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Yes, it's been a snowy, cold January.

In fact, the serial snowstorms of last month made history, breaking records and dumping heaps of snow across Massachusetts – including the highest snowfall in Amherst since 1893, 39.9 inches, according to climatologist Michael Rawlins of the University of Massachusetts-Amherst.

Greenfield had 29.57 inches of snowfall last month, the snowiest January since 1960, when 32.5 inches of snowfall broke The Recorder's official 40-year snowfall record.

January's snowfall totals included the second highest total on record for the month since 1948 at the Blue Hill Observatory in Milton at 48.2 inches.

Rawlins also reports record amounts of snow in January in southern Worcester and Norfolk counties, the region that has been the bulls-eye for several storms last month.

Pittsfield Municipal Airport recorded 47.2 inches, reportedly a record for any month going back some 65 years.

Rawlins says the previous snowfall record for Amherst was 33 inches set in January 1923. Among all months, the January 2011 total ranks second to the 45 inches in February of 1893, the first year for which observations are archived.

Overnight low temperatures in Greenfield dipped down last month to an average of 9 degrees, compared to 16 degrees a year ago, according to Recorder weather data. Overnight lows dipped to single digits or below on 13 nights.

Global warming?

Rawlins says he is often asked if extreme events such as the record snowfalls are manifestations of global warming, but he cautions that recent events here and in other parts of the world can't be directly attributed to the warming atmosphere.

There's "inherent volatility" in the climate system, says Rawlins, adding that January temperatures have been below average. But climate science looks at long-term patterns.

That doesn't include lay observers – some of whom are vocally critical of scientific evidence of climate change – from blurring the distinctions.

Fox News co-host Gretchen Carlson said last February, for example, "The weather is so rotten right now that people are going, 'How can there be global warming if it's snowing and it's bitterly cold?'"

But while the data shows that there have been more extreme weather events in recent decades –droughts and heavy precipitation, for example, Rawlins says, it's "much less clear" whether that's attributable to the warming of the atmosphere.

“Several scientific institutions have concluded that 2010 was tied for the warmest year on record,” he says. “There’s been a trend over the instrumental record, which is around 130 years, toward warmer temperatures. We don’t attribute individual cold months, hot months, wet weather, dry weather to climate change. In a warming climate, like we’re seeing, you’re going to have particularly warm months or years and particularly cold months or years.”

New England has seen an increase in winter precipitation in recent decades, Rawlins added, and heavy snowfalls have also increased in the East. Looking forward, there may be more of the same, as climate model projections suggest wetter winters, and perhaps more heavy snowfalls in coming decades.

Some climate researchers have hypothesized that a warming Arctic atmosphere may be weakening the Jet Stream, which provides something of a boundary between colder weather and warmer weather to the south in North America. That, the thinking goes, would allow colder air to spill farther south in some places, and warmer air to move northward in other regions, he said.

Such a hypothesis would require much further investigation, he says.

In a New York Times column in December, researcher Judah Cohen suggested that despite evidence of thinning Arctic sea ice, seasonal snow cover has continued to increase across the Northern Hemisphere’s high latitudes because more moisture has become available to fall as snow. That bright, white snow, he conjectures, may cause the sun’s energy to reflect back out to space, cooling temperatures.

“The reality is, we’re freezing not in spite of climate change but because of it,” he wrote.

In any case, Rawlins says, “Scientists don’t attempt to attribute individual events to global warming, or a month’s worth of weather, to global warming. The public is interested to know whether what we see over a given week, month or year, is due to global warming. As researchers, we’re interested to know how the climate may be changing, why the climate may be changing and what the impacts of a changing climate are on society.”

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