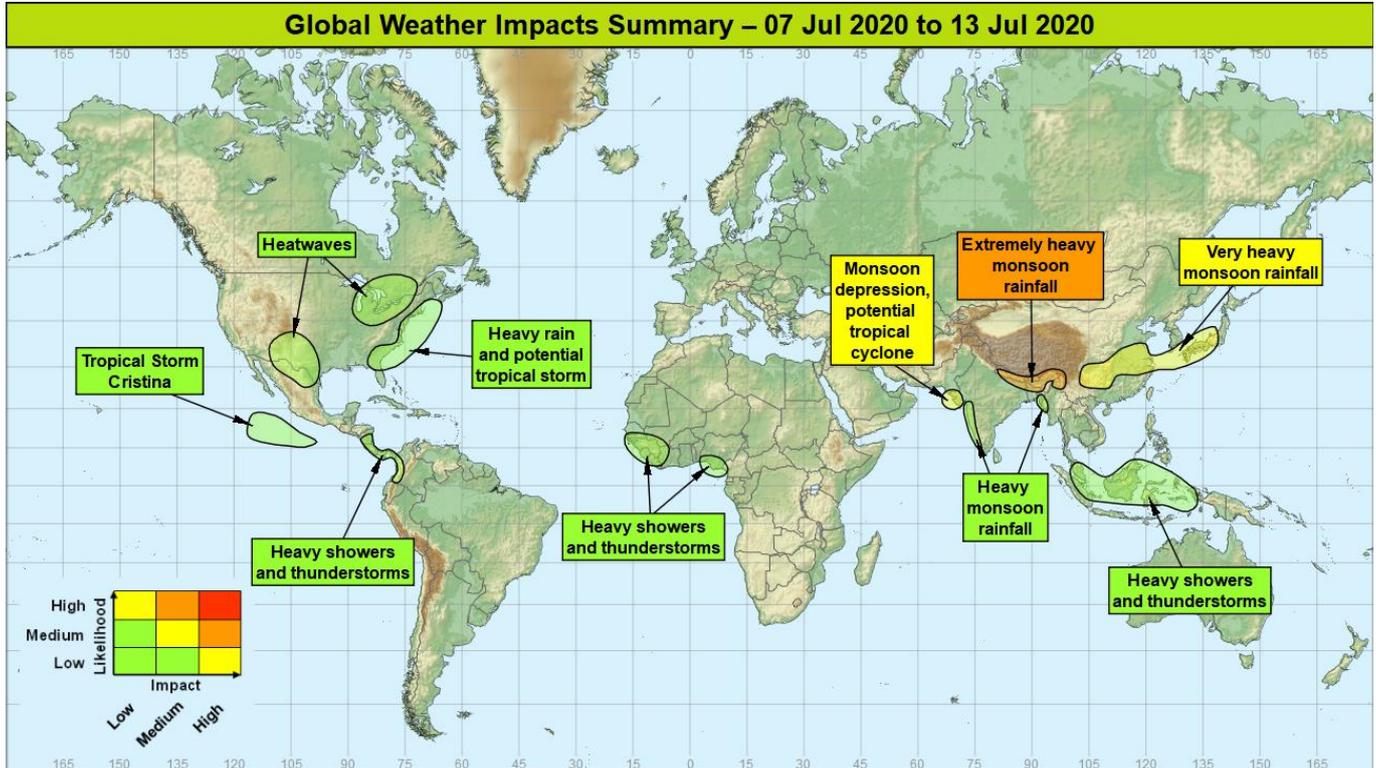


## Global Weather Impacts – Tuesday 7<sup>th</sup> to Monday 13<sup>th</sup> July 2020

Issued on Tuesday 7<sup>th</sup> July 2020

### HEADLINE

- Extremely heavy monsoon rainfall continues for parts of South and East Asia.
- A potential tropical storm close to the India / Pakistan border in the northern Indian Ocean.



### DISCUSSION

#### Tropical Cyclones

##### Tropical Storm Cristina - Northeast Pacific Weather

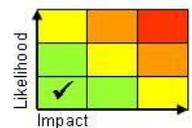
Cristina has formed over the open eastern Pacific over the last 24 hours. Whilst conditions are favourable for some strengthening of this system, it is expected to track northwestwards, staying well offshore of Mexico.

##### **Discussion**

Several African Easterly Waves (AEWs) are organising convection in this area with environmental conditions favourable for the development of Cristina over the next few days. Cristina will be steered northwestwards by the prominent sub-tropical ridge to the north and remain over the open ocean.

##### **Expected Impacts**

Nil.



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

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The following areas are being monitored for possible formation:

## Northern Indian Ocean, India / Pakistan border region

### **Weather**

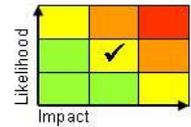
A monsoon depression currently located across Gujarat coast in northwest India will remain slow-moving and bring heavy rainfall to this region and Sindh Province in southern Pakistan. Around 200-400mm of rain could fall in this areas in the next 3 days (150-300mm the July average in this region). From Wednesday this depression may move a little further west, just offshore, and there is a small risk it could develop into a tropical cyclone during this time and bring further heavy rainfall to the region.

### **Discussion**

Over recent days deep convection around this depression has brought heavy rainfall to the region, with this near stationary pattern likely to continue for the next few days. Into midweek the depression is expected to move offshore along the monsoon front, with a small window for development over very warm seas before vertical wind shear increases and renders the environment unfavourable. Phase diagrams for solutions which allow this to occur show the development of a deep symmetric warm core system.

### **Expected Impacts**

Risk of flash flooding both from standing water and small water courses, especially if heavy precipitation effects an urban area. If a modest tropical does develop midweek, a small risk of some disruption from strong winds and rough seas.



## Western Atlantic

### **Weather**

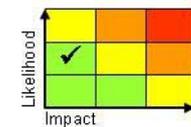
Over the next few days a tropical low will produce heavy rain across Florida and southern Georgia (75-150 mm). Later this week, it will then move out across the Atlantic where the system could become better organised and develop into a tropical cyclone. Should a tropical storm form, this would then move northeast, tracking close to the Carolinas' coastline, bringing threat of heavy rain and strong winds here.

### **Discussion**

Little development of the depression is expected over the next couple of days. However, once the system moves out into the Atlantic Ocean, most probably during Thursday, high SSTs and a relatively low shear environment lend an opportunity for some development to take place. Should a cyclone form, then this would most likely track close to the Carolinas.

### **Expected Impacts**

The potential for flash flooding over coming days. Later in the week depending on the degree of development some rough sea may affect the east coast of USA.



## Europe

Nil.

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## North America

### USA, Canada, and northern Mexico

#### **Weather**

Several heatwaves are underway across North America. The event across the northeast states and eastern Canada will peak midweek, then gradually ease in intensity towards the weekend. Daytime maximum temperatures will be 10°C above average in places, with night time minima similar to the usual daytime maxima at 20-25°C. This represents maximum temperatures into the mid (locally high) 30s°C. Meanwhile a heatwave currently underway in Mexico and the southwestern USA will expand northeast and continue to intensify though the week; here maximum temperatures will more than 10°C above average, reaching the low to mid 40s°C.

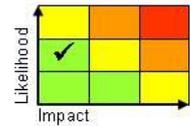
#### **Discussion**

A strong upper high cells remains slow moving across the southwestern USA and northern Mexico with an upper ridge extending northeastwards from this. Through a combination of warm advection, cumulative heating and warming of the airmass through adiabatic subsidence, several major heatwaves will affect the region. In northeast some mid-latitude mobility is expected to cut across the upper high and lead to a reduction in temperatures next weekend, however throughout this period the upper high in the southwest remains in place and allows the heat to continue to build.

#### **Expected Impacts**

Impacts relating to heat stress on human and animal health. Increased demand for air conditioning coupled with reduction in the efficiency of power lines due to excess heat, could place extra strain on power networks. In addition, there is an enhanced risk of wildfires, especially in the southwestern states.

**Southeastern USA** – See *Tropical cyclones section*



## Central America and Caribbean

### Costa Rica, Panama, Nicaragua and western Colombia

#### **Weather**

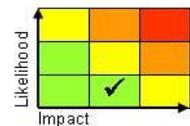
Showers and thunderstorms will continue to be more frequent and widespread than normal over the next week. Up to 50mm of rainfall is possible in places over a short duration, with up to 250 mm throughout the week across the mountains of Central America and as much as 300-400mm across the Colombian Andes.

#### **Discussion**

The ITCZ is expected to remain fairly active across this region, with the passage of several African Easterly Waves (AEW), bringing periods of enhanced activity to Central America. Further south enhanced low-level moisture convergence across the Colombian Andes will lead to enhanced activity here.

#### **Expected Impacts**

An enhanced risk of flash flooding and landslides.



## South America

### Western Colombia – See *Central America and Caribbean section*

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## Africa

### West Africa between Senegal and the Ivory Coast as well as southern Nigeria and southwest Cameroon

#### **Weather**

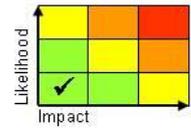
Further intense and prolonged thunderstorms will affect this part of Africa at times this week. Around 50-70 mm of rain will fall in short period (3 to 6 hours) in places and a few locations will receive 100-200mm through the week. Across the far north of this area thunderstorms will bring less rainfall, but will bring strong and gusty winds which are able to lift dust plumes. Between 250-500mm per month is a typical accumulation in July.

#### **Discussion**

Several marked African Easterly Waves (AEWs) will cross the area during this week, with heavy rainfall associated with these features across much of the region, and dry thunderstorms producing strong winds and lifting dense dust plumes in the far north.

#### **Expected Impacts**

Risk of flash flooding and landslides, with significant impacts probably only occurring if the larger rainfall totals affect any of the major urban centres in this region.



## Middle East

Nil.

## Asia

### Northeast India, Nepal, northern Bangladesh, Bhutan, and northern Myanmar

#### **Weather**

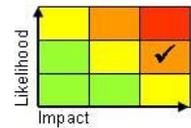
Following recent extreme rainfall across the hills and mountains in this region, further heavy monsoon rainfall is expected through the coming week, particularly towards the end of the week and into the weekend. Across low lying areas totals of 100-200mm are widely expected, with the hills and mountains again likely to see 500-1000mm. This compares to the typical average at this time of year of 400-500mm across low lying regions, and at least 1000mm per month over the mountain sites. Recent rainfall has brought significant flooding across the region, although levels in the larger low lying rivers are now slowly retreating, this additional rain will see levels rise once again in the coming week or two.

#### **Discussion**

Having a strong BSISO1 in phase 3 or 4 correlates with above average rainfall across this region. With a monsoon depression located over Odisha/West Bengal an anomalously strong southerly to southwesterly monsoon flow across the Bay of Bengal is drawing extremely high precipitation water (PWAT) airmass (>75mm) across this region. This will generate further torrential downpours from rain, showers and thunderstorms, with the mountains seeing the highest totals. Despite this occurring relatively early in the monsoon season, flooding and widespread population displacement has already been widely reported. Although recent observations show levels in the larger rivers and flood plains to be slowly receding, modelling taking into account this additional rainfall suggests that within a week levels will have returned to levels seen during the recent floods, and will likely rise even higher.

#### **Expected Impacts**

Widespread surface and continued significant riverine flooding affecting the region, and likelihood of landslides in the higher terrain.



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## Central and eastern China, South Korea and Japan

### **Weather**

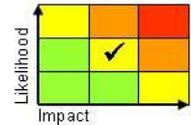
Following exceptional rainfall across these regions over recent days and weeks, the monsoon front that extends from Central China to Japan is expected to remain very active through this week. Widely between 100-200mm of rain is expected, with peak accumulations over the hills and mountains are likely to be in the region of 500-750mm across both China and Japan.

### **Discussion**

Having a strong BSISO1 in phase 3 or 4 correlates with above average rainfall across this region. With a monsoon depression located over Odisha/West Bengal an anomalously strong southerly to southwesterly monsoon flow across the Bay of Bengal is drawing extremely high precipitation water (PWAT) airmass (>75mm) across this region. This will generate further torrential downpours from rain, showers and thunderstorms, with the mountains seeing the highest totals. Despite this occurring relatively early in the monsoon season, flooding and widespread population displacement has already been widely reported. Although recent observations show levels in the larger rivers and flood plains to be slowly receding, modelling taking into account this additional rainfall suggests that within a week levels will have returned to levels seen during the recent floods, and will likely rise even higher.

### **Expected Impacts**

Widespread surface and continued significant riverine flooding affecting the region, and likelihood of landslides in the higher terrain.



## Southern Pakistan and northwest India – See Tropical Cyclones section

## Western India, southeastern Bangladesh and western Myanmar

### **Weather**

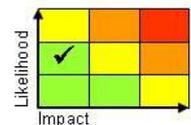
Further heavy monsoon rainfall is expected across these regions through this week. 50-100 mm of rainfall per day is possible, with some elevated areas seeing 150-300 mm over the week. This hills in this region typically receive around 750-1000mm of rainfall in July, so this current event is slightly above average.

### **Discussion**

Across a wide area of the Indian Ocean and Bay of Bengal the southwesterly monsoon flow is anomalously strong, this likely to be aided by the two active monsoon depression in the north of both basins. This brings high PWAT air to the coastlines of the region, when forced to rise over terrain convection is released and heavy rainfall occurs.

### **Expected Impacts**

An increased risk of flash flooding and landslides where terrain is steep.



## Malaysia and Indonesia

### **Weather**

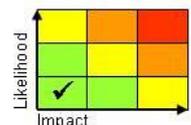
Above average rainfall will continue across this region in the form of heavy showers and thunderstorms. These will be capable of locally bringing 50-100 mm of precipitation in a short duration, with some locations likely to see 150-250 mm through the coming days. Average precipitation accumulations at this time of year across this region is around 250 mm.

### **Discussion**

Strong and consistent signal from NWP for slightly enhanced rainfall across this region. Profiles in the area show large amounts of precipitation water (PWAT), and large skinny CAPE so heavy rainfall likely to be the most disruptive element.

### **Expected Impacts**

An increased risk of flash flooding and landslides in regions where terrain is steep.



## Australasia

Nil.

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**Additional Information****Cox's Bazar, southeast Bangladesh**

Around average shower and thunderstorm activity in this area through the next few days, then increasing to above average activity later this week. Around 200mm of precipitation is expected in total through this week, which is close to average in what is a very wet time of year for this region.

**Yemen**

Throughout much of this week, showers or thunderstorms will be isolated and fairly short lived (5-10mm of rainfall per day in places at most). Midweek will see a decrease in activity, and therefore, no significant impacts are expected for a time. However, by the end of the week or in to the weekend, showers and thunderstorms are expected to develop a little more widely. Larger rainfall totals (locally up to 20-25mm in a day) are possible in the south of Yemen during this period, which would produce a slightly increased risk of threat of flash flooding.

**Issued at:** 070720UTC**Meteorologist** Brent Walker / Chris Bulmer**Global Guidance Unit**

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

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