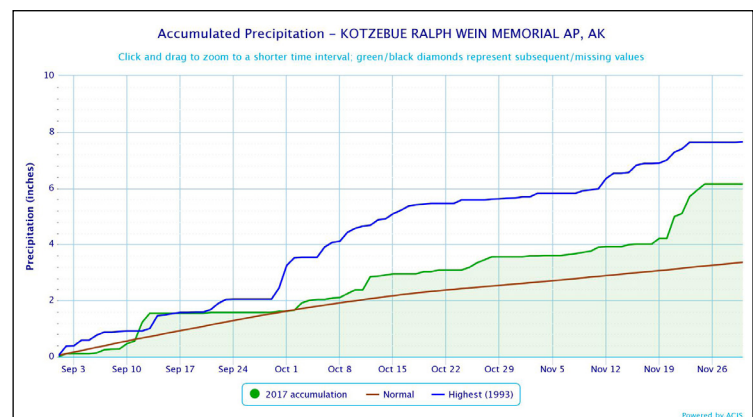


Figure 2. Fall 2017 accumulated precipitation at Kotzebue (green) compared to normal (brown line). The solid blue line shows the year which recorded the highest amount of precipitation for the season (Fall 1993).

Table 1. Kotzebue Temperature: Fall 2017 average monthly temperatures compared to the 1981-2010 normal.

Fall 2017	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
September	43.2	42.3	+0.9	59 / Sept. 5	28 / Sept. 26
October	29.9	24.3	+5.6	45 / Oct. 1 & 5	4 / Oct. 22
November	17.9	9.1	+8.8	34 / Nov. 2, 3, 11	-4 / Nov. 20

Fall Season Temperature Departure from Normal: +5.1°F.

Table 2. Kotzebue Precipitation: Fall 2017 monthly precipitation totals compared to normal.

Fall 2017	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	1.62	1.58	+0.04	0.67 / Sept. 12	12
October	1.94	1.01	+0.93	0.47 / Oct. 12	18
November	2.59	0.77	+1.82	0.78 / Nov. 21	16

Fall Season Precipitation Departure from Normal: +2.79 inches (183% of normal).

Table 3. Kotzebue Snowfall: Fall 2017 monthly snowfall totals compared to normal.

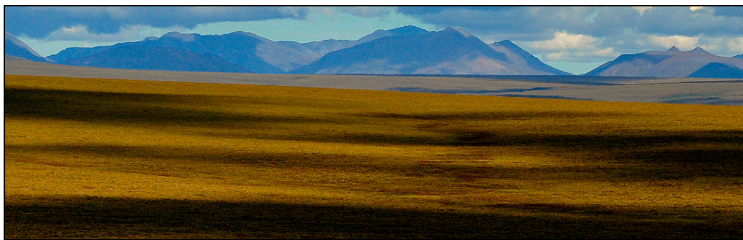
Fall 2017	Total Monthly Snowfall in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 -hr. snow-fall total in. / Date	Cumulative snowfall since 1-July in.
September	Trace	0.8	-0.8	Trace / Sept. 29	Trace
October	8.6	6.1	+2.5	2.0 / Oct. 26	8.6
November	31.8	10.5	+21.3	10.8 / Nov. 21	40.4

Climate Monitoring in the Western Arctic Parklands

The NPS Arctic Network 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 (Figure 3).



Figure 3. NPS Climate Stations in Western Arctic Parklands.



Record Low Ice Extent in Chukchi Sea

Sea ice extent in the Chukchi Sea at the end of November was the lowest on record based on satellite observations (1979-2017). Warm water from the Bering Sea funneled through the strait and into the Chukchi Sea in early summer 2017. This warm water persisted into the autumn, and combined with regular southwest winds, formation of new ice was sluggish. The lack of ice during the stormy autumn months led to coastal floods and erosion along many parts of the coast. Damage was recorded in Utqiagvik, Shishmaref, Norton Sound and several communities on the Kuskokwim Delta. For the Arctic as a whole, sea ice extent was the third lowest on record (Figure 4).

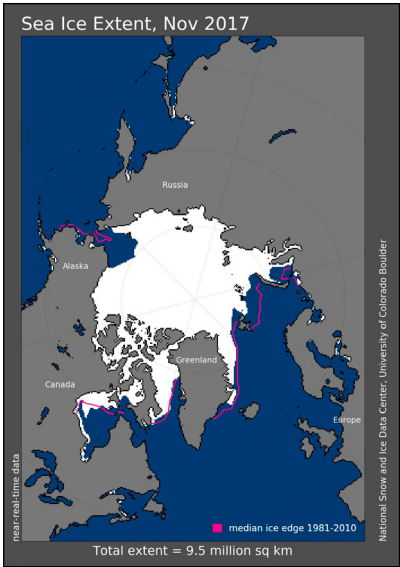


Figure 4. Arctic Sea Ice Extent, Nov. 2017.

Source: <http://nsidc.org/arcticseaicenews/2017/12/>

More Information

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