Storminess Prediction for the Year 2008 – Close Out
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22 December 2008

The Forecast of 2008

With the year 2008 winding down, it is time to reflect on the storminess analysis and the past forecasts. On 4 January 2007, I placed the following forecast on the Impact website (http://www.BreadAndButterScience.com/Weather2008.pdf).

> *Storminess levels will rise dramatically from 2006 levels. The year 2008 will produce an extreme weather year. I predict a minimum of 5 major Atlantic Hurricanes (Category 3 or greater) for the year 2008.*

This forecast was published the next day on the Cambridge Conference Network (CCNet), an international science policy network, issue 3/07 - 5 January 2007. A year later as the hurricane season drew near, I repeated the warning with an article published in the Greene County Daily World on 9 January 2008 (http://gcdailyworld.com/story/1302876.html).

This year produced 5 major Atlantic hurricanes. The first major hurricane Bertha was a Category 3 and the other four were Category 4 hurricanes. This hurricane season was relentless and long. This was the first time that five major hurricanes (Bertha, Gustav, Ike, Omar and Paloma) formed in consecutive months (July - November). Six consecutive storms (Dolly, Edouard, Fay, Gustav, Hanna and Ike) struck the U.S. mainland. Tropical storm Fay was the first storm in recorded history to make landfall in Florida four times, producing a significant flooding event across the state.

The other aspect of storminess is major U.S. tornados. The United States is unlike any other country in the world because it is the planet's tornado playpen. No other country experiences the size of tornados or the quantity that the United States experiences each year. *As of December 18, 2,176 tornadoes have been reported in the United States (of which 1,600 were confirmed through September), with 125 confirmed fatalities* (http://en.wikipedia.org/wiki/Tornadoes_of_2008). In comparison to the rest of the world, tornados outside the U.S. this year produced a total of 9 fatalities (3 in France, 2 in Bangladesh, 2 in Poland, 1 in Russia and 1 in China).

This year produced 9 EF-4 and 1 EF-5 tornados. Combining the number of major Atlantic Hurricanes with the number of major U.S. tornados makes 2008 an extreme weather year.

On a personal note, my little hamlet Bloomfield (population 2,542 in 2000 census) was struck by 3 tornado outbreaks this year. These occurred on February 5, June 3 and June 4. The middle event had my name written on it. The tornados ripped through the back side of my property damaging part of a major Duke Energy electrical grid that feeds power to Louisville, Kentucky from Terre Haute, Indiana. The twisters then went down my hill spreading destruction along their path. This photograph shows my front driveway minutes after the EF-1 storm passed through. The damage shown is indicative of much of my property. Fortunately, the twisters jumped over my home and pole barn but many of my trees were torn asunder.

Background

In 2006, a relationship between major (Saffir/Simpson category 3-4-5) Atlantic hurricanes and major (Fujita scale F4-F5) U.S. tornados was studied. A strong natural short-term cycle was observed overlaying the long-term multi-decadal cycle of hurricane activity. This research was presented in a paper titled "The Art of Forecasting Extreme Weather Events" at the Second International Conference on Global Warming and the Next Ice Age sponsored by Los Alamos National Laboratory in July 2006. From this research, a forecasting tool was developed called the storminess model. (http://meteo.lcd.lu/ globalwarming/SantaFE2006_conference/LANLClimateConfAbstracts.pdf).

Storminess analysis observed an interlinking between major North Atlantic hurricanes and major U.S. tornados. This interlinking may be due to the effects of strong winds in the jet stream reacting with the storms to produce wind shear. Wind shear energizes major tornados but rips major hurricanes apart.

A year of extreme storminess is characterized as a year with a large number of major Atlantic hurricanes or a large number of major U.S. tornados. But at least going back 6 decades, this relationship has never

produced both together at the same time. I suspect that wind shear (tied to the jet stream) explains the root cause.

A forecasting tool is only as good as its ability to generate accurate predictions. The best way to test the tool's accuracy is to generate a forecast. The storminess model was tested twice thus far by generating predictions for the 2006 & 2008 hurricane seasons.   Both forecast were accurate. The tool is now two for two.

The Forecast of 2006

The storminess model was used to forecast a mild 2006 hurricane season. On 20 June 2006, I placed the following prediction on the Impact website (http://www.BreadAndButterScience.com/Prediction.pdf). The prediction was published on 26 June 2006 in CCNet 99/06 (http://www.staff.livjm.ac.uk/spsbpeis/CCNet-26-06-06.htm).

> *Storminess levels will fall very dramatically from 2004 & 2005 levels.   The year 2006 will not produce an extreme in either the number of major Atlantic hurricanes (Category 3 or greater) or in the number of major U.S. tornados (F4 or F5).   I predict 0-2 major Atlantic hurricanes for 2006.*

At that time, other forecasters were predicting an intense hurricane season for 2006; whereas the above analysis showed quite the opposite. So this was a good initial test for the tool. The Colorado State University team of Phil Klotzbach and William Gray had generated a Seasonal Hurricane Forecast that predicted 5 major Atlantic hurricanes for 2006. The National Oceanic and Atmospheric Administration (NOAA) predicted 4-6 major Atlantic hurricanes. Tropical Storm Risk (TSR) with climate experts from the Benfield Hazard Research Centre "warned that the United States and Caribbean should brace themselves for yet another active Atlantic hurricane season in 2006". Their forecast predicted hurricane activity 60 percent above the 1950-2005 norms. At the far extreme were the computer climate modelers. Although this group does not technically generate forecasts, they began making model predictions that to the layman might be interpreted as forecasts. Kevin Trenberth from the National Center for Atmospheric Research (NCAR) predicted that human-induced climate change was producing a shift in hurricane intensities toward extreme hurricanes. Kerry Emanuel, a climatologist at the Massachusetts Institute of Technology, suggested that because hurricane intensity was increasing, the Saffir-Simpson hurricane scale should be expanded to include a new category called Category 6 hurricanes.

The year 2006 produced only 2 major Atlantic hurricanes and the second lowest number of major U.S. tornados since 1950; validating the storminess model.

Relevancy

The storminess forecasting tool has been tested twice with perfect results. In 2006, it was used to sound an all-clear signal after the peak was over. This was done in a background of hysteria following the intense 2004/2005 hurricane seasons. In 2008, the tool was used to accurately predict the onset of the next peak. This was done 1 1/2 years in advance of the start of the 2008 hurricane season. These tests demonstrated the power of the storminess analysis.

It may be the very nature of this short-term cycle that catches individuals and communities off guard. A few quiet years can lull individuals into complacency and then the hammer comes down.