

Hurricane weather system fails to communicate dangers from flooding

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The Lumber River overflows onto a stretch of Interstate 95 in Lumberton, North Carolina, September 18, 2018, following flooding from Hurricane Florence. Photo by: Gerry Broome/AP Photo

TRENTON, North Carolina — Wayne Mills lives in New Bern, North Carolina. He decided to stay home after Hurricane Florence was downgraded from a strong Category 4 storm to a Category 1. He thought the lower category number meant the storm was less dangerous.

Now, though, he wishes he had left. On Sunday, September 16, the nearby Neuse River had risen and was almost at his door.

Scientists give hurricanes a number based on the speed of its wind. People like Mills often think a lower number means a safer hurricane. Those ratings, however, are based on wind strength. They do not measure rainfall or stronger ocean waves. Heavy rainfall is quite dangerous. Water causes almost all storm deaths.

Weather and disaster experts say that the hurricane rating scale needs to change. The current scale is the Saffir-Simpson Hurricane Wind Scale. The scale goes from a weak Category 1 to a strong and

dangerous Category 5. Since the scale focuses on wind, it is not good at explaining the danger of storms with heavy rainfall.

Misleading Terms

"The concept of saying 'downgraded' or 'weakened' should be forever banished," said Marshall Shepherd. He is a weather scientist who teaches at the University of Georgia. "With Florence, I felt it was more dangerous after it was lowered to Category 2."

Famous Roberts is a prison guard from Trenton, North Carolina. When he heard that Florence was a Category 2 instead of a 4, he decided to stay behind. "Like a lot of people (we) didn't think it was actually going to be as bad," he said.

A hurricane gets a higher number on the Saffir-Simpson Hurricane Wind scale as the winds get faster and faster. As a Category 1, Hurricane Florence was not particularly windy. So far, though, the storm has dumped nearly three feet of rain in parts of North Carolina. It also rained nearly two feet in sections of South Carolina.

Brian McNoldy is an expert on hurricanes. He pointed out that there is more to hurricanes than wind. People could be trapped in the floodwaters.

More To Hurricanes Than Wind

Susan Cutter runs the Hazards and Vulnerability Research Institute at the University of South Carolina. The center trains scientists to respond to natural disasters. She said the hurricane center and National Weather Service are not good at explaining dangers besides wind.

One reason, she said, is that it is much harder to explain all the other facts. Wind is easy.

The National Oceanic and Atmospheric Administration, or NOAA, is a government agency that watches the weather and the ocean. It says it takes all storm dangers seriously and tells people about them. Bill Lapenta works at the NOAA. He said that weather experts were warning people before Florence hit that it would be a "major flooding event."

Shepherd used to run the American Meteorological Society, a group of weather scientists. He said the weather service did a great job at predicting what Hurricane Florence would do. He also thinks they tried hard to explain the risk. Somehow, though the message is not getting through.

Wayne Mills, for example, did not understand. If the storm stayed a Category 4, Mills said, "I definitely would have left."

Better Communication Needed

Cutter and Shepherd said the weather service needs to improve their messaging. They should work with social scientists who study how people react and why. Lapenta said his agency does that regularly. It will do more so after Florence.

Flooding and rain will only get worse. Global warming is making hurricanes wetter and slower, so they drop more rain, Shepherd said.

Jason Senkbeil works at the University of Alabama. He studies how storms affect what people decide to do. He is working on two new hurricane scales. They use letters to describe the storm's

dangers. Florence would be an "Rs" for rainfall and strong ocean waves.

The trouble, said Senkbeil, is "rainfall just doesn't sound threatening."

Famous Roberts, though, now knows it is. "I would say for everybody to take heed," he said. "And don't take anything for granted."

Quiz

1 Which two choices are main ideas of the article?

1. *Many scientists think that there needs to be a new rating system for hurricanes.*
2. *More should be done to communicate the dangers of flooding in addition to wind.*
3. *Many people decided to stay in their homes during Hurricane Florence.*
4. *More social scientists are studying how people react to hurricanes and their effects.*

- (A) 1 and 2
(B) 2 and 3
(C) 3 and 4
(D) 1 and 4

2 Read the paragraph from the section "Misleading Terms."

A hurricane gets a higher number on the Saffir-Simpson Hurricane Wind scale as the winds get faster and faster. As a Category 1, Hurricane Florence was not particularly windy. So far, though, the storm has dumped nearly three feet of rain in parts of North Carolina. It also rained nearly two feet in sections of South Carolina.

How does this paragraph support the main idea of the article?

- (A) It illustrates that many people stayed in their homes in South Carolina.
(B) It introduces the categories on the Saffir-Simpson Hurricane Wind scale.
(C) It explains that Florence was very dangerous even though it had the lowest rating.
(D) It explores the possibility that there will continue to be flooding in North Carolina.

3 What kinds of evidence does the author use to support the idea that weather services are not good at explaining the flooding dangers of hurricanes?

- (A) documentary evidence and images
(B) quoted anecdotes and expert opinions
(C) mathematical data and statistics
(D) historical accounts and stories

4 Read the list of sentences from the article.

1. *Scientists give hurricanes a number based on the speed of its wind.*
2. *Water causes almost all storm deaths.*
3. *He pointed out that there is more to hurricanes than wind.*
4. *One reason, she said, is that it is much harder to explain all the other facts.*

Which sentence supports the author's claim that hurricane ratings based on rainfall are important?

- (A) sentence 1 by describing the current ratings
(B) sentence 2 by showing the danger of water
(C) sentence 3 by providing expert opinions on wind
(D) sentence 4 by explaining why rating hurricanes is hard