

# **HISTORICAL WEATHER SUMMARY FOR THE MINNEAPOLIS AREA**

**By Rick Budde**

## **INTRODUCTION:**

As a passionate skier I've been frustrated recently by the seemingly poor winters we've been having with the too short ski seasons. I, like many others, have been wondering if global warming could be at fault for this string of poor winters. I set off to look at historical records from the Minneapolis National Weather Service Office to get some perspective.

Before I started I was pretty sure I would find a trend towards warmer temps and less snow cover. I didn't find that to be the case. What I did find is that the Minneapolis area has a very wide range of conditions during the winter months with significant changes from one year to the next. Our recent winters are not all that unusual compared to other winters going back to 1840 or so. The other notable thing I found was that the winters during the 1970's and early 80's were very, very good (from a skier's perspective). It was during this time frame that many of us developed our own personal sense of what a "normal" winter is like. The unfortunate truth is that these years were truly exceptional and not representative of what is "normal".

I'm not claiming that global warming does not exist, in fact, I think it does exist. You can't look at local data to make global claims about the environment. Many other things do point to a gradual warming of the global climate but our recent string of poor winters is most likely due to normal year to year variation. We only have 150 years or so of weather data in Minneapolis. We would need about 500 years of data to really draw any conclusions about a gradual change in the local environment.

All of the following data comes from this excellent web site:

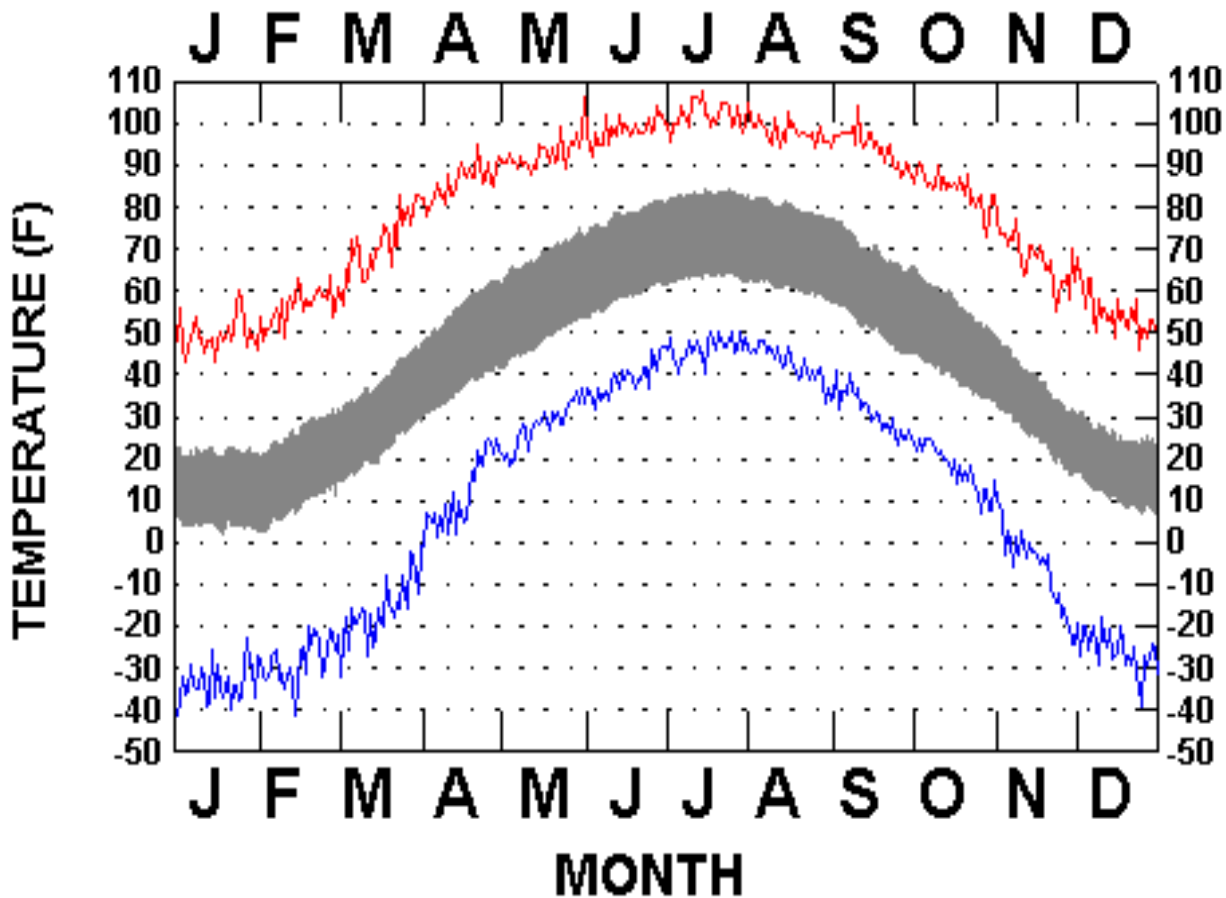
[http://climate.umn.edu/doc/twin\\_cities/twin\\_cities.htm](http://climate.umn.edu/doc/twin_cities/twin_cities.htm)

There are many other interesting data sets there for the interested reader.

## HISTORICAL DATA:

The first chart below shows record highs in red, record lows in blue. Normal highs and lows in grey. There is a 90 to 100 degree range between record highs and lows in January! During the summer months the range is only 50 to 60 degrees.

## MINNEAPOLIS-ST. PAUL AVERAGE & RECORD DAILY MAXIMUM/MINIMUM TEMPERATURES - 1820-2005

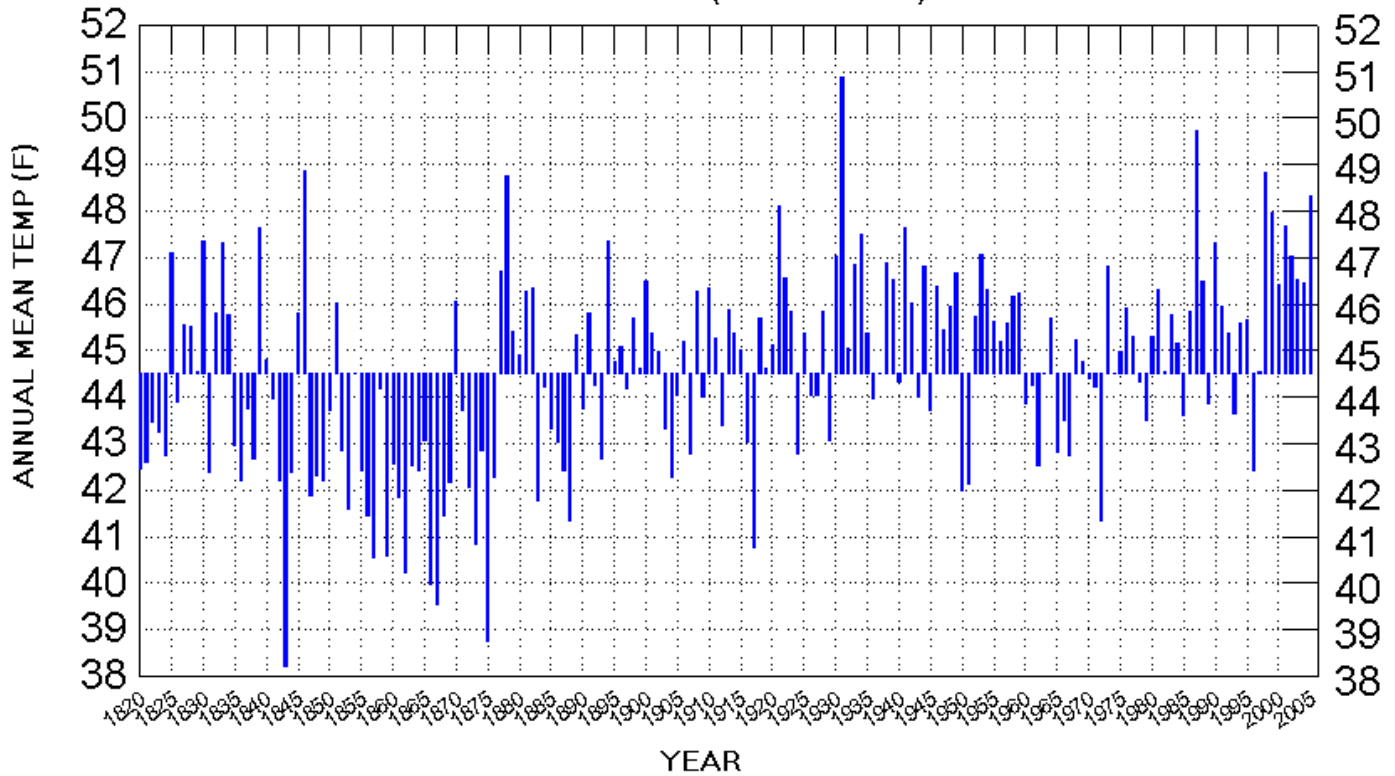


The chart below shows the mean yearly temperature going back to 1820. Most of the last 20 years have been above average but that is not without historical precedent. In fact, most of the years going all the way back to 1880 were “above average”. But then there is the string of very cold years from 1840 to 1880.

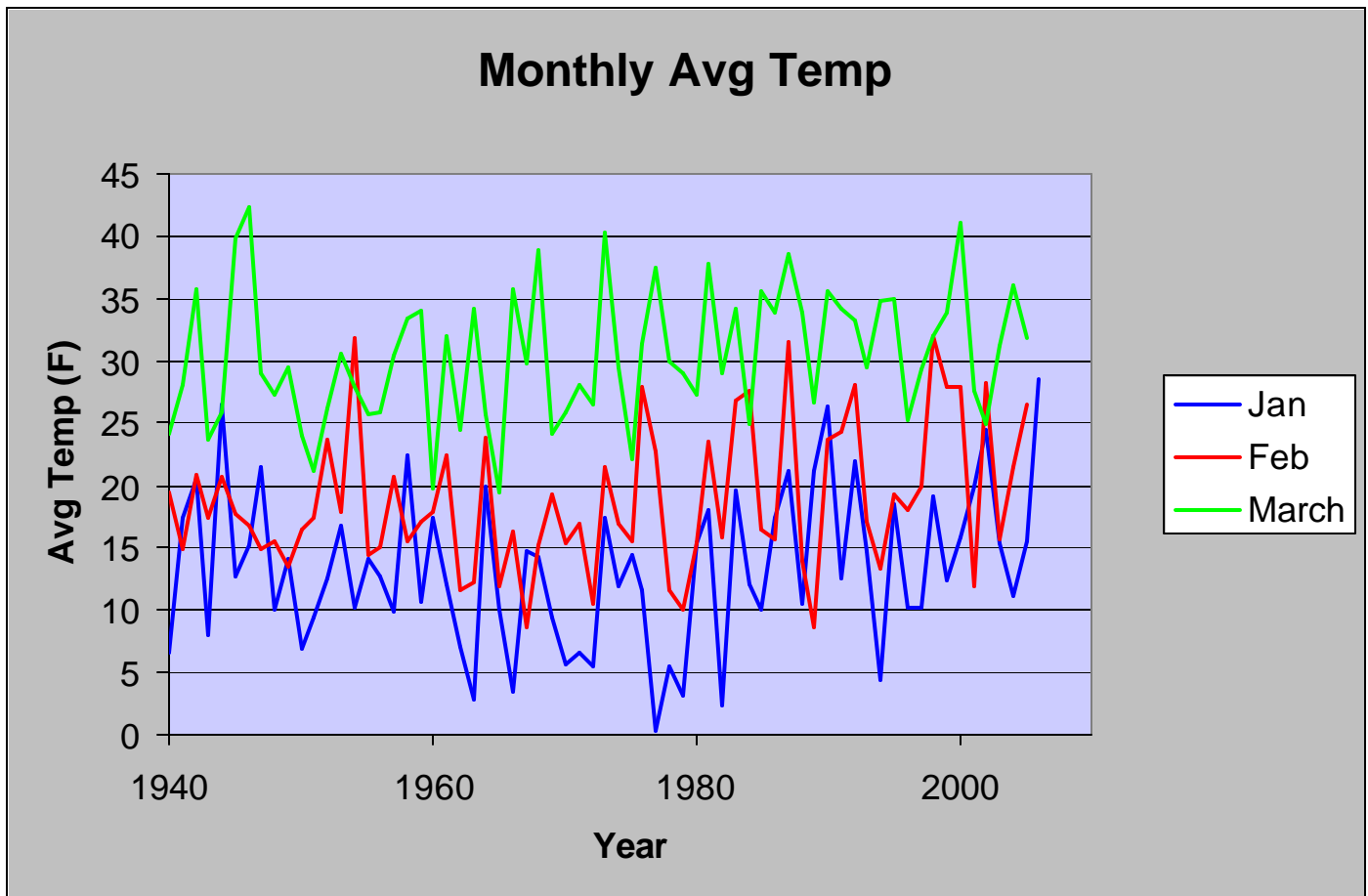
So while our recent winters have been warmer than typical, they were not all that unusual for the years from 1880 to the present.

### MINNEAPOLIS-ST. PAUL AREA ANNUAL MEAN TEMPERATURES, BY YEAR, 1820-2005

Base: 44.5 F (1820-2005 Mean)



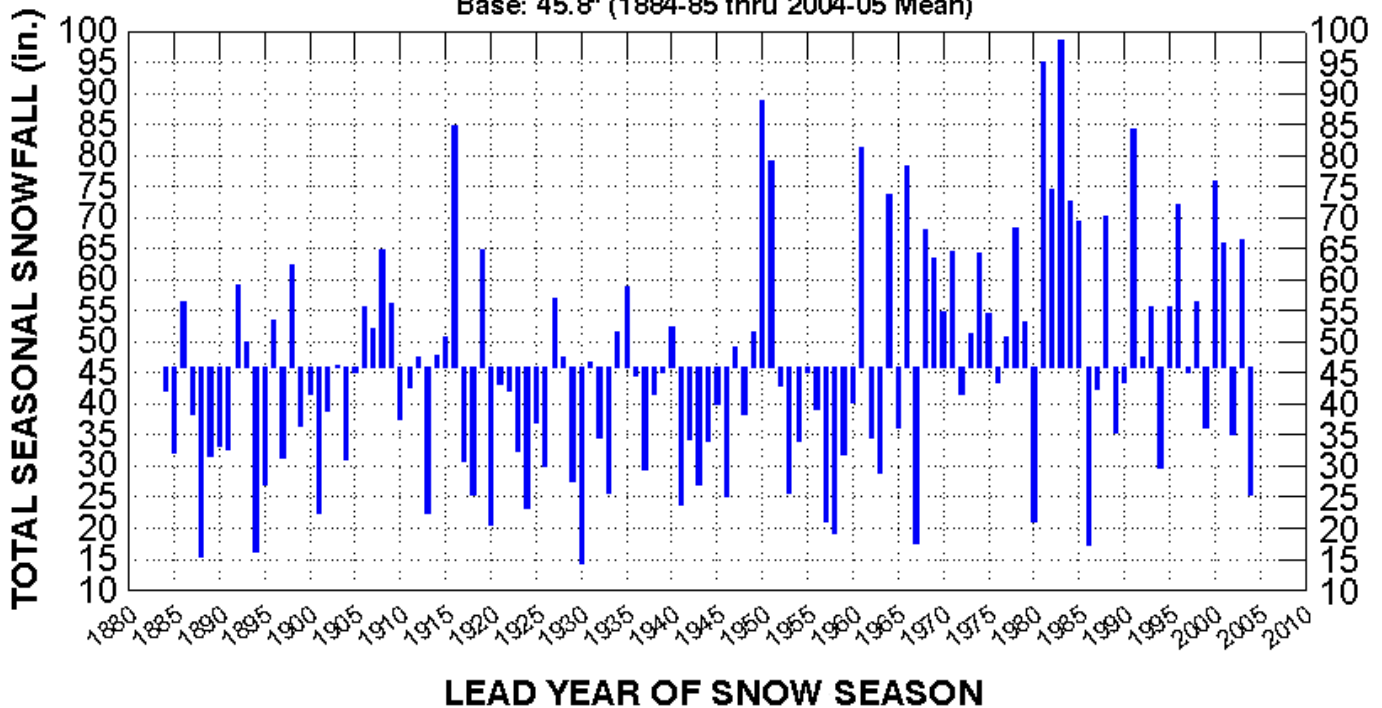
The chart below shows the average monthly temperature for the winter months going back to 1940. There is a very large year to year variation. The coldest January was in 1977 and averaged 0.3 degrees. The warmest January was in 2006 and averaged 28.6. Given this amount of year to year variation and the relatively short time span it's not at all clear that global climate change is to be blamed for the warm spell we suffered through in January of 2006. The record setting warmth of January 2006 was followed by a Feb. 2006 that was close to average.



The chart below shows the total seasonal snow fall going back to 1884/85. Like the temperatures, there is a vary large amount of year to year variation. So far for the 2005/2006 year we have received 24 inches of snow. Twenty four inches is well below average but there are many similar years in the past. The very lowest was 1930 with only about 15 inches of snow all year. The problem many of us face is that “winters just aren’t like they were when I was a kid”. If you were a kid in the 1970 and early 80 like I was that is certainly true. Our personal memory of what is “normal” is way out of whack because those years were significantly above average for snowfall and tended to be below average for winter temperatures. We just have to face the fact that winters won’t be like they were when we were kids because the 1970 and early 80’s set a nearly impossible standard to live up to.

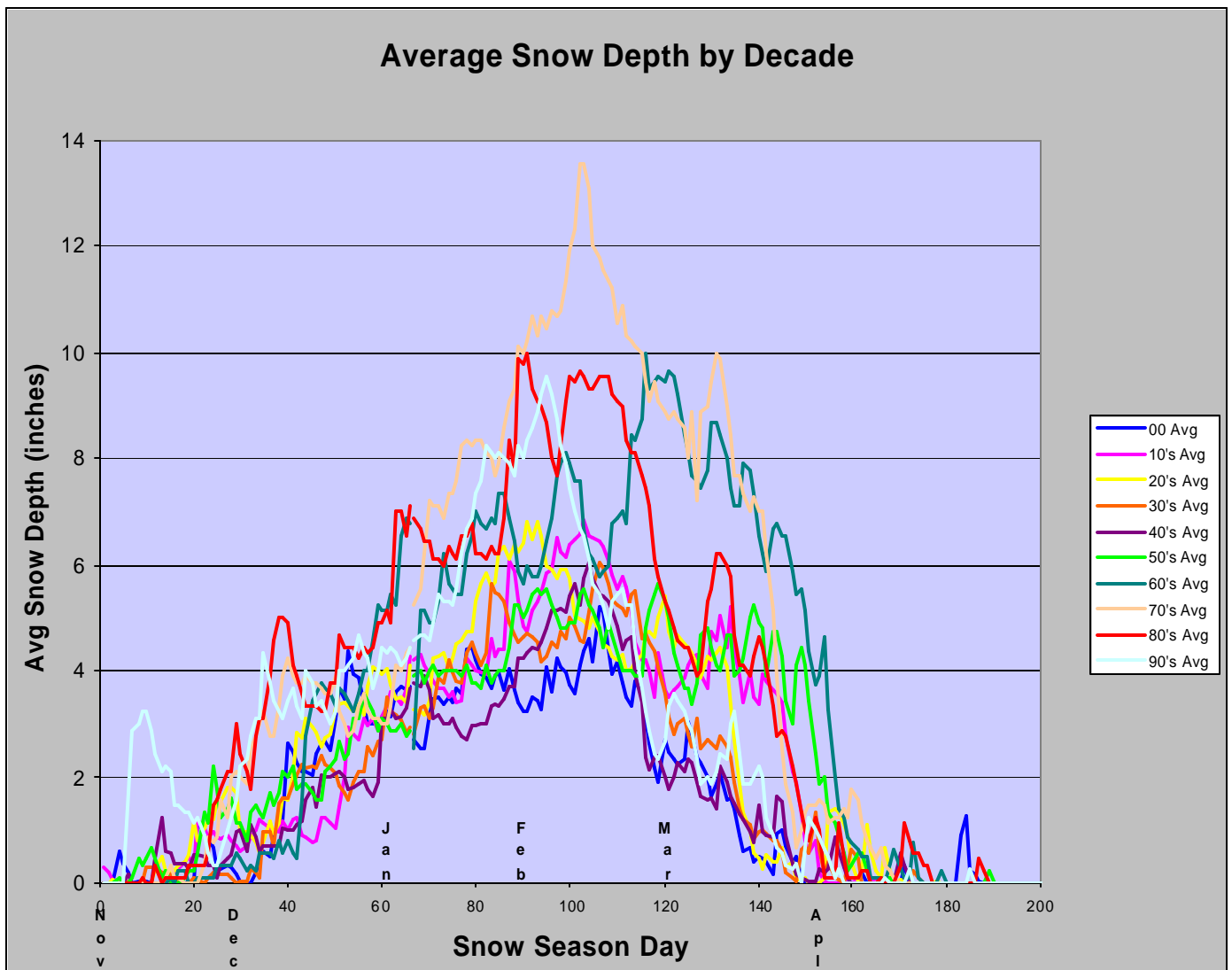
### TOTAL SNOWFALL, BY SEASON, MINNEAPOLIS-ST.PAUL (1884-85 THRU 2004-05)

Base: 45.8" (1884-85 thru 2004-05 Mean)



The next chart shows the average depth of snow on the ground through out the winter season. This chart shows the average depth for a given decade. Looking at snow depth takes into account how much snow has fallen and how long it sticks around before melting. The X axis is “snow season day”. With day 1 being around November 1<sup>st</sup>.

This chart again shows that the 70’s were way, way above normal for snow depth. The 60’s and 80’s were also quite high. Typically we only have about 4 to 6 inches of snow on the ground through January and February. The 1<sup>st</sup> of January typically has 2 to 3 inches of snow cover.



The last chart shows the number of days every year that have more than 4 inches of snow on the ground. Again there is a very big range from nearly zero in the late 1950's and early 60's to a string of 100 days or more through the 1970's. A typical year would have about 6 weeks of snow cover greater than 4 inches.

