



Weather and Climate



Gates of the Arctic Spring 2013 Weather Summary

Spring Records for Bettles

April 13: 21° F record low

April 9: 4.2 inches record snowfall

April 30: 29° F record lowest maximum temperature

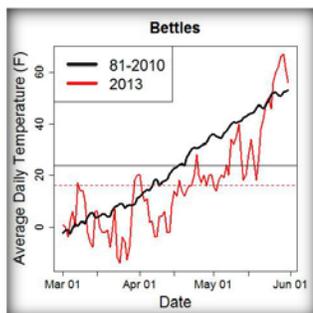
April 2013: With an average temp of 11.6° F was the 3rd coldest on record behind 1986: 10.2° F and 1985: 10.7° F.

Bettles had the strongest negative temperature deviation for May of all the first-order weather stations in the state.

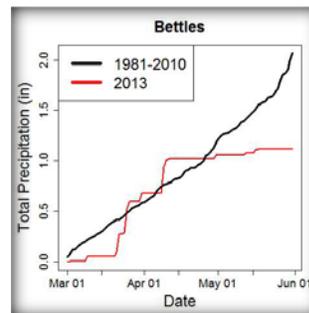
May 12: 15° F
May 13: 10° F
May 14: 8° F
May 15: 14° F
May 17: 18° F
May 18: 10° F
May 19: 10° F all record daily minimum temperatures.

In Bettles, March was cold and dry, with an average monthly temperature of 1.4° F, which is 3.0°F colder than normal. Ten inches of snow fell during the month, just slightly more than the 9.3 inches that is normal for the month, which equated to 0.68 inches of water equivalent. April was cold – the third coldest on record. The average temperature was 11.6° F colder than normal. There was 4.2 inches of total snowfall recorded for the month, which is just over 2 inches less than normal. There were several missing snow observations for the month. The snow water equivalent was 0.38 inches, 63% of normal. The cold temperatures continued through most of May – an impressive number of daily minimum temperature records were set (see left inset) and the monthly average temperature was 8.6° F colder than normal. The cold temperatures gave way suddenly to warm temperatures during the last week of the month, with temperatures climbing into the upper 70s. There was very little precipitation in May. Normally there would be ~ 1.3 inches of snowfall and some rain for a total of 0.88 inches. The seasonal snowfall total for 2012-2013 (through May 31) was 48.5 inches, which is only 53% of normal.

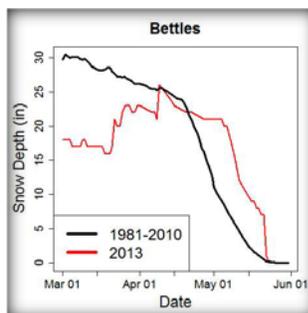
Bettles – Average Air Temperatures



Bettles – Cumulative Precipitation



Bettles – Cumulative Snow Depth



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Bettles Weather Records:

Climate Normal Period 1981 – 2010

Climate Record Period 1944 – 2013

Temperature

Spring 2013	Average Monthly Temp °F	1981-2010 Normal °F	Departure from Normal °F	Monthly High °F / Date	Monthly Low °F / Date
March	1.4	4.4	-3.0	30 / Mar 31	-30 / Mar 13
April	11.7	23.3	-11.6	38 / Apr 24	-22 / Apr 8
May	35.8	44.4	-8.6	78 / May 28, 29	1 / May 3

Spring Season Temperature Departure from Normal: -7.7°F

Precipitation

Spring 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
March	0.68	0.58	+0.10	0.23 / Mar 25	8
April	0.38	0.60	-0.22	0.26 / Mar 9	4
May	0.06	0.88	-0.82	0.03 / May 16	3

Spring Season Departure from Normal: -0.31 inches

Snowfall

Spring 2013	Total Monthly Snowfall in.	1981-2010 Normal in.	Departure from Normal in.	Greatest 24 – hr. snowfall total in. / Date	2012-2013 Cumulative since 1-July in.	Normal Snowfall from July 1 in.
March	10.0	9.3	+0.7	2.3 / Mar 25	43.5	83.5
April	4.2*	6.3	-2.1	4.2 / Apr 9	47.7	89.8
May	0.80*	1.3	-0.5	0.5 / May 16	48.5	91.1

As part of the climate monitoring vital sign, we now have additional NPS climate stations in Gates of the Arctic National Park and Preserve that complement the existing National Weather Service station at Bettles. 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 park. Data from Anaktuvuk Pass, Wiseman, and Umiat are also summarized.

