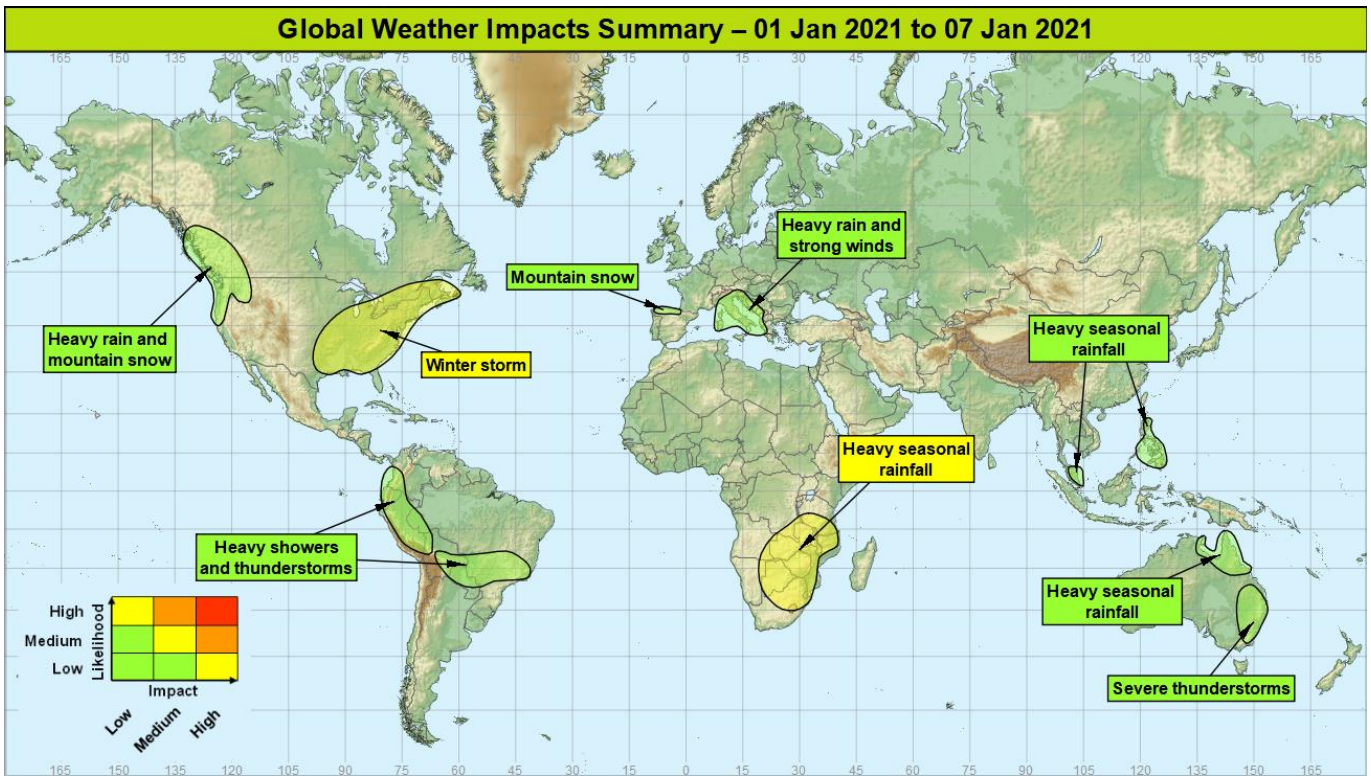
# Daily Global Weather Impacts Assessment

## Global Weather Impacts – Friday 1st to Thursday 7th January 2021

Issued on Friday 1st January 2021

### HEADLINES

- Heavy rainfall across southern Africa, aided by Ex-Chalane.
- Significant winter storm bring disruptive weather to parts of North America.




### Tropical Cyclones

*There are currently no active tropical cyclones which are expected to affect land. The following areas are being monitored for tropical cyclone development which are not expected to impact any land in the next 7 days:*

### Southern Indian Ocean

There is a high likelihood of at least one (possibly two) tropical cyclones developing in the southern Indian Ocean at around 10-15 ˚S 70-90 ˚E, but any such developments would be expected to stay over the sea.

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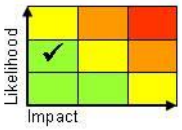
### Europe

### Parts of Italy and the Adriatic coastline




**Weather**

Very unsettled conditions are expected across this part of southern Europe with frequent heavy showers and thunderstorms on most days. Daily rainfall accumulations of around 50-75 mm are likely in places with 7-day accumulations of up to 300mm possible. These higher accumulations are most likely to occur over Bosnia and Herzegovina and Montenegro. This would suggest some places receiving their January monthly rainfall in under a week. Above around 1500 metres, heavy snow is expected to accumulate. As well as the heavy precipitation strong winds or gales are also likely, particularly this weekend. Conditions will improve for a couple of days early next week, before becoming very unsettled once again from midweek.

**Discussion**

This forecast may be amended at any time
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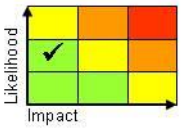
A longwave upper trough is established over Europe with the southern flank of this vortex drawing upon warmth and moisture over the Mediterranean to generate multiple episodes of thunderstorms and more persistent precipitation over windward topography. A brief respite early next week, before conditions turn unsettled once again by midweek as a portion of the disrupted trough swings NE from Iberia towards the region.

**Expected Impacts**

Flash flooding is likely, with some riverine flooding possible. At higher elevations, an enhanced avalanche risk is expected to develop.

## Northern Spain




**Weather**

Heavy snow is expected to continue along the Cantabrian Mountains in northern Spain through Friday and into the weekend. This is likely to bring accumulations of up to 25cm of snow per day in places.

**Discussion**

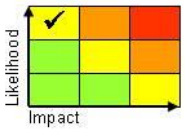
A succession of frontal systems followed by a northerly flow will continue to bring snowfall to this region over the next week.

**Expected Impacts**

Dangerous road conditions in the mountains and increased risk of avalanches.

## North America

### Central and eastern USA and southeast Canada




**Weather**

A significant winter storm will affect large parts of central and eastern USA and the far southeast of Canada over the next couple of days. Heavy rainfall is likely, 50-100 mm in places, along with heavy snowfall (20 to 40 cm) and freezing rain in the north. In the south of the region, there is potential for severe thunderstorms. Strong winds and coastal gales are also possible.

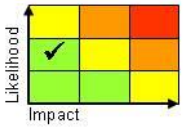
**Discussion**

Cyclogenesis is already underway as major upper trough interacts with a mass of warm, moist air moving north from the Gulf of Mexico. Within the warm sector of the system there is potential for severe thunderstorms, with sufficient CAPE and windshear to produce some organised storms with strong winds and perhaps some large hail. Along the northern flank forecast profiles support a mixture of snow and freezing rain.

**Expected Impacts**

Flash flooding, disruption due to heavy snowfall and ice accumulation are likely to be the main impacts. There is a lower likelihood of severe storm impacts (frequent lightning, large hail and tornadoes).

### Southwest Canada and northwest USA




**Weather**

Repeated frontal systems will bring heavy rain (coastal regions) or snow (higher ground) through the next week. Some areas are likely to accumulate 50-80 mm in 24 hrs (or 20-30 cm snow more inland). Heavier accumulations of snow of over 1m in places are possible this weekend.

**Discussion**

Various upper troughs will engage the surface warm plume, drawing tropical moisture northwards ahead of them. The most amplified of these looks to be during this weekend currently.

**Expected Impacts**

Some coastal flash flooding is possible, with an increased risk of avalanches in mountainous terrain.

## Central America and Caribbean

Nil.



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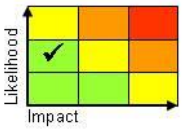
## South America

### Central/southeastern Brazil, northern Paraguay, Bolivia and southern Peru




**Weather**

Further heavy showers and severe thunderstorms are likely to affect this region through the next week. Rainfall totals will vary between locations but in the wetter locations 100-200 mm is possible. Rio de Janeiro typically sees 130 mm of rainfall per month, in the wetter months of the year.

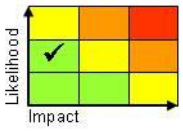
**Discussion**

The South American Convergence Zone (SACZ) has become established and is extruding tropical moisture southeastwards across this region. Precipitable water values of between 50-60mm, as well as CAPE values over 2500 $Jkg^{-1}$, will lead to some slow-moving severe convection which will support significant short period accumulations. Heavier bursts will also be helped by the occasional appearance of mid-latitude upper troughs extending north in to the area.

**Expected Impacts**

Continued threat of flash flooding and landslides.

### Western Columbia and northern Peru




**Weather**

Heavy showers and thunderstorms will become more frequent through this weekend and into the first part of next week bringing daily accumulations of up to 150-200mm in places. This equates to around half the average January rainfall for the area.

**Discussion**

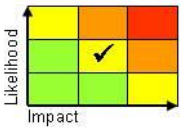
A strengthening of the cross-equatorial flow will aid a low pressure centre to develop off the Pacific coast of Columbia, enhancing precipitation here for a while.

**Expected Impacts**

Increased risk of flash flooding and landslides in steep terrain.

## Africa

### Parts of southern Africa




**Weather**

Heavy showers and thunderstorms are expected to remain more frequent than is usual through the coming week with daily rainfall accumulations of 75-100 mm locally possible. The remnants of Tropical Cyclone Chalane will bring heavy accumulations to the southern part of this region, while around Lake Malawi some places are likely to exceed their typical average rainfall for January in under a week.

**Discussion**

The passage of Tropical Depression Chalane to the south will act to further enhance the low level convergence that has contributed to above average rainfall across this region through the early stages of the wet season.

**Expected Impacts**

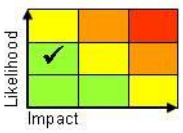
Rainfall has been above average over the past 3 months across much of this region making it more susceptible to impacts from flooding.

## Middle East

Nil.

## Asia

### Philippines and Malaysia




**Weather**

Heavy rain and thunderstorms will continue to affect the region over the next week. 50-100 mm of rain may fall in a few locations in 24 hours. Some places are likely to receive 200-300 mm of rain over the next week. However, this is the wet season and so this is not too unusual even though there will be some impacts.

This forecast may be amended at any time

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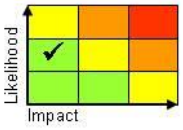
**Discussion**
Strong NE monsoonal flow, coupled with several Equatorial Rossby Waves, will lead to enhanced convection across windward coastal regions of both the Philippines and Malaysia over the next week. Rainfall probably easing by the middle of next week as the effects of the cold surge diminish.
**Expected Impacts**
Flash and riverine flooding likely in places.

**East Asia and Maritime Continent** – See *Additional information* section.

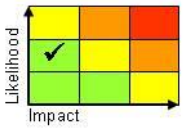
## Australasia

### Eastern Australia




**Weather**
Heavy showers and locally severe thunderstorms are expected over the next 5 days, with daily rainfall totals of up to 50-100 mm possible, along with a threat of large hail and strong, gusty winds.
**Discussion**
A series of upper troughs are likely to engage a southern extension of the monsoon plume to produce a severe thunderstorm threat across parts of New South Wales and southeast Queensland.
**Expected Impacts**
Some localised impacts could be seen from flash flooding and hail / wind damage due to the severe storms.

### Northern Australia




**Weather**
Heavy seasonal rainfall and thunderstorms are likely to continue this week across the north of Australia as the monsoon rainy season continues. Daily rainfall totals of 50-100 mm may develop quite widely, with localised totals of up to 250 mm possible by the early next week.
**Discussion**
The deep moist tropical airmass will continue to take hold over these northern parts of Australia, fuelled by SSTs in excess of 30 ˚C in places. An upper high has now developed in this area, and BOM have stated that the monsoon has arrived in Darwin (slightly early thanks to La Niña) and so further rainfall events may be expected in the coming weeks over northern Australia.
**Expected Impacts**
Much of this region is sparsely populated, and so impacts will be minimal, but flash, and possibly riverine, flooding is likely.

## Additional information

### Eastern Asia

Cold surge across Eastern Asia is now at its peak, with temperatures slowly recovering over the weekend and into next week. Temperatures are around 10˚C below average resulting in widespread air frosts across the region, and unusually cold temperatures in Taiwan. Strong or gale force winds will produce a potentially dangerous wind chill, but this change of air mass should improve the air quality in parts of China, at least for a few days. Heavy snowfall is likely across windward topography of Japan.

### Much of the Maritime Continent

Many eastern parts of the Maritime Continent will continue to experience above average rainfall amounts in the coming week. Higher than average SSTs in the area thanks to the current La Nina conditions, will continue to fuel some severe convection at times.

**Issued at:** 010645UTC **Meteorologist:** Brent Walker **Global Guidance Unit**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