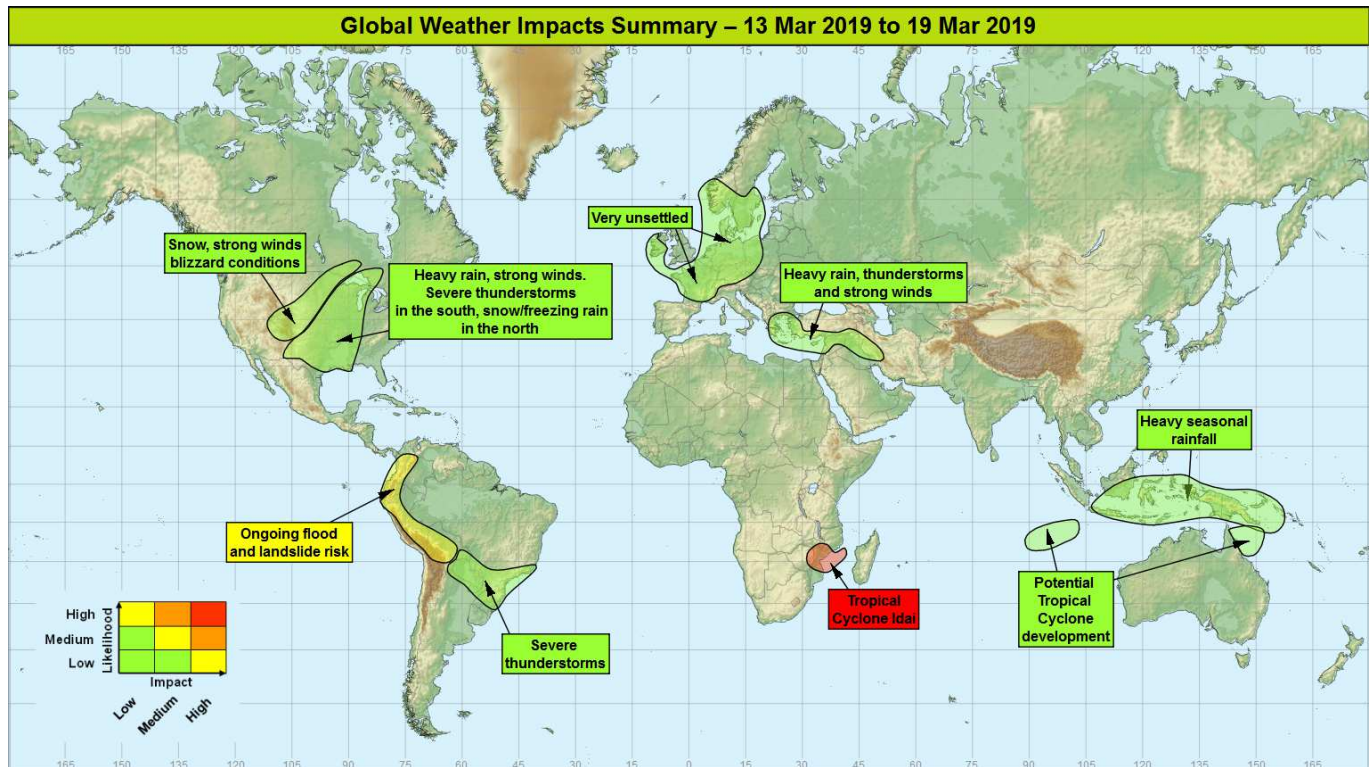


## Global Weather Impacts – Wednesday 13<sup>th</sup> to Tuesday 19<sup>th</sup> March 2019

Issued on Wednesday 13<sup>th</sup> March 2019

### HEADLINES

- Tropical Cyclone Idai is expected to significantly impact Mozambique later this week.
- Another week of enhanced rainfall for the northern Andes, with further impacts likely.



### DISCUSSION

#### Tropical Cyclones

#### Tropical Cyclone Idai (Mozambique Channel, Mozambique, Malawi and Zimbabwe)

##### Weather

Idai has strengthened over the past 24 hours as it has remained slow moving in the Central Mozambique Channel (19.4 degree south 39.5 degrees east), with sustained 10-minute mean winds of around 90 mph at 13/0600 UTC.

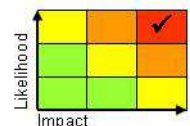
Idai is expected transfer southwest then westwards to make landfall near to the port of Beira (Mozambique) later on Thursday as a strengthening cyclone.

A swathe of exceptionally heavy rainfall will be associated with this tropical system, extending inland across central parts of Mozambique and eventually into southern Malawi and eastern Zimbabwe. Some locations will receive as much as 1000 mm of rain over the course of the event (generally this part of the world sees 150-300 mm of rainfall in a typical March).

Sustained winds in excess of around 120 mph are likely to affect coastal areas in the immediate vicinity of the cyclones core, with less strong but still damaging winds occurring more widely.

The extremely strong winds and low pressure associated with the storm will also bring a significant storm surge (possibly up to 3 metres) just south of where the system makes landfall.

##### Discussion



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Cyclone Idai will experience favourable conditions for strengthening through the next 24 to 36 hours prior to its expected landfall, although eyewall strengthening cycles will result in intensity fluctuations during this period.

There is consistent model track guidance to suggest that landfall of an intense cyclone will be close to the port of Beira with winds well in excess of 100 mph.

Once Idai makes landfall it will rapidly weaken, but become slow moving, continuing to produce very heavy rainfall across central parts of Mozambique, and possibly southern Malawi and eastern Zimbabwe.

This region has already seen very heavy seasonal rainfall in recent weeks with severe and deadly flood impacts. So further very heavy rainfall will just exacerbate the situation.

### **Expected Impacts**

Flash and fluvial flooding, with major river systems such as the Zambezi, Pungwe, Revue and Save likely to be affected.

Destructive winds near the storms centre will pose a danger to life, and significantly damage or destroy structures.

Extremely large waves and a storm surge are likely to cause significant coastal flooding.

### **The following area is being monitored for Tropical Cyclone development:**

#### **SE Indian Ocean**

##### **Weather**

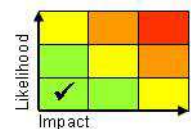
A tropical low and enhanced convection west of Christmas Island, southwest of Sumatra, Indonesia, may develop into a tropical cyclone over the next couple of days, passing close to Cocos Island. Even if a tropical cyclone does not develop, an area of enhanced showers and thunderstorms is likely. This system looks most likely to remain away from land however.

##### **Discussion**

An area of enhanced convection is evident on imagery west of Christmas Island. This looks from the model output to be the most likely area of tropical cyclogenesis over the next few days, with a fairly consistent signal from the main deterministic models for modest development.

##### **Expected Impacts**

Very low probability of flooding and wind impacts affecting the sparsely populated island of Cocos.



#### **Coral Sea and far northeast of Australia**

##### **Weather**

There is the potential for a tropical cyclone development later this weekend or early next week across the Coral Sea. If a system develops it could affect the northeast of Queensland, Australia, bringing very strong winds, intense rainfall and a storm surge.

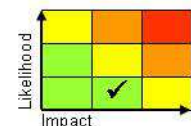
##### **Discussion**

The MJO, that will be moving into the Western Pacific by the weekend, is likely to produce a strong Equatorial Rossby Wave in the next few days that could help develop a tropical cyclone.

The EC and GFS produce a strong signal for a tropical cyclone development in this region by early next week, with the GM producing a weaker signal. So there remains some uncertainty in the timing and intensity of development.

##### **Expected Impacts**

Threat of flash and coastal flooding as well as destructive winds.



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## Europe

### Northwestern Europe

#### **Weather**

A mobile and generally unsettled spell of weather is expected to continue across this region through much of the next 7 days, although nothing particularly unusual for March.

A deep depression (named 'Gareth') will bring a further spell of very strong winds across parts of northern Europe today, accompanied by heavy showers.

This unsettled pattern looks likely to continue until at least the end of the weekend, although will probably become less severe.

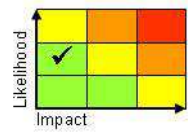
Parts of Scandinavia and the Alps will see heavy snowfall at times, with up to 1.5 metres of fresh snowfall possibly above 1000 metres above sea level.

#### **Discussion**

There remains some uncertainty in the development of individual systems, but there is a good signal for a period of unsettled and potentially very windy weather across much of the near continent. The uncertainty relates to frontal waves which may cross to the cold side of the powerful jet and undergo cyclogenesis, with the potential for some very potent lows to form. Differences from model to model and run to run are unlikely to resolve themselves until relatively short lead times.

#### **Expected Impacts**

The main impacts are likely to be wind related, so disruption to travel, especially aviation and marine seems likely. There is a lesser risk of disruption to power supplies from fallen trees. Snowfall may bring some disruption to parts of southern Scandinavia. Large rainfall totals building up through this event may begin to make parts of the Northern Alps.



### Greece, South and west Turkey, Crete, Cyprus, Lebanon, northern Syria, northern Iraq and western Iran

#### **Weather**

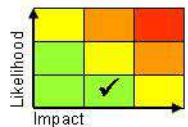
Spells of heavy rain and thunderstorms will affect this region at times through the next few days, producing up to 50 mm in a 6-12 hour period, and in places up to 100 mm during the period (which is double the average March rainfall in the region). Strong winds or gales are possible at times, producing rough seas, as well as lifting dense dust plumes.

#### **Discussion**

A succession of marked upper troughs will sweep east across this region until the weekend, pushing active frontal systems and deeply unstable airmasses across the region.

#### **Expected Impacts**

Some flash flooding is possible, especially in mountainous regions. The strong winds will be hazardous to shipping in the area, and may cause local land disruption, lifting dense dust plumes across Syria and Iraq.



## North America

### Central USA

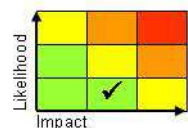
#### **Weather**

An exceptionally deep area of low pressure is expected to form over the Central Plains of the USA today, tracking north-eastwards over the following couple of days. Multiple hazards are expected in association with this system. A large swathe of heavy rain, accompanied by strong winds, looks likely to develop, bringing 50-100 mm across many parts of central and southern US. There is the potential for severe thunderstorms to develop, which could bring large hail, localised damaging winds, and the risk of tornadoes to south-central parts through to the weekend. On the northern edge of this system, snow, transitioning to freezing rain may affect transport and aviation in and around the Great Lakes.

#### **Discussion**

A potent upper trough/cut-off vortex will slowly drift across the far south of the USA over the next couple of days, engaging high WBPT air returning northwards on the backing low-level flow, and spinning up a very deep depression (sub 980hPa) during the next few days. All models agree very well upon this evolution, with high confidence in the development.

#### **Expected Impacts**



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Heavy rain may result in some urban flooding, frequent lightning may disrupt power supplies, large hail damage to crops and property, with a threat of greater disruption (albeit on a very localised scale) if any significant tornadoes form. Freezing rain and snow likely to affect transport, mainly on a localised scale.

## **Colorado northeast up to Minnesota / western Great Lakes area, USA**

### **Weather**

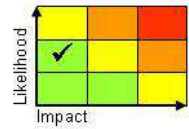
In association with the system described in the previous section, an area of heavy snow and very strong winds/gales will develop as colder air from the northwest engages the developing precipitation area. Some areas could see as much as 50 cm of snow, accompanied by gale force winds bringing blizzard conditions at times.

### **Discussion**

Colder air arriving from the northwest behind a Pacific frontal zone will undercut the developing system allowing pbn to turn to snow along quite a wide swathe. There is relatively high confidence in the region to be affected, although details of snowfall amounts naturally carry lower confidence at this range.

### **Expected Impacts**

Snowfall and strong winds will likely disrupt road, rail and air travel in the region. There is a risk that accretion of snow and ice on trees and power lines may lead to some short term outages. Heavy snowfall will also exacerbate the already elevated avalanche risk in parts of the Rockies.



## **Central America and Caribbean**

Nil significant.

## **South America**

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

#### **Weather**

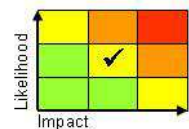
Heavy showers and thunderstorms are expected to continue to affect the northern Andes region for the next week. Rainfall accumulations will vary by location due to the showery nature of the rainfall, but some places are likely to see a further 200-300 mm of rain over the next week.

#### **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 now preconditioned by previous rainfall, further heavy rain will produce some additional impacts. There has already been significant damage to infrastructure from flooding, with homes, bridges and roads destroyed.



## **Paraguay and southern Brazil**

### **Weather**

Frequent showers and thunderstorms are expected to affect the region over the next 7 days. Thunderstorms will produce strong winds, large hail and a risk of tornadoes. Locally in excess of 100 mm of rainfall is possible in a few hours.

### **Discussion**

A number of disturbances embedded within the subtropical jet are expected to lead to further episodes of severe convection along the South Atlantic Convergence Zone (SACZ). The environment will often be characterised by high CAPE and shear, supporting mesoscale convective systems and supercells.

### **Expected Impacts**

Flash flooding and increased risk of landslides are likely. Severe thunderstorms will also cause some highly localised but potentially significant property and infrastructure impacts due to strong winds, hail and lightning damage.



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**Africa**

**Central Mozambique, southern Malawi and eastern Zimbabwe** - See *Tropical Cyclones* section

**Middle East**

**Lebanon, northern Syria, northern Iraq and western Iran** – See *Europe* section

**Asia**

**Central and eastern Indonesia and Papua New Guinea**

**Weather**

Above average rainfall is expected across many islands in this region through the next week. Whilst downpours are expected to be rather localised, they are likely to develop in a similar place each day with 100-150 mm of rain possible falling in 24 hours with some places likely to receive around 300 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 will be moving through the Maritime Continent into the West Pacific through the next week, helping to organise and enhance convection across the region.

**Expected Impacts**

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

**Australasia**

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

**Far northeast of Australia** – See *Tropical Cyclones* section.

**Additional information**

Nil.

**Issued at:** 130800 UTC    **Meteorologist:** Paul Hutcheon

**Global Guidance Unit**

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

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