

## **Severe Weather Advisory for the Caribbean and Florida**

### **Hurricane Irma**

Issued on Thursday, 7<sup>th</sup> September 2017 at 06:00 local time.

#### **Headline**

Major Hurricane Irma has been recorded as one of the strongest storms ever recorded in the Atlantic, and has resulted in catastrophic damage to several islands in the NE Caribbean through Wednesday.

Irma will continue as a category 5 hurricane during the next 3 days, bringing further severe impacts to the region.

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

#### **Impact reports so far**

Irma passed over Barbuda, Anguilla and Saint-Martin early today (Wednesday). There are reports that over 90-95% of the buildings have been destroyed. Barbuda is described as "barely habitable" and the French territory of St Martin as "almost destroyed".

Irma also impacted the island of Virgin Gorda, with the combination of storm surge and destructive winds likely to have severely impacted the region. Puerto Rico was also impacted, with reports of almost half the island's population of 3 million currently without electricity.

#### **Discussion**

Hurricane Irma remains a highly destructive category 5 hurricane and was located 95 miles SE of Punta Cana, Dominican Republic and 210 miles ESE of Cockburn Town, Turks and Caicos Islands at 0900 UTC, moving west-northwest at 17 mph and with estimated 1 minute sustained winds of 180mph.

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

Irma is then expected to continue a west-northwest track, which would take Irma just south of the Turks and Caicos Islands later today (Thursday) or early Friday (UK time).

Thereafter, confidence on track decreases a little. Irma is still expected to be at least a category 4 hurricane, tracking between Cuba and the Bahamas during Friday and Saturday. Regardless of precise track, Cuba is likely to experience a period of torrential rainfall, particularly in the north.

From Sunday Irma is expected to begin to turn northwards towards Florida. There is strengthening evidence to suggest, although uncertainty remains, that Irma will turn north and take a track such that Florida 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 to track along the east coast of Florida on Sunday and Monday.

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

Another hurricane has formed in the tropical Atlantic, named Jose. There is a risk that Jose will track northwestwards close to or across the far north of the Leeward Islands this weekend, perhaps strengthening

**This forecast may be amended at any time**

mailto: [GGU@metoffice.gov.uk](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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to a category 3 hurricane with 1-minute sustained winds of 100 knots. Therefore, this hurricane could severely impact on the recovery effort in this part of the NE Caribbean this weekend.

Latest information of track of Irma can be found here <http://www.nhc.noaa.gov/#Irma>. The National Hurricane Center 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. It is worth noting, given current forecast projections, a slight southward shift in track would take Irma across more islands, affect more of the population and therefore result in higher impacts.

## 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 40-50 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 (4 to 6 metres) is likely. The Turks and Caicos Islands along with the southern Bahamas are most likely to see the highest storm surge of 6 metres which is higher than much of these islands. Therefore, severe storm surge damage is expected to settlements such as Cockburn Town.

**Rainfall:** Heavy rainfall is also an issue, with up to 350mm on Thursday over northern parts of Haiti and the Dominican Republic. However, the potential for the heaviest rainfall is when Irma begins to interact with the larger landmass of Cuba; here event totals could reach 500-900mm 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 is expected across southern Florida, in additions to the hurricane force winds and storm surge.

## Context

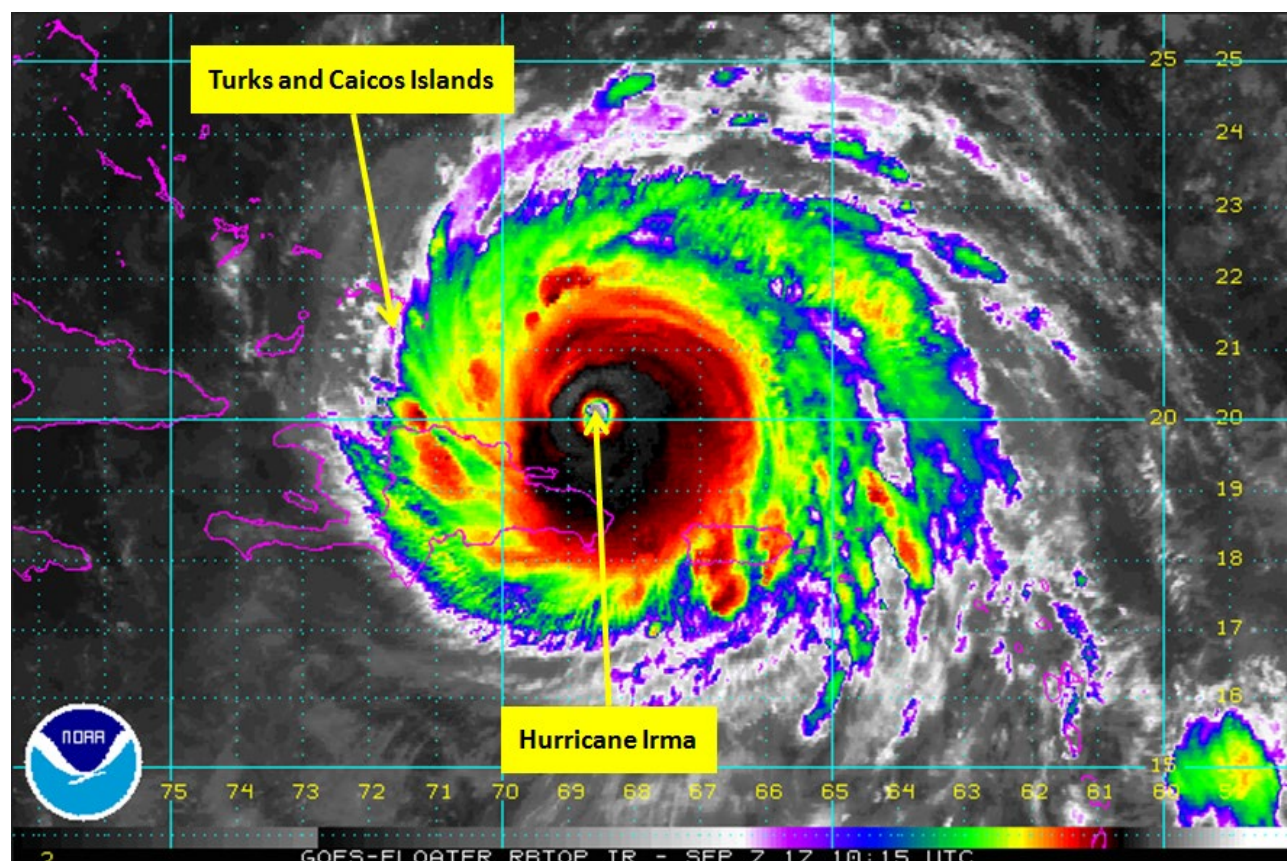
The most recent category 5 hurricanes to affect the North Atlantic basin and make landfall are Andrew (1992), Dean (2007) and Felix (2007). In this region of the Caribbean the last comparable storm was Hurricane Georges in 1998 which caused widespread major impacts across the region - [https://en.wikipedia.org/wiki/Hurricane\\_Georges](https://en.wikipedia.org/wiki/Hurricane_Georges). However, Irma remains a stronger hurricane than Georges and has the potential to become the strongest Atlantic Hurricane on record – currently held by Hurricane Allen in 1980. Irma is also now 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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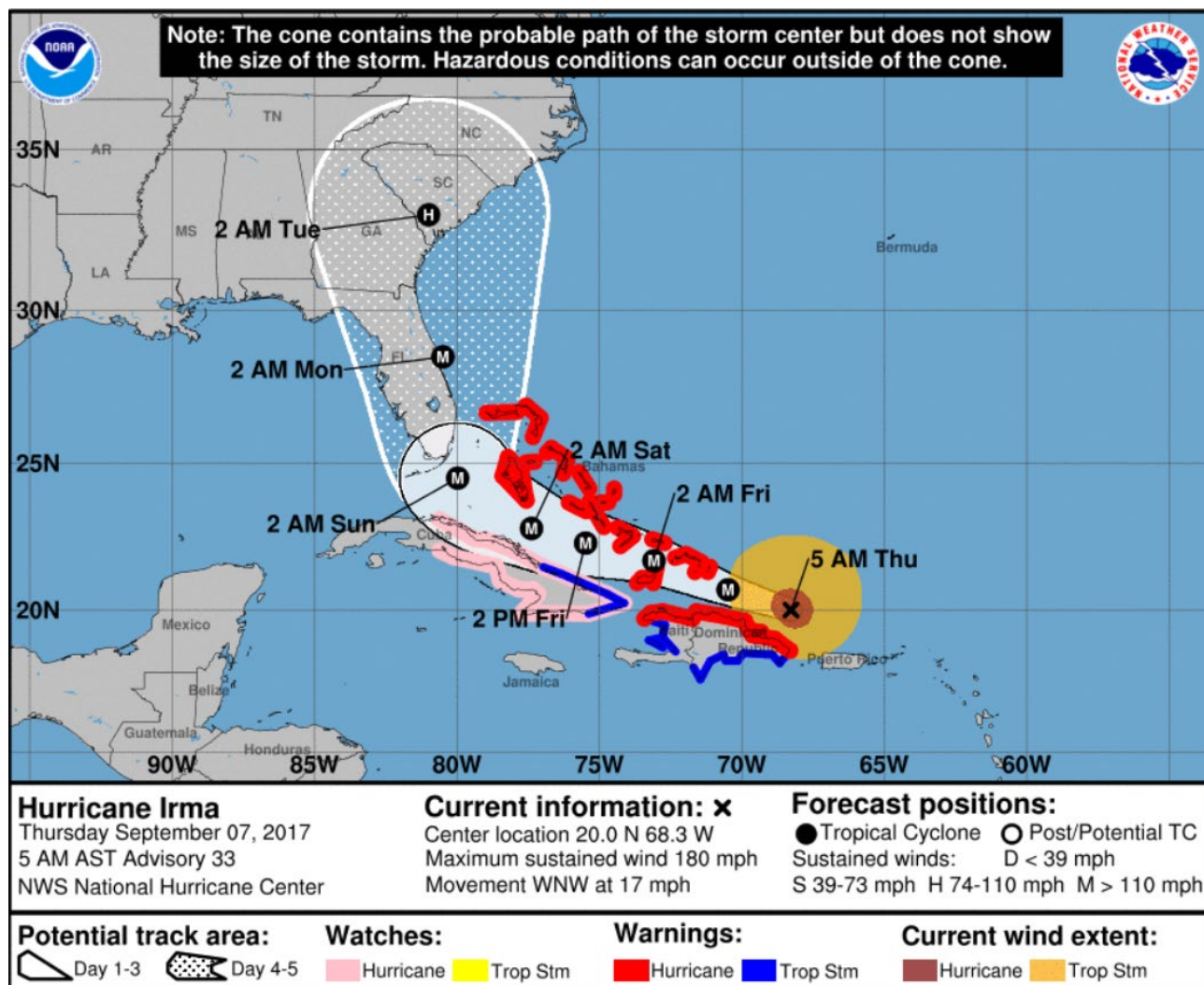
**Figure 1:** 07/1015 UTC colour enhanced satellite image.

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**Figure 2:** 07/0900 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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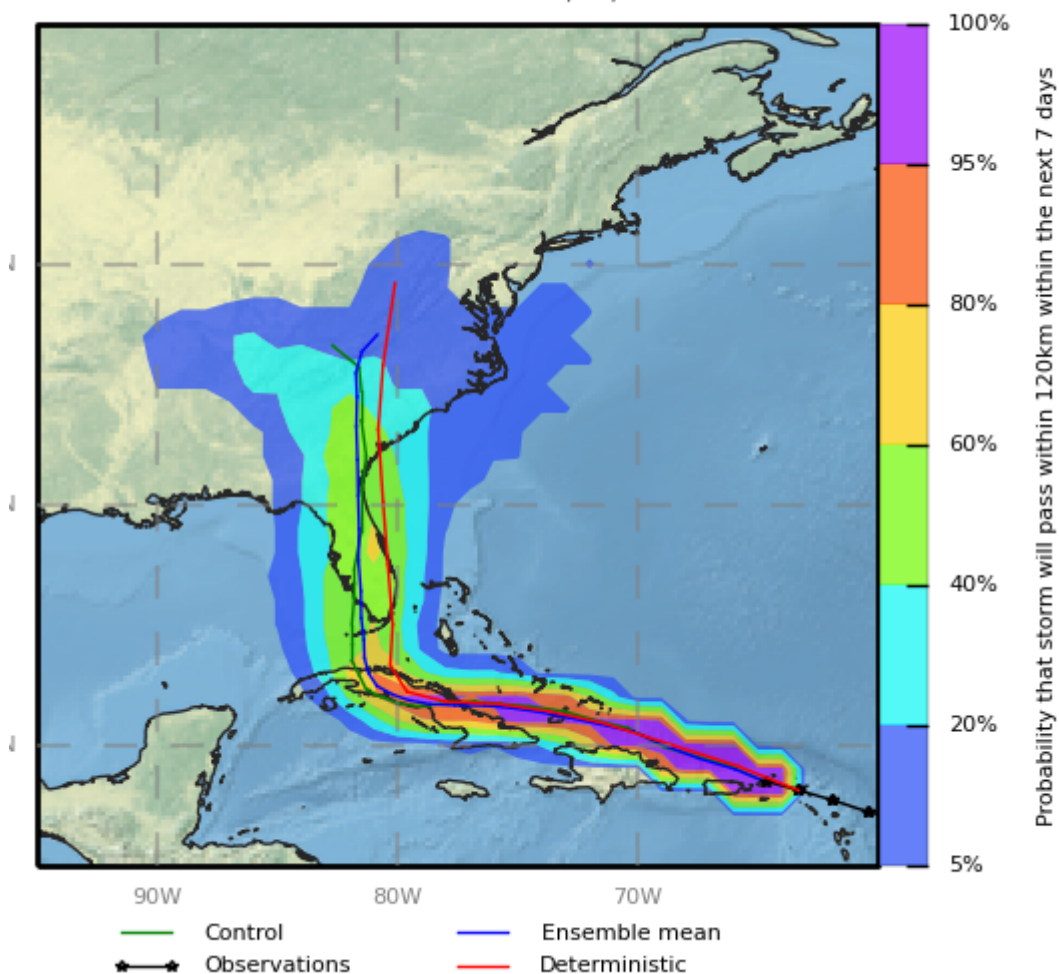
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MOGREPS-G: Forecast tropical storm strike probability  
for IRMA from 18UTC 06/09/2017



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

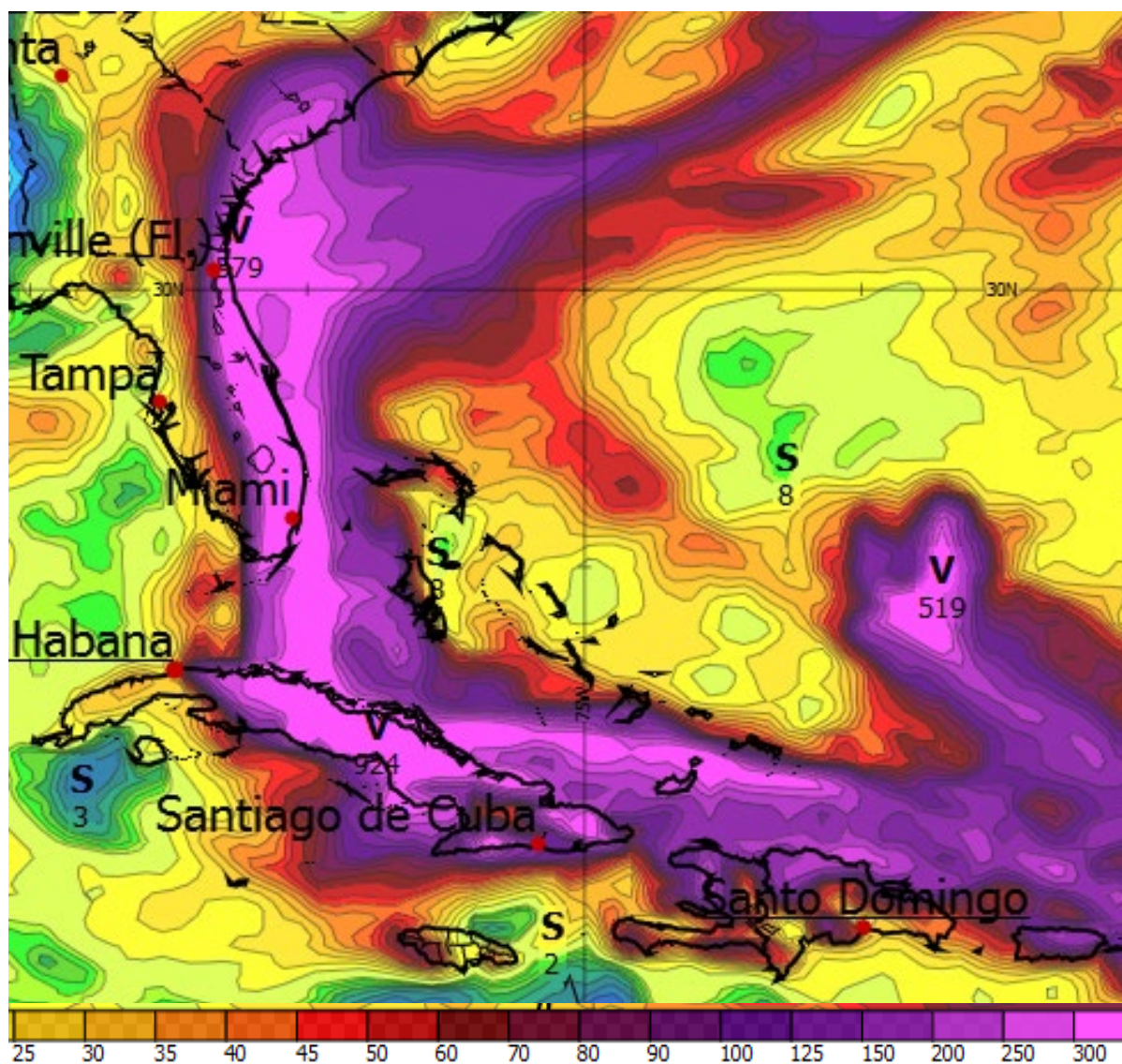
*This shows the range of possibilities for the track of Irma during the next 7 days. Note the decreasing confidence in track as Irma tracks north towards the SE of the USA later in the weekend.*

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

*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 900 millimetres accumulating in a 48 period across Cuba, and 500mm in Florida 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 enhanced risk of landslides in Cuba).*

## Sources

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

**Issued at:** 070500 Z    **Meteorologist:** Paul Hutcheon    **Global Guidance Unit**

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