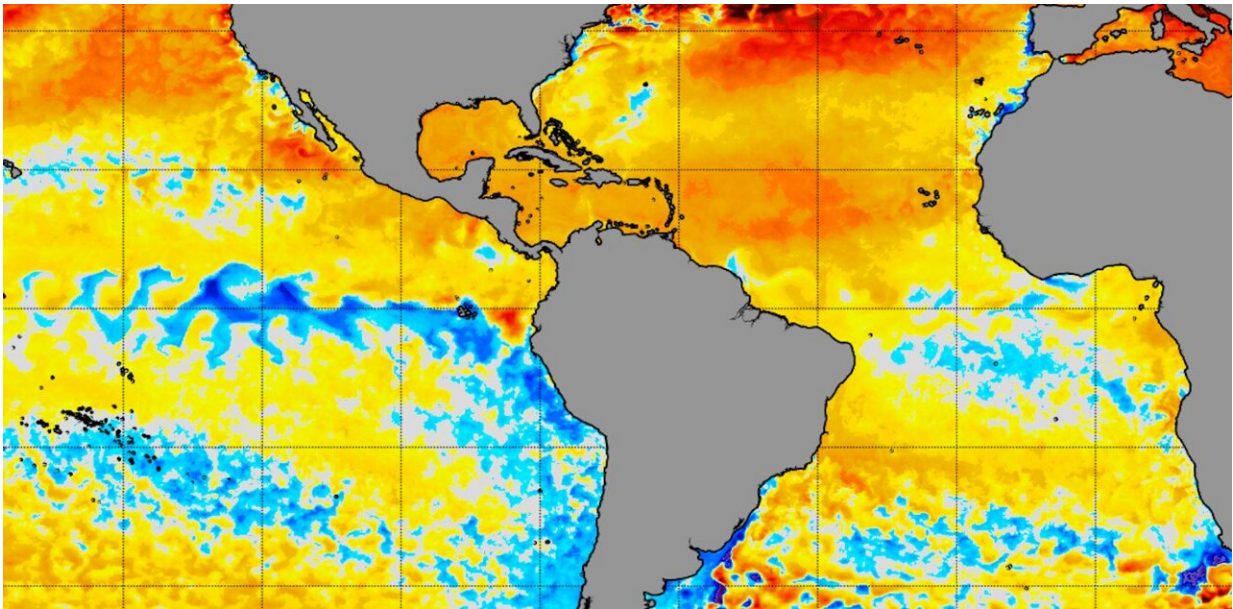


What is an Atlantic Niña? How La Niña's smaller cousin could affect hurricane season

August 28 2024, by Annalisa Bracco and Zachary Handlos



Cooling streaks indicate the potential for two Niña's at once—Pacific and Atlantic, a rare event. Credit: [NOAA Coral Reef Watch](#)

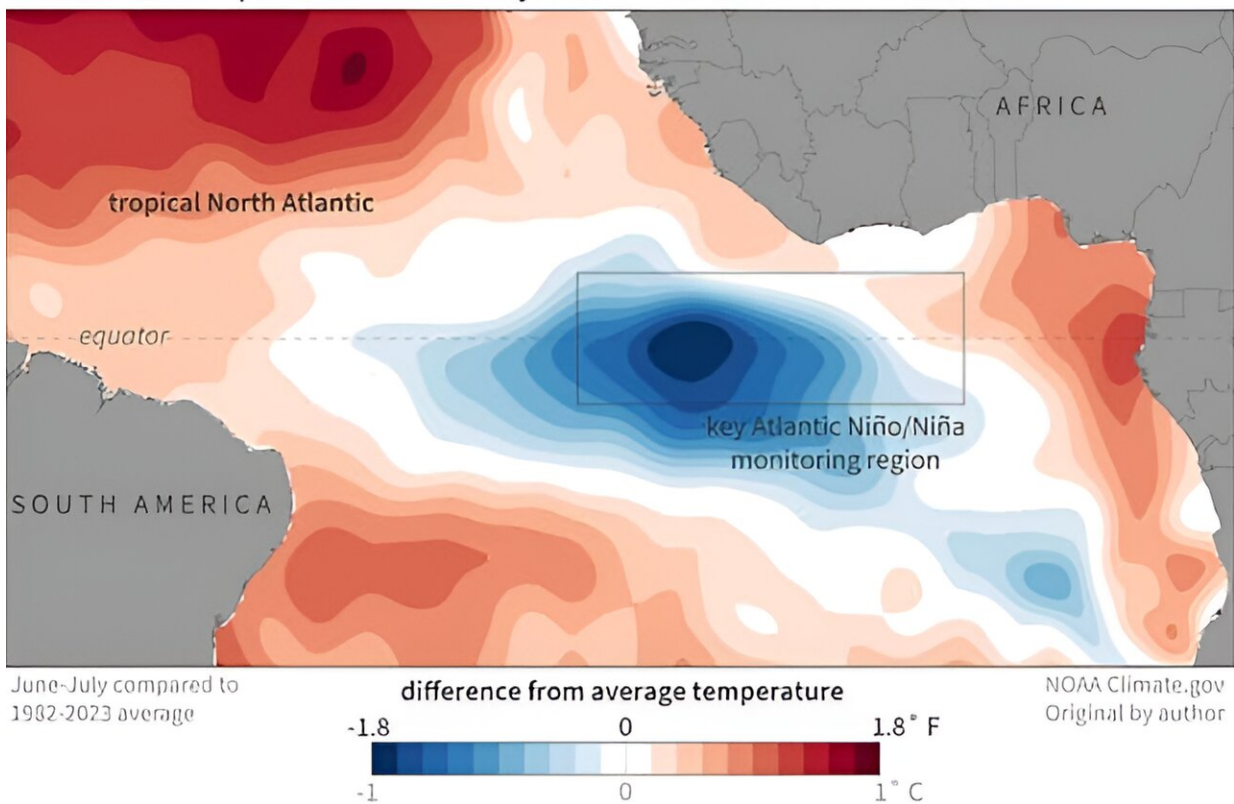
The North Atlantic Ocean has been running a fever for months, with surface temperatures [at or near record highs](#). But cooling along the equator in both the Atlantic and eastern Pacific may [finally be starting to bring some relief](#), particularly for vulnerable coral reef ecosystems.

This cooling comes from two [climate phenomena](#) with similar names: La

Niña, which forms in the tropical Pacific, and the less well-known Atlantic Niña.

Both can affect the Atlantic hurricane season. While La Niña [tends to bring conditions ideal for Atlantic hurricanes](#), the less powerful Atlantic Niña has the potential to reduce some of the hurricane risk.

Cool waters in equatorial Atlantic may become an "Atlantic Niña" event



Cooling in the tropical Atlantic along the equator is a sign an Atlantic Niña may be forming. Credit: [NOAA Climate.gov](https://www.noaa.gov)

We're [ocean](#) and [atmospheric scientists](#) who study this type of climate phenomenon. It's rare to see both Niñas at the same time, yet in August

2024, [both appeared to be developing](#). Let's take a closer look at what that means.

La Niña and its cousin, Atlantic Niña

La Niña is part of the [El Niño–Southern Oscillation](#), a well-known climate phenomenon that has widespread effects on climate and weather around the world.

During La Niña, sea [surface temperatures](#) in the tropical Pacific dip below normal. Easterly trade winds then strengthen, allowing more [cool water](#) to well up along the equator off South America. That cooling affects the atmosphere in ways that reverberate across the planet. Some areas become stormier and others drier during La Niña, and the wind shear that can tear apart Atlantic hurricanes tends to weaken.

La Niña and its warmer opposite, [El Niño](#), oscillate [every three to four years or so](#).

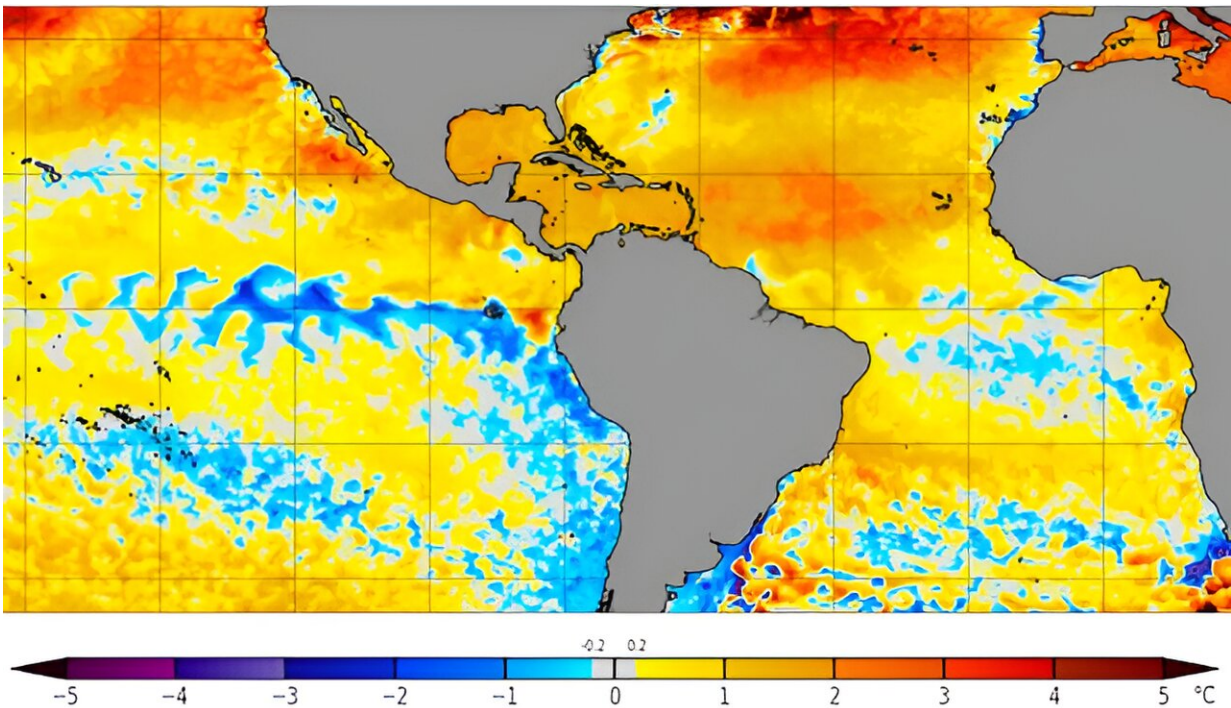
A similar climate phenomenon, [Atlantic Niña](#), occurs in the Atlantic Ocean but at a much smaller scale and amplitude. It typically peaks around July or August and tends to have a shorter duration than its Pacific cousin, and much more modest and local impacts. Atlantic Niñas generally have the [opposite effect](#) of [Atlantic Niños, which tend to reduce rainfall over Africa's Sahel](#) region and increase rainfall in Brazil and the countries that surround the Gulf of Guinea, such as Ghana, Nigeria and Cameroon.

While much weaker than their Pacific counterpart, Atlantic Niñas can, however, partially counteract La Niñas by weakening summer winds that help drive the upwelling that cools the eastern Pacific.

Why are both happening now?

In July and August 2024, meteorologists [noted cooling](#) that appeared to be the development of an Atlantic Niña along the equator. The winds at the ocean surface had been weak through most of the summer, and [sea surface temperatures](#) there were [quite warm until early June](#), so signs of an Atlantic Niña emerging were a surprise.

At the same time, waters along the equator in the eastern Pacific were also cooling, with [La Niña conditions expected](#) there by October or November.



A map of sea surface temperature anomalies shows cooling along the tropical Atlantic and eastern Pacific regions, but much warmer than average temperatures in the Caribbean. Credit: [NOAA Coral Reef Watch](#)

Getting a Pacific-Atlantic Niña combination is [rare but not impossible](#). It's like finding two different pendulums that are weakly coupled to swing in opposite directions moving together in time. The combinations of La Niña and Atlantic Niño, or El Niño and Atlantic Niña are more common.

Good news or bad for hurricane season?

An Atlantic Niña may initially suggest good news for those living in [hurricane](#)-prone areas.

Cooler than average waters off the coast of Africa can suppress the formation of African easterly waves. These are [clusters of thunderstorm activity](#) that can form into tropical disturbances and eventually [tropical storms](#) or hurricanes.

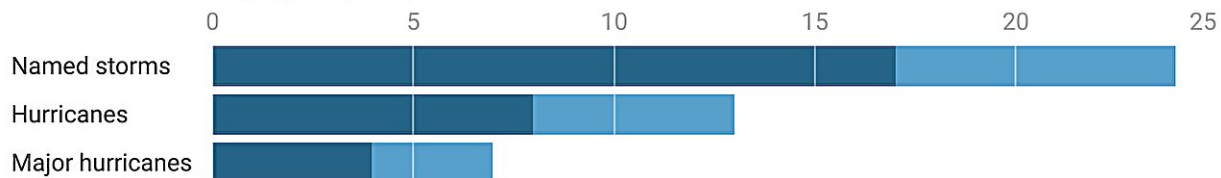
Tropical storms [draw energy from the process of evaporating water](#) associated with warm sea surface temperatures. So, cooling in the tropical Atlantic could weaken this process. That would leave less energy for the thunderstorms, which would reduce the probability of a tropical cyclone forming.

However, NOAA takes all factors into account when [it updates its Atlantic hurricane season outlook](#), released in early August, and it still anticipates an extremely active 2024 season. [Tropical storm season typically peaks](#) in early to mid-September.

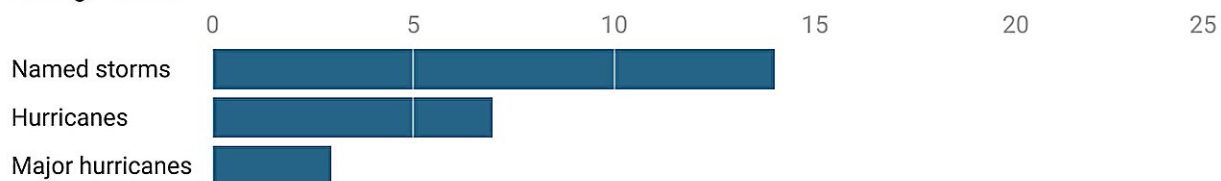
NOAA's 2024 hurricane forecast update

NOAA's Atlantic hurricane season update in August still forecasts an active 2024, exceeding the 30-year average (1991-2020). The colors reflect the forecast range.

NOAA 2024 forecast (August update)



Average season



Hurricane season is June 1 to Nov. 30. NOAA forecast: 17-24 named storms, 8-13 hurricanes, 4-7 major hurricanes.

Chart: The Conversation/CC-BY-ND • Source: NOAA • Created with Datawrapper

Credit: The Conversation

Two reasons are behind the busy forecast: The [near record-breaking warm](#) sea surface temperatures in much of the North Atlantic can strengthen hurricanes. And the expected development of a La Niña in the Pacific tends to weaken [wind shear](#)—the change in wind speed with height that can tear apart hurricanes. La Niña's much stronger effects can override any impacts associated with the Atlantic Niña.

Exacerbating the problem: Global warming

The past two years have seen [exceptionally high ocean temperatures](#) in the Atlantic and around much of the world's oceans. The two Niñas are likely to contribute some cooling relief for certain regions, but it may not

last long.

In addition to these cycles, the [global warming](#) trend caused by rising greenhouse gas emissions is raising the baseline temperatures and can [fuel major hurricanes](#).

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