



UNOSAT

Tropical Cyclone MARIA-17.

Population exposure analysis in Caribbean

18 September 2017

Population Exposure Analysis

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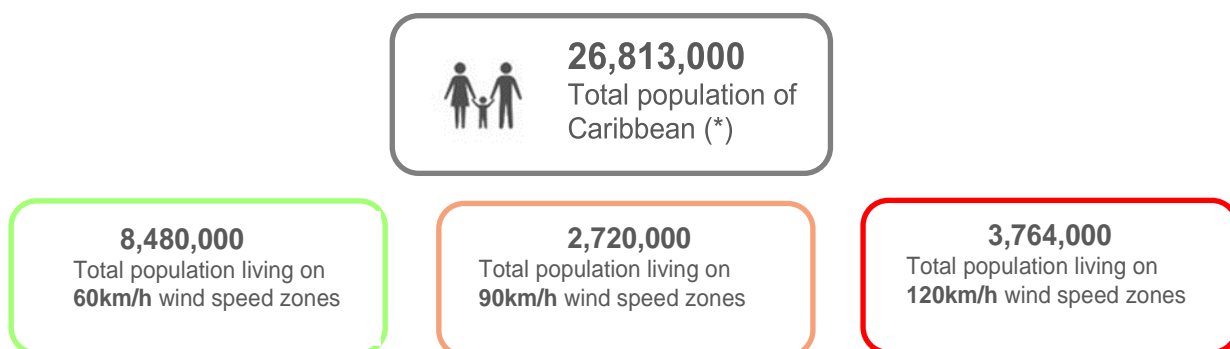


Overview

After IRMA-17 a new hurricane called MARIA constitutes a potential threat to the areas previously affected by IRMA over 6-13 September. MARIA is expected to affect the Caribbean region and to potentially become a category 3 hurricane as it moves closer to Guadeloupe, Dominica, Puerto Rico and other islands in the region. Tropical cyclone MARIA continued moving west-northwest, strengthening. On 18 September at 6.00 UTC, its centre was located 145 km from Barbados and 270 km from Dominica. It had maximum sustained wind speed of 150 km/h (category 1 hurricane). The centre of MARIA may move across the Leeward islands in the evening of 18 September, strengthening further. It may then reach the coast of Dominica as a category 2 hurricane, before moving toward Puerto Rico. Heavy rain, strong winds and storm surge could affect the Leeward Islands, Windward Islands and Puerto Rico on 18-20 September. As of 18 September at 8.00 UTC, a hurricane warning is in effect for Guadeloupe, Dominica, St. Kitts, Nevis, Montserrat and Martinique. A tropical storm warning is also in effect for Antigua and Barbuda, Saba and St. Eustatius and St. Lucia.

Based on data of the predicted tropical cyclone path, wind speeds from JRC issued on 18 September 2017 at 09:00 UTC, and population data from WorldPop, UNITAR-UNOSAT conducted a population exposure analysis for the Caribbean.

Population Exposure in Caribbean



Caribbean Population Exposed to sustained wind speed zones : Tropical Cyclone MARIA-17 (18/09/2017, 09h00 UTC)

Country/Territory	Total Population	Wind Speed Zones (WSZ)			Total Exposed Population(**)	%
		WSZ ≥ 120 km/h	90km/h ≤ WSZ < 120km/h	60km/h ≤ WSZ < 90 km/h		
Puerto Rico	3,651,232	3,564,510	86,722		3,651,232	100
Guadeloupe	446,611	75,371	365,166	6,074	446,611	100
Dominica	72,119	72,119			72,119	100
United States Virgin Islands	93,311	45,566	47,607		93,173	100
Turks and Caicos Islands	45,020	6,418	38,602	0	45,020	100
Saba	1,228		1,228		1,228	100
Antigua and Barbuda	89,349		75	89,274	89,349	100
Saint Lucia	179,088			175,874	175,874	98
Dominican Republic	10,470,773		1,773,576	7,618,613	9,392,188	90
British Virgin Islands	27,248		26,510	738	27,248	100
Bahamas	343,735			397	397	0
Saint Kitts and Nevis	48,059		44,894	3,165	48,059	100
Haiti	10,596,666			170,549	170,549	2
Saint-Barthelemy	5,191			5,191	5,191	100
Saint-Martin	32,418			32,418	32,418	100
Sint Eustatius	2,390		2,390		2,390	100
Sint Maarten	39,921			39,921	39,921	100
Anguilla	12,316			12,316	12,316	100
Barbados	276,038			276,038	276,038	100
Martinique	375,996		327,547	48,449	375,996	100
Montserrat	5,068		5,068		5,068	100
Total	26,813,777	3,763,984	2,719,385	8,479,017	14,962,386	

Sources:

Cyclone Track: Joint Research Center-GDACS

Administrative Levels: GADM

Spatial Demographic Data: WorldPop (2015)

Analysis: UNITAR-UNOSAT (18/09/2017)

Note:

(*) Total population of Caribbean is considering only the following countries and territories: Anguilla, Antigua and Barbuda, Barbados, Bahamas, British Virgin Islands, Dominica, Dominican Republic, Guadeloupe, Monserrat, Saint Martin, Saint Barthelemy, Haiti, Sint Maarten, Saba, Sint Eustatius, Saint Lucia, Puerto Rico, Saint Kitts and Nevis, Turks and Caicos Islands and United States Virgin Islands. These countries and territories are within the wind speeds zones of 60km/h, 90km/h and 120km/h according to the expected cyclone track released as of 18 September 2017 (09:00 UTC).










(**) The population exposure has been calculated using a 1Km resolution WorldPoP dataset. This is a preliminary analysis & has not yet been validated in the field.

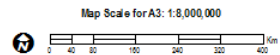


Tropical Cyclone MARIA-17 : Path and Wind Speed Zones (as of 18 September 2017)

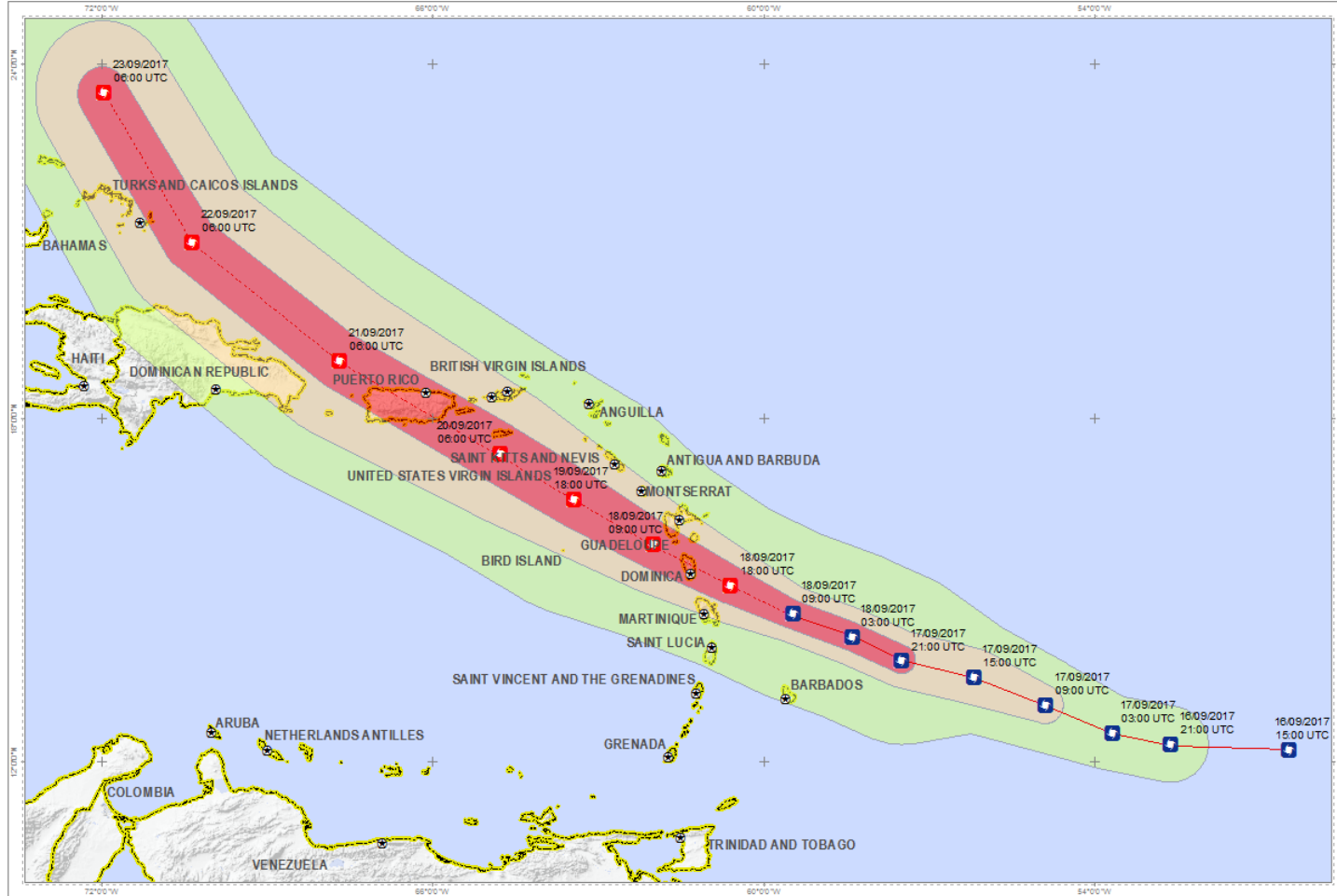
This map illustrates the tropical cyclone MARIA-17 path with low, medium and strong wind impact zones observed and predicted at 18 September 2017. The tropical cyclone path and wind speed zones were derived from Joint Research Centre data (Warning 0 issued the 18th September 2017 at 09:00 UTC). This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNITAR-UNOSAT.

Legend

-  Capital
-  Expected position
-  Observed position
-  Expected path
-  Observed path
-  International boundary
- Wind Speed Zone**
-  120 km/h
-  90 km/h
-  60 km/h



Analysis conducted with ArcGIS v10.4
 Coordinate System: WGS 1984 Web Mercator
 Auxiliary Sphere
 Projection: Mercator Auxiliary Sphere
 Datum: WGS 1984



Wind Speed Data: Joint Research Centre
 Date Series: 16 September 2017 - 23 September 2017
 Copyright: JRC
 Source: JRC

Baseline Data: GADM
 Analysis: UNITAR - UNOSAT
 Production: UNITAR - UNOSAT

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