

Severe Weather Advisory for the Caribbean and Florida

Hurricane Irma

Issued on Tuesday, 05 September 2017 at 10:30 local time.

Headline

Major Hurricane Irma will affect parts of the Caribbean from 1800UTC today (Tuesday), then possibly Florida from Sunday.

Impacts

Destructive winds, dangerous waves, storm surge (2-3m), torrential rains and enhanced landslide risk. This leading to a risk of fatalities and significant impacts to local infrastructure and transport links.

Discussion

Hurricane Irma remains a category 4 hurricane and was located around 600km east of Antigua at 0600UTC, moving westwards at 12 knots and with estimated 1 minute sustained winds now increased to 130 KT (150mph). This is just 7 knots below category 5 strength.

Irma may strengthen further as it moves W-NW over the next 36hrs across warmer waters near the northern Leeward Islands and just north of Puerto Rico, possibly to category 5 strength.

There is high confidence that Irma will pass very close to or across the northern most Leeward Islands (Antigua and Barbuda, St Kitts and Nevis and Anguilla) tonight (Tuesday night) with hurricane force winds likely to cause severe damage to buildings and critical infrastructure. In addition, the combination of storm surge and high waves will lead to a risk of widespread coastal flooding and sea water inundation – particularly across the relatively low lying parts of Anguilla, Barbuda and St.Martin.

Irma is then expected to track west or west-northwest, passing very close to or across the British Virgin Islands, and across or just north of Puerto Rico through Wednesday.

This track is likely to continue during Thursday which would take Irma between the Hispaniola (Dominican Republic and Haiti) and the Turks and Caicos Islands.

Thereafter, confidence on track decreases. Irma is still expected to be at least a category 4 hurricane, either tracking across or just north of Cuba during Friday and Saturday.

From Sunday there is even greater uncertainty in how quickly Irma (probably still a category 4 hurricane) turns north. A quick northward turn would take Irma across the Bahamas, with a slower northward turn tracking Irma across or even just west of Florida.

All islands in the path of Irma are at risk of severe hurricane impacts (see Main Hazards section).

A track across open water will reduce impacts, but allow for a stronger hurricane. A slight southward shift in track would take Irma across more islands, affect more of the population and therefore result in higher impacts.

The northern Leeward Islands and Puerto Rico look at risk of severe hurricane impacts during the next few days.

At the moment much of Haiti and Dominican Republic looks at a slightly lower risk of severe impacts, but a southward shift would change this.

This forecast may be amended at any time

mailto: GGU@metoffice.gov.uk

Phone Duty Forecaster, Global Guidance Unit (GGU), Operations Centre, Met Office, Fitzroy Road, Exeter
VPN n6225 4319, BT 01392 884319

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The Turks and Caicos Islands could see a 2 to 3 metre storm surge with Irma likely to track to the south of these islands.

Cuba looks at increasing risk of severe hurricane impacts, with Florida now having declared a state of emergency in preparation for a possible major hurricane impact.

Heavy rainfall is also an issue, with up to 150mm in 24 hours likely along the track. However, the heaviest rainfall expected across parts of Cuba where Irma may become slower moving before a turn northwards with event totals possibly reaching 500mm in some places.

To put this into context, the most recent comparable storm was Hurricane Georges in 1998 which caused widespread major impacts across the region - https://en.wikipedia.org/wiki/Hurricane_Luis. However, Irma may well be a stronger hurricane than Georges.

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Figure 1: 05/0745 UTC colour enhanced satellite image.

Note the large, clear eye on Irma which is indicative of a major hurricane. National Hurricane Center estimation of 130 knots 1 minute sustained winds at this time.

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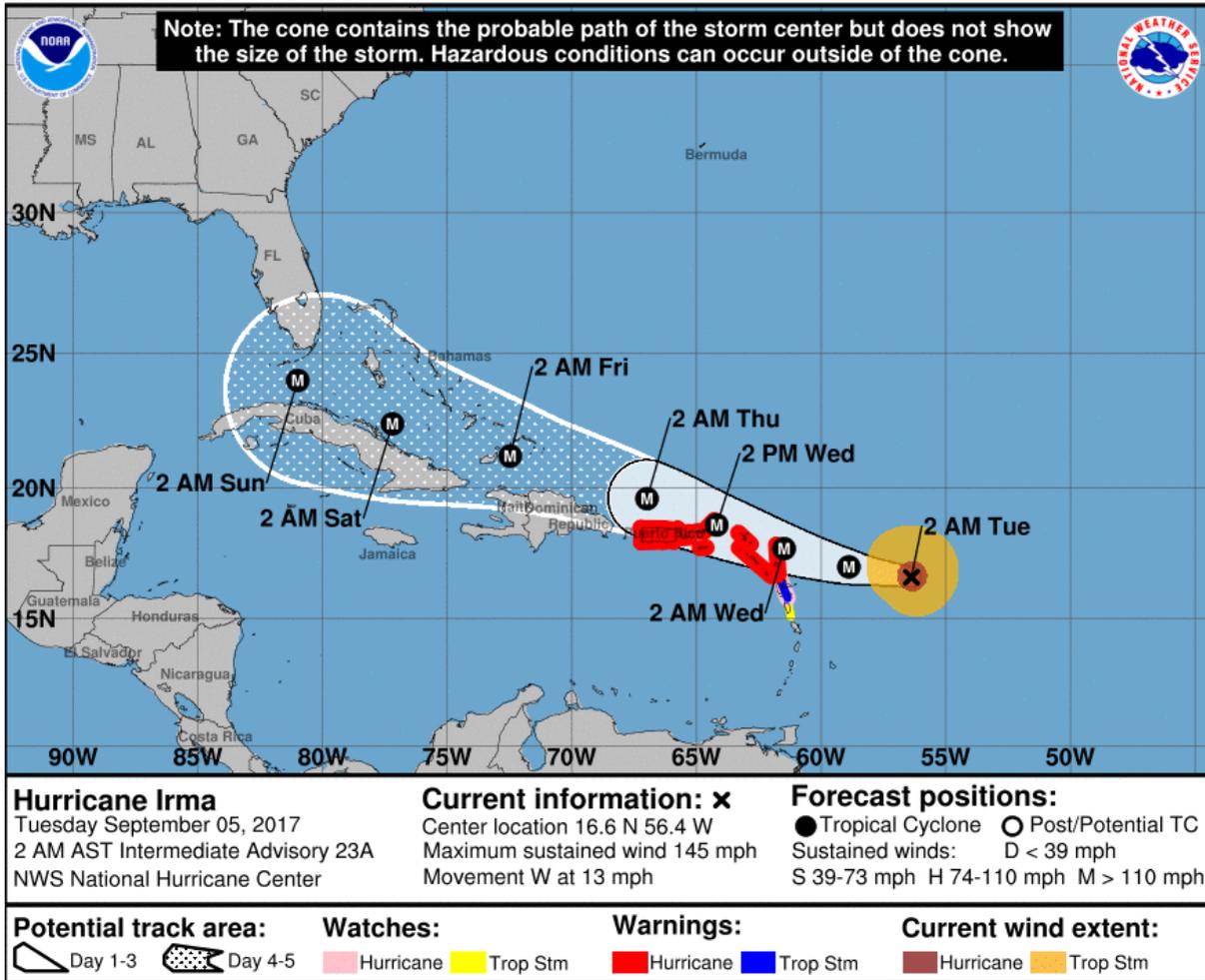


Figure 2: 05/0600 UTC official forecast track and cone of uncertainty for Hurricane Irma from the National Hurricane Centre. Times on the graphic are in AST (UTC-4).

Note the Hurricane Warning in force for the northern Leeward Islands and Puerto Rico.

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MOGREPS-G: Forecast tropical storm tracks
for IRMA from 00UTC 05/09/2017

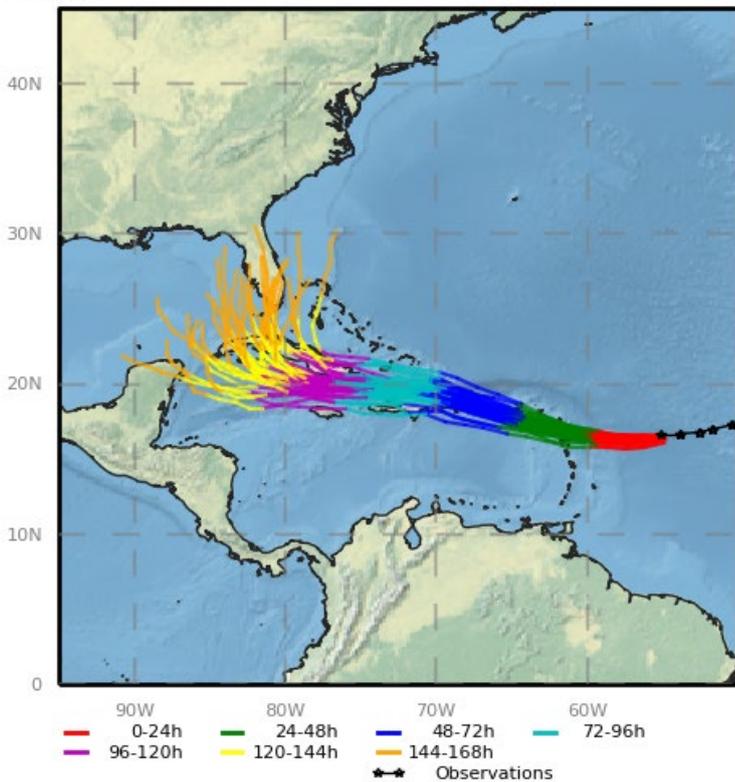


Figure 3: Ensemble spread of tracks from the Met Office MOGREPS-G.

This shows the range of possibilities for the track of Irma during the next 7 days. Note the decreasing confidence in track as Irma tracks north towards the SE of the USA later in the weekend.

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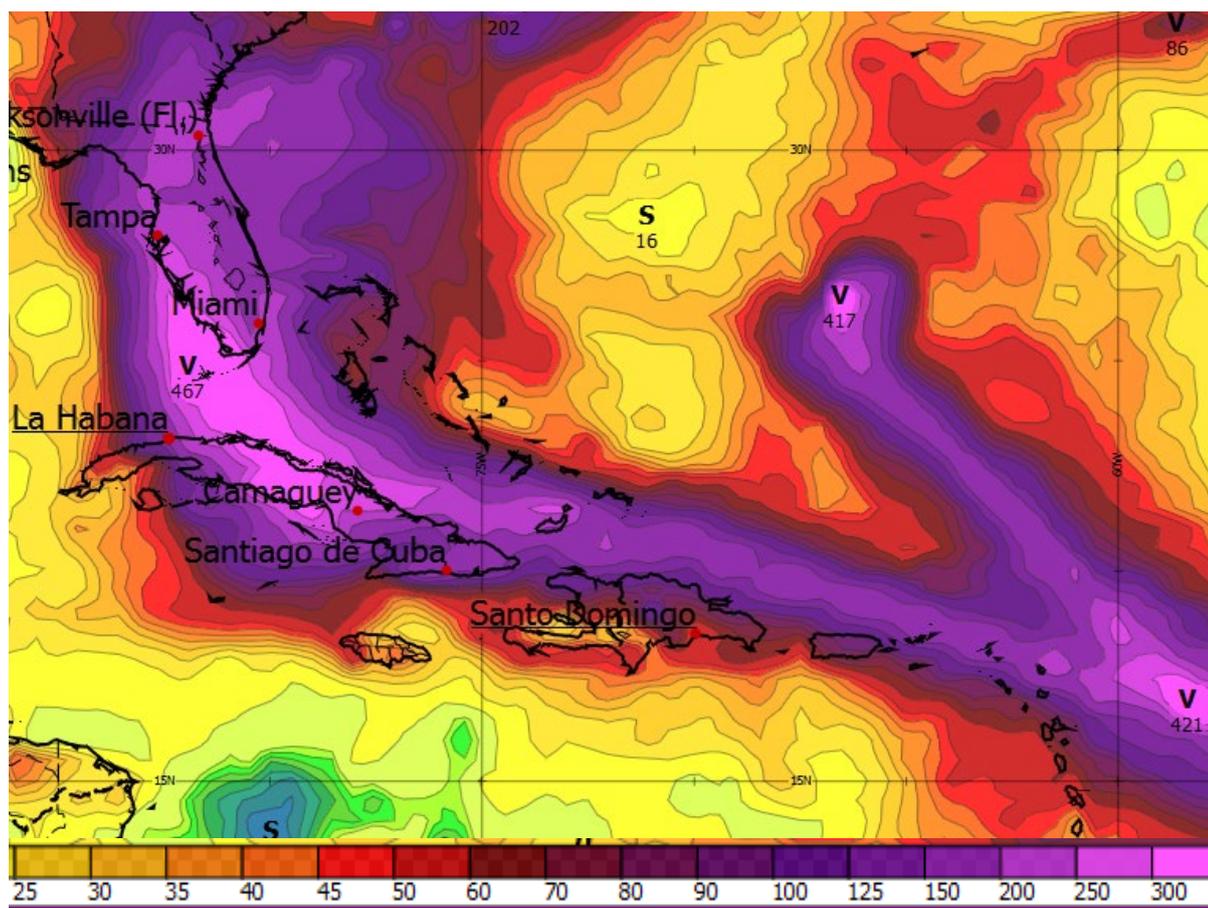


Figure 4: Accumulated precipitation up to next Tuesday in millimetres from the ECMWF.

Note the risk of at least 150 millimetres (which will fall in 24 hours) along the track of Irma, with a risk of up to 450 millimetres accumulating in a 48 period across Cuba and southern Florida as Irma slows down and tracks north later this weekend and into next week. This will result in a high risk of flash flooding and enhanced risk of landslides, especially considering the mountainous terrain of these Caribbean Islands.

Sources

NHC, UK Met Office, ECMWF, NCEP.

Issued at: 050925 Z **Meteorologist:** Paul Hutcheon **Global Guidance Unit**

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Phone Duty Forecaster, Global Guidance Unit (GGU), Operations Centre, Met Office, Fitzroy Road, Exeter
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