

Alaska Statewide Climate Summary

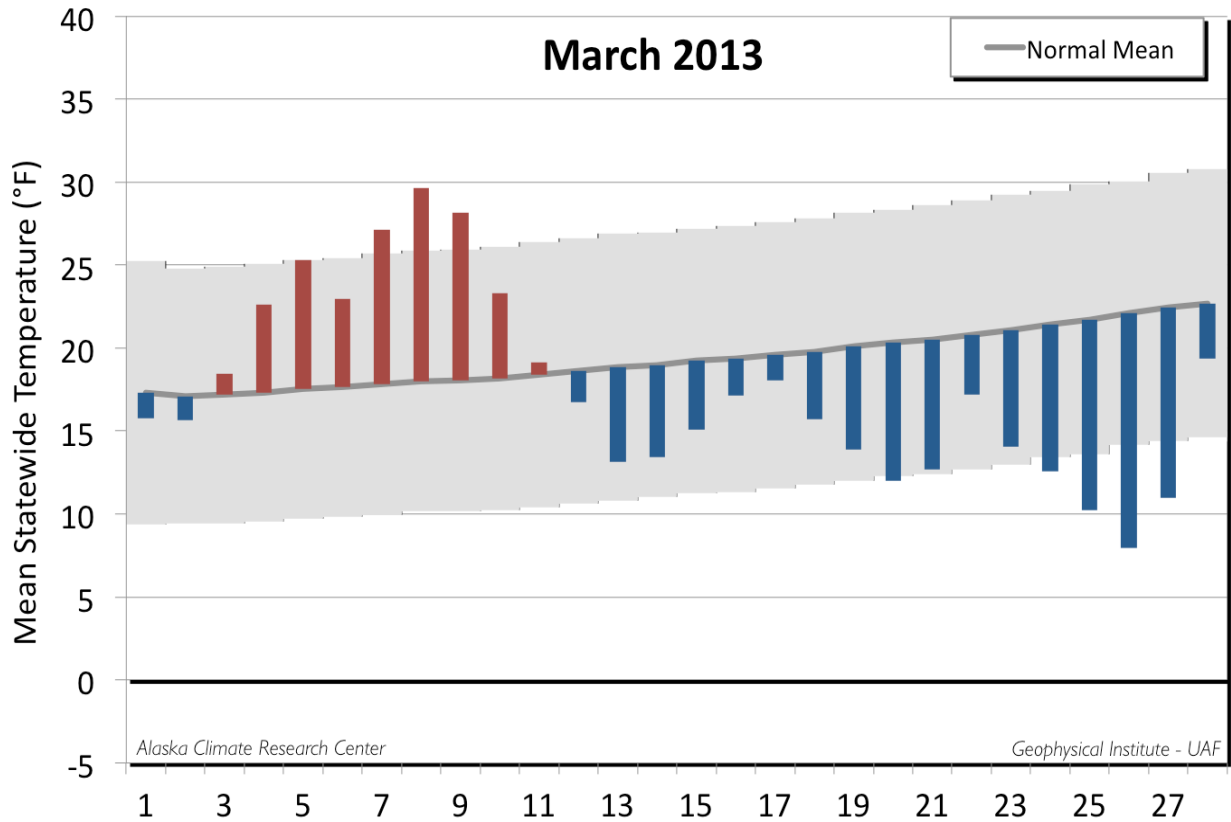
March 2013

Temperature

In contrast to the beginning of this year, which observed mostly above normal temperatures, March 2013 was colder than normal (see Fig.1). Negative deviations were observed for 16 of the 20 first order stations in Alaska, and a mean monthly value for the all stations could be calculated to a negative deviation of 1.7°F. Large negative deviations in declining order were found for Talkeetna (-4.6°F), Fairbanks (-4.3°F), Juneau (-4.1°F), Bettles and Bethel (both -3.0°F). Barrow was the only station with a substantial positive deviation of +5.3°F, continuing the long term warming trend observed in Arctic Alaska over the last decades. This trend is especially strong in fall and winter, as evidenced by the substantially decreased sea ice extent and thickness in the Arctic Ocean. Other positive deviations were not as substantial (< 1°F), and details for all stations can be seen from Table 1. Altogether the observed deviations are quite moderate when compared to other winter months, when much larger deviations were observed for monthly values in recent years, exceeding 20°F for a single station or 10°F for the mean of all stations.

Station	Temperature		
	Observed (°F)	Normal (°F)	Delta (°F)
Anchorage	24.5	26.6	-2.1
Annette	38.5	39.7	-1.2
Barrow	-7.4	-12.7	5.3
Bethel	12.2	15.2	-3
Bettles	1.4	4.4	-3
Cold Bay	30.8	30.1	0.7
Delta Junction	12.6	14.1	-1.5
Fairbanks	7.1	11.4	-4.3

Gulkana	13.3	15.6	-2.3
Homer	30.3	29.9	0.4
Juneau	29.7	33.8	-4.1
King Salmon	21.3	24.1	-2.8
Kodiak	31.9	32.8	-0.9
Kotzebue	1.6	1.1	0.5
McGrath	9.3	11.6	-2.3
Nome	8.5	10.3	-1.8
St. Paul Island	23.5	24.8	-1.3
Talkeetna	20.3	24.9	-4.6
Valdez	28.3	30.3	-2
Yakutat	28.9	32	-3.1



New daily temperature records were also set this month. Here we included a few other stations. Between the 4th and 9th of March, Bethel, McGrath and Valdez reported new daily maxima, while in the last 1/3rd of the month, Juneau, Homer, Bethel McGrath, King Salmon and Eielson AFB reported new daily minima. In the table below, new daily record low and high temperatures are listed:

Date	Station	Element	New Record	Old Record	Year of Old Record
03/04/13	Bethel	High Temperature	37	36	2009
03/07/13	McGrath	High Temperature	44	43	1949
03/08/13	McGrath	High Temperature	47	43	1965
03/09/13	Valdez	High Temperature	44	42	1980
03/20/13	Juneau	Low Temperature	9	11	2001
03/26/13	Homer	Low Temperature	9	10	1976
03/26/13	Bethel	Low Temperature	-22	-21	1977

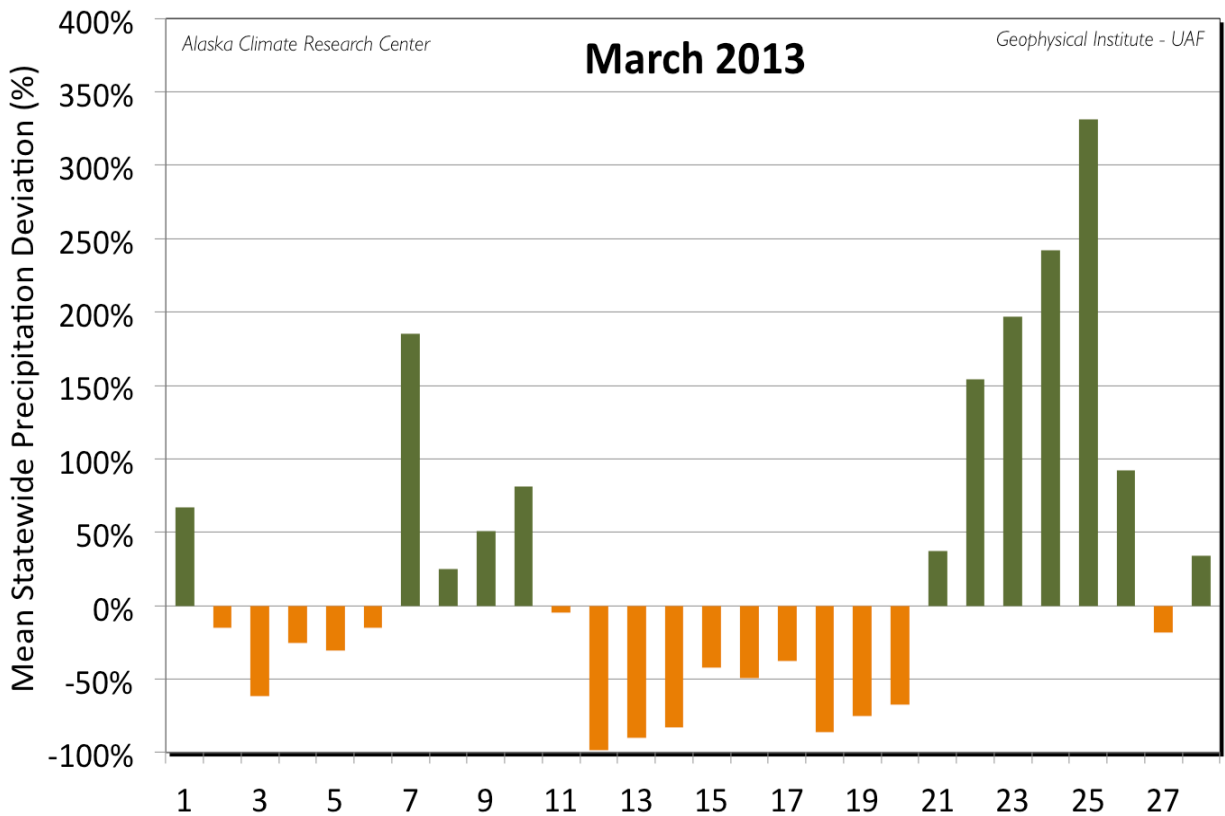
03/26/13	McGrath	Low Temperature	-30	-25	1976
03/26/13	King Salmon	Low Temperature	-18	-11	1977
03/27/13	Eielson AFB	Low Temperature	-31	-26	2004

Precipitation

Precipitation varied widely (see Fig.2). Expressed as percentages, Barrow had the highest amount with 556% of the mean value with 0.50" of the expected 0.09". St. Paul Island (293%), Anchorage (228%) and King Salmon (214%) had at least twice the long term mean. On the other side of the spectrum were Yakutat and Annette in Southeastern Alaska with just above half (both 54%) of the long term mean. The mean value of all 20 stations gave a value of 36% above normal. As for the temperature, the precipitation and snowfall deviations for the different station are given in the tables below.

Station	Precipitation				
	Observed (in)	Normal (in)	Delta (in)	Delta %	%
Anchorage	1.37	0.6	0.77	128%	228%
Annette	4.36	8.05	-3.69	-46%	54%
Barrow	0.5	0.09	0.41	456%	556%
Bethel	0.78	0.71	0.07	10%	110%
Bettles	0.37	0.58	-0.21	-36%	64%
Cold Bay	2.67	2.7	-0.03	-1%	99%
Delta Junction	0.17	0.18	-0.01	-6%	94%
Fairbanks	0.26	0.25	0.01	4%	104%
Gulkana	0.51	0.3	0.21	70%	170%
Homer	0.96	1.65	-0.69	-42%	58%

Juneau	2.36	3.78	-1.42	-38%	62%
King Salmon	1.5	0.7	0.8	114%	214%
Kodiak	4.47	5.53	-1.06	-19%	81%
Kotzebue	0.37	0.44	-0.07	-16%	84%
McGrath	0.49	0.81	-0.32	-40%	60%
Nome	0.64	0.65	-0.01	-2%	98%
St. Paul Island	3.13	1.07	2.06	193%	293%
Talkeetna	1.24	1.05	0.19	18%	118%
Valdez	5.42	4.54	0.88	19%	119%
Yakutat	5.93	11.04	-5.11	-46%	54%



Station	Snowfall				
	Observed (in)	Normal (in)	Delta (in)	Delta (%)	%
Anchorage	20.6	9.9	10.7	108%	208%
Annette	0.9	6.9	-6	-87%	13%
Barrow	7.9	2.1	5.8	276%	376%
Bethel	5.8	8.2	-2.4	-29%	71%
Bettles	4.8	9.3	-4.5	-48%	52%
Cold Bay	7.5	13	-5.5	-42%	58%
Fairbanks	6.2	4.9	1.3	27%	127%
Juneau	9.4	11.6	-2.2	-19%	81%
King Salmon	11.3	6.4	4.9	77%	177%
Kodiak	11.7	11.3	0.4	4%	104%
Kotzebue	3.7	5.9	-2.2	-37%	63%
McGrath	7.2	11.3	-4.1	-36%	64%
Nome	9.1	8.9	0.2	2%	102%
St. Paul Island	26.9	8	18.9	236%	336%
Valdez	73.7	48.4	25.3	52%	152%
Yakutat	35.3	28.4	6.9	24%	124%

Records events, both for precipitation and snowfall, are summarized below.

Date	Station	Element	New Record	Old Record	Year of Old Record
03/07/13	St. Paul Island	Snowfall	6.38	2.5	1978
03/09/13	King Salmon	Snowfall	1.9	1.2	1959
03/10/13	King Salmon	Snowfall	4.3	2.7	1969
03/17/13	St. Paul Island	Snowfall	2.4	1.8	1954
03/22/13	King Salmon	Snowfall	1.8	1.5	1993
03/23/13	Valdez	Snowfall	16.9	14.4	1997
03/23/13	Valdez	Precipitation	1.14	0.78	1997
03/24/13	Anchorage	Snowfall	5.8	3.6	1972
03/24/13	Anchorage	Precipitation	0.42	0.33	1972
03/26/13	Barrow	Snowfall	3.1	0.8	1965
03/26/13	Barrow	Precipitation	0.27	0.07	1979
03/27/13	St. Paul Island	Snowfall	2.1	1.6	2006
03/28/13	King Salmon	Precipitation	0.31	0.19	1991
03/30/13	King Salmon	Precipitation	0.36	0.19	1969

The most surprising of these records is the amount of precipitation, which fell in Barrow on the 26th March. The amount of 0.27", which fell on this day, is 3 times the monthly long-term value for Barrow in March.

Newsworthy Events

On March 12th an air quality advisory was issued for Fairbanks and North Pole due to relative strong inversion conditions.

The Steese Highway, which had been closed at Eagle Summit due to blowing and drifting snow, was reopened on Sunday, March 24th.

A winter storm warning was issued for Anchorage and Eagle River on March 25th.

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 twenty 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.