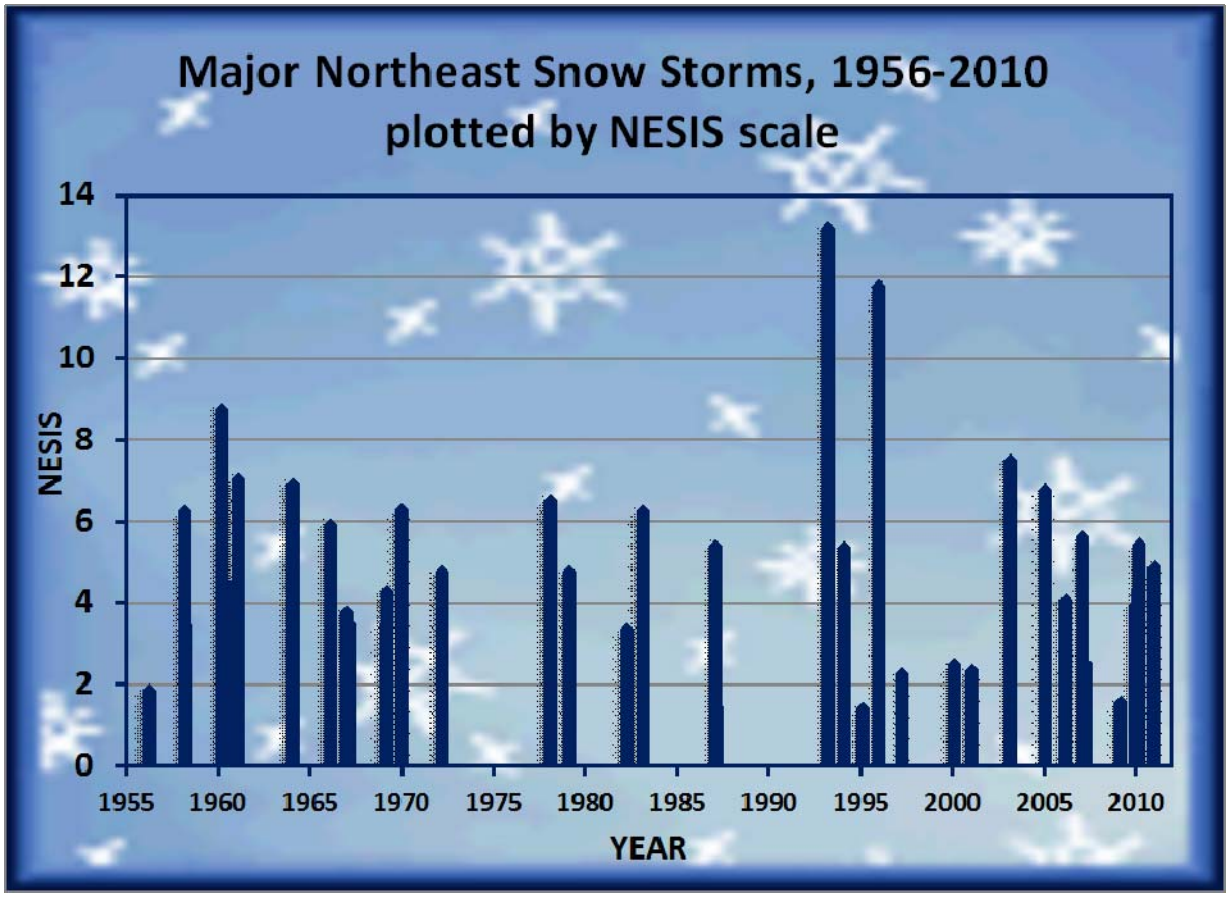
Big Snows: Northeast U.S. and Colorado

Richard Keen, PhD

I'm sure by now every snow freak in the Northeast U.S. has pored over the "Billboard Top 40" (actuallY, 41) list of major snow storms since 1955. If you haven't, go to "The Northeast Snowfall Impact Scale (NESIS)", posted at

http://www.ncdc.noaa.gov/snow-and-ice/nesis.php

I'd like to thank our friends at the NWS and NCDC, Paul Kocin, Louis Uccellini, Jay Lawrimore, and Michael Squires, for their work at putting this together. For me it brings back the memories of the great school-closing dumps of my early days in Philadelphia. I "survived" numbers 3, 5, and 6 on the list, and made enough money shoveling neighbors out of numbers 5, 21, and 26 to buy my second telescope. Number 30 left our house without power for five days, during which we ate hot dogs cooked in the fireplace. But enough of the memories. How are today's kids in the Northeast faring in their quest to earn enough money digging snow to buy themselves telescopes?



To put the storms in a timewise perspective, here's a chart of each event, plotted by date and NESIS magnitude.

Kocin et al. have simplified the storm magnitudes into categories (1 to 5, with "major" being 3 and above). Anecdotally, only two winters have had three "major" storms, 1960-61 (when I earned my telescope) and 2009-10. Apparently today's kids are no better or worse off. There's 55 seasons (54 full winters and two half winters) of storms represented in the Kocin et al. catalog, so I've split the record into two halves to see if recent years have had more or fewer of these great snow storms. Results are summarized in the table.

Summary of Northeast Snowstorms, 1956-2010			
Seasons	# seasons	# events	Accumulated NESIS
1956-1983	27.5	20	101.72
1983-2010	27.5	21	98.04

The split couldn't be more even, with 20 storms in the first 27.5 seasons and 21 in the second 27.5 winters. The accumulated NESIS index (sum of the NESIS for the 20 or 21 storms) is almost as evenly split. The implications for climate change are that as far as Northeast snow storms are concerned, there is no change.

I now live in Colorado, where I am the co-op observer for Coal Creek Canyon, 8950 feet up in the foothills west of Denver. An endearing feature of the local climate is the frequent occurrence of 40-inch-plus snow storms. I now have 32 years of snow storm records, and as with the Northeast snow storms, the 40-inch events are evenly split (7 and 7) between the first and last halves of the record. You may read more about the Colorado storms in "Thirty years in the Bull's-eye: a climatology of meter-class snow storms in the Front Range foothills", by Richard Keen, 5th annual Hydrologic Sciences Student Research Symposium, University of Colorado, Boulder, April 1-2, 2010, posted at http://hydrosciences.colorado.edu/symposium/abstract_details.php?abstract_id=26

Conclusion: there appears to be little or no change in the frequency of major snow storms over the past 30 to 55 years, at least in the Northeast U.S. and in the Front Range foothills of Colorado.