Alaska Statewide Climate Summary

July 2012

Temperature

Nearly universally below normal temperatures developed across most of Alaska for July. The exception was Barrow with a positive deviation of 3.1°F. Arctic Alaska has shown the greatest warming over the last decades and this finding is in agreement with this trend. All other nineteen first order stations exhibited below normal values. In this sense July mirrored May 2012. A mean deviation of all twenty stations from the long-term mean could be calculated as -2.1°F, and this is the third month in a row with a mean below the normal. The coldest areas were Southcentral and Southwest with: Homer (-4.3°F), Bethel (-3.8°F), Talkeetna (-3.6°F), Anchorage (-3.3°F), and McGrath (-3.3°F).

The cold month was noticed in Fairbanks with only one day above 80°F, compared to the average of five days above that mark, along with the mean daily maximum of only 69.7°F, which didn't even break the 70°F mark. The first half of July for Anchorage was also the coldest on record since 1920. See the table below for more details.

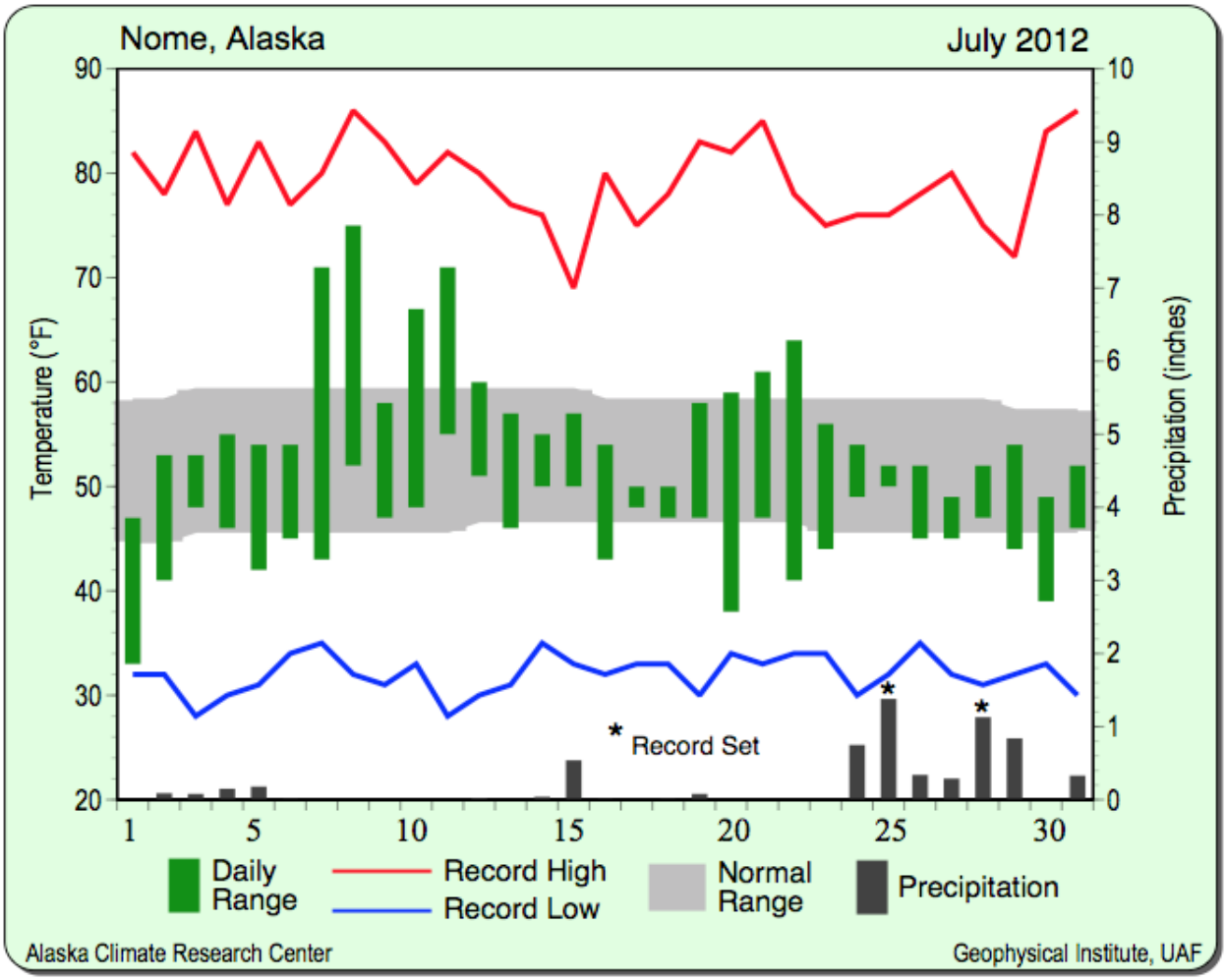
Station	Temperature		
	Observed (°F)	Normal (°F)	Delta (°F)
Anchorage	**55.5**	**58.8**	**-3.3**
Annette	**57.0**	**58.6**	**-1.6**
Barrow	**44.0**	**40.9**	**3.1**
Bethel	**52.3**	**56.1**	**-3.8**
Bettles	**58.1**	**59.7**	**-1.6**
Big Delta	**58.8**	**60.2**	**-1.4**
Cold Bay	**48.4**	**50.9**	**-2.5**
Fairbanks	**60.8**	**62.5**	**-1.7**

Gulkana	**54.9**	**57.6**	**-2.7**
Homer	**50.3**	**54.6**	**-4.3**
Juneau	**54.9**	**56.9**	**-2.0**
King Salmon	**52.3**	**54.5**	**-2.2**
Kodiak	**52.0**	**54.5**	**-2.5**
Kotzebue	**54.1**	**54.6**	**-0.5**
McGrath	**56.7**	**60.0**	**-3.3**
Nome	**51.1**	**52.2**	**-1.1**
St. Paul Island	**44.8**	**47.2**	**-2.4**
Talkeetna	**56.5**	**60.1**	**-3.6**
Valdez	**53.2**	**55.4**	**-2.2**
Yakutat	**52.1**	**54.3**	**-2.2**

Given the persistently low temperatures across Alaska for July, it is not surprising that that there was a large number of new daily record low temperatures set or tied. The low records were set throughout the month, from across Southeast to the Southwest. Note the number of records in the Southeast on the 11th and 12th, these were preceded by a number of low daily maximum temperature records across the panhandle on the 9th and 10th (not shown). In addition, no record high temperatures were set during the month.

Date	Temperature Records				
	Station	Element	New Record	Old Record	Year of old Record
07/06/12	Cold Bay	Low Temperature	39	39	1956
07/09/12	St. Paul	Low Temperature	31	32	1967

07/10/12	McGrath	Low Temperature	38	38	1979
07/11/12	Annette	Low Temperature	46	46	1970
07/11/12	Sitka	Low Temperature	45	45	1994
07/11/12	Sitka Observatory	Low Temperature	39	40	1929
07/12/12	Juneau	Low Temperature	38	40	1946
07/12/12	Annette	Low Temperature	45	45	1970
07/12/12	Sitka	Low Temperature	43	43	1921
07/13/12	Valdez	Low Temperature	44	44	1979
07/14/12	St. Paul	Low Temperature	33	35	1996
07/18/12	McGrath	Low Temperature	38	41	2001
07/18/12	Valdez	Low Temperature	44	44	1998
07/25/12	Kodiak	Low Temperature	43	43	2000
07/31/12	Valdez	Low Temperature	44	45	2000



Daily temperature ranges and precipitation for Nome for July 2012. Note the two record precipitation events near the end of the month.

Precipitation

Unlike temperature, precipitation was solidly mixed with half of the first order stations reporting above normal totals, and half reporting below normal totals. The greatest positive deviations of normal were found along the western and southeastern parts of Alaska: Nome (197%), Kotzebue (140%), King Salmon (107%). On the other side of the spectrum were the dry stations of: Barrow with only 55% of the expected value, or 0.54" of the normal of 0.98", Talkeetna (65%), Yakutat (67%). While the number of stations with above and below normals precipitation values were equal, the above normal stations had more extreme values, hence the mean precipitation deviation for all stations was 23% above normal. Barrow was the only first order station to register snowfall in July with a total of 0.2", matching the normal value of 0.2". As with the temperature, the precipitation deviations for the twenty first order stations are given in the table below:

Station	Precipitation				
	Observed (in)	Normal (in)	Delta (in)	(%)	Delta (%)
Anchorage	**2.14**	**1.83**	**0.31**	**117%**	**17%**
Annette	**8.25**	**4.65**	**3.60**	**177%**	**77%**
Barrow	**0.54**	**0.98**	**-0.44**	**55%**	**-45%**
Bethel	**3.91**	**2.36**	**1.55**	**166%**	**66%**
Bettles	**1.91**	**2.36**	**-0.45**	**81%**	**-19%**
Big Delta	**1.91**	**2.68**	**-0.77**	**71%**	**-29%**
Cold Bay	**2.19**	**2.48**	**-0.29**	**88%**	**-12%**
Fairbanks	**1.72**	**2.16**	**-0.44**	**80%**	**-20%**
Gulkana	**1.41**	**1.81**	**-0.40**	**78%**	**-22%**
Homer	**1.22**	**1.55**	**-0.33**	**79%**	**-21%**
Juneau	**5.37**	**4.60**	**0.77**	**117%**	**17%**
King Salmon	**4.77**	**2.30**	**2.47**	**207%**	**107%**
Kodiak	**4.05**	**4.93**	**-0.88**	**82%**	**-18%**
Kotzebue	**3.48**	**1.45**	**2.03**	**240%**	**140%**
McGrath	**3.96**	**2.38**	**1.58**	**166%**	**66%**
Nome	**6.27**	**2.11**	**4.16**	**297%**	**197%**
St. Paul Island	**2.32**	**1.85**	**0.47**	**125%**	**25%**
Talkeetna	**2.20**	**3.39**	**-1.19**	**65%**	**-35%**
Valdez	**4.34**	**4.04**	**0.30**	**107%**	**7%**

Yakutat	**5.28**	**7.88**	**-2.60**	**67%**	**-33%**

There were a fair number of precipitation records set in July, stretching along the coast from Annette in the Southeast to Kotzebue in the Northwest. The only Interior station with a new record was Bettles. Nome broke both a 90-year-old record on the 18th, followed by smashing a 101-year-old record on the 25th. The five days of precipitation in Nome starting on the 25th dumped a total of 4.73", more than twice the normal for the whole month of July. Note the records set in the Southeast on the 9th, as a cyclonic system moved across the region.

Date	Precipitation Records				
	Station	Element	New Record	Old Record	Year of old Record
07/06/12	King Salmon	Precipitation	0.59	0.31	1956
07/08/12	Bettles	Precipitation	0.49	0.46	1976
07/09/12	King Salmon	Precipitation	0.71	0.63	1994
07/09/12	Annette	Precipitation	1.70	1.59	1969
07/09/12	Juneau	Precipitation	1.64	0.96	1984
07/09/12	Sitka	Precipitation	1.25	0.81	2007
07/09/12	Pelican	Precipitation	1.10	0.73	1968
07/09/12	Haines Airport	Precipitation	0.82	0.30	1973
07/18/12	Nome	Precipitation	1.13	0.87	1911
07/21/12	McGrath	Precipitation	0.67	0.59	1975
07/21/12	Valdez	Precipitation	1.00	0.79	1976
07/25/12	Nome	Precipitation	1.38	1.35	1922
07/29/12	Kotzebue	Precipitation	1.04	0.43	1981

The month started off with flood watches set for the eastern Interior on the 3rd. The 5th saw the Mendenhall glacier dam break near Juneau prompting a flood watch. Then a similar event occurred on the 30th at Tulsequah glacier. The cool temperatures resulted in only one day of recorded thunder at the Fairbanks Airport, and fewer lighting strikes were record this July then any July since 2003. The fire season has thankfully fizzled and only 207,000 acres that have burned this year statewide.

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 20 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.