

The Lure of Coastal Life Outweighs The Risks

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BILOXI, Miss. -- The hurricane that flattened parts of this coastal city and drowned New Orleans, that tossed casino boats into apartment buildings and killed perhaps thousands of Americans, was a disaster long ago foretold.

Scientists and environmentalists have cautioned for years that the nation's coastline is dangerously overbuilt. But with Americans migrating in increasing numbers to coastal counties, construction only accelerated, and local officials increasingly relied on technology and luck to forestall catastrophe. As high-rise condominiums and sprawling beach homes have proliferated, warnings have been consistently ignored.

In Mississippi, 20 glittering casinos sprouted at the water's edge. An Army official tried to impose a moratorium on casino projects along the coast in 1998 but was outmuscled by developers and Sen. Trent Lott (R-Miss.). All those casinos, which employed 16,000 people, now lie wrecked and broken.

The development pressure comes from one immutable fact: Americans love waterfront property. And the federal government has fueled that love through flood insurance that minimizes its risks and by paying for infrastructure such as bridges and roads that makes it more accessible.

In the process, coastal development often degrades the barrier beaches and coastal wetlands that can serve as natural buffers against hurricanes. "You just cannot justify massive building and rebuilding near the most dangerous property in the United States," said Orrin H. Pilkey Jr., a professor emeritus at Duke University and a specialist in coastal ecosystems. "It's a form of societal madness."

In Florida, more than 13 million people live in coastal counties, up from 200,000 a century ago. As a result, all four of last year's Florida hurricanes made the list of America's 10 most damaging storms ever. And federal meteorologist Stanley B. Goldenberg, who flew into the eye of Hurricane Katrina as it made landfall, forecasts a spike in hurricanes that could last a decade or more. If the next great storm rolls into Miami Beach or Charleston, S.C., or North Carolina's Outer Banks on a Labor Day weekend, he said, the impact could be almost as devastating -- albeit without New Orleans-style flooding.

"I don't like what I'm finding, but if the steering wind patterns continue, we're going to have a lot more landfalls and . . . a lot more people affected multiple times," said Goldenberg, a meteorologist with the National Oceanic and Atmospheric Administration in Miami. "I look at the buildings that have gone up, and there are a lot more targets and a lot more arrows."

Scientists and some engineers believe that Americans put too much faith in technological fixes to stave off nature's primal force. For example, the Mississippi River used to bring loads of silt down to the Mississippi Delta, building coastal marshes that helped buffer the Louisiana coast from hurricanes. But as the river was tamed by a series of dikes and dams, cutting off the flow of silt, wetlands began disappearing at the rate of 25 square miles a year -- and New Orleans began to sink even lower.

The Mississippi Delta, scientists note, was the most engineered and industrialized delta in the world, but disaster struck

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anyway. The levees designed to protect New Orleans were intended only for a Category 3 hurricane, and in previous years critics had questioned whether they could withstand a storm of even that power. (Katrina made landfall as a Category 4 hurricane.)

"There's only two kinds of levees," said Jane Bullock, chief of staff at the Federal Emergency Management Agency during the Clinton administration. "Ones that have failed and those that will fail."

The disaster in New Orleans "is not an act of God," said Benigno Aguirre, a professor at the Disaster Research Center at the University of Delaware. "This is an act of man. The federal government refused to spend the money to improve the levees."

New Orleans Was Warned

Scientists have warned of the dangers to New Orleans for years. In 2001, for example, Scientific American published a prescient article titled "Drowning New Orleans," predicting that "a major hurricane could swamp New Orleans under 20 feet of water, killing thousands." Evacuating huge numbers of people from New Orleans and from coastal areas has long been seen as a problem, especially given the concentration of the poor in New Orleans and the growing population in other parts of the Gulf Coast.

It takes twice as long to evacuate Biloxi and Gulfport, Miss., as it did 10 years ago, say officials. On the Outer Banks, an evacuation could take three times as long as it did 20 years ago. And faith in science can lead to complacency.

"We evacuated for Ivan and there wasn't nothing but a little wind damage," said Arthur Smith, 70, a school bus driver who lived with his wife in a down-on-its-luck bungalow in Biloxi, about a mile from the Gulf of Mexico. "Hugo came and we were ready to go but nothing happened. Then all of a sudden here come Katrina and we waited too long." Hurricane Hugo hit in 1989; Ivan, in 2004.

The storm surge rose 12 feet around their house. Smith and his wife survived by clinging to the top of a school bus.

A report for the Institute of Transportation Engineers in 2002 noted that 200,000 to 300,000 New Orleans residents lacked access to cars. On the Mississippi and Alabama coasts, where development patterns are more suburban than urban, tens of thousands of poor residents get around by bike, bus and bumming rides.

For much of the 20th century, the coastal areas were dominated by the poor and working class. Wealthy and middle-class Americans did not start moving there until the long lull after Hurricane Camille in 1969, when there was a demographic explosion.

In 1960, there were 180 people per square mile in the coastal United States; by 1994, there were 275 per square mile. A USA Today study in 2000 found 1,000 year-round settlers arriving in coastal counties each day.

"Insurance companies were underwriting coastal development with reckless abandon," said Ted Steinberg, a history professor at Case Western Reserve University and author of "Acts of God: The Unnatural History of Natural Disasters." "Developers overbuilt to their hearts' content."

Mississippi's coastal counties grow three times as fast as any other county in the state, a pattern found in many coastal states, and fighting this trend is a lonely business.

In 1998, Deputy Assistant Army Secretary Michael L. Davis tried to stop the Army Corps of Engineers from rubber-stamping casino applications without studying the impact dredging would have on marshes that shelter wildlife, purify drinking water and help prevent flooding. This angered Lott, then Senate majority leader, who had recently flown to Las Vegas in a casino executive's jet and had raised \$100,000 for Republicans at a casino-industry fundraiser.

Lott got the moratorium lifted, then he got the Army to launch an investigation of Davis. No wrongdoing was found, but Davis was removed from Gulf Coast permitting issues.

Federal Encouragement

Other federal decisions have spurred coastal development. By law, barrier-island homeowners are not eligible for federal flood insurance. Ecologically, these islands act as a mutable and natural buffers against hurricane surges. But when Hurricane Fran hit North Carolina in 1996, the federal government forked over money to rebuild barrier-island roads and bridges -- and set off a development gold rush.

"They used to require 600-foot-deep lots on these islands -- now developers are selling postage-stamp lots," said Pilkey, the Duke professor.

The federal government also paid prodigious sums in flood insurance claims to property owners who had insisted on building in harm's way. In 1998, David Conrad of the National Wildlife Federation identified 32,000 properties in which the owners already had cashed in at least two federal flood insurance claims. The federal flood insurance fund now shows a negative balance -- and it has not begun to address the coming surge of Katrina claims.

"There's been a steadily increasing buildup in high-hazard areas, especially in the Gulf from Louisiana to Alabama," Conrad said. "The federal and local governments don't have the ability to say no, even when the risks are so obvious."

On the coastal roadway in Biloxi, a massive red crane -- in place to repair work from the *last* hurricane -- sprawls across the road. Elegant Victorian homes are hollowed shells; discount motels seemed to have just exploded. The gray branches of cypress trees are clotted with mattresses and sheets and little girls' dolls. Up the road, a 30-foot storm surge had hurled a huge casino ship across the coastal road and into the flank of an old apartment building. The casino lies on its side, like a beached whale.

"The most impressive picture to me was the casino that . . . squished on top of a Holiday Inn," said retired Brig. Gen. Gerald Galloway, formerly of the Army Corps and author of a report on flood-plain management. "I hope this makes people in the risk zones realize what they're up against."

None of this is inevitable. In Japan, the government has spent billions of dollars fortifying cities against super-typhoons. After the Mississippi River floods of 1993, federal and state officials made the wrenching decision to buy out more than 13,000 flood-prone homes and businesses.

High waters in those areas now cause very little damage. In 1993, Charles County, Mo., suffered \$26 million in damage; after a big buyout, a similar flood two years later cost \$300,000. The entire town of Valmeyer, Ill., moved to higher ground.

Might this offer a solution for low-lying sections of New Orleans? House Speaker L. Dennis Hastert (R-Ill.) was castigated last week for even suggesting such a thing.

"I'm not sure it's tenable in this country to abandon a city of that size, but New Orleans should not even exist and hundreds of people are dying to prove that point," said David M. Bush, a professor of geology at West Georgia University. "To build it somewhere else would cost trillions of dollars -- but not to make a move risks an even greater disaster."

Scientists suggest that Gulf Coast officials should ban new building on barrier islands, require setbacks for all coastal development, and perhaps refuse to reconstruct a bridge or two. But they doubt that will happen.

"It's almost unpatriotic to say we can't stop nature," Pilkey said.

While American flags hang from the broken bones of homes, and thousands of residents wait for flood insurance checks in Biloxi and Gulfport, three gleaming, 20-story condominium projects -- the Vue Crescent, the Caribbean Dream and the Shores of Paradise -- remain slated for construction. The determination in the voice of Biloxi Police Officer John Campbell, 50 and bald and muscular, is heard everywhere.

"I'm going to rebuild my house on stilts this time," Johnson said. "You can't let Mother Nature beat you."

That determination was seconded by President Bush when he visited the Gulf Coast last week.

"The good news is -- and it's hard for some to see it now -- that out of this chaos is going to come a fantastic Gulf Coast, like it was before," Bush said. "Out of the rubble of Trent Lott's house -- he's lost his entire house -- there's going to be a fantastic house. And I'm looking forward to sitting on the porch."

Grunwald reported from Washington. Staff writer Michelle Garcia in New York contributed to this report.

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