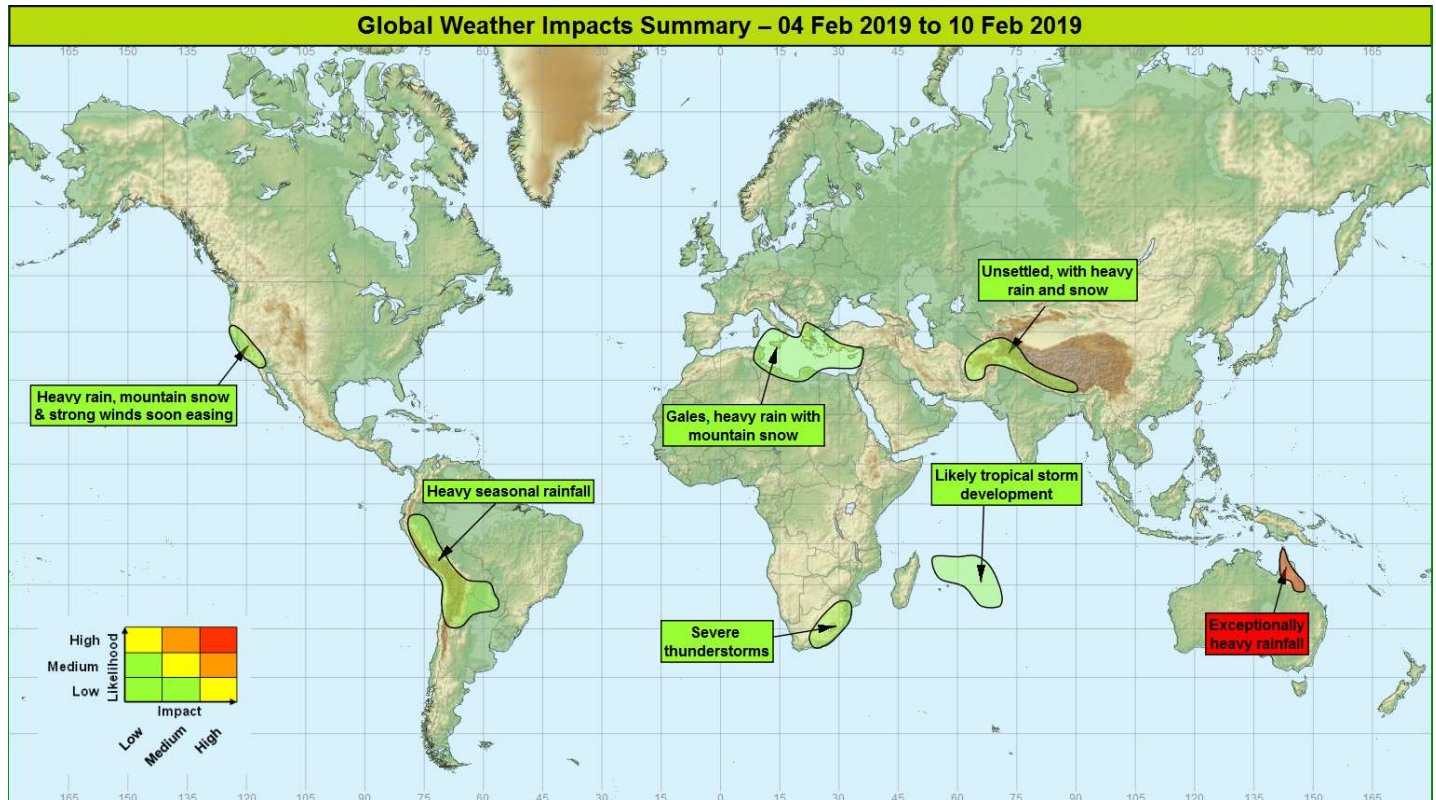


## Global Weather Impacts – Monday 04<sup>th</sup> to Sunday 09<sup>th</sup> February 2019

Issued on Monday 04<sup>th</sup> February 2019

### HEADLINES

- Unprecedented, and likely devastating, monsoon rainfall continues across north-eastern Australia.
- Further unsettled weather for the Mediterranean and adjacent countries, this pushing slowly east through the week.
- Heavy rain and mountain snow across California easing through the next few days.



### DISCUSSION

#### Tropical Cyclones

There are currently no active tropical cyclones.

The following region is being monitored for potential tropical cyclone development:

#### South-western Indian Ocean

##### Weather

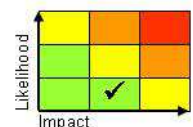
There is a high chance of tropical storm development in the south-west Indian Ocean by the end of this week. There is uncertainty as to whether one, or two, systems will develop.

##### Discussion

An area of enhanced convection is expected to become more organised as the southern portion of a Rossby Wave couplet passes to the N, resulting in one, or perhaps two tropical storms. Whilst deterministic and EPS model spread is quite large with respect to timing and location of any developments, they do offer some commonality in that none signal a major landfall of any system during this time period.

##### Expected Impacts

Main impact will be on maritime activities as landfall is not currently anticipated.



This forecast may be amended at any time

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## Europe

### Parts of southern and south-eastern Europe, the Mediterranean, along with northern parts of Tunisia and Libya

#### **Weather**

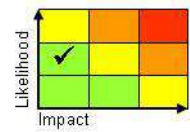
Remaining very unsettled during this week, initially across central, then later eastern parts. Periods of heavy rain and thunderstorms will affect much of this region. Many locations could see 50-100 mm of rainfall. Peak event totals are likely to be over the mountainous parts of the Peloponnese (Greece), with some 150-200mm possible here. At higher elevations heavy snow is likely, mainly above 1000 M. 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**

The major upper trough disruption close to Tunisia is expected to continue slowly east through the week. The resultant surface and upper vortex will then be the main driver for very disturbed weather as both systems come erratically east, with some improvement in conditions across the west of the area early this week. Various shear vorticity lobes are signalled to come S into the upper vortex, renewing it and maintaining for longer than would normally be expected due to convective warming of the trough.

#### **Expected Impacts**

Flash and river flooding are significant threats in this region, with an enhanced likelihood of landslides in areas where the terrain is steep. Dangerous marine conditions are expected, with large waves and the possibility of coastal flooding. Heavy snowfall chiefly over the region's mountains. Lifted dust storms may impact on aviation and air quality across North Africa and southern Europe.



## North America

### California

#### **Weather**

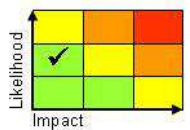
Heavy rain, with snow on the Sierra Nevada mountains, is expected to continue through today, before easing Tuesday. 30 to 50 mm of rain could fall near the coast, with peak rainfall of 250 mm in the mountains (accumulating as snow at above 1500 M). Blizzards are likely over the Sierras.

#### **Discussion**

A slow-moving winter storm, just off the coast of Oregon, continues to feed active frontal systems east across California. As fronts continue inland, they will weaken somewhat, but further pulses of heavy, showery rain (and mountain snow) are likely into the early part of this week.

#### **Expected Impacts**

Flash-flooding brought disruption to Los Angeles on Saturday. Whilst conditions have generally eased here, further flash-flooding is likely during the next few days further east, mainly due to antecedent conditions. Snowfall over the Sierra Nevada mountains may disrupt travel on high passes and will enhance the risk of avalanches here.



## Central America and Caribbean

Nil significant.

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## South America

### Peru, Bolivia, northern Chile, Ecuador, Paraguay, northwest Argentina and western Brazil

#### **Weather**

Frequent heavy showers and thunderstorms will affect this area through this week, resulting in heavy seasonal rainfall. Up to 100 mm of rain is possible in 24 hours, with a weekly peak total of up to 600 mm (around three times the monthly average).

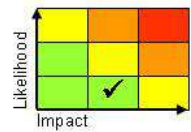
There is the potential for significant water to run towards the Pacific through the desert regions of north-western Chile and south-western Peru. Across northern Argentina and parts of Paraguay, severe thunderstorms are likely, bringing short period torrential downpours, large hail and gusty winds and the risk of tornadoes. Conditions here should become much more settled from Tuesday.

#### **Discussion**

A north-shifted SACZ, as well as a south-shifted ITCZ are expected to combine for the next week or so, leading to periods of intense showers and thunderstorms across the region. Sea breezes will lead to convergence, whilst a couple of short-wave UTs cross N Argentina and Paraguay early in the period, all combining to generate a very unstable atmosphere.

#### **Expected Impacts**

Flash flooding and landslides are a significant threat in the mountainous areas. Flash flooding also possible if thunderstorms impact urban areas. Disruption to aviation, as well as large hail, gusty winds and 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.

### Madagascar, La Reunion and Mauritius – See *Tropical Storms* section.

### Central and eastern South Africa, Lesotho, Swaziland and southwest Mozambique

#### **Weather**

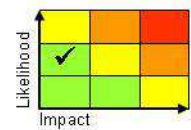
Severe thunderstorms are expected to affect this region until Tuesday, with the peak activity tending to migrate northeast with time. These storms will produce intense rainfall, with up to 75-100 mm of rain falling in a few hours (the equivalent of a month's worth of rain). Frequent lightning, large hail and strong winds are also likely.

#### **Discussion**

A complex upper trough will become slow moving across eastern South Africa, before undergoing a complex disruption in the next few days. Marked upper forcing will engage a very warm plume that has been brought south from sub-tropical latitudes. The disruption is likely to split, with the N portion pulling away to the NW, whilst the S portion clears to the E allowing for a diminution of activity by the end of Tuesday. Before then, large CAPE (2000-2500 J/kg), with good vertical wind shear will likely lead to the development of long-lived, and potentially severe thunderstorms.

#### **Expected Impacts**

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



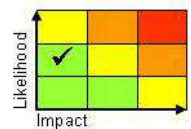
## Middle East

Nil significant.

## Asia

### Afghanistan, Pakistan, northern India and Nepal

#### **Weather**



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Rain and heavy mountain snow will continue to move east across this region. Across Afghanistan 50-100 cm of snowfall could affect the high mountains, with up to 10 cm possible in Kabul, although here perhaps turning to wet snow or even sleet at times. As the disturbance continues east, it will affect Kashmir and Nepal, where the precipitation will likely become even heavier. 1-2 metres of snowfall is likely across the southern Himalayas. It will also draw some unusually cold air south across much of Pakistan and NW India.

## Discussion

A very amplified upper pattern across Eurasia will lead to a major trough extension across the area. Strong, confluent flow on the trough's forward side will lead to isentropic lift, frontogenesis and the blossoming of precipitation across western Afghanistan through today, with the resulting surface disturbance pushing E ahead of the trough as the pattern begins to progress. Shortwaves running into the rear of the trough will maintain activity, ensuring an unsettled week across the area.

## Expected Impacts

Snowfall over the mountains will likely block some high road passes in the region and enhance the risk of avalanches. Overall the impact of the snowfall is likely to be positive as it will top up the snowpack in the region. When this melts in the spring and early summer it provides much of this region's water prior to the monsoon arrival. Below average temperatures may impact vulnerable populations.

## Australasia

### Northern Queensland, Australia

#### Weather

Further intense rainfall and thunderstorms are expected throughout the next week. Urban areas along the northern Queensland coastline are likely to see some extreme downpours; this includes Cairns, Townsville and Mackay. At this stage, large parts of northern Queensland look likely to see a further 400-600 mm during this period, with some areas seeing over 1000mm.

#### Discussion

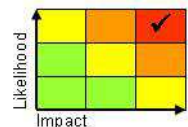
The monsoon trough currently sits over the north of Queensland focusing convection here. A tropical low is embedded within it and this will help to focus severe convection and heavy rainfall. In addition, the MJO now moving over the western Pacific (Phase 7) may be having some influence in enhancing activity.

#### Expected Impacts

Severe flash and river flooding is ongoing in and around Townsville, with other parts of northern Queensland also seeing significant impacts. Evacuations are underway, with some 20000 homes at risk. There is the potential for some communities to be cut-off for a number of days or weeks. For context, Woolshed, just south-west of Townsville, has already received 1028mm of rain this month (to the end of Sunday, UK time), and when added to the last four days of January, has seen 1726.8mm (according to the Bureau of Meteorology) in just over a week. This amount of rain is unprecedented in the area, and further impacts on infrastructure seem inevitable.

## Additional information

Nil.



**Issued at:** 040800 UTC    **Meteorologist:** Jason Kelly

**Global Guidance Unit**

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