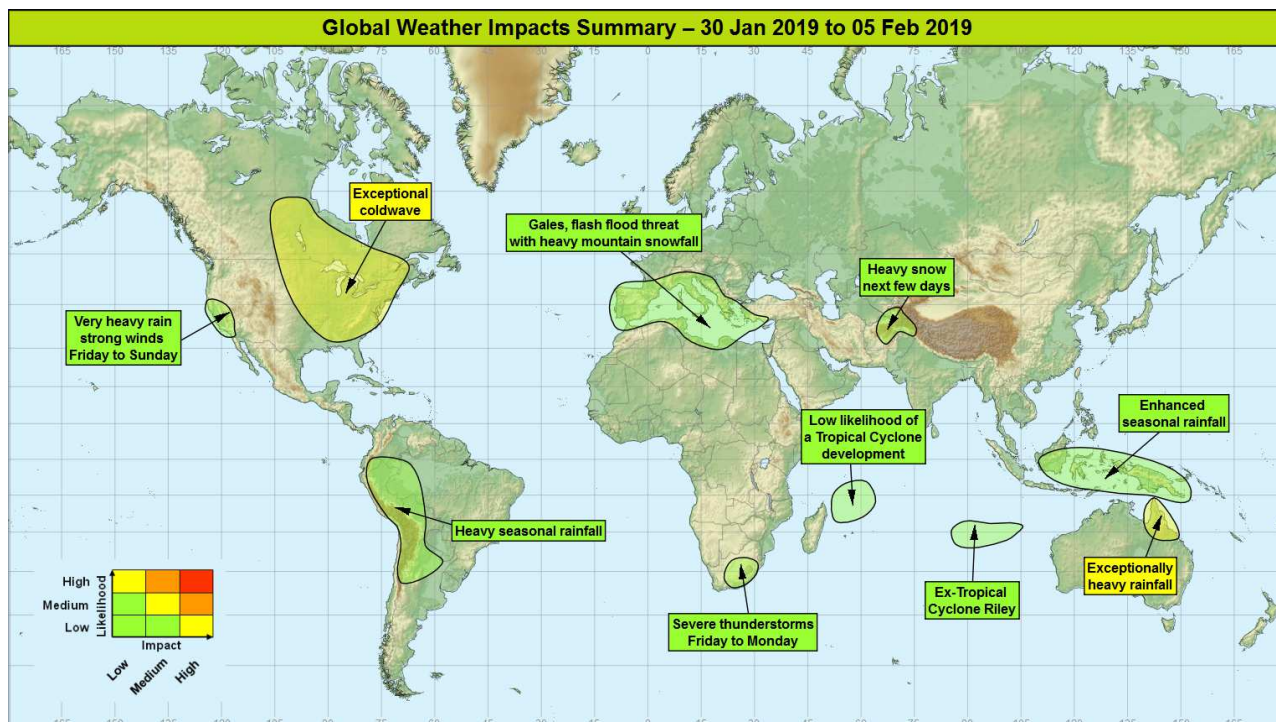


## Global Weather Impacts – Wednesday 30<sup>th</sup> January to Tuesday 5<sup>th</sup> February 2019

Issued on Wednesday 30<sup>th</sup> January 2019

### HEADLINES

- Exceptional cold across the eastern half of North America through the next few days.
- Exceptionally heavy monsoon rainfall over northeastern Australia through the next week.
- Further very unsettled weather for southern Europe and the Mediterranean.



### DISCUSSION

#### Tropical Cyclones

#### Ex-Tropical Cyclone Riley (Indian Ocean)

##### Weather

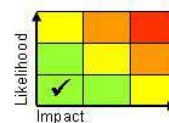
Tropical Cyclone Riley has weakened through Wednesday, and is now a tropical depression. Ex-Riley will continue to track west-southwest away from Australia and over the open Indian Ocean in the coming days. This system poses no threat to land but associated strong winds will produce rough or very rough seas within its vicinity.

##### Discussion

Satellite imagery suggests Riley has weakened further over the last 24 hours with deteriorating levels of convection. Ex-Riley will be steered west-southwest under the influence of the subtropical ridge, with cooler SSTs and increasing wind shear seeing Riley gradually weaken further over the Indian Ocean.

##### Expected Impacts

Strong winds and rough or very rough seas could impact any marine transport / shipping in the area.



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

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## Southwestern Indian Ocean

### **Weather**

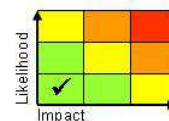
There is a low likelihood of a tropical cyclone development to the northeast of Madagascar next week, although any development is likely to remain offshore.

### **Discussion**

An enhanced pulse of the ITCZ, possibly influenced by an Equatorial Rossby Wave, could develop a tropical cyclone next week. However, the GM remains the strongest signal for this, with little support from the EC and GFS. Around 40% of MOGREPS-G and NCEP EPS members predict a TC development, but with no EC EPS members showing this signal.

### **Expected Impacts**

Since any development will remain offshore, impacts will be restricted to strong wind and rough sea impacts on marine transport.



**Northeast Australia** – See *Australasia* section.

## Europe

### **Much of southern Europe and the Mediterranean, along with northern parts of Morocco, Algeria, Tunisia and Libya**

### **Weather**

Remaining very unsettled through the rest of this week, the weekend and into next week across this region.

Periods of heavy rain and thunderstorms will affect much of this region at times, with the heaviest rainfall accumulations affecting northern and western Iberia, southern France, northern and western Italy, the Balkan coastline and southwestern Turkey.

Through the next week up to 100 mm of rainfall is expected in this region, with peak accumulations of up to 400 mm possible in the Balkan mountain region, which would be twice the average January or February rainfall. A 24 hour rainfall accumulation of 150 mm is possible in the Balkan mountains and northern Italy later this week and into the weekend.

At higher elevations the rainfall will fall as snow, resulting in very heavy mountain snowfall accumulations in this region. Some cities in the western Balkans and northern Italy could also see significant snowfall at times.

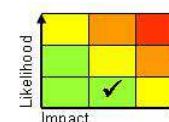
Very strong winds will also be seen across large parts of this region, with gales and very rough seas likely. The winds will be strong enough across parts of North Africa to lift dense dust storms that could extend north into southern Europe at times.

### **Discussion**

A series of disrupting upper troughs will be seen across southern Europe and the Mediterranean through the next week. Cold continental air will result in a threat of significant snowfall on the northern edge of frontal zones and WBPT plumes, especially at higher elevations. Lowering and rising WBFL will increase the threat of avalanches in these higher elevations.

### **Expected Impacts**

Flash flooding is a significant threat in this region, with an enhanced likelihood of landslides in areas where the terrain is steep. Dangerous marine conditions are expected, with the possibility of coastal flooding too. Heavy snowfall could impact some cities in northern Italy and the western Balkans, with a growing avalanche threat. Lifted dust storms may impact on aviation and the health of the local populations.



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## North America

### Central and eastern North America

#### **Weather**

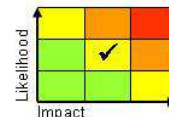
Exceptionally cold temperatures already affecting the northern Mid-west of the USA and Central Canada will extend east to the Eastern Seaboard through the next few days. Across a wide area temperatures are forecast to be in excess of 20 °C below average. Major cities including Chicago, Detroit, Toronto and Montreal will be impacted. The Eastern Seaboard and the more southern States will not be as badly impacted, but will still see temperatures of 10 °C below average. Some snowfall will continue with this also likely to be heaviest around the Great Lakes, where up to 30 cm of snow could fall. Strong winds will produce a significant wind chill, making temperatures of minus 30 °C feel more like minus 45 °C. During Friday and Saturday temperatures are signalled to recover back towards more normal values, with above average temperatures possible early next week.

#### **Discussion**

A long fetch northerly flow on the rear of a vortex extending across the east of the USA will continue to advect exceptionally cold arctic air to a large portion of North America. Strong winds will add a significant wind chill to already exceptionally cold temperatures. The National Weather Service of the USA has described this event as a very dangerous and life threatening Arctic blast, and the coldest Arctic airmass intrusion in recent memory.

#### **Expected Impacts**

Exposure to this exceptional cold spell, without specialist cold climate clothing is likely to result in a danger to health or life from a variety of cold weather injuries (frostbite, hypothermia etc). Snowfall (or blowing snow) may cause some minor disruption to travel. Utilities may be severely impacted by things such as frozen water pipes. The severe cold alone may be enough to cause disruption to travel, for example temperatures will fall low enough for diesel fuels to gel.



## California

#### **Weather**

Heavy rainfall, falling as snow on the Sierra Nevada mountains, is expected to affect much of California on Friday and Saturday, including Los Angeles. As much as 100 mm of rain could fall near the coast, with peak rainfall of 200 mm in the mountains (accumulating as snow at higher elevations). There is also the threat of strong or gale force winds across California for a time, building very rough coastal seas.

#### **Discussion**

An active cold front will bring heavy rainfall and mountain snowfall to California on Friday and Saturday. There is more uncertainty for the development of a deep depression just west of California, but this could bring the unusually strong winds to the State.

#### **Expected Impacts**

Flash flooding is likely, along with an enhanced threat of mudslides (especially in burn scar regions). Very strong winds could disrupt aviation and bring down trees, and could build dangerous marine conditions and cause coastal flooding.



## Central America and Caribbean

Nil significant.

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## South America

### Ecuador, Peru, Bolivia, northern Chile and northwest Brazil

#### **Weather**

Frequent heavy showers and thunderstorms will affect this area through the coming week, resulting in heavy seasonal rainfall.

Up to 100-150 mm of rain is possible in 24 hours, with a weekly peak total of up to 350 mm (around twice the monthly average).

There is the potential for significant water to run towards the Pacific through the desert regions of northwestern Chile and southwestern Peru.

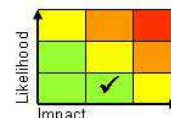
Northern Argentina is at threat of severe thunderstorms that could result in intense rainfall, frequent lightning, large hail, strong winds and tornadoes.

#### **Discussion**

The progression of the MJO into Phase 7 through the next week is likely to be contributing to the period of enhanced seasonal rainfall in this part of South America.

#### **Expected Impacts**

Flash flooding and landslides are a significant threat in the mountainous areas. Flash flooding also possible if thunderstorms impact urban areas. Severe thunderstorms also bring the threat of large hail damage, frequent lightning that could disrupt aviation and power networks, strong gusty winds and isolated tornadoes. Across the desert regions the unusually high level of rainfall runoff may bring severe flooding in the usually dry alluvial plains that many people live and farm along.



## Africa

### Northern parts of Morocco, Algeria, Tunisia and Libya – See *Europe* section.

### Central and eastern South Africa and Lesotho

#### **Weather**

Severe thunderstorms are expected to affect this region from Friday to Monday. These storms will produce intense rainfall, with up to 75-100 mm of rain falling in a few hours (the equivalent of a months worth of rain). Frequent lightning, large hail and strong winds are also likely.

#### **Discussion**

A complex upper trough will become slow moving across southwest South Africa, with the marked upper forcing engaging a very warm plume that has been brought south from sub-tropical latitudes. This will result in large CAPE storms, with good vertical wind shear allowing for severe, long lasting storms to develop.

#### **Expected Impacts**

Severe thunderstorms will bring the threat of flash flooding, large hail damage, frequent lightning that could disrupt aviation and power networks, strong gusty winds.



## Middle East

Nil significant.

## Asia

### Eastern Afghanistan and northern Pakistan

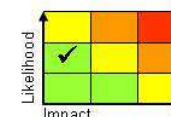
#### **Weather**

A spell of snow, occasionally heavy, is expected to extend east from eastern Afghanistan into northern Pakistan today (Wednesday), before easing from the west through Thursday and Friday. Accumulations of up to 50-75 cm of snow over higher ground.

#### **Discussion**

An upper trough will continue to progress eastwards across the region engaging a low level WBPT plume to produce heavy precipitation.

#### **Expected Impacts**



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An increased threat of avalanches from fresh snow over higher ground, with key mountain passes likely to be closed by the fresh snowfall.

## **Eastern Indonesia and Papua New Guinea**

### **Weather**

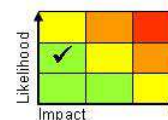
Seasonal rainfall is expected to be more intense and widespread than is normal through much of the next week. Up to 50-100 mm of rain could fall in a few hours, combined with locally strong winds. Rainfall totals of 200-350 mm could accumulate in places which is equivalent to around the average January rainfall for this region.

### **Discussion**

With the Madden Julian Oscillation (MJO) now moving through the western Pacific, convection will remain more intense and widespread than usual during this week.

### **Expected Impacts**

Heavy rainfall will increase the risk of flash and fluvial flooding, plus landslides in regions where terrain is steep. Thunderstorms will produce frequent lightning.



## **Australasia**

### **Northern Australia**

#### **Weather**

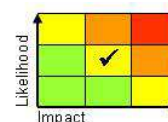
Frequent spells of intense rainfall and thunderstorms are expected throughout the next week. Urban areas along the Great Barrier Reef are likely to see some intense downpours, this includes Cairns, Townsville and Mackay. At this stage, large parts of northern Queensland look likely to see 200-400 mm during this period with some areas seeing as much as 1000 mm. There is currently a low probability of some parts seeing in excess of 1000 mm during this period. Average monthly rainfall for this region is between 200-500 mm.

#### **Discussion**

The monsoon trough currently sits over the north of Queensland focusing convection here. A tropical low is embedded within it and this will probably help to focus severe convection and heavy rainfall. At this stage, there appears on a very low prob that the low will move over the Gulf of Carpentaria and form a tropical cyclone. In addition, the MJO now moving over the western Pacific may be having some influence in enhancing activity here. Whilst models are in good agreement of large totals accumulating over the coming week there are significant differences with the GM currently at the extreme end of solutions in producing spot maxima over the next 6 days of 2000-2500 mm.

#### **Expected Impacts**

Rainfall will be the primary cause of impacts, with severe flash and river flooding potential quite widely across the northern Queensland.



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

### **Additional information**

Nil.

**Issued at:** 300630 UTC    **Meteorologist:** Paul Hutcheon

**Global Guidance Unit**

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

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