Are *You* Ready for the Next "Big One"? *... or, ...have we learned our lessons?*

Peg Van Patten

Weather experts say that it is not a question of "if" there will be another 1938-scale hurricane slamming the Northeast U.S. but rather "When?" Such storms are rare, but 70 years after "the great hurricane", some believe it won't be long now. It could be only 5, 20 or 30 years away; It could come next fall.

The unnamed hurricane had borne down relentlessly on the New England Coast with little warning, having abruptly tripled its speed during its journey from Cape Hatteras to Long Island. That leg of the trip took a mere eight hours, and forecasters lost track of it completely just before landfall.

Would this scenario be different if a hurricane of this magnitude struck today?

At the Northeast Hurricane Mitigation Leadership Forum held in Newport, Rhode Island recently, Michael Goetz of FEMA Region 1 says it would be much, much worse, due to the increased coastal population density. A hurricane striking Connecticut today might do 80 to 200 billion dollars damage or more, depending on the landfall location, estimates Leslie Chapman-Henderson of FLASH, the Federal Alliance for Safe Homes. Even though our forecasting has greatly improved, with the advent of NOAA National Weather Service satellites, and other modern technology, our sheer numbers are so much greater that evacuations could turn into gridlock. We have generators, now, it's true, but Connecticut's shore has something else it didn't have in 1938 – the I-95 transportation corridor. That could be good, in terms of a fast way out, or bad if it were damaged or lost in a storm.

Wayne Sandford, Deputy Commission at the Connecticut Department of Environmental Management, says that a plan is in place to change the Merritt Parkway into a one-way evacuation route if needed in such an emergency. There are also plans, he said, to effectively manage convoys of trailer trucks that might come into the State's highways if disaster relief supplies were necessary. While Sandford is confident that evacuation routes are ready, it's not clear how many people would leave if a storm strikes in the middle of the night. The best plan, then, is to watch approaching storms and leave early if you are advised to evacuate. Estimates are that it would take a full 9 hours to evacuate the entire state. To put that into perspective, recall that the 1938 hurricane took only 8 hours to travel to Long Island from Cape Hatteras. Cell phones could be on our side, dependsing on how the signal towers fare.

A statement frequently made by forecasters is that New England could not possibly ever get a Category 4 or 5 hurricane. However, scientists are not so sure that will continue to be the case. Some climate change models have predicted that hurricanes will increase in frequency and intensity as waters warm. As the ocean warms with climate change, sea surface temperature also increases, and, coupled with wind shear, is what drives storm generation and intensity. A new study by Drs. David S. Nolan and Eric D. Rappin from the University of Miami's Rosenstiel School of Marine and Atmospheric Science, published in the July 2008 issue of *Geophysical Research Letters*, suggests that wind shear may keep the number of hurricanes generated from increasing, but that those that are generated will be more intense. If a 1938-magnitude hurricane struck today in the heavily developed southwestern Connecticut shore, a NOAA Coastal Services report states, potential damages to New England could be as high as $533 billion. Such estimates vary but are all extremely large numbers.

Getting Ready

If you're a property owner, there are things you can do today to prepare for the next "Big One". Trim back loose or dead tree limbs on your property, for example. Check up on your insurance coverage: find out what your deductible is, and if your homeowners or renter's insurance covers flooding as well as wind damage. Most policies don't cover both. Some policies specify a certain "trigger" in order for the coverage to apply to storms. Ask your agent to discuss it with you.

If you are in a low-lying coastal location, you may want to fortify your home by reinforcing the connections of the roof to the walls and walls to foundation. You can check for loose gutters and install wind-resistant shutters if needed. There are also new types of aerodynamic trim edgings for roofs that may keep them from peeling off in severe winds. Building codes mostly require preparation for 120-mile an hour winds, but vary between towns and

states. Some people prefer not to retrofit or improve existing homes because they plan to stay only a few years. Recognizing this, some insurance professionals are now suggesting tying coastal hazard policies to the vulnerable property itself, rather than the individual occupant. Many homeowners and even more renters don't have insurance at all.

A number of businesses intended to help predict hurricanes and also to fortify structures and mitigate damage have sprung up following Katrina's devastation of New Orleans. Karen Clark, CEO of one such business, reminds us that rebuilding and repairing a major event in New England could be ever harder than down south because winter rapidly follows the fall hurricane season. Mitigation measures can decrease potential damage by as much as 25 to 50%, experts say.

Hospitals have learned from the Katrina experience. South County Hospital in Rhode Island has not only prepared evacuation plans, but also has agreements in place for inland hospitals to accept evacuating patients and provide doctors from other hospitals with access to treat them. There are similar agreements for doctors in Connecticut.

Pam Rubinoff, educator on coastal resources and natural hazards at the Coastal Resources Center at the University of Rhode Island and Rhode Island Sea Grant, advises on a 3-step process to make communities less vulnerable. Most often, given human nature, this planning occurs after a disaster has happened, to prepare for the next. First, you absorb the shock of the event, and second, bounce back (think of a trampoline). "Finally, we must learn from our past mistakes and adapt." Adaptation could include evaluating sites as to whether or not rebuilding in a high-risk location is even feasible, or if relocation is necessary. It could also include upgrading building codes if needed. In Massachusetts and Rhode Island, plans are underway to build communities in such a way that they would prove resilient to future catastrophic storms. South Carolina Sea Grant has led a partnership effort that includes a demonstration house retrofit to resist storms (see http://www.113calhoun.org).

In a January 2008 NOAA Coastal Services report, Rubinoff and colleagues cite many characteristics of resilient coastal communities. A few of these are: encouraging a diverse economic base, involvement of community members in community decisions, support for coastal hazard education at all levels, and establishing buffer zones of natural vegetation in high-risk areas.

Good news is that more partnerships and collaborations on the subject are in the works. Many areas are updating old floodplain maps. There is increasing communication between emergency managers, federal and state agencies, extension agents, and local communities. Agencies such as the National Sea Grant College Program now consider Coastal Hazards as a priority. Connecticut has made a start. FEMA now has a Community Rating System which can help towns take mitigation measures and reduce insurance premiums. So far 12 of the State's 25 coastal municipalities have participated, and received an average score of 8.4 out of a possible 10. Stonington, Stamford, and Westport are among the towns that have undertaken ambitious hurricane protection and mitigation projects.

If you don't live in a high risk coastal area where evacuation would be likely in a major storm, but will probably still be impacted by severe weather, make plans and become familiar with them. Discuss what to do and where to go for shelter with your family, and prepare your Hurricane Survival Kit. Designate a meeting spot for the aftermath, should you become separated. Teach children that downed power lines are dangerous.

The hurricane kit should contain flashlights and batteries, a battery-powered radio, food and water for humans and pets to last 96 hours, necessary prescription medications, hygienic supplies, and a first aid kit. Your kit should be kept in a particular, easy to find spot in the home or shelter. Don't bother putting masking tape on the windows–it doesn't really help. It might stick to some glass shards after the window breaks, that's all. Install storm shutters if you are in a vulnerable coastal area, or board windows up when the big wind comes. There are also new aerodynamic roof edge treatments that can be installed on existing roofs to help prevent a roof from lifting at the corners (see www.flash.org).

After a storm, water supplies should be assumed to be badly polluted. After the storm, it's important to watch out for downed power lines, dangling limbs, and collapsing structures.

This article only scratches the surface of this important topic, but take it from me–you'll be hearing more. Any time you see a tropical storm in the Atlantic, start watching and preparing, say the experts at the NOAA Hurricane Center. You may want to use the Disaster Kit suggestions on page 10. Be sure you and your family are ready for the next Big One, because this visitor doesn't always call ahead.

More helpful links: http://www.ready.gov

http://www.nhc.noaa.gov/

http://www.ct.gov/demhs/cwp/view.asp?a=1933&q=418866