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Experts: Future of Big Hurricanes Looms

By JOSEPH B. VERRENGIA, Associated Press Writer *Sat Oct 1, 4:06 PM ET*

Have we seen America's future through the eyes of hurricanes Katrina and Rita? Monster storms drowning cities and obliterating coastlines. Jobs vanishing and prices rising as ports and pipelines close. Millions fleeing, but many are trapped and die. Chaos reigns, paralyzing government and leaving the world's wealthiest society humbled and frightened.

Natural disaster in the United States has morphed to a dangerous new level. Some experts say the nation can expect to be pummeled by more of these mega-catastrophes over the next 20 or 30 years in a nasty conspiracy of unfavorable weather patterns, changing demographics and political denial.

A month after Katrina and one week after Rita, it's not clear how the United States will play the new hand that nature has apparently dealt.

"Are we prepared to lose a major city every year?" asks Carnegie Mellon University risk strategist Baruch Fischhoff. "It's cowardice not to ask the question, and cowardice on the public's part not to get engaged in the answer."

"We failed quite significantly," says sociologist Havidan Rodriguez, director of the Disaster Research Center at the University of Delaware. "Will what we've seen over the last few weeks continue to be the case? It could unless we prepare. People tend to forget lessons learned. Governments tend to forget."

Others cautiously see some hope in the waterlogged ruins of the Gulf Coast. They describe the latest hurricanes as a turning point that could lead to improved public safety and infrastructure.

"We often need events like this to change the mindset," said Mary C. Comerio, an architect and reconstruction researcher at the University of California-Berkeley. "And it's very hard to stop private investors and entrepreneurs from seeking opportunity. It's an amazing part of the American spirit."

New Orleans and the Gulf Coast might even be a living laboratory for sustainable development and commerce that can withstand future calamities. For example, New Orleans' historic core might be reopened for tourism, but neighborhoods could be rebuilt on safer, firmer ground using more efficient 21st century technologies.

Link the two with a train, one expert suggested. Oh, and better make it elevated.

"The first rule of sustainability is to align with natural forces, or at least not try to defy them," said environmentalist Paul Hawken, a leading voice in the green design and green commerce movements. "There is no reason to go backwards in redesigning the city."

America's eastern and Gulf coasts always have been in the path of powerful storms. The nation's weather history occasionally has been splattered with other Category 4 and 5 hurricanes — the strongest, largest storms, which pack the punch of hundreds of nuclear weapons and have the most potential to devastate huge swaths of land.

But since 1995, hurricanes have become more frequent and more intense. Some scientists say the United States is on the bad side of a natural storm cycle, while others notice the trend may coincide with the recent increase in air and sea temperatures attributed to global warming.

Statistics show the planet to be increasingly unsafe. Globally, more than 2.5 billion people were affected by floods, earthquakes, hurricanes and other natural disasters between 1994 and 2003, a 60 percent increase over the previous two 10-year periods, U.N. officials report.

Those numbers don't even include the millions displaced by last December's tsunami, which killed an estimated 180,000 people.

Damage to insured property around the world in 2004 by natural disasters totaled \$49 billion, according to the Zurich-based insurance giant Swiss Re. And that figure doesn't include the tsunami, either. Of the total, some calculations suggest that as much as \$45 billion in losses came from a quartet of Florida hurricanes — Charley, Ivan, Frances and Jeanne.

The overall insured loss for 2004 is more than twice the \$23 billion annual average in property losses since 1987, confirming a "discernible upward trend," Swiss Re said.

So what makes natural events potentially more disastrous now? The weather might be changing for the worse. But the real difference is demographics.

How and where Americans live today make the nation especially vulnerable to these unstoppable events.

In the last several decades, the nation's population has migrated toward the coasts, and the value of their possessions has increased substantially.

More than half of the nation's 297 million people live in coastal areas. Florida's population has increased fivefold since 1950, and now 80 percent live within 20 miles of salt water. According to the U.S. Census Bureau, seven of the nation's top 10 fastest growing states are coastal, including California, whose population has increased from 10 million in 1950 to more than 33 million today.

And it's not just coastal populations that are at risk. Infrastructure supplies food, energy and materials nationwide like the body's circulatory system distributes blood and nutrients. If the New Madrid fault ruptures in the Midwest, the loss of key roads, railways, power grids and pipelines over the Mississippi River would likely choke off vital supplies to distant cities for months, including Washington, D.C. and New York City.

The Federal Emergency Management Agency bases much of its planning on 100-year storm estimates that are decades old and don't always account for today's more intense storms and increased urbanization.

And, experts warn, these future calamities don't even factor in larger environmental influences that are lurking, like global warming.

"In the decades to come, the equation will be completely different from what it is now," said Robert Muir-Woods, London-based research director for Risk Management Solutions, consultants to the insurance industry on natural catastrophes and terrorist strikes. RMS estimates that insured losses after Katrina and Rita have reached \$70 billion thus far.

"So much of what you see in the United States now was built when hurricane activity was low and there was a category 5 storm once every 30 years, not every year or two," Muir-Woods said. "Your investment decisions need to be revisited."

Other demographic changes not often associated with natural disasters are an aging population, the growth of assisted living communities and dependent-care facilities in warm-weather states and the increase in immigrant populations where English is not widely understood. All of which will make evacuations even more difficult, researchers say.

"All of the plans have assumed that people have cars and they speak English," Rodriguez said. "If you forget the population in your planning, the population will ignore your plans."

So how can the United States cope with a more dangerous future?

There is no single solution, but recommendations by architects, civil engineers and sociologists can be roughly sorted into a few categories.

Beginning with infrastructure: Communications systems, power grids, roads and flood control measures — especially levees — should be expanded and hardened, they advise.

Louisiana's levees were built to withstand a storm surge from a category 3 hurricane. Nationwide, levee construction largely has been deferred. In June, Congress and the White House slashed the U.S. Army Corps of Engineers' latest request for levee improvements in New Orleans from \$105 million to \$42.2 million.

Staring at a \$200 billion clean-up tab, the original request now looks like a bargain.

Roads, bridges and other key features have been equally neglected. The interstate highway system that was clogged with evacuees is now 50 years old.

"Katrina is a great example of how deteriorating infrastructure actually created more damage," Comerio said. "If the levees could've protected us just a little more, the flood would not have happened and we would not have incurred the enormous costs of a displaced population."

_A second priority: Turning knowledge into real improvements.

Katrina was perhaps the most-anticipated natural disaster in history, and both hurricanes were forecast accurately. But elected officials and top bureaucrats were reluctant to act aggressively on the advice of scientists and other experts.

As recently as last year, public officials war-gamed the impact of a fictional Hurricane Pam in New Orleans. "We made great progress this week in our preparedness efforts," Ron Castleman, FEMA regional director, said at the time. The real disaster mocks his comments now.

Other exercises focusing on terrorism and infectious disease outbreaks have pointed out similar flaws in communications, medical care and evacuations in other cities. But the real-life storms suggest that few real improvements have been made as a result of any dress rehearsals.

"I don't know if the learning is as systematic as it needs to be," said Fischhoff, who consults with the Department of Homeland Security.

_But perhaps the biggest question confronting the nation, according to disaster experts, isn't about building bigger dams or even reserving more buses and boats.

It's whether the nation has the will to squarely face more natural catastrophes. No one interviewed expressed any confidence in the special House committee created to investigate the Katrina response, in part because of political infighting.

Several experts suggested more public officials should be booted after Katrina. FEMA director Michael Brown was forced out, and New Orleans Police Superintendent Eddie Compass has resigned.

"What we are missing, utterly and completely, in this government is accountability," Hawken said.

"I don't see anybody talking in terms of shame," Fischhoff said. "I don't see any soul-searching."

Many recommended an independent commission led by an independent figure outside of government. Former Fed chairman Paul Volcker's inquiry into corruption at the United Nations was one example cited. Another was the investigation into the space shuttle Columbia disaster led by retired Adm. Harold Gehman Jr.

Even while the Katrina investigation is ongoing, experts say America should prepare for future disasters using a new set of conditions that consider less obvious factors — like the predicted effects of global warming.

Farfetched? Oil companies that have strongly opposed climate-based environmental regulations are nevertheless raising their offshore drilling platforms in the Gulf of Mexico by 15 feet in anticipation of higher storm surges. Just in case.

History is littered with the bones of great cities built in defiance of nature, most prominently the ancient version of Alexandria, Egypt, and its great library and lighthouse. That was another city built in the squishy mouth of a great river. Two millennia later, some truths don't change, said Muir-Woods, who raised the comparison with New Orleans.

"Climate change will have its greatest impact at the coastlines," Muir-Woods said, "and the risk will go up higher than people think."

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