

Alaska Statewide Climate Summary

July 2015

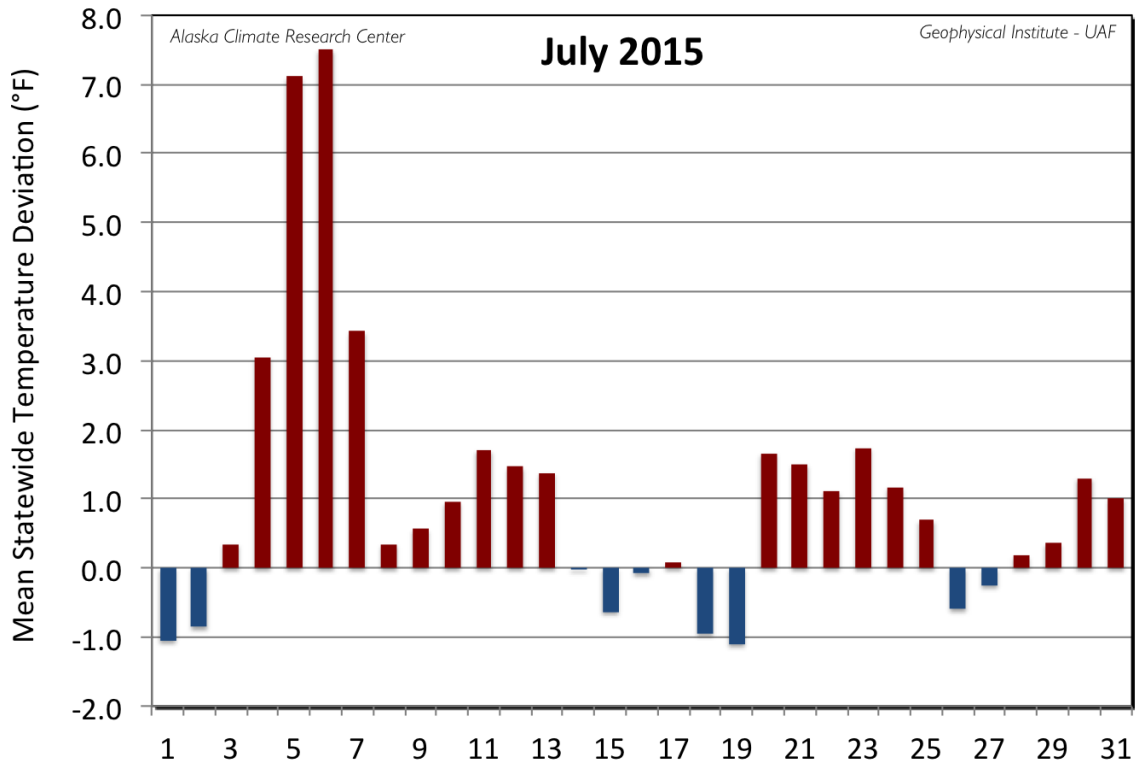
Temperature

The warmer than normal temperatures that have existed throughout most of the winter and spring continued into July 2015 with temperatures that were above normal for 15 of the 19 First Order Stations. Calculating the mean daily temperatures of the First Order Stations (see Figure), 22 days of the month were above the 30-year normal. Temperatures started the month colder than normal until the 3rd, when warmer temperatures persisted until the 13th. Mixed temperatures were experienced for the next six days, followed by lightly warmer than normal temperatures for six more days. The end of the month went back to mixed temperatures again. The peak warm deviation, a high of 7.5°F, occurred on the 6th, while the coldest deviation, a mild -1.1°F occurred on the 19th. The monthly mean temperature of all First Order Stations was 56.8°F, 1.3°F above the normal of 55.5°F. This is 1.1°F above the July 2014 mean of 55.7°F. On a monthly basis, statewide temperatures have been above normal since July 2014. Kotzebue held the greatest positive deviation from normal at 4.1°F above its long-term mean of 54.6°F. Stations following Kotzebue with positive deviations exceeding 2°F were Annette (3.4°F), Kodiak (2.9°F), Nome (2.7°F), St Paul (2.1°F).

Station	Temperature		
	Observed (°F)	Normal (°F)	Delta (°F)
Anchorage	59.9	58.8	1.1
Annette	62.0	58.6	3.4
Barrow	40.5	40.9	-0.4
Bethel	56.9	56.1	0.8
Bettles	60.7	59.7	1.0
Cold Bay	51.9	50.9	1.0
Delta Junction	59.5	60.2	-0.7
Fairbanks	62.2	62.5	-0.3

Gulkana	58.9	57.6	1.3
Homer	56.1	54.6	1.5
Juneau	57.6	56.9	0.7
King Salmon	57.4	55.5	1.9
Kodiak	57.4	54.5	2.9
Kotzebue	58.7	54.6	4.1
McGrath	59.0	60.0	-1.0
Nome	54.9	52.2	2.7
St. Paul Island	49.3	47.2	2.1
Talkeetna	59.7	60.1	-0.4
Yakutat	56.0	54.3	1.7

The highest temperature of the First Order Stations was 89°F reported at Fairbanks on the 6th of the month. Fairbanks also held the spot for the highest mean temperature for the month at 62.2°F, despite being slightly colder than normal. The coldest temperature was 31°F at Barrow on the 28th and 30th, while Barrow also reported the lowest July mean temperature at 40.5°F.



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

As has often been the case throughout this last winter and spring, the daily record temperature events for July were nearly all high events, with just one record low event reported in Bettles on the 4th. Most of the limited number of high events reported were experienced during the warm period around the 6th.

Date	Temperature Records				
	Station	Element	New Record	Old Record	Year of old Record
07/03/15	Homer	High Temperature	68	67	1990
07/04/15	Bettles	Low Temperature	37	39	2013
07/05/15	Annette	High Temperature	85	82	1958
07/05/15	Barrow	High Temperature	64	61	1940

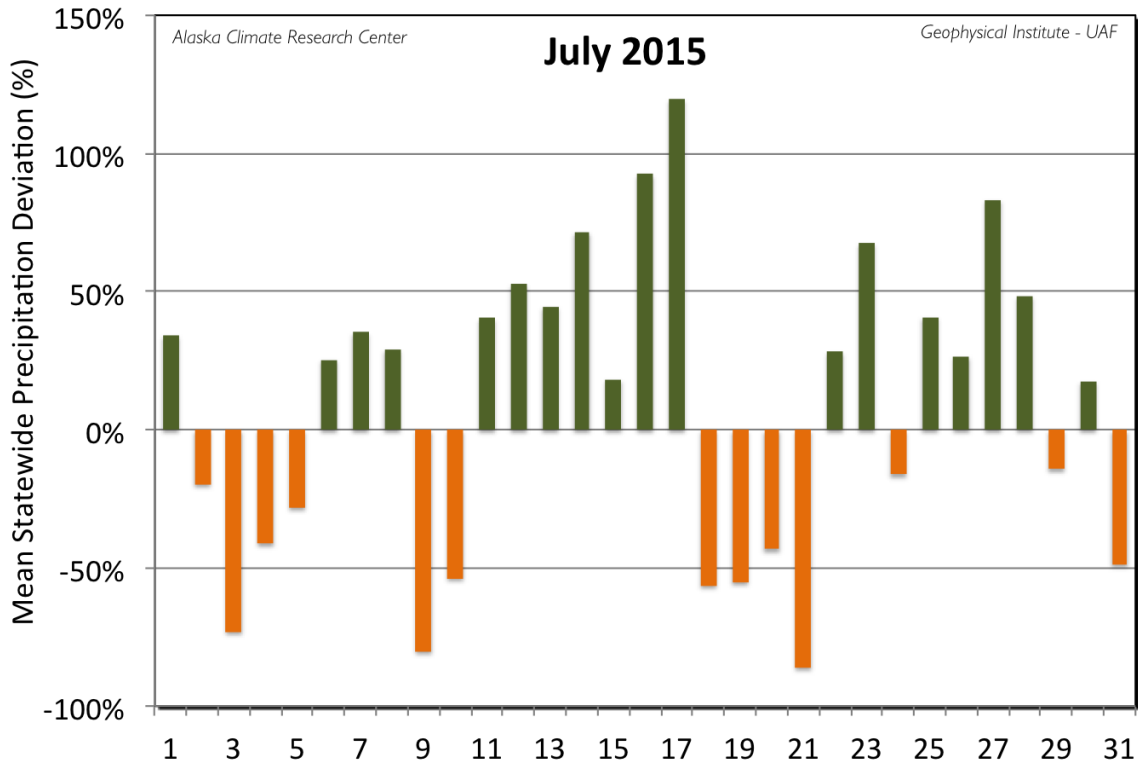
07/06/15	Annette	High Temperature	88	81	1958
07/06/15	Delta Junction	High Temperature	87	84	1986
07/06/15	Gulkana	High Temperature	86	84	1972
07/06/15	Kotzebue	High Temperature	79	77	2014
07/06/15	Northway	High Temperature	84	81	1989
07/07/15	Annette	High Temperature	87	85	1975
07/20/15	Cordova	High Temperature	78	78	1972

Precipitation

July was just slightly wetter than normal, with the overall precipitation calculated as 7% above normal; this calculation was based on the mean of the deviations in percentage of the First Order Stations. Nine of the First Order Stations and 18 days of the month reported above normal values. This is drier than July in 2014, which had a precipitation total 24% above normal. The greatest daily deviation of 120% occurred on the 17th, driven by rain experienced across much of the state. Zero days of the month had no measureable precipitation at all of the 19 first order stations. On a monthly basis, Juneau had the greatest positive deviation from normal, with a total of 10.40", or 126% above the expected amount of 4.60". The only other two stations with precipitation greater than 50% above normal were Annette (64%) and McGrath (62%). The leading station with a lower than normal precipitation amount was Barrow with just 22% of normal. The only other station with less than half of their normal precipitation was Kotzebue with 24%.

Station	Precipitation				
	Observed (in)	Normal (in)	Delta (in)	Delta (%)	(%)
Anchorage	2.53	1.83	0.70	38%	138%

Annette	7.64	4.65	2.99	64%	164%
Barrow	0.22	0.98	-0.76	-78%	22%
Bethel	2.08	2.36	-0.28	-12%	88%
Bettles	1.96	2.36	-0.40	-17%	83%
Cold Bay	2.47	2.48	-0.01	0%	100%
Delta Junction	3.13	2.68	0.45	17%	117%
Fairbanks	2.78	2.16	0.62	29%	129%
Gulkana	1.46	1.81	-0.35	-19%	81%
Homer	1.22	1.55	-0.33	-21%	79%
Juneau	10.40	4.60	5.80	126%	226%
King Salmon	3.11	2.30	0.81	35%	135%
Kodiak	3.32	4.93	-1.61	-33%	67%
Kotzebue	0.35	1.45	-1.10	-76%	24%
McGrath	3.86	2.38	1.48	62%	162%
Nome	1.44	2.11	-0.67	-32%	68%
St. Paul Island	1.84	1.85	-0.01	-1%	99%
Talkeetna	3.49	3.39	0.10	3%	103%
Yakutat	11.81	7.88	3.93	50%	150%



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

The maximum monthly precipitation total reported for a First Order Station was 11.81" at Yakutat, while Annette reported the highest daily total of 2.16" on the 24th, a new record for this specific day.

As might be expected, there were a fair number of daily precipitation records, and they were set throughout the month and across the state. Despite only setting one daily record, Juneau had the wettest July on record with a total of 10.4", 0.04" above the old record from 1997. This monthly record was driven by precipitation on 26 days of the month and seven of those were greater than half inch. This comes after the wettest January, as well as the driest May, on record for Juneau. With the exception of May, all months this year have had above normal precipitation at Juneau. This makes 2015 the second wettest stretch from January to July with 42.88", 0.41" behind the 43.29" from 1992 for this time period. It was the second wettest July on record for Sitka with 9.55"; the record is 12.27" from 1959.

Precipitation Records

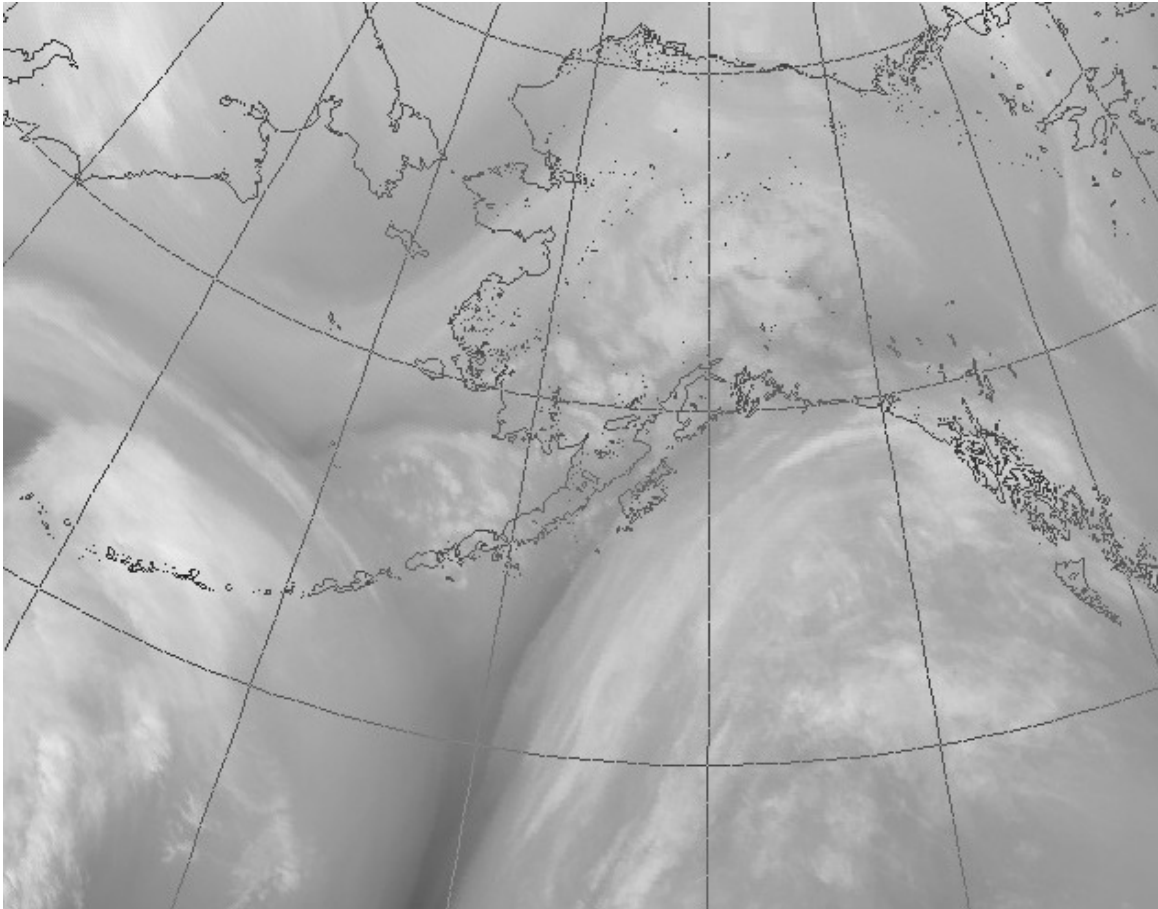
Date	Station	Element	New Record	Old Record	Year of old Record
07/01/15	Haines Airport	Precipitation	0.56	0.55	1942
07/06/15	Kodiak	Precipitation	1.37	1.05	2008
07/08/15	Bettles	Precipitation	0.57	0.49	2012
07/13/15	Yakutat	Precipitation	1.62	1.43	1968
07/17/15	Sitka	Precipitation	1.48	1.25	1950
07/19/15	Sitka	Precipitation	1.09	0.92	2000
07/23/15	Juneau	Precipitation	2.00	1.14	2000
07/24/15	Annette	Precipitation	2.16	1.92	1995
07/28/15	McGrath	Precipitation	0.70	0.48	2014

Newsworthy Events

Wildfires dominated the news at the start of July with the State allowing campfires at select state parks in the Matanuska-Susitna Borough area on the 2nd. Fireworks bans from June were still in effect. No new fires that were the result of fireworks were reported during the weekend of the 4th. The Fairbanks North Star Borough would not end up lifting its ban on fireworks until the 28th. Dense smoke advisories were issued for areas west of Fairbanks on the 4th. The air quality in Fairbanks area dropped to unhealthy conditions again on the 5th, while warmer temperatures were predicted for the Interior helping fuel the nearly 300 fires burning at the time; 36 of them staffed. Voluntary evacuation orders were still in effect at Tanana, with several fires surrounding the village generating hazardous conditions. Progress was reported on containing fires across the state including the Rex Complex fires near Nenana, Healy Lake near Delta Junction at 63% contained, West Fork Fire (100%) and Anaconda (68%) both near Chena Hot Springs. Nearly 500 fighters were working the Aggie Fire near the Elliott Highway north of Fairbanks that had grown to 13,000 acres and was expected to increase in size with the warmer weather.

The hot, dry, weather on the 6th did, as predicted, push the wildfires to new extremes. Air quality again dropped to hazardous levels for many Interior areas. The silver lining in the cloud of dense smoke that permeated the Interior was that it helped reduce temperatures over the next few days. By the 7th, the Aggie Creek fire had jumped to 17,000 acres and more personnel (600), as well as air tankers, were

assigned. Some evacuations were recommended in the area. One of the Rex complex fires crossed a power line near mile 290 of Parks Highway, killing power to the Anderson School and the incident command post. The Baker fire moved to one and half miles of the Elliot Highway. Similar problems with aggressive behavior were reported at a number of the staffed fires in the Interior. Air quality continued to be hazardous in the Fairbanks area and a number of activities were canceled. The Borough Parks & Recreation canceled all outdoor activities, and youth soccer and softballs games were scrapped, and the Holland-America Tour Company canceled its Interior flight seeing tours due to the smoke. Total acreage burned exceeded three million acres at this point.

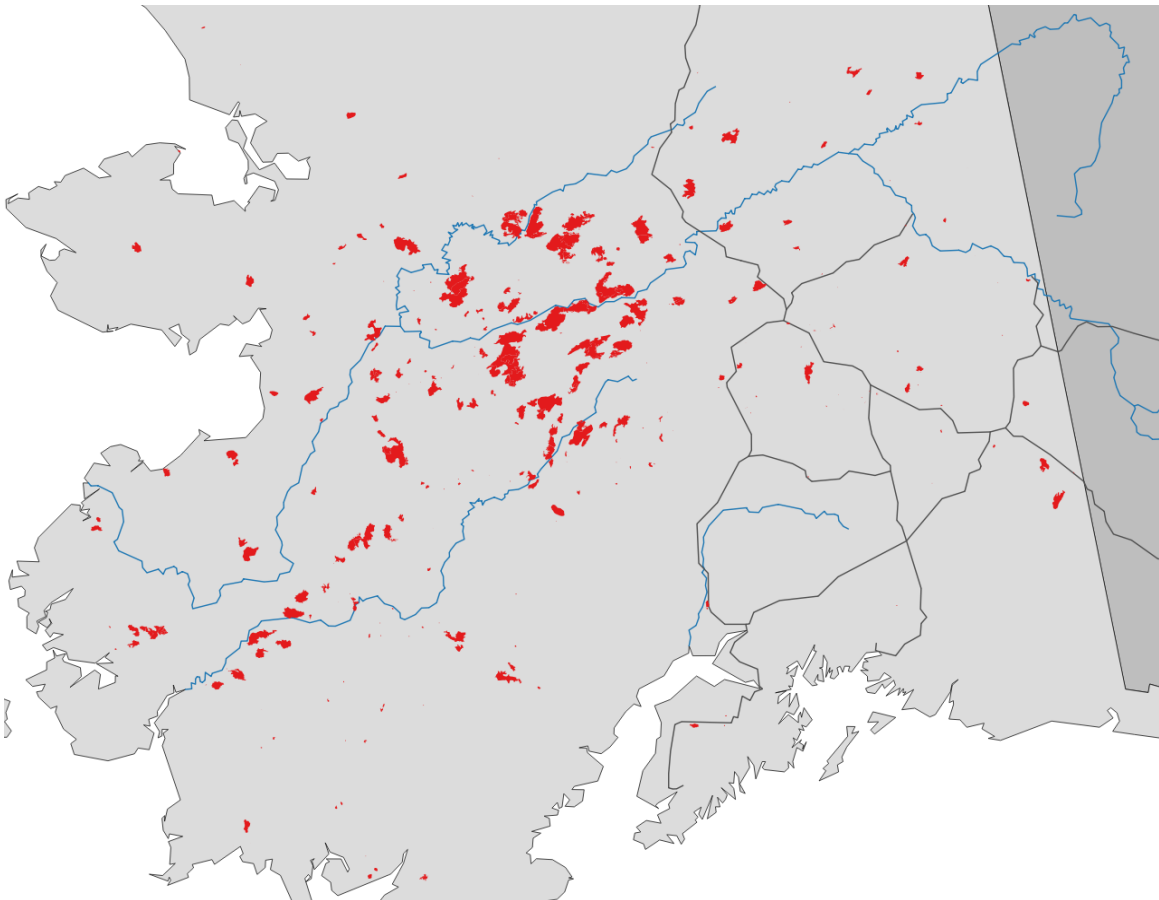


This map of Alaska shows the wildfire perimeters at the end of July 2015. Data courtesy of the [Alaska Interagency Coordination Center](#).

The Aggie Creek fire had topped 26,000 acres on the 10th, and the fire had moved to within a half a mile of the Trans-Alaska Pipeline. A number of efforts were used to protect the pipeline. The fire was reported at 25% contained at that point, and the number of personnel assigned to the fire had dropped to about 400. The Nome Creek Valley reopened to camping again on the 11th as wildfire danger dropped due to the rain, then closed again on the 13th due to the U.S. Creek Fire. The fires around Tanana were still listed as quite active, and had topped 500,000 acres in total and more than 250 fighters were assigned to the fires. Eighty-six personnel were assigned to the Long Lake fire (25,000 acres) near Northway. The 75,000 acres Hay Slough fire near Manley threatened mining and structures, while the nearby Baker fire grew to over

20,000 acres. Total area burned had reached 4.69 million acres on the 13th, with 300 active wildfires; the fifth worst season on record. Wildfire growth slowed across the region on the 16th due to the wetter weather. Totalling the efforts, more than 2,000 firefighters from Alaska had been joined by 3,500 from the Lower 48.

High wind warnings for gusts up to 65 mph were issued for areas of Anchorage on the 16th. The 19th saw heavy rain (between one and one and a half inches) forecasted for the Chena, Chatanika and Salcha Rivers, as well as Arctic Village and areas east. High water warnings were issued on the 19th for the central and eastern Brooks Range from the heavy rainfall. Wildfire generated smoke worsened the air quality in the Fairbanks area again on the weekend of the 25th. Heavy rain, a '50-year rainfall event' that same weekend in Anchorage resulted in localized flash flooding, the closure of some streets with up to two feet of water on them, and the evacuation of about 30 people from an apartment complex. A weather station at Lake Otis and O'Malley reposted 2.56" of rainfall during the event, with the Anchorage International Airport reporting 1.05".



This water vapor satellite image from the National Weather Service for the 25th of July shows the weather pattern the resulted in heavy rainfall and localized flooding in Anchorage.

The warmer, drier weather regime that had started around the 19th resulted in some increased fire activity by the 26th. Smoke returned to the Fairbanks area. The total area burned for the summer had reached 4.8 million acres, the fourth-highest summer on record and larger than the state of Connecticut. And seven new fires were started by lightning on the 24th, but none were deemed serious and only one needed to be fought. The total burned by the end of the month was 4.9 million acres. The slowing fires allowed the number of personnel staffing the various fires to drop to about 1,600 that weekend, half the number at the peak a few weeks ago. Lower 48 crews were sent back south as heavy rains were again forecasted for portions of the Interior on the 27th. Salcha recorded more than two inches of precipitation. A small stream flood advisory was issued for the Eastern Alaska Range. The Taiya River near Skagway had risen to near its banks by the 27th from persistent rain in the area. The damp conditions resulted in dense fog advisories for the areas of the Alaska Range and Interior on the 28th and 29th. The morning of the 30th saw heavy rains in the Anchorage area again.

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.