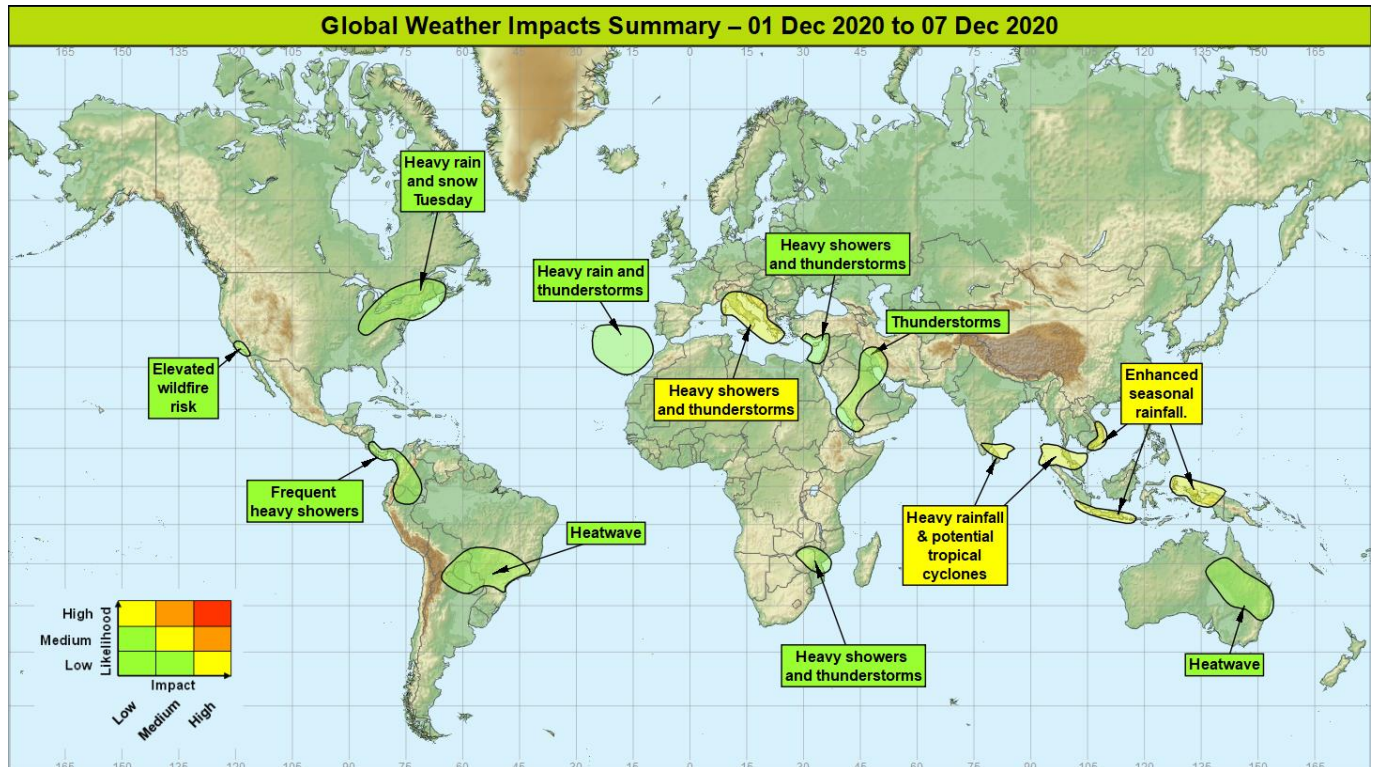


## Global Weather Impacts – Tuesday 1<sup>st</sup> December to Monday 7<sup>th</sup> December

Issued on Tuesday 1<sup>st</sup> December 2020

### HEADLINES

- Flash flood risk across parts of the Mediterranean from mid-week.
- Flash flood risk continuing across parts of South East Asia.
- Tropical cyclones likely to form in the southern Bay of Bengal near to Sri Lanka on Tuesday and the Gulf of Thailand later this week.



### DISCUSSION

There are currently no active tropical cyclones. The following areas are being monitored for tropical cyclone development that may impact land over the next 7 days:

#### Bay of Bengal Weather

A depression formed in the Bay of Bengal on Sunday which is expected to continue to intensify into a tropical storm during Tuesday. This storm is likely to move west-northwestwards across northern Sri Lanka on Wednesday and southeast India by Thursday or early Friday. Strong winds will affect areas close to the centre of the storm; however, the primary hazard will likely be heavy rainfall - 100-200mm is expected to fall in a couple of days in the north of Sri Lanka, with perhaps as much as 300-400mm in some locations. This is the wettest part of the year for this region and these higher totals are close to the typical monthly rainfall for December.

#### Discussion

A tropical depression has developed from an Equatorial Rossby Wave which will then be steered gradually west-northwestwards across the warm northeast Indian Ocean (SSTs 29-30C) in a region of low vertical shear. Strengthening of this system is signalled to occur today (Tuesday) by all the main 00Z model output. It is likely to be named by the India Meteorological Department later today.

#### Expected Impacts

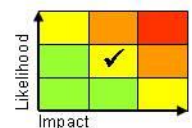
An enhanced risk of flash and riverine flooding. Dangerous coastal conditions and damaging winds close to the centre of the storm may occur.

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

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## Gulf of Thailand and the Andaman Sea

### **Weather**

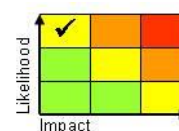
An area of showers and thunderstorms moving into the Gulf of Thailand has developed into a shallow depression. Although it is unlikely to develop more, this area is likely to bring heavy rainfall (150-300mm in a day or so) to southern Thailand/northern Malaysia in the middle of this week, before moving into the Andaman Sea where conditions may be favourable for the formation of a tropical cyclone.

### **Discussion**

The monsoon trough where the northeast flow across the South China Sea meets the equatorial westerly flow, is a source of low level vorticity and this is being further enhanced by an Equatorial Rossby Wave (ERW) currently moving west across the region. It is possible that these features could aid the development of a tropical depression across the Gulf of Thailand early next week where SSTs remain very warm at 29-30C. Whatever the strength of the circulation some weakening is likely as it crosses the Malay Peninsula, however conditions are likely to remain conducive to tropical cyclone activity as the circulation subsequently emerges into the Andaman Sea.

### **Expected Impacts**

Flash and some minor riverine flooding, with the potential if a tropical cyclone forms for strong winds to damage some structures and cause utility outages across coastal parts around the middle of this week.



*The following areas are being monitored for tropical cyclone development that will remain over open water:*

## Southern Indian Ocean

There is the small chance that a tropical cyclone could form in the central southern or southeast Indian Ocean over the coming days. Any system that forms will remain well away from land and out over the open ocean before decaying.

## Northeast Atlantic Ocean – Between the Azores and Canary Islands, including Madeira

See *Europe* section for details.

## Europe

### Italy, Corsica and the Balkans

### **Weather**

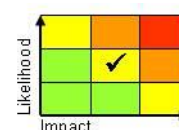
Slow moving thundery downpours will affect this region through the latter half of this week bringing accumulations of up to 50-100mm in a few hours in places, with some peaks of double this amount possible in 24hrs. Further heavy rainfall (snow across the Alps) is likely across a similar region into the weekend.

### **Discussion**

An upper vortex will engage the low level moist plume causing cyclogenesis close to Corsica. The resultant low will track slowly east before the upper vortex relaxes away to the east by Friday.

### **Expected Impacts**

An enhanced flash flood risk, especially on Wednesday and Thursday.



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## The Canary Islands, Madeira and the Azores

### **Weather**

A slow moving area of low pressure is now bringing heavy showers, thunderstorms and strong winds across this region and this is likely to continue through until Thursday. The strong winds this system will bring to the Azores have reached the threshold for the low to be named Storm Clement by the Portuguese Met Service. Across the region rainfall accumulations could reach 40-70mm quite widely, with locally 120mm across the mountainous islands. Although these accumulations are not that unusual for the Azores, they are more unusual for some of the drier Canary Islands.

### **Discussion**

A further trough and extension has taken place across the region with the upper vortex and its associated surface low likely to sink very slowly south across this area through the coming 5 days. This will be a source of frequent deep convection, which may allow the low to acquire some subtropical characteristics, meaning that the system named "Storm Clement" by the Portuguese Met Service also has a low/moderate (30%) chance of becoming a named tropical storm and acquiring a Greek name from the National Hurricane Centre (NHC).

### **Expected Impacts**

Flash flooding and landslides in the mountainous terrain are the most probable impacts, with the additional of some strong winds around the periphery of the surface low generating some large waves and dangerous beach conditions that could disrupt travel across the region (ferries etc.).



## Cyprus, Turkey, Syria, Lebanon, Israel and Egypt

### **Weather**

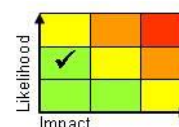
Fairly frequent and intense showers and thunderstorms will affect this region until Wednesday. Whilst most areas are unlikely to see impactful rainfall, a few places could see 50-80mm in a few hours in association with the most intense storms, most likely in coastal areas. Further heavy showers are likely to develop during the second half of this week.

### **Discussion**

Activity will be focused on slightly elevated WBPT plumes which may act as frontal like features, although the vast majority of precipitation is likely to be convective in nature (driven by the warm underlying seas). The highest risk of impacts are where these showers are most frequently driven inland with significant rainfall expected across Cyprus and southern Turkey today (Tuesday). Further heavy showers are expected to develop in similar areas on Thursday and Friday which could give similar impacts.

### **Expected Impacts**

An enhanced risk of flash flooding.



## North America

### Northeast USA and southeast Canada

### **Weather**

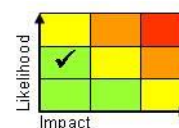
A deep area of low pressure has developed over the northeastern seaboard of the USA. This will bring strong winds and heavy rainfall to this region with accumulations of 40-80mm possible across eastern States. Along the western flank of this low some heavy snowfall is expected with the potential for 30-50cm to fall in around 24 hours in an area from Tennessee to the Great Lakes on Tuesday.

### **Discussion**

An upper trough engaged a thermally strong cold front just inland from the Gulf coastline on Monday morning causing a major cyclogenesis event, with the low pushing northeast along the Eastern Seaboard. Very moist air with tropical origins within the warm conveyor will mean the system produces significant rainfall, however the snowfall where the cold air undercuts the western flank of the depression may be the most impactful weather.

### **Expected Impacts**

Some minor flash and minor riverine flooding is possible in places in the east. Snowfall across the west of the region will likely bring disruption to transport and utilities on Tuesday.



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## Southwestern USA

### **Weather**

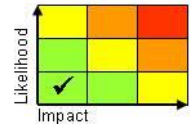
Santa Ana (strong, very dry and warm easterly) winds are expected in this area again during the middle of this week, enhancing the ongoing wildfire risk.

### **Discussion**

Another build of pressure to the east of the Sierra Nevada will induce a cross barrier MSLP gradient, once again encouraging strong gap and downslope winds including the Santa Ana across southern California.

### **Expected Impacts**

Risk that any wildfires could rapidly grow and spread bringing a risk to property and life.



## Central America and Caribbean

### Nicaragua, Guatemala, Costa Rica, Panama, Colombia and Venezuela

### **Weather**

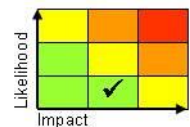
Enhanced heavy shower and thunderstorm activity will affect the region during this week. During this time 150-200mm of rain is likely to build up across many parts of the region, with a few spots perhaps seeing as much as 400mm by the end of the week – which is approximately twice the normal rainfall for this time of the year.

### **Discussion**

An active period in the ITCZ will see strengthened northeasterly winds in the northern part of this area, and southwesterlies in the south of the area. The associated low-level convergence of very high PWAT air will bring an increased frequency of showers and thunderstorms, especially into areas exposed to these winds, i.e. coastal parts with onshore winds. This all aided by upper level divergence associated with a weak mid-latitude trough that extends southwest from the upper vortex currently southeast of Bermuda.

### **Expected Impacts**

Flash and further riverine flooding, with an increased likelihood of landslides.



## South America

### Colombia and Venezuela – See Central America and Caribbean section

### Paraguay, northern Argentina, eastern Bolivia and southern Brazil

### **Weather**

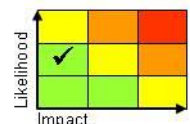
Temperatures are expected to rise into the high 30's and low 40's of Celsius most days this week with very warm overnight temperatures. The hot, dry conditions will be conducive to the maintenance/regeneration of wildfires, of which there are numerous across this region.

### **Discussion**

The establishment of the northwest monsoon flow across this region continues to advect hot, dry air from areas further north – the warming process further aided by orographic descent (from the Andes) and forced subsidence due to upper ridging aloft. Temperatures in excess of 40C are not unprecedented in this region at this time of year, although it is likely that a few local station records will be broken, with temperatures around 4-6C above the average.

### **Expected Impacts**

The longevity of the heat is likely to impact on vulnerable demographics, combined with the drought conditions that will increasingly stress national resources/agriculture etc. Poor air quality associated with wildfire smoke will also impact on human health.



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**Africa****Egypt** – See *Europe section***Zimbabwe and Mozambique****Weather**

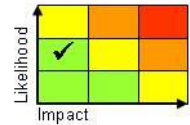
Active and frequent showers and thunderstorms are expected to develop in this area from the middle of this week and continue for several days. During that time precipitation accumulations across a reasonable part of this area are expected to be 25-50mm, but locally 200-400mm is signalled across central Mozambique. Despite the region entering its wettest period of the year (December to February) these totals are above what would normally be seen in early December.

**Discussion**

A mid-latitude cold front progresses up the eastern coast of South Africa before stalling close to central Mozambique on Wednesday. A surface high builds to the rear of this generating a strong southeasterly flow, this meeting the northeasterly Indian Ocean trade winds and generating strong low level wind and moisture convergence. This will lead to the generation of abundant deep moist convection which is highly efficient at producing heavy rainfall.

**Expected Impacts**

Increased threat of flash flooding, with lightning being an additional hazard.

**Middle East****Levant coastline** – See *Europe section***Parts of Saudi Arabia, Northwest Yemen, Southeast Iraq, Kuwait, and western Iran****Weather**

There is the potential for severe thunderstorms to develop across these areas over the coming days. Torrential downpours are possible with 50-75 mm falling in a few hours, hail (in elevated regions) and some strong and gusty winds (which may lift some minor dust plumes).

**Discussion**

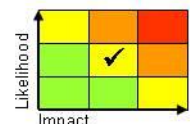
A trough extensions extending southwards across northern Saudi Arabia this week will draw northwards and then engage high WBPT plumes (sourced from Africa/Red Sea) to generate areas of high-based showers and thunderstorms. The high PWAT airmass will support some locally intense downpours and high cloud bases will be supportive of frequent lightning, locally gusty winds.

**Expected Impacts**

Small likelihood of isolated flash flooding, which should this impact urban areas could cause significant disruption. Frequent lightning could cause isolated issues and lifted dust could cause disruption to transport.

**Asia****Southeast India and eastern Sri Lanka** – See *Tropical Cyclones section***Southern Thailand, and Nicobar Islands** – See *Tropical Cyclones section***Vietnam, Cambodia, and parts of Indonesia****Weather**

There is likely to be enhanced convective activity in the coming week with heavy showers and thunderstorms affecting large parts of this wider region from time to time. There will be some drier interludes as well in all areas, but when the showers do come along they are likely to be torrential, with a risk of frequent lightning. Windward coasts and mountainous areas are likely to see the worst of the storms.



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## Discussion

Several factors are contributing to this potentially very wet spell in the region. Even though it is not unusual at this time of year, effects are still likely to be felt, given antecedent wet conditions and the anticipated frequency and intensity of the rains. The MJO is moving from Phase 4 into Phase 5, which will bring large-scale upper divergence. A train of Rossby waves to the east will also likely enhance the convection in pulses, a Kelvin wave can be seen propagating eastwards, and finally La Niña will also contribute as SSTs are well above average over this part of the world, with a large area of >28C.

## Expected Impacts

Increased likelihood of flash and river flooding, with potential for landslides in the higher terrain.

## Australasia

### Much of populated Australia especially New South Wales and southeastern Queensland Weather

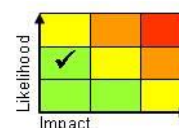
This area of Australia is likely to continue to see some very high temperatures in the coming days, with temperatures quite widely in excess of 40C – and reach the mid to high 40's inland. Though heatwaves are not uncommon in this area, it is particularly early this year and is likely to produce conditions favourable for wildfires to spread as the winds also pick up during the coming days. Cooler temperatures will gradually spread northeast into Victoria and New South Wales, however the heat is expected to remain persistent and intense across much of southern Queensland and eastern parts of the Northern Territory through until Wednesday.

## Discussion

A trough extension across central/western Australia will be associated with a northeast moving cold front. Ahead of this feature hot air from the hot northern interior of the continent will be drawn southeastwards across this region. A combination of warm advection and strong sensible heating will lead to an upper anticyclone developing across this region (some adiabatic subsidence likely), this will slow the cold fronts northeast progress and lead to hot conditions persisting until Wednesday.

## Expected Impacts

Heat health impacts for older and more vulnerable members of the population and animals. An enhanced risk of wildfires.



## Additional Information

**Northern India, Pakistan, Afghanistan and parts of eastern China:** Urban pollution, combined with crop burning, will continue to generate high levels of air pollution in this area over the coming months. Very unhealthy air quality has continued to be reported in cities in the area including Delhi, Lahore and Kabul, with the US Embassy describing it as hazardous in Kabul currently.

**Issued at:** 010845 UTC    **Meteorologist:** Chris Tubbs/David Oliver

**Global Guidance Unit**

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

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