

Flood Mitigation & Communication: Thinking Outside the Water Lines

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Joe Raedle/Getty Images

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Q: What was the costliest U.S. weather disaster of 2016?

A: Louisiana's "no-name" flood of August
Slow-moving, unclassified, unnamed system with impacts greater than most hurricanes

- > 30,000 water rescues
- 13 deaths, \$10-15B in damage
- ~146,000 homes damaged/destroyed



DigitalGlobe via Getty Images

More than \$2 billion paid out by National Flood Insurance Program— but vast majority of affected homeowners **did not have NFIP insurance**

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Some thoughts from wearing various "hats"


atmospheric science:

Tools for prediction and warning continue to improve

Long-range outlooks based on numerical models successfully caught the Louisiana threat almost a week in advance

National Water Model (with open-source toolkit for multi-sector use) is kicking off a new era of detailed guidance

Social science is making a difference (e.g., new storm-surge warning/inundation products from Nat'l Hurricane Center)



Current Capabilities: Predicted Hourly Rainfall Output at 200 kilometers
Future Capabilities: Subhourly River Forecast Output for 12,000 watersheds and associated flood hazards

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journalism:

The flood story remains a challenge

In most cases, flooding isn't as visually compelling as a tornado or hurricane winds.

When did you last see a "flood chaser" interviewed?

When did you last see a TV station break into programming with a flood warning or a flood watch? (NY: Marshall Shepherd)



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resiliency:

Information is power! How do we ensure that citizens have it?

For example, in a number of U.S. states, home sellers are *not legally obliged* to disclose the established flooding risk of their properties.

It's even difficult to find out which states do and don't have such a requirement.




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Mitigating flood risk is a distinctly multifaceted challenge

Flooding is shaped by:

- the intersection of our built environment and the fluid atmosphere
- a huge range of time and spatial scales (from a few minutes in a creekbed to weeks across thousands of sq km)
- coastal and inland processes that are affected by climate change in different ways (sea-level rise vs. intensified precipitation rates)



The many interfacing specialties and specialists means that clear communication—among experts, and with the public—is especially important!

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Sean Rayford/Getty Images

Flooding is our nation's deadliest and most expensive natural hazard. Climate change & development are adding to the threat.

The more we acknowledge and communicate this, the better chance we'll have to build a stronger chain of expertise for mitigating flood loss and injury—from observations and warnings to floodplain management and financial strategies.

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