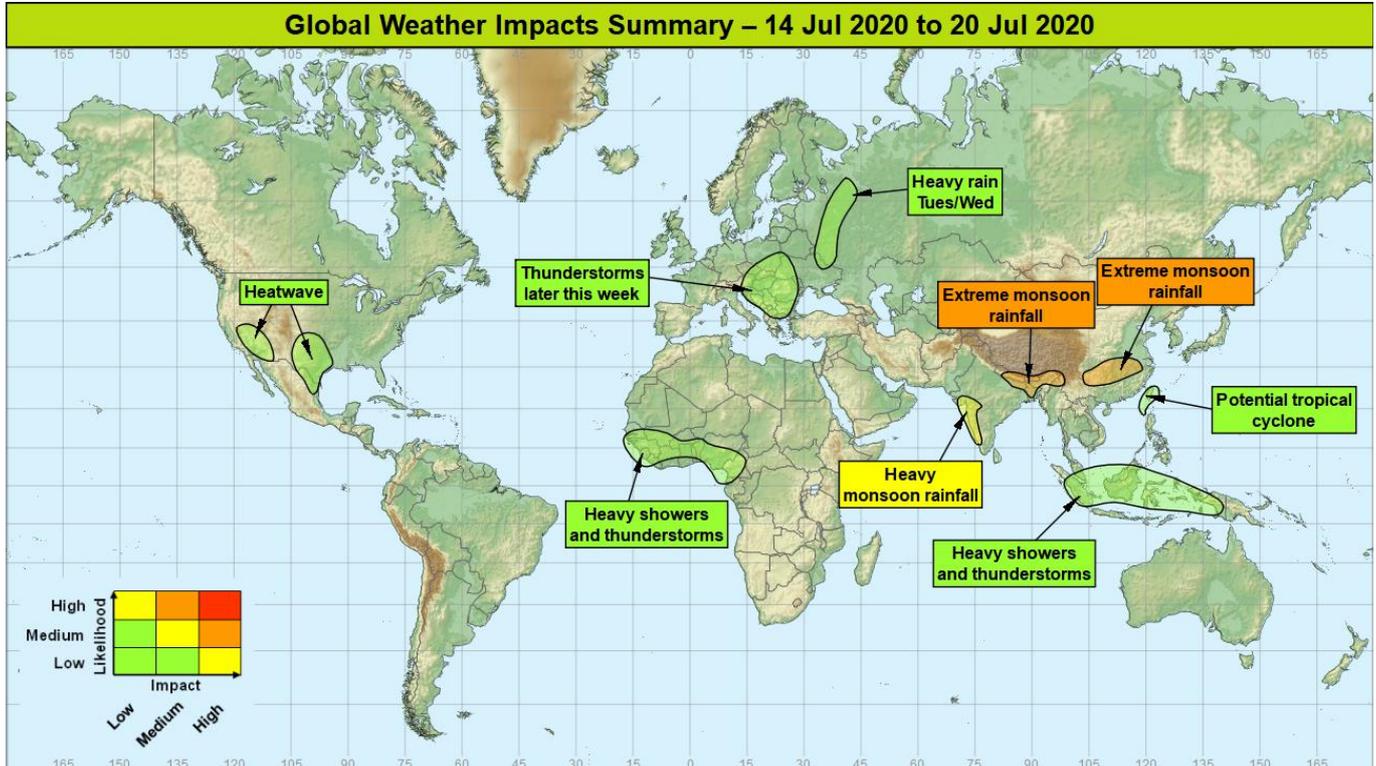


## Global Weather Impacts – Tuesday 14<sup>th</sup> July to Monday 20<sup>th</sup> July 2020

Issued on Tuesday 14<sup>th</sup> July 2020 (resent to remove erroneous area over Australia from map)

### HEADLINE

- Very heavy monsoon rainfall will continue in parts of South and East Asia.



### DISCUSSION

#### Tropical Cyclones

There are no active tropical cyclones. The following area is being monitored for potential development:

#### Western North Pacific Weather

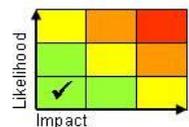
A tropical disturbance which crossed the north of Luzon yesterday (bringing 146mm in 12 hours to Aparri, far north Luzon) is expected to track generally north then northeast towards Taiwan over the next couple of days. There is a small chance it may strengthen sufficiently to become a tropical storm today. Either way a spell of heavy rain (50-80mm) and thunderstorms can be across Taiwan (especially west and south) on Wednesday.

#### Discussion

An ERW and high SSTs continue to help maintain a slack depression close to Luzon – although the interaction with land yesterday has disrupted the low-level circulation temporarily. Overall, conditions are not particularly favourable for further significant development due to strong vertical wind shear.

#### Expected Impacts

Localised flash flooding, especially in southern and western parts of Taiwan, is possible.



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

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## Europe

### East and southeast Europe

#### **Weather**

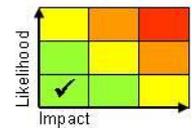
Thunderstorms will develop later this week across parts of the highlighted region. As a worst case, thunderstorms could bring short-period heavy rain (30-50mm in 2-3 hours in places), with around 75-100mm in some areas over the course of 3 days, which is roughly equivalent to a month's worth of rain. Thunderstorms will also bring frequent lightning and large hail.

#### **Discussion**

A cold front will move SE across Europe to perhaps become slow-moving across E/SE Europe, whilst the driving upper trough disrupts to form a cut-off vortex. There has been significant run to run variation in the details of this process, which lead to lesser or greater amounts of rain on the front, depending on phasing with the disrupted upper trough elements. What is more reliable however is the idea of intense thunderstorms breaking out within the high WBPT air ahead of the front, as upper cold pool(s) move across it.

#### **Expected Impacts**

There is a chance of flash flooding, with secondary impacts related to lightning strikes, such as interruptions to power supplies, also possible.



### Western Russia (including Moscow)

#### **Weather**

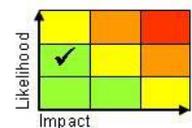
Widespread heavy and persistent rain is expected to fall through the next couple of days across this region, with some places seeing over 100mm of rain in two days.

#### **Discussion**

Highly amplified pattern over eastern Europe has drawn a very warm air mass from south-west Asia northwards, with cyclogenesis expected to proceed today. The driving trough will pretty quickly cut-off (having already extended a significant amount), allowing the simultaneous intensification and slowing of the resulting depression, generating a zone of heavy, and persistent rainfall on its western flank within the "back-wash" (cold conveyor). Models have oscillated a little in respect of the position of the pivot point of the heaviest rain, but it's sufficiently close to Moscow to pose a risk of flooding here.

#### **Expected Impacts**

Chance of flash flooding, and perhaps river flooding given the large areal extent of heavy rainfall. Some disruption to transport likely, and flooding of urban areas (including Moscow) could occur.



## North America

### Southern USA (particularly Texas, California and Nevada) and northern Mexico

#### **Weather**

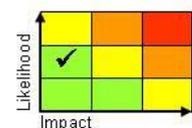
A very hot and humid air mass is in residence across the region at present, with temperatures across the wider air broadly in the region 35-40°C, but within the highlighted area temperatures exceeding 40°C are expected. This combined with high humidity and oppressively warm nights.

#### **Discussion**

Sustained and deep advection of hot, moist Gulf of Mexico air, combined with summertime insolation and modest adiabatic compression via dynamical subsidence, has generated a very hot air mass across much of Central and S USA. Topography is also playing a role. It is likely that records have been and will be broken during this period. Whilst remaining hot through much of the coming week, the extreme heat is likely to gradually subside from mid-week. This will lead to Wet Bulb Globe Temperatures exceeding 30°C, indicating extreme heat stress.

#### **Expected Impacts**

High heat stress will effect vulnerable demographics and can be lethal without adequate precautions. Transport may also be affected.



### Central America and Caribbean

Nil.

### South America

Nil.

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## Africa

### Parts of West Africa

#### **Weather**

Heavy showers and thunderstorms are likely to be more frequent than usual through much of this week across parts of West Africa, producing 50-100mm of rain in just a few hours in places. The heaviest rainfall is likely to affect the western part of this region (Sierra Leone, Guinea and Liberia) where up to 250mm of rain could accumulate (average monthly rainfall in this region is 400-600mm).

#### **Discussion**

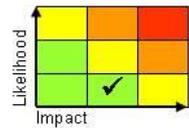
More active or more frequent African Easterly Waves are likely to affect West Africa through the coming week, producing above average rainfall in places, especially close to the Atlantic coastline.

#### **Expected Impacts**

Increased likelihood of flash flooding and landslides.

#### Middle East

Nil.



## Asia

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

#### **Weather**

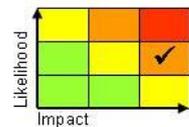
Following recent extreme rainfall across the hills and mountains in this region, continued very heavy monsoon rainfall and thunderstorms is expected through much of the next 7 days. Across low lying areas, further rainfall totals of 125-250mm are widely expected, with the hills and mountains of northeast India in particular likely to see a further 600-800mm or perhaps locally in excess of this. The typical average at this time of year of 400-500mm per month across low lying regions, and 1000mm per month over the mountain sites. Recent rainfall has brought significant flooding across the region, and this additional rain will likely see river levels rise significantly once again in the coming week or two.

#### **Discussion**

The South Asian Monsoon is signalled to remain very active across this region, and indeed the environmental parameters (weak MJO, above average SST's, and extremely moist air) support this idea, with rainfall totals similar (in extremis) to those measured over the past 7 days, albeit perhaps a little less widespread. With rivers (including the Brahmaputra) already high/in flood, and numerous significant impacts reported, the situation is not expected to improve imminently, whilst long range products continue to signal above average activity.

#### **Expected Impacts**

Flooding and fatalities, as well as widespread population displacement has already been widely reported, and continued significant river flooding is expected to affect the region. There is also a very high threat of further landslides in the higher terrain.



## China

### Weather

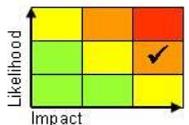
Following exceptional rainfall across these regions over recent weeks, the monsoon front that extends from central China to Japan is expected to remain active through the coming week, with further pulses of intense rain and thunderstorms. Another 100-200mm of rain is expected widely across this region, with peak accumulations over the hills and mountains are likely to be in the region of 300-500mm across parts of central China.

#### **Discussion**

The southerly winds associated with the monsoon are drawing very warm and moist flow across this region with extremely high values of PWAT (>75mm). 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. There is a non-zero probability that a dam collapse could affect one or more major cities.

#### **Expected Impacts**

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



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## Western India

### **Weather**

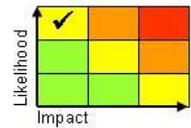
A period of heavy monsoon rainfall (intense showers and thunderstorms) is expected through the next 5-7 days (peaking on Wednesday and Thursday), with up to 600mm of rain falling (50-75% the average July rainfall).

### **Discussion**

A deep, strong and moist SW'ly airflow will produce an active period of monsoon rainfall for this part of India through much of the next week.

### **Expected Impacts**

Increased likelihood of flash flooding and landslides.



## Parts of Malaysia, Indonesia and Papua New Guinea

### **Weather**

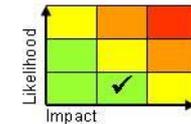
Above average rainfall will continue across this region in the form of heavy showers and thunderstorms. These will be capable of locally bringing 50-100 mm of precipitation in a short duration, with some locations likely to see 150-250 mm through the coming days. Average precipitation accumulations at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

### **Discussion**

Strong and consistent signal from NWP for enhanced rainfall across this region no doubt aided by positive SST anomalies of 1 to 2C. In addition, a Kelvin Wave is expected to move east across the area over the coming few days.

### **Expected Impacts**

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



Taiwan – see *Tropical Cyclones* section

## Australasia

Nil.

## Additional Information

### **Cox's Bazar, southeast Bangladesh**

Further heavy showers and thunderstorms look likely today, before a general reduction in activity (still showers, but much less frequent and intense), lowering the flash flood risk temporarily. By the weekend, a general increase in activity is expected once more, increasing both flash flooding and landslide risk once more.

### **Yemen**

Throughout the next few days showers or thunderstorms will be fairly well scattered and mostly fairly short lived (5-10mm of rainfall per day typically, locally 15-20mm in the SW for a time this week). However showers will likely become more widespread from the middle of the week. This comes on top of quite a wet preceding week for some of the governorates in the south-west of the country, with an increased risk of impacts here.

### **Sudan/South Sudan**

Rainfall activity is expected to be above average over the coming week across South Sudan and the far south of Sudan (especially through the next few days and again this weekend) due to more frequent/widespread heavy showers and thunderstorms across the region. Over the next week the wettest spots could see 125-175 mm accumulate, which is around the average rainfall for the whole of July. So there will be a higher likelihood of flash flooding than usual.

**Issued at:** 140800 UTC

**Meteorologist:** D J Harris / C Bulmer

**Global Guidance Unit**

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

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