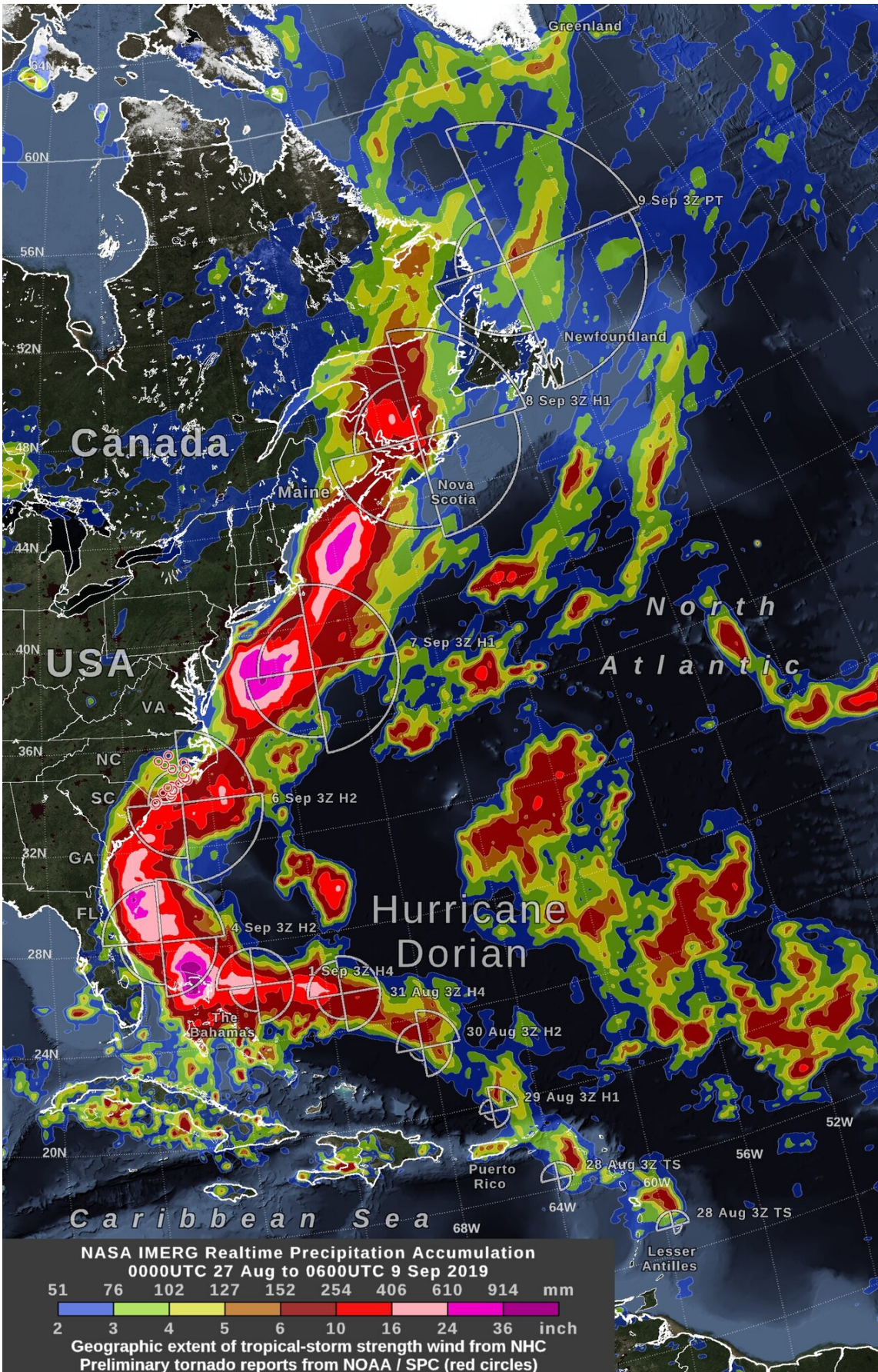


NASA estimates Hurricane Dorian's massive rainfall track

September 9 2019



At one-day intervals, the image shows the distance that tropical-storm force (39 mph) winds extended from Hurricane Dorian's low-pressure center, as estimated by the National Hurricane Center. The Saffir-Simpson hurricane-intensity category is the number following the "H" in the label on the image. "TS" or "PT" indicate times when the storm was either at tropical storm strength or when the storm was categorized as post-tropical. Red circles over North Carolina indicate preliminary reports of tornadoes on Sept. 5. Credit: NASA Goddard

On Monday morning, September 9, Hurricane Dorian was a post-tropical storm after a mid-latitude weather front and cold seas had altered its tropical characteristics over the weekend. NASA compiled data on Hurricane Dorian and created a map that showed the heavy rainfall totals it left in its wake from the Bahamas to Canada.

On Saturday and Sunday, Sept. 7 and 8, Hurricane Dorian struck eastern Canada, causing wind damage and bringing [heavy rainfall](#). According to the Associated Press, a peak of 400,000 people were without power in Nova Scotia, Canada, because of Dorian.

At NASA's Goddard Space Flight Center in Greenbelt, Maryland, a graphic was produced that shows precipitation that fell during the almost two-week period from August 27 to the early hours of Sept. 9. The near-real-time rain estimates come from the NASA's IMERG algorithm, which combines observations from a fleet of satellites, in near real time, to provide near-global estimates of precipitation every 30 minutes.

This year, NASA began running an improved version of the IMERG algorithm that does a better job estimating precipitation at high latitudes, specifically north of 60 degrees North latitude. The post-tropical remnants of Hurricane Dorian were approaching this cold region at the

end of the analysis period. While the IMERG algorithm is still unable to estimate precipitation falling over ice-covered surfaces (such as Greenland), IMERG can now give a more complete picture of the water cycle in places such as Canada, which is, for the most part, free of [snow cover](#) at this time of year.

In addition to rainfall totals, the map includes preliminary reports of tornadoes from 4:50 AM to 5:00 PM EDT on September 5 in North Carolina as provided by NOAA's Storm Prediction Center.

IMERG showed largest rainfall amounts of more than 36 inches over the Bahamas and in an area off the coast of northeastern Florida. A large area of rainfall between 16 and 24 inches fell in many areas off the U.S. East Coast. Areas include those from South Carolina to the Bahamas, another off the North Carolina coast, a third area off the coasts of southern New Jersey, Delaware and Maryland, and the New England states.

By combining NASA precipitation estimates with other data sources, we can gain a greater understanding of major storms that affect our planet.

On Monday, Sept. 9 at 0300 UTC (Sept. 8 at 11 p.m. EDT), NOAA's National Hurricane Center (NHC) issued the final advisory on Dorian. At that time, Dorian had moved into the Labrador Sea and its impacts on Newfoundland were beginning to subside. Post-tropical cyclone Dorian had maximum sustained winds near 50 knots (57 mph/93 kph). It was centered near 52.1 degrees north latitude and 53.4 degrees west longitude. That puts the center about 375 miles north of Cape Race, Newfoundland, Canada. Dorian was speeding to the east-northeast at 21 knots. Minimum central pressure was 980 millibars.

On Sept. 9, additional rainfall totals expected from Dorian in far eastern Quebec, Newfoundland and Labrador are expected to be less than 1

inch. Meanwhile, life-threatening rip tide and surf conditions are expected to affect mid-Atlantic and New England coasts of the U.S., as well as the coast of Atlantic Canada.

The NHC said the cyclone will continue into the open Atlantic, where it will dissipate south of Greenland.

Provided by NASA's Goddard Space Flight Center

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