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Scientific Outreach for Scientific Advocacy

by Ilan Kelman*

On August 8, 2007, New York City was pummeled by storms. Public transport was disrupted, thousands lost power, and a tornado damaged several homes. The media and the public demanded answers, especially about why the storm caused so much trouble and whether more such events could be expected in the future. Scientists, including me, were asked about the link of severe weather events to climate change.

Jim Hansen, director of NASA's Goddard Institute for Space Studies in New York, summarized the answer when he was quoted on <http://www.livescience.com> as saying "You cannot blame a single specific event, such as this week's storm, on climate change. However, it is fair to ask whether the human changes have altered the likelihood of such events. There the answer seems to be 'yes.'" That statement is a perfect example of science outreach and communication. It is scientifically accurate, succinct, and stated in plain English.

Other scientists offered additional perspectives. Also on [livescience.com](http://www.livescience.com), I was quoted as noting that inadequate investment in infrastructure was an important factor in the event's impacts, irrespective of the influence of climate change. The journalist made it clear, as I had stated during the interview, that I do not have specific proof for New York City, but was commenting on a pervasive national pattern related to infrastructure and extreme events. Whatever the weather or climate does, urban infrastructure is being used more intensely by increasing populations without adequate



maintenance or retrofitting.

Is it fair to use science for such interpretation? Two years earlier, Hurricane Katrina's remnants caused widespread flooding in a Kentucky town and a 10-year-old drowned in a drainage culvert. A local newspaper, interviewing me by telephone, implied that the local authority should have upgraded the drainage system, but did not. Did I agree? I felt that such interpretation would be going too far, especially since I did not know the town, so I stayed with general statements about needing investment in infrastructure. I was quoted accurately and fairly including my support for raising taxes to invest in community improvements, a statement I repeated in an interview about Katrina that was published in Newsweek.

The statement about taxes was succinct and in plain English, but it could be critiqued as being too political. I could be accused of using scientific outreach to promote policies based on political opinions. Whether or not my recommendations are appropriate, it could be alleged that I had overstepped the bounds of science by interpreting what should be done to alleviate the observed problem.

I would argue that my statement was scientifically accurate. Numerous scientific studies published in international peer-reviewed journals discuss the need for investing in community projects to reduce the detrimental impacts of weather events. In the absence of an understanding philanthropist or a generous corporation, taxes are necessarily the main source for this form of investment.

Reams of scientific studies also demonstrate the large return on investment gained from using tax money to help communities reap the rewards of weather—from precipitation providing water resources to the ecological services enhanced by wind storms and wildfires—without suffering casualties or infra-structure damage. The return on investment can be over \$40 saved for every dollar invested in local projects. By promoting this science, I would hope to convince others that the policies I advocate are appropriate and scientifically sound. The lesson for scientific outreach is to use scientific skills, qualifications, and knowledge, not only to provide scientific information, but also to explain how and why we should act in response to that scientific information. Advocacy based on science is an important part of scientific outreach.

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Photo credit:

Fall color infuses the historic Mt. Hope Cemetery in Rochester, N.Y. - Photo by Samuel Barber

