



**Floods, Tornadoes,
Hurricanes, Wildfires,
Earthquakes ...**

Why We Don't Prepare

BY
AMANDA
RIPLEY
BOULDER

EVERY JULY THE COUNTRY'S LEADING disaster scientists and emergency planners gather in Boulder, Colo., for an invitation-only workshop. Picture 440 people obsessed with the tragic and the safe, people who get excited about earthquake "shake maps" and righteous about flood insurance. It's a spirited but wonky crowd that is growing more melancholy every year. • After 9/11, the people at the Boulder conference decried the nation's myopic focus on terrorism. They lamented the decline of the Federal Emergency Management Agency (FEMA). And they warned to the point of cliché that a major hurricane would destroy New Orleans. It was a convention of prophets without any

disciples. • This year, perhaps to make the farce explicit, the event organizers, from the Natural Hazards Center at the University of Colorado, Boulder, introduced a parlor game. They placed a ballot box next to the water pitchers and asked everyone to vote: What will be the next mega-disaster? A tsunami, an earthquake, a pandemic flu? And where will it strike? It was an amusing diversion, although not a hard question for this lot. • Because the real challenge in the U.S. today is not predicting catastrophes. That we can do. The challenge that apparently lies beyond our grasp is to prepare for them. Dennis Mileti ran the Natural Hazards Center for 10 years, and is the country's leading expert on how to

warn people so that they will pay attention. Today he is semi-retired, but he comes back to the workshop each year to preach his gospel. This July, standing before the crowd in a Hawaiian shirt, Mileti was direct: "How many citizens must die? How many people do you need to see pounding through their roofs?" Like most people there, Mileti was heartbroken by Katrina, and he knows he'll be heartbroken again. "We know exactly—exactly—where the major disasters will occur," he told me later. "But individuals underperceive risk."

Historically, humans get serious about avoiding disasters only after one has just smacked them across the face. Well, then, by that logic, 2006 should have been a breakthrough year for rational behavior. With the memory of 9/11, the worst terrorist attack in U.S. history, still fresh in their minds, Americans watched Katrina, the most expensive disaster in U.S. history, on live TV. Katrina, who didn't know it before should have learned that bad things can happen. And they are made much worse by our own lack of ambition—our willful blindness to risk as much as our reluctance to work together before everything goes to hell.

leen Blanco and the state legislature managed to pass mandatory building codes this year. Most states already have such codes. Florida has had a strict one in place since 2001, and structures built under it tend to be the ones left standing after a 120 m.p.h. wind rips through. We know that for every dollar spent on that kind of basic mitigation, society saves an average of \$4, according to a 2005 report by the nonprofit National Institute of Building Sciences. Then there's Mississippi, which, believe it or not, still has no statewide building code. Katrina destroyed 68,729 houses there. But this year a proposed mandatory code, opposed by many builders, real estate lobbyists and homeowners, ended up voluntary.

At the same time, Mississippi has helped coastal towns develop creative plans for rebuilding more intelligently. New Orleans, however, still has no central agency or person in charge of rebuilding. The city's planning office is down to nine people, from 24 before Katrina, and it really needs 65, according to the American Planning Association. And the imperative to rebuild the wetlands that protect against storms, much discussed in the weeks after Katrina and just as important as the levees, gets less attention every day. Worst

become a point of pride, of dignity—just the opposite of what it should be. When a planning panel brought in by Nagin's Bring Back New Orleans Commission—comprising 50 specialists in urban and post-disaster planning—late last year proposed holding off on redeveloping places that had flooded repeatedly until residents had more information, the traumatized population recoiled as one. The city council quickly passed a defiant and suicidal resolution: "All neighborhoods [should] be included in the timely and simultaneous rebuilding of all New Orleans neighborhoods."

■ A National Culture of Unpreparedness

IN THE 12 MONTHS SINCE KATRINA, THE REST OF THE U.S. HAS NOT proved to be a quicker study than the Gulf Coast. There is still no federal law requiring state and local officials to plan for the evacuation of the sick, elderly, disabled or poor. But in the past few months, both houses of Congress triumphantly passed bills that require locals to plan for the evacuation of pets.

In June the Department of Homeland Security (DHS) released an unprecedented analysis of state and urban emergency plans

City, N.J., force the evacuation of more than 3 million people and cost more than twice as much as Katrina. An insurance-industry risk assessment ranked New York City as No. 2 on a list of the worst places for a hurricane to strike; Miami came in first. But in a June survey measuring the readiness of 4,200 insured homeowners living in hurricane zones, New Yorkers came in second to last. They had taken only about a third of eight basic steps to protect themselves from a major storm (such as getting flood insurance or putting together a disaster evacuation plan or kit).

The conventional wisdom after Katrina was that most of the people who failed to evacuate were too poor to do so. But a recent survey of more than 2,000 respondents in eight hurricane-prone states showed that other forces may also be at play. The survey, led by Robert Blendon, professor of health policy and political analysis at the Harvard School of Public Health, attempted to determine what, if anything, would pry people from their homes in the face of another Katrina. Overall, 33% said they would not leave or were not sure whether they would leave if an evacuation order was given. But it was homeowners, at 39%, who were particularly stubborn.

Hurricanes

More than 130 million Americans—almost half the population—live in the path of future hurricanes

Number of hurricanes expected in a 100-year period

- 20 to 40
- 40 to 60
- More than 60

Earthquakes

The risk spreads far beyond the West Coast. More than 75 million people in 39 states live in potential quake zones

Probability of strong shaking in a 100-year period

- Very low
- Moderate
- High

Floods

Americans like to live near water, but most bodies of water can—and repeatedly do—flood

Presidential flood-disaster declarations, 1965-2003

- One
- Two
- Three
- Four or more

Wildfires

As development spreads, we fight wildfires to protect property. But that leaves more fuel behind for more fires to damage more property

- Wildfires of more than 250 acres, 1980-2003

Source: USGS

Granted, some amount of delusion is probably part of the human condition. In A.D. 63, Pompeii was seriously damaged by an earthquake, and the locals immediately went to work rebuilding, in the same spot—until they were buried altogether by a volcano 16 years later. But a review of the past year in disaster history suggests that modern Americans are particularly, mysteriously bad at protecting themselves from guaranteed threats. We know more than we ever did about the dangers we face. But it turns out that in times of crisis, our greatest enemy is rarely the storm, the quake or the surge itself. More often, it is ourselves.

■ A Tour of the American Hazardscape

SO WHAT HAS HAPPENED IN THE YEAR THAT FOLLOWED THE CARNIVAL of negligence on the Gulf Coast? In New Orleans, the Army Corps of Engineers has worked day and night—like men bailing a sinking ship, literally—to rebuild the bulwarks. They have got the flood walls and levees to where they were before Katrina, more or less. That's, er, not enough, we can now say with confidence. But it may be all that can be expected from one year of hustle.

Meanwhile, New Orleans officials have, to their credit, crafted a plan to use buses and trains to evacuate the sick, the disabled and the carless before the next big hurricane. The city estimates that 15,000 people will need a ride out. However, state officials have not yet determined where the trains and buses will take everyone. The negotiations with neighboring communities are ongoing and difficult.

More encouraging is the fact that Louisiana Governor Kath-

of all, Mayor Ray Nagin and the city council are still not talking honestly about the fact that New Orleans will have to occupy a much smaller footprint in the future. It simply can't provide city services across its old boundaries, and its old boundaries cannot realistically be defended against a major storm anytime soon.

Here is the reality of New Orleans' risk profile, present and future: Donald Powell, the banker appointed by President George W. Bush to run the reconstruction effort, said last December, "The Federal Government is committed to building the best levee system known in the world." As of right now, the Corps plans to spend \$6 billion to make sure that by 2010, the city will (probably) be flooded only once every 100 years. That's not close to the best in the world. The Netherlands has a system designed to protect populated areas against anything but a 1-in-10,000-years flood. Alternatively, the Corps could build 1-in-500-year protection for the city, but that would cost about \$30 billion, says Ivor van Heerden, deputy director of Louisiana State University's Hurricane Center.

It may be unfair, but this is the reality New Orleans leaders should be talking about. In a TIME poll of 1,000 Americans taken this month, 56% said they did not think all of New Orleans should be rebuilt if it might flood again. But in New Orleans, a city cut through with racial distrust and anger over the Corps' faulty levees, the same conversation is laced with suspicion. There is enough high ground in New Orleans for the city to relocate the entire pre-Katrina population more safely. The mostly African-American Lower Ninth Ward could still exist; it would just need to be smaller. But for many locals, rebuilding in the same doomed locations has

around the country, including assessments of evacuation plans and command structures. The report concluded that most "cannot be characterized as fully adequate, feasible, or acceptable." Among the worst performers: Dallas, New Orleans and Oklahoma City. (The best by far was the state of Florida.)

But it's not just bureaucrats who are unprepared for calamity. Regular people are even less likely to plan ahead. In this month's TIME poll, about half of those surveyed said they had personally experienced a natural disaster or public emergency. But only 16% said they were "very well prepared" for the next one. Of the rest, about half explained their lack of preparedness by saying they don't live in a high-risk area.

In fact, 91% of Americans live in places at a moderate-to-high risk of earthquakes, volcanoes, tornadoes, wildfires, hurricanes, flooding, high-wind damage or terrorism, according to an estimate calculated for TIME by the Hazards and Vulnerability Research Institute at the University of South Carolina. But Americans have a tendency to be die-hard optimists, literally. It is part of what makes the country great—and vincible. "There are four stages of denial," says Eric Holdeman, director of emergency management for Seattle's King County, which faces a significant earthquake threat. "One is, it won't happen. Two is, if it does happen, it won't happen to me. Three: if it does happen to me, it won't be that bad. And four: if it happens to me and it's bad, there's nothing I can do to stop it anyway."

Here's one thing we know: a serious hurricane is due to strike New York City, just as one did in 1821 and 1938. Experts predict that such a storm would swamp lower Manhattan, Brooklyn and Jersey

Lack of funds or transportation does play a role for stay-behinds, but according to the poll, a greater consideration is a vague belief that their home is built well enough to survive a storm—a justification offered by a whopping 68%.

People cherry-pick the lessons of Katrina to avoid taking action. Fifty-four percent of those who say they wouldn't evacuate are worried that the roads would be too crowded, and 67% believe shelters would be dangerous. That's understandable, unfortunately. One of the most damaging legacies of Katrina might be the TV images of looting and the graphic rumors of violence that crystallized our belief that we turn into savages in a disaster—a notion that is demonstrably untrue; after most disasters, including Katrina, the crime rate goes down. Ironically, 66% of those surveyed were also confident that if they stayed at home, they would eventually be rescued—a faith hardly justified by the Katrina experience. Ours is a strange culture of irrational distrust—buoyed by irrational optimism.

Heat waves bring out the same kind of self-delusion. Scott Sheridan, professor of geography at Kent State University, has studied heat-wave behavior—focusing particularly on seniors, who are at special risk in hot weather—in Philadelphia; Phoenix, Ariz.; Toronto; and Dayton, Ohio. He found that less than half of people 65 and older abide by heat-emergency recommendations like drinking lots of water. Reason: they don't consider themselves seniors. "Heat doesn't bother me much, but I worry about my neighbors," said an older respondent.

That optimism helps explain why construction along the Gulf Coast of Mexico and both coasts of Florida continues to boom, even

though hurricane season is an annual affair. Keep in mind that dense coastal construction is the main reason storms are causing more and more damage every year in the U.S. More than 50% of Americans live in coastal areas, which means heavy weather increasingly runs into people and property. Also, the elimination of wetlands to make room for development means there's less and less of a buffer zone to absorb storm surges and mitigate damage. So our biggest problem is not the weather but our romantic urge to live near water.

Trickle-Down Apathy

WHEN AMERICANS CANNOT BE TRUSTED TO SAVE THEMSELVES, THE government does it for them—at least that's the story of mandatory car insurance, seat-belt laws and smoking bans. But when it comes to preventing disasters, the rules are different. The message, says Paul Farmer, executive director of the American Planning Association, is consistent: "We will help you build where you shouldn't, we'll rescue you when things go wrong, and then we'll help you rebuild again in the same place."

In New Orleans, for example, many people in positions of power knew full well that the entire city should not be rebuilt after Katrina. They were quietly counting on the Federal Government to play the heavy. FEMA was expected to release new building rules for the first time since 1984. The rules would determine which areas and structures the Federal Government would insure against floods. Everything else would be lost, and the feds would be the perfect scapegoats. In April FEMA released its new guidelines. But instead of banning development in areas that are extremely likely to flood again, FEMA blinked. The major new requirement was that some houses be built 3 ft. off the ground—even though Katrina flooded up to 20 ft. in some neighborhoods.

Nationwide, only 20% of American homes at risk for floods are covered by flood insurance. Private insurers largely refuse to offer it because floods are such a sure thing. In certain flood-prone areas, the Federal Government requires people to buy policies from the government's National Flood Insurance Program to get a mortgage loan. But the program has never worked even remotely as insurance should. It has never priced people out of living in insanely risky areas. Instead, too few places are included in the must-insure category, and premiums are kept artificially low. This year, despite brave talk about finally fixing the program, Congress caved in to short-sighted constituents and real estate interests and failed to make major changes.

It may not be reassuring to hear that America's handicaps in this area are as old as the country itself. A federal system like ours is not built to plan for—or respond to—massive disasters, concedes George Foresman, the country's new Under Secretary for Preparedness. "Everything we're trying to do goes counter to how the Founding Fathers designed the system," he says, sitting in his office on the DHS campus in Washington, surrounded by pie charts documenting what needs fixing. Unlike other, more centralized governments, ours cannot easily force states or companies to act. And when the feds try to demand changes anyway, state and local officials bristle at the interference. Like teenagers, we resent paternalism—until we're in trouble. Then we expect to be taken care of.

Before he was appointed by President Bush to the new, post-Katrina preparedness job, Foresman spent more than 22 years in emergency-management in Virginia. His hiring in December was one of the few bright spots of the past 12 months, say veteran emergency planners who know him. He understands the importance of

preparing for all kinds of disasters, not just terrorist attacks. But he does not soft-sell the challenge ahead. "Frankly, the American public doesn't do well with being told what not to do," he says. With reason: before James Lee Witt became FEMA director under President Bill Clinton, he was county judge in Yell County, Ark. In 1983 he made the mistake of trying to get the county to participate in the national flood-insurance program. "I almost got cremated by farmers. [They were] saying, 'Ain't no way in hell I'm going to let the Federal Government tell me where I can build a barn,'" he says.

If the feds want something to change, they have to suggest it—nicely. After the 1993 floods in the Midwest, the Federal Government, under Witt's direction, managed to do something rare: it offered to buy out flood-prone properties to prevent repeat disasters. Several communities accepted, and the government, in partnership with the state, bought back 25,000 properties. The thousands of acres left behind were converted into wetlands, which act like a sponge in storms. In 1995 the floods came again. "And guess what?" says Witt. "We never spent one dime on responding. Nobody lost everything they worked for."

Today relations between the different levels of government are at a low point. The natural tensions of a federal system have been exacerbated by an Administration that distrusts government even more than the average voter does. President Bush did not want to establish DHS to begin with. When he was pressured to do it anyway, he created a department weak in leadership, autonomy and funding.

So although DHS has received an unprecedented amount of money for emergency management, it's a fraction of what most security experts think is necessary. And most of the money has gone toward counterterrorism. While some counterterrorism equipment can be useful in other kinds of disasters, the money cannot be used to pay the salaries of state and local employees. That would violate an ideological position against making the Federal Government bigger (even though the Federal Government has grown under the Bush Administration through

other outlays, like military and education spending). So \$18 billion has gone out to states and cities, but most of it has been spent on shiny equipment like haz-mat suits and X-ray machines—even in cities that desperately need police and firefighters instead. Only 20% has gone to planning and training, which Foresman himself admits is not enough.

At the close of the Boulder workshop this year, Kathleen Tierney, head of the Natural Hazards Center, stood up to say, "We as human societies have yet to understand ... that nature doesn't care. And for that reason, we must care." She was quoting herself intentionally. She had said the same thing the year before, seven weeks before Katrina. As she spoke, her voice rose: "Here we stand one year later. Where is the political will to protect lives and property?"

Then Tierney announced the hotly anticipated results of the Next Big One contest. There were some outliers. One person predicted that a gamma-ray flare would kill 90% of the earth's species. That is what is known in the disaster community as a hilarious joke. But the winner, with 32% of the votes, was once again a hurricane. After all, eight of the 10 costliest disasters in U.S. history have been hurricanes. This time, most of the hurricane voters predicted that the storm would devastate the East Coast, including New York City. History has left us all the clues we need. Now we wait for the heartbreak. —With reporting by Jeffrey Kluger/New York

Despite Katrina,
most Americans
believe their
homes will
endure a storm