

# FEATURE

## [CLIMATE](#)

# Climate change makes storms like Ian more common



## [REBECCA HERSHER](#)

Heard on [Weekend Edition Saturday](#)

September 29, 2022 12:45 PM ET

<https://www.npr.org/2022/09/29/1125875383/climate-change-makes-storms-like-ian-more-common>



*Hurricane Ian left debris in Punta Gorda, Fla., after it made landfall. Storms like Ian are more likely because of climate change.*

*Ricardo Arduengo/AFP via Getty Images*

Hurricane Ian was just shy of a Category 5 hurricane when it barreled into Florida. The wind was strong enough to destroy homes, and

relentless storm surge and rain flooded entire neighborhoods in a matter of hours.

Storms like Ian are more likely because of human-caused climate change.

Heat is the fuel that makes hurricanes big, powerful and rainy. As humans burn fossil fuels and release huge amounts of carbon dioxide and other greenhouse gasses, the amount of heat trapped on Earth rises steadily. The air gets hotter, and the ocean water gets hotter. When a



baby hurricane forms in the Atlantic, all that heat is available to help the storm grow.

### [THE PICTURE SHOW](#)

[Photos: This is what Florida looks like after Hurricane Ian](#)

That's what happened to Ian. When the storm first formed, it was relatively weak. But as it moved over very hot water in the Caribbean and Gulf of Mexico, it grew very quickly.

### Climate change supports rapid intensification of hurricanes

Hurricane Ian went from a tropical storm to a hurricane in less than 24 hours, and then ballooned in intensity again before landfall. It went from a Category 3 storm with winds powerful enough to damage roofs, to just shy of a Category 5 storm, with winds powerful enough to remove roofs altogether.

That kind of [rapid intensification](#) has happened a lot recently, especially along the Gulf Coast of the U.S. At least one landfalling hurricane has rapidly intensified every year since 2017. Just last year, Hurricane Ida gained strength right before hitting Louisiana. It also happened to Hurricanes Harvey and Irma in 2017, Hurricane Michael in 2018 and Hurricane Laura in 2020.

Research suggests that [hurricanes that form in the Atlantic](#) are more likely to get powerful very quickly. Hot water is partly to blame, although wind conditions also play a big role. Studying exactly how global warming affects storm intensification is a major focus of climate scientists right now, given how dangerous it is when a hurricane gains strength right before hitting land.

### Climate change makes catastrophic flooding from hurricanes more likely

A warmer planet also drives more flooding from hurricanes and tropical storms. A warmer atmosphere can hold more moisture. When a storm gains power and gets very large, like Ian, it holds a gigantic amount of water vapor, which falls as rain — often hundreds or even thousands of miles from where the storm initially hits land.

Research has already shown that past storms, such as Hurricane Harvey, [dropped more rain because of climate change](#).

And the bigger the storm, the bigger the storm surge. Ian pushed a wall of water ashore in Florida. And sea level rise means that ocean water is closer to buildings and roads than it used to be. Many Florida cities experience ocean flooding even on sunny days.

Together, sea level rise and powerful, rainy storms like Ian conspire to cause catastrophic flooding across huge areas of the U.S. when a hurricane hits land.