

SCIENCE

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Irma May Have Been the Bigger Storm, but the Damage From Harvey's Storm Surge Will Last for Years

Reporters who covered both storms explain what it was like to be in the eye of two hurricanes, and what it will be like to rebuild.

By *Eleanor Cummins*



A weather reporter clings on to a railing to illustrate the force of the winds caused by Hurricane Irma as it arrived in Miami on Sunday.

Marcus Yam/*Los Angeles Times* via Getty Images

Hurricane Harvey and Hurricane Irma are the only Category 4 Atlantic storms to ever **hit the United**

States in the same year—let alone the same two weeks. Their landfalls turned the past few weeks into an emotional maelstrom of displacement, **property damage**, and conversations about **climate change**. While the full impact of the two storms is still being tallied up, journalists who were on the scene to cover both believe the back-to-back disasters also serve as a testament to the overwhelming damage water can do to our homes, and lives.

Despite a swirl slightly less imposing than Irma's, Harvey punched above its weight. The storm **killed more than 70 people** and caused billions of dollars in damage. "It just looked a lot worse, just an ongoing crisis in Houston," says Jorge Ribas, a video journalist for the *Washington Post* who covered both Harvey and Irma. "That's not to diminish what happened here with Irma, but ... when we were in Lumberton, Texas, we were driving in boats and the water was at the top of stop signs, you know, covering street signs. I've never seen anything like that."

No one else has, either. Current calculations suggest Hurricane Harvey dumped an unprecedented **27 trillion gallons of water** on Texas and Louisiana. Parts of Houston received almost 53 inches of rain, breaking a record for rainfall in the continental United States and forcing the National Weather Service to **rewrite its color-coding system**. And weeks after the storm, things just keep getting worse: The storm water has been **slow to drain** and is getting dirtier by the day.

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Early samples of Houston's floodwater **tested positive for *E. coli***, likely from leaking sewage, according to an analysis paid for by the *New York Times*. Doctors in Texas have reported an increase in emergency room visits for cellulitis, an infection that results in red and irritated skin, and can be exacerbated by exposure to contaminated water. Traces of heavy metals including lead and arsenic were also detected in standing water at higher levels than is normal, the *Times* reported, though exact levels and risk are still unclear.

These early tests harken back to the aftermath of Hurricane Katrina, which walloped New Orleans with **floods 10-foot deep**, providing plentiful breeding grounds for disease. In the days following the historic 2005 storm, standing water in the bayou turned similarly toxic, resulting in at least **30 cases of MRSA**, a drug-resistant bug that typically preys on people with open wounds and weakened immune systems, and five deaths from infection with *Vibrio* viruses, which are usually relegated to undercooked seafood but can attack the immune system through open wounds. And that wasn't the only health damage. Katrina's floods also resulted in **long-term mold damage** to remaining buildings, causing inflammation, asthma, and allergies. The hope, then, is that lessons in public health and disaster response learned during Katrina will help Texans in this critical time.

By contrast, in the wake of Hurricane Irma, Florida found, at least according to a headline in *USA Today* that temporarily declared "**damage but no disaster**" (it was later changed). If that's even true in Florida, which some residents would surely contest, it's partly the result of the chance fact that Irma ended up pummeling the Caribbean and then lost steam on its way to the Sunshine State. Irma was most remarkable in terms of the strength of the storm, meaning it was wind, not water, that exacted the most damage. While the Federal Emergency Management Agency estimates Irma's whipping winds racked up a **\$14 billion bill**, raging floods and their associated horrors were **surprisingly scattered and subdued**.

Still, the relative horror of one hurricane or another is difficult to determine, akin to comparing rotten apples to rotten Florida oranges. In its wake, Irma left at **least 23 dead in the mainland United States** and **more than 30 dead in the Caribbean**. And, while it's unlikely to rival the damage seen in **flood-prone Houston**, pockets from Jacksonville, Florida, to Charleston, South Carolina, **experienced historic deluges**. Waterborne illness may also start floating there, too.

Assessing and comparing the size of each storm is relatively meaningless for the individuals who weathered them, says Tamara Lush of the Associated Press, who lives in Irma's path but also covered Harvey. The distinction between damage and disaster, she says, is razor-thin. Lush knew from experience covering Hurricane Katrina and other tropical storms that she must come prepared—with water, snacks, and a lot of composure. “You do have to have a certain level of detachment so you don't fall to pieces at the end of your day in your hotel room,” she says.

But that detachment became impossible when Irma barreled down on her own home in St. Petersburg, Florida, just outside of the mandatory evacuation zone, as Lush **chronicled in a “storm diary”** for the AP. Though her home made it through relatively unscathed, the experience of reporting on Irma, while also dealing with felled trees and debris surrounding her house, drained her in a way other storms hadn't.

Right now, people are rightfully focused on the immediate problems at hand. The full extent of the damage in the Caribbean has yet to be assessed, let alone remedied. In Texas, many are still displaced by the floods and those who have made it home have found their water-damaged houses in shambles. And Floridians, meanwhile, are focused on finding out when their power—**and, crucially, their A/C**—will return.

Economically, FEMA, the agency responsible for bailing people out of disasters like these, is **billions of dollars in debt** after disasters like Hurricane Katrina and Superstorm Sandy. And environmentally, we know that **extreme weather events** like these are on the rise as climate change accelerates. What happens to these battered Gulf states next is anyone's guess. End times, as science fiction writer John Scalzi put it, may indeed have **gotten in a few dress rehearsals** this week. But most of the people displaced by these storms are settling back in for the rest of the show.