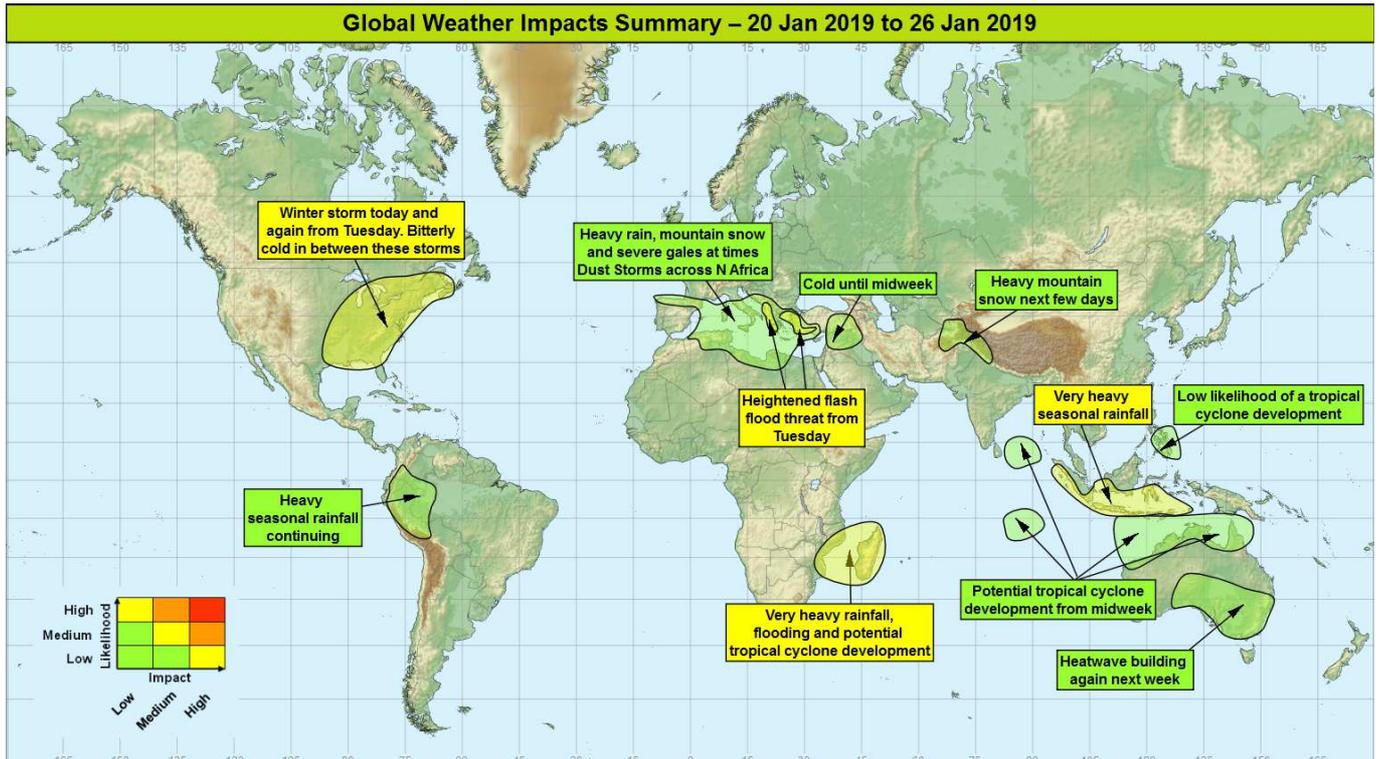


## Global Weather Impacts – Sunday 20<sup>th</sup> to Saturday 26<sup>th</sup> January 2019

Issued on Sunday 20<sup>th</sup> January 2019

### HEADLINES

- Potential for the development of a tropical storm impacting Mozambique and Madagascar.
- Lower likelihood for tropical storm developments for the Philippines, northern Australia and southern Indonesia.
- Major winter storm affecting the eastern USA today then bitterly cold before another winter storm.
- Much heavier than usual rainfall enhancing the threat of flooding in parts of Indonesia this coming week.
- Flash flood risk in parts of southeastern Europe from Tuesday
- Australian heatwave returning this coming week.



### DISCUSSION

#### Tropical Cyclones

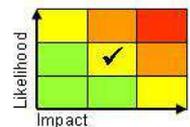
There are currently no named tropical cyclones. The following areas are being monitored:

#### Mozambique Channel (Mozambique and Madagascar)

##### Weather

There is a growing probability of a tropical cyclone developing in the Mozambique Channel through the next week. Should a tropical cyclone develop, it would bring strong winds to some coastal areas in the Mozambique Channel and very rough seas to the Channel. Even if a tropical cyclone does not develop, very heavy rainfall will affect this region for much of the next week. Up to 500 mm of rainfall could accumulate, which is twice the average January rainfall in the region.

##### Discussion



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A complex MSLP pattern exists in the region, with two weak low pressure centres (one just NE of Madagascar and one in the southern Mozambique Channel). The southern low pressure centre is expected to become dominant through the next few days as it tracks north into the central Mozambique Channel.

Thereafter, there is increasing model spread for the track and depth of the system, but it is likely to move south again, perhaps strengthening.

### **Expected Impacts**

Very high rainfall accumulations will result in a heightened flood threat, with a lower likelihood of wind damage. However, strong winds and very rough seas may cause some disruption to shipping through the Mozambique Channel.

### **Northwest Pacific (Southern and Central Philippines)**

#### **Weather**

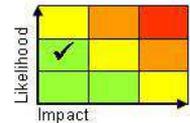
An area of heavy shower and thunderstorm activity will be slow moving just east or across the southern half of the Philippines through the next few days, but it now looks like it will not strengthen into a tropical storm. The frequent showers and thunderstorms are likely to produce locally 100-200 mm of rain in 24 hours and up to 400 mm in places during the next 3 or 4 days (especially for Eastern and Central Visayas and northeastern Mindanao). This amount of rain is close to the average rainfall for the whole of January. This system will then weaken markedly from Wednesday.

#### **Discussion**

The signal for any strengthening of this system is weaker again across the various model output, lowering the likelihood of a tropical storm development. This system will be prevented from moving further north and west by a strong cold surge moving southwards down the East China Sea, with this event likely to weaken the tropical system.

#### **Expected Impacts**

Flash flooding is the most likely impact, with a heightened likelihood of landslides. This region of the Philippines was adversely impacted in late December by the system that went on to become Tropical Storm Pabuk.



### **Timor Sea and Gulf of Carpentaria (Northern Australia and southern Indonesia)**

#### **Weather**

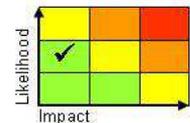
There is a low likelihood of one or two tropical cyclones developing through the second half of this coming week in or around the Timor Sea and Gulf of Carpentaria. Irrespective of development, above average rainfall is expected to affect parts of the far north of northern Australia, southern Indonesia and Timor Leste.

#### **Discussion**

A pair of equatorial Rossby waves moving slowly westward may become foci for tropical cyclone development, enhanced by the arrival of the MJO across the region later next week. There remain large model differences for location and intensity of development.

#### **Expected Impacts**

Localised flash flooding and strong winds should a tropical cyclone develop.



### **Eastern Indian Ocean**

#### **Weather**

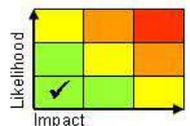
There is a low probability of a weak tropical cyclone forming either side of the Equator in the eastern Indian Ocean from midweek.

#### **Discussion**

There is a weak model signal for the westward transfer of an Equatorial Rossby Wave (augmented by the influence of the nearby MJO) to develop a tropical circulation either side of the Equator later in the coming week.

#### **Expected Impacts**

None since any development is expected to remain offshore.



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## Europe

### Southern and western Turkey, western and northern Greece, Albania, Montenegro, southern Bosnia and Herzegovina and far south of Croatia

#### **Weather**

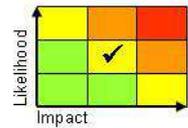
Heavy showers and thunderstorms will affect this region for much of the next week, with the peak activity days being Tuesday to Friday when up to 100-150 mm of rain could fall in a 24 hour period. Through the next 7 days some places could see as much as 300 mm, with up to the average January rainfall falling in just a week. The mountains in this region will see heavy snowfall.

#### **Discussion**

The upper pattern will remain cyclonic through the next week across this region, with a more significant upper trough disruption resulting in more widespread and intense deep convection from Tuesday. The impacts from heavy rainfall could be enhanced by the already sodden ground in a region that has seen a very wet last few months.

#### **Expected Impacts**

Localised flash flooding leading to damage to property and infrastructure. Some temporary transport disruption is also possible. Further snowfall over mountains is expected to produce an increased risk of avalanches.



### Much of southern Europe and the Mediterranean, along with northern Africa

#### **Weather**

This region will continue to see very unsettled weather through the next week with heavy showers or thunderstorms bringing 24 hour rainfall accumulation of up to 50 mm at times, although with strong winds and rough seas.

Through Wednesday a deep depression will develop in the Central Mediterranean, with gales or severe gales (sustained winds of 39 to 54 mph) expected at times. These winds will build very rough seas across many parts of the Mediterranean from Wednesday, and likely lead to significant dust storms across North Africa. These conditions will continue through the rest of the week, slowly transferring eastwards.

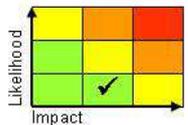
The system responsible for this will also produce heavy rain (up to 100 mm in 24 hours and 300 mm from Tuesday to Friday) to parts of northern Spain and the far southwest of France from Tuesday to Friday. The rain will fall as snow across higher ground, especially the Pyrenees (including Andorra) where very large snowfall of up to 150 cm could be seen).

#### **Discussion**

All models produce an extending upper trough that disrupts across Central Europe next week. This will result in the formation of a deep depression in the Central Mediterranean.

#### **Expected Impacts**

Disruptive snowfall will affect Andorra and higher altitudes of northern Spain. There is also the potential for flash flooding across this region, with coastal flooding also a possibility due to very strong onshore winds. Dangerous sea conditions will pose a threat to marine transport. Dust storms may impact on the health of the local population.



## North America

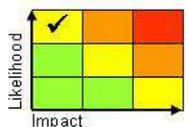
### Central and eastern USA and southeast Canada

#### **Weather**

A major winter storm is underway across eastern part of the USA, but will move out into the Atlantic by Monday. Very heavy snowfall (up to 45-50 cm) is expected to affect parts of northeastern USA (to the north of New York) and southeastern Canada and will transfer northeastwards through the rest of the weekend. Some areas will see freezing rain for a time, with southern areas seeing heavy rain.

A bitterly cold few days will follow before another winter storm affects the eastern USA from Tuesday to Thursday with further disruptive snow, ice and rain impacts possible, along with severe thunderstorms in the south. This will be followed by another few days of bitterly cold temperatures.

#### **Discussion**



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There is good model agreement for two winter storms to affect the eastern USA and far southeast of Canada through the next week, with sub MS10C WBPT air following both systems. There are some model differences for the details of the second winter storm, regarding the timing and track, and this impacts confidence in where the various impacts will be.

**Expected Impacts**

Significant transport disruption is expected. Snow and ice on trees and power lines is likely to result in power disruption and make roads and pavements very slippery. Heavy rain may cause some localised flash flooding and damage to property and infrastructure. Coastal flooding is also possible in some Eastern Seaboard locations due to the very strong southerly winds. Hazardous low temperatures and wind-chill effects are expected in between winter storms

**Central America and Caribbean**

Nil significant.

**South America**

**Southern Colombia, Ecuador, Peru and northwestern Brazil**

**Weather**

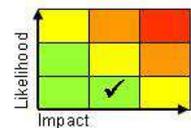
Above average rainfall in association with frequent showers and thunderstorms is expected through the next week. As seen in recent days, localised accumulations of 50-100 mm of rain can be expected in a few hours, with many areas seeing 150-250 mm of rain by the end of next week. This is expected to equate to close to the January average in places.

**Discussion**

The SSTs in the eastern tropical Pacific have cooled in the last weeks, and this is resulting in weakening convective rainfall to the west of the Andes mountain chain. So the focus for the heaviest rainfall this coming week will be along the Andes and to the east in the rainforest.

**Expected Impacts**

Increased likelihood of flash flooding and landslides from heavy rainfall.



**Africa**

**Mozambique Channel (Mozambique and Madagascar)** – See *Tropical Cyclones* section.

**Algeria** – See *Europe* section.

**Middle East**

**Eastern Turkey, Lebanon, Syria and northern Iraq**

**Weather**

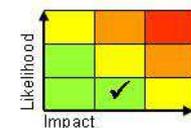
Below average temperatures have become established across the region with widespread frost expected overnight away from coastal areas until midweek. Temperatures will gradually recover to normal values later in the week.

**Discussion**

An incursion of low WBPT airmass has become slow-moving under a developing anticyclone across the region. With clearer skies and decreasing winds, this will lead to some low overnight minima before in-situ heating allows temperatures to recover to nearer normal from the west next week.

**Expected Impacts**

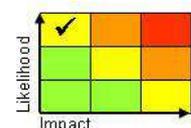
Adverse health impacts on vulnerable populations exposed to below average temperatures.



**Asia**

**Southern and central Philippines, Indonesia, Timor-Leste** – See *Tropical Cyclones* section.

**Much of Indonesia**



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## Weather

Seasonal rainfall is expected to be more intense and widespread than is usual over the next week. Up to 100 mm of rain could fall in a few hours, combined with locally strong winds or even a tornado. Rainfall totals of up to 350 mm could accumulate in places which is equivalent to around the average January rainfall in this region.

## Discussion

A combination of a Kelvin wave recently moving through the region, a strengthening cross-equatorial northerly, enhanced low level ITCZ convergence and an emerging active MJO phase in the Indian Ocean has resulted in and will maintain enhanced seasonal rainfall through the coming week.

## Expected Impacts

Localised flash flooding with some wind damage possible near severe thunderstorms. With the wet season progressing, there will be an increasing threat of landslides and river flooding as soil becomes increasingly saturated.

## Afghanistan, Tajikistan, northern Pakistan and northwest India

### Weather

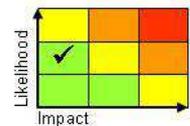
A spell of snow will move out of Afghanistan and Tajikistan, but will continue to impact northern Pakistan today (Sunday) as it extends east into the far northwest of India. Many places are likely to see a further 20-40 cm of snow, with isolated accumulations of a metre or more over the Kashmir region of Pakistan and India. Drier conditions will follow in the coming days resulting in very cold overnight temperatures becoming widespread in this region, with minima as low as -20°C possible.

### Discussion

An upper trough will transfer eastwards across the region through the coming 2 or 3 days, engaging a series of high WBPT plumes. This will lead to widespread snow on the abundant elevated topography of the region.

### Expected Impacts

This follows another snowfall event last week affecting a similar region. Fresh snowfall is expected to disrupt air and land-based transport networks in the region whilst power supplies could be interrupted. Cold temperatures may also have adverse impacts on human and animal health. Given the mountainous nature of these regions, there will also be an increased likelihood of avalanches.



## Australasia

**Northern Australia** – See *Tropical Cyclones* section.

### Southeastern Australia

#### Weather

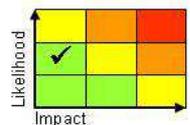
The historic heatwave that has affected much of southern and eastern Australia has cooled off through this weekend. However, temperatures will rise again this coming week, quite likely reaching similar levels as this recent heatwave. Last Thursday night, a new all-time Australian overnight heat record was recorded in Noona, NSW with a minimum temperature of 35.9°C.

#### Discussion

High temperatures are not unusual for Australia in the last decade. The Bureau of Meteorology recently announced that 2018 was the 3<sup>rd</sup> warmest year on record. These heatwaves tend to develop over NW Australia, where the town of Marble Bar has now exceeded 41 °C for over a month, then spread south and east across the interior, then on to affect the more populous areas of southeastern Australia.

#### Expected Impacts

Extreme heat can impact the health of the more vulnerable people and can adversely impact on the availability of water and the power network. High temperatures can also damage transport networks, including the melting of tarmac and buckling of railway tracks. The heat, combined with prolonged dry weather will also lead to an increased risk of wildfires.



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**Additional information**

Nil.

**Issued at:** 200800 UTC **Meteorologist:** Paul Hutcheon**Global Guidance Unit**

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