

Alaska Statewide Climate Summary

October 2018

The following report provides an overview of the October 2018 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

October saw record breaking temperatures throughout the state. All of our selected stations recorded monthly mean temperatures well above average. At 3.1°F above normal, Juneau was the coldest (!) station. Eight stations (Anchorage, Bethel, Bettles, Delta Junction, Fairbanks, King Salmon, Kotzebue, McGrath) saw exceptionally high temperature deviations of over 10°F above normal. McGrath tops the list with a whopping 11.3°F. Monthly temperature deviations for all stations are listed in Table 1.

Several new monthly temperature records were set: In terms of monthly mean temperature, **October 2018 was the warmest October on record in Anchorage** (the record starts in 1952, previous record 2013), **Bethel** (measurements started in 1923, previous record 1925), **Nome** (measurements started in 1900, previous record 2016) and **Yakutat** (measurements started in 1917, previous record 1980). For Anchorage and Bethel, this is the second monthly record in a row. Several other stations saw top 5 values: 2018 was the second warmest October on record in Bettles, Gulkana, Homer, King Salmon, McGrath, and St. Paul Island, third warmest in Cold Bay, Delta Junction, Fairbanks, and Kotzebue, fourth warmest in comparatively cool Juneau, and fifth warmest in Kodiak, Talkeetna, and Utqiagvik.

The unusually warm conditions are also reflected in the high number of new daily temperature records listed in Table 2. All temperature records set in October were high records.

Figure 2 shows temperature deviations at all of the selected stations for each day of the month. Anchorage and Kotzebue did not see a single day with below average temperatures in September. Juneau is the only station with a prolonged period of cooler temperatures during the first half of the month. Most other stations were overwhelmingly consistent and often very large positive deviations occurred from normal for the majority of October. For most locations, only the last three days of the month were normal or slightly cooler than normal.

Table 1: Mean monthly air temperature, normal (1981-2010) and departure for selected stations throughout the state, October 2018, preliminary values.

Station	Observed (°F)	Normal (°F)	Departure (°F)
Anchorage	44.8	34.8	10.0
Bethel	41.0	30.3	10.7
Bettles	30.1	18.9	10.8
Cold Bay	44.5	40.5	4.1
Delta Junction	35.1	24.1	11.0
Fairbanks	34.5	24.2	10.3
Gulkana	36.8	26.6	9.5
Homer	44.8	38.1	6.7
Juneau	45.5	42.4	3.1
Ketchikan	49.2	45.3	3.9
King Salmon	44.5	33.5	11.0
Kodiak	45.5	40.5	5.0
Kotzebue	34.3	24.3	10.0
McGrath	36.4	25.1	11.3
Nome	38.4	28.8	9.6
St. Paul Island	43.4	38.6	4.8
Talkeetna	40.9	33.2	7.7
Utqiagvik	25.7	17.2	8.5
Yakutat	46.5	41.1	5.5

2018-10, Monthly Temperature Departure From Normal (1981-2010)

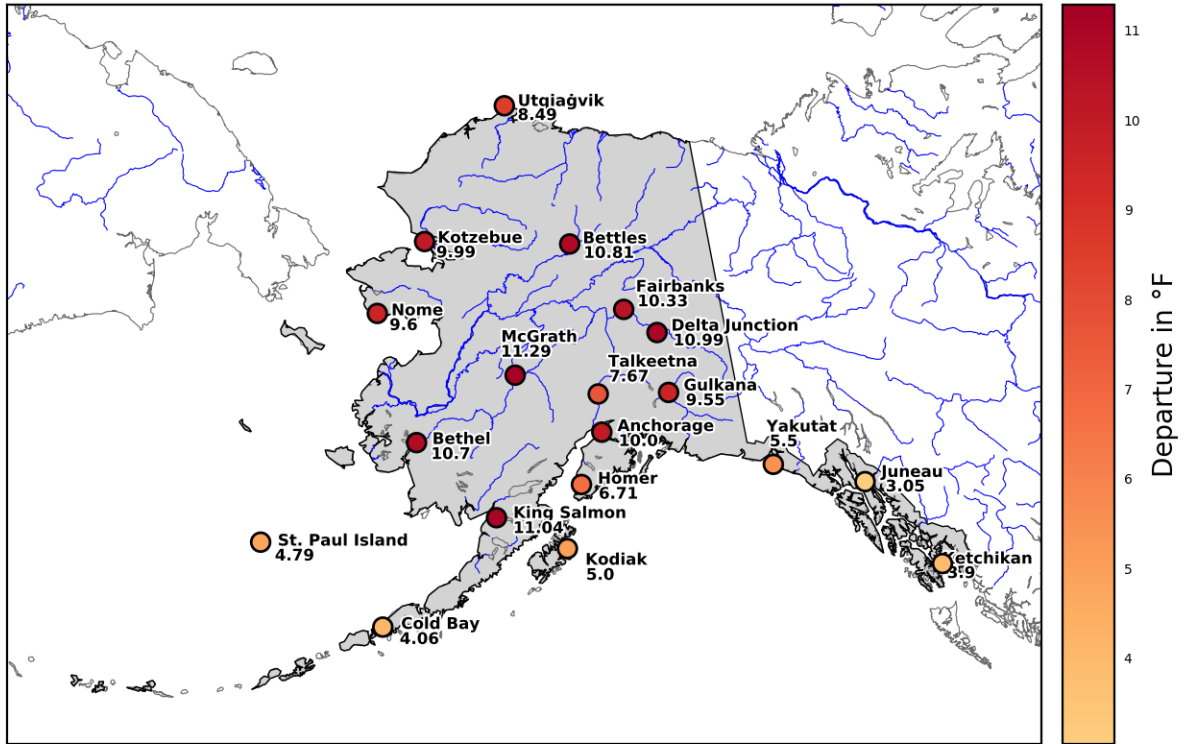


Figure 1: Monthly mean temperature departure from normal, October 2018.

Daily mean temperature, departure from normal (1981-2010), 2018-10

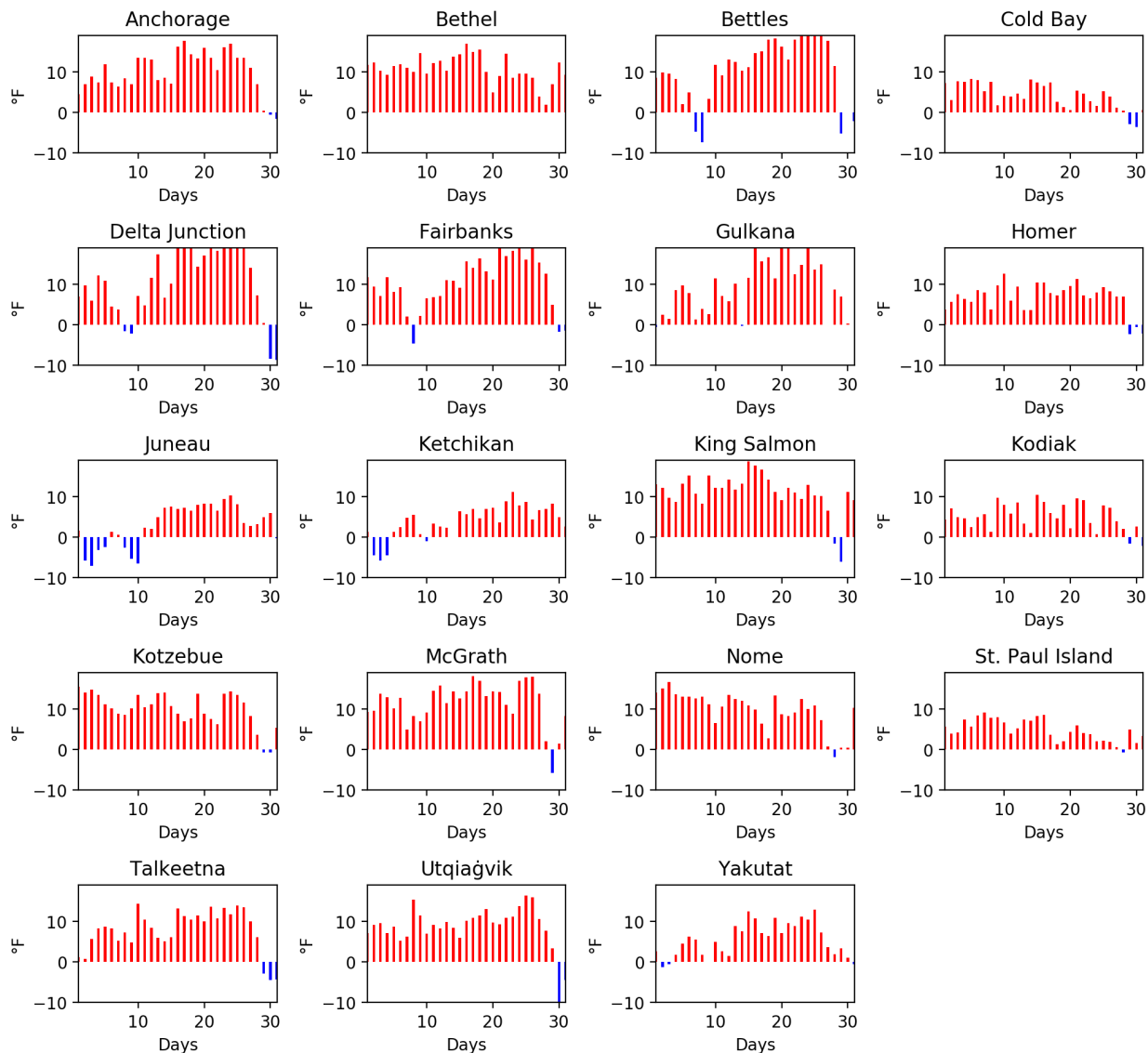


Figure 2: Daily mean temperature departures for each day in October 2018, at the selected stations (unfortunately the weather station in Delta Junction experienced some problems during the first half of the month.)

Table 2: Daily temperature records, October 2018, 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					
Anchorage	2018/10/05	avgt	52.5	1952	50.5
Anchorage	2018/10/11	avgt	51	1986	50.5
Anchorage	2018/10/17	avgt	52	2013	49
Anchorage	2018/10/24	avgt	47.5	1980	46.5
Anchorage	2018/10/25	avgt	43.5	2011	43
Anchorage	2018/10/17	maxt	56	1969	54
Anchorage	2018/10/20	maxt	53	2013	52
Anchorage	2018/10/23	maxt	55	2002	54
Anchorage	2018/10/26	maxt	52	2017	51
Anchorage	2018/10/04	mint	46	2017	45
Anchorage	2018/10/05	mint	48	2017	45
Anchorage	2018/10/17	mint	48	2013	44
Anchorage	2018/10/18	mint	45	2013	44
Anchorage	2018/10/24	mint	42	2011	41
Bethel	2018/10/16	avgt	47	1969	45
Bethel	2018/10/17	avgt	44.5	2006	43
Bethel	2018/10/22	maxt	52	1926	51
Bethel	2018/10/09	mint	44	1925	41
Bettles	2018/10/01	maxt	59	2003	56
Bettles	2018/10/03	maxt	54	2003	51
Cold Bay	2018/10/03	mint	47	2009	46
Delta Junction	2018/10/21	avgt	43	2002	42.5
Delta Junction	2018/10/24	maxt	51	1998	49
Delta Junction	2018/10/25	maxt	50	1998	48
Delta Junction	2018/10/26	maxt	49	1992	48
Delta Junction	2018/10/21	mint	36	2002	35
Fairbanks	2018/10/26	mint	30	1936	29
Gulkana	2018/10/21	mint	54	1954	50
Gulkana	2018/10/24	avgt	42	1981	39
Gulkana	2018/10/16	avgt	40	1959	39
Gulkana	2018/10/21	maxt	53	1972	52
Gulkana	2018/10/24	maxt	50	2002	49
Gulkana	2018/10/17	maxt	49	1998	47

Gulkana	2018/10/21	mint	34	1961	33
Homer	2018/10/10	maxt	58	1936	57
Homer	2018/10/15	maxt	57	1969	56
Homer	2018/10/26	maxt	53	2013	52
Juneau	2018/10/01	maxt	63	1954	61
Juneau	2018/10/28	maxt	53	1952	52
King Salmon	2018/10/06	avgt	53.5	2003	52
King Salmon	2018/10/15	avgt	52.5	2013	51.5
King Salmon	2018/10/16	avgt	51	2013	49
King Salmon	2018/10/05	maxt	59	2016	58
King Salmon	2018/10/15	maxt	60	1969	59
King Salmon	2018/10/18	maxt	57	1988	53
King Salmon	2018/10/02	mint	51	1925	50
King Salmon	2018/10/06	mint	48	1957	46
King Salmon	2018/10/16	mint	47	2013	45
Kodiak	2018/10/02	mint	50	1935	48
Kotzebue	2018/10/01	avgt	49.5	2003	47.5
Kotzebue	2018/10/02	avgt	47.5	1966	46
Kotzebue	2018/10/03	avgt	47.5	1991	44
Kotzebue	2018/10/04	avgt	45.5	1989	44.5
Kotzebue	2018/10/13	avgt	40	1969	39.5
Kotzebue	2018/10/02	maxt	53	1950	51
Kotzebue	2018/10/03	maxt	52	1942	50
Kotzebue	2018/10/04	maxt	49	1941	48
Kotzebue	2018/10/01	mint	45	1966	42
Kotzebue	2018/10/03	mint	43	1991	42
Kotzebue	2018/10/04	mint	42	1989	41
McGrath	2018/10/03	avgt	48.5	1979	47.5
McGrath	2018/10/03	maxt	61	1979	57
Nome	2018/10/03	avgt	51.5	1937	46
Nome	2018/10/05	avgt	47	1957	46.5
Nome	2018/10/07	avgt	45.5	1925	45
Nome	2018/10/03	maxt	54	1954	52
Nome	2018/10/19	maxt	47	2004	44
Nome	2018/10/02	mint	47	1950	45
Nome	2018/10/03	mint	49	1937	45
St. Paul Island	2018/10/07	avgt	49.5	2016	49
St. Paul Island	2018/10/09	avgt	48	1979	47.5

St. Paul Island	2018/10/05	maxt	51	1993	50
St. Paul Island	2018/10/07	maxt	51	1979	50
St. Paul Island	2018/10/20	maxt	48	1951	47
Talkeetna	2018/10/11	avgt	46.5	1932	46
Talkeetna	2018/10/11	mint	41	1952	39
Talkeetna	2018/10/12	mint	40	1986	39
Talkeetna	2018/10/16	mint	42	1925	41
Utqiagvik	2018/10/08	avgt	37.5	2016	33.5
Utqiagvik	2018/10/07	maxt	39	1993	38
Utqiagvik	2018/10/08	maxt	42	1926	37
Utqiagvik	2018/10/09	maxt	40	1935	39
Yakutat	2018/10/15	avgt	54	1937	51
Yakutat	2018/10/16	avgt	52	2015	50
Yakutat	2018/10/19	avgt	51	2002	50.5
Yakutat	2018/10/25	avgt	51	1936	49.5
Yakutat	2018/10/01	maxt	66	1967	63
Yakutat	2018/10/25	maxt	58	1986	55
Yakutat	2018/10/15	mint	52	1925	47

Precipitation

October was a moderately too wet or about normal month at many stations. Relatively speaking, Homer was wettest with 172% of normal precipitation. The stations in the interior were generally drier than normal and drier than the Arctic and western regions of the state this month. Delta Junction was driest at only 36% of normal. Ketchikan in the far southeast was also drier than normal, marking another month of significant drought conditions in the southern panhandle. Overall, October was variable throughout the state in terms of precipitation and generally wetter than the previous month, which saw exceptionally dry conditions in much of Alaska. See Table 3, Figure 3.

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, October 2018, preliminary values.

Station	Precipitation (in)	Normal (in)	% of normal
Anchorage	2.8	2.0	138.4
Bethel	2.0	1.7	122.4
Bettles	1.5	1.0	139.4
Cold Bay	6.7	4.8	140.8
Delta Junction	0.3	0.8	36.2
Fairbanks	0.5	0.8	62.7

Gulkana	0.5	1.0	49.5
Homer	4.4	2.6	172.0
Juneau	10.4	8.6	120.7
Ketchikan	11.6	19.2	60.2
King Salmon	4.1	2.1	195.7
Kodiak	5.6	8.3	67.6
Kotzebue	0.8	1.0	76.2
McGrath	1.3	1.4	90.3
Nome	1.7	1.6	104.3
St. Paul Island	4.0	3.1	129.3
Talkeetna	3.1	2.9	105.5
Utqiagvik	0.7	0.4	165.9
Yakutat	22.8	22.0	103.7

2018-10, Monthly Precipitation, % of Normal (1981-2010)

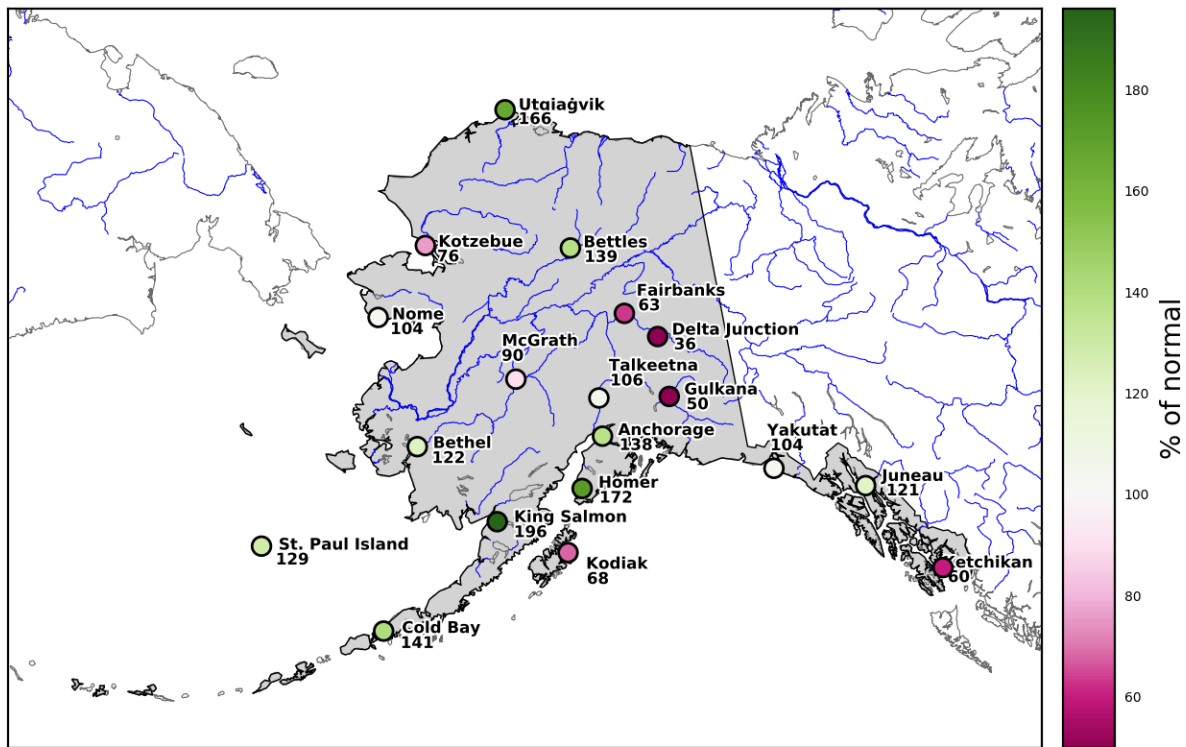


Figure 3: Monthly precipitation sums expressed as percent of normal (1981-2010), October 2018.

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.

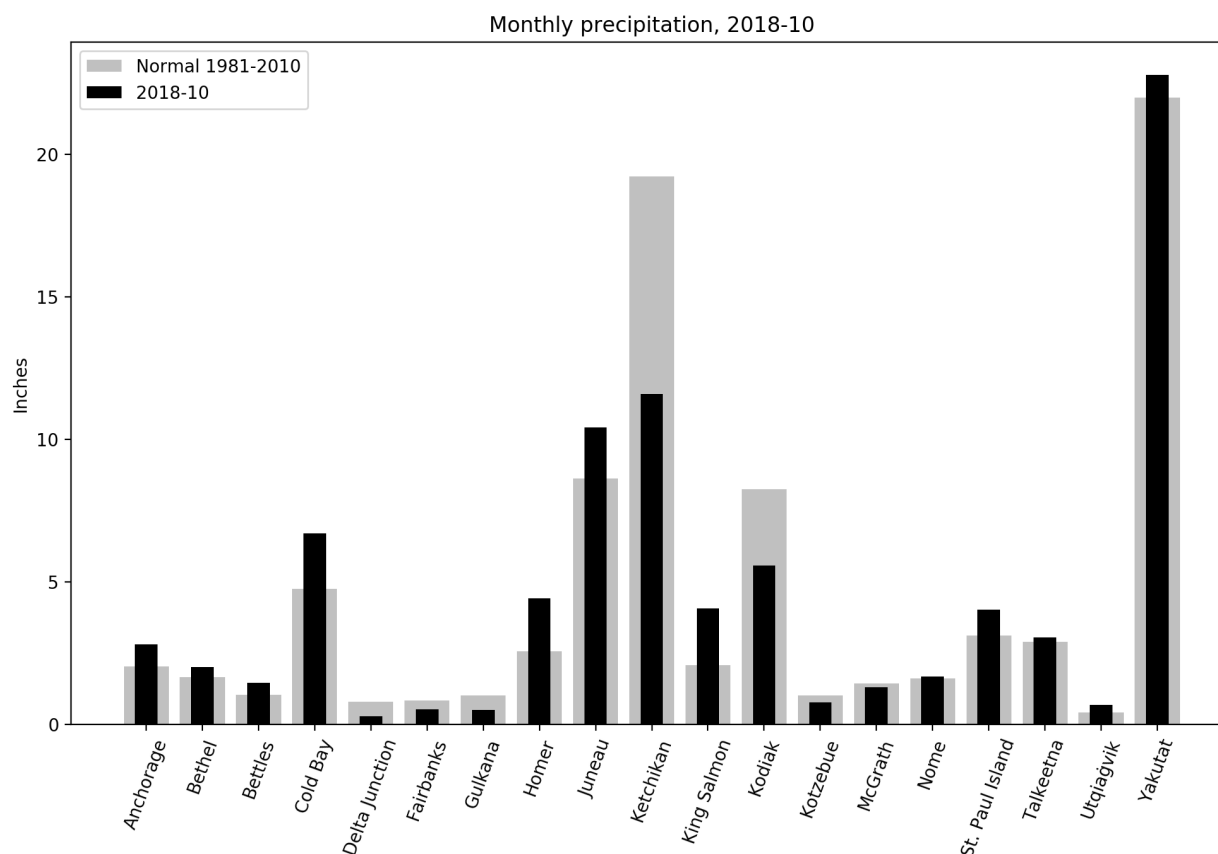


Figure 4: Monthly precipitation sums for October 2018 at the selected stations compared to the normal (1981-2010), in inches.

Snow

In October, all of the selected stations that measure snowfall normally receive at least a small amount of snow. Bettles, Fairbanks, and McGrath normally see about 10 inches of snow in October. This year, all stations except Kotzebue (which was almost exactly normal), received far less snow than normal. At several stations, this coincides with above average precipitation. This implies that precipitation that would normally be expected to fall as snow fell as rain due to the unusually high temperatures.

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, October 2018, preliminary values.

Station	Precipitation (in)	Normal (in)	% of normal
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Anchorage	0.4	7.9	5.1
Bethel	0.1	4.4	2.3
Bettles	9.3	12.4	75.0
Cold Bay	0.0	2.4	0.0
Fairbanks	0.7	10.8	6.5
Juneau	0.0	0.8	0.0
King Salmon	0.3	2.8	10.7
Kodiak	0.0	1.1	0.0
Kotzebue	6.4	6.1	104.9
McGrath	3.0	10.2	29.4
Nome	1.5	4.6	32.6
St. Paul Island	0.0	2.0	0.0
Utqiagvik	7.2	9.1	79.1
Yakutat	0.0	2.5	0.0

Newsworthy Events

Arctic sea ice increased particularly in the Chukchi Sea where extent is slightly ahead of last year now, although far below the climatological normal.

The unusual warmth of the past month led to a number of unusually late dates of first frost, first snow, first consistent snow cover, and last time mowing the lawn in communities throughout the state. Around Anchorage, the first significant snowfall of the season caused traffic delays on October 28th and 29th.

The drought in the southeast is easing off. While October started dry in Ketchikan, by the end of the month it had rained enough to restart the community's hydropower facility, allowing the electric utility to switch off the diesel generators they had been using to compensate for the lack of rain. According to a statement by the utility company, the generators burned a little over half a million gallons of fuel in October alone.

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.