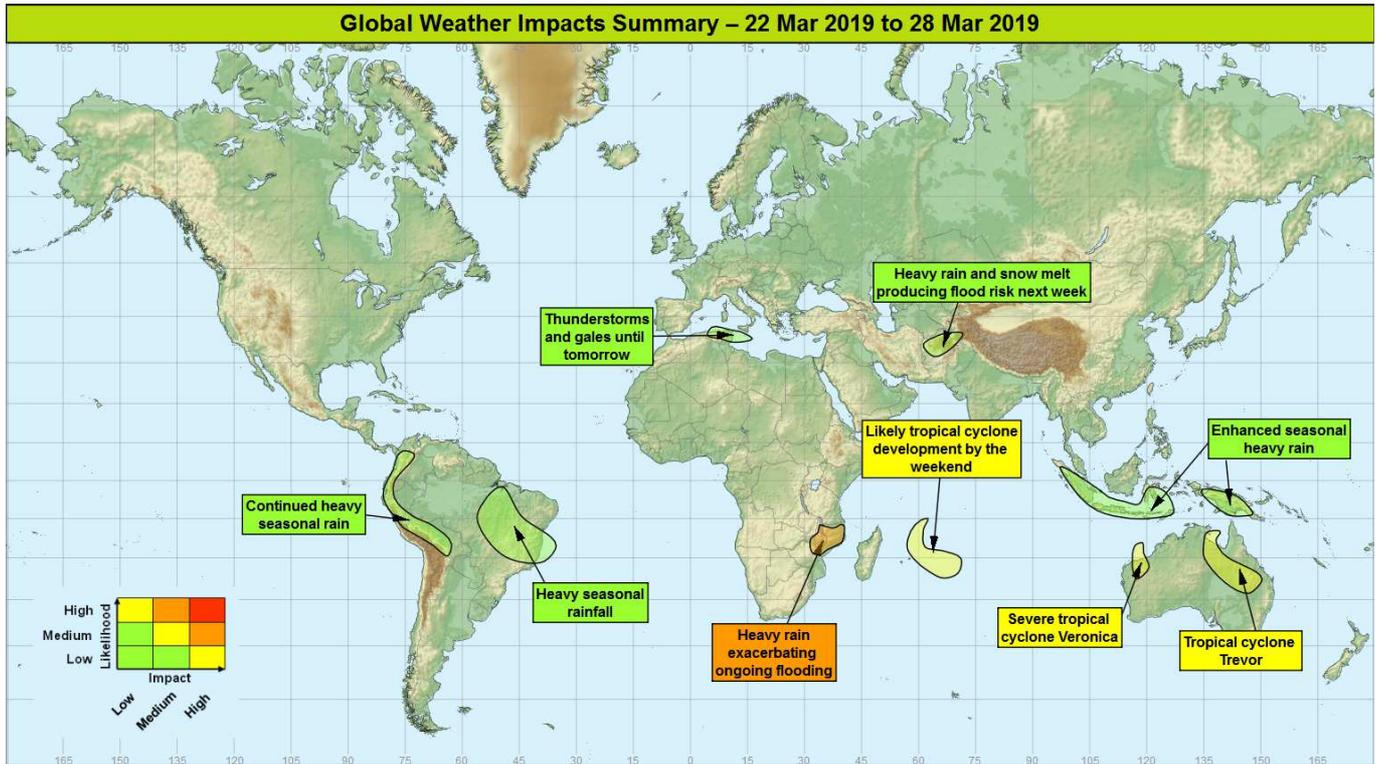


## Global Weather Impacts – Friday 22<sup>nd</sup> to Thursday 28<sup>th</sup> March 2019

Issued on Friday 22<sup>nd</sup> March 2019

### HEADLINES

- Thunderstorms continue over northern parts of Mozambique and Malawi.
- Tropical cyclones Trevor and Veronica affecting northern Australia through the next week.
- Possibility of a strong tropical cyclone affecting Rodrigues (Indian Ocean) this weekend.



### DISCUSSION

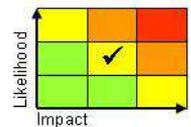
#### Tropical Cyclones

##### Tropical cyclone Trevor (North-eastern Australia)

##### Weather

Tropical cyclone Trevor is a category 3 cyclone in the Gulf of Carpentaria. Trevor has sustained winds of 80 mph at 22/0000 UTC.

Trevor is expected to strengthen through the next few days as it tracks south-west across the Gulf of Carpentaria, likely strengthening to a category 4 cyclone (sustained winds of 98 to 123 mph) by the time it makes landfall close to Port McArthur in Northern Territory. Through the weekend into the start of next week Trevor will weaken over land as it tracks south, further into Northern Territory, perhaps reaching Alice Springs. During the next 3 days Trevor is likely to produce a further 300-700 mm of rain on the Cape York Peninsula, north of Cairns. The focus for the rainfall then turns to the far east of Northern Territory, where up to 500 mm of rain could fall in a 3 day period, which would be over a years worth of rain in some places. Early next week the remains of Trevor are likely to track southeast into southern Queensland to bring very heavy rain.



##### Discussion

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

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Models are consistent with the strengthening of Trevor across the Gulf of Carpentaria during the next few days, but with some model spread in the timing and location of landfall in Northern Territory and timing and exact track south across Northern Territory. However, the areas affected are very sparsely populated.

**Expected Impacts**

Flash flooding and river flooding likely, with a storm surge onto the Gulf of Carpentaria coastline likely. Damaging winds also expected, but the areas affected are very sparsely populated which should limit the impact of this cyclone. However, one of the world's largest zinc mines is in the region, with potential environmental impacts should it receive a direct hit.

**Severe tropical cyclone Veronica (Timor Sea and north-western Australia)**

**Weather**

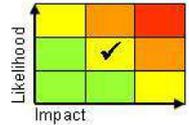
Cyclone Veronica is now a category 4 cyclone, with estimated sustained winds of 110 mph at 22/0000 UTC. This cyclone is expected to continue tracking south, then south-eastwards towards the northern coast of Western Australia through the next 3 days before likely making landfall close to the west of Port Hedland (population around 14000), Western Australia on Sunday. Veronica could bring up to 1000 mm of rain in 24 hours on landfall, which is three times the average annual rainfall in this region.

**Discussion**

An Equatorial Rossby Wave has assisted in the development of Veronica, with all models showing a southwestwards track and strengthening phase for this cyclone through the next 3 or 4 days, and much better model agreement regarding the timing and location of landfall and track thereafter.

**Expected Impacts**

Flash flooding likely, with a storm surge onto the coastline too. Damaging winds also expected, but the areas affected are very sparsely populated which should limit the impact of this cyclone.



**The following area is being monitored for tropical cyclone development:**

**South-western Indian Ocean (primarily Rodrigues)**

**Weather**

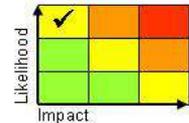
An area of thunderstorms over the southwestern Indian Ocean is expected to develop into a tropical storm during the next 12-18 hours to the northeast of Mauritius and Reunion. It is likely that this cyclone could become an intense feature through the weekend as it tracks south then south-east. There is a moderate likelihood of this system affecting the island of Rodrigues (east of Reunion). This potential tropical cyclone could produce up to 500 mm of rainfall in a 24 hour period, with hurricane force winds (sustained winds in excess of 74 mph) and a large storm surge.

**Discussion**

An Equatorial Rossby Wave has helped to organise an area of thunderstorms that is expected to strengthen into a tropical cyclone in the coming few days. All models show the development of a marked tropical cyclone, but with continued model spread for the exact track. ECMWF continues to be the model with the track closest to Reunion and Mauritius, though even within its EPS this is a minority solution. Instead, most model tracks put the island of Rodrigues at risk, with this evolution also being closer to the official track forecast.

**Expected Impacts**

If this system affects one of the Mascarene Islands it will produce a threat of flash flooding, coastal flooding, landslides and damaging winds. The island of Rodrigues was impacted by tropical cyclone Gelena last month, which resulted in the loss of electricity to 90% of residents, and so is likely to be especially vulnerable to another strong cyclone impact.



**Europe**

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## Malta, northern Tunisia and the far northeast of Algeria

### **Weather**

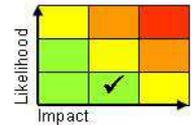
Heavy showers and thunderstorms will affect this region through the next 36-48 hours. Up to 100 mm of rain could fall in a 24 hour period, with event totals of up to 200-250 mm possible. These rainfall totals compare to average March rainfall figures of around 50 mm. In addition to the rainfall, strong or gale force winds are expected to continue during the next few days, building rough seas.

### **Discussion**

A disrupting upper trough has resulted in the development of a depression and areas of thunderstorms that will circulate the low pressure centre.

### **Expected Impacts**

Flash flooding is a significant threat, with disruption to marine and air transport in the region.



## North America

Nil significant.

## Central America and Caribbean

Nil significant.

## South America

## Northern Andes region (Colombia, Ecuador, Peru and Bolivia)

### **Weather**

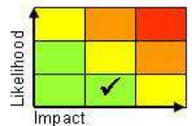
Heavy showers and thunderstorms are expected to continue to affect the northern Andes region for the next week. Rainfall accumulations will vary by location due to the showery nature of the rainfall, but locally a further 150-250 mm of rain is possible in places through the week.

### **Discussion**

Along the Pacific coastline north of NE Peru there are positive SST anomalies, and these indicate a weakening of trade winds and the Humboldt Current in this region. This setup allows sea breezes to draw moist oceanic air to the usually dry western Andes, with an unusually high frequency of heavy showers and thunderstorms occurring here.

### **Expected Impacts**

Flash flooding and landslides remain an ongoing threat in the mountainous areas, as well as downstream river flooding. With much of this region preconditioned by previous rainfall, further heavy rain will produce some additional impacts. Over recent weeks there has already been significant damage to infrastructure from flooding, with homes, bridges and roads destroyed.



## Northeastern Brazil

### **Weather**

Widespread heavy showers and thunderstorms are expected to affect north-eastern parts of Brazil, with up to 250 mm of rain accumulating in places. This would represent 2 or 3 times the average March rainfall falling within a week.

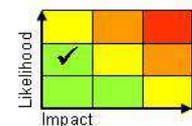
### **Discussion**

The South Atlantic Convergence Zone (SACZ) will push further north than usual through the coming days, likely combining with a south shifted ITCZ a little further north, to produce very large rainfall totals across a large region.

The GM, EC and GFS all produce a signal for a rare sub-tropical or tropical cyclone development close to or just offshore Brazil (between Salvador and Rio de Janeiro) this weekend or early next week. This is supported by EC and NCEP EPS tropical cyclone probability output.

### **Expected Impacts**

Flash flooding is the most likely impact, with the potential for landslides. However, this region of Brazil has seen below average rainfall so far through the rainy season, so river flooding and dam breaches are likely to be a lower likelihood.



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## Africa

### **Central and northern Mozambique, along with Malawi** **Weather**

Tropical cyclone Idai affected large parts of Mozambique, bringing locally devastating wind and rain impacts, more particularly to the coastal city of Beira. Further heavy showers and thunderstorms are likely in the coming days, but with the focus for this shifting further north with time. By the end of the weekend, the focus for heaviest showers is likely to be across northern Mozambique, much of Malawi, and, at times, across the eastern coastal fringes of central Mozambique. Where these storms become long-lived/organised, they have the potential to generate 50-75mm of rain in 24 hours, with some parts of northern Mozambique perhaps seeing 100-150mm by early next week. Much of the rest of the country, including Beira, should see a diminution of rainfall intensity and coverage, through there is the risk of further heavy showers developing across the south of the country by mid-week.

#### **Discussion**

This event may well rank as the worst Southern Hemisphere weather disaster on record, with some reports that the death toll has exceeded 1000. There are reports that 90% of the city of Beira has been destroyed. Despite the peak rainfall transferring northwards, river flooding is likely to continue in central Mozambique for several days. This northward transfer of thunderstorms will likely exacerbate the existing flooding further north in Malawi and northern Mozambique through the weekend, but with drier weather likely into next week.

Since the weather is starting to improve across the region, the impact matrix has been downgraded to amber.

#### **Expected Impacts**

Improving weather conditions are expected for the severely impacted areas of eastern Zimbabwe and central Mozambique in the coming days. However, Malawi and northern Mozambique, that were impacted by widespread flooding around 10 days ago by the system that became Idai, will see a threat of further severe river flooding from the increased thunderstorm activity.

**Northern Tunisia and the far northeast of Algeria** – See *Europe* section.

**Mauritius, Reunion and Rodrigues** – See *Tropical Cyclones* section.

## Middle East

Nil significant.

## Asia

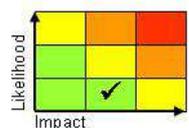
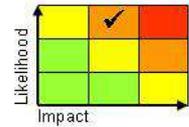
### **Afghanistan** **Weather**

A series of active frontal systems will produce spells of heavy rain across Afghanistan next week, with up to 50-100 mm of rain likely to accumulate. The rain will be associated with very warm air that will melt the snow pack across the Hindu Kush below 3000-3500 metres.

#### **Discussion**

There is a strong signal for heavier than average rainfall and rising freezing levels next week across Afghanistan. There has been a deeper than average snow pack this past winter across the Hindu Kush.

#### **Expected Impacts**



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The combination of heavy rain and snow melt will increase the likelihood of flash flooding, river flooding and landslides across the mountainous northern and eastern Afghanistan, with downstream river flooding possible in southwestern Afghanistan. At higher altitudes there will be an increased likelihood of avalanches with fresh snowfall.

## **Indonesia and Papua New Guinea**

### **Weather**

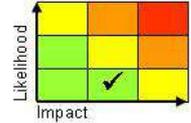
Above average rainfall is expected across many islands in this region through the next week. Whilst the heaviest downpours will be rather localised, they are likely to develop in a similar places each day with 500-100 mm of rain falling in 24 hours and some places likely to receive around 250 mm over the next week. In a typical 7-day period at this time of year, this region normally receives around 50-100 mm.

### **Discussion**

The MJO, although weakening, will continue to help to organise and enhance convection across the region. An additional contribution is expected to be the enhanced ITCZ due an increased flow, and subsequent convergence, from the south associated with tropical cyclone Veronica.

### **Expected Impacts**

An increased likelihood of flash flooding and landslides leading to localised damage to infrastructure and property.



## **Australasia**

**Northeastern and northwestern Australia** – See *Tropical Cyclones* section.

**Papua New Guinea** – See *Asia* section.

## **Additional information**

Nil.

**Issued at:** 220800 UTC    **Meteorologist:** Jason Kelly

**Global Guidance Unit**

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