



Weather and Climate



Western Arctic Parklands Fall 2013 Weather Summary

Was fall 2013 normal?

It was a warm and wet fall in Kotzebue...the average fall temperature was 3.4° F warmer than normal. Total fall precipitation was 4.85 inches, 144% of normal; most of this fell as rain.

Snowfall total was 11.7 inches for the season, or 80% of normal. Most of the snow fell in November.

Records - Fall 2013:
Warmest October on record for Kotzebue: 34.5° F

Record high temperatures:
Oct 17: 43° F
Oct 18: 41° F
Oct 27: 39° F

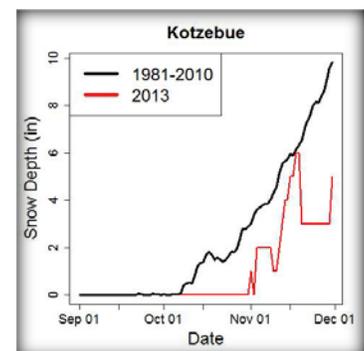
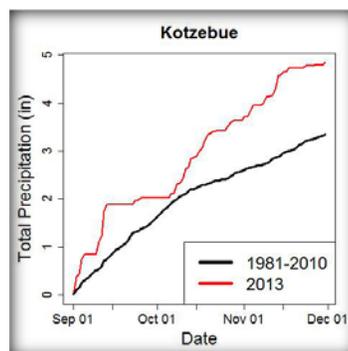
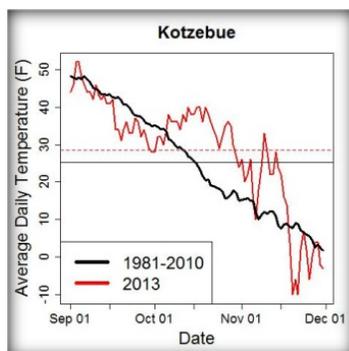
Oct 13, 16, 17, 19, 26, 27, 28 all had record high *minimum* temperatures.

September was cool and wet with an average monthly temperature of 39.4° F, which is 2.9° F cooler than normal. Daily temperatures were below average for most of the month. There was 2.02 inches of precipitation recorded for the month, 128% of the normal amount expected. Only 0.4 inches of snow was recorded for the month, but normal is only 0.8 inches for September.

October was very warm and wet in Kotzebue, with some very warm nights. The monthly average was 34.5° F, which is an impressive 10.2° F warmer than normal! According to the records, October of 2006 had previously been the warmest at 32.6° F. There were 3 record high temperatures in October and 7 days where record high *minimum* temperatures were recorded. The total precipitation for the month was 1.61 inches, 160% of normal. There were 21 out of 31 days in October with measurable precipitation. Most of the precipitation came in the form of rain rather than snow, only 0.5 inches of measurable snow was recorded, over the 1981-2010 normal period the average snow fall total for October is 6.1 inches.

The temperatures stayed warm through November, but moderated a bit from the October warmth. The average monthly temperature was 11.9° F; 2.8° F warmer than normal. There were a few storm events that brought high winds to the region — on November 6, 7, and 13th, the peak wind gusts in Kotzebue exceeded 50 mph. A 59 mph gust was recorded on November 7th. At the end of November there was 5 inches of snow on the ground in Kotzebue.

Kotzebue – Average air temperatures, cumulative precipitation, and snow depth for 2013 (red) compared to normal (black)



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Kotzebue Weather Records:
Climate Normal Period 1981 – 2010
Climate Record Period 1897 – 2013

Temperature

Fall 2013	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
September	39.4	42.3	-2.9	59 / Sep 3	23 / Sep 30
October	34.5*	24.3	+10.2	43 / Oct 17	22 / Oct 1, 31
November	11.9	9.1	+2.8	38 / Nov 9	-15 / Nov 19

Fall Season Temperature Departure from Normal: +3.4°F

*record warm monthly temperature

Precipitation

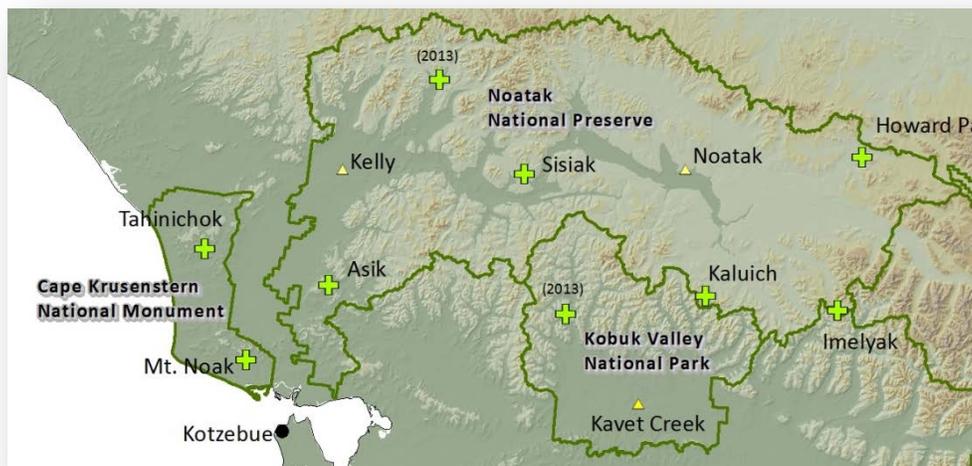
Fall 2013	Total Monthly Precip in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24-hr total in. / Date	# Days with ≥ 0.01 in. Water
September	2.02	1.58	+0.44	0.51 / Sep 12	11
October	1.61	1.01	+0.60	0.21 / Oct 11	21
November	1.22	0.77	+0.45	0.28 / Nov 13	18

Fall Season Precipitation Departure from Normal: +0.50 inches

Snowfall

Fall 2013	Total Monthly Snowfall in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24-hr snowfall total in. / Date	Cumulative since 1-July in.	Normal Snowfall from July 1 in.
September	0.4	0.8	-0.4	0.3 / Sep 25	0.4	0.7
October	0.5	6.1	-5.6	0.3 / Oct 10	0.9	5.7
November	10.8	10.5	+0.3	2.4 / Nov 3	11.7	14.6

We now have additional NPS climate stations in Cape Krusenstern, Noatak, and Kobuk Valley that complement existing National Weather Service stations at Kotzebue and along the Kobuk River to the south. The new NPS stations will provide critical data on high elevation sites in the Arctic and will help characterize the climate gradients and patterns affecting resources in the Western Arctic parklands.



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Arctic Network RAWS weather summaries – Fall 2013:

Park	Site	Elev. ft.	Avg Temp °F			Fall Avg Temp °F	Extremes °F		Peak Wind mph	Seasonal Temp Spread °F *
			Sep	Oct	Nov		High	Low		
CAKR	Tahinichok	966	34.2	30.7	12.2	25.7	51	-3	55	54
NOAT	Asik	1329	34.0	30.3	12.1	25.5	53	-6	56	59
	Kelly	382	35.9	31.3	7.1	24.8	62	-22	18	84
	Sisiak	1823	31.4	27.7	6.7	21.9	49	-12	45	61
	Noatak	985	33.4	28.6	-1.1	20.3	55	-32	45	87
	Howard Pass	2062	30.8	28.1	8.8	22.6	49	-23	64	72
	Kaluich	2486	29.9	26.3	6.1	20.8	48	-16	74	64
	Imelyak	3569	30.7	27.2	7.5	21.8	47	-19	59	66
KOVA	Kavet Creek	235	38.3	32.6	2.3	24.4	60	-30	19	90
	Salmon River	1201	33.8	29.0	7.8	23.5	53	-12	47	65

* Difference between the high and low temperature for the season. Mt. Noak station stopped transmitting data in September

Interesting notes from RAWS stations:

- The wind howled in November – On November 9th at Kaluich the average wind speed was > 50 mph for 23 hours straight and peak gusts were > 70 mph for 4 of those hours.
- The difference between the September and October temperatures was on average ~ 4 degrees F; and between October and November it was ~ 22 degrees F.
- October is a transition month -- the winter inversions start to creep back in as the daylight hours decrease and temperatures drop.



Salmon River climate station in Kobuk Valley

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

Connecting Further

New paper published [Recent sea ice increase and temperature decrease in the Bering Sea area, AK](#)

Previous weather summaries and other climate monitoring documents on the [Arctic Network web portal](#)

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

Check out the Dec-Jan-Feb 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

[Maps](#) of projected temperature and precipitation changes for the WEAR parks.

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