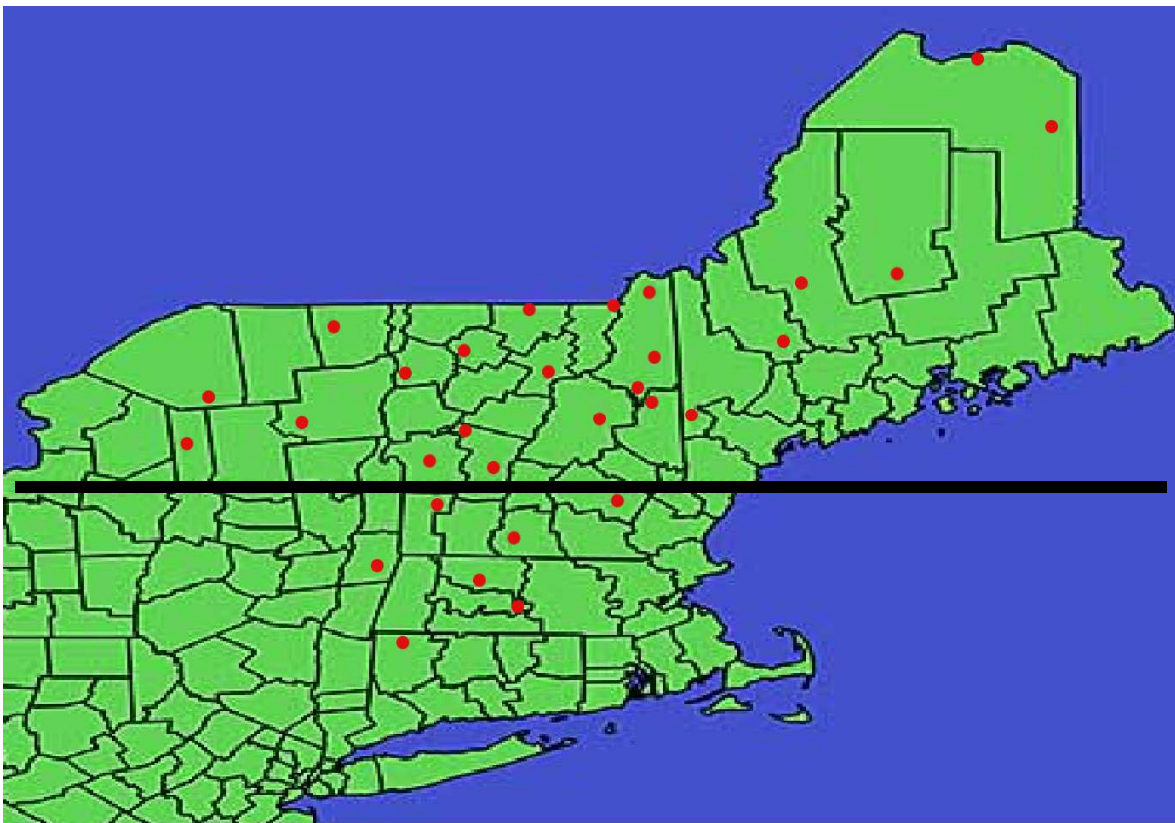


Methodology

The Stations

The 30 stations used in ranking were chosen based on several factors. Initially, any station in interior New England or northeastern New York (specifically the region covered by the ALB and BTV offices) was considered. An interior station was defined as a station that was located at least 50 miles from the ocean and was not in a county that bordered the ocean. Any stations that did not have reliable data for the period of study (Nov.1977-Apr. 2007) were also eliminated. We then chose 30 stations that we felt would adequately represent the various types of terrain found in the region. Since the study focused on northern New England and New York, a majority (23) of our chosen stations are found north of the 43rd parallel.



The 30 stations used in the study. The 43rd parallel is shown.

Period of Study

The period of study chosen was November 1977-April 2007. Initially, we wanted only cases that occurred during or after January 1979. This is due to the fact that the North American Regional Reanalysis (NARR) dataset begins in 1979. It was later decided that a benchmark storm should begin the climatology and the Blizzard of 1978 (February 7, 1978-Ranked 8 in the study) was chosen and the period of study was therefore extended backwards to November of 1977.

Selecting Cases

It was decided that the study would focus on the 30 biggest snow storms in the interior northeast within the period of study. To find these storms we used the climod dataset found at <http://acis.dnr.sc.gov/Climod/climod/threshold/> and grabbed any day that received at least 3 inches of snow from November to April 1977-2007 for each of the 30 stations. From here we began to search for matching data. In this dataset, there are 129 days where at least 2 of the selected stations had 3 or more inches of snow.

Ranking

In order to identify the top 30 days, we created a system that took into account the severity, size, and significance of each storm. The goal was to take in account that a small storm with a concentrated area of snow can be just as devastating as a large, fast moving system. The first four variables in the formula took into account how much snow fell at each station. We totaled the number of stations that recorded 6 or more inches of snow and multiplied that number by 2. We did this for 12, 18, and 24 inches as well with an increasing multiplication factor.

In order to account for the size of the storm, we included a variable that showed the number of stations that received at least 3 inches of snow. It shouldn't be a surprise that that top 20 snowstorms had at least 20 of the 30 stations record at least 3 inches of snow. The number of stations with snowfall above 6 inches was also high with most events having 15 or more of the stations coming in.

The final two variables took into account the severity of the storm. One variable was simply an average snowfall at the 30 stations. The second variable was an average inverse rank variable. For example, if a certain storm produced enough snow to be the heaviest 1 day snowfall in the period of study, then that day would be given a rank of 1 and score of 25. If the storm snowfall did not rank in the top 25 for a station, then it would be given a default rank of 26 and therefore a rank value of 0. Two examples of this formula are given below. One example is from our top case (March 14, 1993) and the second example is from the case with the lowest score or rank 129 (Jan 17, 1994).

Rank #1 (Mar. 14, 1993)

Inches	Total Stations	Formula	Score		Reported stations		Avg. Snow Fall		Avg. Rank		Total
6+	27	27*2	54								
12+	23	23*3	69								
18+	11	11*4	44								
24+	1	1*5	5								
			172	+	28	+	15.41in	+	19.47	=	234.88

***Note all averages are from the 30 selected stations.**

Out of 30 stations 27 reported 6+ inches.

Rank #129 (Jan. 17, 1994)

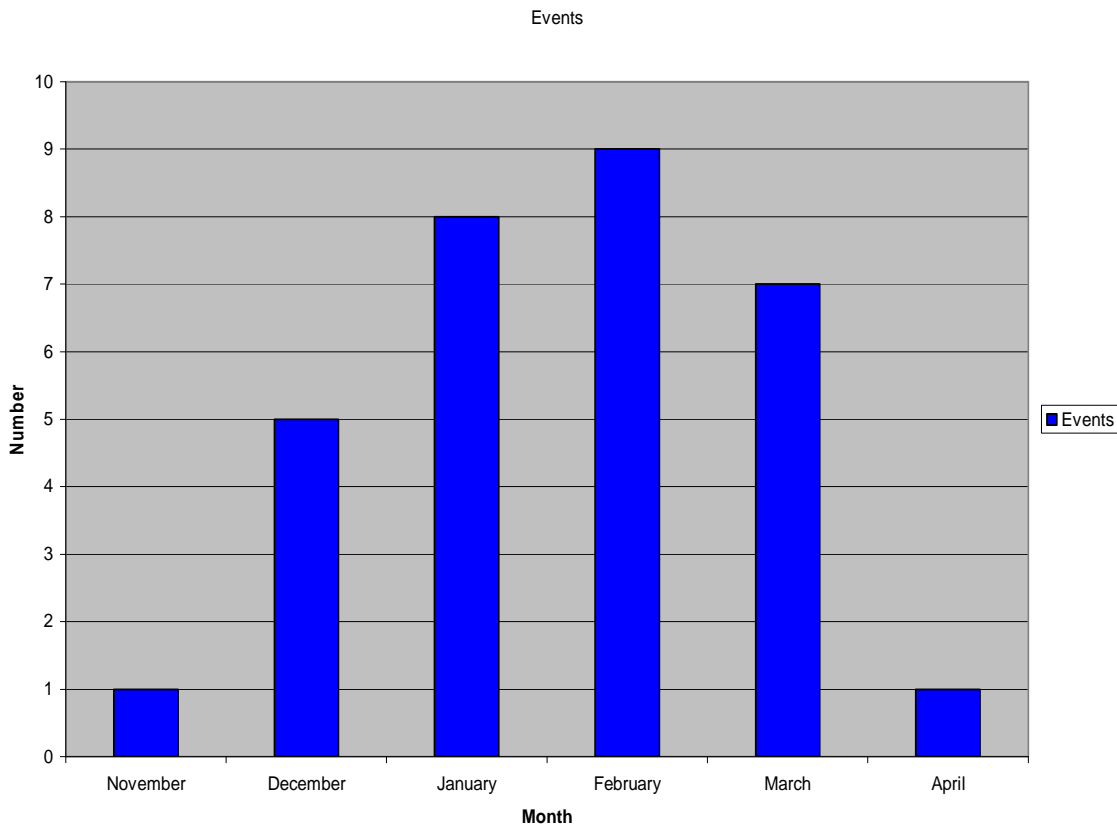
Inches	Total Stations	Formula	Score		Reported stations		Avg. Snow Fall		Avg. Rank		Total
6+	5	5*2	10								
12+	0	0*3	0								
18+	0	0*4	0								
24+	0	0*5	0								
			10	+	7	+	7.46in	+	8.67	=	33.12

***Note all averages are from the 30 selected stations.**

Out of 30 stations 5 reported 6+ inches.

Statistics

The top 30 cases resulted in 29 snowstorms. With the Valentine’s Day Snowstorm, we had two days (February 14th and February 15th) that ranked in the top 30. To make up for this, the case ranked #31 (December 16, 1989) was included in our study. The 30 cases have occurred in all six months of the study with the highest number of events occurring in February (9) with January (8) and March (7) close behind. Of the 31 days, 6 of them occurred in mid-February (February 11-20) with secondary peaks in early February (February 1-10) and March (March 1-10). Finally, it should be noted that over 75% of our cases occur in January, February, and March.



Number events by month