

Severe Weather Advisory for Tropical Cyclone Donna

Issued on Sunday 7th May 2017 at 14:45 UTC.

Headline

New Caledonia at risk of impacts from Tropical Cyclone Donna, particularly across the Loyalty Islands. Further impacts for Vanuatu still possible.

Impacts

This Tropical Cyclone could bring a risk of damaging winds, flooding rains, storm surge flooding and an enhanced landslide risk to parts of New Caledonia and Vanuatu.

Discussion

Tropical Cyclone Donna was centered around 290 miles NW of Port Vila, Vanuatu at 1200UTC today (Saturday), with sustained winds of around 75KT (86mph). The official advisory centre in Fiji has now categorised this as a Category 3 Tropical Cyclone using the Australian/Fiji category system. There are reports of destruction across parts of northern Vanuatu following the heavy rain and strong winds (http://www.ndmo.gov.vu/resources/downloads/com_jaextmanager/category/24-situation-reports?download=60:03-ndmo-vanuatu-tc-donna-situation-report-6th-may-2017). Earlier editions of these Situation Reports suggest international aid has been provided by Australia and New Zealand, which may influence the level of UK support.

Donna is currently moving slowly south-south-east with further slight intensification possible over the next 24hrs. It is expected to turn towards the southeast later Sunday or Monday, potentially curving slightly closer to Vanuatu. On this track Donna is likely to pass over the Loyalty Islands, New Caledonia (population ~18,000).

There continues to be some spread of model solutions for Donna's track over the next few days although there is fairly good agreement that Vanuatu should avoid a direct landfall now. The Met Office Global Model has been consistently furthest east with its forecast track, with its outer rain bands and gale force winds brushing the west of the Vanuatu chain though today and Monday. The best estimate for rainfall based on the latest forecast models is for localised totals of up to 150-200mm rain across parts of Vanuatu, particularly windward coasts and mountains. This rain has potential to lead to flash flooding however low confidence in distribution.

The model consensus and official guidance is for a track further west through the next 24 hours with an increased likelihood of a track close to (or in to) New Caledonia and in particular the Loyalty Islands from Monday. There is uncertainty in the strength of Donna through Monday but the expectation is that the Cyclone will remain a category 3 storm. At this stage it is unclear as to whether Donna will make landfall in New Caledonia. However there is a likelihood of damaging, perhaps destructive, winds to New Caledonia in particular on its north coast and also for the Loyalty Islands. Additionally high waves and possible coastal surge are further hazards in these areas.

In excess of 150-200mm of rainfall is also likely across the Loyalty Islands and the relatively sparsely populated northern coastline of eastern New Caledonia on Monday and Tuesday. There is a low probability of event totals locally in excess of 400mm. As such a significant risk of flooding rains in the region with landslides possible in mountainous parts.

The New Caledonia capital Noumea (pop ~180,000) is located on the eastern part of the island but on the south coast. Despite the most probable track of Tropical Cyclone Donna is towards the east of the country, Noumea will likely see significant protection from the mountains to the north. The Loyalty Islands have significantly less protection, being largely flat terrain, and are far more exposed to the destructive winds, heavy rain and rough seas.

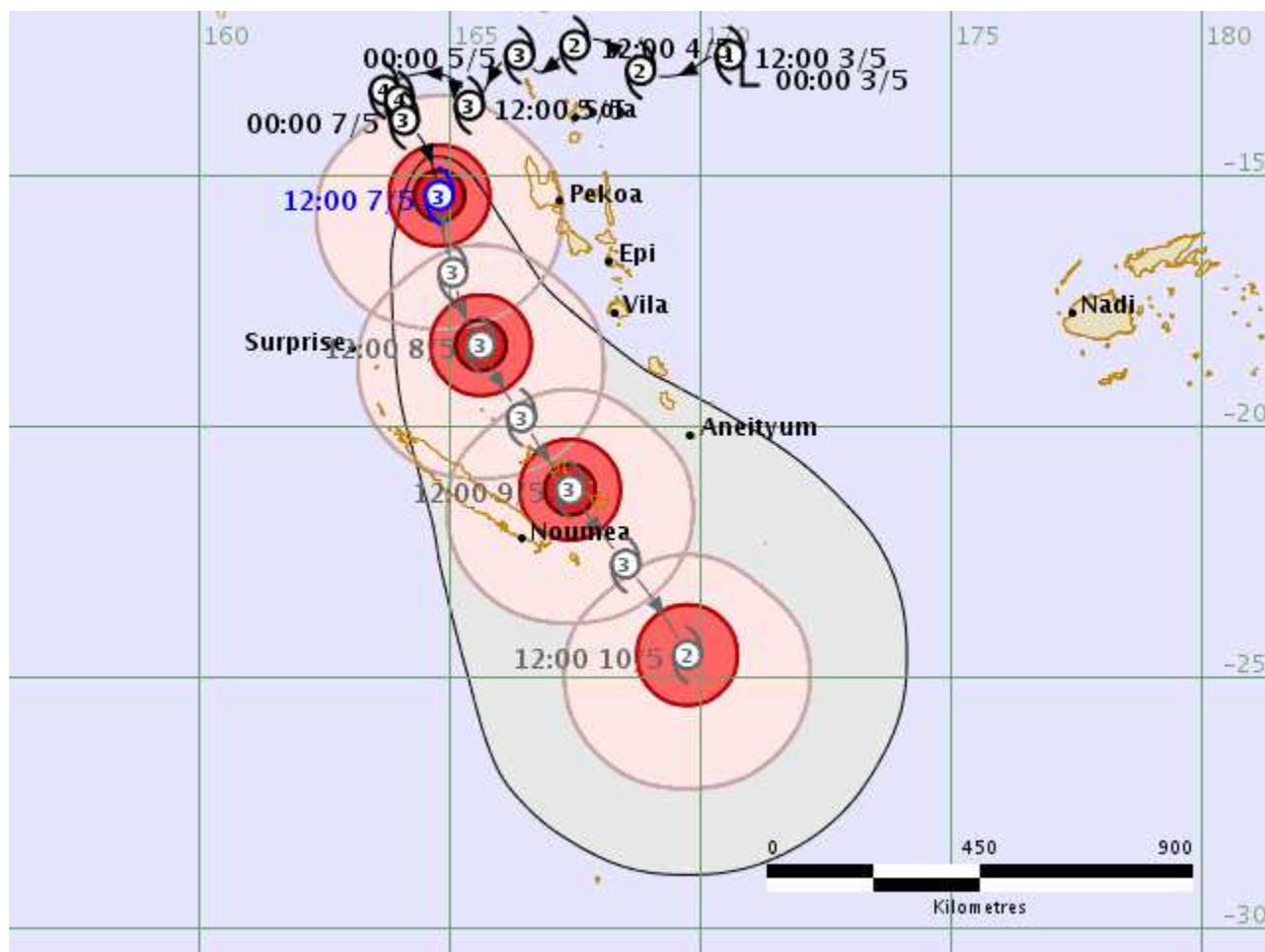
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Figure 1: Latest official track from RSMC Nadi, Fiji, issued at 1341UTC today (Sunday). This track takes Donna away from the Vanuatu, but note the large cone of uncertainty indicated by the grey outer circle showing the range of likely tracks over 72 hours, with some uncertainty remaining in how close it will get to Vanuatu or New Caledonia.



Current and Past Cyclone Details		Forecast Cyclone Details (at 24, 48 and 72 hours from issue)	
Current Location and Intensity Number	@ or L	Forecast Location and Intensity Number	@ or L
Very Destructive Hurricane Force Winds		Very Destructive Wind Boundary	
Destructive Storm Force Winds		Destructive Wind Boundary	
Damaging Gale Force Winds		Gale Force Wind Boundary	
Past Track and Movement		Most Likely Future Track	
Past Location and Intensity Number	@ or L	Range of Likely Tracks over 72 hours	

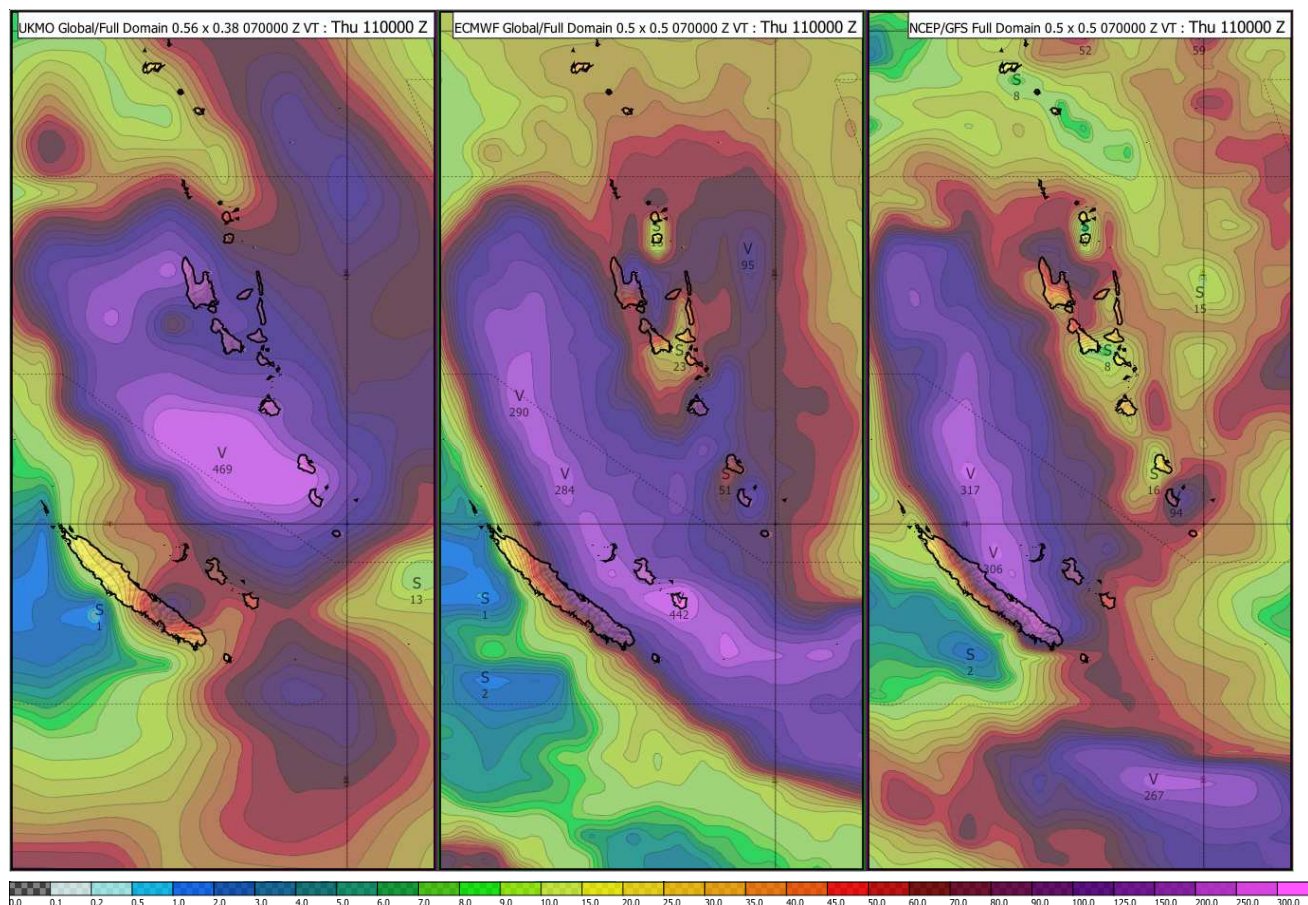
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Figure 2: Accumulated rainfall from the GM (left), ECMWF (centre), GFS (right) to 110000 UTC. The official track is most similar to ECMWF, although all 3 remain within the cone of uncertainty.



Sources

Met Office, ECMWF, NCEP, RSMC Nadi.

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