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Tags: Bridgehampton, East Hampton, Hurricane Sandy, Sag Harbor, Southampton

## **Deconstructing Sandy**

Posted on 21 November 2012

By Amy Patton

Citing compelling evidence that points to global climate change as one of the triggers that sent Hurricane Sandy blasting into the northeast on October 29, Stony Brook University oceanographer Dr. Malcolm Bowman came to the university's Southampton campus Friday evening to address a crowd hoping to learn more.

The New Zealand-born professor, who helms the school's Marine and Atmospheric Science research program, is considered a leading authority on northeast coastal storms. On Friday, he delivered the bad news: Sandy is likely the first of many strong weather events that will impact Long Island in coming years.

Recent years of rapid warming in places much farther north, such as the Arctic with the accelerated melting of massive glaciers, said Dr. Bowman, cannot be ignored as contributors to ever-increasing "unusual" weather patterns on Long Island.

The devastation from Sandy which racked up billions of dollars in damages and left many dead in New York and New Jersey did not spare the East End of Long Island, though because of the storm's trajectory the region fared far better than communities further west.

It's no surprise, said Dr. Bowman.

"Since around 2004, based on our predictions of extreme weather events and those from NOAA (National Oceanographic and Atmospheric Administration) we believed then that it was only a matter of time until New York was going to get walloped," said Dr. Bowman.

Hurricanes, he explained to the audience of about 100 in college's Chancellor's Hall, "have their birth and genesis in tropical climates."

He added that Sandy's upward movement, like other storms, was carried toward the north by Gulf Stream waters.

"That's where the engine feeds the storm's power," he said. "It's like a stove that supplies heat energy to the hurricane that will keep it going towards the north."

Cold Arctic air originating from a large dip in the jet stream to the west added strength to the storm, said Bowman, while a gigantic high pressure system to the north served as a blockade to Sandy's movement northward. That system drove Sandy – dubbed a super storm when these three systems collided – directly into the East Coast, he added, keeping it there for an unusually long period of time.

"As many experts have reported, the hurricane was the result of a 'perfect storm' of weather and climate events," said Dr. Bowman. "The peak of high tides in New York City and Long Island's waterways just happened to coincide with the spike in the forces of the storm."

Excessive winds, not rain, as some may have thought, pushed the water table of the oceans and bays up to record levels.

Predicting more weather events like Sandy in the future due to a likely redux of similar weather phenomenon, Dr. Bowman offered an international look in his presentation about how other countries in flood-prone zones use technology and engineering to control the effects of Mother Nature.

He pointed to the coastal infrastructure of the low-lying Netherlands, which, he noted, could be useful in controlling storm surges in the New York metropolitan area by using huge dams, dikes, levees, natural sand dunes and floodgates that are controlled electronically.

One example that has worked for Holland, said Dr. Bowman, is the Oosterscheldekering, a storm surge barrier which is only closed during storms. It is the most well-known, and most expensive, dam in the world.



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Funding for such projects, though, in New York, could be tricky politically.

"Building these structures to protect the coast is very expensive. 'Who is going to pay for this,' taxpayers might ask," queried Dr. Bowman.

Some East End communities such as Sag Harbor could potentially make use of such engineering efforts, and according to Dr. Bowman it is only a matter of time before Long Island is impacted by another storm.

"Two hundred years from now, when our great-grandchildren are here, it is likely that Long Island and Manhattan will no longer be habitable because of an inevitable sea rise of at least 12 feet," said Dr. Bowman.

"Let's hope by then our species has adapted to it and has found ways to survive," he said. "That's one thing humans are really good at: adapting to our environment."

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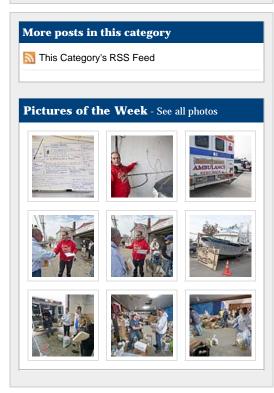
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