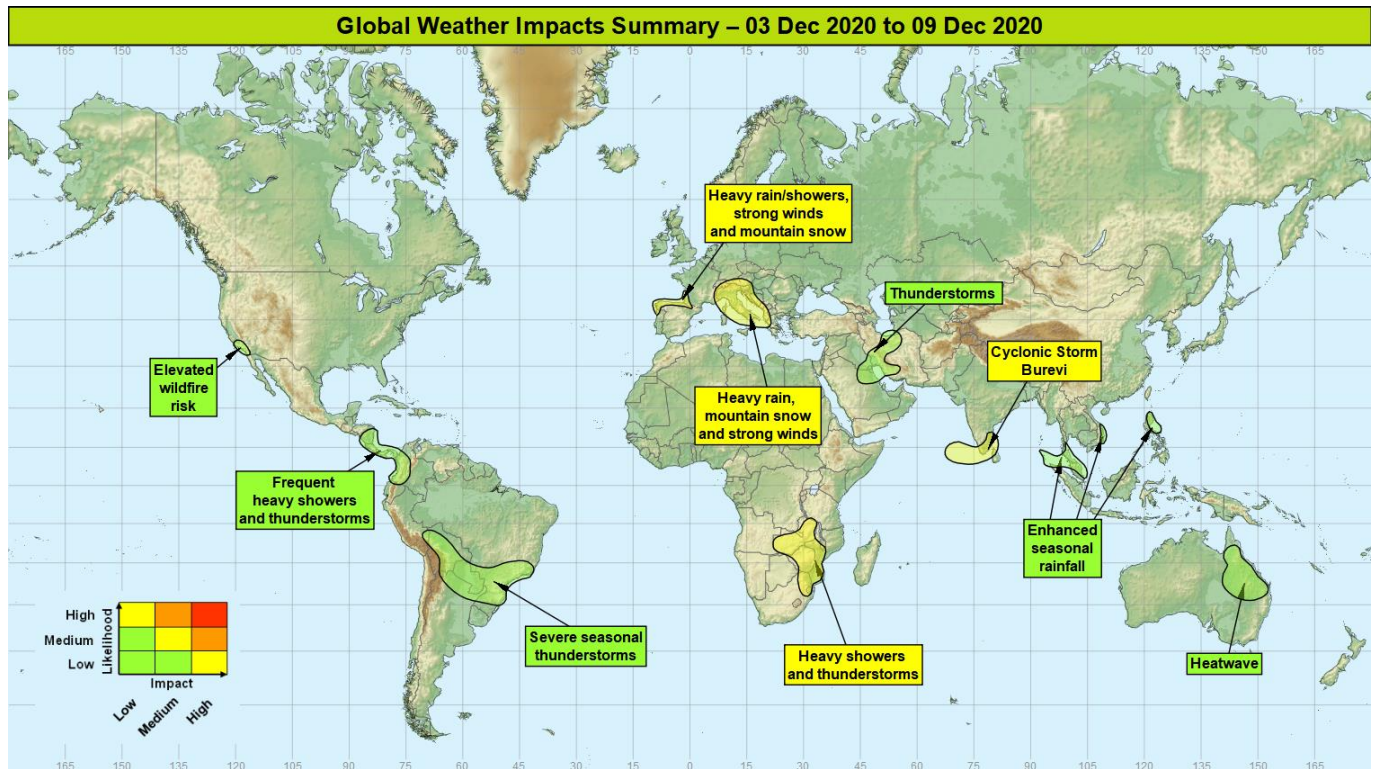


## Global Weather Impacts – Thursday 3<sup>rd</sup> to Wednesday 9<sup>th</sup> December

Issued on Thursday 3<sup>rd</sup> December 2020

### HEADLINES

- Cyclonic Storm Burevi made landfall overnight across eastern Tamil Nadu.
- Heavy rain leading to flash flooding across parts of the Mediterranean, snow on mountains.
- Flash flood risk continuing across parts of Southeast Asia and in parts of southeast Africa.



### DISCUSSION

#### Tropical Cyclones

#### Cyclonic Storm Burevi – Bay of Bengal, Sri-Lanka, SE India Weather

Tropical storm Burevi made landfall over SE Tamil Nadu with sustained winds of around 40-45mph. Burevi is expected to move across the far south of India during today and Friday with impacts in Sri-Lanka soon easing. Strong winds will affect areas close to the centre of the storm; however, the primary hazard will likely be heavy rainfall - 150-250mm is expected to fall in a couple of days along the path of the cyclone, with perhaps as much as 300-500mm 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, in an area which has been consistently wetter than normal in recent months.

#### Discussion

Cyclonic Storm Burevi formed from an Equatorial Rossby Wave crossing the Bay of Bengal. The cyclone was steered gradually west-northwestwards across the warm northeast Indian Ocean (SSTs 29-30C) in a region of low vertical shear earlier this week. Today, over land, Burevi will weaken in intensity, with the winds easing – however some very heavy and persistent rain will affect Tamil Nadu. Over the weekend, Burevi will continue westwards over the Arabian sea, with some model signal for strengthening once back over warm sea. NB: Very low risk that eventually it could approach the coast of Somalia, and given recent conditions there, this would have much greater effects than expected at first glance – not indicated on map yet, due to very low confidence, but one to watch in the coming days.

#### Expected Impacts

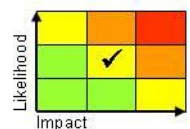
An enhanced risk of flash and riverine flooding. Dangerous coastal conditions and damaging winds close to the centre of the storm may occur.

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

## **Southern Indian Ocean**

There is a 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.

## **Europe**

### **Italy, Corsica, Southern Alps and the Balkans**

#### **Weather**

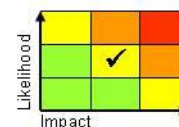
Spells of heavy rain and thunderstorms will affect this region through the rest of this week and especially into the weekend, bringing accumulations of up to 50-100mm in a few hours in places. By the beginning of next week 250 to 360 mm of rain could have built up in a few locations. Snow is likely across the Dinaric and Italian Alps with some large accumulations gradually building up here, and snow is possible at lower levels in the east/north of this area – e.g. perhaps large populated areas such as Zagreb/Ljubljana for example. Further heavy showers are possible at times next week, but overall conditions are expected to be drier. Gales, although not unheard of at this time of year, will still cause large waves and treacherous sea conditions, particularly in the Adriatic sea.

#### **Discussion**

The upper pattern will remain blocked as several trough extensions take place across central and western parts of Europe. Areas of deep convection and heavy, orographically modulated rainfall are likely to develop in the high WBPT plumes that are drawn north on the forward side of the extending upper trough(s). After a brief lull later today and at first tomorrow, a renewed surge of activity is likely over the weekend.

#### **Expected Impacts**

Significant risk of flash flooding, with fluvial impacts increasingly likely. Landslides are possible as well as avalanches, with snow causing disruption to travel on higher routes. Hazardous sea conditions at times.



### **Northern Spain (and Portugal) and southwest France**

#### **Weather**

Frequent, heavy showers along with some longer spells of rain are expected to affect the region in the next few days. Rainfall will vary somewhat, but on the wetter days 50-75 mm could fall and by early next week up to 150 mm is possible in places, especially over higher ground. Precipitation will fall as snow above 800 to 1200 metres, with some significant falls likely (50 to 100 cm) over parts of the Pyrenees. In addition to this, northerly gales or severe gales will develop by the weekend, leading to some very large waves in the Bay of Biscay which will not only cause dangerous sea conditions, but has the potential to damage sea defences.

#### **Discussion**

A cyclonic block developing over western Europe, with a northwesterly surface winds, will allow a near continuous feed of heavy showers off the Bay of Biscay. Some longer spells of rain and mountain snow will occur in association with active frontal systems swinging southeast cross the region at times.

#### **Expected Impacts**

Main impact will be flash flooding with some disruption to travel likely, especially over mountainous regions where heavy snow will be an additional hazard. Hazardous sea conditions at times, with potential for sea defences to be damaged.



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**North America****California, USA****Weather**

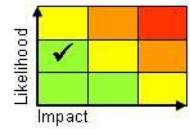
A Santa Ana wind event is expected to continue for the rest of the week and through the weekend across southern parts of California. Gusts of up to around 60 mph are possible during the peak of the event today, before winds ease by the weekend. Wildfire risk will become elevated.

**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**

Potential 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**

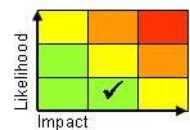
Enhanced heavy shower and thunderstorm activity will affect the region during the next few days, before easing later in the weekend. During this time 150-200 mm of rain is likely to build up across many parts of the region, with a few spots perhaps seeing as much as 400 mm by the middle of next week – 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, Bolivia and southern Brazil****Weather**

Severe thunderstorms are expected to affect the region at times for the next week. The most intense and widespread storms are likely during today and through to the weekend. As well as intense short period rainfall (50-75 mm), large hail and strong winds will be hazards associated with these storms and even a low chance of tornadoes.

**Discussion**

A combination of high WBPT and a weakly cyclonic pattern aloft will encourage the destabilisation of the atmosphere and deep convection to form most days this week. High CAPE (locally reaching 2500+J/kg) and moderate vertical wind shear could lead to supercell formation, with the typical hazards associated with these storm probable.

**Expected Impacts**

Flash flooding likely bringing disruption to travel. Large and strong winds could bring some damage to crops and property.

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**Africa****South Africa, Swaziland, Zambia, Zimbabwe and Mozambique****Weather**

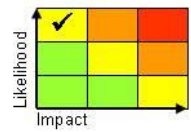
Frequent showers and thunderstorms are expected to continue in this area for several days. During that time precipitation accumulations across a reasonable part of this area are expected to be 100 to 150 mm, but locally 200 to 400mm is signalled across central Mozambique. Despite the region entering 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 widespread deep, moist convection which is highly efficient at producing heavy rainfall.

**Expected Impacts**

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

**Middle East****Northern Saudi Arabia, Southeast Iraq, Kuwait, and western Iran****Weather**

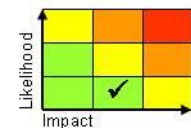
There is the potential for severe thunderstorms to develop across these areas over the coming days. Torrential downpours are possible with 50-75 mm falling in a few hours, hail (in elevated regions) and some strong and gusty winds (which may lift some minor dust plumes).

**Discussion**

A trough southwards across northern Saudi Arabia 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.



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## Asia

**Southeast India and Sri Lanka** – See *Tropical Cyclones* section

### **Parts of The Philippines, Vietnam, Thailand, Indonesia and Malaysia**

#### **Weather**

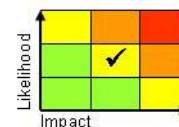
Heavy showers and thunderstorms will be more widespread and intense than usual across some parts of southeast Asia through this week. There will be some drier interludes as well, but when the showers do come along they are likely to be torrential, with a risk of frequent lightning. Windward (east-facing) coasts and mountains will see the worst of the storms.

#### **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. A tropical low over Indonesia is inducing a strong, moisture-laden northeasterly flow on its northern flank, affecting the eastern-facing coasts and mountains particularly where the highest rainfall totals are expected in the coming days. Additionally, 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, and finally La Niña will also contribute as SSTs are well above average over this part of the world, with a large area of >28°C.

#### **Expected Impacts**

Increased likelihood of flash and river flooding, particularly in areas exposed to the northeasterly flow, with potential for landslides in the higher terrain.



### **Australasia**

#### **Northeast, Australia**

#### **Weather**

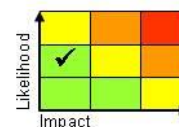
Intense heat has now become confined, mostly, to Queensland. Nevertheless, major cities such as Brisbane are likely to see temperatures into the mid-30s and in excess of 40°C is still expected across the interior, around 5 to 8°C above-average. Though heatwaves are not uncommon in this area, it is particularly early this year and is likely to produce conditions favourable for wildfires to spread as the winds increase for a time in southern Queensland. In to next week though, the heat looks like easing, with the risk of thunderstorms heading in from the west.

#### **Discussion**

Persistent upper level anticyclone will continue to produce large-scale subsidence, maintaining very hot conditions persisting through the rest of the week. Cold front approaching from the southwest likely to bring an end to the heat wave early next week, or at least confined it to a smaller region of Queensland further north.

#### **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 to health.

**Northwest Africa:** A marked cold front will head south towards northwestern Africa over the weekend, bringing heavy rain (particularly to Mediterranean coasts) strong winds and a marked drop in temperatures by next week. Large waves associated with the strong northerly winds could bring hazardous sea conditions to NW Morocco and the Canary Islands.

**Issued at:** 030815 UTC **Meteorologist:** Chris Almond / Jason Kelly

**Global Guidance Unit**

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

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