Alaska Statewide Climate Summary
July 2018

The following report provides an overview of temperature and precipitation for June 2018. The report is based on preliminary data from selected weather stations throughout the state. "Departure from normal" refers to the climatological average over the 1981-2010 period.

Temperature

July temperatures were warmer than normal throughout the state. Of the selected stations, Kotzebue, Juneau, and Ketchikan were warmest with positive deviations of 3.9, 4.3, and 5.7°F, respectively (see Table 1, Figure 1). This represents a very warm month in the Southeast: Juneau set a new record for the time series with a monthly mean temperature of 61.2°F. The second warmest year on record was 1951 with a July mean temperature of 60.2°F. For Ketchikan, July 2018 was the second warmest July on record. Anchorage, Delta Junction, Homer, Kotzebue, McGrath, St. Paul Island, and Yakutat also recorded monthly temperatures within the "top ten" for the respective time series. Talkeetna was the "coolest" station with a positive deviation of 0.9°F. Numerous daily high records were set in July, see Table 2.

It is interesting to note that while Kotzebue recorded a significant positive deviation, as mentioned above, and July was warmer in only 8 years of the over 100 years long time series. Considering the long-term records, July 2018 was again unusually warm in Kotzebue continuing a period of above average monthly temperatures at Kotzebue since September 2017, see Figure 2.

Figure 3 shows temperature deviations at all of the selected stations for each day of the month. At most stations, July started and ended with above average temperatures. A cool phase mid-month was more pronounced in the interior than in the south and southeast, contributing to the regional differences in monthly mean temperature deviations.

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

Station	**Observed (°F)**	**Normal (°F)**	**Departure (°F)**
Anchorage	61.4	58.8	2.6
Bethel	57.1	56.1	1.0
Bettles	61.5	59.7	1.8
Cold Bay	52.2	50.9	1.3
Delta Junction	62.8	60.2	2.4
Fairbanks	63.9	62.5	1.4
Gulkana	59.5	57.6	1.9
Homer	56.7	54.6	2.1

Juneau	61.2	56.9	4.3
Ketchikan	63.4	57.7	5.7
King Salmon	56.7	55.6	1.1
Kodiak	56.5	54.5	2.0
Kotzebue	58.5	54.6	3.9
McGrath	62.9	60.0	2.9
Nome	53.4	52.2	1.2
St. Paul Island	48.5	47.2	1.3
Talkeetna	61.0	60.2	0.9
Utqiaġvik	43.5	40.8	2.7
Yakutat	57.1	54.4	2.7

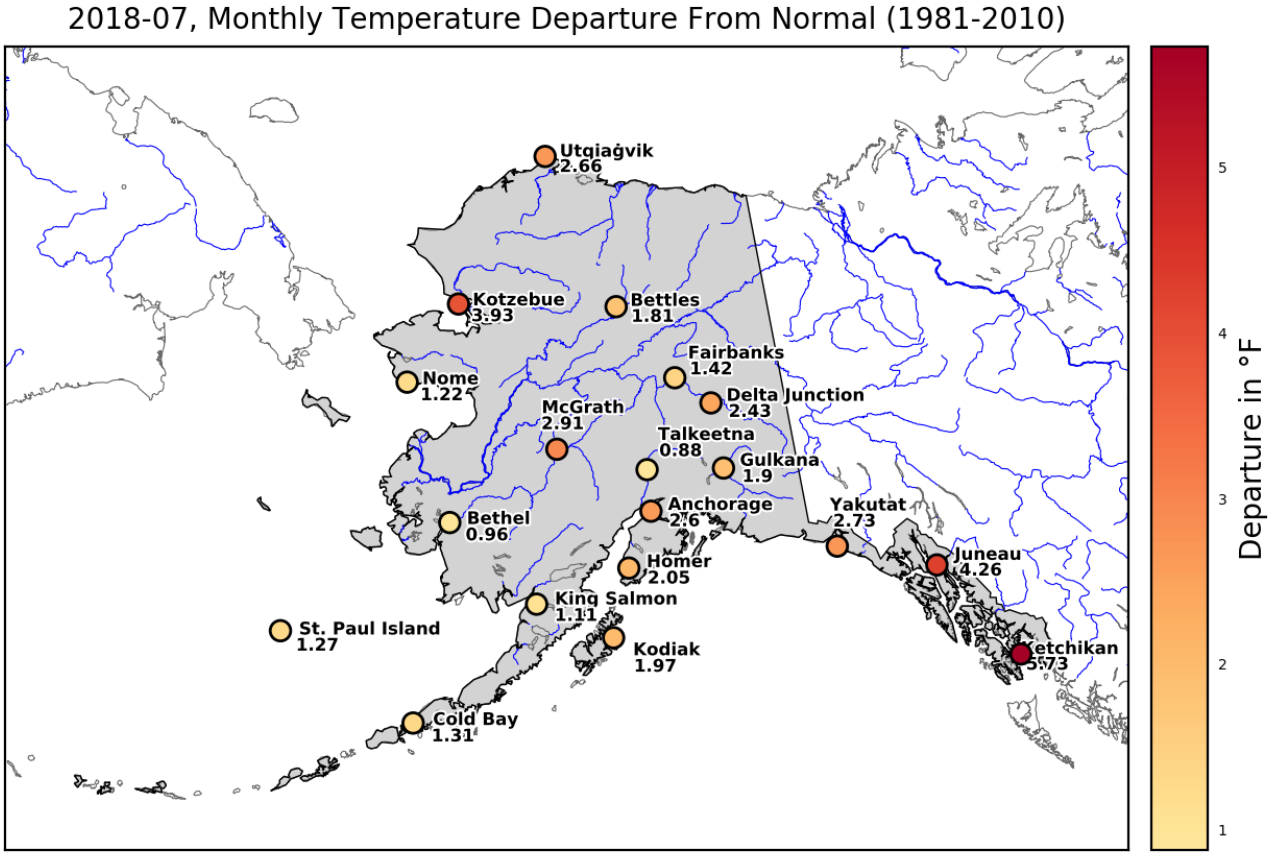

Figure 1: Monthly mean temperature departure from normal, July 2018.

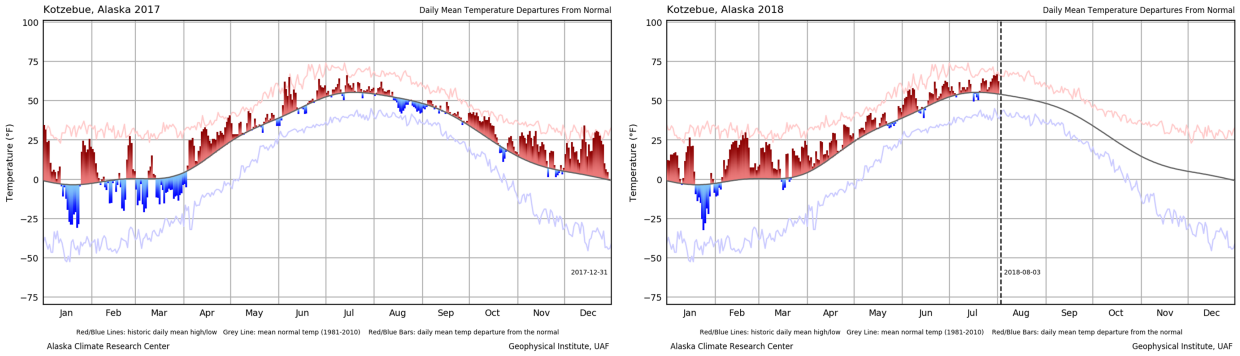

Figure 2: Daily temperature deviations from the 1981-2010 normal in Kotzebue for 2017 and 2018 to date.

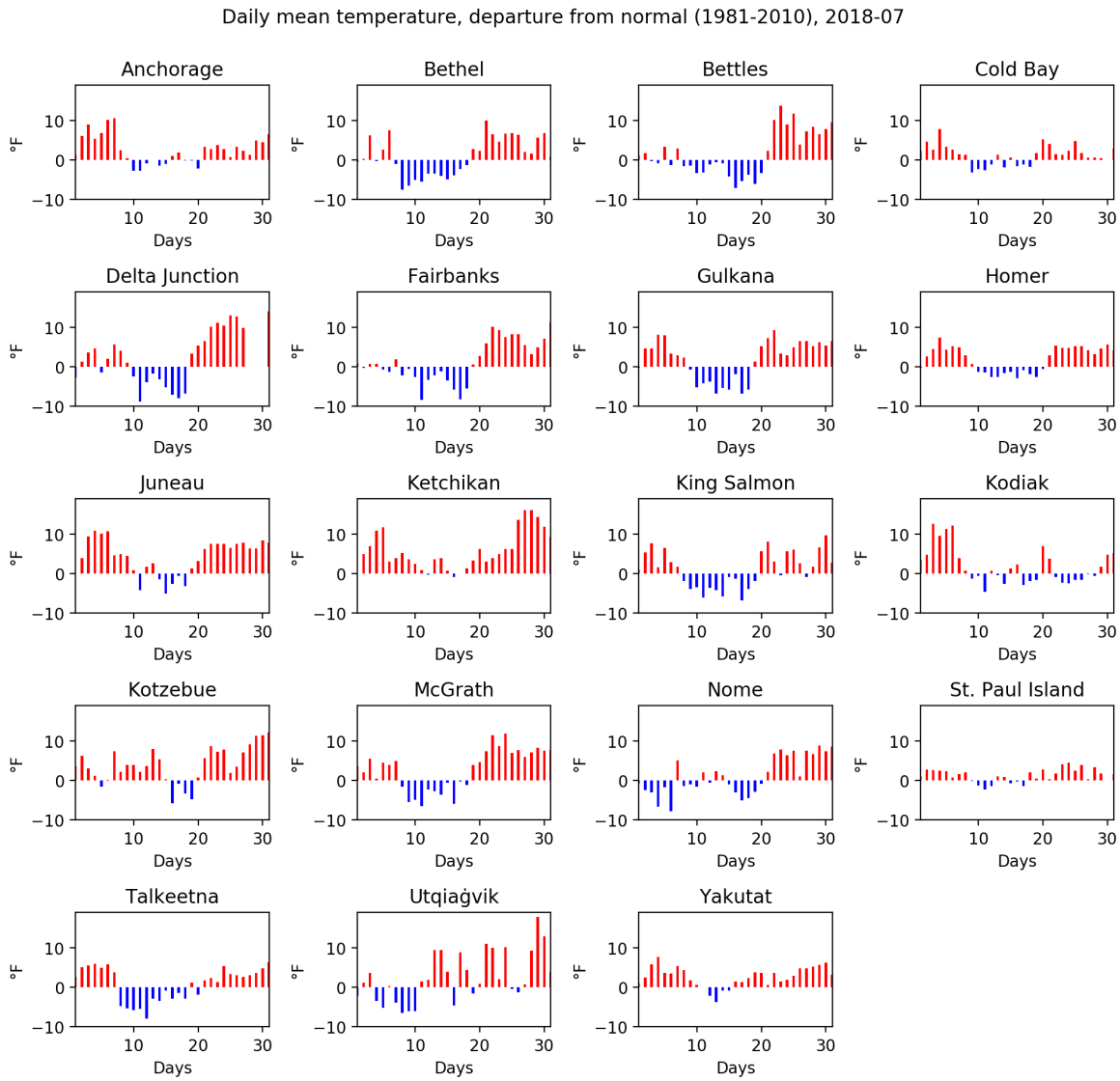

Figure 3: Daily mean temperature departures for each day in July 2018, at the selected stations.

Table 2: Daily temperature records, July 2018, since the beginning of the respective time series. Mean T = daily mean temperature, Min T = daily minimum temperature, Max T = daily maximum temperature.

Station	Date	Element	New Record	Year of old record	Old record
High records					
Anchorage	2018/07/07	Mean T	69	2005	67
Anchorage	2018/07/03	Max T	80	1979	79
Anchorage	2018/07/07	Min T	62	2005	59
Bettles	2018/07/23	Min T	60	1968	58
Bettles	2018/07/25	Min T	58	1955	56
Cold Bay	2018/07/04	Mean T	57.5	1997	56
Cold Bay	2018/07/25	Min T	53	1953	52
Delta Junction	2018/07/22	Mean T	70	1952	69
Delta Junction	2018/07/26	Mean T	72	1955	71.5
Delta Junction	2018/07/31	Mean T	72.5	1994	71
Delta Junction	2018/07/22	Max T	86	1968	84
Delta Junction	2018/07/25	Min T	63	1947	60
Delta Junction	2018/07/26	Min T	66	2009	60
Delta Junction	2018/07/31	Min T	64	1965	58
Fairbanks	2018/07/26	Min T	61	1975	60
Homer	2018/07/04	Mean T	61	2016	60
Homer	2018/07/30	Mean T	61	2016	60
Homer	2018/07/04	Max T	71	1936	70
Homer	2018/07/08	Min T	55	1962	52
Homer	2018/07/22	Min T	56	2004	55
Juneau	2018/07/04	Mean T	67	1999	65.5
Juneau	2018/07/05	Mean T	66.5	1990	66
Juneau	2018/07/23	Mean T	65	1966	64
Juneau	2018/07/24	Mean T	65	1966	64.5
Juneau	2018/07/03	Max T	83	1999	82
Juneau	2018/07/05	Max T	84	1951	83
Juneau	2018/07/06	Min T	60	1990	55
Juneau	2018/07/07	Min T	57	2015	55
Juneau	2018/07/26	Min T	56	1994	55
Juneau	2018/07/27	Min T	58	2009	56
Juneau	2018/07/31	Min T	55	2010	54
Ketchikan	2018/07/04	Mean T	67	1972	65
Ketchikan	2018/07/26	Mean T	72.5	1915	71

Ketchikan	2018/07/27	Mean T	75	1915	74
Ketchikan	2018/07/28	Mean T	75	2009	74
Ketchikan	2018/07/29	Mean T	73.5	2009	73
Ketchikan	2018/07/28	Max T	83	1915	82
Ketchikan	2018/07/26	Min T	63	1942	60
Ketchikan	2018/07/27	Min T	66	2009	64
King Salmon	2018/07/30	Mean T	65.5	1955	65
King Salmon	2018/07/03	Max T	82	1989	80
King Salmon	2018/07/30	Min T	58	1955	55
Kodiak	2018/07/03	Max T	77	1979	75
Kotzebue	2018/07/29	Mean T	66	1997	65
Kotzebue	2018/07/29	Min T	60	1997	59
Kotzebue	2018/07/30	Min T	64	1933	60
McGrath	2018/07/22	Mean T	71	2011	69.5
McGrath	2018/07/24	Mean T	71	1968	68
McGrath	2018/07/23	Min T	60	2001	59
McGrath	2018/07/24	Min T	61	2005	58
McGrath	2018/07/25	Min T	58	1984	57
McGrath	2018/07/26	Min T	62	1966	56
Utqiaġvik	2018/07/17	Min T	49	2017	45
Yakutat	2018/07/30	Mean T	61.5	1923	60.5
Low records					
Gulkana	2018/07/18	Min T	33	1917	34

Precipitation

Precipitation throughout the state was variable, which is not unusual. The southwestern stations on the coast were wetter than normal, as were Kotzebue and Utqiaġvik in the Arctic, while the interior and southeast were too dry. Overall, 7 of the 19 selected stations recorded more precipitation than normal, while the remaining stations were drier than normal.

With only 18% of normal precipitation, Ketchikan was not only the warmest (see above) station in July, but also the driest one by a fairly large margin (Figure 4). The southeast has been experiencing unusually dry conditions for several months and *Moderate Drought* status as defined by the US Drought Monitor (https://www.drought.gov/drought/) was introduced for parts of the region in July.

Gulkana was the second driest with 37% of normal precipitation. Most other stations in the interior received between 40 and 60% of normal precipitation.

Figure 5 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.

Snow Fall

Yes, there was snow in July: Utqiaġvik reported a monthly snow fall sum was 2 inches. All of the snow fell on July 8th. The normal for July in Utqiaġvik is 0.2 inches, so this year's value represents a deviation of 1000% from the normal – a value that indicates the importance of considering both relative and absolute deviations when interpreting such data.

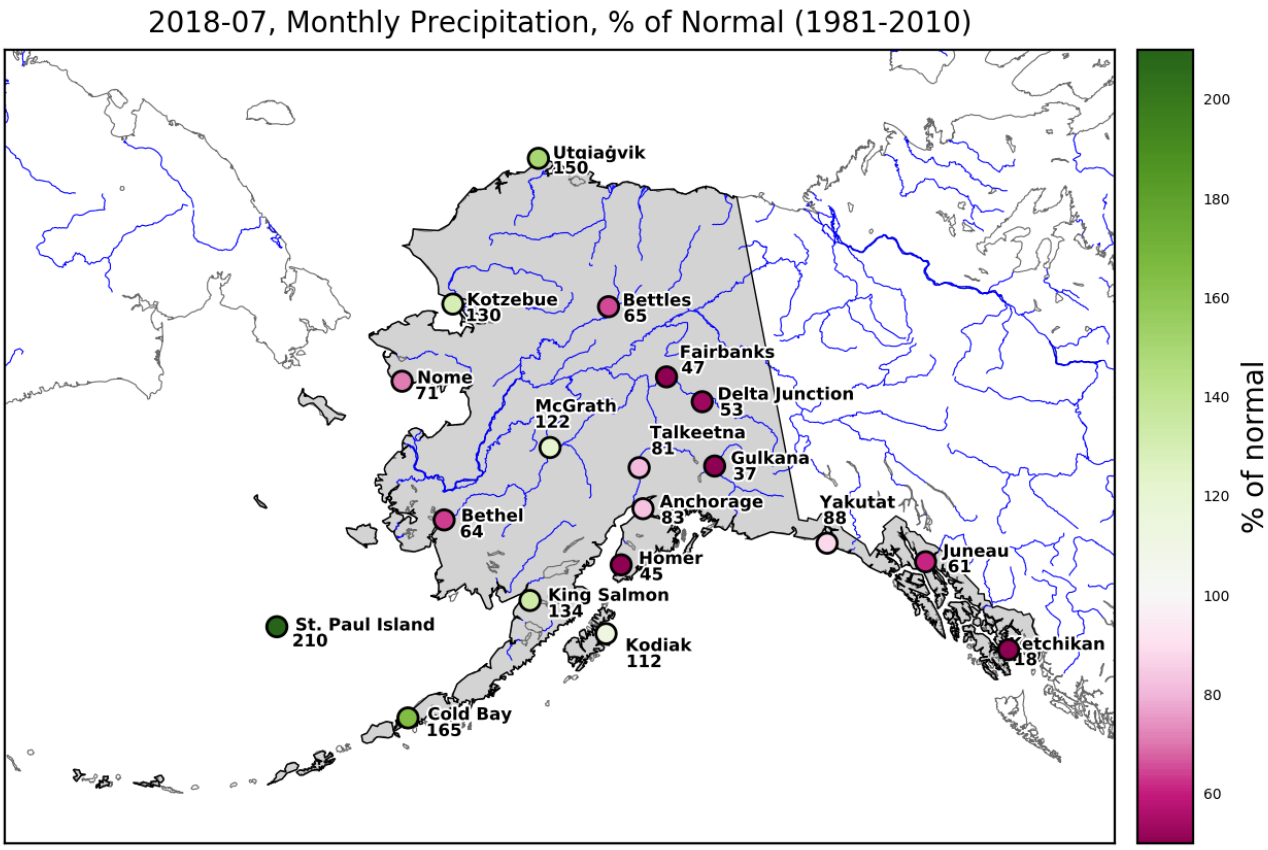

Figure 4: Monthly precipitation sums expressed as percent of normal (1981-2010), July 2018.

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, July 2018, preliminary values.

Station	Precipitation (in)	Normal (in)	% of normal
Anchorage	1.5	1.8	83.1
Bethel	1.5	2.4	64.0
Bettles	1.5	2.4	64.8
Cold Bay	4.1	2.5	165.3
Delta Junction	1.4	2.7	52.6
Fairbanks	1.0	2.2	46.8
Gulkana	0.7	1.8	37.0
Homer	0.7	1.6	44.5
Juneau	2.8	4.6	61.3
Ketchikan	1.2	6.6	18.4
King Salmon	3.1	2.3	134.3
Kodiak	5.5	4.9	112.0
Kotzebue	1.9	1.5	130.3
McGrath	2.9	2.4	121.8
Nome	1.5	2.1	71.1
St. Paul Island	3.9	1.9	210.3
Talkeetna	2.7	3.4	80.8
Utqiaġvik	1.5	1.0	150.0
Yakutat	6.9	7.9	87.9

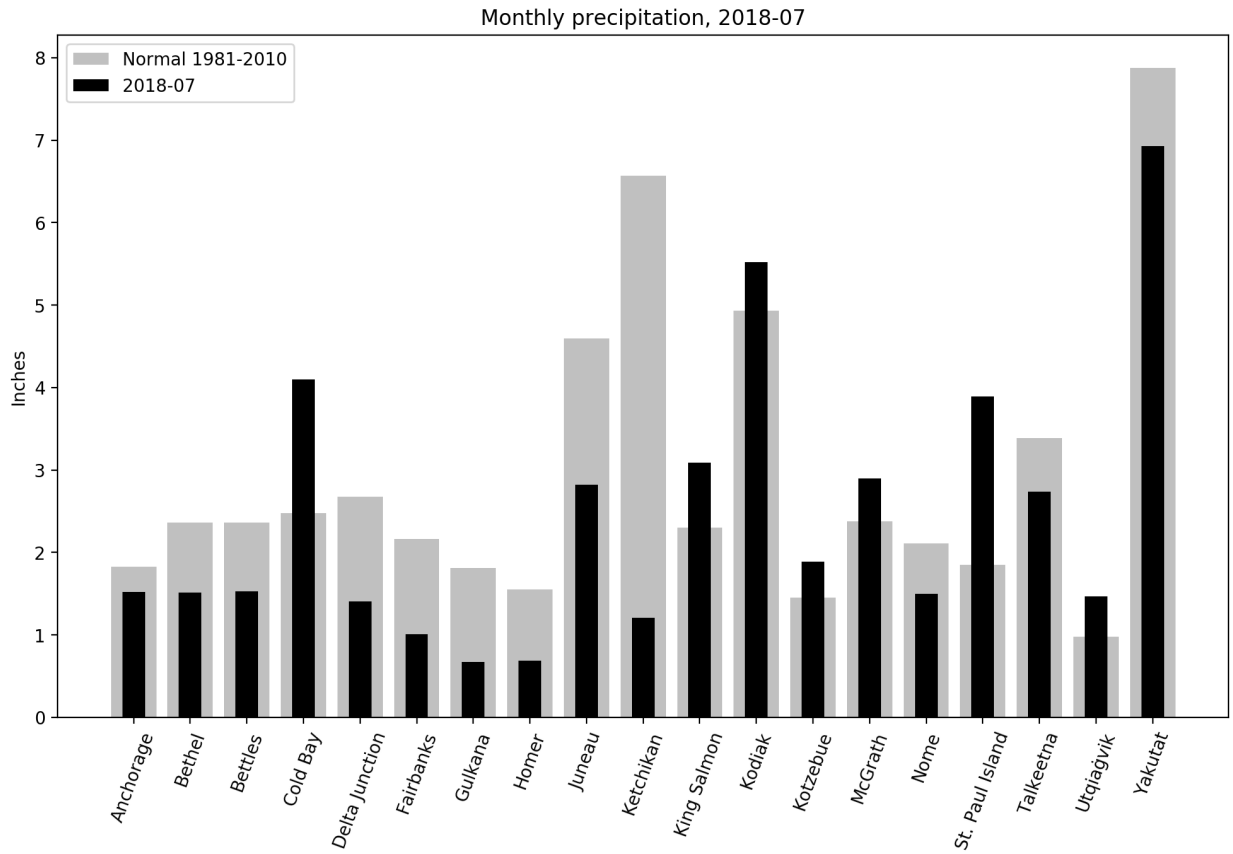

Figure 5: Monthly precipitation sums for July 2018 at the selected stations compared to the normal (1981-2010), in inches.

Newsworthy Events

The largely warm and dry weather combined with occasional lighting strikes has produced an uptick in wildfires in July and the highest fire danger of the year to date. During the last week of July, firefighters were working at four staffed fires: the Zitziana River Fire south of Manley hot springs, the Dome Creek Fire in the Yukon-Charley Rivers National Park, the Hughes Mountain Fire near Hughes and the Taixtsalda Hill Fire between Northway and Tok. There are a number of other fires which are not currently threatening any infrastructure. Please check http://smoke.alaska.edu/current_fires.html for an overview of wildfire occurrence within the state.

While Arctic sea ice extent was at or near record low levels during much of the winter and spring, the rate of summer ice loss has not been as extreme, with relatively slow retreat in the Beaufort and Chukchi Sea, with the Beaufort Sea even seeing a slight increase in extent due to ice transport from the north during the first half of the month.

For several days at the beginning of the month, smoke from large wildfires in Siberia blew over the Chukchi and Beaufort Sea. Smoke particles settling on the ice can darken the surface, thus increasing the amount of radiation that is absorbed and potentially enhancing melt rates.

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.