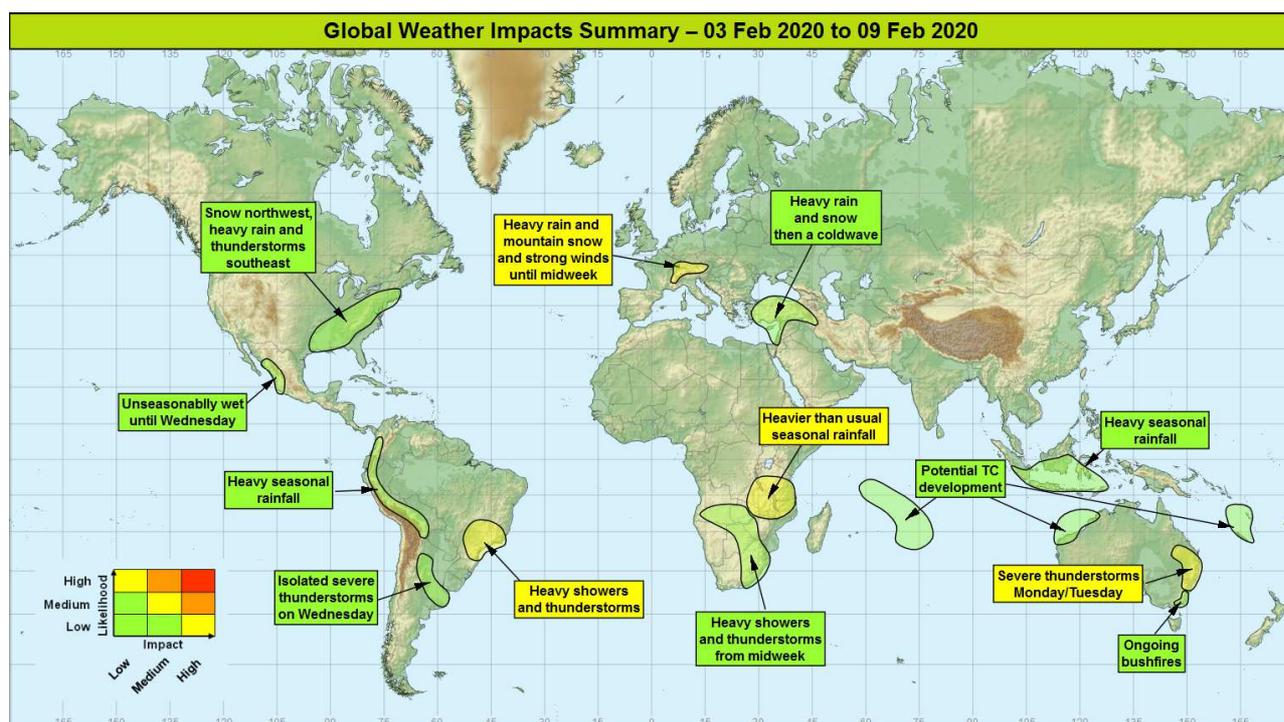


**Global Weather Impacts – Monday 3<sup>rd</sup> to Sunday 9<sup>th</sup> February 2020**

Issued on Monday 3<sup>rd</sup> February 2020

**HEADLINES**

- Heavy rain and mountain snowfall in central Europe until midweek.
- Heavy and locally severe thunderstorms for a time in parts of South America and eastern Australia.
- Continued heavy seasonal rainfall for parts of eastern Africa.



**DISCUSSION**

**Tropical Cyclones**

*There are currently no active tropical storms, but the following areas are being monitored for development*

The following areas are being monitored for potential tropical storm development:

**Southwest Indian Ocean**

**Weather**

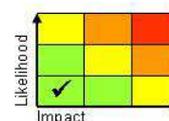
There remains the potential for a couple of tropical cyclones to develop in the Indian Ocean this week. Currently there is no indication that any system will directly impact land.

**Discussion**

High SST temperatures and low shear along the Indian Ocean Convergence Zone is conducive to the development of a tropical storm across the south-western Indian Ocean in the coming week. Models differ as to where any development may be, but presently none suggest a threat to land.

**Expected Impacts**

Nil



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**Northwestern Australia**

**Weather**

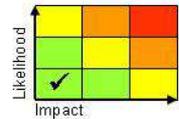
There is a signal for the potential development of a tropical low close to the Kimberley Coast of northwestern Australia through the early part of this week, which may subsequently intensify into a tropical storm.

**Discussion**

Growing signal from models for this development for an Equatorial Rossby Wave, although its likely proximity to the coast makes it uncertain as to whether this system is able to strengthen into a tropical storm.

**Expected Impacts**

Threat of very heavy rainfall along the coast of northwestern Australia. Lower likelihood of damaging winds. As this area is sparsely populated impacts are likely to be low.



**Southwest Pacific – Solomon islands and New Caledonia**

**Weather**

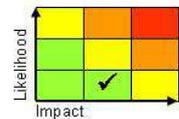
There is a developing signal for the development of a tropical depression to the west of the Solomon islands from Thursday. By end the weekend there is a low probability that this will have strengthened to become a tropical cyclone. Although this is expected to remain over the open water, this may enhance the rainfall across parts of the Solomon islands from Friday, and to a lesser extent New Caledonia over the weekend.

**Discussion**

There has been a growing signal from the models for the development of a tropical feature close to the Solomon islands later this week. However there are significant model differences for the evolution, with the GM the most developmental at this time.

**Expected Impacts**

Potential for very heavy rainfall along across parts of the Solomon islands from Friday, and to a lesser extent across parts of New Caledonia over the weekend. This may lead to flash flooding and an increased risk of landslides. There is a lower risk for significant winds impacts, though associated rough seas could impact marine travel across the region.



**Europe**

**Eastern France, Switzerland, southern Germany and parts of Austria**

**Weather**

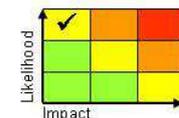
Very unsettled across this region until midweek with repeated spells of heavy rainfall. Conditions will turn colder and more showery during Tuesday, before becoming mostly dry thereafter. Around 50-100 mm of rain is likely to have fallen widely by midweek, with up to 200 mm in parts of the Alps, which will fall as snow above 2000 metres above sea level. The snow will fall to increasingly lower altitudes from Tuesday, with low altitudes (500 metres above sea level) seeing snowfall by then.

**Discussion**

A broad warm conveyor will continue to feed pulses of heavy rain into central parts of Europe, especially Alpine regions over the next few days. Strong orographic modulation of the rainfall will result in some very large accumulations over high ground. Initially high freezing levels could allow significant snowmelt to occur across lower elevations of the Alps. Early next week a marked upper trough will drive the frontal systems south, allowing much colder air to sweep south, turning the increasingly showery precip wintry to increasingly lower levels.

**Expected Impacts**

Threat of flooding due to heavy rainfall and snow melt, with a heightened risk of travel disruption and avalanche at higher elevations. Increasing threat of disruption due to heavy snow at lower elevations towards midweek.



**Cyprus**– See Middle East section

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## North America

### Southeastern and eastern USA

#### **Weather**

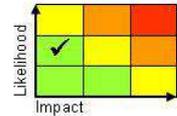
A significant winter storm will develop midweek across the south and east of the USA, producing heavy rain and severe thunderstorms, with the possibility of heavy snow and/or freezing rain on the northern fringes of this zone. 50-100 mm of rain is expected to fall widely with the possibility of 150 mm in parts of the southern states. Heavy snow (15-30 cm) is possible later in the week close to major urban areas in the northeast.

#### **Discussion**

Good model agreement for a marked long wave upper trough to push east across the Rockies, engaging a warming plume across southern and eastern parts of the USA to develop a marked winter storm. Forecast profiles support the development of severe thunderstorms in the broad warm sector of system. Moist profiles with low CAPE suggest storms will be capable of producing high rainfall rates, although with large amounts of low-level wind shear, a few tornadoes are also possible. On the northern flank of the system warm air aloft, with a marked cold undercut leads to a significant freezing rain risk.

#### **Expected Impacts**

Flash flooding looks likely, with a lower threat of severe storm impacts (frequent lightning and strong winds and an isolated tornado). Northern fringes will be at threat of power and transport network disruption from heavy snow and freezing rain.



## Central America

### Parts of western Mexico

#### **Weather**

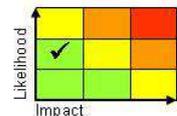
A period of unseasonably wet weather is expected until Wednesday, with up to 100-150 mm of rain expected in places where the average rainfall is 10-20 mm.

#### **Discussion**

A low latitude upper trough will engage a warming plume to produce enhanced shower and thunderstorm activity across this part of western Mexico that is usually dry at this time of year.

#### **Expected Impacts**

Out of season flash flooding is possible in places.



## South America

### Southeast Brazil

#### **Weather**

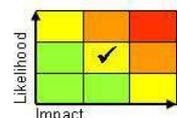
Heavy showers and thunderstorms will affect parts of southeast Brazil through the coming week. There is the potential for 50-100mm of precipitation to fall quite widely, with some locations seeing as much as 200-300mm. Rio de Janeiro (which lies within this zone) typically sees around 100mm of precipitation through the whole of February.

#### **Discussion**

Several pulses of activity along the South Atlantic Convergence Zone (SACZ) will bring an enhanced heavy showers/thunderstorm threat to southeastern Brazil. This will be aided by a trough extension and eventual disruption in the sub-tropical jet, which will likely lead to a cut-off upper vortex developing just to the east of this region by the end of the week, which will generate a strong and moist onshore flow from the tropical Atlantic.

#### **Expected Impacts**

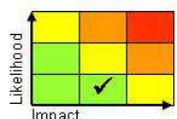
Heightened threat of flash flooding and landslides, including across some of densely populated regions, with cities such as Sao Paulo, Rio de Janeiro, and Belo Horizonte.



## Peru, Bolivia, Ecuador and Colombia

#### **Weather**

Heavier than usual shower and thunderstorm activity is expected to affect this region through much of the coming week, bringing up to 200-300 mm of rain (up to twice the February average) in places.



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**Discussion**

Good model agreement for this region seeing heavier than average rainfall through the coming week, some enhancement across the far north of this region over the next day or so may be from a cold surge which cross the Caribbean and Central America and enhances convergence where this meets the southerly trade winds along the equator.

**Expected Impacts**

Increased threat of flash flooding and landslides, particularly in mountainous terrain.

**Northern Argentina and the far south of Uruguay**

**Weather**

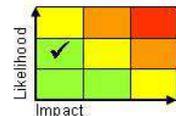
Severe thunderstorms likely developing across parts of northern Argentina and Uruguay on Wednesday. In addition to the potential for up to 100 mm of rain fall in 6-12 hours these storms will produce additional hazards of hail, strong winds and frequent lightning.

**Discussion**

The strong sub-tropical jet will come to overlay the monsoon plume on Wednesday, profiles include many on the ingredients required to generate severe storms, with strong wind shear that veers with height, steep mid-level lapse rate and that may be broken by mesoscale heating and/or lift. Although this zone will continue to produce heavy rain beyond Wednesday, profiles do not look quite so threatening (in terms of severe storms) over the following days.

**Expected Impacts**

Flash flooding looks likely, with a lower threat of severe storm impacts (frequent lightning and strong winds and an isolated tornado).



**Africa**

**Central and East Africa**

**Weather**

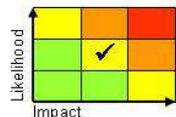
More widespread / frequent heavy showers and thunderstorms are expected to continue across the region through the coming week. Rainfall will vary significantly across relatively small distances but there is the potential for locally 50-150 mm to fall in a 24 hours period, with up to 200-300 mm accumulating through the next week in places. This would result in many places seeing the average February rainfall in just a week.

**Discussion**

High SSTs in the western Indian Ocean continue to enhance convection along the ITCZ, and Indian Ocean Convergence Zone bringing above-average rainfall to the region. This region has been very wet in recent weeks and months, with multiple reports of ongoing severe flooding.

**Expected Impacts**

Rainfall is likely to cause some severe flash flooding **with some significant river flooding also possible**. There will also be a heightened risk of landslides in areas where the terrain is steep.



**Parts of Southern Africa**

**Weather**

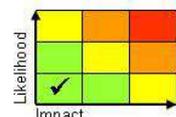
From midweek showers and thunderstorms throughout this zone are signalled to increase to above normal frequency. As such rainfall will likely total 15-30mm quite widely, but with isolated spots seeing 100-150mm of precipitation. Although much of this rainfall will be welcome, with the potential for this to fall over a short duration it may bring some impacts.

**Discussion**

A plume of warm tropical air is drawn south ahead of the surface cold front with a slightly cyclonic upper flow allowing the formation of heavy diurnal showers and thunderstorms each day. By the end of the week the low level cold front is expected to have progress further northeast allowing shower and thunderstorm activity to return to near average in this zone.

**Expected Impacts**

Although much of the rainfall will be welcome across areas that have experienced rainfall deficits in recent times, some flash flooding is possible, especially in urban areas.



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**Middle East**

**Turkey, Syria, Iraq Lebanon, Israel and Cyprus**

**Weather**

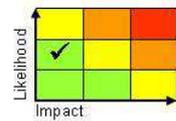
Potential for a multi-hazard severe weather event across large parts of southeast Europe later this coming week. In the south, heavy rain, thunderstorms and strong winds will be the main hazards with 50-150mm of rain falling in places. Further north, heavy snow is expected with 10-20 cm falling quite widely, perhaps up to 1 m in a few locations across northern Turkey.

**Discussion**

A major trough extension will take place across central and eastern Europe next week. The trough will interact with a frontal wave over central Europe allowing cyclogenesis to take place, with the resultant system then moving southeast into Greece around midweek, then east into the Levant. Snow will fall on the northern flank of the system and then more widely to the rear of the cold front, with a marked coldwave sweeping the region

**Expected Impacts**

Widespread disruption to travel is possible either due to flash flooding or heavy snowfall. Some interruptions to power supplies are also possible. Coldwave likely to have impacts for vulnerable populations groups in the region unable to access adequate shelter and heating.



**Asia**

**Indonesia**

**Weather**

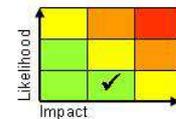
Pulses of enhanced showers and thunderstorms are expected across this region during the coming week. During this period up to 150-250 mm of rain is expected fall in some spots, with up to 50-100 mm falling in just 6-12 hours in places. This is not untypical for the region, but this follows recent weeks where it has been very wet.

**Discussion**

The main driver of the wetter than average signal looks to be an enhanced NE'ly monsoon phase across the South China Sea that enhances the convergence along the ITCZ that lies across much of Indonesia. The late onset of the Australia monsoon is possibly allowing the ITCZ to currently sit at a slightly more northerly latitude than usual, and enhancing the impacts of these cold surges over Java in particular.

**Expected Impacts**

Flash flooding and a heightened risk of landslides are the principle hazards from this event.



**Australasia**

**Eastern Australia**

**Weather**

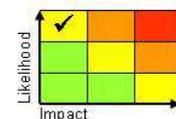
Intense showers and severe thunderstorms are expected to develop across the region over the next couple of days. These storms will be capable of producing up to 100 mm of rain in just 6 hours. Beyond Tuesday although the showers will remain present there severity will lower, however still by the end of the coming week some location could see accumulations of up to 250 mm which is around the average for the whole of February.

**Discussion**

On Monday and Tuesday a warm plume drawn southeast ahead of a surface cold front will allow some severe thunderstorms to form, profiles show the hallmarks of severe convection. From Wednesday onwards although showers will continue in this region, the severity of these in terms of hail and strong winds will be much reduced, as profiles show moist relatively low CAPE tropical convection becoming favoured with a complete absence of steep lapse rates in elevated layers. This due to the air being sourced from the moist southwest pacific.

**Expected Impacts**

Flash flooding along with hail and wind damage are likely initially. Aviation and power networks could be disrupted by lightning damage. Brisbane and the Gold Coast look likely to be affected.



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**New South Wales, Australian Capital Territory, Victoria**

**Weather**

Temperatures will remain suppressed until the middle of the coming week, limiting the potential for new wildfires to develop. Overall, BoM have much lower fire danger ratings, mostly low-moderate over the coming days.

**Discussion**

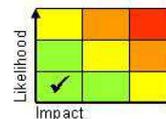
A cold front has now moved northeast of the region where fires continue and introduced much cooler conditions, although winds will remain rather strong until pressure builds more strongly north from Tuesday. Later in the week, temperatures could rise again but this will be accompanied by higher levels of moisture being drawn in off the Pacific Ocean leading to a risk of showers, especially across eastern parts of NSW. Overall fire danger ratings will be lower than recently.

**Expected Impacts**

Existing fires will continue to produce fine particulates and contribute to localised areas of very poor or hazardous air quality.

**Additional Information**

Nil.



**Issued at:** 030850 UTC **Meteorologists:** Nick Silkstone / Tony Wardle

**Global Guidance Unit**

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