

THE ATMOSPHERIC RESERVOIR

Examining the Atmosphere and Atmospheric Resource Management

HURRICANE FORECASTS: THE SOONER, THE BETTER

By Mark D. Schneider

The National Oceanic and Atmospheric Administration (NOAA) is the parent agency of the National Weather Service (NWS) and National Hurricane Center (NHC), and its primary mission is to protect lives and property. Even though North Dakota is landlocked and located over a thousand miles away from the Gulf of Mexico and Caribbean Islands, many of us have family and relatives who either live or vacation there between June 1st and November 30th each year (the official dates of each hurricane season). It's no wonder then, why we would be interested in hurricane and tropical storm forecasts.

The NHC sends out its acclaimed "Hurricane Hunters" to fly into tropical storms so they can measure atmospheric conditions such as wind and pressure. What changed this year, was that now instead of just waiting for tropical storms to develop off the western coast of Africa and travel half-way across the Atlantic Ocean before investigating them, reconnaissance flights are being made to Africa to study the origins of the storms.

There is a region of west Africa just south of the Sahara Desert where an estimated 80 to 85 percent of all major hurricanes originate. This source region is appropriately called a nursery and hurricane forecasters are constantly monitoring it for new development. By directly measuring the atmospheric conditions at the beginning of a

hurricanes' lifecycle, when it's just a weather disturbance, hurricane forecasters now have accurate data for initializing their numerical weather models.

Another new development in hurricane research during the last year is the use of sail drones. These specialized drones are dropped from the belly of the Hurricane Hunter aircraft to lowest levels of the hurricane (approximately the first 3,000 feet above the surface) where it's unsafe for piloted aircraft to fly. The goal of this drone data is to enable forecasters to better predict the rapid intensification of hurricanes. This could be a tremendous help to the decision-makers that are responsible for evacuations and logistical planning during tropical storm events.

In September, days before Hurricane Ian strengthened from just a weak tropical depression in the Central Caribbean Sea to a Category 4 Hurricane, the NHC was able to alert Florida's Gulf Coast of the impending storm so that evacuations and preparations could be made. The newly extended flights of the Hurricane Hunter aircraft to the western African Coast and the new utilization of sail drones should make it possible for hurricane forecasters to give even greater advanced notice to U.S. territories and the southeastern part of our country.

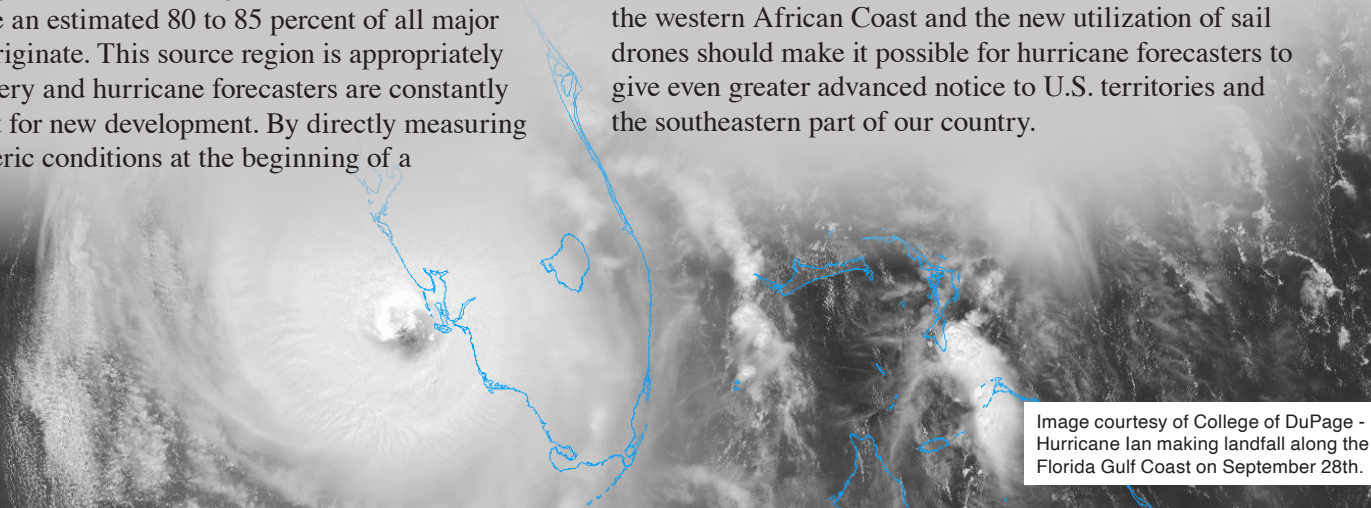


Image courtesy of College of DuPage - Hurricane Ian making landfall along the Florida Gulf Coast on September 28th.

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