

# ATLANTIC HURRICANES: PAST AND FUTURE

Along with harrowing pictures of the aftermath of the Asian tsunami, the lasting disaster-related images of the 12 months to December 2005 will be those showing New Orleans - a major city in the world's richest country - brought to its knees by Hurricane Katrina. Along with major hurricanes Dennis, Emily, Rita and Wilma, Katrina was one of 27 tropical storms that formed in the Atlantic Basin in the 2005 season, the most since records began in 1928. More than half of the storms - 14 in all - achieved hurricane status, with three attaining category 5 level. Spatially, 2005 was also an exceptional season, with October seeing the first North Atlantic tropical storm (Vince) ever to reach Spain, and November heralding the arrival of Tropical Storm Delta in the Canary Islands, killing seven and leaving 200,000 without power. The unprecedented ferocity of the 2005 hurricane season also coincided with publication of a cluster of papers examining recent trends in hurricane activity. Most notable are those of MIT's Kerry Emanuel (*Nature* **436**, 686-688), and Peter Webster (Georgia Institute of Technology) and colleagues (*Science* **309**, 1844-46). The former recognises a marked increase in the destructive power of Atlantic hurricanes in the last 30 years, linked to increases in tropical sea-surface temperature reflecting both multi-decadal oscillations and global warming. Examining worldwide tropical cyclone numbers and intensities, Webster and colleagues report a doubling in the numbers of Category 4 and 5 storms over the last 35 years. This trend towards increasingly more powerful storms, they suggest, is not inconsistent with recent climate model simulations that a doubling of carbon dioxide levels may increase the frequency of the most intense tropical cyclones. While other hurricane scientists remain sceptical, maintaining that the recent intense Atlantic hurricane activity is purely a reflection of the peaking of the current multi-decadal cycle, it may well be that we are already beginning to see a global warming signal in tropical storminess. Certainly, Kerry Emanuel thinks that future warming may lead to an upward trend in the destructive potential of tropical cyclones, particularly in the light of increasing population and wealth in exposed coastal areas. Looking ahead to 2006, *Tropical Storm Risk*, led by BHRC's Mark Saunders, forecasts another active Atlantic season, with Atlantic Basin and US landfalling activity predicted to be close to 70 percent above the 1950-2005 norm. For all tropical cyclone forecasts and updates, go to: [www.benfieldhrc.org/seasonal/tropical.htm](http://www.benfieldhrc.org/seasonal/tropical.htm).

[Image: Hurricane Vince formed close to Madeira in the NE Atlantic in early October 2006. Vince struck the Iberian Peninsula as a weak tropical storm on October 11th, close to Huelva in southern Spain. Courtesy Wikipedia]

