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# Courtesy of NOAA—03/09/09

## NOAA REPORT UNCOVERS WHY SOME PEOPLE DON'T HEED SEVERE WEATHER WARNINGS

By: NOAA/staff

[NOAA's National Weather Service](#) has issued a report that analyzes forecasting performance and public response during the second deadliest tornado outbreak in U.S. history. The report, *Service Assessment of the Super Tuesday Tornado Outbreak of February 5-6, 2008*, also addresses a key area of concern: why some people take cover while others ride out severe weather.

Dubbed the "Super Tuesday" tornado outbreak due to the presidential primary elections held that day, 82 tornadoes raked nine states throughout the South, killing 57 people, injuring 350 others and causing \$400 million in property damage.

Jack Hayes, director of NOAA's National Weather Service, included a researcher from the National Center for Atmospheric Research Societal Impacts Program on the assessment team to examine why many people did not take action to protect themselves.

In reviewing the public response, the team found that two-thirds of the victims were in mobile homes, and 60 percent did not have access to safe shelter (i.e., a basement or storm cellar). The majority of the survivors interviewed for the assessment sought shelter in the best location available to them, but most of them also did not have access to a safe shelter. Some indicated they thought the threat was minimal because February is not within traditional tornado season. Several of those interviewed said they spent time seeking confirmation and went to a safe location only after they saw a tornado. Many people minimized the threat of personal risk through "optimism bias," the belief that such bad things only happen to other people.

"Protecting life and property is not as simple as issuing a forecast," Hayes said. "A number of barriers often deter people from making risk-averse decisions, and we want to learn all we can to determine if there is more the National Weather Service can do to change this."

On forecasting performance, the assessment team found that the National Weather Service issued warnings 17 minutes, on average, in advance of all the deadly tornadoes. The agency's [Storm Prediction Center](#) had been monitoring the tornado threat for several days. Local forecast offices forewarned communities by issuing hazardous weather outlooks days in advance.

After interviewing local media and citizens in the stricken areas, the assessment team determined that local communities had received the warnings and were aware of the dangerous weather threat. People reported receiving tornado warning information through multiple sources, such as television news stations, sirens, [NOAA Weather Radio All Hazards](#) or by word of mouth. People indicated overall satisfaction with National Weather Service performance in forecasting the tornadoes and communicating the danger.

According to the assessment team's recommendation, the National Weather Service will improve wording and call-to-action statements to more effectively convey the urgency and danger of the message. The agency also will continue using social science research in future service assessments to further understand people's interpretation of and response to severe weather situations, and to improve public response to severe weather communication.

Use of societal impact studies is useful for weather phenomena other than tornadoes. In September 2008 dozens of people died when Hurricane Ike struck Galveston, Texas, even after the weather forecast office in Houston issued a dire warning to residents to heed evacuation orders.

The National Weather Service routinely conducts assessments of agency performance during severe weather events in an effort to improve operations and determine best practices. Within days after the weather event, the agency sends a team into the field to interview citizens, emergency managers, the media, and others in affected areas. The team then compiles all findings and develops an assessment report, which contains analyses of the local Weather Service forecast office's performance in forecasting the weather and communicating the public safety threat. Best practices and recommendations are shared throughout the agency to improve performance during future severe weather events.

NOAA understands and predicts changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and conserves and manages our coastal and marine resources.



(Credit: NOAA)



(Credit: NOAA)



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