



Quarterly Weather & Climate Summary Denali National Park & Preserve Spring 2015

Denali Spring Weather

March temperatures were warmer than normal, despite a cold spell the 9th to 16th. The average temperature for the month was 17.0° F, 3.6° F warmer than normal. Daily high temperatures were above freezing the last two weeks of the month. With 0.25 inches of precipitation, March was 64% of normal. 4.3 inches of snow fell in March; normal is 6.8 inches.

Each day in April was near-normal or warmer than average. The monthly mean temperature was 31.4° F, 3.5° F warmer than normal. Precipitation and snowfall were both near-normal with 0.43 inches of water equivalent and 6.3 inches of snowfall.

Overall, May was very warm and dry. The monthly average temperature was 5.0° F degrees warmer than normal; no snow fell in May; and total precipitation was 48% of normal. With an average monthly temperature of 54.0° F, it was the 2nd warmest May on record (behind 2004). Melt out at park headquarters occurred on May 1, five days ahead of schedule.

Overall, with an average temperature of 32.1° F, spring 2015 was 4.1° F warmer than normal. Precipitation was 66% of normal with 1.1 inches for the three-month spring season. Total snowfall since July 2014 was 44.6 inches, only 58% or normal. This is low, but there are also 8 years on record with less snow (Figure 1 and 2; Table 1,2, and 3).

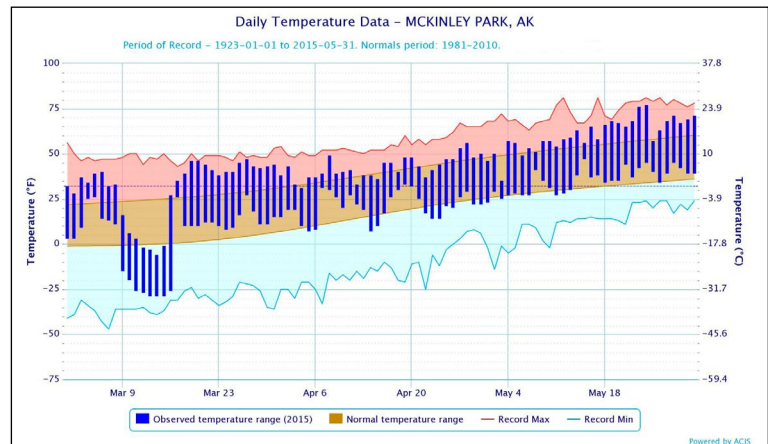


Figure 1. Spring 2015 daily temperatures at Denali showing **record maximum** (red), **record minimum** (blue), **normal** (brown) and **2015 observed** daily range (blue).

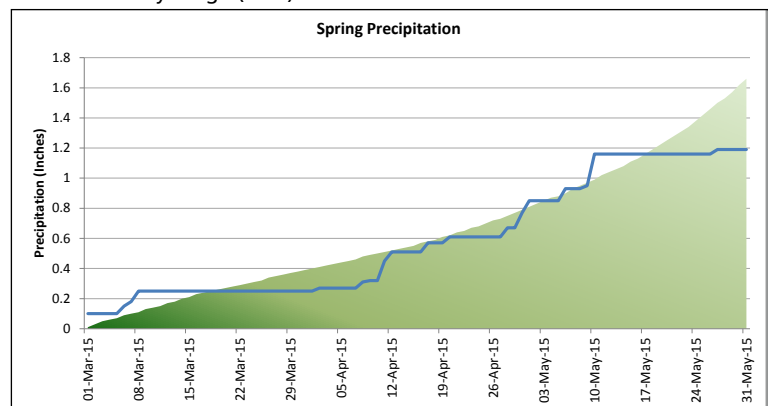


Figure 2. Spring 2015 **accumulated precipitation** at Denali (blue line) compared to **normal** (green).

Table 1. Temperature: Spring 2015 average monthly temperatures compared to the 1981-2010 normal.

Spring 2015	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
March	17.0	13.4	+3.6	47 / Mar. 27	-29 / Mar. 13, 14, 15
April	31.4	27.9	+3.5	56 / Apr. 28	7 / Apr. 5
May	47.8	42.8	+5.0	77 / May 24	23 / May 1

Spring Season Temperature Departure from Normal: +4.1°F

Table 2. Precipitation: Spring 2015 monthly precipitation totals compared to normal.

Spring 2015	Total Monthly Precip. in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 -hr. total in. / Date	# Days with >=0.01 in. water
March	0.25	0.39	-0.14	0.10 / Mar. 1	4
April	0.43	0.40	+0.03	0.13 / Apr. 11	7
May	0.42	0.87	-0.45	0.21 / May 10	5

Spring Season Departure from Normal: -0.56 inches (66% of normal)

Table 3. Snowfall: Spring 2015 monthly snowfall totals compared to normal.

Spring 2015	Total Monthly Snowfall in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 -hr. snowfall total in. / Date	Cumulative snowfall since 1-July in.	Snow Depth at end of month
March	4.3	6.8	-2.5	1.9 / Mar. 1	38.4	18
April	6.3	6.1	+0.2	3.1 / Apr. 11	44.6	0
May	Trace	3.1	-3.1	T / May 1	44.6	0

Climate Monitoring in Denali

There are additional NPS climate stations in Denali that complement the long-term record available from the National Weather Service station at Park headquarters (Figure 3). These additional sites provide critical data on a park-wide scale that help characterize the climate gradients

and patterns affecting resources in Denali National Park and Preserve. This past summer, University of Alaska researchers installed a weather station near 14,000’ on Denali. Spring statistics from these sites are summarized in Table 4.

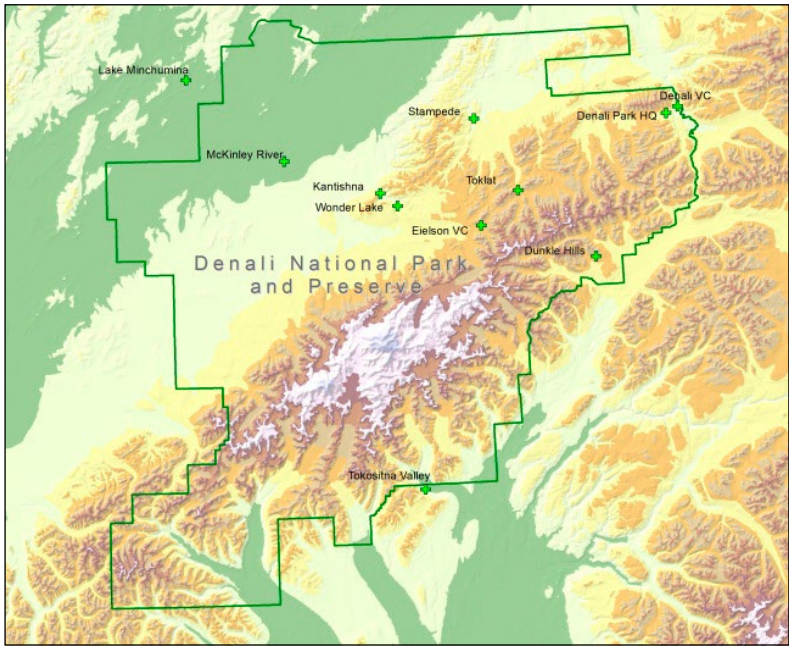


Figure 3. Locations of climate stations in Denali.

Table 4. Summary of weather statistics from the Denali climate stations. All data are preliminary and subject to review.

Site	Elev. (ft)	Average Temp °F			Extreme High	Extreme Low	Peak Wind	Max Snow Depth	Snow Off	Average Temp.
		Mar.	Apr.	May	(°F)	(°F)	(mph)	(inches)	(Date)	(Spring)
Denali VC	1650	19.6	34.1	51.3	81	-36	33	---	---	35.0
Toklat	2920	17.2	29.3	46.5	68	-35	35	12	Apr. 18	31.0
Eielson VC	3653	19.7	28.5	45.9	66	-24	37	15	Apr. 28	31.4
Wonder Lake	2050	16.6	30.9	49.7	76	-29	51	---	---	32.4
Stampede	1800	15.5	31.8	48.7	77	-35	19	19	Apr. 23	32.0
Wigand	1741	17.1	32.6	50.3	75	-28	41	11	Apr. 16	33.3
Kantishna	1550	14.9	32.1	49.8	76	-32	---	29	May 6	32.3
Ruth Glacier	3301	20.9	28.7	42.8	63	-14	39	30	May 12	30.8
Tokositna Valley	850	22.8	35.2	49.1	75	-19	---	44	May 20	35.7
14k Denali	14,000	-14.4	-11.6	9.7	41	-46	89	---	---	-5.4

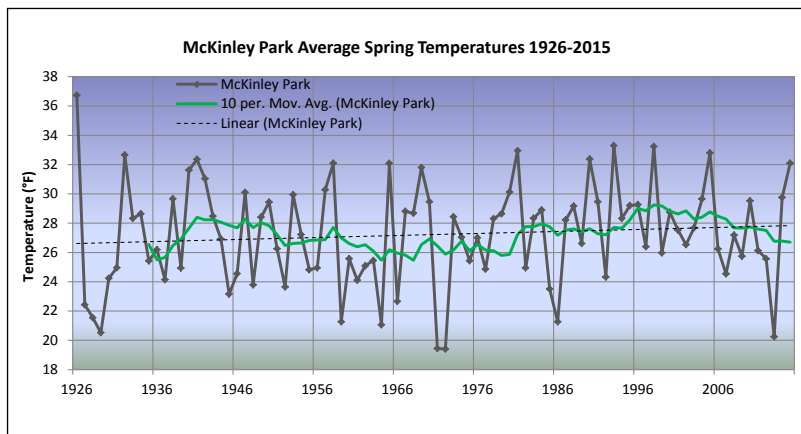
Interesting Notes from RAWs Stations

- The coldest low-elevation instrumented location in March was Kantishna. The warmest locations in March were the south side stations at Ruth Glacier and Tokositna Valley. In May, the warmest stations were on the north side at Wigand and Denali VC.
- The average spring temperature at 14,000' on Denali was -5.4°F. Temperatures were as low as -46°F in March and high temperatures on the mountain were above freezing for three days at the end of May.
- The peak wind gust for the season from the 14,000 ft. station was 89 mph on March 1.

Denali Spring Temperature Trend

The average spring temperature for 2015 was 32.1° F, which is 4.1° F warmer than the 1981-2010 normal (the latest climate normal period) and 4.9° F degrees warmer than the long-term average (1926-2015). We calculate the average spring temperature by simply taking the average of March, April, and May monthly temperatures. Average spring temperatures show great variability with a range between 19.4° F in both 1971 and 1972 and 36.7° F in 1926 (Figure 4).

Figure 4 (right). Average [spring temperatures](#) (March, April, May) at Denali Park Headquarters over the past 88 years. The green line shows a [10-year moving average](#). The dotted line shows a simple linear regression trend.



Connecting Further

- Previous weather summaries and other climate monitoring documents on the [Central Alaska Network web portal](#)
- Access near real-time data from [Western Regional Climate Center](#) and [MesoWest](#)
- Statewide summary of weather highlights in the latest [Alaska Climate Dispatch](#) from the Alaska Center for Climate Assessment and Policy
- [Maps](#) of projected temperature and precipitation changes for Denali National Park and Preserve

More Information

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