Alaska Statewide Climate Summary

February 2016

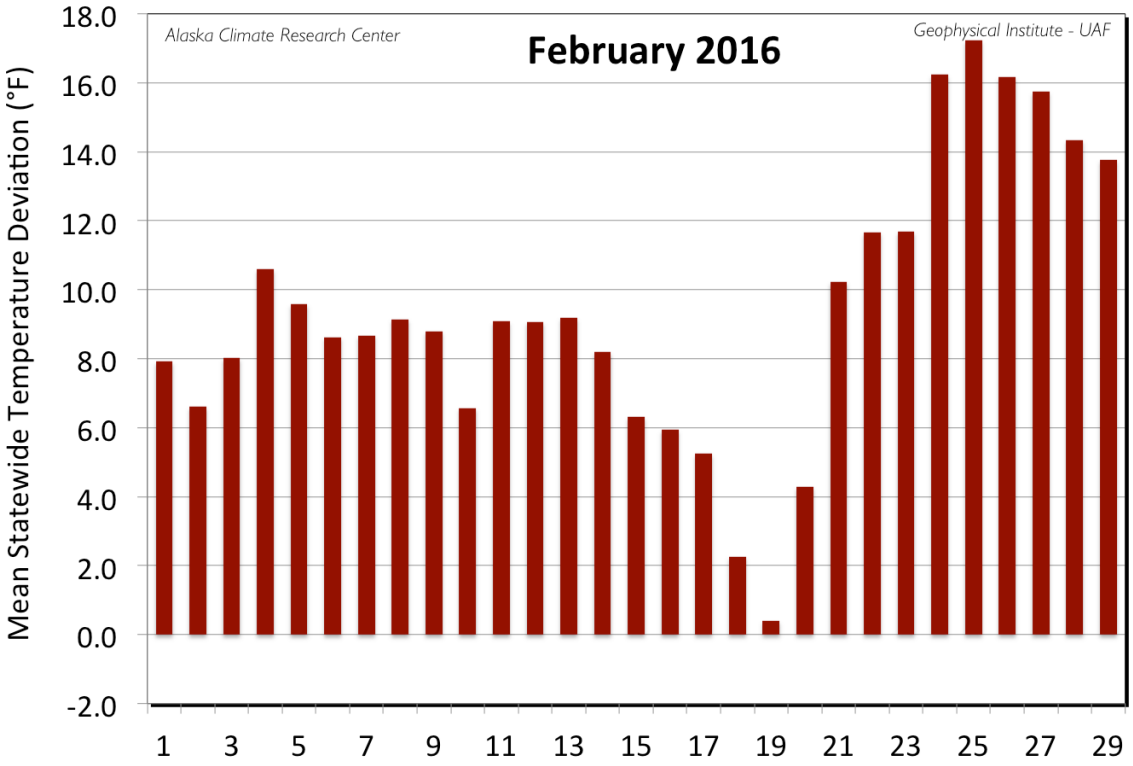
Temperature

February 2016 is the fifth month in a row where temperatures were above normal. The monthly mean temperature of all First Order Stations was 23.5°F, 9.1°F above the normal of 14.4°F. This is 4.0°F above the February 2015 mean of 19.5°F. Monthly mean temperatures were above normal for all 19 First Order Stations. Calculating the mean daily temperatures of the First Order Stations (see Figure), all 29 days of the month were above the 30-year normal. The peak positive deviation for the month, an extreme 17.2°F, occurred on the 25th. On a monthly basis, King Salmon held the greatest positive deviation from normal with a significant value of 16.0°F above its long-term mean of -1.0°F. Stations following King Salmon with deviations exceeding 10.0°F were Delta Junction (13.2°F), Bettles (11.9°F), Kotzebue (11.4°F), Talkeetna (10.9°F), Bethel (10.9°F), and Barrow (10.1°F).

Station	Temperature		
	Observed (°F)	Normal (°F)	Delta (°F)
Anchorage	**29.9**	**20.2**	**9.7**
Annette	**41.6**	**37.7**	**3.9**
Barrow	**-4.1**	**-14.2**	**10.1**
Bethel	**21.8**	**11.1**	**10.7**
Bettles	**6.9**	**-5.0**	**11.9**
Cold Bay	**34.3**	**29.0**	**5.3**
Delta Junction	**18.1**	**4.9**	**13.2**
Fairbanks	**7.9**	**-1.3**	**9.2**
Gulkana	**11.3**	**5.5**	**5.8**
Homer	**35.4**	**26.2**	**9.2**

Juneau	**37.6**	**30.1**	**7.5**
King Salmon	**34.8**	**18.8**	**16.0**
Kodiak	**36.0**	**30.8**	**5.2**
Kotzebue	**10.6**	**-0.8**	**11.4**
McGrath	**10.2**	**1.4**	**8.8**
Nome	**16.1**	**7.4**	**8.7**
St. Paul Island	**32.9**	**24.4**	**8.5**
Talkeetna	**29.0**	**18.1**	**10.9**
Yakutat	**37.1**	**29.7**	**7.4**

The highest February temperature of the First Order Stations was 59°F reported at Annette on the 9th of the month. Annette also held the spot for the highest mean temperature for the month at 41.6°F. The lowest temperature was -22°F at Bettles on the 17th, while Barrow reported the lowest February mean temperature at -4.1°F.



Daily mean temperature deviation from the normal temperature for the mean of the first order stations for February 2015.

There were a fair number of daily temperature record events once again in February, and like December and January, all were high events; either new records or tied events. By February 29th, it had been 1096 days since the low temperature at Nome had dropped below -30°F. The previous longest run had been the 1085 days ending January 6th, 1983. The winter of 2015-16 is only the second one on record for Fairbanks where the temperatures did drop below -30°F by the end of February. The only other winter on record where Fairbanks did not reach -30°F is 1976-1977.

It was the second warmest February on record in King Salmon after the record of 35.6°F set in 2003. Juneau also had its second warmest February (37.6°F) after the 40.1°F observed in 1977. Kenai also had the second warmest February with 31.2°F, just under the 31.3°F from 2003. Similarly, Sitka observed an average temperature of 42.8°F was just 0.2°F below the record from 1977. It was the third warmest February for Barrow, Bettles, Kotzebue, Talkeetna, and Ketchikan. It was the fourth warmest February for Bethel and Anchorage, while it was the fifth warmest for Delta Junction and Homer.

Date	Temperature Records				
	Station	Element	New Record	Old Record	Year of old Record
02/08/16	Juneau	High Temperature	48	48	1968
02/09/16	Sitka	High Temperature	55	53	1993
02/10/16	Cordova	High Temperature	49	49	2006
02/10/16	Ketchikan	High Temperature	51	51	1970
02/10/16	Petersburg	High Temperature	52	49	2006
02/11/16	Ketchikan	High Temperature	53	51	1970
02/13/16	Anchorage	High Temperature	42	42	1978
02/13/16	Auke Bay	High Temperature	46	46	2010
02/13/16	Gustavus	High Temperature	46	38	2015
02/13/16	Haines Airport	High Temperature	43	43	2006
02/13/16	Skagway Power	High Temperature	46	46	2015
02/16/16	Cold Bay	High Temperature	43	41	2015
02/16/16	St. Paul	High Temperature	40	40	1980
02/19/16	St. Paul	High Temperature	37	37	2003
02/21/16	Juneau	High Temperature	50	50	1998
02/25/16	Anchorage	High Temperature	46	46	1978
02/25/16	Bettles	High Temperature	36	34	1988
02/25/16	King Salmon	High Temperature	48	46	1997
02/26/16	Bettles	High Temperature	35	31	1978

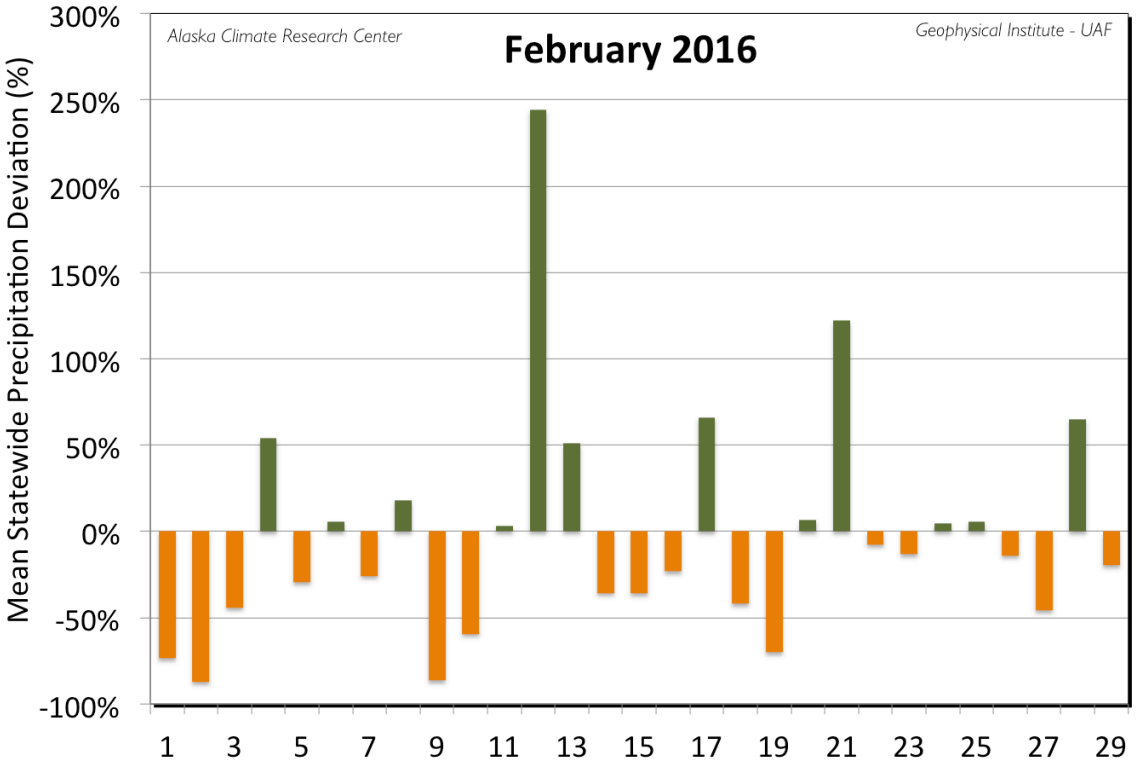
02/26/16	St. Paul	High Temperature	40	38	2015
02/27/16	Bettles	High Temperature	32	32	1970
02/27/16	Gulkana	High Temperature	44	40	2003
02/27/16	McGrath	High Temperature	43	43	1969
02/27/16	St. Paul	High Temperature	38	38	2015
02/28/16	St. Paul	High Temperature	34	34	1978
02/29/16	Anchorage	High Temperature	40	40	1968
02/29/16	Bettles	High Temperature	35	35	1996
02/29/16	King Salmon	High Temperature	45	45	2004
02/29/16	Northway	High Temperature	34	34	1996
02/29/16	St. Paul	High Temperature	39	39	1996

Precipitation

February precipitation was higher than expected, with the overall precipitation calculated as 9% above normal; this calculation was based on the mean of the deviations in percentage of the First Order Stations. Six of the First Order Stations and twelve days of the month reported above normal values. There were no days during the month without any measureable precipitation at all of the 19 First Order Stations. It was also wetter than February 2015, which had a precipitation total of 8% below normal. The greatest daily deviation of 244% occurred on the 12th. This high daily deviation was driven by record water equivalent snowfall at Barrow of 0.57", which dwarfs the mean precipitation value of 0.01". Like December and January, on a monthly basis, Fairbanks had the greatest negative deviation from normal, with a total of 0.05", or just 12% of the expected amount of 0.42". Talkeetna tied Fairbanks with just 12% of normal also. The other stations with precipitation totals less than 30% of normal were McGrath (13%), Bethel (22%), Gulkana (22%), Delta Junction (25%), and Bettles (28%). The leading station with a greater than normal precipitation amount was Barrow with 507% above normal. Homer had the next greatest deviation at 204% above normal.

Station	Precipitation

	Observed (in)	Normal (in)	Delta (in)	Delta (%)	(%)
Anchorage	**0.30**	**0.72**	**-0.42**	**-58%**	**42%**
Annette	**15.54**	**7.31**	**8.23**	**113%**	**213%**
Barrow	**0.85**	**0.14**	**0.71**	**507%**	**607%**
Bethel	**0.16**	**0.72**	**-0.56**	**-78%**	**22%**
Bettles	**0.24**	**0.85**	**-0.61**	**-72%**	**28%**
Cold Bay	**2.00**	**2.98**	**-0.98**	**-33%**	**67%**
Delta Junction	**0.07**	**0.28**	**-0.21**	**-75%**	**25%**
Fairbanks	**0.05**	**0.42**	**-0.37**	**-88%**	**12%**
Gulkana	**0.11**	**0.51**	**-0.40**	**-78%**	**22%**
Homer	**5.20**	**1.71**	**3.49**	**204%**	**304%**
Juneau	**3.25**	**4.13**	**-0.88**	**-21%**	**79%**
King Salmon	**0.96**	**0.76**	**0.20**	**26%**	**126%**
Kodiak	**12.88**	**6.14**	**6.74**	**110%**	**210%**
Kotzebue	**0.34**	**0.66**	**-0.32**	**-48%**	**52%**
McGrath	**0.12**	**0.94**	**-0.82**	**-87%**	**13%**
Nome	**0.50**	**0.93**	**-0.43**	**-46%**	**54%**
St. Paul Island	**1.20**	**1.30**	**-0.10**	**-8%**	**92%**
Talkeetna	**0.18**	**1.45**	**-1.27**	**-88%**	**12%**
Yakutat	**10.87**	**10.86**	**0.01**	**0%**	**100%**



Daily mean precipitation deviation from the normal for the first order stations for February 2015.

The maximum monthly precipitation total reported for a First Order Station was 15.54" at Annette, and Annette also reported the highest daily total of 2.09" on the 8th, a new record for that specific day.

There were a limited number of daily precipitation records this February, and all were located at coastal stations, and most occurred towards the end of the month. The daily record of 0.57" at Barrow on the 12th is also a new daily precipitation record for any February day, topping the 0.30" from 1969. Similarly, the 5.96" for Ketchikan on the 25th is the second highest daily precipitation total for any February day after the 6.10" from February 18th, 1965.

For February, Kodiak totaled the second highest precipitation on record with 12.88", quite a bit lower than the record of 16.64" from 1947. Similarly, Ketchikan received 24.88", second to 1954's February total of 25.60". At the other end of the state, Barrow also had it's second wettest February with 0.85", 0.10"shy of the 1917 record. It was the fourth wettest at Homer, and the fifth wettest at Annette.

Date	Precipitation Records				
	Station	Element	New Record	Old Record	Year of old Record
02/08/16	Annette	Precipitation	2.09	1.88	1977
02/12/16	Barrow	Precipitation	0.57	0.12	1989
02/16/16	St. Paul	Precipitation	0.39	0.35	1994
02/23/16	Kodiak	Precipitation	1.83	1.81	2004
02/25/16	Annette	Precipitation	1.76	1.51	1963
02/25/16	Ketchikan	Precipitation	5.96	3.04	1968
02/26/16	Hollis	Precipitation	0.97	0.93	1993
02/26/16	Skagway	Precipitation	0.59	0.41	1927
02/29/16	St. Paul	Precipitation	0.08	0.05	1956

Snowfall

Snowfall was again unsurprisingly light in February, with 14 of the 15 First Order Stations that measure snowfall reporting below normal amounts. Barrow was the only station reporting above normal amount. Based on the mean of the deviations from all 15 stations, the overall deviation from the normals was 49% below the expected amount. Like January, Yakutat reported the highest negative deviation in snowfall amount at -26.4" with an actual total of 2.2". Snowpack averaged about 30% of normal.

Station	Snowfall				
	Observed (in)	Normal (in)	Delta (in)	Delta (%)	(%)
Anchorage	**1.8**	**10.9**	**-9.1**	**-83%**	**17%**
Annette	**0.0**	**7.2**	**-7.2**	**-100%**	**0%**

Barrow	8.9	2.6	6.3	242%	342%
Bethel	1.3	6.9	-5.6	-81%	19%
Bettles	4.5	14.0	-9.5	-68%	32%
Cold Bay	3.2	12.9	-9.7	-75%	25%
Fairbanks	0.6	8.1	-7.5	-93%	7%
Juneau	2.0	16.8	-14.8	-88%	12%
King Salmon	4.7	6.0	-1.3	-22%	78%
Kodiak	1.0	15.1	-14.1	-93%	7%
Kotzebue	7.5	9.6	-2.1	-22%	78%
McGrath	3.1	13.1	-10.0	-76%	24%
Nome	7.6	12.2	-4.6	-38%	62%
St. Paul Island	4.7	10.0	-5.3	-53%	47%
Yakutat	2.2	28.6	-26.4	-92%	8%

Barrow reported the highest total snowfall for any first order station at 8.9", and Barrow also reported the highest one-day snowfall at 5.7" on the 12th, a new daily record for Barrow, breaking the 1.2" record from 1989. This is also the new record for any February day at Barrow, breaking the old record of 4.0" from February 27th, 1916. King Salmon also tied a daily snowfall record on the 18th with 1.1", originally set in 1945. Kotzebue reported the highest snow depth at 32" at the end of the month.

By the 20th, Anchorage had gone 37 winter days without snowfall, a new record for consecutive days during the winter. On a monthly basis, Annette tied for the second lowest snowfall total with just a trace of snow. The record is no snowfall for February 1997. Barrow had its fourth snowiest February on record, while it was the forth least snowiest February for Kodiak.

Newsworthy Events

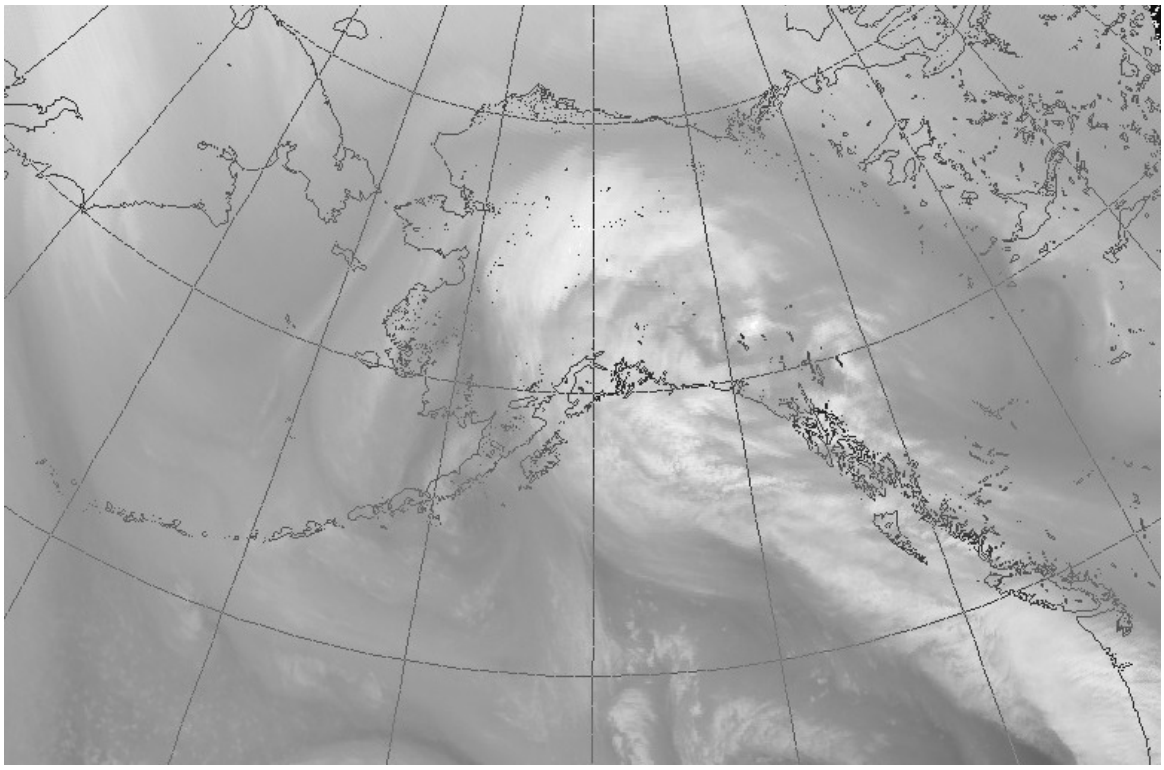
February started out with hazardous driving conditions reported on the Seward Highway due to rainy conditions on the 2nd and the 3rd. Wind advisories for up to 45 mph were issued for areas of the Dalton

Highway, while wind, blowing snow, and reduced visibility warnings were published for Thompson Pass on the Richardson Highway on the 3rd. On the next day winter weather warnings were issued for most of the Panhandle with up to 60 mph winds and significant snowfall expected. Snowfall totaled 10.5" at Haines Custom station, while Annette reported wind gusts up to 63 mph. 59 mph was reported at Metlakatla and 55 mph at Hydaburg. The Homer area received up to 6" of snow the same day, and that snow moved into the Anchorage area the next day, creating hazardous driving conditions on area roads. Rain, snow and high winds were reported across the Southeast again on the 7th and 8th with Craig reporting 44 mph winds, and over 7" of snow in the Haines area.

Some Mat-Su schools were closed on the 11th due to freezing rain on Anchorage and Mat-Su area roads. High winds up to 50 mph were also expected along the eastern Alaska Range the same day. Also on the 11tha winter weather advisory was issued for the North Slope for up to 4" of snow and blowing snow from winds up 35 mph. This was upgraded to blizzard conditions the next day, and continued throughout the weekend. Point Thompson reported winds in excess of 62 mph. Other stations reporting high winds during the blizzard: Barrow (46 mph), Point Lay (48 mph), Deadhorse (53 mph), and Barter Island (48 mph).

Rain, sleet and snow were reported in Anchorage on the 13th. Winter storm warnings were issued for the Bering Strait Coast and St Lawrence Island for up to 8" of snow and winds up to 60 mph starting on the 16th and the blizzard conditions continued until the 18th. On the 17th St. Paul recorded winds up to 44 mph. Wind Chill warnings for -55°F were expected along the western Arctic Coast on the 19th.

High winds were reported along the southern Panhandle areas on the 20th, with winds gusting up to 60 mph on Prince of Wales Island. Snow and freezing rain again impacted the Southcentral area on the 21st. Stations from around Homer reported up to 30" of snow. The heavy snowfall prompted Avalanche warnings to be issued for the western Chugach Mountains. Avalanche hazard reduction work was performed along the Seward Highway the next couple days. As the storm pushed north, high wind warnings were broadcast for passes in the Alaska Range for gusts up to 65 mph. Warming temperatures the next few days resulted in small stream flood advisories for Kenai Peninsula areas south of Kenai.



This water vapor satellite image from the National Weather Service for the 21st of February shows the weather pattern that brought heavy snowfall, rain and winds to the Southcentral and Southeast areas.

Also on the 21st storm force winds and high seas (30 ft.) were reported in the eastern Gulf of Alaska. Juneau reported 35 mph gusts. More winter weather in the Southeast on the 24th resulted in heavy snow to the north; almost 10" was measured near Skagway.

A travel advisory was issued for the Parks Highway west of Fairbanks for freezing rain on the 25th. Haines Custom station received 12.0" of snow on the 25th, as well as a total of 75.1" by the end of month and had a maximum of 78" on the ground on the 26th". High winds were again forecasted for Alaska Range passes on the 24th, and then again on the 27th, while winter weather warnings were again issued for the North Slope and Bering Strait Coast and St. Lawrence Island on the 27th. On the 29th, Turnagain Pass had a snow depth of 147".

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, contact the center at 907-474-7885 or visit the center web site at http://akclimate.org. Please report any errors to webmaster@akclimate.org. This summary is based on the 19 first order stations in Alaska operated by the National Weather Service. Extreme events of other stations are also mentioned.