

# Troubled forecasters seek way to improve tornado warnings

May 3 2015, by Kelly P. Kissel

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In this April 30, 2014 file photo, Dustin Shaw lifts debris as he searches through what is left of his sister's house in Vilonia, Ark. Forecasters who are troubled by the high death count from twisters in recent years say they must find better ways to communicate if the public is going to behave appropriately as bad weather approaches. (AP Photo/Danny Johnston, File)

Forecasters troubled by the high death count from twisters in Alabama and Joplin, Missouri, four years ago say they must put away their "nerd-

speak" and find better ways to communicate if the public is going to react appropriately when bad weather approaches.

There once was a time when warnings went out after a tornado was on the ground. Forecasters now sometimes give 15 minutes' notice or more, and advances in technology help relay word automatically to emergency managers, media outlets and smart phones.

But when 158 people died in one storm in Joplin on May 22, 2011—three weeks after 316 people died in the southern Appalachians—forecasters knew something else had to be done.

The nation ended 2011 with its second-highest tornado death toll on record, 553. The highest death toll was 794 tornado fatalities in 1925, well before advanced technology helped forecasters.

"We're not giving up," John Murphy, the National Weather Service's [chief operating officer](#), said as he visited researchers at the National Weather Center in Norman. "We're working with social scientists on what it will take to help get the sorts of behavior we're looking for," such as going to the basement when a tornado is moving through.

To encourage safe behavior, the [weather service](#) wants its social sciences on a par with its physical sciences.



In this April 29, 2014 file photo, Louie Short walks through rubble that is all that remains of his Mayflower, Ark., home. Short's arm was injured in a tornado that struck his neighborhood killing one man. Forecasters who are troubled by the high death count from twisters in recent years say they must find better ways to communicate if the public is going to behave appropriately as bad weather approaches. (AP Photo/Danny Johnston, File)

"We don't want to have the same system we've had for 20-30 years," Richard Spinrad, the chief scientist at the National Oceanic and Atmospheric Administration, said last week at the National Weather Center, which houses the Storm Prediction Center and National Severe Storms Laboratory.

Three research projects unveiled last week each combine data from different sources to increase lead times. A fourth suggests a new way to warn about threats: assess risk in each 1-square-kilometer area, calculate it as a percentage and then perhaps relay that number to an app on

smartphones. Updates each minute or two would show whether the threat was increasing.

The idea intrigues David Henderson, a city councilman in Mayflower, Arkansas. Last April, his city of 2,200 and nearby Vilonia were hit by the nation's deadliest tornado since a 2013 twister struck a Moore elementary school. Sixteen people died in the central Arkansas storm.

"When weather alerts go off, people have to make a decision," Henderson said. "If you have an elderly person, they may not have time to get to a shelter," so having a way to know about an increasing risk before a formal tornado warning goes up could help.

The project, known now as FACETS for "Forecasting a Continuum of Environmental Threats," could especially help hospitals or nursing homes, where dozens or hundreds of people would have to be moved in advance of a storm, said Lans Rothfusz, NSSL's deputy director.

A name change may be in order, too.

"We have to back away from the nerd-speak," said Craig McLean, the agency's assistant administrator for oceanic and atmospheric research. "We have to put plain language out so people will readily understand what is the nature of their risk and what type of either preparation or evasive action they need to take and how soon."

Murphy's question after the 2011 storms—"Why didn't people react?"—was rhetorical, relevant and hard to answer when considering human nature.

"There is no one answer you can give across the scale," he said. "The analogy that I use is that, as a young guy, I used to surf, and the National Weather Service would put out high surf warnings. Well, guess what?

You know where I'm going? To the beach."

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