

# Tropical Storm Debby is expected to send flooding to the Southeast. Here's how much rain could fall

August 6 2024, by Alexa St. John

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A home in Rubonia, Fla., is surrounded by floodwater after Tropical Storm Debby swept through the area, Monday, Aug. 5, 2024, in Bradenton, Fla. Credit: Tiffany Tompkins/The Bradenton Herald via AP

Northern Florida, the coastal regions of Georgia and South Carolina and parts of North Carolina are bracing for severe rain and catastrophic flooding this week as the Debby storm system moves up and east.

Debby made landfall as a Category 1 hurricane on the Big Bend coast of Florida early Monday, first hitting the small community of Steinhatchee. It damaged homes and businesses, sent floodwaters rising, caused sweeping power outages across the state and Georgia and led to several fatalities. Debby was downgraded to a tropical storm midday Monday.

But experts say the worst is yet to come as the storm system is expected to stall over the Southeast region.

## **How much rain is expected?**

Forecasters say the system could pummel the Southeast with widespread areas of up to 20 inches (51 centimeters) of rain and some totaling up to 30 inches (76 centimeters).

That would be a record-setting rainfall, shattering the record from a tropical system in 2018's Hurricane Florence. More than 23 inches (58 centimeters) of rain was recorded in South Carolina after that storm hit the Carolinas.

Although Debby was classified as a Category 1, "It really is worthy of a Category 3 or 4 rating, if you want to talk about rainfall impacts," said Jeff Masters, founder of Weather Underground, now with Yale Climate Connections. "That's going to cause a lot of damage."



Guests at the Magic Kingdom at Walt Disney World brave wind and rain as bands of weather from Hurricane Debby pass through Central Florida, Monday, Aug. 5, 2024, in Bay Lake, Fla. Credit: Joe Burbank/Orlando Sentinel via AP

## **What areas are at risk?**

Northern Florida as well as low-lying areas including Savannah, Georgia, and Hilton Head Island and Charleston, South Carolina, are expected to see the most severe flooding. North Carolina could also be impacted.

Officials in Savannah warned the area could see a month's worth of rain

in four days if the system stalls. There were also flooding concerns for Tybee Island, Georgia's largest public beach 18 miles (28.97 kilometers) east of Savannah. On top of any torrential downpours that Debby dishes out, the island could get even wetter from 2 to 4 feet of storm surge, according to the National Hurricane Center.

"We don't know how much rain is going to fall. But we have to prepare for the worst," Hilton Head Island Mayor Alan Perry said on a video posted to Facebook. "If that happens, we will see an event we have never seen on Hilton Head before."

Meanwhile, Charleston County Interim Emergency Director Ben Webster called Debby a "historic and potentially unprecedented event" three times in a 90-second briefing Monday morning.

Few places in South Carolina are as susceptible to flooding as Charleston. Much of the city and surrounding areas founded in 1670 were built on land created by using fill dirt and other debris. Rising sea levels cause a number of minor flooding events even without a storm and like many coastal cities, Charleston can't drain well.

The city doesn't expect a massive amount of flooding from the ocean, but the storm is still dangerous. Heavy rain can back up into the city, also causing flooding.



Brantley Schnabel helps his family carry sandbags to their van while preparing for Hurricane Debby at a county park, Monday, Aug. 5, 2024, in Savannah, Ga. Debby reached the Big Bend coast of Florida early Monday, bringing with it the potential for catastrophic flooding and life-threatening storm surge. Credit: AP Photo/Stephen B. Morton

## What's causing this storm to stall?

Some hurricanes make landfall and move quickly, experts say, while others slow substantially.

"Really what happened, and why the storm has stalled, is because there's basically high pressure areas to the west of the storm and to the northeast, and that's kind of pinned the storm," said Phil Klotzbach,

senior research scientist at Colorado State University's Department of Atmospheric Science. "With a hurricane you always have wind problems, but when you have a storm moving at 3 to 5 miles an hour, it's going to be over any specific location for a very long period of time, so flash flooding and just tremendous rainfall totals are going to be very likely."

Experts say the warming atmosphere plays a role in the severity of storm surges such as Debby.

Warming water in the northeast Gulf of Mexico is increasing Hurricane Debby's heavy rains, as more moisture evaporates from the waters, Masters said. Some research says climate change can impact the forward motion of hurricanes, he added, making them go slower.

"It's something we've been seeing more of lately," Masters said.



Roger Huffman's home in Bradenton's Villa Del Sol mobile home park is without power and surrounded by floodwater, Monday, Aug. 5, 2024, after Tropical Weather Debby swept through the area. Credit: Tiffany Tompkins/The Bradenton Herald via AP

## How long could this last?

The worst of the rain is expected during the first half of the week, but it could last through Saturday, forecasters said.

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