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Hurricane Watch Issued For U.S. Virgin Islands, Warning For Puerto Rico as Fiona Meets Better Conditions

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Staff Consortium **September 17, 2022**

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The National Hurricane Center has issued a Hurricane Watch for the U.S. Virgin Islands and a Hurricane Warning for Puerto Rico, including Vieques and Culebra, as Tropical Storm Fiona has reformed and is meeting conditions favorable for further development.

A Hurricane Warning means that hurricane conditions are expected somewhere within the warning area. A warning is typically issued 36 hours before the anticipated first occurrence of tropical-storm-force winds, conditions that make outside preparations difficult or dangerous. Preparations to protect life and property should be rushed to completion.

A Hurricane Watch means that hurricane conditions are possible within the watch area. A watch is typically issued 48 hours before the anticipated first occurrence of tropical-storm-force winds, conditions that make outside preparations difficult or dangerous.

According to N.H.C.'s 11:00 a.m. forecast, data from Air Force Reserve and NOAA Hurricane Hunter aircraft indicate that Fiona's center has re-formed farther east. At 11:00 a.m. AST, the center of Tropical Storm Fiona was located near latitude 16.3 North, longitude 63.5 West. Fiona is moving toward the west near 8 mph (13 km/h). A west-northwestward motion at a similar forward speed is expected to begin later today, followed by a turn toward the northwest by Sunday evening. On the forecast track, the center of Fiona is expected to move near or south of the Virgin Islands this evening, approach Puerto Rico tonight, and move near or over Puerto Rico Sunday night. Fiona should then move near the Dominican Republic on Monday.

Maximum sustained winds are near 60 mph (95 km/h) with higher gusts. Strengthening is forecast during the next few days, and Fiona is expected to become a hurricane by Sunday or Sunday night while moving near Puerto Rico.

Tropical-storm-force winds extend outward up to 125 miles (205 km) from the center.

Key Message

Fiona is going through some structural changes this morning. From a zoomed-out view on satellite imagery, Fiona appears better organized compared to previous days, with the convective envelope becoming more symmetric, and upper-level outflow expanding around most of the storm. However, Air Force Reserve and NOAA Hurricane Hunter aircraft data indicate that the central part of the circulation still lacks some vertical coherency. From the best we can tell from the aircraft data, the low-level center appears to be re-forming farther east near a recent burst of deep convection. The central pressure may have risen a bit during this re-organization process, but maximum winds are still estimated to be 50 kt.

With the center re-formation, the initial motion has become more uncertain, although Fiona has definitely slowed down from yesterday. The longer-term average motion is 275/7 kt. The track forecast reasoning remains unchanged, with Fiona expected to gradually recurve around the western extent of the western Atlantic subtropical ridge through the 5-day forecast period. The big change, however, is that the adjusted initial position due to the center re-formation has tugged all of the guidance eastward on this cycle. The new NHC forecast is also east of the previous one and lies close to the HCCA and TVCN consensus aids, now showing a track near or over the western part of Puerto Rico in about 36 hours. The caveat to this forecast is that additional center re-formations could cause models to shift again, and therefore there's quite a bit of uncertainty in the short-term track forecast. Especially in cases like this, users are reminded to not focus solely on the track forecast itself, and to account for potential shifts in the track east or west.

The upper-level environment over Fiona has improved, and deep-layer shear is expected to be light to moderate for the next several days. In fact, along with a favorable thermodynamic environment, the Rapid Intensification Indices have increased, and now show a 1-in-3 chance of a 30-kt increase over the next 24 hours. There is some uncertainty as to how quickly Fiona can take advantage of these favorable conditions given its current structure. But either way, intensification is anticipated, and Fiona is likely to be near or at hurricane strength while it moves near Puerto Rico on Sunday. The NHC intensity forecast has been increased from the previous prediction, but it still lies below the intensity consensus aids. If Fiona gets better organized today, then it's possible that additional increases to the intensity forecast will be forthcoming later today.

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