

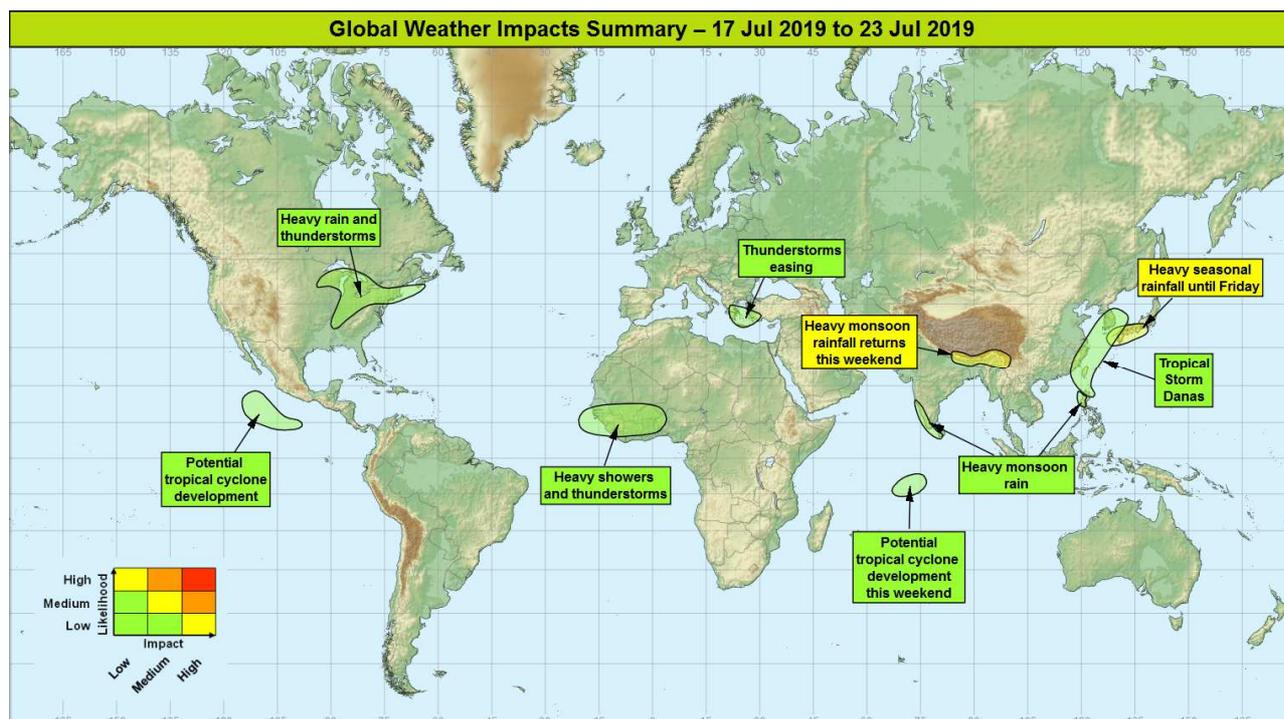
**Global Weather Impacts – Wednesday 17<sup>th</sup> to Tuesday 23<sup>rd</sup> July 2019**

Issued on Wednesday 17<sup>th</sup> July 2019

**Correction for name of TC in NW Pacific**

**HEADLINES**

- Heavy rain across southern Japan through the rest of the week.
- Tropical Storm Danas has formed in the Philippine Sea, now moving north towards Taiwan.
- Continued heavy rainfall and flooding across parts of south and east Asia.



**DISCUSSION**

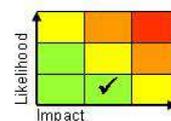
**Tropical Cyclones**

**Tropical Storm Danas (extreme northern Philippines, Taiwan, southeast China, western Japan and the Korean Peninsula)**

**Weather**

Danas developed into a tropical storm from an organised area of thunderstorms on Tuesday. The system currently has maximum sustained winds of 40 mph, and gusts to 57 mph. It is now forecast to head northwards and reach Taiwan later today, before pushing on to affect parts of southeast China, and perhaps the Korean Peninsula later in the week (although there are growing track uncertainties by this time). Any further development of this system is expected to only be gradual, with the probability of typhoon classification considered low. Irrespective of development, enhanced shower and thunderstorm activity around Danas will contribute to some locally heavy rainfall during this time, locally 250-500 mm of rain could fall in a few days in this region, which is approximately double the average July rainfall.

**Discussion**



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

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Organised convection associated with an Equatorial Rossby Wave formed a low level circulation through Tuesday, with winds around this exceeding the criteria to be classified as a tropical storm. As the system heads northwards, some favourable factors for further development (such as high SSTs) will be offset by unfavourable others (such as land interaction with Taiwan and moderate vertical wind shear). As a result the system is most likely to remain as a tropical storm, with increasing uncertainty in track and strength into the weekend. A landfall in eastern China could see it decay, but a track further east would maintain tropical storm strength and a track north, with landfall in Japan or South Korea.

### Expected Impacts

Primary impacts would likely be from heavy rain (flooding, threat of landslides) over the mountainous areas of the region. Strong winds close to the systems centre will create rough seas, potentially affecting shipping in the region.

*The following areas are also being monitored for potential Tropical Cyclone development:*

### Northeast Pacific

#### Weather

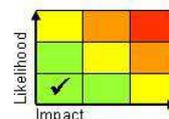
An area of thunderstorms currently just west of Central America, will continue to move out into the open tropical northeast Pacific over the next few days. The area into which these storms move will be favourable for the gradual development of a tropical cyclone, with a medium risk of a system developing later this week.

#### Discussion

An African Easterly Wave (AEW) has emerged from Central America into the northeast Pacific. Here over the coming days it experience favourable environmental conditions to allow the wave to slowly develop into a tropical cyclone (low vertical wind shear, and high SSTs etc). The National Hurricane Centre gives a 50% probability for the development of a tropical storm in the coming 5 days.

#### Expected Impacts

Nil as any system that does develop would remain over open ocean during this period.



### Central southern Indian Ocean (close to the British Indian Ocean Territories)

#### Weather

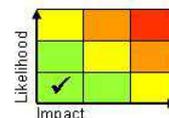
There is a small likelihood of a weak tropical cyclone forming in this region this weekend and tracking southwest close to several of the islands that comprise the British Indian Ocean Territories. Any system that does form is most likely to be weak, with the chief hazard being heavy rainfall with 100-200 mm possibly falling over a couple of days. This area typically sees 130 mm of rainfall through July.

#### Discussion

A Kelvin Wave (KW) currently running east across the Indian ocean will likely generate a pair Equatorial Rossby Waves (ERW) in its wake. Although the northern wave will become absorbed into the South Asian Monsoon flow, the southern wave will move into a region where gradual development of a tropical cyclone is possible this weekend.

#### Expected Impacts

Potential for some minor flash flooding, although the small size of the islands (and quick discharge of rainwater to the sea) will mean the rainfall likely to be unproblematic. Winds likely to generate some rough seas in the region, but impacts over land expected to be slight.



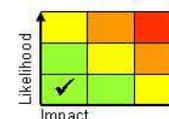
### Europe

### Southern Greece and the far southwest of Turkey

#### Weather

Heavy showers and thunderstorms currently across southern Greece will weaken as they push into Turkey through today. The showers will be capable of producing up to 50 mm of rain in a short period, with the chance of frequent lightning, squally winds and large hail.

#### Discussion



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The upper trough that has brought active convection to this region through Tuesday is now beginning to relax as it moves away to the east. For one further day across a small area this feature may continue to produce isolated active thunderstorms although with an ever decreasing risk of organisation and severity through the day.

### Expected Impacts

Although impacts from severe thunderstorms are typically isolated, flash flooding, property and infrastructure damage and power interruptions are possible.

## North America

### Northeast USA and southeast Canada

#### Weather

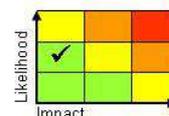
Two factors will create a large area of heavy rainfall and thunderstorms through this region over the next couple of days. Firstly across the southeast the remnants of Ex-hurricane Barry are likely to transfer northeast across this part of North America, producing heavy rainfall and thunderstorms that could produce up to 100 mm of rain in a few hours (close to the average July rainfall). Around the Great Lakes an area of thunderstorms associated with a mid-latitude low pressure system will also be capable producing 50-100mm of rain in a few hours, with the additional risk of large hail and strong wind gusts, and strong wind gusts here.

#### Discussion

The deep moisture footprint of Barry will track northeast to be engaged by upper troughs from midweek, resulting in deeply moist and unstable profiles that will pose the threat of intense rainfall. There remains much model spread for timing and location though. Further north a marked mid-latitude trough will engage a high WBPT plume in the vicinity of the Great Lakes and allow a few severe thunderstorms to form.

#### Expected Impacts

Flash flooding looks like the most likely impact. Particularly with the storms in the Great Lakes area additional hazards of frequent lightning, large hail and the odd tornado is possible here.



## Central America and Caribbean

Nil significant.

## South America

Nil significant.

## Africa

### West Africa inland from the Gulf of Guinea to Sahel region

#### Weather

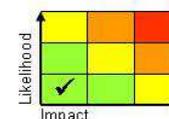
Further areas of active thunderstorms will progress westwards across this zone through the coming week. These storms may be in excess of 50 mm of rainfall in a short period of time, with over 100 mm possible if a location experiences several storms. In addition to the heavy rainfall, strong damaging winds may be associated with this area, particularly towards the Sahel.

#### Discussion

Several active AEW are forecast to transfer across the area stretching from the Sahel to down close to the Gulf of Guinea coastline. These feature is expected to remain fairly coherent through to its exit into the Atlantic, where there subtle signals of the potential for a couple of weak circulations to form to the south of the Cabo Verde Islands.

#### Expected Impacts

Flash flooding from short duration heavy rainfall is possible, especially if the rainfall affects any urban centres. The rainfall will also enhance the risk of landslides where terrain is steep. In the north of the region strong winds may also accompany storms, these able to damage poorly built structures and lift areas of dense sand and dust.



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## Middle East

Nil significant.

## Asia

**Extreme northern Philippines, Taiwan, southeast China, western Japan and the Korean Peninsula** – see *Tropical Cyclones* section.

### **Northern India, eastern Nepal, Bhutan and northern Myanmar**

#### **Weather**

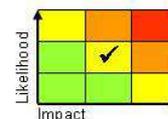
Following an exceptionally wet period in this region, a short period of respite is expected with a reduction in shower activity over the next couple of days. However into the coming weekend a further uptick in heavy shower and thunderstorm is signalled, with an increased frequency of storms again capable of producing in excess of 100 mm per day in some locations (especially over the southern slopes of the Himalayas).

#### **Discussion**

The active monsoon pulse will continue to weaken through the next couple of days, but there is good model agreement for an increase in rainfall from the weekend due to a strengthening southerly flow drawing moisture northwards from the Bay of Bengal.

#### **Expected Impacts**

After a very wet period flooding and landslides have been reported across a wide area. Although rainfall will ease for a couple of days, reports of impacts from river flooding are likely to continue. The return of heavy showers and thunderstorms over the weekend will once more enhance the threat of flash flooding and landslides, and will increase the likelihood of further river flooding.



### **Southwest India, western Sri Lanka, and western Philippines**

#### **Weather**

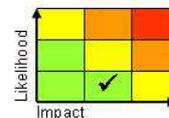
The monsoon rains will become increasingly heavy through the coming days, with rainfall accumulations by the end of the week reaching up to 500 mm in places, with widespread accumulations of 100-250 mm. Although this will fall steadily throughout the week across southwest India, across the Philippines the majority of this precipitation is expected to fall over the next couple of days.

#### **Discussion**

There is a consistent signal from all models for a strengthening of the southwest monsoon flow, aided across India by a monsoon low pressure system, and aided across the northern Philippines by the flow around Tropical Storm Dalas (see tropical cyclone section).

#### **Expected Impacts**

Flash flooding will be increasingly likely, as will landslides in mountainous regions. Over the next couple of days this flooding in the Philippines may impact the heavily populated Manila Metropolitan area.



### **Southern Japan**

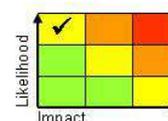
#### **Weather**

Torrential rain and severe thunderstorms associated with the seasonal rains will affect this region, especially on Thursday and Friday, before becoming drier by the start of next week. Up to 150-250 mm of rain is expected widely in the region, with locally up to 600 mm accumulating. This is around a month to two month's worth of rain for some locations.

#### **Discussion**

Strong convergence along the seasonal front (called the 'Baiu' in Japan) will continue to provide a focus for intense rainfall and a threat of severe storms. A succession of upper troughs will engage the northern edge of the monsoon frontal plume through the next couple of days, resulting in persistent, heavy rains in places.

#### **Expected Impacts**



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Both fluvial and flash flooding is possible, with an additional risk of landslides in mountainous areas. Disruption to transport and infrastructure is likely in what is a densely populated area due to the slow-moving seasonal heavy rainfall. There must even be a chance of limited evacuations across southern Japan, as seen in a similar event a couple of weeks ago.

**Australasia**

Nil.

**Additional information**

Nil.

**Issued at:** 171400 UTC    **Meteorologists:** Nick Silkstone / Paul Hutcheon    **Global Guidance Unit**

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