



# National Weather Service Aberdeen, South Dakota



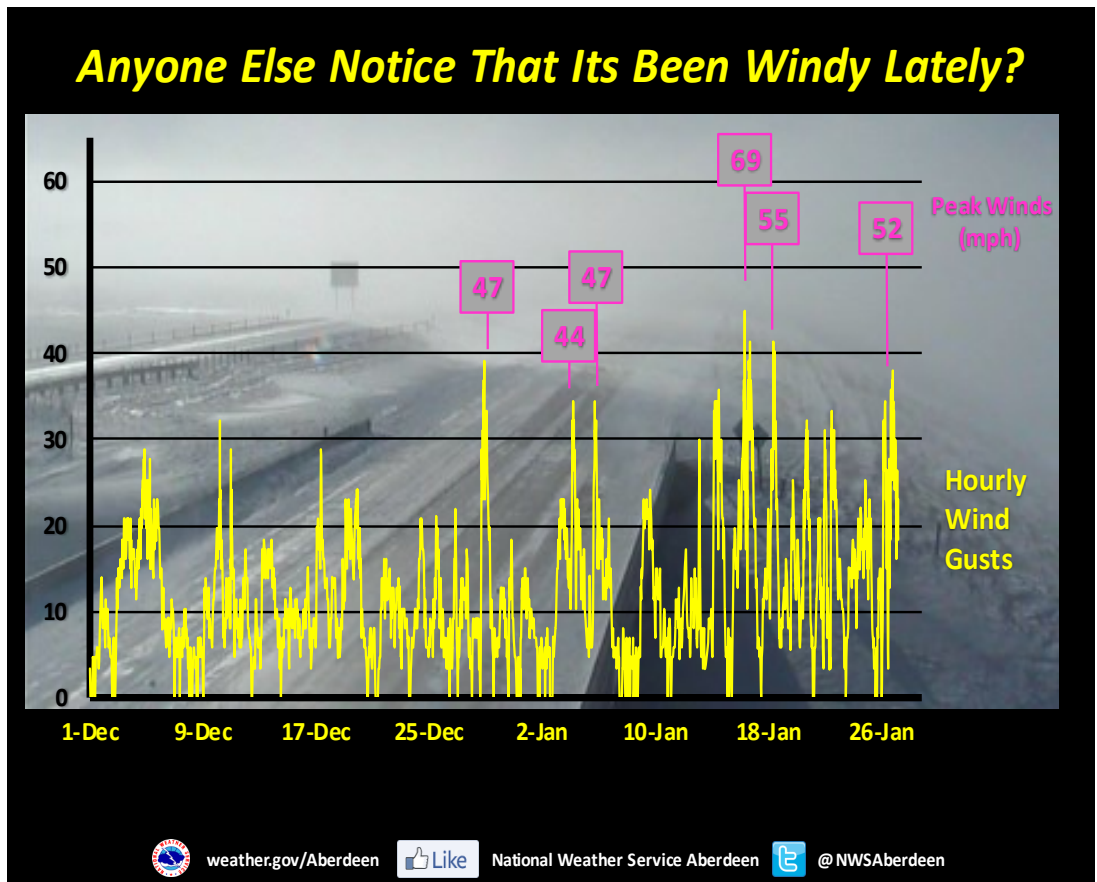
January 2014

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## Has it Been Windy Lately or What?

We have been getting a number of questions about how windy it has been lately. Here is a chart showing the wind speeds and peak winds experienced at the Aberdeen Regional Airport over the last two months. Notice how the pattern changed at the end of December with a number of very gusty days in January? These wind speeds were common across all of Northeastern South Dakota and West Central Minnesota.



[weather.gov/Aberdeen](http://weather.gov/Aberdeen)



National Weather Service Aberdeen

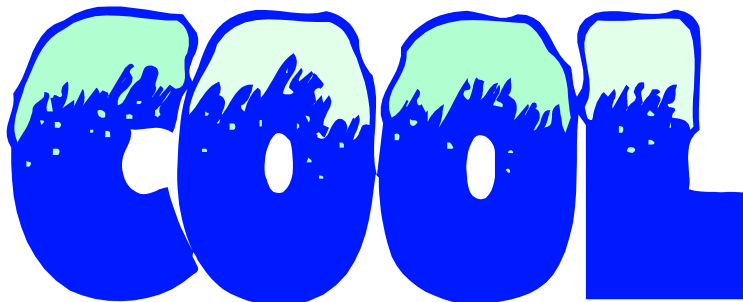


@NWSAberdeen

## 2013 Year in Review

2013 was a cool and wet year across central and northeast South Dakota as well as west central Minnesota. Most locations had one of their top ten coldest years on record. The yearly average temperatures were from 2 to 3 degrees below normal, which is large for a yearly average. Wheaton, Minnesota had their all-time coldest year on record with an average yearly temperature of just 39.9 degrees. Kennebec came in with their second coldest year on record with 46.5 degrees. Aberdeen tied for the fourth coldest on record with an average temperature of 40.5 degrees. Timber Lake and Mobridge both tied for their sixth coldest year on record with 43.8 and 43.2 degrees, respectively. Wattertown was 40.7 degrees and Pierre was 45.3 degrees, or 8th and 10th respectively, for their coldest years on record.

2013 was also a wet year with several locations having one of their top ten wettest years on record. Total yearly precipitation ranged from just above normal at Aberdeen to 10.5 inches above normal at Timber Lake. Some of the big events in 2013 were the very snowy April across the region with 20 or more inches of snowfall occurring at many locations; the widespread severe thunderstorm wind damage in northeast South Dakota and west central Minnesota on June 21st; along with the devastating blizzard to hit western South Dakota on October 4th and 5th.



## 2013 Year in Review (cont.)

### 2013 CLIMATE

Temperature Data	Aberdeen	Sisseton	Wheaton	Watertown
Warmest Temperature/Date	95 / Aug 24 <sup>th</sup>	96 / Aug 29 <sup>th</sup>	96 / Aug 30 <sup>th</sup>	93 / Aug 29 <sup>th</sup>
Coldest Temperature/Date	-31 / Feb 1 <sup>st</sup>	-23 / Feb 20 <sup>th</sup>	-21 / Feb 21 <sup>st</sup>	-23 / Dec 7 <sup>th</sup>
Average Yearly High/Departure from Normal	52.2 / -2.2	51.1 / -3.4	49.8 / -3.3	50.6 / -3.0
Average Yearly Low/Departure from Normal	28.8 / -2.7	30.4 / -2.6	30.0 / -2.2	30.8 / -1.7
Yearly Average/Departure from Normal	40.5 / -2.5	40.7 / -3.0	39.9 / -2.8	40.7 / -2.3
<b>Precipitation/Wind Data</b>				
Yearly Precipitation / Departure from Normal	21.90 / +0.18	28.61 / +6.28	26.28 / +1.34	24.75 / +2.69
Highest Wind Gust MPH / Date	58 / Jun 21 <sup>st</sup>	61 / Jan 10 <sup>th</sup>	N/A	82 / Jun 21 <sup>st</sup>

Temperature Data	Pierre	Kennebec	Mobridge	Timber Lake
Warmest Temperature/Date	102 / Aug 24 <sup>th</sup>	99 / Aug 26 <sup>th</sup>	101 / Aug 24 <sup>th</sup>	99 / Aug 24 <sup>th</sup>
Coldest Temperature/Date	-21 / Dec 23 <sup>rd</sup>	-24 / Dec 23 <sup>rd</sup>	-25 / Dec 23 <sup>rd</sup>	-24 / Dec 7 <sup>th</sup>
Average Yearly High/Departure from Normal	56.7 / -2.5	59.3 / -1.9	54.6 / -2.2	55.2 / -2.3
Average Yearly Low/Departure from Normal	33.8 / -1.8	33.7 / -1.8	31.8 / -1.3	32.3 / -1.4
Yearly Average/Departure from Normal	45.3 / -2.1	46.5 / -1.9	43.2 / -1.7	43.8 / -1.8
<b>Precipitation/Wind Data</b>				
Yearly Precipitation / Departure from Normal	24.58 / +4.57	26.54 / +6.91	23.72 / +5.85	28.93 / +10.50
Highest Wind Gust MPH / Date	63 / Jul 13 <sup>th</sup>	N/A	64 / Jul 9 <sup>th</sup>	N/A

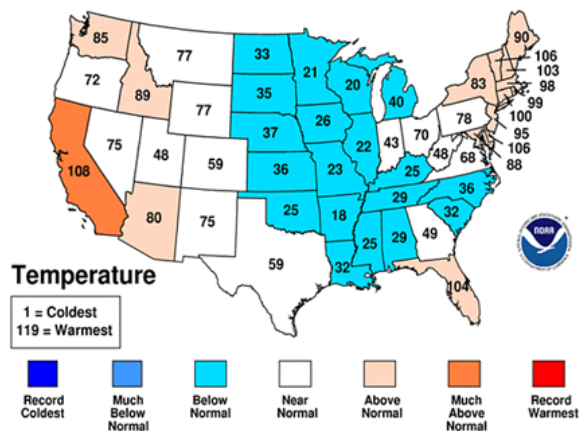
## NCDC 2013 Annual Report

The average temperature for the contiguous United States during 2013 was 52.4°F, 0.3°F above the 20th century average, tying with 1980 as the 37th warmest year in the 119-year period of record, according to NOAA scientists. The year consisted of a warmer-than-average winter, summer, and autumn, and a cooler-than-average spring.

For the year, the average precipitation total for the contiguous U.S. was 31.17 inches, 2.03 inches above the 20th century average. This marked the 21st wettest year on record and the wettest since 2009. California was record dry, while Michigan and North Dakota were record wet; Alaska had its third wettest year.

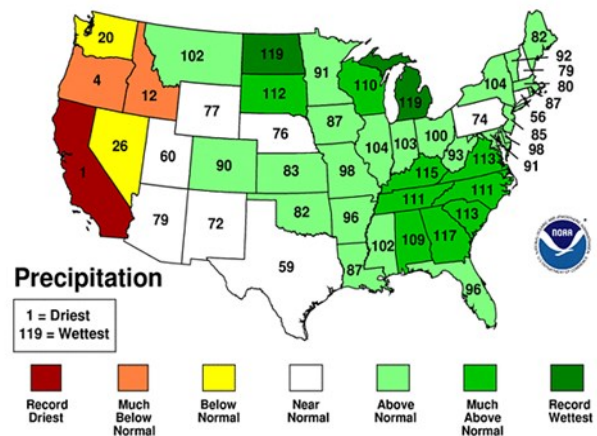
### January-December 2013 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



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National Climatic Data Center/NESDIS/NOAA



In 2013, the U.S. experienced seven weather and climate disaster events, each with losses exceeding \$1 billion in damages. These events included five severe weather and tornado events, a major flood event, and the western drought / heat wave. Overall, these events killed 109 people and delivered significant economic effects.

## What Exactly is the Polar Vortex?

Lately, the hot topic going around is the “Polar Vortex” and how it is responsible for the bitterly cold air that has overwhelmed the upper plains the past few weeks. But, what exactly is the Polar Vortex, and is it truly responsible?

During every winter, there is a broad cyclonic (counter-clockwise turning) circulation that sets up across the North Pole region of the northern hemisphere. This circulation becomes established in the stratosphere, which is roughly 12.5 miles above the earth’s surface. These circulations form during mid to late fall, reach peak intensity by mid-winter, then begin to decay during the spring. Such a cycle suggests that the vortex is closely tied to the amount of incoming solar energy. Because ozone (which is found in the stratospheric layer) absorbs incoming ultraviolet energy, this layer does indeed warm up during the northern hemisphere summer.

Before diving further into this investigation, we need to get some basic assumptions and facts out on the table. 1...because of the diminishing amount of solar energy during winter, coupled with fresh and deep snow cover over the interior of Canada, the low level air mass that is in place is deeply chilled (e.g. surface temperatures well below zero). 2...keep in mind that the polar vortex resides roughly 12-15 miles above the earth’s surface; and 3...very rarely does stratospheric air reach the earth’s surface.

This winter, the overall established near-earth flow pattern has been dictated by a ridge of warm and dry air across the west coast, with a digging trough of low pressure located across the Mississippi valley region. As storms crash into the west coast ridge, they are deflected northward into the interior of Canada. Once they reach the backside of the ridge, they drop southeast across the northern plains and into the established trough. As these systems drop out of Canada, they are able to transport very cold, Arctic air masses southward into the Dakotas. Lately we have seen disturbances slide south quicker than the atmosphere can recover, leading to reinforcing shots of this bitterly cold Arctic air. If this sounds familiar, it should because normally we in the northern plains refer to them as “Alberta Clippers”. The stratospheric polar vortex may play a small, indirect part in the formation of this cold air, but again for the most part, the arctic air intrusion is due more to low level air mass circulations than the polar vortex, and this is something that we northern plains folks experience every winter to some degree or another.

In closing, the polar vortex is a high altitude formation that occurs every winter and has little to do with low level cold air intrusion. You cannot time lapse the polar vortex, nor see it with your own eyes.

## Spotter Training

### Skywarn Spotter Training 2014

Here are the scheduled Skywarn Talks for 2014.

#### March

- 20: 7pm CDT: Roberts County – Location to be determined
- 25: 3pm CDT: Codington County – Codington Co. Extension office  
7pm CDT: Hamlin County – Location to be determined
- 26: 7pm CDT: Codington County – Codington Co. Extension office

#### April

- 2: 7pm CDT: Buffalo/Brule Counties – Oacoma Community Center
- 3: 7pm CDT: Hughes/Stanley Counties – Pierre Fire Station #1
- 9: 7pm CDT: Day County – Basement of county courthouse
- 17: 7pm CDT: Hand County – Miller Fire Hall
- 22: 6pm CDT: Brown County – Basement of county courthouse

#### May

- 5: 7pm CDT: Jones County – Location to be determined

There are no requirements needed to take class, other than a general interest in severe weather and the willingness to pass your weather report onto the authorities. Classes are still being scheduled, so please check the following page for any additions to this list.

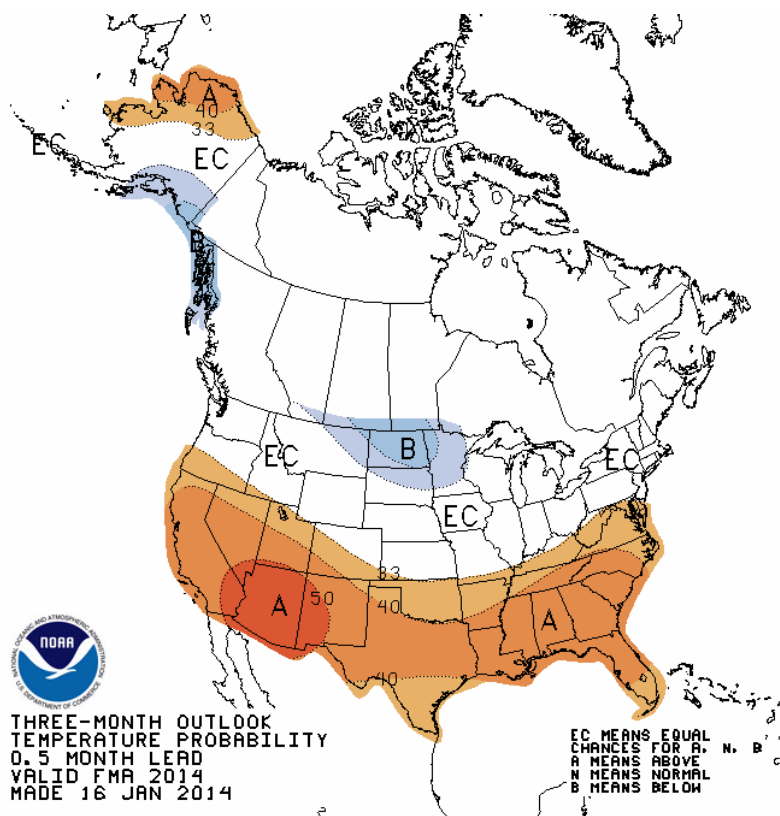
<http://www.crh.noaa.gov/abr/?n=skywarnschedule.php>

If you have any questions or for more information, you can contact [Dave Hintz, Warning Coordination Meteorologist](#).



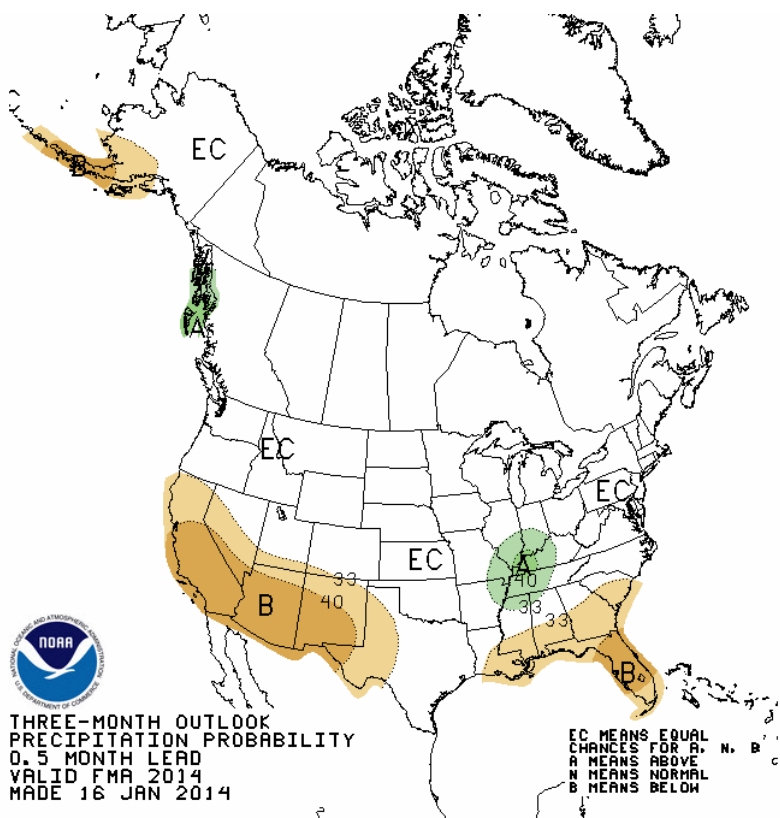


### Seasonal Outlook - February through April



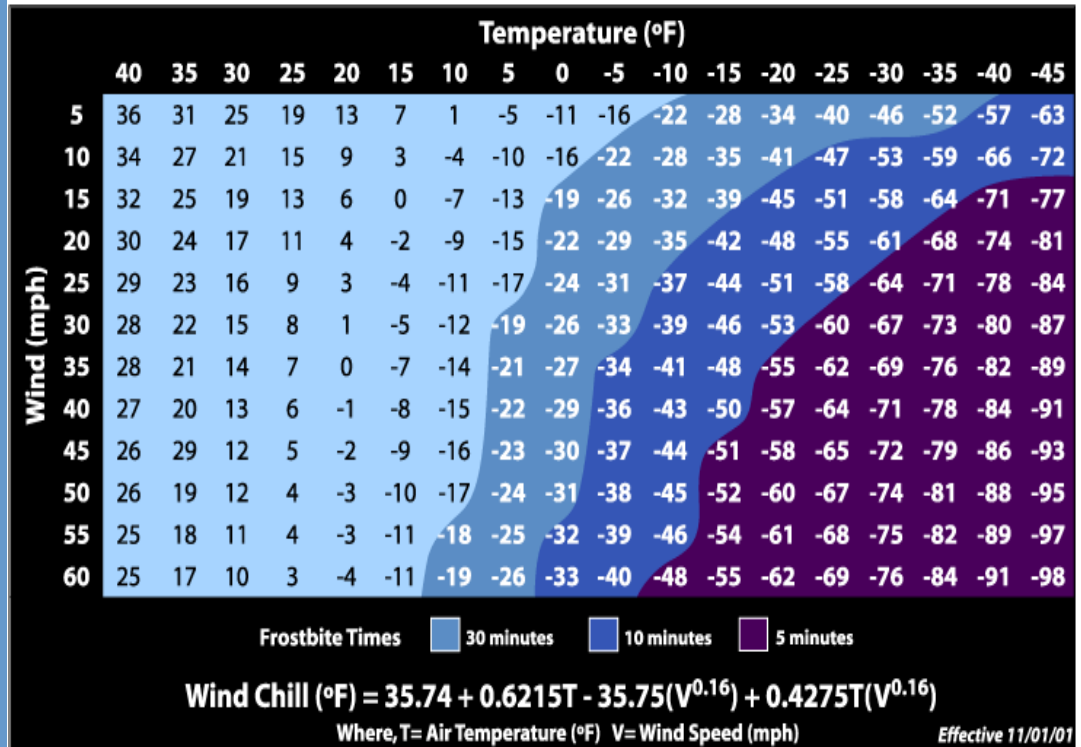
Temperature outlook for the months of February through April

Precipitation outlook for the months of February through April





# Wind Chill Chart



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### OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, \$300

[www.weather.gov/aberndeen](http://www.weather.gov/aberndeen)

The promise of spring's arrival is enough to get anyone through the bitter winter!

~ Jen Selinsky