

Central Alaska Network

National Park Service
U.S. Department of the Interior

Alaska Region
Inventory & Monitoring Program



Denali NP & Pres. • Wrangell-St. Elias NP & Pres. • Yukon-Charley Rivers N Pres.

4th Quarter Fall 2016

Weather & Climate Summary Wrangell-St. Elias National Park & Preserve Fall 2016

Gulkana and Yakutat Fall Temperatures

It was the 11th warmest fall on record for Yakutat and cooler than normal at Gulkana. With only 33.44 inches of fall precipitation, it was the 3rd driest fall on record in Yakutat. Fall precipitation totaled 1.87 inches in Gulkana, the 10th driest on record.

In Gulkana, September started off clear and dry with highs in the 70's and low's below freezing. The high temperature of 72°F on September 2 tied the record set in 1974. Overall, the month was 2.8°F warmer than normal. October was consistently cooler than normal except for the last few days of the month. The minimum monthly temperature of -17°F occurred on October 24. It was the coldest October in twenty years and ranked as the 4th coldest October on record with an average monthly temperature of 20.0°F. The month of November ended up right at normal, but this masks the fact that the first half of the month was warmer than normal and the second half of the month was cold. The average monthly average temperature was 5.9°F. Overall, fall 2016 averaged 24.0°F; normal is 25.2°F. (Figure 1, Table 1).

In Yakutat, fall started off warm with record high temperatures of 67°F and 68°F on September 1 and 2 respectively. Temperatures moderated for most of the rest of the month with rainfall recorded 20 days in September. The average monthly temperature for September was 50.1°F compared to a normal of 48.4°F. Clear sky conditions for much of October resulted in high temperatures above normal and low temperatures below normal. Overall, the average temperature of 40.8°F was 0.2°F cooler than normal. The first half of November was warm and wet with measurable precipitation each day and an average temperature departure of +8.4°F. Cool, dry conditions dominated November 16-24

before warm weather returned for the last week of the month. Overall, the average temperature for the month was 36.9°F compared to a normal of 32.3°F; the 9th warmest November on record (Figure 1, Table 1).

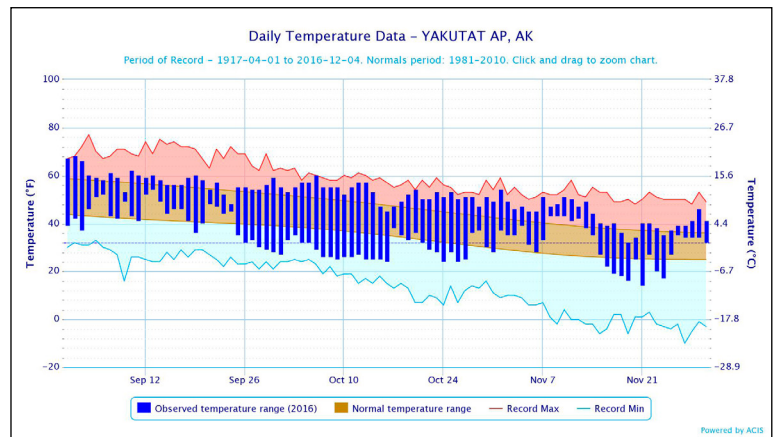
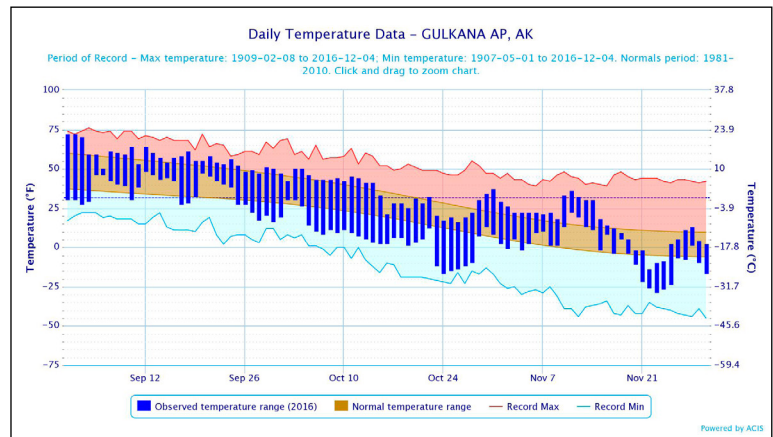


Figure 1. Fall 2016 daily temperatures at Gulkana and Yakutat showing record maximum (red), record minimum (blue), normal (brown) and 2016 observed daily range (blue bars).

Table 1. Temperature: Gulkana (top) and Yakutat (bottom) fall 2016 temperatures compared to 1981-2010 normals.

Gulkana Fall 2016	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
September	46.1	43.3	+2.8	72 / Sept. 1 & 2	16 / Sept. 30
October	20.0	26.6	-6.6	50 / Oct. 3 & 4	-17 / Oct. 24
November	5.9	5.8	+0.1	36 / Nov. 11	-29 / Nov. 23

Fall Season Temperature Departure from Normal: -1.2°F

Yakutat Fall 2016	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
September	50.1	48.4	+1.7	68 / Sept. 2	28 / Sept. 30
October	40.8	41.0	-0.2	60 / Oct. 6	24 / Oct. 16, 24, 26
November	36.9	32.3	+4.6	54 / Nov. 1	14 / Nov. 21

Fall Season Departure from Normal: +2.0°F

Fall 2016 Precipitation

In Gulkana, on average, one out of every three years receives less than one inch of precipitation in the month of September. 2016 was one of these years, with only 0.89 inches, 56% of normal. October was also very dry with only 0.37 inches compared to a normal of 1.01 inches. Almost all of this precipitation came as snow on October 21 (0.29 inches water equivalent). November precipitation was near average with 0.61 inches, bringing the seasonal total to 1.87 inches. This is the 10th driest fall on record with only 57% of normal precipitation. (Figure 2, Table 1).

In Yakutat, September precipitation was 75% of normal with rain recorded 19 out of 30 days. The daily total on September 12 was 3.74 inches, a record for the date. October was exceptionally dry, with only 3.00 inches for the month. Normal is almost 22 inches. This destroyed the previous record for lowest monthly precipitation of 6.68 inches set in 1950.

Amazingly, there was no measureable precipitation in Yakutat from September 28 – October 15. Also of note, no measureable snowfall was recorded for the month. Normal October snowfall is 2.5 inches. November was warm, with 14.34 inches of precipitation, 99% of normal. In total, 4.3 inches of wet snow was measured for the month, but the snow depth never exceeded 2 inches. Normal snowfall is 18.2 inches. (Figure 2, Table 2).

Thanks in large part to the extremely dry month of October, it was the third driest fall on record in Yakutat with 33.44 inches of water recorded. Only 1973 (31.57 inches) and 1950 (25.35 inches) were drier. Snowfall for the autumn was the 7th lowest on record with 4.3 inches. Snowfall is highly variable in the fall months, ranging from a low total of less than 1.0 inches in 2002 to 94.4 inches in 1956.

Figure 2. Fall 2016 accumulated precipitation at Gulkana (right), and Yakutat (far right) compared to normal (brown line).

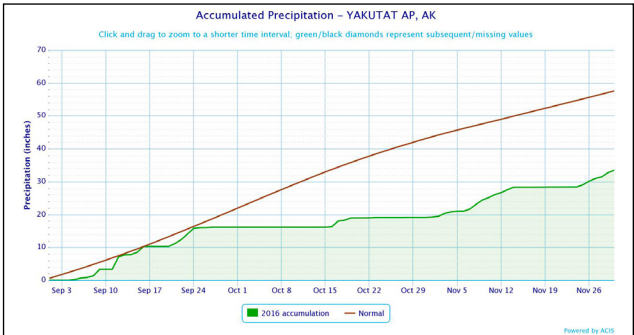
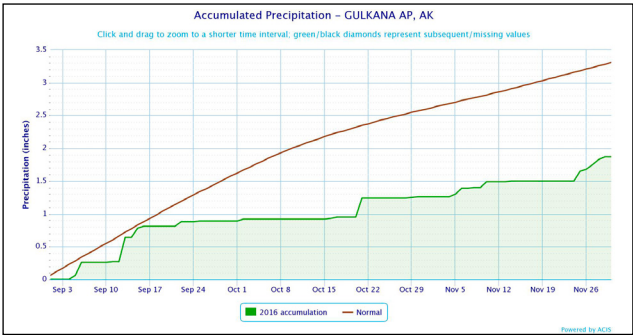


Table 2. Precipitation: Gulkana (top) and Yakutat (bottom) fall 2016 precipitation totals compared to 1981-2010 normals.

Gulkana Fall 2016	Total Monthly Precip. in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 -hr. Total in. / Date	# Days with >=0.01 in. Water
September	0.89	1.58	-0.69	0.37 / Sept. 13	8
October	0.37	1.01	-0.64	0.29 / Oct. 21	6
November	0.61	0.72	-0.11	0.15 / Nov. 25	10

Fall Season Precipitation Departure from Normal: -1.44 inches (57% of normal)

Table 2. Continued

Yakutat Fall 2016	Total Monthly Precip. in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 -hr. Total in. / Date	# Days with ≥0.01 in. Water
September	16.10	21.11	-5.01	3.74 / Sept. 12	19
October	3.00	21.98	-18.98	1.72 / Oct. 17	8
November	14.34	14.45	-0.11	1.46 / Nov. 8	23

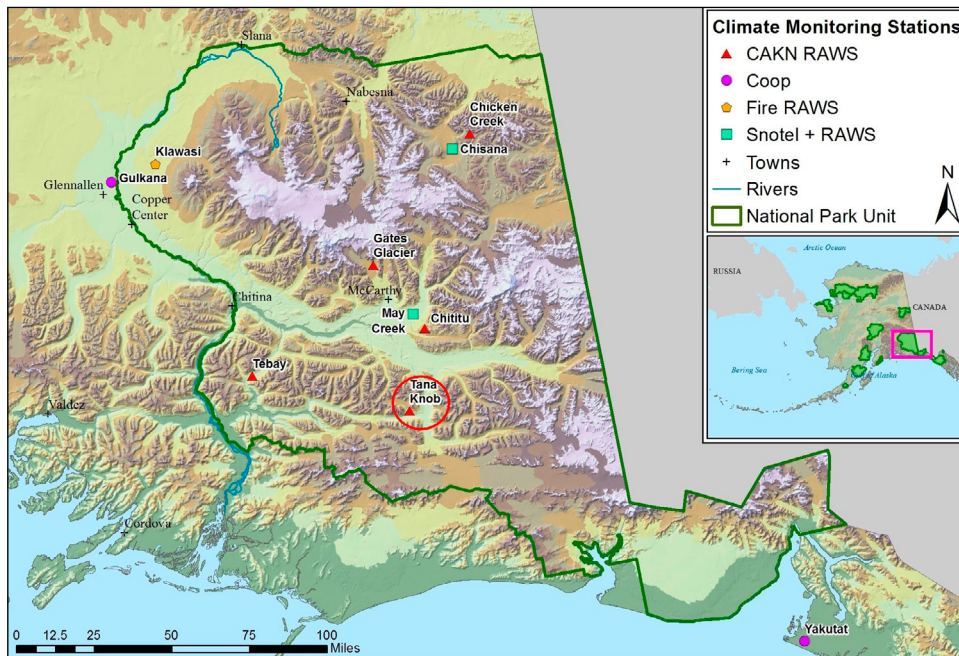
Fall Season Departure from Normal: -24.10 inches (58% of normal)

Climate Monitoring in Wrangell-St. Elias

The NPS climate stations in Wrangell-St. Elias have been collecting climate data for the past decade as part of the Central Alaska Network climate monitoring program (Figure 3). The NPS stations complement long-term records available from

the National Weather Service stations in Gulkana and Yakutat. The NPS stations are providing critical data at higher elevations which helps characterize climate gradients and patterns affecting resources in Wrangell-St. Elias National Preserve.

Figure 3. NPS stations in Wrangell-St. Elias National Park & Preserve.



Featured Site: Tana Knob

Tana Knob (Elev. 3739') is located in the Chugach Mountain Range in the Tana River valley north of the Bagley Icefield. The site sits on the high bench above the confluence of the Tana and West Fork Tana Rivers. The temperatures are cool in the summer and moderate in the winter. There is abundant snowfall and summer rain due to the elevation and proximity

to the Gulf of Alaska. The site has had frequent problems with wildlife reducing the availability of good data for analysis. Based on complete available years of record the average air temperature is 27.6°F. The highest temperature recorded thus far is 75.0°F on 7/6/2015 and the lowest is -30.7°F on 1/7/2009.

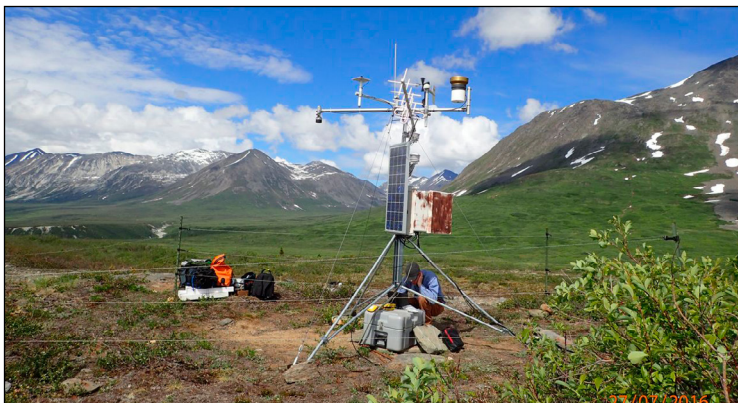


Figure 4. Tana Knob climate station (circled on the map in Figure 3).

More Information

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[Current weather in Wrangell-St. Elias](#)