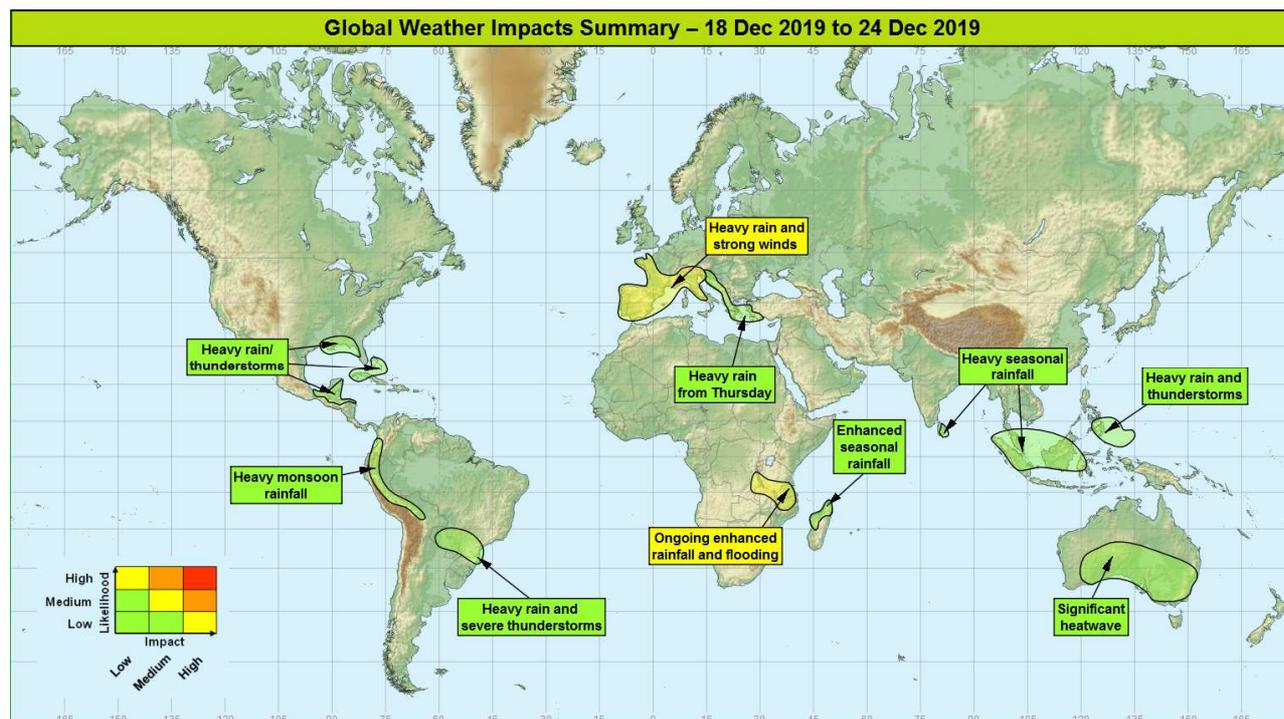


**Global Weather Impacts – Wednesday 18<sup>th</sup> to Tuesday 24<sup>th</sup> December 2019**

Issued on Wednesday 18<sup>th</sup> December 2019

**HEADLINES**

- Very unsettled weather with heavy rain and strong winds continuing across western Europe.
- Above average rainfall and flooding across parts of eastern Africa.
- Heatwave across southern and eastern Australia.



**DISCUSSION**

**Tropical Cyclones**

There are currently no active tropical cyclones, and no areas are being monitored for development.

**Europe**

**Western and south-western Europe**

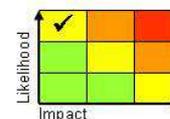
**Weather**

An unsettled week with spells of heavy rain and strong winds. The most extreme rainfall is likely across northern Spain and Portugal, where 200-350mm could fall through the week. Heavy rain is also likely at times across the rest of the region, with 30-50mm likely widely, and up to 200mm over some high ground. The weather will generally be milder this coming week, with mountain snowfall largely restricted to above 1800 metres over the Alps.

**Discussion**

A powerful south shifted Atlantic jet will drive a succession of active frontal systems into western Europe. The heaviest rainfall over NW Iberia as high WBPT airmass is dredged NE from the sub-tropics. Into the weekend there is potential for further heavy rain and very strong winds to affect the region, capable of being very disruptive to western parts of the region. Already two low centres from this event have been named storms Daniel and Elsa by the Portuguese and Spanish Met services respectively, with the potential for further lows to be named later this week.

**Expected Impacts**



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

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Both flash and longer term river flooding are possible, especially across parts of Iberia. Strong winds are likely to cause disruption to travel and some property/infrastructure damage, especially over the weekend. Snow will be confined to higher elevations, with snow melt at lower elevations possibly contributing to the overall flood risk. Large waves bring the potential for dangerous conditions for Atlantic coasts.

**Parts of the Balkans, Greece and western Turkey from Thursday**  
**Weather**

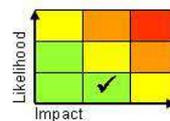
The disturbed weather across western parts of Europe is likely to affect these areas from Thursday. By the end of the period some 40-80 mm of rain is likely to have fallen widely, with western upslopes of Albania and northern Greece seeing as much as 200-250 mm – this is just over the average total for all of for December in these areas.

**Discussion**

The strong jet and intense push of warm air is likely to allow active frontal systems to get across much of the Mediterranean, with a strong orographic component to rainfall. With warm, tropical air entrained into these systems, ppn efficiency will be high. WBFLs are also high meaning rainfall will not be locked up as snow over mountains, exacerbating likely impacts.

**Expected Impacts**

Flash-flooding, landslides and impacts to some transport and utilities is possible.



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**North America**

**Gulf Coast of America, Western Cuba and The Bahamas**

**Weather**

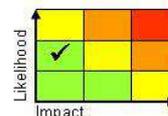
Heavy rain and thunderstorms are expected to affect the area from Thursday and through the weekend, bringing 40-80mm of rainfall fairly widely, and locally peaks of around 300mm. As much of the rainfall will be in the form of heavy showers and thunderstorm, large amounts of precipitation are likely to fall in a short duration.

**Discussion**

The same mid-latitude cold front discussed in the previous section will reach this region on Thursday and then become slow moving, hence remaining a focus for heavy rain and thunderstorms through into the early part of next week. Profiles support some organised and long lived cells, capable a producing slow moving torrential downpours, that will also likely produce frequent lightning and some hail.

**Expected Impacts**

Flash flooding is likely, especially in urban areas. Some disruption to utilities and infrastructure is possible and an increased risk of landslides in areas of steep terrain in Cuba.



**Central America**

**Belize, Honduras, Guatemala and southeast Mexico**

**Weather**

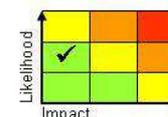
Heavy rain and thunderstorms are likely to affect the area over the next several days, bringing widely 50-100mm of rain by the end of the period. Some areas could see 150-300mm of rain during today and Thursday, with much of this falling in a relatively short space of time. This is equivalent to more than a month's worth of rainfall in places.

**Discussion**

A mid-latitude cold front is expected to stall across the area through today, then acting as the focus for heavy rain and severe thunderstorms. Given the lead-time, there is excellent agreement between deterministic models with this evolution. Forecast profiles support slow-moving torrential downpours, with frequent lightning and large hail.

**Expected Impacts**

Flash and river-flooding. Disruption to utilities and infrastructure.



**Western Cuba and The Bahamas – see North America section**

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**South America**

**Ecuador, western Colombia, Peru and Bolivia**

**Weather**

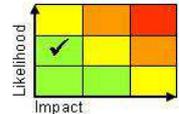
Frequent heavy showers and thunderstorms will affect these regions through the next 7 days, with the showers each day bringing 50-75 mm in just a few hours, with some locations receiving over 200 mm (around the December average rainfall). As is the nature of showers, spatial coverage on any one day will be highly variable.

**Discussion**

With the South American Monsoon now extending well southward, daily rounds of showers and thunderstorms are expected to form to the west of the Andes of Colombia and Ecuador, and to the east of the Andes further south. The region highlighted has seen above average rainfall during the past weeks, and is also forecast to receive the highest rainfall totals.

**Expected Impacts**

Flash flooding likely, with increased likelihood of landslides.



**Parts of Argentina, Paraguay, Uruguay, and southern Brazil**

**Weather**

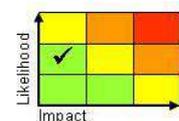
An ongoing outbreak of heavy rainfall and some severe thunderstorms will continue to move northeast across this region. Frequent lightning is likely, and a risk of localised large hail. Although the initial area highlighted will see storms and rain ease this weekend, a further area is likely to form around the River Plate Estuary.

**Discussion**

A shortwave upper trough in the subtropical jet will continue to run northeast east across this region engaging the high moisture plume associated with the South American Monsoon, resulting in a significant pulse of the South Atlantic Convergence Zone. As the first upper relaxes and moves offshore on Thursday and leads to a reduction in activity, the arrival of a further shortwave trough across the River Plate region on Friday will see a further pulse in activity across this zone.

**Expected Impacts**

Localised flash flooding, and low risk of localised damage from large hail, frequent lightning and strong wind gusts.



**Africa**

**Parts of eastern/central Africa**

**Weather**

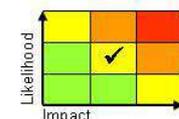
Continued widespread heavy showers and thunderstorms associated with the seasonal rains are expected to continue to be heavier than normal over the next week, with a further 100-200 mm of rain falling in places from frequent heavy, thundery, afternoon downpours. This is close to the average rainfall in this region for the whole of December, with this area having already seen 200-400% of the usual rainfall over the past few weeks.

**Discussion**

Enhanced seasonal rainfall in association with the strong positive Indian Ocean Dipole event which, although declining, is still influencing the large scale shower distribution. Large tracts of eastern Africa have seen well above average rainfall over the past few months. The combination of all these factors dramatically increases the likelihood of further flash and river flooding along with further deadly landslides. There are signs that the area of enhanced rainfall is slowly waning, with totals offered by extended models also slowly reducing.

**Expected Impacts**

Increased threat of flash flooding and landslides in the region, with further river flooding likely.



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**Madagascar**

**Weather**

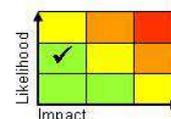
Across the far north of the island daily shower and thunderstorm activity will continue at above average frequency. Over a couple of hours 25-50 mm of rainfall is locally possible, whilst some locations may receive 150-250 mm in total overall; this representing around a month's rainfall during the wet season, following an already wet spell across this region.

**Discussion**

The moisture plume associated with the remnants of long since dissipated Tropical Cyclone Belna remain slow over the country. This dwindling source of moisture will act to promote shower and thunderstorm activity, albeit of gradually reducing intensity. December is a very wet month in Madagascar at the start of the annual rainy season, hence it is thought that these rainfall accumulations although high are unlikely to be overly problematic.

**Expected Impacts**

Localised flash flooding possible. An elevated risk of landslides in areas where terrain is steep.



**Middle East**

**Weather**

Nil significant.

**Asia**

**Malaysia, Indonesia and Brunei**

**Weather**

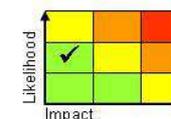
Even though it is the rainy season in this region, heavy rainfall is expected to continue through the next week with some places seeing up to 300mm (equivalent of 50-75% of the average monthly rainfall at this time of year).

**Discussion**

Above average SSTs in the Java Sea and surrounding waters, combined with increased convergence as a result of a stronger northeasterly flow through the South China Sea and passage of several tropical Equatorial Rossby Waves (ERW) is likely to contribute to enhanced convection through the next week. These rains have already caused significant impacts in parts of this region, with flooding being reported across parts of Malaysia.

**Expected Impacts**

Increased threat of flash flooding and landslides.



**Western Sri Lanka**

**Weather**

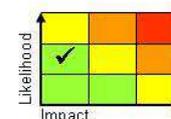
Periods of heavy rain are likely to affect many western areas of the Island through the next 5-7 days, with event totals approaching 150-200mm. This is well above the average total rainfall for December for this part of Sri Lanka.

**Discussion**

An active train of Equatorial Rossby Waves are expected to bring periods of heavy rain and thunderstorms primarily to the west of Sri Lanka. Above normal SSTs and a series of ERW are likely to lead to periods of heavy rain.

**Expected Impacts**

Flash-flooding, disruption to transport and utilities are all possible.

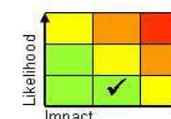


**Philippine Sea**

**Weather**

A cluster of thunderstorms currently to the north of Papua New Guinea is expected to be steered west over the coming week. As this region approaches the southern Philippines this weekend, development of a tropical low is possible. This bringing heavy rainfall (up to 200-400mm) where a magnitude 6.8 earthquake occurred last Sunday.

**Discussion**



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An Equatorial Rossby Wave (ERW) is organising thunderstorm activity in the Philippine Sea. This wave will gradually move westwards through the rest of this week. As this feature approaches land this weekend, it will may organise into a tropical low, bringing.

**Expected Impacts**

Flash flooding is possible across the southern Philippines, with a lower risk of damage from strong winds. Vulnerability may be higher than normal here given the recent earthquake.

**Australasia**

**Parts of central/southern Australia**

**Weather**

Temperatures across many central parts of Australia have begun to increase, setting the scene for a potentially historic heat-wave. Maximum temperatures are likely to be widely some 10-15°C above normal for much of the rest of this week, with values possibly achieving the mid to high 40s°C. Australia has experienced its hottest day on record on Tuesday with the national average temperature reaching a high of 40.9C. Also individual heat records for towns and cities were also broken with several places recording temperatures above 45C. At the start of this week, Perth, the capital of Western Australia, recorded three days in a row above 40C, a record for December.

**Discussion**

An area of high pressure to the S of Australia is drifting east, with N'ly flow developing on its western flank. This is drawing hot desert air southward, leading to some exceptional temperatures.

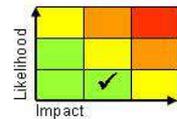
**Expected Impacts**

Impacts on infrastructure, including road and rail, as well as utilities, can be expected. Impacts on vulnerable populations (without access to air-con) are also likely. This event is expected to be fairly long in duration, exacerbating the impacts further.

**Additional Information**

**Eastern Australia**

Numerous bush fires continue across parts of eastern New South Wales, Queensland and Australian Capital Territory with widely dry conditions persisting across all but coastal Queensland over the next week. Whilst fire weather conditions have improved relative to recent days, the sheer size of many ongoing fires will continue to produce large amounts of small particulates that will contribute to very poor air quality for several weeks to come.



**Issued at:** 180800 UTC **Meteorologists:** Jason Kelly/Tony Wardle

**Global Guidance Unit**

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