

Dangerous brew: Ocean heat and La Nina combo likely mean more Atlantic hurricanes this summer

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Bob Givehchi, right, and his son Daniel, 8, Toronto residents visiting Miami for the first time, walk past debris and palm trees blowing in gusty winds, at Matheson Hammock Park in Coral Gables, Fla., Dec. 15, 2023. Nearly all the experts think 2024 will be one of the busiest Atlantic hurricane seasons on record. Credit: AP Photo/Rebecca Blackwell, File

Get ready for what nearly all the experts think will be one of the busiest Atlantic hurricane seasons on record, thanks to unprecedented ocean heat and a brewing La Niña.

There's an 85% chance that the Atlantic hurricane season that starts in June will be above average in storm activity, the National Oceanic and Atmospheric Administration announced Thursday in its annual outlook. The weather agency predicted between 17 and 25 named storms will brew up this summer and fall, with 8 to 13 achieving hurricane status (at least 75 mph sustained winds) and four to seven of them becoming major hurricanes, with at least 111 mph winds.

An average Atlantic hurricane season produces 14 named storms, seven of them hurricanes and three [major hurricanes](#).

"This season is looking to be an extraordinary one in a number of ways," NOAA Administrator Rick Spinrad said. He said this forecast is the busiest in the 25 years that NOAA has been issuing in May. The agency updates its forecasts each August.

About 20 other groups—universities, other governments, private weather companies—also have made seasonal forecasts. All but two expect a busier, nastier summer and fall for hurricanes. The [average of those other forecasts is about 11 hurricanes](#), or about 50% more than in a normal year.

"All the ingredients are definitely in place to have an [active season](#)," National Weather Service Director Ken Graham said. "It's a reason to be concerned, of course, but not alarmed."

What people should be most concerned about is water because 90% of hurricane deaths are in water and they are preventable, Graham said.

When meteorologists look at how busy a hurricane season is, two factors matter most: [ocean temperatures](#) in the Atlantic where storms spin up and need [warm water](#) for fuel, and whether there is a La Niña or El Niño, the natural and periodic cooling or warming of Pacific Ocean waters that changes weather patterns worldwide. A La Niña tends to turbocharge Atlantic [storm activity](#) while depressing storminess in the Pacific and an El Niño does the opposite.

La Niña usually reduces high-altitude winds that can decapitate hurricanes, and generally during a La Niña there's more instability or storminess in the atmosphere, which can seed hurricane development. Storms get their energy from hot water. Ocean waters have been record warm for 13 months in a row and a La Niña is forecast to arrive by mid to late summer. The current El Niño is dwindling and is expected to be gone within a month or so.

"We've never had a La Niña combined with ocean temperatures this warm in recorded history so that's a little ominous," said University of Miami tropical meteorology researcher Brian McNoldy.



A home which came off its blocks sits partially submerged in a canal, in Horseshoe Beach, Fla., Friday, Sept. 1, 2023, two days after the passage of Hurricane Idalia. Nearly all the experts think 2024 will be one of the busiest Atlantic hurricane seasons on record. Credit: AP Photo/Rebecca Blackwell, File

This May, ocean heat in the main area where hurricanes develop has been as high as it usually is in mid-August. "That's crazy," McNoldy said. It's both record warm on the [ocean surface](#) and at depths, which "is looking a little scary."

He said he wouldn't be surprised to see storms earlier than normal this year as a result. Peak hurricane season usually is mid-August to mid-October with the official season starting June 1 and ending Nov. 30.

A year ago, the two factors were opposing each other. Instead of a La Niña, there was a strong El Niño, which usually inhibits storminess a bit. Experts said at the time they weren't sure which of those factors would win out.

Warm water won. Last year had 20 named storms, [the fourth-highest since 1950](#) and far more than the average of 14. An overall measurement of strength, duration and frequency of storms had last season at 17% bigger than normal.

Record hot water seems to be key, McNoldy said.

"Things really went off the rails last spring (2023) and they haven't gotten back to the rails since then," McNoldy said.

"Hurricanes live off of warm ocean water," said Colorado State University hurricane researcher Phil Klotzbach. "That tends to basically be fuel for the hurricane. But also when you have the warm Atlantic what that tends to do is also force more air up over the Atlantic, more rising motion, which helps support strong thunderstorms."

A record hot ocean is bad news across the board, not just because of hurricanes but it harms shipping, important ocean currents, coral reefs and fisheries, Spinrad said.

There's the background of human-caused climate change that's making water warmer in general, but not this much warmer, McNoldy said. He said other contributors may include an undersea volcano eruption in the South Pacific in 2022, which sent millions of tons of water vapor into the air to trap heat, and a reduction in sulfur in ship fuels. The latter meant fewer particles in the air that reflect sunlight and cool the atmosphere a bit.

Seven of [the last 10 Atlantic hurricane seasons have been more active](#) than the long-term normal.



Debris from destroyed homes and structures float in a canal in Horseshoe Beach, Fla., Aug. 31, 2023, one day after the passage of Hurricane Idalia. Nearly all the experts think 2024 will be one of the busiest Atlantic hurricane seasons on record. Credit: AP Photo/Rebecca Blackwell, File

Climate change generally is making the strongest hurricanes even more intense, making storms rain more and making them rapidly intensify more, McNoldy said.

Graham, a former National Hurricane Center director, said because

warmer oceans are making storms intensify more rapidly, people need to be prepared early for everything. All the worst Category 5 hurricanes with winds greater than 156 miles per hour that have hit the United States weren't even strong enough to be hurricanes three days prior to landfall.

Klotzbach and his team at Colorado State University—which pioneered hurricane season forecasting—gave a 62% probability that the United States will be hit with a major hurricane with winds of at least 111 mph. Normally the chance is 43%. The Caribbean has a two-out-of-three chance of getting hit by a major hurricane and the U.S. Gulf Coast has a 42% likelihood of getting smacked by such a storm, the CSU forecast said. For the U.S. East Coast the chance of being hit by a major hurricane is 34%.

Klotzbach said he doesn't see how something could shift soon enough to prevent a busy season this year.

"The die is somewhat cast," Klotzbach said.

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