

Why was Hurricane Lane so unpredictable?

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Hawaii's Big Island is experiencing severe flooding as of Friday morning, leaving many surprised or unprepared, as the path of Hurricane Lane was looking unpredictable earlier in the week. Why can these storms be so hard to predict?

Models that forecast the path of a [storm](#) are fairly accurate, but they're not as good at predicting changes in intensity, said Dan Chavas, a professor of earth, atmospheric and planetary sciences at Purdue University.

"As Lane approaches Hawaii it will encounter a significant increase in wind shear – changes in wind speed and direction in the lowest 10 kilometers of the atmosphere – which we expect will cause the storm to weaken," Chavas said. "But since our models perform less well in predicting changes in intensity, people should be cautious."

Although models are generally good at predicting the path of a storm, they're not perfect, and even a small error could have a major impact. The storm brought in enormous amounts of wind and rain despite not coming particularly close to the island. The steep topography of Hawaii could make matters worse, potentially causing serious damage from flooding and erosion, said Chavas.

Hurricane Lane briefly became a Category 5 storm, although it's weakened to a Category 2 as of Friday afternoon. Five is the highest category for classifying [hurricane intensity](#), in which catastrophic damage will occur. Storms of this intensity are rare for Hawaii – only two have ever been recorded within 350 miles of the Big Island. But [climate change](#) could make storms like Lane more common.

"Sea surface temperatures are warmer than normal in the vicinity of Hawaii, which creates an environment that can support stronger storms," said Chavas. "We expect the most intense storms on Earth to become more intense."

Rising sea levels and increased precipitation are expected outcomes of climate change, which can also increase storm surge from hurricanes.

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