

Severe Weather Advisory for the Caribbean and Florida - Hurricane Irma

Issued on Sunday, 10th September 2017 at 09:00 local time.

Headline

Irma has maintained its strength over the last 3 hours and is a major Category 4 Hurricane, with mean wind speeds of 115kt (130mph) as it moves towards Florida today (Sunday).

Latest imagery now shows that the “eye” of Irma is gradually moving northwards towards the Florida Keys. Irma is expected cross the lower Florida Keys as a Category 4 Hurricane in the next few hours, with some further strengthening possible beforehand. The outer bands of Irma are already affecting the south of Florida with heavy rain and there is the potential for some severe thunderstorms and perhaps tornadoes.

Discussion

The latest estimate of the winds is based on aircraft flying across the Hurricane, as well as surface wind estimates. Irma was located 40 miles N of Varadero, Cuba and 70 miles SSE of Key West, Florida at 10/0600UTC, moving northwest at 8 mph.

There remains some uncertainty in the short term forecast, so we should not focus on the exact track of the centre as hurricane force winds extend some 70 miles out from the centre of the storm, with tropical storm strength winds extending 205 miles out.

The latest forecast is slightly less intense than the previous one but the centre of Irma is still expected to cross the lower Florida Keys as a Category 4 Hurricane in the next several hours, moving near or along the west coast of Florida through the rest of Sunday and into Monday. The weakening storm should then move inland over the Florida panhandle and southwestern Georgia later Monday to become a Tropical Storm. On Tuesday and Wednesday Irma is expected to decay to become a Tropical Depression across Alabama and then Tennessee/Kentucky.

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.

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 70 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. Trees could be uprooted or snapped and some may be debarked, isolating most communities impacted. Very strong and gusty winds are associated with any severe thunderstorms and tornadoes ahead of Irma making landfall.

Storm Surge & Flooding: Flooding, through a combination of torrential rainfall, storm surge and heavy surf is likely. The south-western coastline of Florida is expected to see the highest storm surge of 3-5 metres. Therefore, severe storm surge damage is likely. Miami is expected to see a storm surge of 0.5 to 1 metre.

Rainfall: Irma is a large storm with its associated torrential rain extending a long way from the storm centre leading to flash flooding and mudslides. Locally severe thunderstorms are already affecting Florida, with 200-400mm of rain expected on Sunday and Monday across Florida. Georgia, Alabama and Tennessee are then

This forecast may be amended at any time

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at risk of some heavy rain fall (100-200mm) as the then weakening storm moves across the region early in the week.

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.

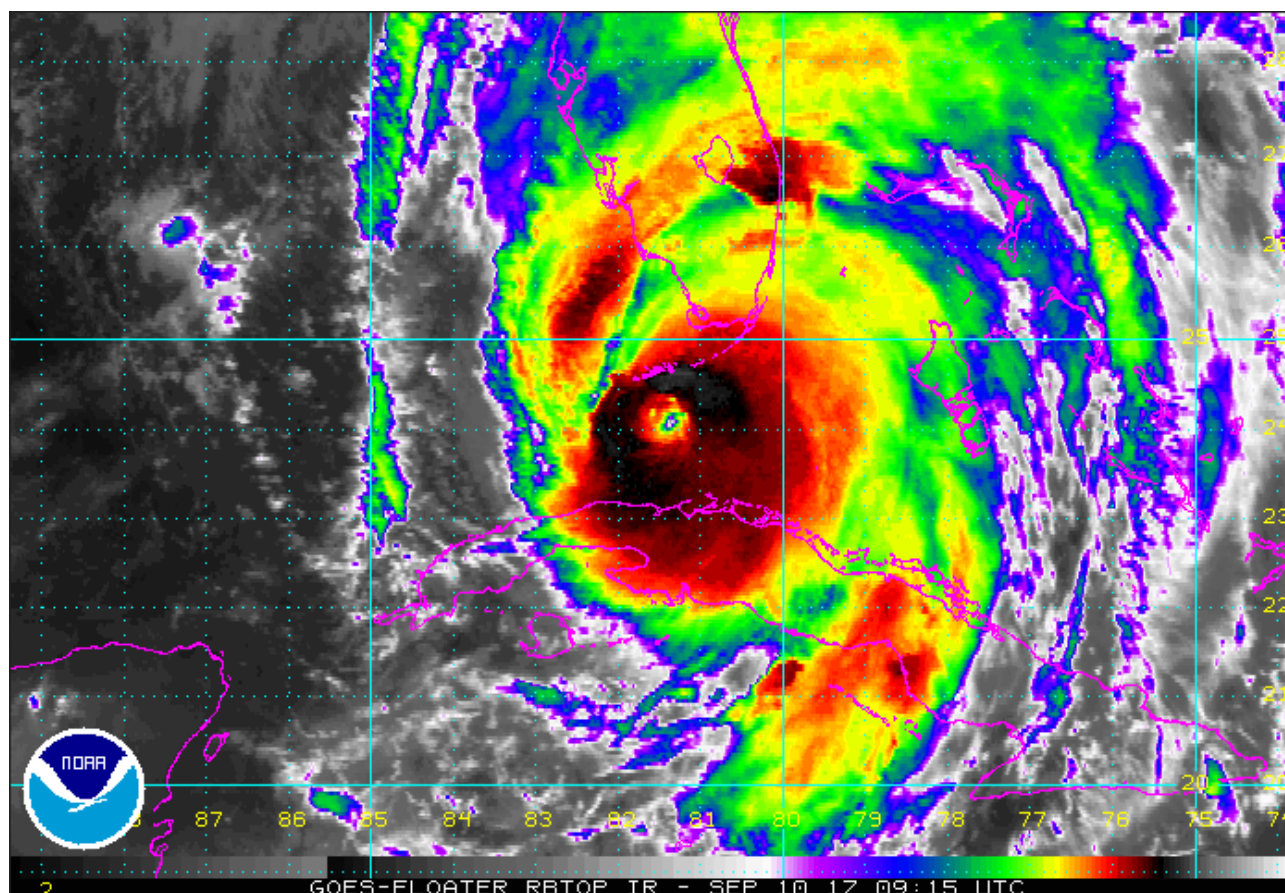


Figure 1: 10/0915 UTC IR satellite image. The shows Hurricane Irma now moving towards Florida.

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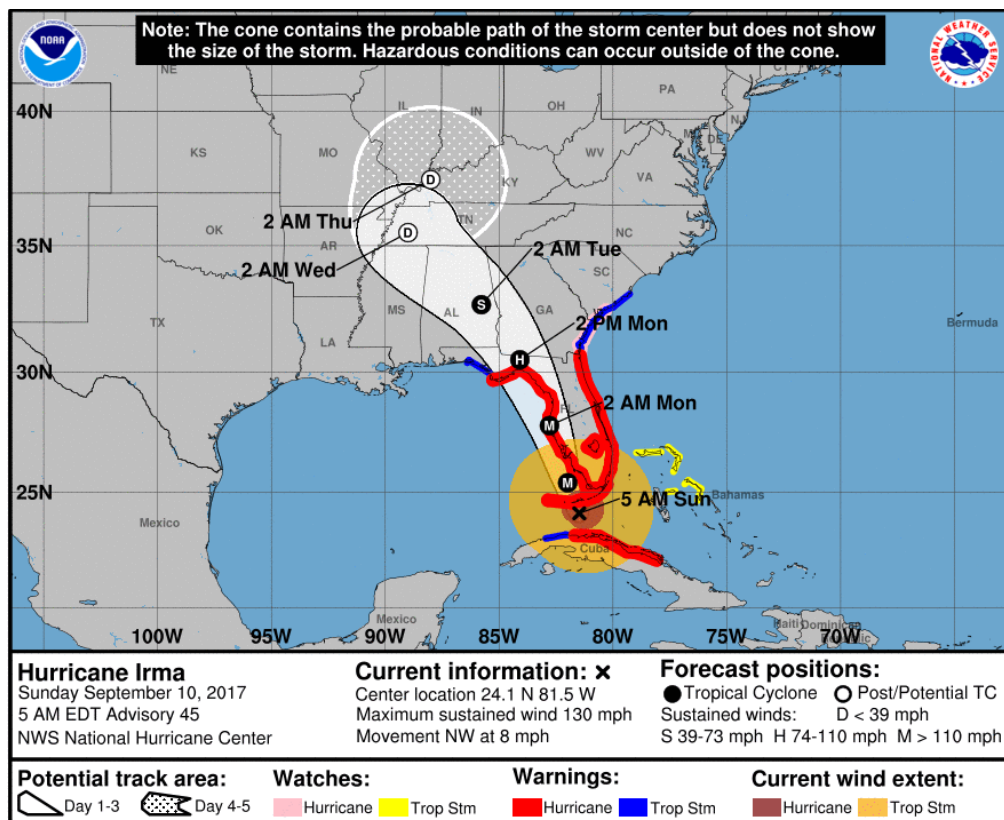


Figure 2: 10/0900 UTC official forecast track and cone of uncertainty for Hurricane Irma from the National Hurricane Centre. Times on the graphic are in AST (UTC-4).

A slight westward shift from the previous track.

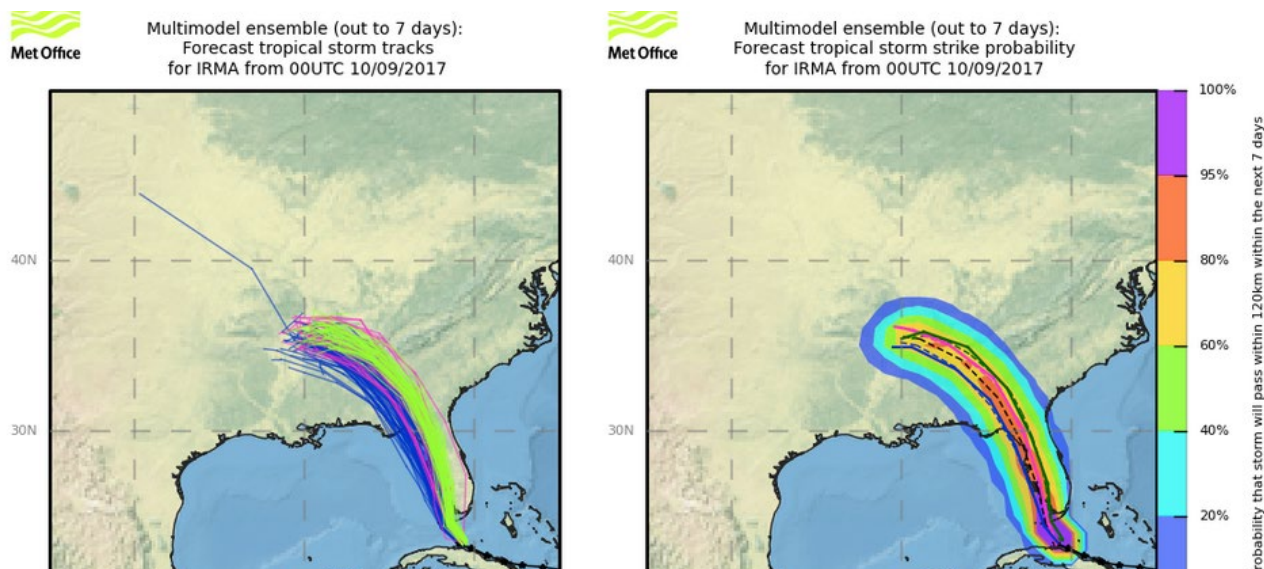


Figure 3: Latest Ensemble spread (10/00 UTC) of tracks from the Met Office, ECMWF and NCEP. This shows the range of possibilities for the track of Irma during the next 7 days. Note the continued strong signal for a track north across western Florida.

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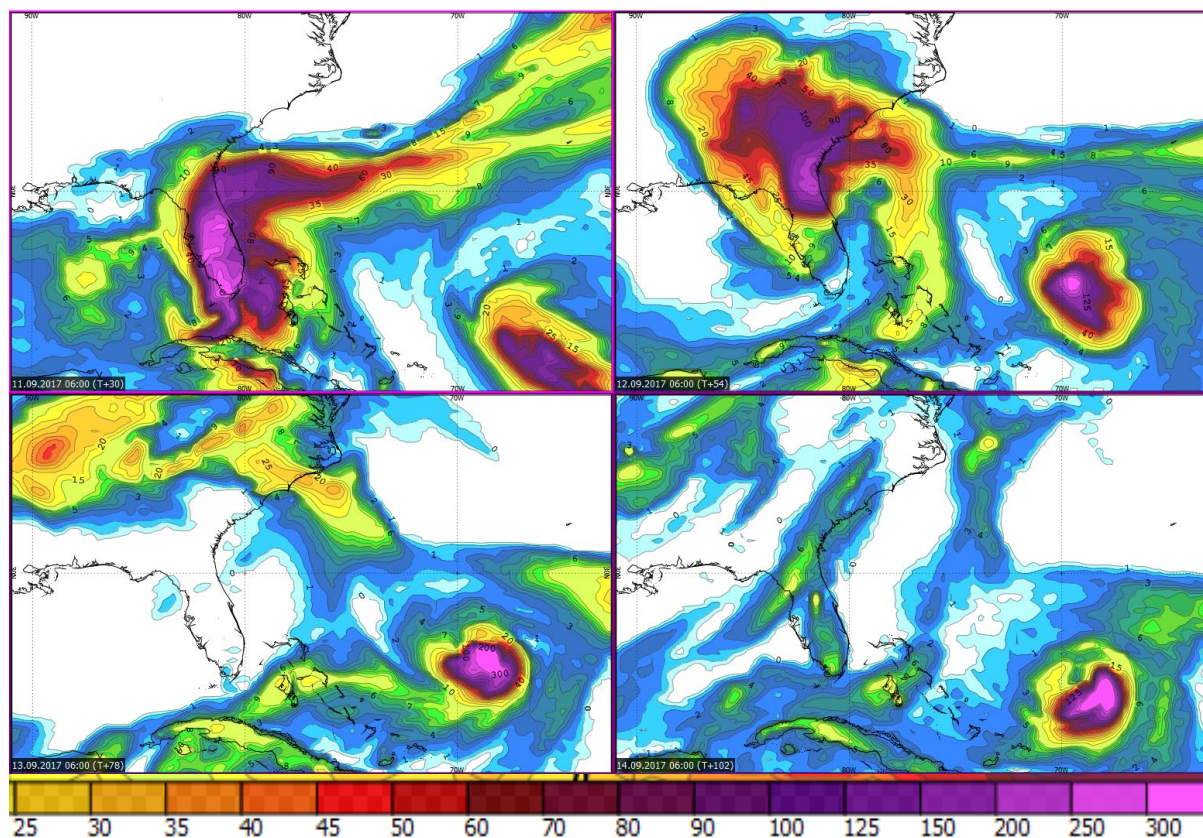


Figure 4: 09/00 UTC UKGM 24 hour rainfall totals for the next 4 days. Accumulated precipitation up to next Wednesday in millimeters; Sunday (top left) to Wednesday (bottom right).

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

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