

Alaska Statewide Climate Summary

October 2016

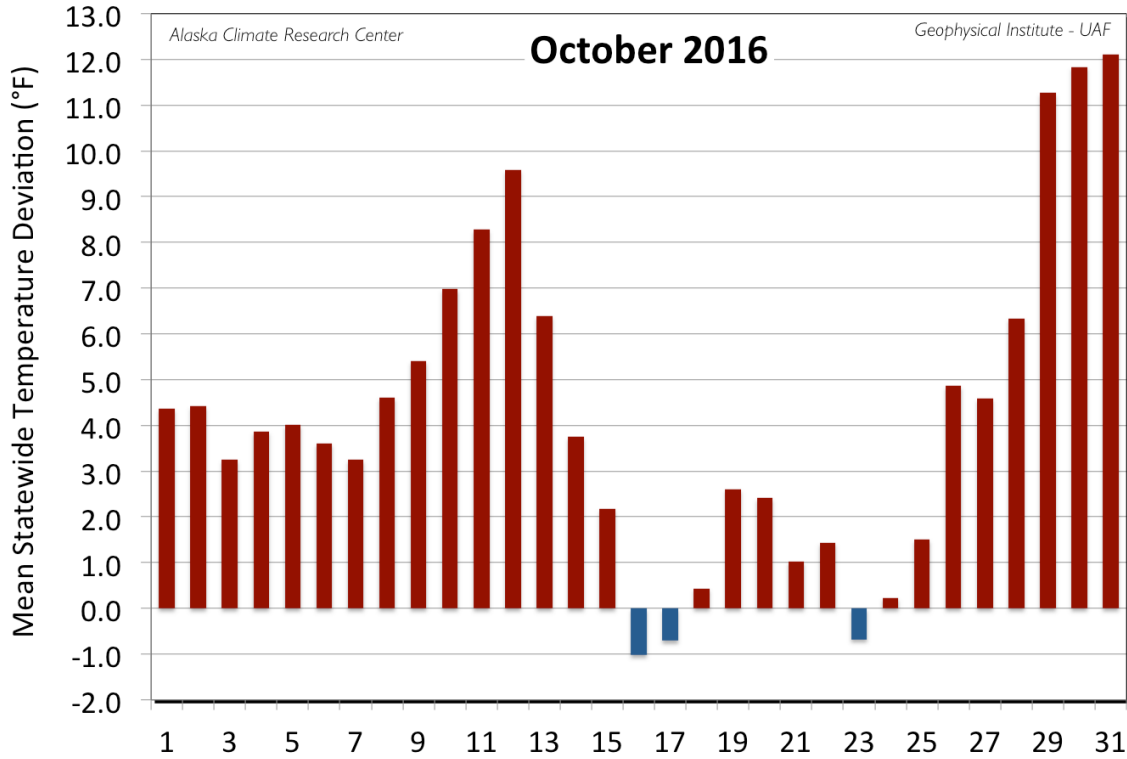
Temperature

October 2016 marks the thirteenth month in a row with statewide mean temperatures above normal. The monthly mean temperature of all First Order Stations was 36.1°F, 4.1°F above the normal of 32.0°F. This is 1.4°F below the October 2015 mean of 37.5°F. Calculating the mean daily temperatures of the First Order Stations, 28 days of the month were above the 30-year normal, with three days (16th, 17th and 23rd) below normal (see Figure). The peak positive deviation for the month occurred on the 31st at a very significant 21.1°F. Monthly mean temperatures (see table) were above normal for 16 of the 19 First Order Stations. The only stations with a below normal mean monthly temperature were Gulkana with -6.6°F below its normal of 26.6°F, Juneau (-2.2°F) and Yakutat (-0.2°F). Barrow had the greatest positive deviation with an impressive of 12.9°F above its normal of 45.3°F. Kotzebue had the next greatest positive deviation with 11.0°F. The other stations with deviations greater than +6°F were: Nome (+9.0°F), Bethel (+7.4°F), King Salmon (+6.9°F) and St. Paul (+6.2°). Note that that the stations with greatest positive deviations are coastal stations stretching from Bristol Bay to the Arctic Ocean.

Station	Temperature		
	Observed (°F)	Normal (°F)	Delta (°F)
Anchorage	35.9	34.8	1.1
Annette	49.5	46.7	2.8
Barrow	30.1	17.2	12.9
Bethel	37.7	30.3	7.4
Bettles	23.0	18.9	4.1
Cold Bay	45.3	40.4	4.9
Delta Junction	26.3	24.1	2.2
Fairbanks	26.7	24.2	2.5

Gulkana	20.0	26.6	-6.6
Homer	43.0	38.1	4.9
Juneau	40.2	42.4	-2.2
King Salmon	40.4	33.5	6.9
Kodiak	44.0	40.5	3.5
Kotzebue	35.3	24.3	11.0
McGrath	29.8	25.1	4.7
Nome	37.7	28.7	9.0
St. Paul Island	44.8	38.6	6.2
Talkeetna	35.1	33.2	1.9
Yakutat	40.8	41.0	-0.2

The highest daily maximum temperature of the First Order Stations for October was 63°F reported at King Salmon on the 13th and Annette on the 24th. Annette also held the spot for the highest mean temperature for the month at 49.5°F. The lowest temperature of -17°F was observed at Gulkana on the 24th and Gulkana reported the lowest October mean monthly temperature with a value of 20.0°F.



Daily mean temperature deviation from the normal temperature for the mean of the First Order Stations for October 2016.

There were a quite a few daily temperature record events in October, and most were high events, and occurred during the warm spells during the first half of the month, and during the last week of the month. Many of the events were focused in the southwestern area of the State. St. Paul had 19 events both set and tied high records. King Salmon had nine such events. Kodiak had two new low records, while Juneau had one new low record temperature. The high of 44°F at Barrow on the 10th not only set a daily record, but was the warmest temperature in October on record. The average temperature at Fairbanks dropped to 32°F on the 13th, giving a total of 194 days (start on April 3rd) where the temperature was greater than or equal to 32°F, breaking the old record of 188 days from 1943.

Date	Temperature Records				
	Station	Element	New Record	Old Record	Year of old Record
10/03/16	King Salmon	High Temperature	59	58	2012
10/03/16	St. Paul	High Temperature	51	51	2015

10/04/16	Barrow	High Temperature	39	38	1937
10/04/16	St. Paul	High Temperature	51	51	1989
10/05/16	King Salmon	High Temperature	58	57	2015
10/05/16	St. Paul	High Temperature	50	50	2015
10/06/16	St. Paul	High Temperature	52	51	1979
10/06/16	Yakutat	High Temperature	60	60	1975
10/07/16	St. Paul	High Temperature	50	50	1979
10/08/16	St. Paul	High Temperature	51	49	2009
10/09/16	King Salmon	High Temperature	58	58	2015
10/09/16	St. Paul	High Temperature	50	50	1985
10/10/16	Barrow	High Temperature	44	43	1925
10/10/16	King Salmon	High Temperature	57	57	2009
10/10/16	St. Paul	High Temperature	50	50	1979
10/11/16	King Salmon	High Temperature	56	56	2012
10/11/16	Nome	High Temperature	52	51	1979
10/11/16	St. Paul	High Temperature	51	50	1979
10/12/16	King Salmon	High Temperature	59	55	2009
10/12/16	Nome	High Temperature	59	58	1937
10/12/16	St. Paul	High Temperature	50	49	1993
10/13/16	Juneau	Low Temperature	24	26	1992
10/13/16	King Salmon	High Temperature	63	57	1993
10/13/16	Kodiak	High Temperature	55	51	1936

10/13/16	St. Paul	High Temperature	51	48	2015
10/14/16	St. Paul	High Temperature	50	48	2015
10/15/16	St. Paul	High Temperature	50	49	2004
10/17/16	Kodiak	Low Temperature	23	24	1997
10/18/16	Kodiak	Low Temperature	22	24	1994
10/23/16	St. Paul	High Temperature	48	47	1979
10/24/16	Annette	High Temperature	63	61	2010
10/25/16	Annette	High Temperature	59	59	1979
10/24/16	Cold Bay	High Temperature	52	52	1980
10/24/16	St. Paul	High Temperature	47	47	1969
10/25/16	St. Paul	High Temperature	48	46	1981
10/26/16	Barrow	High Temperature	35	35	1946
10/26/16	St. Paul	High Temperature	48	46	1996
10/28/16	Cold Bay	High Temperature	55	55	1945
10/28/16	King Salmon	High Temperature	54	53	1991
10/28/16	King Salmon	High Temperature	54	53	1991
10/28/16	St. Paul	High Temperature	48	46	1996
10/29/16	Barrow	High Temperature	41	35	1911
10/29/16	Nome	High Temperature	44	44	2002
10/29/16	St. Paul	High Temperature	46	46	2003
10/30/16	Barrow	High Temperature	36	35	1911
10/30/16	Kotzebue	High Temperature	41	40	2002

10/31/16	Barrow	High Temperature	36	33	1928
10/31/16	Nome	High Temperature	43	42	1911

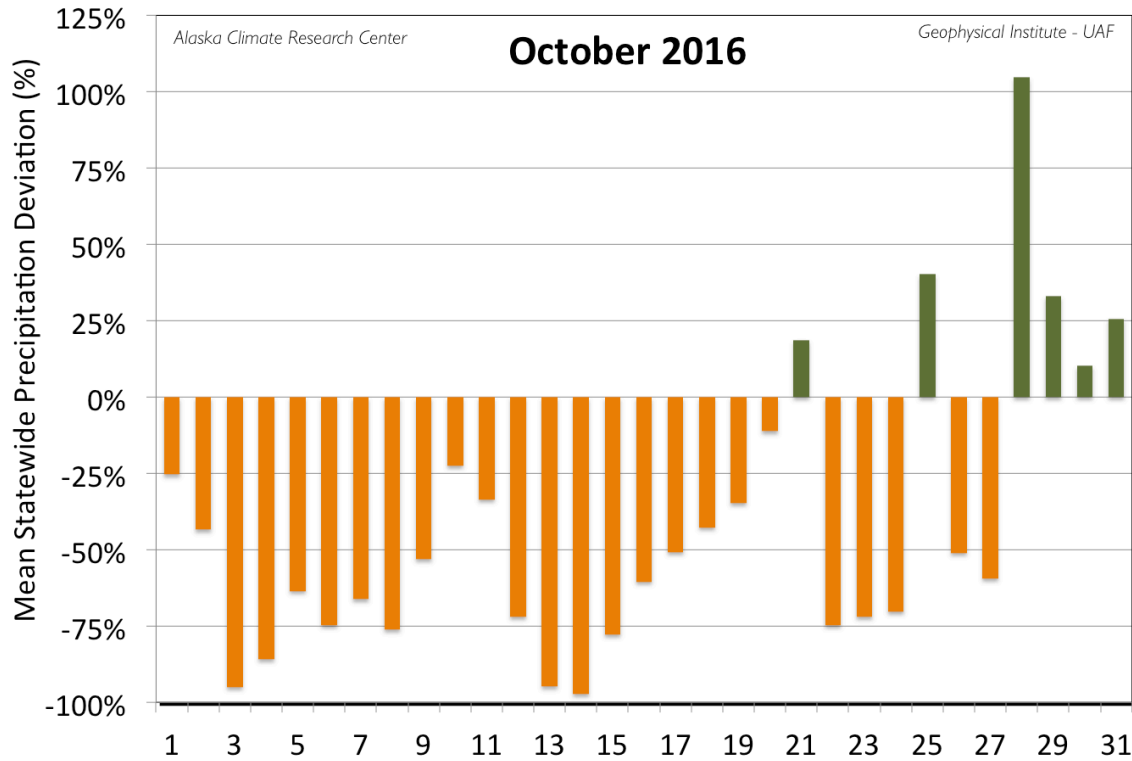
The table below lists the stations that set new monthly average high records. In addition, it was the second warmest October for Cold Bay with 45.3, 0.7°F below the 2013 record. It was the fourth warmest October for Bethel and the fifth warmest for King Salmon and Homer.

Station	Monthly Low Temperature Records			
	New Record	Old Record	Difference	Year of old Record
Barrow	30.1	27.7	2.4	1911
Kotzebue	35.3	34.5	0.8	2013
Nome	37.7	36.0	1.7	2006
St. Paul	44.8	43.3	1.5	1979
Dutch Harbor	46.7	46.0	0.7	2015

Precipitation

October's precipitation was significantly below normal, with the overall precipitation calculated as 45% below the average; this calculation was based on the mean of the deviations in percentage of the First Order Stations. Fifteen of the First Order Stations and 25 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. This is quite a bit drier than October 2015, which reported a negative deviation of -4% below normal. The greatest daily deviation of 105% occurred on the 28th. The leading station with a greater than normal monthly precipitation amount was St. Paul with 5.29", or 170% of normal.

Station	Precipitation				
	Observed (in)	Normal (in)	Delta (in)	Delta (%)	(%)
Anchorage	0.59	2.03	-1.44	-71%	29%
Annette	4.59	13.92	-9.33	-67%	33%
Barrow	0.28	0.41	-0.13	-32%	68%
Bethel	0.74	1.65	-0.91	-55%	45%
Bettles	0.26	1.04	-0.78	-75%	25%
Cold Bay	7.11	4.76	2.35	49%	149%
Delta Junction	0.10	0.80	-0.70	-88%	13%
Fairbanks	0.02	0.83	-0.81	-98%	2%
Gulkana	0.37	1.01	-0.64	-63%	37%
Homer	1.57	2.57	-1.00	-39%	61%
Juneau	2.59	8.63	-6.04	-70%	30%
King Salmon	1.12	2.08	-0.96	-46%	54%
Kodiak	11.58	8.26	3.32	40%	140%
Kotzebue	0.30	1.01	-0.71	-70%	30%
McGrath	0.38	1.44	-1.06	-74%	26%
Nome	1.70	1.61	0.09	6%	106%
St. Paul Island	5.29	3.11	2.18	70%	170%
Talkeetna	0.48	2.90	-2.42	-83%	17%
Yakutat	3.00	21.98	-18.98	-86%	14%



Daily mean precipitation deviation from the normal for the First Order Stations for October 2016.

October's highest monthly precipitation total reported for a First Order Station was 11.58" at Kodiak, and Kodiak also reported the highest daily total of 2.76" on the 11th, a new daily record.

Given the overall low precipitation in October, only one daily record was set and that was at Kodiak on the 11th with 2.76", breaking the old record from 1999 with 2.15". In addition, Juneau set a new record for consecutive days with no rain in October, with 14 days from October 1 to October 14, topping the old record of 12 days from October 19 to October 30, 2012. October is the normally wettest month of the year for Juneau. Barrow did not have a permanent snow pack until the 21st, a new record, breaking the old record of October 12th, set in 1998. The snowfall in Juneau on the 15th marks the first time measureable snowfall was record at Juneau before Fairbanks, and the 6th time this has occurred at Juneau before Anchorage.

The table below lists the stations that set new monthly low precipitation records. In addition, it was the second driest October for Talkeetna with 0.48", 0.36" above the 1967 record. It was the fifth driest October for Bettles and Big Delta. Opposing the trend seen in the Southeast, St. Paul set a new monthly precipitation high record with 6.21", topping the 5.74" from 2004.

Station	Monthly Low Precipitation Records			
	New Record	Old Record	Difference	Year of old Record
Annette	4.59	5.44	-0.85	2012
Ketchikan	7.38	8.48	-1.10	2012
Sitka	4.78	5.92	-1.14	2012
Juneau	2.59	3.28	-0.69	1950
Yakutat	3.00	4.41	-1.41	1936
Cordova	1.78	2.40	-0.62	1985

Newsworthy Events

Seasonal maintenance on the Denali highway, Taylor Highway and the new road to Tanana ended on October 1st. The glacial dam above the Skilak Lake broke on the 6th. No significant impacts were reported on the lake, or downstream on the Kenai River, which did rise a couple feet and crested on the 11th. The glacial dam traditionally breaks in late fall every other year.

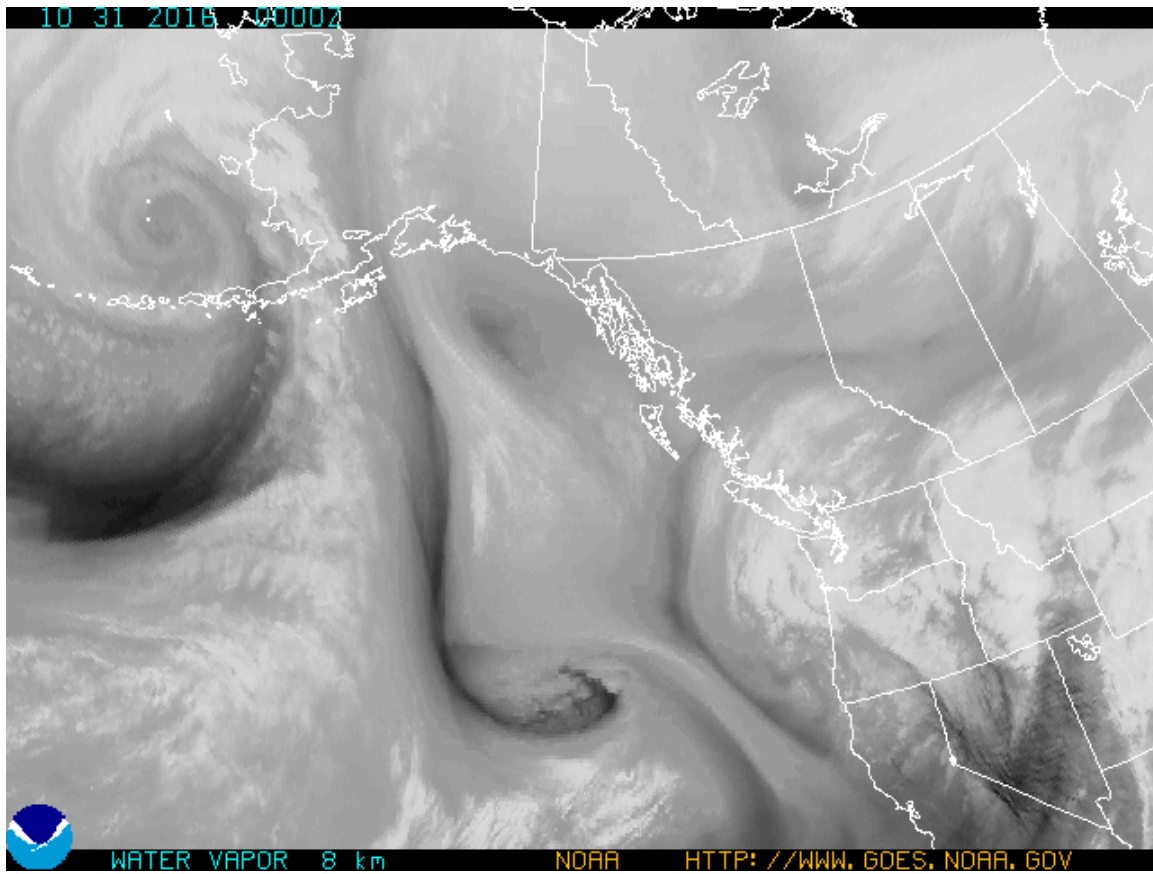
A late season wildfire was reported near the Northwestern village of Noorvik on the 12th. The fire posed no problems and was last reported at over 300 acres. On the 15th the dry conditions and high winds raised the fire danger in the Interior and residents were requested to cease open burning and use extreme caution. Also on the 15th, the Moose Creek wildfire was reported near the Glen Highway north of Palmer. The fire was fought, but hampered by the winter weather with high winds and the low temperature freezing the water and equipment used to fight the fire. Efforts were also hampered by a lack of personnel and ready equipment due to the end of the wildfire season. Even so, more than 40 firefighters were dispatched. The fire was not fully contained until the 21st and was estimated at 300 acres. The firefighters were aided by about 2" of new snow. The fire did come within 75' of the Glen Highway.



This VIRUS satellite image shows a plume of dust being blown out of the Copper River Basin of Alaska by high winds on the 13th of October.

Strong wind warnings were issued for the Interior areas for the 15th and 16th. Winds up to 51 mph were reported at Sheenjek River and Hodzana. Tanana reported gusts up to 48 mph, 47 mph at Kaltag, and 38 mph at McGrath and Fort Yukon. Numerous power outages were reported on the night of the 16th and into the 17th. Considerable amounts of airborne glacial dust was seen along the Tanana River and a number of trees were reported down.

The first significant snowfall impacted the Southcentral on the 17th with over 3" at Seward, 2" at Cordova and Girdwood. More snow fell in the Southcentral on the 21st with more than 12" at Hatcher and Indian Passes. Eagle River reported more than 7", Palmer and Potter marsh received more than 4" and Kenai reported 1". The snow created poor driving conditions in the area and numerous auto accidents and stuck vehicles were reported in Anchorage. Blizzard warnings were issued for Thompson Pass due to snow and high winds. Fairbanks received its first measureable snowfall on the 21st, with up to 5" reported near town. The snowfall for the 21st totaled 5.1" at Harding Lake and 3.2" at Circle Hot Springs.



This NWS satellite image shows the storm generating hurricane force winds along the Aleutian Islands areas of Alaska on the 30th.

A freezing rain advisory was issued for Fairbanks and Nenana areas on the 29th. Driving conditions did deteriorate and a portion of the Chena Hot Springs Road was closed for a couple hours. High winds, up to Hurricane Force, high seas and coastal flooding warnings were issued for Western Alaska and Bering Sea on the 29th. The high winds at Nome damaged buildings with roofs blown off and some boats were lost. On the 30th Adak reported a wind gust over 90 mph, Nokolski and Akutan 76 mph and Unalaska reported 98 mph. More icy roads affected Anchorage drivers on the 31st.

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.