

**AMERICAN METEOROLOGICAL SOCIETY
NEWS RELEASE**

Headquarters
45 Beacon Street
Boston, MA 02108-3693

1120 G Street, N.W., Suite 800
Washington, DC 20005-6115

Contact: Stephanie Kenitzer, AMS
(425) 432-2192
Kenitzer@dc.ametsoc.org



FOR IMMEDIATE RELEASE
22 September 2003

FINANCIAL LOSSES OF WEATHER EXTREMES ARE HARD TO MEASURE

How much financial loss do weather extremes such as Hurricane Isabel cause is often the million dollar question. Insurance companies, businesses, government agencies and scientists all want to know how much damage a particular tornado or hurricane caused. The answer, however, is partly cloudy.

"Measures of financial impacts of weather extremes are largely qualitative estimates rather than hard numbers," says Stanley Changnon, professor of Geography at University of Illinois, in an article in the September issue of the *Bulletin of the American Meteorological Society*. "That's mostly because no one is in charge of collecting and controlling natural hazard impact data. Many organizations gather the data but all in different formats and with different goals. The end result is a muddled picture of how much damage Mother Nature has caused."

Why is it so difficult to estimate losses from weather extremes? First, collecting and analyzing data about economic losses from weather extremes requires a keen understanding of economics and the ability to interpret different forms of data, said Changnon.

In addition, measurement of losses is often done too quickly. Typically those individuals and organizations that experience loss from a weather event seek aid and those losses are quickly estimated. These short-term measures, however, do not consider losses occurring months and years after the event.

Another challenge is that most data on losses stems from the government and insurance payments for losses, but many losses are not insured. Environmental damage is often unaccounted for in loss estimates. Nor are the benefits both to the economy and the environment, such as a boom in construction spending after a major disaster, seldom estimated.

The lack of accurate and reliable loss data has resulted in numerous problems, contends Changnon.

One of the most dramatic is the increase in government relief for damages from weather extremes during the 1980s and 90s as a result of more Presidential disaster

declarations. Another reason for growth in payments was a lack of understanding of how impacts of extreme events were increasing as a result of societal shifts including an increasing population, demographic shifts, poorer construction practices and more.

Another problem with the lack of accurate data on losses, both past and present, is the ability to measure the value of mitigation.

"The federal government and California spent \$165 million in flood mitigation activities after the costly 1982/83 El Nino, roughly estimated at \$2 billion. The 1997/98 El Nino was estimated to cause losses at \$1.1 billion," said Changnon. "Is the dollar difference in losses the true value of the mitigation? How can you measure the impact of flood mitigation activities when you don't have a solid data of loss estimates from flood events before and after the mitigation?"

The insurance industry is among the most vulnerable to problems from inaccurate and incomplete data of losses, adds Changnon. Insured losses from weather extremes reached all-time highs during the 1990s, with \$40 billion in insured losses during 1991-94. As a result some insurance firms went out of business and others withdrew from high-risk areas. Without a common database that recorded all losses for each weather extreme, the insurance industry had no sound basis for setting adequate rates.

The issue of global warming adds a sense of urgency. "If global warming will lead to more weather extremes, then we have to be able to estimate the potential future losses of these extreme events."

But the picture is clearing up according to Changnon. Studies of major weather extremes, like El Nino and the Midwest flood of 1993, using insurance and business data are providing more accurate time- and risk-adjusted losses for several extreme conditions in the U.S.

"We're on our way," said Changnon. "The scientific community and others have recognized that we need to routinely assess and measure losses from weather extremes and other natural hazards if we want to monitor the impacts and to have policies that wisely address the issues."

The AMS (<http://www.ametsoc.org/ams>) is the nation's leading professional society for scientists in the atmospheric and related sciences.

#

Note to Editors and Assignment Desks: PDF or faxed copies of the paper, "Measures of Economic Impacts from Weather Extremes: Getting Better But Far From What Is Needed – A Call for Action," are available to journalists from **Stephanie Kenitzer**, AMS press office at (425) 432-2192, or kenitzer@dc.ametsoc.org.

You may contact the researcher directly: Stanley Changnon at (217)586-5691 at schangno@uiuc.edu

