

Alaska Statewide Climate Summary

March 2012

Temperature

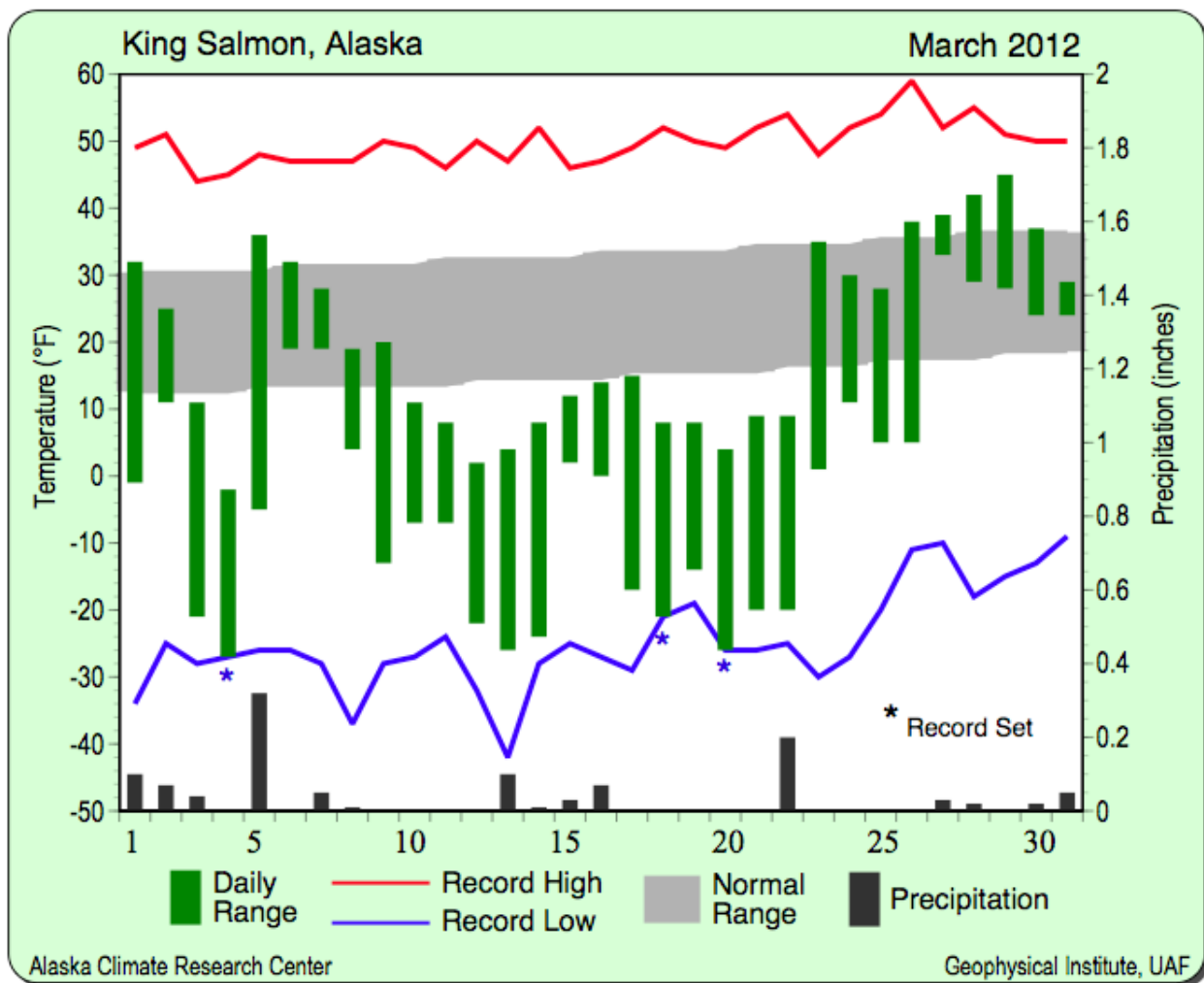
Temperatures continued their monthly flip-flop from above normal to below normal. November had temperatures far below the expected values, while December was much above normal, and for most stations substantially warmer than those of November. January was much too cold and lots of new low temperature records were observed, while in February, the temperature for most of Alaska was above normal, with only the first and last days of the month being seasonably below average. March was cold again, and for most stations temperatures lower than February's were observed, with all 20 first order meteorological stations in Alaska reporting negative deviations, and a few with very substantial anomalies. The mean deviation of all 20 stations from the long-term mean calculates to 7.4°F. The stations with negative deviation larger than -6°F are in declining order the following: King Salmon (-14.7°F), Bethel (-13.3°F), Cold Bay and Kotzebue (both 10.0°F), Nome (-9.8°F), St Paul Island (-9.7°F), McGrath (-9.6°F) Barrow (-8.9°F), Bettles (-9.2°F), Talkeetna (-7.4°F), Big Delta and Homer (both -7.0°F), Fairbanks and Kodiak (both -6.9°F). For more details at the different stations, see the table below. It can be seen that the Bering Sea region was especially colder than expected, followed by Interior Alaska. Southeastern Alaska, while still seasonably below normal, reported the smallest deviation with Juneau (-0.8°F) and Annette and Yakutat (both 2.5°F).

Station	Temperature		
	Observed (°F)	Normal (°F)	Delta (°F)
Anchorage	21.4	26.6	-5.2
Annette	37.2	39.7	-2.5
Barrow	-21.6	-12.7	-8.9
Bethel	1.9	15.2	-13.3
Bettles	-4.8	4.4	-9.2
Big Delta	7.1	14.1	-7.0
Cold Bay	20.1	30.1	-10.0
Fairbanks	4.5	11.4	-6.9

Gulkana	11.7	15.6	-3.9
Homer	22.9	29.9	-7.0
Juneau	33.0	33.8	-0.8
King Salmon	9.4	24.1	-14.7
Kodiak	25.9	32.8	-6.9
Kotzebue	-8.9	1.1	-10.0
McGrath	2.0	11.6	-9.6
Nome	0.5	10.3	-9.8
St. Paul Island	15.1	24.8	-9.7
Talkeetna	17.5	24.9	-7.4
Valdez	27.0	30.3	-3.3
Yakutat	29.5	32.0	-2.5

A number of new low temperatures records were set, especially in the Bering Sea area where the mean monthly temperature deviations were large. King Salmon reported 3 such events. On the 4th the temperature dropped to -27°F, surpassing the old record low for this day, set in 1971 by 4°F. On the 18th, the temperature dropped to -21°F, 1°F lower than the previous minimum which was set in 1966. Two days later, the temperature dropped even further to -26°F, replacing the old minimum also set in 1966, of 21°F. Cold Bay reported one new minimum. On the 22nd the temperature dropped to -3°F, replacing the old record low (0°F) for this day of 1972. Cold Bay also tied two record cold values. The first occurred on the 13th at 3°F, tying the record from 1972, and then again on the 20th at 5°F, equaling the old record from 1976. The final new minimum was observe in Valdez on the 7th March with a value of 3°F, which was 7°F colder than the old record of 1987. The only new high record was set towards the end of the month at Annette, in the southeastern corner of Alaska, reporting a maximum temperature of 55°F on the 27th March. This is 1°F higher than the old record high for the day, which had been set in 1993.

Both, from the mean monthly values as well as from the frequency of the new daily new minima – some records go back for more than a century – it can be seen that March 2012 was indeed an exceptionally cold month.



Daily temperature ranges and precipitation for King Salmon for March 2012. Note the three low temperature record events that occurred during the month.

Precipitation

Precipitation varied widely. Expressed as percentages, Barrow had the lowest amount with only 11% of the mean value with 0.01" of the expected 0.09". On the other side of the spectrum was Fairbanks, recording 288% of the mean value, or 0.72" of the expected 0.25". The mean value for the 20 stations was relatively close to normal with a positive deviation of +11%. As for the temperature, the precipitation deviations for the different station are given in the table below:

Station	Precipitation				
	Observed (in)	Normal (in)	Delta (in)	(%)	Delta (%)
Anchorage	1.78	0.72	1.06	247%	147%
Annette	6.15	7.31	-1.16	84%	-16%
Barrow	0.21	0.14	0.07	150%	50%
Bethel	1.24	0.72	0.52	172%	72%
Bettles	0.39	0.85	-0.46	46%	-54%
Big Delta	0.42	0.28	0.14	150%	50%
Cold Bay	6.04	2.98	3.06	203%	103%
Fairbanks	0.42	0.42	0.00	100%	0%
Gulkana	0.39	0.51	-0.12	76%	-24%
Homer	7.45	1.71	5.74	436%	336%
Juneau	3.10	4.13	-1.03	75%	-25%
King Salmon	1.12	0.76	0.36	147%	47%
Kodiak	7.41	6.14	1.27	121%	21%
Kotzebue	0.90	0.66	0.24	136%	36%
McGrath	0.80	0.94	-0.14	85%	-15%
Nome	1.08	0.93	0.15	116%	16%
St. Paul Island	1.86	1.30	0.56	143%	43%
Talkeetna	1.34	1.45	-0.11	92%	-8%
Valdez	8.10	5.79	2.31	140%	40%

Yakutat	10.49	10.86	-0.37	97%	-3%
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There are quite a number of new daily maxima, both for precipitation (in inch water-equivalent) and snowfall (in inches), which are summarized in Table 3.

Date	Precipitation Records				
	Station	Element	New Record	Old Record	Year of old Record
03/01/12	Kodiak	Snowfall	5.5	5	1959
03/02/12	Cold Bay	Snowfall	7.4	4.6	1994
03/05/12	Bethel	Snowfall	4.1	3	1991
03/05/12	Bethel	Precipitation	0.38	0.3	1991
03/06/12	Fairbanks	Snowfall	6.9	3.5	1943
03/06/12	Fairbanks	Precipitation	0.28	0.24	1985
03/07/12	Fairbanks	Snowfall	2.7	2.7	1932
03/07/12	Fairbanks	Precipitation	0.17	0.15	1967
03/08/12	St. Paul	Precipitation	0.28	0.21	1967
03/25/12	Cold Bay	Snowfall	4.9	2.5	2001
03/25/12	St. Paul	Snowfall	4.4	3.3	1994
03/27/12	Cold Bay	Snowfall	7.9	4	2000
03/29/12	Cold Bay	Precipitation	0.84	0.39	2006

The combination of very cold temperatures, heavy snowfall and in part, strong winds, resulted in dangerous conditions at times. On the 2nd March a travel advisory was issued for the Steese and Elliott Highways, north of Fairbanks. In Anchorage, a warning was given on the 5th March by the mayor's office, due to a heavy snow load. Several, mostly flat roofs failed, built predominantly prior to 1980, caved under the strain. The roof of the Abbott Loop Community Church failed and the church was declared, "unsafe to occupy". Heavy snowfall in the night from the 5th to the 6th in the Fairbanks area caused a number of accidents, mostly on the Richardson Highway. A travel advisory was given for the Parks Highway on 6th of March, and heavy snowfall continued through the night. On the 9th, blowing snow in the elevated areas of the Elliott Highway made traveling difficult and the Steese Highway at Eagle Summit Pass was shut down to traffic. In Anchorage, the roof of an Alaska Railroad Storage Building collapsed on the 10th due to the heavy snow load, but nobody was hurt. On the 13th, a large avalanche killed two people while Heli-skiing at the Takhin Ridge near Haines and on the 17th another roof (VA Clinic) collapsed under the snow load in East Anchorage. The snowfall in Anchorage was 129.3" on the 19th, only 3.3" below the maximum snowfall ever experienced during a winter.

On 19th March, spring officially arrive in Alaska. With a low temperature of -20°F in Fairbanks, it did not feel like it. However, on the 27th March, the first geese were spotted in the Big Delta area, a sure sign that spring is on its way.

This information consists of preliminary climatological data compiled by the Alaska Climate Research Center, Geophysical Institute, University of Alaska Fairbanks. This summary is based on the 20 first order stations in Alaska operated by the National Weather Service. Extreme events of other stations are also mentioned. It should be noted that the new climate normals for the time period of 1981-2010 are applied for the calculations of the deviations, and they can be slightly different from the old normals (1971-2000), which were in use up until end of July 2011.