Alaska Statewide Climate Summary
February 2019

The following report provides an overview of the February 2019 weather. The report is based on preliminary data from selected weather stations throughout the state of Alaska. "Departure from normal" refers to the climatological average over the 1981-2010 period.

Temperature

February 2019 was an extremely warm month in the western and northern parts of the states and comparatively cool in the southeast. At an impressive 18.7°F above normal, Utqiaġvik recorded the highest temperature deviation of the selected stations this month, closely followed by Kotzebue and Bethel at 18.5 and 18.3°F, respectively. Nome, Bettles and King Salmon also recorded monthly deviations more than 10°F above normal. In contrast, Anchorage was close to average, and Talkeetna, Gulkana, Yakutat, Juneau and Ketchikan all recorded cooler than normal temperatures. Ketchikan was coldest, relatively speaking, with a deviation from normal of -6.2°F. Monthly temperature deviations for all stations are listed in Table 1.

Bethel and Cold Bay each set new monthly temperature records. At 29.4°F above normal, February 2019 was over 3°F warmer than February 1989, the previous record holder. In Cold Bay, the February mean this year was 37.8°F, about 1°F warmer than the previous record from 2003. In Kotzebue, this year's February mean ties with 1989 for the warmest February on record. Utqiaġvik saw the second warmest February on record. Ketchikan on the other hand recorded the coolest February since 1936 and set a new daily low record on February 4th for mean and minimum temperature. All other daily temperatures set this month were high records and are listed in Table 2.

Figure 2 shows temperature deviations at all of the selected stations for each day of the month. The contrast between predominantly cool temperatures especially in Juneau and Ketchikan, and very consistent positive deviations at the northern and western stations is clearly apparent. Stations in the South Central region (e.g. Anchorage, Talkeetna, Yakutat) show a mix of warmer and cooler than normal, forming a kind of transition zone between the cool Southeast and the unusually warm North and West. All days of the month were warmer than normal in St. Paul Island, Bethel, and Cold Bay.

Table 1: Mean monthly air temperature, normal (1981-2010) and departure for selected stations throughout the state, February 2019, preliminary values.

Station	Observed (°F)	Normal (°F)	Departure (°F)
Anchorage	20.8	20.2	0.6
Bethel	29.4	11.0	18.3
Bettles	5.0	-5.0	10.0
Cold Bay	37.8	29.0	8.8

Delta Junction	8.1	4.9	3.2
Fairbanks	5.5	-1.3	6.8
Gulkana	2.8	5.5	-2.6
Homer	31.4	26.3	5.2
Juneau	24.1	30.1	-6.0
Ketchikan	29.6	35.8	-6.2
King Salmon	31.4	18.9	12.3
Kodiak	35.4	30.8	4.6
Kotzebue	17.7	-0.8	18.4
McGrath	11.2	1.4	9.8
Nome	21.1	7.4	13.7
St. Paul Island	34.0	24.4	9.6
Talkeetna	14.6	18.1	-3.6
Utqiaġvik	4.5	-14.2	18.7
Yakutat	28.7	29.6	-0.9

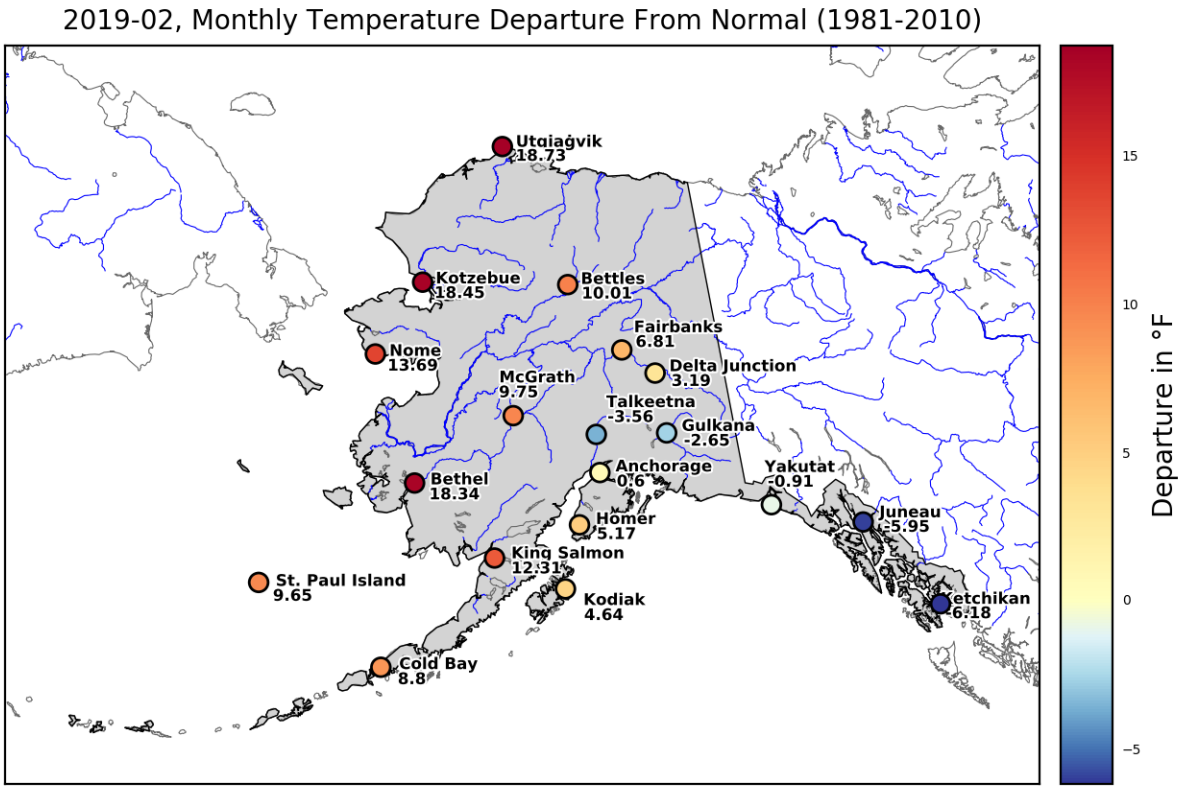

Figure 1: Monthly mean temperature departure from normal, February 2019.

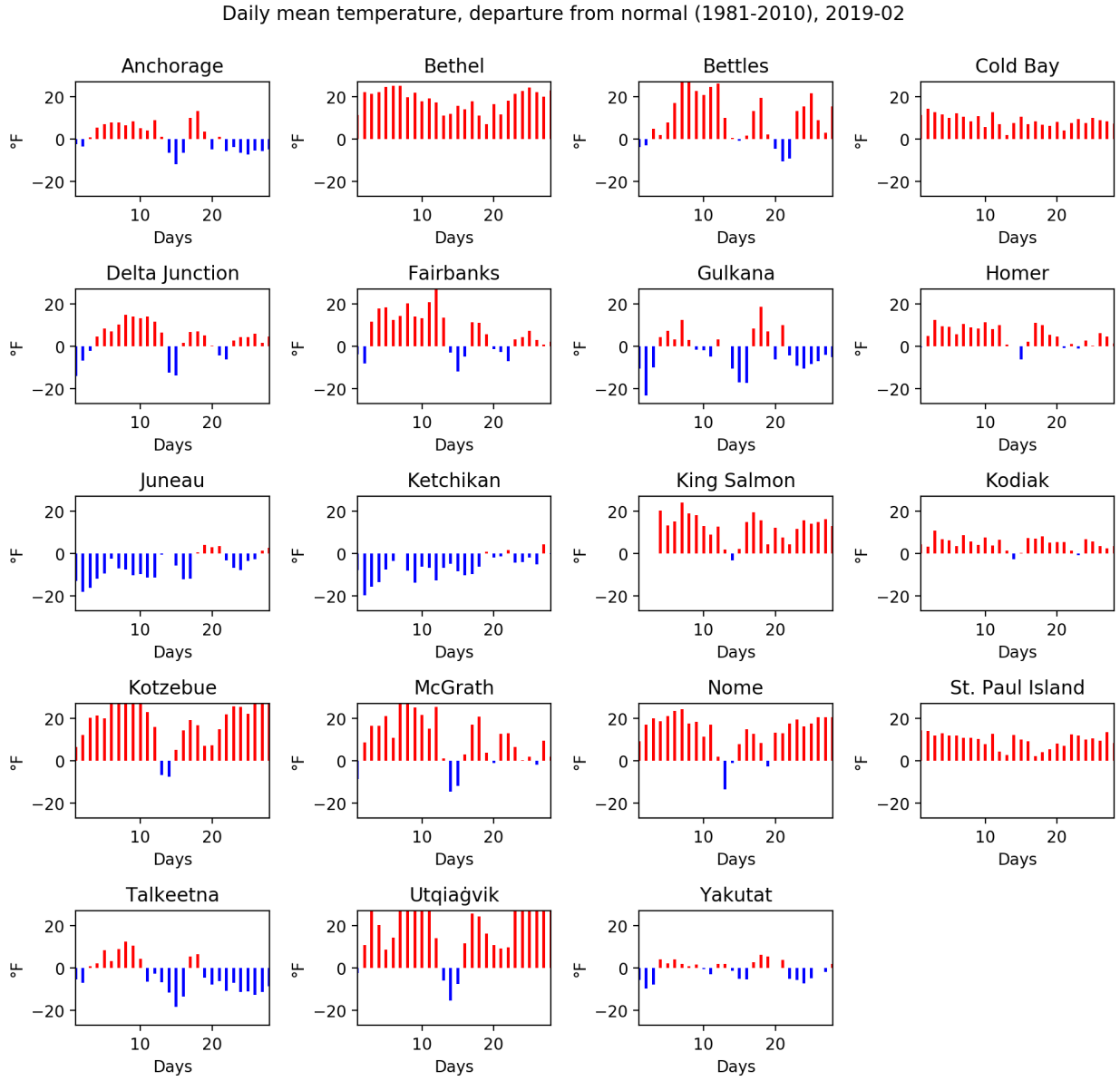

Figure 2: Daily mean temperature departures for each day in February 2019, at the selected stations.

Table 2: Daily temperature records, February 2019, since the beginning of the respective time series. avgt = daily mean temperature, mint = daily minimum temperature, maxt = daily maximum temperature.

Station	Date	Element	New Record	Year of old record	Old record
High records					
Bethel	2019/02/28	maxt	42	1938	41
Bettles	2019/02/08	maxt	34	1989	32
Cold Bay	2019/02/02	avgt	42.5	1982	41
Cold Bay	2019/02/03	avgt	41	1988	39.5
Cold Bay	2019/02/11	avgt	41.5	1966	40.5
Cold Bay	2019/02/15	avgt	39.5	1956	38.5
Cold Bay	2019/02/11	maxt	48	1966	46
Cold Bay	2019/02/15	maxt	46	1956	43
Cold Bay	2019/02/02	mint	40	1982	39
Cold Bay	2019/02/03	mint	39	1988	38
Kotzebue	2019/02/09	avgt	27.5	1989	26.5
Kotzebue	2019/02/09	maxt	35	2011	32
Kotzebue	2019/02/28	maxt	38	1943	35
Kotzebue	2019/02/26	mint	26	1981	24
McGrath	2019/02/08	maxt	42	2003	40
St. Paul Island	2019/02/01	avgt	38.5	1985	37.5
St. Paul Island	2019/02/02	avgt	38	1978	37.5
St. Paul Island	2019/02/11	avgt	37	1959	36
St. Paul Island	2019/02/27	avgt	38	1978	36.5
St. Paul Island	2019/02/02	maxt	41	1978	39
St. Paul Island	2019/02/11	maxt	41	1959	39
St. Paul Island	2019/02/23	maxt	41	1989	39
St. Paul Island	2019/02/27	maxt	42	1951	38
St. Paul Island	2019/02/28	maxt	40	1952	39
Utqiaġvik	2019/02/10	avgt	22.5	1923	16
Utqiaġvik	2019/02/23	avgt	18.5	2009	14.5
Utqiaġvik	2019/02/24	avgt	25	2011	19
Utqiaġvik	2019/02/08	maxt	33	1982	32
Utqiaġvik	2019/02/10	maxt	28	1989	26
Utqiaġvik	2019/02/11	maxt	28	1923	27
Utqiaġvik	2019/02/23	maxt	27	1917	26
Utqiaġvik	2019/02/24	maxt	30	2011	29
Utqiaġvik	2019/02/28	maxt	34	1960	32

Utqiaġvik	2019/02/10	mint	17	1986	12
Utqiaġvik	2019/02/23	mint	10	1903	5
Utqiaġvik	2019/02/24	mint	20	2011	9
Low records					
Ketchikan	2019/02/04	avgt	22	1938	23.5
Ketchikan	2019/02/04	maxt	28	1989	31

Precipitation

As with temperature, there was a split between the North and West and the southern and southeastern parts of the state in terms of February precipitation: The Panhandle and central coast of the Gulf of Alaska saw unusually dry conditions, the South Central region was close to average, and the North and West were wetter than normal, in some cases significantly so (see Table 3, Figure 3.)

At 400% of normal precipitation, Kotzebue tops the list this month as the wettest station, in relative terms. Bettles, King Salmon, Bethel, Nome, and Utqiaġvik also all recorded more than 250% of normal precipitation. Kodiak was the driest station this month at only 11% of normal, closely followed by Ketchikan at 17%. Moderate to severe drought conditions persist in the southern Panhandle.

Figure 4 shows the monthly precipitation sums at each station in inches. It can be seen how strongly precipitation varies between stations not only during the past month but also in the climatological mean, due to the diverse climatological conditions that can be found in Alaska.

Table 3: Monthly precipitation sum, normal (1981-2010) and departure expressed as a percentage of the normal (1981-2010) for selected stations throughout the state, February 2019, preliminary values.

Station	Precipitation (in)	Normal (in)	% of normal
Anchorage	0.9	0.7	127.8
Bethel	2.1	0.7	288.9
Bettles	2.6	0.8	301.2
Cold Bay	5.8	3.0	196.0
Delta Junction	0.1	0.3	42.9
Fairbanks	0.8	0.4	188.1
Gulkana	0.4	0.5	82.4
Homer	1.1	1.7	66.1
Juneau	1.9	4.1	45.8
Ketchikan	1.8	10.5	17.4
King Salmon	2.3	0.8	298.7

Kodiak	0.7	6.1	10.7
Kotzebue	2.6	0.7	400.0
McGrath	2.2	0.9	234.0
Nome	2.7	0.9	294.6
St. Paul Island	2.8	1.3	213.8
Talkeetna	1.6	1.5	108.3
Utqiaġvik	0.4	0.1	271.4
Yakutat	3.1	10.9	28.4

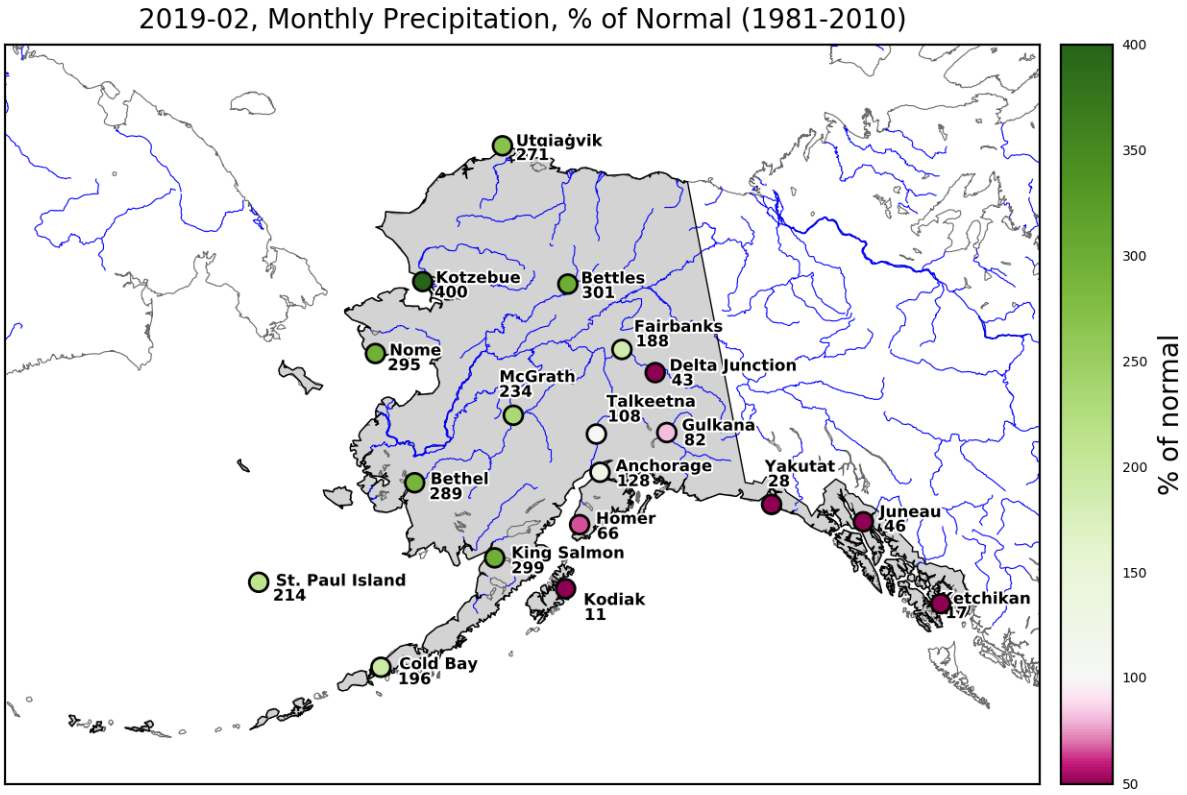

Figure 3: Monthly precipitation sums expressed as percent of normal (1981-2010), February 2019.

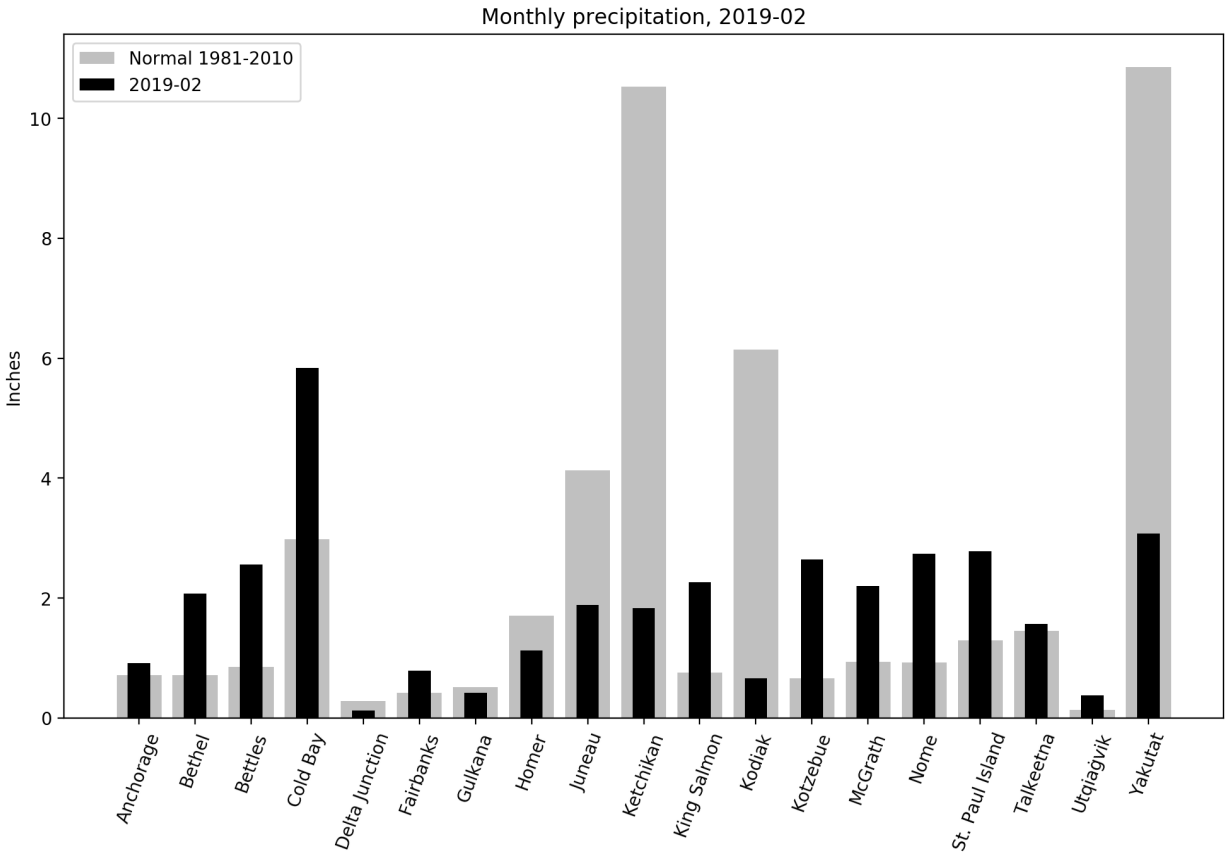

Figure 4: Monthly precipitation sums for February 2019 at the selected stations compared to the normal (1981-2010), in inches.

Snow

Snowfall was very variable throughout the state. At 292% of normal, Nome was the snowiest station in relative terms. Bettles, Kotzebue, Fairbanks, and McGrath all recorded values between about 200% and 300% of normal. Yakutat and Kodiak saw no snowfall at all in February (Table 3).

Table 4: Monthly snowfall sum, normal (1981-2010) and departure expressed as a percentage of the normal (1981-2010) for the selected stations that measure snowfall, February 2019, preliminary values.

Station	Snowfall (in)	Normal (in)	% of normal
Anchorage	12.6	10.9	115.6
Bethel	0.0	6.9	0.0
Bettles	36.3	14.0	259.3
Cold Bay	4.1	12.9	31.8
Fairbanks	16.1	8.1	198.8
Juneau	13.1	16.8	78.0

King Salmon	1.8	6.0	30.0
Kodiak	0.0	15.1	0.0
Kotzebue	26.4	9.6	275.0
McGrath	26.1	13.1	199.2
Nome	35.6	12.2	291.8
St. Paul Island	0.4	10.0	4.0
Utqiaġvik	3.8	2.6	146.2
Yakutat	0.0	28.6	0.0

Newsworthy Events

Persistent high pressure characterized the weather for much of February in the Interior and Eastern parts of the state. The ridging pattern associated with this was part of a large-scale omega-type block between centers of low pressure over eastern Siberia and eastern Canada. Influx of cold air from Siberia favored cyclogenesis in the northern Pacific and multiple storms embedded in the polar front moved South to North, roughly tracking the Alaskan coast from the Aleutians to Utqiaġvik. This led to advection of warm air from the south and very stormy conditions on the Arctic and Subarctic coast. This in turn led to a dramatic reduction in sea ice in the Bering Sea. A new minimum sea ice extent is recorded for the Bering Sea this spring 2019, and ice free conditions will occur in this region early in the season. The warm, south to southeasterly storms erode existing ice and prevent new ice from forming. Open water is visible in locations such as Unalakleet and Shishmaref, which is very unusual for this time of year and cause for concern due to the possibility of severe coastal flooding. The 2019 Iditarod sled dog race will not follow the normal race course across Norton Sound due to unstable ice conditions and instead take an overland route.

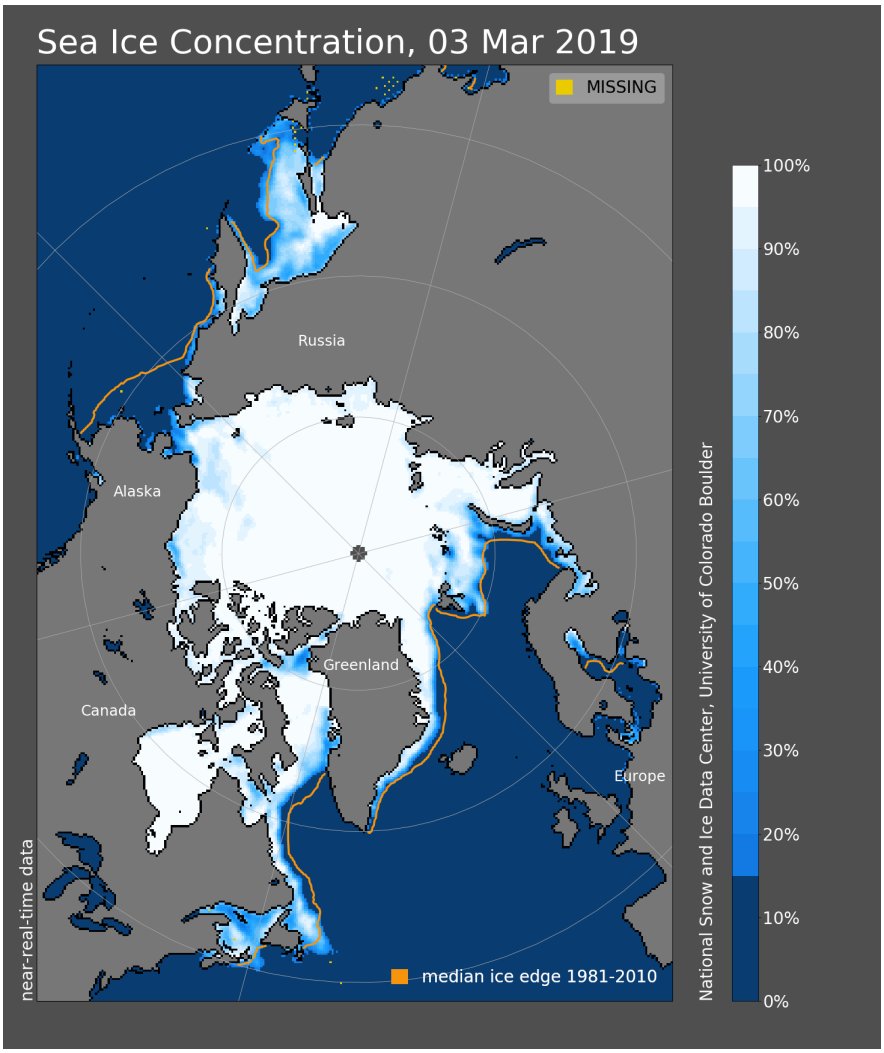

Figure 5: Daily Arctic Sea Ice concentration, March 3, 2019, median ice edge for the 1981-2010 reference period in yellow. Very low sea ice concentration in the Bering Sea. Image: NSIDC (nsidc.org)

This information consists of preliminary climatological data compiled by the Alaska Climate Research Center, Geophysical Institute, University of Alaska Fairbanks. For more information on weather and climatology, visit the center web site at http://akclimate.org. Please report any errors to webmaster@akclimate.org.