

Blizzard rating system unveiled

1993 Northeastern storm ranked most devastating

WASHINGTON — The superstorm of 1993 was the most devastating blizzard to strike the Northeast in at least a century, according to a new system that rates the impact of East Coast winter storms.

The new 1-to-5 rating system, somewhat similar to the scales for hurricanes and tornadoes, was announced Tuesday by winter experts from the National Weather Service and The Weather Channel.

In their study of 70 major Northeastern storms, only two — the storm of March 1993 and the January blizzard of 1996 — fell into the “extreme” category with a 5 rating, reported Paul Kocin, winter weather expert at The Weather Channel, and Louis Uccellini, director of the Weather Service’s National Centers for Environmental Prediction.

Their new Northeast Snowfall Impact Scale, or NESIS, is being published this week in the Bulletin of the American Meteorological Society.

Only post-blizzard for now

The ratings are designed to assess the impact of a storm after it is over, the way the Fujita scale is used to rate tornadoes. Kocin said he can foresee a day when it might be possible to develop the blizzard scale for use in warning of coming events the way the Saffir-Simpson scale is used with hurricanes.

But that will require improvements in forecasting snowfall amounts, however, he said. Such forecasts are much more difficult than mere storm tracks, Kocin said.

Added Uccellini: “We recognize that at some point people will want to do that, but given the uncertainty in snowfall forecasts, we say it should be done with great caution if at all. ... You might be accused of hyping the storm if it’s not used right.”

As a means of comparing storms to the past, the ratings are already being used at The Weather Channel. The system is being evaluated by the Weather Service, and Uccellini said the Federal Emergency Management Agency is also interested in it as a tool to gauge response to storms.

What's factored in

The new winter storm rating system considers the amount of snow, the size of the area covered and the population residing in that area to estimate the human and economic impact of the storm.

Thus, 30 inches of snow over the Appalachian Mountains would have a lower rating than the same amount over the Washington-Boston corridor, Uccellini explained.

To account for population shifts over time, the researchers analyzed the area and amount of snow for 70 storms, estimating the impact each would have had on the population as of 1999.

“When we predict a snowstorm for the Northeast, the first question asked is always, how much. Followed by when and where,” said Kocin.

“And while we can answer those questions, emergency managers, transportation officials and planners are always looking for a way to compare developing storms to past storms,” he said.

Historic blizzards

“The superstorm of March 1993 and the blizzard of January 1996 stand alone as the most widespread snowfalls of the 70-year case sample,” Uccellini and Kocin reported.

They were in "Category 5 'Extreme.'".

Under their system, the storm that has become perhaps the most famous in the Northeast, the great blizzard of 1888, ranks fourth. While it had its greatest impact on New York, resulting in great attention, the 1888 storm covered a smaller area than either the two Category 5 storms or the Feb. 15-18, 2003, Presidents Day storm, Kocin and Uccellini report.

Like the 2003 storm, the March 11-14, 1888, blizzard rates a 4, or “crippling,” rating under the new system.

The "crippling" storms, ordered by severity, were:

- Feb. 15-18, 2003
- March 11-14, 1888
- Feb. 11-14, 1899
- March 2-5, 1960
- Feb. 10-12, 1983
- Feb. 5-7, 1978
- Feb. 2-5, 1961

The 70 storms studied by the researchers to develop their ratings included 30 major snowstorms between 1950 and 2000, all with at least 10 inches or more of accumulation. Another 30 near-miss storms in the study did not dump the anticipated amount of snow; were outside the Northeast Urban Corridor; or produced sleet and freezing rain rather than snow.

Northeast focus for now

The NESIS is designed to rate storms striking the region from southern Virginia to New

England. That area is largely affected by two types of winter storms: nor'easters that form off the Atlantic coast and move north, and interior storms that move across the country from the west.

The patterns of winter storms vary in other parts of the country, but the researchers said similar scales could be developed for other areas.

Kocin and Uccellini's rating system comes two years after another 1-to-5 winter storm ranking was proposed by Gregory Zielinski of the University of Maine. Zielinski's system focuses on the intensity of the storm and its speed of movement as a way to assist forecasters in warning the public. It does not, however, include a measure of the population likely to be affected by the storm.