



**RISK: Computer projections of hurricane losses off by \$45B-\$53B – critic**

Climate Wire  
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January 19, 2011

A series of hurricane models that predict rising storm damage to U.S. coastlines are wrong, according to a pioneer in the field who believes the inflated warnings could lead to artificially high insurance prices.

The criticism comes as the first "near-term" hurricane models, which predict annual damages for a five-year period, come to a close after being introduced in 2006. The aggressive forecasts using warmer Atlantic water as a key justification for predicting more hurricanes overshot actual economic losses by between \$45 billion and \$53 billion. Insured hurricane damages in the last five years amounted to \$15.2 billion.

"To date, the catastrophe models have not demonstrated any skill in projecting near term hurricane losses," says a report by Karen Clark and Co., an insurance consulting firm founded by the architect of catastrophe modeling, Karen Clark.

The assessment adds another thread to the complex debate around identifying economic losses caused by climate change. Near-term models don't explicitly look for the fingerprints of global warming -- which might not surface in hurricane data for decades. But some believe the aggressive calculations related to smashed homes, ruined roads and penetrating sea surges reflect growing risks from rising temperatures.

Near-term computer models emerged after Hurricane Katrina inflicted record-breaking economic losses on insurers in 2005. Losses surpassed \$40 billion, eclipsing predictions calculated by traditional, or "long-term," models that incorporate a century's worth of hurricane data to render a range of economic losses. They forecast lower damage costs, because the 100-year hurricane record includes periods of low storm activity.

Even long-term models, however, overshot the amount of damage incurred during the placid period of the last five years. These conservative models predicted that insurers would pay \$50 billion in damages between 2006 and 2010. That's more than triple the real costs.

**19 storms this year, but none on land**

EQECAT Inc., one of three major catastrophe modeling firms, says that underscores the uncertainty inherent in forecasting hurricane damage. Near-term models weren't alone in missing the mark for the past five years, says Tom Larsen, a senior vice president with EQECAT.

"The last five years didn't work," Larsen said of his company's predictions. "But where does that lead? If I were to look at the conclusions of this paper here, Karen Clark, well, another conclusion is the long-term models overestimate risk."

He added that one major hurricane, like Katrina, would make the near-term models look accurate over a five-year period.

"The bulk of the total losses are triggered by very extreme events," Larsen said.

Other modelers include AIR Worldwide and Risk Management Solutions Inc.

Nature has helped fuel the scrutiny. Following disastrous hurricane seasons in 2004 and 2005, the last five years have been relatively calm. No hurricanes made landfall in 2010, even though it was one of the busiest years for named storms in recorded history, with 19. They just stayed over the Atlantic.

Clark, who developed one of the first long-term catastrophe models in the 1980s, acknowledges that any simulation amounts to a rough guess. She now advises insurers about the weaknesses and strengths of catastrophe models, and of their impacts on homeowners and businesses.

When near-term models were introduced in 2006, all of them predicted that a rising number of fierce hurricanes would increase damage by at least 35 percent over the forecasts of long-term models. Clark said that could lead an insurance company to raise rates by \$400 on a homeowner who pays \$1,000 for his annual premium.

"These models are being used for things that mean real money to real people," Clark said. "That's \$2,000 that somebody's paying out of their pocket [over five years]."

### **Near-term models address climate change**

But it's unclear how often near-term models are being used to justify rate increases. State regulators in Florida and elsewhere have prohibited their use, at least temporarily. Long-term models, however, are widely accepted.

That seems shortsighted to some, who believe the century-old hurricane record ignores the impacts of a warming atmosphere.

"Using a long-term model, which is based on experiences when climate was different, doesn't make a lot of sense," said Seth Chandler, an insurance law specialist at the University of Houston. "And it's very dangerous for consumer as well as the insurance industry. One of the worst things that can happen for consumers, apart from high rates, is finding out that their insurance company is insolvent because it underestimated the risk of hurricane loss."

He added that near-term models can "compensate for climate change" by assuming the risk is higher.

It's difficult to ascertain the immediate impact of global warming on hurricanes. A landmark study last year by the National Oceanic and Atmospheric Administration determined that climate change could increase the number of severe storms 10 percent per decade through 2110, at which point they would double in frequency. Weaker storms, meanwhile, would decrease in frequency.

That is a much less aggressive scenario than the near-term models predict, says Clark, who suggested insurers could match their climbing climate risk by increasing premiums 1 percent annually. In 100 years, premiums would double -- just like the number of big storms predicted by NOAA.

"That's not the same thing as saying, 'For the next five years, activity is going to be 40 percent and losses are going to be 40 percent above average,'" Clark said, referring to near-term model predictions. "There's no climate science underlying that."