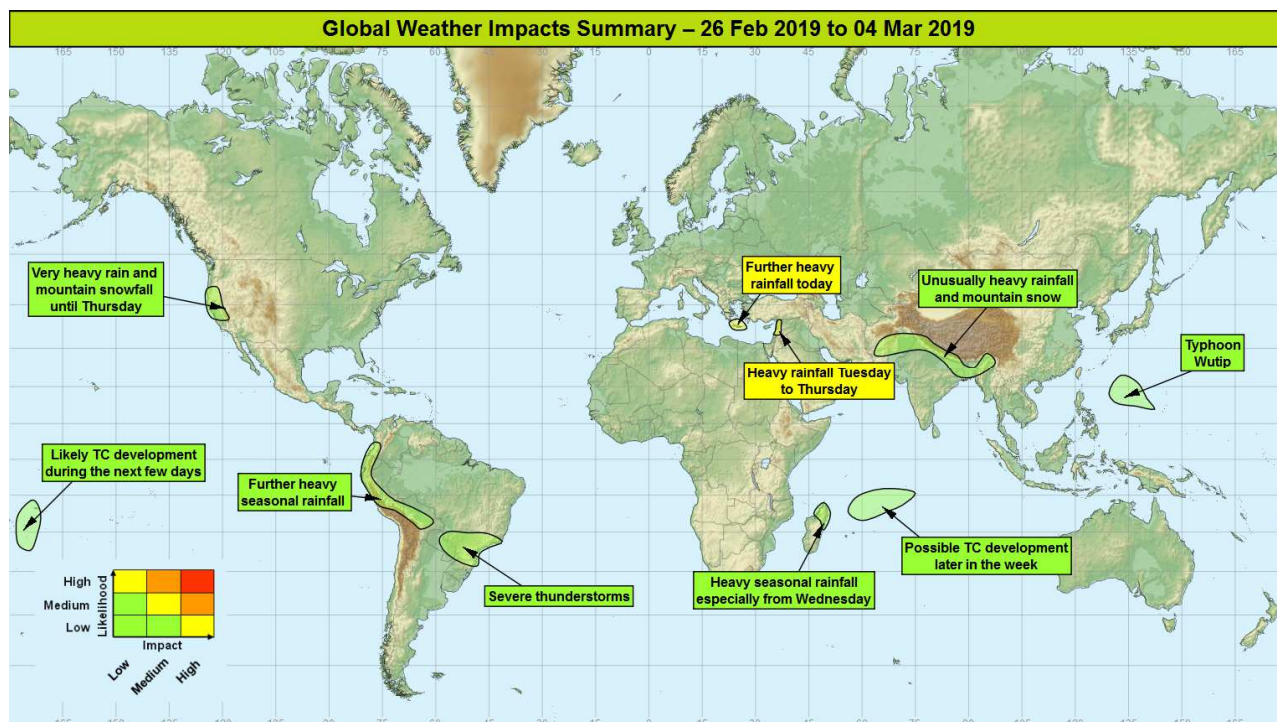


## Global Weather Impacts – Tuesday 26<sup>th</sup> February to Monday 4<sup>th</sup> March 2019

Issued on Tuesday 26<sup>th</sup> February 2019

### HEADLINES

- Deep low pressure system moving across the eastern Mediterranean bringing a threat of further heavy rainfall to Crete today, and parts of the Levant over the next few days.
- Unusually heavy rainfall for Nepal, northern India and Bangladesh until Thursday.



### DISCUSSION

#### Tropical Cyclones

#### Typhoon Wutip (Northwest Pacific)

##### Weather

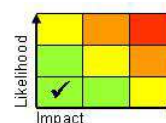
Typhoon Wutip was located near 14.5 degrees North 139.5 degrees East at 26/0300Z, and was moving slowly north. Sustained winds associated with Wutip were 130 mph, with gusts to 186 mph. During the next few days Wutip is expected to significantly weaken as it tracks slowly northwestwards across open water away from any land.

##### Discussion

There are reports that Typhoon Wutip could be the strongest ever February Typhoon. However, there is still good model agreement for this weakening evolution of Wutip during the 4 or 5 days. The loss of strength next week will be due to Wutip moving far enough north to encounter increased wind shear from the sub-tropical jet while also encountering slightly cooler water.

##### Expected Impacts

The forecast track of Wutip keeps it over open waters, with the only impacts for marine transport in the vicinity of the tropical system.



This forecast may be amended at any time

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*The following area has potential for Tropical Cyclone development:*

## Southwest Pacific (Samoa and Tonga)

### **Weather**

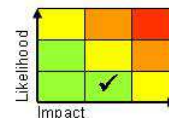
There is the potential for a weak tropical depression to develop into a cyclone over the next 24-48 hours to the east-northeast of Tonga on Tuesday and Wednesday. Tropical Storm force winds are possible, along with up to 200 mm of rain in 24 hours across Tonga.

### **Discussion**

An equatorial Rossby wave could assist in the development of a tropical cyclone just west of Samoa today, with growing model support for this. All models take the system south, close to Tonga through the next 2 or 3 days, but with uncertainty on the intensity of this system. RSMC Fiji has placed a moderate to high probability of a tropical cyclone development by Tuesday.

### **Expected Impacts**

If this system develops, there is a threat of flash and coastal flooding along with potential modest wind damage.



## Southwest Indian Ocean

### **Weather**

There is an increasing likelihood of a tropical cyclone development in the Southwest Indian Ocean later this week, but any development will remain away from land.

### **Discussion**

The MJO will move into the Indian Ocean this week and will likely create Equatorial Rossby Waves that will transfer slowly westwards. It is likely that one of these waves will help develop a Tropical Cyclone later in the week, but there remains poor model agreement for details of any development at this stage.

### **Expected Impacts**

Impacts will be restricted to maritime transport from very strong winds and high seas.



## Europe

### Crete

### **Weather**

Widespread heavy rainfall occurred across Crete on Monday with reports of 344mm at Askifou, Chania. The low pressure system that brought heavy rain to the island has moved away east, but a further 25-50mm is possible today.

### **Discussion**

The central Mediterranean vortex will continue east on Tuesday allowing the wrap-around occlusion to move east across the island. The front is likely to become aligned with the flow and relatively slow moving for a time, leading to a risk of further locally significant accumulations.

### **Expected Impacts**

Although not typically considered extreme, heavy rain again on Tuesday may lead to further flooding and a risk of landslides.



## North America

### Southern Oregon and northern California

### **Weather**

This region of the Pacific West will see several spells of very wet weather through to Thursday. This could result in 300-400 mm of rain accumulating, which is three times the average February rainfall. The rain will fall as snow on higher ground, increasing the snow pack across the Sierra Nevada.

### **Discussion**



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A strong south-shifted Pacific jet stream will feed in a constant stream of Pacific moisture (known as the 'Pineapple Express'), resulting in a series of frontal systems impacting this part of the Pacific coastline that has seen very heavy rainfall (mountain snowfall) in recent months. The snowfall, in association with a marked 1000-500hPa thickness cold pool, could descend as low as 800 metres above sea level initially, but the snow level will gradually rise through the next few days to 1500-2000 metres.

## **Expected Impacts**

Flash, and an increasing likelihood of river, flooding. Increased likelihood of landslides. Increasing avalanche threat in the Sierra Nevada.

## **Central America and Caribbean**

Nil significant.

## **South America**

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

#### **Weather**

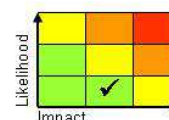
Heavy showers and thunderstorms are expected across parts of the northern Andes region over the next 4 days, extending into parts of Peru and Bolivia east of the Andes. Up to 100 mm of rain is possible each day in isolated locations (falling within the space of a few hours) with some places seeing a further 300-400 mm of rain over the next week, which would be slightly higher than the monthly average, coming on top of heavy seasonal rains through the last few months.

#### **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. There is also likely to be an input from the South American monsoon and South Atlantic Convergence Zone as it moves north from Argentina.

#### **Expected Impacts**

Flash flooding and landslides are a threat in the mountainous areas, with a risk of downstream river flooding. Parts of Peru and Bolivia to the east of the Andes appear to have been badly affected so far, with a state of emergency declared in a number of provinces. Information on further impacts from the ongoing storms has been difficult to come by in recent days. Therefore, we continue to assess this event as yellow (medium likelihood of a medium impact event).



### **Southeast Brazil, eastern Paraguay and the far northeast of Argentina**

#### **Weather**

An area of severe thunderstorms is expected to continue transferring northwards over the next 4 or 5 days. Rainfall totals in isolated locations may reach 75-150 mm, with much of this falling in a short period of time; in addition other hazards associated with severe thunderstorms will be present.

#### **Discussion**

A southward extrusion of the monsoon plume across this region will continue to be engaged by an upper trough in the sub-tropical jet stream, resulting in a South Atlantic Convergence Zone event, producing an active band of severe thunderstorms moving northwards across this region.

#### **Expected Impacts**

Potential for flash flooding. In addition large hail, frequent lightning, strong, gusty winds and the odd tornado may bring significant but highly localised impacts.



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## Africa

### Northeastern Madagascar

#### **Weather**

Heavy showers and thunderstorms are expected to affect northeastern parts of Madagascar through the next 5-6 days, especially on Wednesday and Thursday. Up to 400 mm of rain could fall, with much of this perhaps falling in a few days, which is close to the average February rainfall.

#### **Discussion**

The influence of a convectively coupled equatorial Rossby wave and the progression of the MJO will produce an enhanced threat of heavy seasonal rainfall in northeastern Madagascar through the week. The rainy season has been weak so far, so this rainfall could be welcome to the agriculture industry.

#### **Expected Impacts**

Increasing threat of flash flooding and landslides through the week.



## Middle East

### Lebanon and western Syria

#### **Weather**

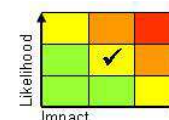
Through Tuesday, Wednesday and Thursday heavy showers and thunderstorms will affect Lebanon and the west of Syria. Up to 50 mm of rain could fall in a 6-12 hour period, with an isolated event total of up to 150 mm possible. This compares to a February average rainfall of around 120 mm. The rain will fall as snow on the mountains. Strong winds will pose a threat of dense lifted dust storms across Syria and Iraq.

#### **Discussion**

An upper trough will sweep east across the region, destabilising the boundary layer to produce deep convection. An upper ridge will follow to bring a more benign spell of weather. WBFL will lower from 2200 metres to 1500 metres through this period, which will allow heavy snowfall to affect land above 2000 metres initially, but eventually down to 1300 metres.

#### **Expected Impacts**

Flash flooding and mountain snow impacts are likely to disrupt land transport and life in the region.



## Asia

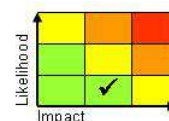
### Northwest Pacific – See *Tropical Cyclones* section.

### Northern India, Pakistan, Afghanistan, Nepal and Bangladesh

#### **Weather**

Heavy showers and thunderstorms (falling as snow above 2300 metres) will run east across Pakistan, northern India and Nepal over the next 2-3 days, with the potential for another more significant event at the end of the week. Up to 100 mm of rainfall could fall in places, with up to 100-150 cm of snow over the mountains. Across Bangladesh and northeast India unusually heavy rainfall is expected during this period, producing up to 50-100 mm of rain in a few hours, along with a threat of frequent lightning. Late February is usually still the dry season with an average February rainfall of around 20 mm, but heavy populated cities like Dhaka (and possibly Kolkata) could see 5 to 10 times the average monthly rainfall in just 4 days this week.

#### **Discussion**



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A sharp upper trough in the subtropical jet will engage a resident high wet bulb potential temperature plume, leading to mass ascent, with strong orographic enhancement of the precipitation taking place as deep southwesterly flow runs into the Himalayas. Across Bangladesh a low level warm, moist southerly flow will combine with the strong upper level westerlies to produce unusually deep convection for the time of year. CAPE may not be high enough to develop supercell storms with large hail and tornadoes, but intense rainfall is expected.

A second upper trough is expected at the end of the week which could lead to more widespread rain and snow across Pakistan and parts of Afghanistan.

**Expected Impacts**

Flash flooding will be a significant threat in the region, with heavy snowfall over the mountains severely disrupting travel across high mountain passes, and increasing the likelihood of avalanches. There is also a low likelihood of large hail and tornado damage in parts of Bangladesh and northeast India, although flooding looks like the most likely impact.

As discussed above, there is the potential for another event at the end of the week and this has the potential to be escalated on the impact matrix.

**Australasia**

**Samoa and Tonga** – See *Tropical Cyclones* section.

**Additional information**

Nil.

**Issued at:** 260800 UTC    **Meteorologist:** Neil Armstrong

**Global Guidance Unit**

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