science

Bigger Smash

Hurricanes cause more damage because there's more for them to wreck.

By Gregg Easterbrook

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The insurance industry is "feeling the unmistakable economic impact of global warming," Al Gore declares in his new movie, *An Inconvenient Truth*. Publications as diverse as *USA Today* and *Mother Jones* have similarly argued recently that rising weather-related insurance losses are evidence of an artificial greenhouse effect. Last year, hurricanes Katrina and Rita contributed to a record $50 billion in weather-related losses in the United States. Ceres, a public-interest organization that urges business to engage in environmental protection, recently estimated that weather-related insurance losses rose from an average of about $5 billion per year 20 years ago to an average of about $15 billion annually in the last decade. (All money figures in this article are stated in current dollars.) Like the former vice president and a lot of other people, Ceres attributes increased insurance losses to artificially triggered climate change.

But maybe there's another reason losses keep rising—namely, that property keeps becoming worth more. With each passing year, hurricanes that strike the United States are striking a nation of ever-more-affluent people who build ever-more properties in coastal areas. No wonder the destruction keeps getting worse. Every year there's more to destroy!

In 1947, before tropical storms were named, a major hurricane struck Florida, the most hurricane-exposed state. The 1947 storm brought peak winds of 155 miles per hour and caused the Sunshine State an estimated $775 million in damage. At the time, Florida had about 600,000 detached single-family homes worth roughly $20 billion. In August 1992, Hurricane Andrew hit Florida with peak gusts of 164 mph, causing an estimated $37 billion in damages. By the time Andrew arrived, Florida possessed about 3 million single-family detached homes worth roughly $500 billion. Housing-stock value was way up, and so losses were way up. And this is a simplified calculation taking into account only single-family detached homes—the value of office buildings, industry, apartments, infrastructure, and amusement parks was also much higher in Florida in 1992 than in 1947. Andrew did roughly 50 times the monetary damage to Florida as did the similar hurricane of 1947. And it's a fair guess that in 1992, Florida was 50 times more valuable than in 1947.

Today Florida has 3.8 million single-family detached homes whose value may be closing in on $1 trillion; all Florida residential, commercial, and public structures may be worth 75 times the total of the state's property in 1947. Thus when hurricanes Charley, Frances, and Ivan pummeled Florida in 2004*, causing a combined $40 billion in damage, the severity of losses was mainly a phenomenon of rising real-estate value. In terms of damage per total dollar value of Florida real estate, Charley, Frances, and Ivan combined were less destructive than the hurricane of 1947, which struck before greenhouse gas accumulation could have been the culprit.

Similar calculations apply to most claims that insurance losses are rising because weather has gained in fury. Census Bureau figures suggest that between new houses built and rising prices, the total value of owner-occupied housing in the United States increased about 45 percent from 1990 to 2000. The Ceres study says weather-related property losses increased about 40 percent from 1990 to 2000. Hmmm, those numbers seem awfully similar. Rising insurance losses from weather have coincided with a period of rapid population growth and a huge boom in real estate values. Yet news reports over the last few years have been chockablock with exclamations of amazement about rising real estate values and also exclamations of amazement about insurers' rising storm-damage losses—as if the two were unrelated.

Today the median American home is worth twice as much in real dollars as in 1970, and there are 50 percent more homes throughout the country. Higher land values account for a chunk of the rise in

property value, and land is much less prone to weather damage than structure. Still, given rising real estate values, the red-hot construction industry, and the mania for high-end waterfront living, you would expect insurers' hurricane losses to accelerate, regardless of greenhouse trends.

More buildings, and more expensive ones, are also the driving factors in rising insurance losses from floods, wildfires, and hailstorms. The intensity of wildfires has been increasing in recent decades, partly because forest-management practices have tended to reduce the total number of fires but cause those that do start to be hotter and cover more acres (because underbrush and dead trees have not already been consumed by smaller fires). The Ceres study says wildfire insurers' losses were 10-fold greater between 1985 and 1994 than the average per decade for the three previous decades. Yet how much of the increased losses can be attributed to the fires themselves, as opposed to the rising value of property—especially exurban expansion and luxo vacation homes newly built in the sorts of places most vulnerable to wildfires?

In 1913, the Miami River flooded in Ohio, killing 400 people and doing $100 million in damage; in 1921, the Arkansas River flooded in Colorado, killing 350 people and doing $15 million in damage. Equivalent floods in the same places today would kill far fewer people but destroy far more property. The 1927 Mississippi River flood killed 246 people and caused $4.5 billion in property damage; the 1993 Mississippi River flood killed 50 people and destroyed $15 billion worth of property. Until Hurricane Katrina, the 1927 flood was considered by many the worst natural disaster in American history. But the lesser 1993 flood in the same region caused three times the insurance losses, simply because there was more to lose.

Bear in mind as well that chance is a significant factor in weather-related losses. Three major hurricanes, Eloise, Andrew, and Opal, hit Florida from 1965 to winter 2004. Since then, six—Charley, Frances, Ivan, Jeanne, Dennis, and Wilma—have battered the state. (Katrina was not a major hurricane when it crossed Florida.) Atlantic cyclone frequency and ferocity have increased somewhat since 1965. But the increase has been gradual: nothing like a jump from one major hurricane every 13 years to six in two years. Most likely, the recent escalation in major hurricanes that make landfall in Florida is due to bad luck following a long phase of good luck. Meanwhile, an ever-higher percentage of Florida has been developed, increasing the odds that a landfalling hurricane will hit shopping centers instead of reeds.

The scientific case for greenhouse reform gets stronger all the time; to show that higher weather-related insurance losses are mainly a consequence of rising property values, rising population, and the rush for coastal real estate does not disprove an artificial greenhouse effect. It's just that insurers' losses are peripheral to global-warming questions. We want the United States to grow ever-more valuable. But the more valuable the country becomes, the more gets smashed when there's a storm.

Correction, June 22, 2006: *The original sentence wrongly stated that Charley, Frances, and Ivan hit in 2005.* *Return* *to the corrected sentence.*

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