

# Alaska Statewide Climate Summary

December 2014

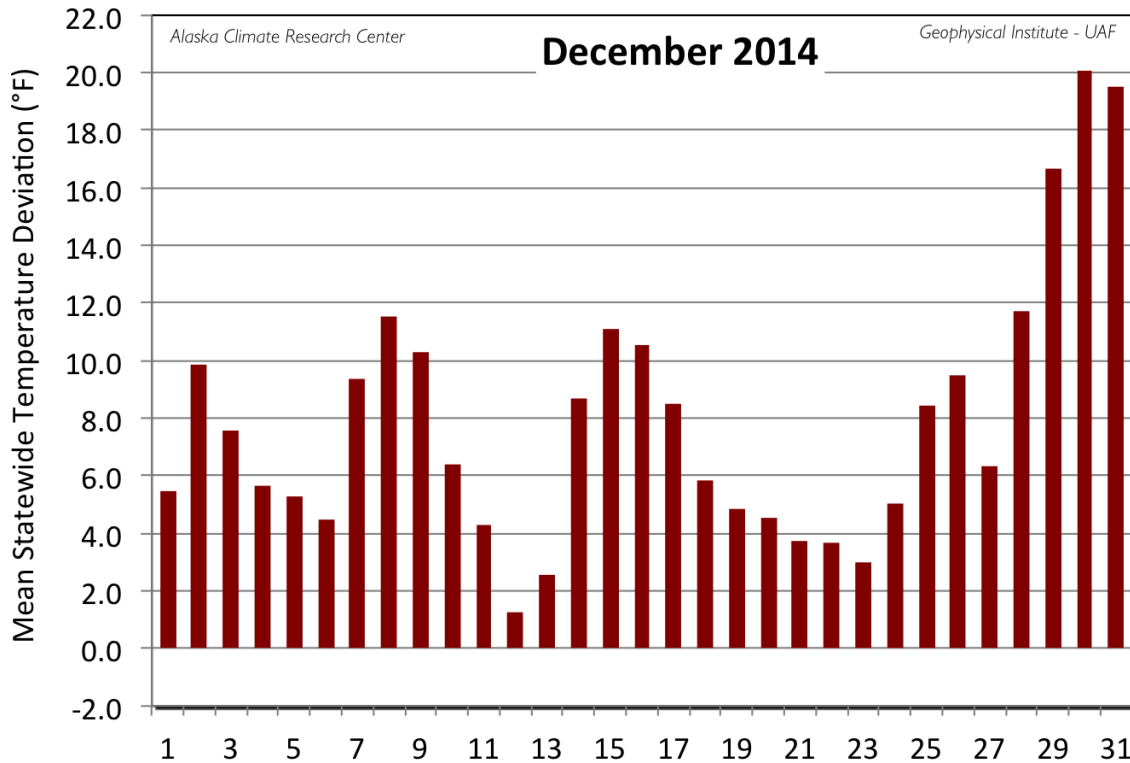
## Temperature

The warm trend from November continued into December 2014 with temperatures that were decidedly above normal across the state, with all 19 of the First Order Stations reporting positive deviations. Calculating the mean daily temperatures of the First Order Stations (see Figure), all 31 days of the month were above the 30-year normal. The peak deviation, an extreme 20.1°F, occurred on the 30<sup>th</sup> of the month. The monthly mean temperature of all First Order Stations was 21.8°F, a significant 7.5°F above the normal of 14.3°F. This is 6.9°F above the December of 2013 mean of 14.9°F. McGrath held the greatest positive deviation from normal for December at a highly substantial 13.9°F above its long-term mean of -3.2°F. Stations following King Salmon with positive deviations equal to or exceeding 10°F were: King Salmon (13.0°F), Fairbanks (12.1°F), Delta Junction (10.7°F) and Talkeetna (10.2°F).

The warmest temperature for the First Order Stations was 55°F reported at Annette on the 7<sup>th</sup>. Annette also reported the highest mean temperature for the month at 41.7°F. The coldest temperature was -29°F at Bettles on the 27<sup>th</sup>. Barrow reported the lowest December mean temperature at -6.8°F.

Station	Temperature		
	Observed (°F)	Normal (°F)	Delta (°F)
Anchorage	26.5	19.0	7.5
Annette	41.7	37.1	4.6
Barrow	-6.8	-7.8	1.0
Bethel	19.4	10.4	9.0
Bettles	4.1	-5.7	9.8
Cold Bay	33.6	31.1	2.5
Delta Junction	12.8	2.1	10.7
Fairbanks	8.0	-4.1	12.1

Gulkana	7.8	0.4	7.4
Homer	37.0	27.1	9.9
Juneau	33.4	29.9	3.5
King Salmon	31.6	18.6	13.0
Kodiak	38.2	31.2	7.0
Kotzebue	7.8	2.3	5.5
McGrath	10.7	-3.2	13.9
Nome	15.6	9.5	6.1
St. Paul Island	33.6	28.9	4.7
Talkeetna	26.3	16.0	10.3
Yakutat	33.7	29.6	4.1



*Daily mean temperature deviation from the normal temperature for the mean of the first order stations for December 2014.*

As in November, a fair number of record temperature events were reported for December, and like November, all were new record highs, with no new lows noted. They were set throughout the month. King Salmon, Homer and Craig all had a total of four new records set or tied. Fairbanks had the second warmest December in 111 years of records.

Date	Temperature Records				
	Station	Element	New Record	Old Record	Year of old Record
12/01/14	Cold Bay	High Temperature	45	45	2002
12/01/14	St. Paul	High Temperature	42	41	2002
12/07/14	Annette	High Temperature	55	51	2002
12/07/14	Homer	High Temperature	49	49	1978
12/07/14	King Salmon	High Temperature	47	45	2013

12/07/14	Kodiak	High Temperature	47	46	1978
12/07/14	Yakutat	High Temperature	46	46	1982
12/08/14	Craig	High Temperature	54	52	2002
12/08/14	Homer	High Temperature	52	49	1986
12/08/14	King Salmon	High Temperature	48	47	1937
12/08/14	Kodiak	High Temperature	46	46	1978
12/14/14	Craig	High Temperature	52	50	2013
12/14/14	Port Alexander	High Temperature	48	48	1962
12/14/14	Yakutat	High Temperature	46	46	1982
12/15/14	Auke Bay	High Temperature	46	44	2013
12/15/14	Craig	High Temperature	52	51	2002
12/15/14	Juneau	High Temperature	46	46	2005
12/15/14	Petersburg	High Temperature	52	52	1958
12/15/14	Port Alexander	High Temperature	49	49	1962
12/15/14	Talkeetna	High Temperature	40	39	2005
12/16/14	Craig	High Temperature	52	50	2005
12/20/14	Yakutat	High Temperature	45	45	1985
12/27/14	St. Paul	High Temperature	41	41	1984
12/29/14	King Salmon	High Temperature	48	45	1967
12/30/14	Delta Junction	High Temperature	44	44	1967
12/30/14	Homer	High Temperature	48	47	1941
12/30/14	King Salmon	High Temperature	49	43	2009

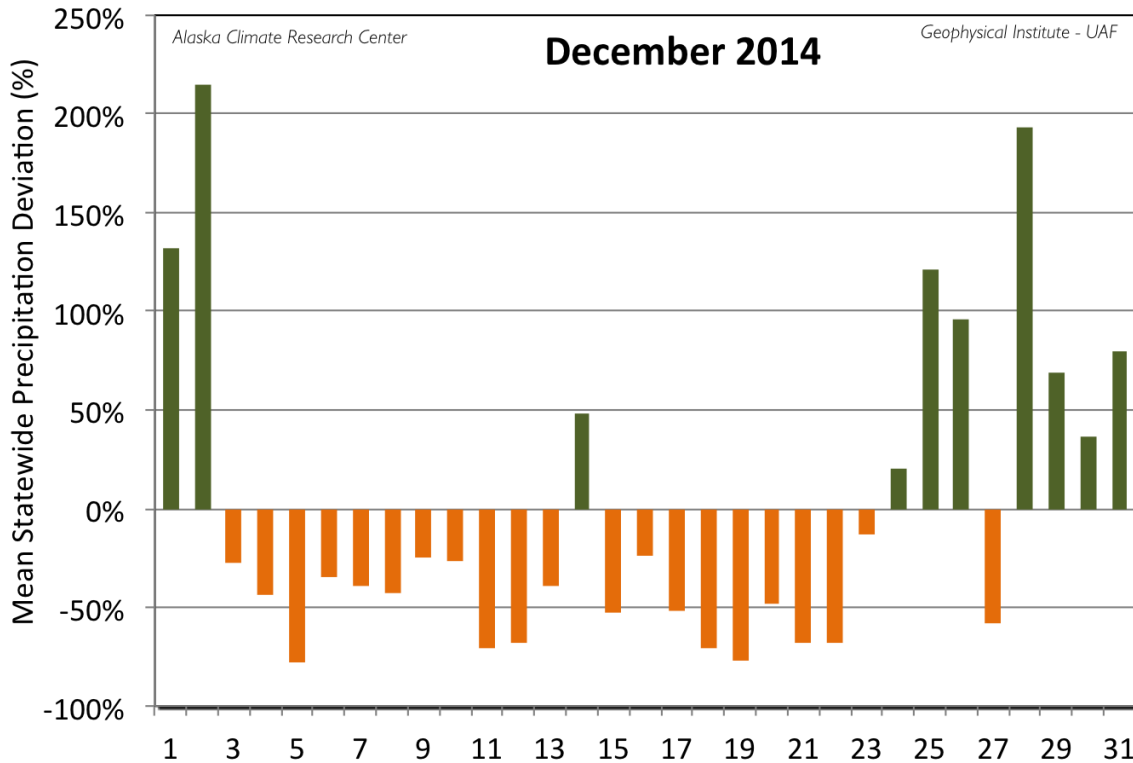
12/31/14	Homer	High Temperature	48	48	1941
12/31/14	Kotzebue	High Temperature	35	32	1987
12/31/14	Talkeetna	High Temperature	40	40	2001

## Precipitation

December was just a bit a drier than normal, with the overall precipitation calculated as 2% below normal; this calculation was based on the mean of the deviations in percentage of the First Order Stations. Ten of the First Order Stations and 21 days of the month reported below normal values. This is in contrast to the wet December in 2013 that had 46% more precipitation than normal. The greatest daily deviation of 214% occurred on the 2<sup>nd</sup>, when a storm passed over much of Alaska. On a monthly basis, King Salmon had the greatest positive deviation from normal, with a total of 1.96", or 59% above the expected amount of 1.23". Other stations with precipitation greater than 140% of normal were: Kodiak (158%), Fairbanks (145%), Barrow (143%) and Bethel (142%). Leading the stations with lower than normal precipitation totals was Delta Junction with just 18% of normal. Other stations with less than a 60% of their normal precipitation were: Kotzebue (46%), Nome (50%), and Juneau (56%).

Station	Precipitation				
	Observed (in)	Normal (in)	Delta (in)	Delta (%)	(%)
Anchorage	<b>0.72</b>	<b>1.11</b>	<b>-0.39</b>	<b>-35%</b>	<b>65%</b>
Annette	<b>12.96</b>	<b>10.72</b>	<b>2.24</b>	<b>21%</b>	<b>121%</b>
Barrow	<b>0.20</b>	<b>0.14</b>	<b>0.06</b>	<b>43%</b>	<b>143%</b>
Bethel	<b>1.59</b>	<b>1.12</b>	<b>0.47</b>	<b>42%</b>	<b>142%</b>
Bettles	<b>1.12</b>	<b>0.92</b>	<b>0.20</b>	<b>22%</b>	<b>122%</b>
Cold Bay	<b>2.92</b>	<b>4.46</b>	<b>-1.54</b>	<b>-35%</b>	<b>65%</b>
Delta Junction	<b>0.07</b>	<b>0.38</b>	<b>-0.31</b>	<b>-82%</b>	<b>18%</b>
Fairbanks	<b>0.93</b>	<b>0.64</b>	<b>0.29</b>	<b>45%</b>	<b>145%</b>

Gulkana	<b>0.74</b>	<b>0.78</b>	<b>-0.04</b>	<b>-5%</b>	<b>95%</b>
Homer	<b>2.77</b>	<b>3.08</b>	<b>-0.31</b>	<b>-10%</b>	<b>90%</b>
Juneau	<b>3.29</b>	<b>5.84</b>	<b>-2.55</b>	<b>-44%</b>	<b>56%</b>
King Salmon	<b>1.96</b>	<b>1.23</b>	<b>0.73</b>	<b>59%</b>	<b>159%</b>
Kodiak	<b>13.79</b>	<b>8.73</b>	<b>5.06</b>	<b>58%</b>	<b>158%</b>
Kotzebue	<b>0.35</b>	<b>0.76</b>	<b>-0.41</b>	<b>-54%</b>	<b>46%</b>
McGrath	<b>1.40</b>	<b>1.29</b>	<b>0.11</b>	<b>9%</b>	<b>109%</b>
Nome	<b>0.54</b>	<b>1.08</b>	<b>-0.54</b>	<b>-50%</b>	<b>50%</b>
St. Paul Island	<b>2.96</b>	<b>2.25</b>	<b>0.71</b>	<b>32%</b>	<b>132%</b>
Talkeetna	<b>1.50</b>	<b>1.93</b>	<b>-0.43</b>	<b>-22%</b>	<b>78%</b>
Yakutat	<b>12.05</b>	<b>16.28</b>	<b>-4.23</b>	<b>-26%</b>	<b>74%</b>



Daily mean precipitation deviation from the normal for the first order stations for December 2014.

The maximum monthly precipitation total reported for the First Order Stations was 13.79" at Kodiak, and Kodiak reported the highest daily total of 3.03" on the 28<sup>th</sup>, a new daily record. The highest one-day snowfall occurred at Bettles on the 18<sup>th</sup> with 5.2", also a new daily record. Bettles reported the highest monthly snowfall of 24.5", and the highest snow depth at 18".

Given the general lower than normal precipitation record in December, it's not surprising there were a very limited number of precipitation record events during the month. The table below lists the eight noted events.

Date	Precipitation Records				
	Station	Element	New Record	Old Record	Year of old Record
12/02/14	Fairbanks	Precipitation	0.39	0.29	1992
12/14/14	St. Paul	Precipitation	0.77	0.63	2008
12/25/14	Bettles	Precipitation	0.30	0.14	2007

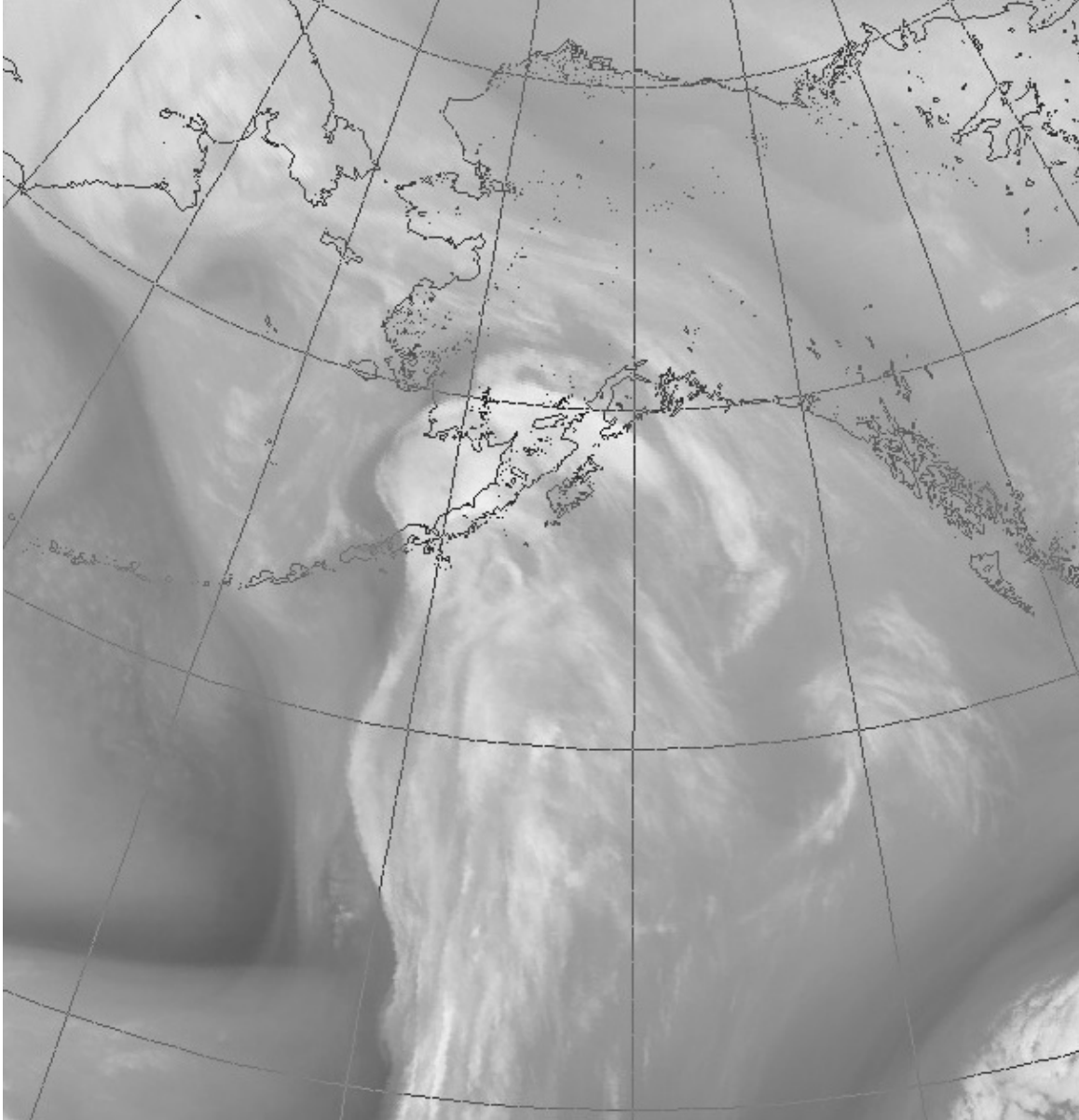
12/25/14	Bettles	Snowfall	5.2	2.3	1987
12/28/14	Barrow	Precipitation	0.11	0.05	1903
12/28/14	Kodiak	Precipitation	3.03	1.82	1978
12/29/14	Kodiak	Precipitation	2.67	1.09	2003
12/31/14	King Salmon	Precipitation	0.47	0.28	1961

Snowfall was unsurprisingly light, with 13 of the First Order Stations that measure snowfall reporting below normal amounts. Based on the mean of the deviations from all 15 stations, the overall deviation from the normals was just 52% of the expected amount. Kodiak reported the lowest amount at 0.3", just 2% of its normal. Bettles had the highest deviation at 157% of its expected amount with a total of 24.5". Mean snow depth was about 30% under the normal. The near normal amount of precipitation, but deficiency in snowfall and resulting snow cover is, of course, due to the warmer weather, resulting in a higher percentage of the precipitation falling as rain instead of snow.

Station	Snowfall				
	Observed (in)	Normal (in)	Delta (in)	Delta (%)	(%)
Anchorage	7.5	16.7	-9.2	-55%	45%
Annette	0.4	8.1	-7.7	-95%	5%
Barrow	3.0	3.5	-0.5	-14%	86%
Bethel	6.5	11.4	-4.9	-43%	57%
Bettles	24.5	15.6	8.9	57%	157%
Cold Bay	2.3	12.6	-10.3	-82%	18%
Fairbanks	15.2	12.1	3.1	26%	126%
Juneau	3.5	15.6	-12.1	-78%	22%
King Salmon	7.5	9.5	-2.0	-21%	79%
Kodiak	0.3	13.8	-13.5	-98%	2%



Kotzebue	<b>3.0</b>	<b>11.5</b>	<b>-8.5</b>	<b>-74%</b>	<b>26%</b>
McGrath	<b>15.7</b>	<b>20.2</b>	<b>-4.5</b>	<b>-22%</b>	<b>78%</b>
Nome	<b>5.1</b>	<b>14.5</b>	<b>-9.4</b>	<b>-65%</b>	<b>35%</b>
St. Paul Island	<b>4.3</b>	<b>12.1</b>	<b>-7.8</b>	<b>-64%</b>	<b>36%</b>
Yakutat	<b>1.8</b>	<b>23.2</b>	<b>-21.4</b>	<b>-92%</b>	<b>8%</b>



*This water vapor satellite image from the National Weather Service shows a storm pushing into Alaska on December 2<sup>nd</sup>.*

### **Newsworthy Events**

December started off with freezing rain for the Southcentral areas and winter storm warnings for the Fairbanks region. Snowfall totaled up to 9" at Two Rivers, and hazardous driving conditions ensued. The snowfall total for Twelvemile Summit was 12.4". Dense fog advisories were issued for the Fairbanks area for the next two days. The snowfall allowed for the opening of the Birch Hill Ski area. On the 3<sup>rd</sup> the ice fishing huts at Chena Lakes were open to rent. The Eaglecrest Ski area in Juneau opened on the 6<sup>th</sup>.

Strong winds were reported across northern Alaska on the 9<sup>th</sup>, gusts up to 89 mph were reported at Howard Pass in the northeastern Brooks Range and 87 mph at Point Hope. The delayed freeze up of

the Kuskokwim River is still impacting travel in the region, as well as the Kuskokwim 300 sled dog race. It was not until the 25<sup>th</sup> that a safe trail was marked.

Mat-Su schools were closed on the 10<sup>th</sup> due to freezing rain. Air quality advisories were issued for the North Pole area on the 13<sup>th</sup>. Winter storm warnings were in effect for Bering Strait and Chukchi areas on the 14<sup>th</sup> for high winds and blowing snow. Turnagain Pass area was still closed to snow machiners at mid-month due to low snowpack. The upper mountain at Alyesak was re-opened on the 19<sup>th</sup> after a four-day closure. The thin ice on the Chena River in Fairbanks had resulted in two vehicles going through the ice at the 'ice bridge'. A bulldozer went though the ice on the Nenana River near Nenana on the 23<sup>rd</sup>. A light snowfall in Anchorage on the 21<sup>st</sup> resulted in a number of vehicle accidents.

High wind advisories were issued on Christmas day for the eastern Alaska Range. Snow advisory was alerted for western areas of northern Alaska the same day, then Fairbanks area the following day, with totals of about half a foot over the two days and 9.7" in Bettles. The 27<sup>th</sup> saw temperatures drop to -20°F for the first time of the winter in Fairbanks, third latest date to reach that temperature in more than 100 years. A large number of winter storm warnings and high wind warnings were issues across the state on the 29<sup>th</sup>. Anchorage residents enjoyed 'snow gains and ice pellets' on the 30<sup>th</sup>. Air quality alerts were in effect for North Pole and Juneau areas on the 30<sup>th</sup>. Freezing rain alerts and travel advisories were issued for the Fairbanks area for the night of the 30<sup>th</sup> and News Years Eve. The public was urged not to drive most of the Parks Highway due to ice from the freezing rain.

*This information consists of preliminary climatological data compiled by the Alaska Climate Research Center, Geophysical Institute, University of Alaska Fairbanks. For more information on weather and climatology, contact the center at 907-474-7885 or visit the center web site at <http://akclimate.org>. Please report any errors to [webmaster@akclimate.org](mailto:webmaster@akclimate.org). This summary is based on the 19 first order stations in Alaska operated by the National Weather Service. Extreme events of other stations are also mentioned.*