

Severe Weather Advisory for the Caribbean and Florida - Hurricane Irma

Issued on Friday, 8th September 2017 at 06:00 local time.

Headline

Major Hurricane Irma is one of the strongest hurricanes ever recorded in the Atlantic, and has resulted in severe damage to a number of islands in the Caribbean through Wednesday and Thursday.

Irma has weakened a little during the last 24 hours, but will continue as a category 5 hurricane during Friday, possibly weakening to a strong category 4 hurricane during Saturday, but bringing the risk of further severe impacts to the region.

Florida, and perhaps Georgia and the Carolinas, are expected to be impacted by this major hurricane from Sunday through to Tuesday.

Impact reports so far

Irma passed over Barbuda, Anguilla, Saint-Martin and the British Virgin Islands on Wednesday and Thursday, leading to severe damage to a high percentage of buildings, and resulted in a number of fatalities. Power, telecommunication and transport infrastructure on these islands were also severely impacted.

Irma resulted in electricity supplies being cut off to almost a million people in Puerto Rico, with the low lying island group of the Turks and Caicos Islands being impacted through Thursday night as Irma tracked west-northwest, just south of the islands.

Discussion

Hurricane Irma remains a highly destructive category 5 hurricane and was located 650 miles SE of Nassau, Bahamas and just south of the Turks and Caicos Islands at 08/0300UTC, moving west-northwest at 16 mph and with estimated 1 minute sustained winds of 165mph.

Irma is expected to remain a Category 5 Hurricane until at least early Saturday, and expected to remain a major hurricane through the next 3 or 4 days.

Irma is expected to continue a west-northwest track, which would take Irma between Cuba and the Bahamas today and Saturday, possibly weakening slightly to a category 4 hurricane.

From Sunday Irma is expected to begin to turn northwards towards Florida. There is continued strong model evidence to suggest, although some uncertainty remains, that Irma (still at least a category 4 hurricane) will turn north and take a track such that Florida (including Miami) is affected through Sunday and Monday. The latest guidance from the National Hurricane Centre represents this track and would suggest that Irma is most likely affect the east coast of Florida on Sunday and Monday.

There have already been evacuations from the Florida Keys and some coastal parts of southeast Florida. Other parts of Florida and Georgia are likely to issue evacuation orders today.

Latest information of track of Irma can be found here <http://www.nhc.noaa.gov/#Irma>. The National Hurricane Centre is the official agency for issuing forecasts and warnings for tropical storms and hurricanes in the North Atlantic basin. Decision making should be based on these official forecasts.

This forecast may be amended at any time

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Impacts

Impacts will be typical of a major hurricane and include destructive winds, dangerous waves, storm surge, torrential rains and an enhanced risk of landslides. A combination of these hazards will lead to a risk of fatalities and significant impacts to local infrastructure and transport links. Total and extremely long-lived power outages and water losses are to be expected.

Winds: Winds within 50-60 miles of the centre of the hurricane will be strong enough to cause complete roof failure on many residences and industrial buildings, and some complete building failures with small buildings blown over or away. Only a few types of structures are capable of surviving intact. Virtually all trees are uprooted or snapped and some may be debarked, isolating most communities impacted.

Storm Surge & Flooding: Flooding, through a combination of torrential rainfall and storm surge is likely. The southeastern and central Bahamas are most likely to see the highest storm surge of 4-6 metres which is higher than much of these islands. Therefore, severe storm surge damage is likely. A significant storm surge also likely along the east coast of Florida.

Rainfall: The potential for the heaviest rainfall is when Irma begins to interact with the larger landmass of Cuba; here event totals could reach 200-500mm in some places this weekend. It should be noted that Irma is a large storm and torrential rain will extend a long way from the storm centre leading to flash flooding and mudslides. By Monday very heavy rainfall (up to 400mm) is expected across Florida, in additions to the hurricane force winds and storm surge, with Georgia and the Carolinas then at risk in the following days.

Context

The most recent category 5 hurricanes to affect the North Atlantic basin and make landfall are Andrew (1992), Dean (2007) and Felix (2007). In this region of the Caribbean the last comparable storm was Hurricane Georges in 1998 which caused widespread major impacts across the region - https://en.wikipedia.org/wiki/Hurricane_Georges. However, Irma remains a stronger hurricane than Georges. and is also the longest duration tropical cyclone attaining speeds of 160 knots anywhere across the globe (previous record holder was Typhoon Haiyan in 2013). It is also one of the longest lasting category 5 Atlantic hurricane in recorded history.

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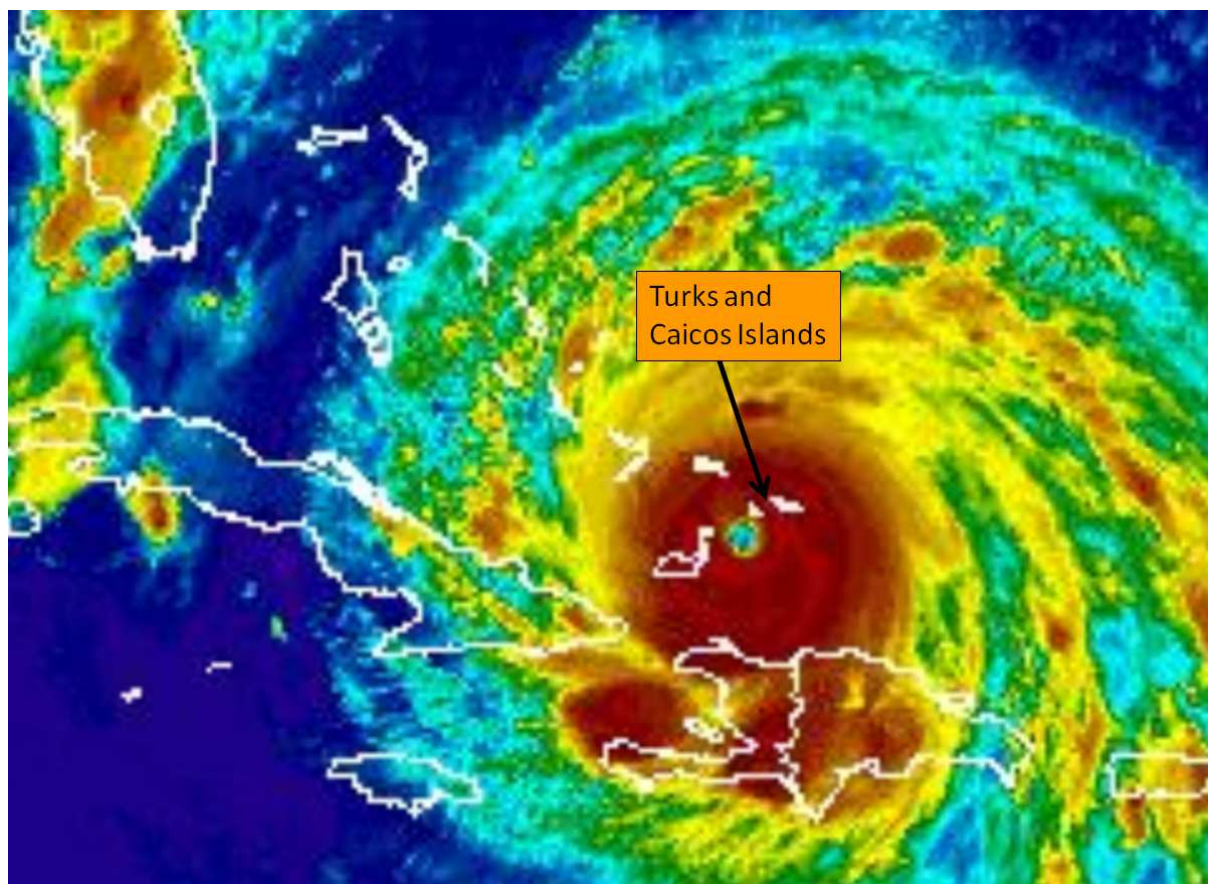


Figure 1: 08/0245 UTC colour enhanced satellite image.

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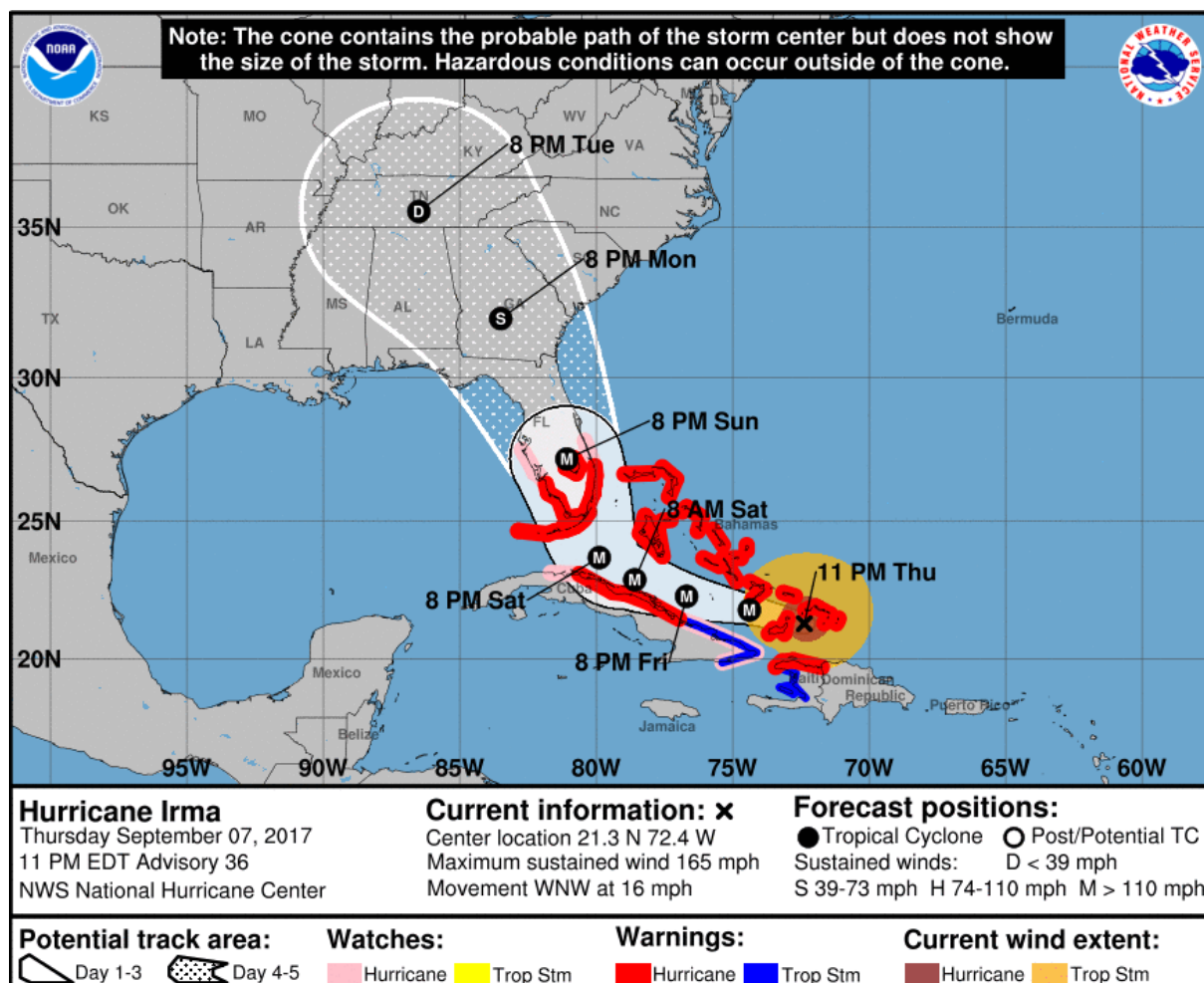


Figure 2: 08/0300 UTC official forecast track and cone of uncertainty for Hurricane Irma from the National Hurricane Centre. Times on the graphic are in AST (UTC-4).

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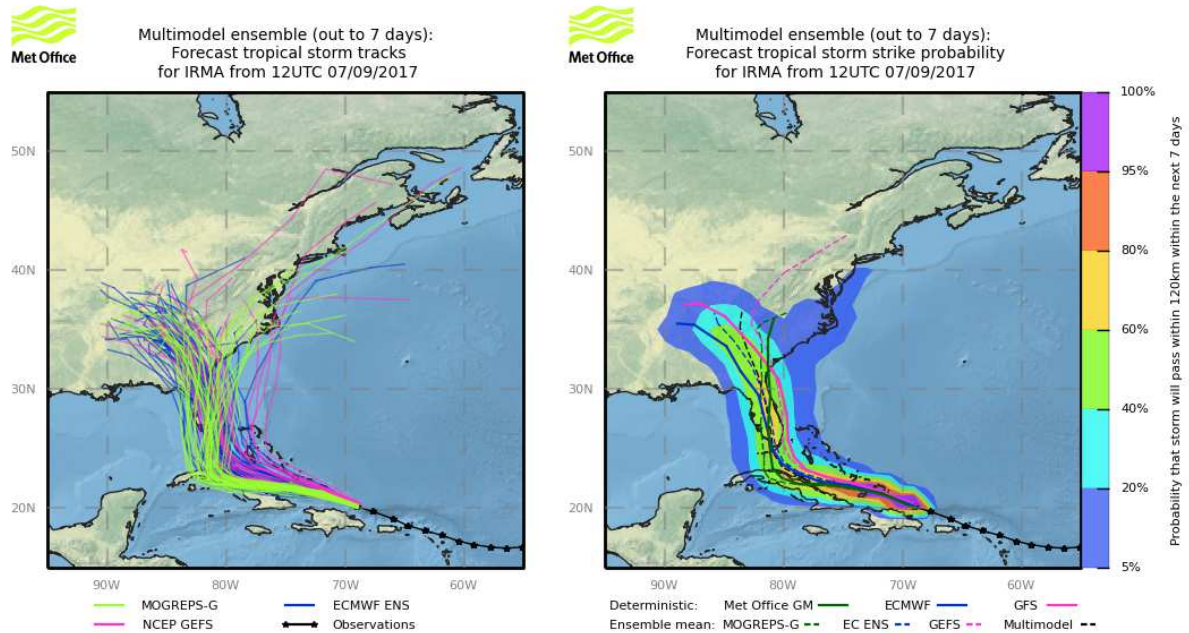


Figure 3: Ensemble spread of tracks from the Met Office, ECMWF and NCEP.

This shows the range of possibilities for the track of Irma during the next 7 days. Note the continued strong signal for a track north across Florida.

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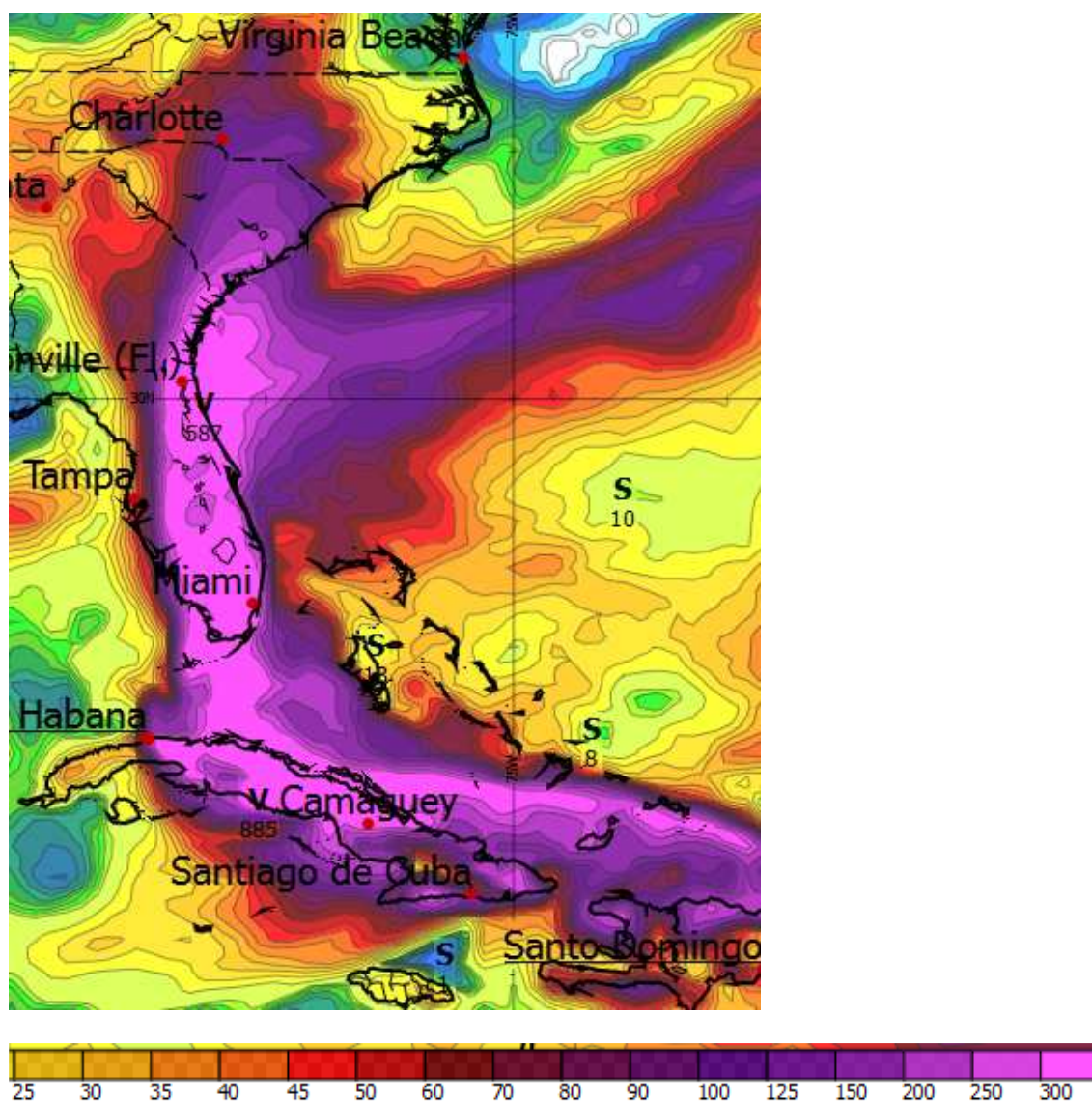


Figure 4: Accumulated precipitation up to next Wednesday in millimetres from the GM.

Note the risk of 250 millimetres per day along the track of Irma, with a risk of twice this amount of rain falling across parts of Cuba and Florida as Irma slows down a little and tracks north later this weekend and into next week. This will result in a high risk of flash flooding and landslides.

Sources

NHC, UK Met Office, ECMWF, NCEP, and various media reports.

Issued at: 080500 Z **Meteorologist:** Paul Hutcheon **Global Guidance Unit**

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