

For Early Hurricane Forecasts, Consult a Telepath

Long-Term Storm Predictors Post a Sorry Track Record but Vow to Improve; One Certainty Is Their Guesses Get a Lot of Press

By **CARL BIALIK**
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If analysts did no better than predicting stock prices would equal the average of the last five years, one would hope they'd find a different career -- or at least take their work private while they refined their techniques.

That's the sorry track record of climatologists who each year predict the number of hurricanes that will threaten the Caribbean and Southeastern U.S. before the storm season begins on June 1. Yet their seasonal forecasts continue to garner headlines in the spring as reliably as groundhogs and their shadows.

In early 2005, predictions ranged from 11 to 14 tropical storms -- compared with an average of 14 in the prior five years -- with seven or eight hurricanes, compared with a five-year average of seven. The storm season instead brought Katrina, Rita and 13 other hurricanes among the 27 named storms.

The forecasts' flaws were evident before that big miss and have continued since then. The next two years they overshot; last year, at last, they were right in predicting a typical year. This year, most forecasters are calling for below-average activity.

"It's as if they're presenting their data in the middle of a study, before they reach their conclusions," says Robert S. Young, director of the program for the study of developed shorelines at Western Carolina University. "They should keep doing what they're doing, and they shouldn't tell anyone about it until they've figured it out."

Yet even as academics, government agencies and private industry crowd into the forecasting arena, they're bumping up against obstacles that may render accurate forecasting so far ahead of time impossible. Some forecasts are based on past years with similar patterns, but the climatology record doesn't go back far enough to lend much confidence. And it's hard to even detect these weather patterns far in advance -- even giant patterns that determine the intensity of a season. El Niño, or warming of Pacific Ocean waters, tends to suppress hurricanes; La Niña, unusually cold Pacific waters, tends

to increase storm activity. Yet neither of these seasonal effects can be predicted with much reliability before the late spring.

"Until you really get into the spring and the weather patterns start to set up, it's really hard to get any kind of decent forecast as to what's going to go on in the summer and fall," says Chuck Watson, who works on forecasts of damage from hurricanes. Anytime before spring, "You might as well throw a dart."

Or hire a gibbon and a trance medium to compete with the dart thrower. That was the stunt dreamed up by reporter Bo Petersen of the Post & Courier of Charleston, S.C., in 2007, after several years of more straightforward reporting of professionals' ultimately errant forecasts. The trance medium beat out Mr. Petersen, the gibbon, the dart thrower -- and the pros. This comedic contest was borne out of a serious problem, according to Mr. Petersen: "The sense we got from emergency-management people here is that the forecasts had been so wrong that they were hearing from the public, 'Why should we pay any attention to this stuff?'"

Some forecasters update their predictions once the season has begun. And those forecasts do well. But none of the major forecasts that come out before June has improved significantly on a simple prediction scheme that calls for the same number of named storms and hurricanes as the average of the five prior years. And some do much worse.

Forecasters often are open about their failings. Philip Klotzbach, who works on the Colorado State University forecast, and others post analyses of their accuracy, which is more than, say, political pundits do. And they say it's good scientific practice to publish their work in progress.

But why publish press releases and even, in some cases, hold press conferences? "Part of the reason we even do our press conference and release our data is, well, everyone else is," Mr. Watson says. He adds that research funders generally encourage the publicizing of the fruits of their grant money: "From a funding and research standpoint, you've almost got to release it," Mr. Watson says. "It's part of that game."

Even if the forecasts were dead-on, they wouldn't do emergency managers much good. The number of named tropical storms and hurricanes can have little to do with the damage they create: Hurricane Andrew struck in 1992, a year of below-average storm counts. "The total number of storms is a red herring," says Joe Bastardi, chief long-range and hurricane forecaster for AccuWeather.com. "It's a joke." Many forecasts include more useful measures such as the number of storms that hit land or the accumulated cyclone energy, which quantifies total storm intensity. But news reports often focus on the more-accessible predictions of storm counts.

The industries most affected by hurricanes focus more closely on the short-term forecasting of individual storms, an endeavor with much higher accuracy.

"The insurance industry is always interested to hear the long-range hurricane predictions, but they don't directly influence what companies do," says Loretta L. Worters, a spokeswoman for the Insurance Information Institute. More important is whether the storms hit U.S. soil, she says.

Forecasters say their task is complicated by the subjectivity involved in determining which storms are named, a reflection of intensity and greater likelihood they'll make landfall. The National Hurricane Center, an arm of the National Oceanic and Atmospheric Administration, decides when to append a name. "I don't understand why some storms are getting named and others are not getting named," Mr. Bastardi says.

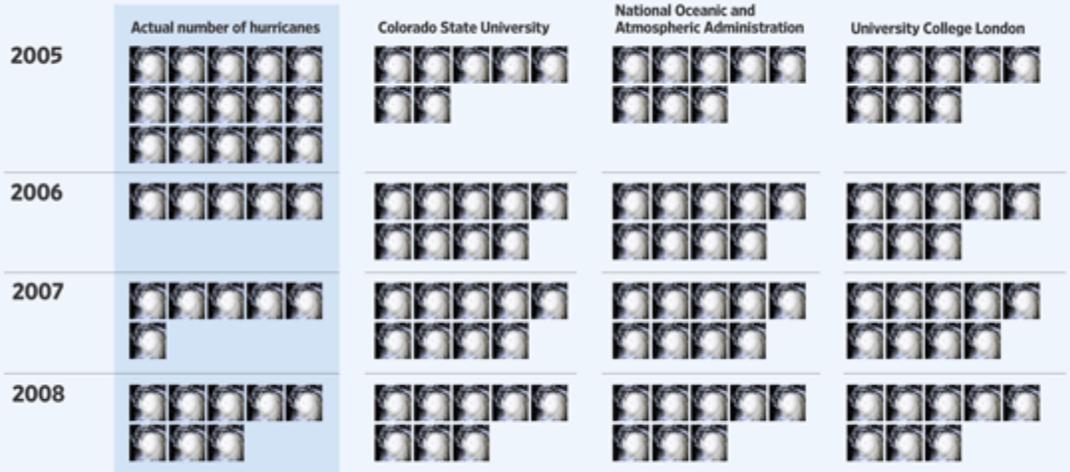
Perhaps one to two additional storms are being named each year than would have been a few decades ago, thanks to improvements in technology and climate science, according to Christopher Landsea of the hurricane center. To some climatologists, the naming standards have gotten too lax. NOAA named 13 storms in 2007, prompting a press release from the Weather Research Center in Houston saying its forecast of seven named storms was dead-on -- after subtracting the six storms it deemed unworthy of naming, because they only briefly featured the levels of wind and pressure characteristic of tropical storms.

Several forecasters question NOAA's dual role as forecaster, through its Climate Prediction Center, and as forecast arbiter, via the National Hurricane Center. The concern is that those scientists deciding whether to name storms late in the season might feel pressure to base their decision in part on how it would reflect on their colleagues' predicted counts. "In some sense, they hold the cards," James Elsner, a professor of geography at Florida State University, says of NOAA scientists.

Gerry Bell, NOAA's lead seasonal hurricane forecaster, says, "There is absolutely no conflict," pointing to the separation between the two arms of the government agency that forecast storms and name storms.

Climatologists are making a new forecast -- this time about their ability to get predictions right. "It's inevitable, with increasing computing power and an increase in the understanding of the dynamics of El Niño, that skill will climb in the long term," says Adam Lea, who works on forecasts from University College London's Hazard Research Centre. "We will get better."

Third Eye of the Storm | How forecasters fared when predicting the number of hurricanes



Hurricane image: Associated Press
Sources: Colorado State University, NOAA, Tropical Storm Risk

Notes: NOAA figures are averages of range. Some numbers are rounded.
Colorado State and UCL forecasts from April, NOAA's from May.

Corrections & Amplifications

Joe Bastardi, chief long-range and hurricane forecaster for AccuWeather.com, doesn't hold a doctorate. A previous version of this column incorrectly referred to him as Dr. Bastardi.