

What is a subtropical storm and how is it different from a tropical or extratropical system?

November 10 2022, by Doyle Rice



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A subtropical storm is what's known to forecasters as a "hybrid" storm, a meteorological mashup of a tropical and "extratropical" storm.

Such a system, Subtropical Storm Nicole, formed in the Atlantic early Monday and is forecast to threaten the Southeast coast over the next few days, potentially as a hurricane, bringing rain, wind and [storm surge](#) to the region.

How is a [subtropical storm](#) different from a tropical or extratropical storm?

Let's go over some meteorology basics first:

Meteorologists divide storms, or [cyclones](#), into two general types: "extratropical" storms and "tropical" storms.

Extratropical vs. tropical storms

Extratropical cyclones are the familiar storms that occur in all seasons and can form over land or water. They are represented as an "L" on weather maps. Temperature contrasts are their major source of energy, and they have fronts, or boundaries, between warm and cold air.

Tropical cyclones include tropical storms, hurricanes and typhoons. They form mainly in the summer and fall and form over warm oceans, especially [tropical oceans](#). They get most of their energy from the extraction of heat from the warm ocean water. Also, they do not have fronts. Instead, [tropical cyclones](#) form in warm, humid air masses.

'Hybrid' storms

A few storms, however, combine elements of both of these types of storms. The National Hurricane Center calls these "hybrid" storms subtropical storms, which are like tropical storms in that they don't have fronts. But they also get their energy from contrasting temperatures, as do extratropical storms.

They also tend to have a larger wind field, extending much farther from their centers.

Subtropical cyclones usually form out of old extratropical storms.

Additionally, tropical systems can quickly grow into hurricanes, while extratropical or subtropical storms typically do not.

Subtropical storms not well documented

Historically, subtropical storms are not well documented, according to WeatherBug. In fact, the hurricane center began to name subtropical storms only in 2002.

Subtropical storms are also more likely than [tropical storms](#) to form outside hurricane season. For instance, the "official" dates of the Atlantic hurricane season are June 1 to Nov. 30.

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