

Combating Climate Change

Captured by SD 1078 in the Atlantic Ocean during Hurricane Fiona, Sept. 22, 2022. (Video: NOAA and Saildrone)

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As climate change increasingly affects weather patterns over the Atlantic Ocean and Gulf of Mexico, tracking hurricanes and monitoring their intensity has become more critical than ever.

The National Oceanic and Atmospheric Administration (NOAA) reports that between 1980 and 2021, hurricanes caused 6,697 deaths and over \$1.1 trillion in damages. Hurricanes' massive waves and roaring winds can also have catastrophic effects on ships at sea, making accurate forecasting a must for naval operations.

While new technology has steadily improved hurricane-tracking forecasts since the 1990s, predicting how rapidly a tropical storm or hurricane may intensify has been more problematic. To understand storm intensity, scientists measure heat and momentum, collecting data on the exchange of energy between the ocean and atmosphere. But in order to do this in the most accurate way, scientists need data from inside the storm itself.

That's where uncrewed systems come in. "With uncrewed systems, we can either do what we're already doing, but do it more productively and efficiently, or we can go get data we just couldn't get before," said NOAA Corps Captain William Mowitt, director of NOAA's Uncrewed Systems Operations Center.

You can read the full article about how the U.S. Navy, NOAA, and private partners are using uncrewed systems and new technologies to forecast hurricanes in the May issue of Seapower Magazine.

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