



Weather and Climate



Denali Winter 2013-2014 Weather Summary

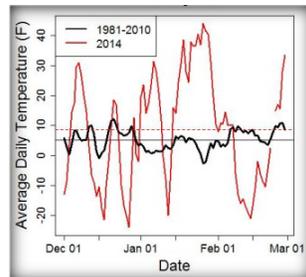
How did the winter of 2013-2014 stack up to normal?

The winter temperature roller coaster continues – December was cold, January was approaching hot, and February slid back to cooler temperatures.

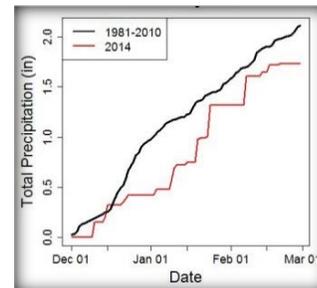
Overall there was less snow than normal, and a few rain events were recorded. Average temperatures were 20 to 30 degrees warmer than normal in January and overall it was the 4th warmest on record based on 88 years of observations.

The winter started out cool with an average monthly temperature for December of 1.0 °F, almost 6 °F below average. During the one warm spell between the 4th and 8th of the month, temperatures climbed to 20 to 30 °F above normal. The temperatures cooled down a few days later and stayed that way for the remainder of the month. The total snowfall for the month was only 7.2 inches, 47% of normal. January 2014 came in with a roar...the average temperature of 22.9 °F was almost 20 degrees warmer than average. This ranked as the 4th warmest January on record. On January 26th the high temperature hit 52 °F which set a new record daily high for January at this site, breaking the January 7th value of 51 °F from 1961. On January 19th, 7.6 inches of snow fell which helped boost the monthly snowfall total to 11.7 inches. Unfortunately, a few days after the snowfall event on the 19th the temperatures warmed to the mid-40s and it rained. The temperatures cooled again in February with a monthly average temperature of 0.7 °F, almost 7 degrees colder than normal. Between February 8th and the 21st the average temperature was a chilly -12 °F. A total of 5.9 inches of snow fell during February, which brought the total snowfall to 50.6 inches for the 2013-2014 season, 10.1 inches less than normal.

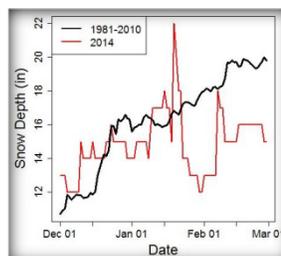
Denali Park HQ – Average Air Temperatures



Denali Park HQ – Cumulative Precipitation



Denali Park HQ – Cumulative Snow Depth



Denali Winter 2013-2014 Weather Summary

Denali Park HQ Weather Records:
 Climate Normal Period 1981 – 2010
 Climate Record Period 1925 – 2014

Temperature

Winter 2013 - 2014	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
December	1.0	6.9	-5.9	34 / Dec 7	-28 / Dec 17
January	22.9	3.1	+19.8	52* / Jan 27	-24 / Jan 12
February	0.7	7.6	-6.9	47 / Feb 28	-27 / Feb 14

Winter Season Temperature Departure from Normal: +2.3 °F *Record High Temp for January

Precipitation

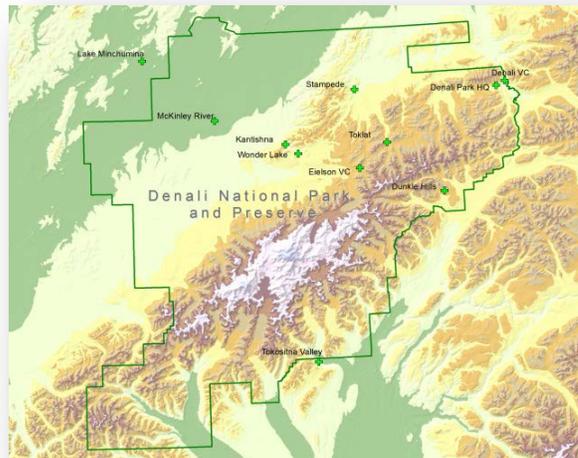
Winter 2013 - 2014	Total Monthly Precip in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 –hr total in. / Date	# Days with >=0.01 in. rain or snow
December	0.42	0.92	-0.5	0.15 / Dec 10	6
January	0.90	0.63	+0.27	0.31 / Jan 24	9
February	0.41	0.54	-0.13	0.29 / Feb 7	4

Winter Season Departure from Normal: -0.12 inches

Snowfall

Winter 2013 - 2014	Total Monthly Snowfall in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 – hr snowfall total in. / Date	Cumulative snowfall total from July 1 in.	Normal Snowfall Total from July 1 - in.
December	7.2	15.4	-8.2	3.2 / Dec 10	33	43.3
January	11.7	9.0	+2.7	7.6 / Jan 19	44.7	52.3
February	5.9	8.4	-2.5	4.5 / Feb 7	50.6	60.7

There are additional NPS climate stations in Denali that complement the long-term record available from the National Weather Service station at Park headquarters. 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.



Denali Winter 2013-2014 Weather Summary

Denali Remote Automated Weather Station (RAWS) summaries – Winter 2013-2014:

Site	Elev. Ft.	Average Temp °F			Winter Avg Temp	Extremes °F		Peak Wind mph	High T – Low T °F *
		Dec	Jan	Feb	°F	High	Low		
Denali VC	1650	-3.1	21.4	-1.5	5.6	55	-42	32	97
Toklat	2920	9.0	26.8	6.1	14.0	50	-35	35	85
Eielson VC	3653	17.6	28.9	16.4	21.0	54	-29	41	83
Wonder Lake	2050	3.8	16.8	1.8	7.5	52	-36	54	88
Stampede	1800	0.5	13.3	-4.6	3.1	49	-42	15	91
Wigand	1741	3.3	17.6	0	7.0	51	-31	45	82
Kantishna	1550	-1.4	11.5	-5.3	1.0	46	-45	**	91
McKinley River	863	m	m	m	m	m	m	m	m
Dunkle Hills	2651	7.8	21.8	6.4	12.0	40	-18	32	58
Tokositna Valley	850	13.3	27.4	14.5	18.4	46	-13	**	59

* Difference between the high and low temperature for the season; ** parameter not measured

Interesting notes:

- Check out the warm temperatures from Eielson! The warm southerly Chinook winds that are common in the winter months are often called the “Pineapple Express” because the jet stream is oriented straight from Hawaii to Alaska. The warm moist air pushes up and over the Alaska Range heating up the areas just north of the range.
- During the late February snow survey we experienced this first hand. It was 57° F when we landed at Purkeypile, just west of the park boundary. 45 minutes before that we took off from Minchumina and it was 32 °F. Records show that during the same time period it had been 50 °F at Eielson Visitor Center, 32 °F at Wonder Lake, and only 23 °F in Kantishna.



Snow Telemetry (SNOTEL) site in Kantishna

Please Note: The summarized data are preliminary and have not undergone final quality control. Therefore, these data are subject to revision.

Connecting Further

Check out these links:

The latest Intergovernmental Panel on Climate Change [Summary Report](#) – released March 30, 2014.

[Central Alaska Network](#) climate monitoring vital sign

Access near real-time data from [Western Regional Climate Center](#) and [MesoWest](#)

Check out the latest 3-month weather outlook from the [NOAA Climate Prediction Center](#)

Statewide summary of weather highlights in the latest [Alaska Climate Dispatch](#) from the Alaska Center for Climate Assessment and Policy

[Map](#) of projected temperature and precipitation changes Denali National Park and Preserve.

For more information contact:

Pam Sousanes or Ken Hill

Central Alaska Network

pam_sousanes@nps.gov; kenneth_hill@nps.gov

907.455.0677

907.455.0678