

# In Sandy's aftermath, it's time to take extreme weather and climate change seriously

November 8 2012, by Ken Branson

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Hurricane Sandy caused massive destruction in Union Beach, N.J. Credit: The Federal Emergency Management Agency

Climate Change became an issue late in the election after Hurricane Sandy devastated the Jersey Shore, ravaged parts of New York and wreaked havoc up and down the East Coast. President Obama mentioned climate change in his acceptance speech on election night, declaring: "We want our kids to grow up in an America . . . that isn't threatened by the destructive power of a warming planet." The president's comments signal that the issue is likely to move to the forefront during his second term.

Although it's impossible to pin a single catastrophic storm on climate change, Kenneth G. Miller, professor of earth and planetary sciences in

the School of Arts and Sciences at Rutgers who researches [sea level rise](#), argues that in the aftermath of Sandy the tone of the conversation needs to change: It's time to stop debating the issue and take action.

**Rutgers Today:** There's been a lot of discussion about whether climate change is responsible for this hurricane – or, rather, for the confluence of three [weather systems](#) that turned it into a [superstorm](#) and drew it in our direction. Is there any way to relate this storm to climate change, or might it have happened without the warming of global air and [water temperatures](#) over the past several decades?

**Miller:** To paraphrase our own Tony Broccoli (a Rutgers professor of environmental sciences) Sandy cannot be attributed to global warming any more than any particular home run hit by Barry Bonds can be attributed to steroids. He would have hit many home runs without steroids and Sandy may have hit if temperatures had not risen globally by 1.5°F. But, this is the fourth 100-year storm we have weathered at the Jersey shore since 1991. Governor Cuomo said it best " . . . the frequency of extreme weather situations. . . is not political. . . There's only so long you can say, 'this is once in a lifetime and it's not going to happen again.'" The planet is warming and sea level is rising. It is time to stop debating these facts and move on to the discussion of intelligent planning and zoning. Warming temperatures are associated with increased evaporation and precipitation; this means extreme weather events are more likely. We are rolling loaded climate dice for more extreme weather events.

**Rutgers Today:** What, in your opinion, are the policy implications of Sandy for public officials in coastal areas?

**Miller:** First, we should raise the estimates for storm surge for the "100-year storm" that are used to determine where people can build. New Jersey already raised its standard above the federal level, but

lobbyists tried to lower it back to the federal level. A one-foot increase might make a difference; my brother-in-law's decision to build to 11 ft (one foot above the required level) saved his house. Sea level will very likely rise by one foot by 2050, which means raising our estimates of storm surge is prudent if you want your bay front house to survive.

Second, we must reconsider how we use our barrier islands. Federal flood insurance allows people to rebuild in this hazardous zone. The government has guaranteed that we can rebuild these lost houses. We should re-examine this policy. Without federal flood insurance, houses on the barrier islands would be virtually uninsurable. Should houses in harm's way be allowed to be rebuilt again and again at taxpayer expense?

**Rutgers Today:** As a scientist, what do you expect to learn from Hurricane Sandy, particularly about our area?

**Miller:** This is the storm we all feared would come. Look at the front page of The New York Times showing that County Road 528 (Herbert Street) at the foot of the Mantoloking Bridge is now an inlet. There were at least transient breakthroughs on Long Beach Island and one down in Ocean City. To a geologist, this is not a surprise because inlets form and close; Henry Hudson reported inlets in Long Beach Island that have since closed. During the Ash Wednesday storm of 1962, an inlet formed in Harvey Cedars and then closed. I had hoped that I would not see the breaching of the barriers again, but here inlets have opened and would stay open if not for the herculean efforts of the engineers. Seaside piers were destroyed. There were gas fires in Mantaloking. Bayside flooding was extensive.

**Rutgers Today:** You give a talk from time to time, "Shall I sell my house at the Jersey Shore?" and you own a house in Waretown, Ocean County, on Barnegat Bay. How did you and your neighbors fare, and is there anything about Sandy that will change your talk?

**Miller:** I end my talk with, "Don't sell; insure." This is true for the mainland bayside town I live in, Waretown in Ocean County. But as we see, living on a barrier island is hazardous. I don't presume to tell people on the barrier islands what to do, but they should expect that major damage will occur again.

My house was in Barnegat Bay this time, and the mark on my sheet rock testifies that the surge was 19 inches above the 100-year mark. Three previous storms – in 1991, 1992 and 2005 – reached but did not exceed the 100-year mark. Neighbors of mine with single-story houses on the ground on the bay block are now homeless. People are frantically clearing storm drains in anticipation of the upcoming nor'easter. They are walking the streets, stunned, saying how lucky we have been – no lives were lost and neighbors are taking in homeless neighbors. But the calm demeanor underlies one fact: It is a war zone in Waretown, as we hear is the experience throughout the Jersey Shore.

**Rutgers Today:** Do you think there is a greater ability now for the president to address climate change? What kind of action do you think is necessary in his second term?

**Miller:** The increase in [extreme weather](#) events is partly attributable to [climate change](#). A conference was held by the Rutgers Climate Initiative this year at Rutgers with this title and subtitle, "How can we address uncertainty". The conference highlighted the reality confirmed by Sandy that we must adapt to the coming changes. Smarter planning is needed.

How political and regulatory issues play out remains to be seen. Governor Christie has banned new coal power plants in New Jersey. Will the EPA's proposed regulations banning new conventional coal power plants follow suit? Will Congress enact the clean energy standard proposed by the president, which would require 80% of the nation's electricity to be produced from low carbon sources by 2035 and echoes

state-level Renewable Portfolio Standards like New Jersey's? Whatever the answers to these questions, Sandy has reinvigorated discussions of how we must deal with a changing planet.

Provided by Rutgers University

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