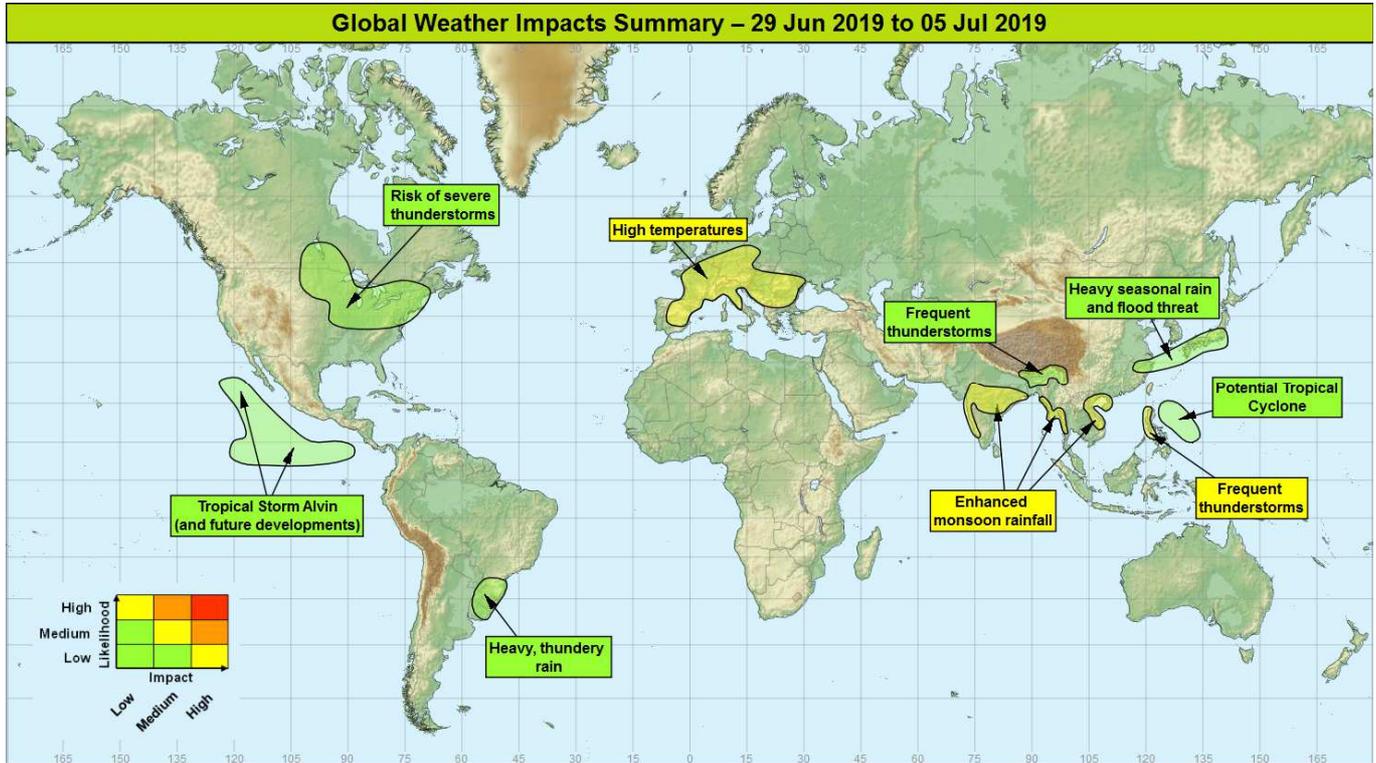


## Global Weather Impacts – Saturday 29<sup>th</sup> June to Friday 05<sup>th</sup> July 2019

Issued on Saturday 29<sup>th</sup> June 2019

### HEADLINES

- European heat wave continues; peak has likely been reached with extent and intensity of high temperatures slowly falling over the coming days. Could trigger a few violent thunderstorms.
- Heavy monsoon rains across parts of southern and eastern Asia.



### DISCUSSION

#### Tropical Cyclones

#### Tropical Storm Alvin and future developments – Eastern North Pacific Ocean Weather

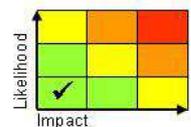
Alvin continues to move north-west over increasingly cool seas and will soon weaken into a remnant low. Further tropical cyclones may form in this currently rather active region of tropical convection over the coming 7 days.

#### Discussion

Alvin is now being steered into an environment unable to sustain a tropical cyclone, and as such is expected to spin down quickly over the next 12 hours, degenerating into a remnant low. Further tropical waves interacting with the ITCZ, possibly under the influence of the MJO too (although this is very weak), are signalled to spawn further circulations which may become organised and strong enough to be designated tropical storms. There is however no consistent model signal beyond this broad trend at present.

#### Expected Impacts

Nil (Alvin and any further cyclones expected to remain over open water)



*The following areas are being monitored for tropical cyclone development:*

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

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## Philippine Sea

### **Weather**

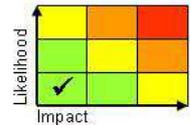
An area of thunderstorms and associated low level circulation are moving slowly northwest across the Philippine Sea. It looks likely to strengthen into a tropical storm over the next 24 hours, it looks unlikely to pose a threat to land within the next three days.

### **Discussion**

A low level circulation with increasingly organised convection, associated with an Equatorial Rossby Wave, is expected to be steered NW'wards over favourable SSTs. Should the current wind shear environment reduce then conditions are favourable for strengthening into a tropical storm in the next 24 hours. Models indicate that the system may strengthen but only slowly as it continues NW'wards over the next three days, and possibly merging with a broader monsoon depression over the South China Sea early to mid next week.

### **Expected Impacts**

Nil (Any system that does briefly develop would remain over open sea).



## Europe

### Western Europe

### **Weather**

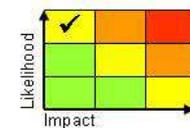
The ongoing heat wave has likely peaked over France with maximum temperatures exceeding both 45°C and the all-time national record yesterday (Friday). Northeast Spain is likely to see the highest temperatures today but temperatures in excess of 40°C remain likely across many parts of France and Spain, and mid to high 30s of Celsius more widely across much of central and southern Europe. Recent Spanish wildfires appear to now be under control/extinguished, but the intense heat could also trigger some isolated violent thunderstorms. Cooler air arriving from the Atlantic later in the weekend will initially push the heat back eastward across parts of central and eastern Europe but a general trend towards more normal conditions is then expected through the following week.

### **Discussion**

Warm air sourced from high levels over north Africa coupled with strong subsidence/adiabatic compression through strong ridging aloft, and strong insolation given the time of year has resulted in hot conditions developing widely across western Europe. There are signs now that the dynamical component is beginning to decrease, whilst winds from the Mediterranean will likely mean that Friday's hottest spots are somewhat cooler (but still over 40°C) today. Nonetheless partial thicknesses remain in excess of 145dam in parts of central France and Spain supportive of values in the 41-43°C bracket. Beyond this, a cold front arriving from the west and high pressure toppling in behind will see temperatures falling from the northwest through next week, and an increasingly zonal pattern will see the dynamic/compression component lost as well. That said, parts of southern Europe will still see temperatures into the high 30s Celsius, with some areas around 5°C above normal.

### **Expected Impacts**

High temperatures will bring heat health impacts to vulnerable populations, particularly given the spell of very warm nights (minima >20°C), whilst placing strain on some utilities and transport networks (e.g. railways). Increased likelihood of wildfires. Large hail and damaging winds possible where violent thunderstorms form.



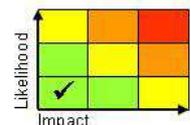
## North America

### Parts of USA and central Canada

### **Weather**

Outbreaks of strong to severe thunderstorms are expected over the next few days, with the potential for torrential rain, large hail, damaging wind gusts and a very isolated threat of tornadoes. Where these occur 50-75mm of rain could fall in just a few hours.

### **Discussion**



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An amplifying upper pattern over North America will see an upper trough sliding over a warm plume and cold front currently over NE USA producing a deeply unstable and strongly sheared environment conducive to severe storms, which develop both in the warm air and along the cold front. These will tend to run east and the bulk of the storms will clear into the Atlantic by Sunday. A separate high WBPT plume on the forward side of broad troughing will provide a second focus for severe storms over central-north US and central Canada, this collapsing eastward over the next few days with the trailing cold front becoming the main focus for storms.

**Expected Impacts**

Primarily a threat to aviation, particularly for the busy Eastern Seaboard hubs. Localised flash flooding, wind and hail damage.

**Central America and Caribbean**

Nil.

**South America**

**Uruguay, south Brazil**

**Weather**

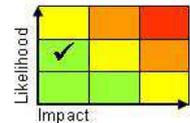
A band of heavy, thundery rain will move slowly north across this region in coming days. Daily rainfall totals in excess of 75mm are likely, with some locations perhaps seeing in excess of 100mm over the next few days. Frequent lightning and strong gusty winds will be additional hazards.

**Discussion**

The South Atlantic Convergence Zone will be active through this period, moving slowly and erratically northward. Strong low level wind convergence combined with strong mid-high level flow roughly parallel to the front will support training of thunderstorms along the slow moving boundary, and thus potential for large rainfall totals to accumulate in the high PWAT airmass north of the front.

**Expected Impacts**

Localised flash flooding, potentially of urban areas, and localised wind/lightning damage.



**Africa**

Nil.

**Middle East**

Nil.

**Asia**

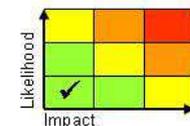
**North Bangladesh, far northeast India, Bhutan and far north of Myanmar**

**Weather**

A continuation of the seasonal thunderstorms/torrential rain in this area is expected over the next few days, although with a larger scale system forming in the Bay of Bengal this weekend heavy showers are expected to become much more isolated. Where showers do occur, 75-100 mm per day is possible, but the risk of anywhere seeing more than this (showers on multiple days) now looks very low.

**Discussion**

Regular diurnal destabilisation of the extremely, moist and unstable air mass over this region will produce thunderstorms. The most frequent and persistent storms will likely form on the southern upslopes of the Himalayas, and perhaps across north Bangladesh where marked convergence is signalled at the head of the strong S'yly monsoon flow, but signals are that these showers will become much more isolated over the next few days. Very large precipitable water and very tall, skinny CAPE will result in torrential downpours.



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## Expected Impacts

Flash flooding and localised damage of property/infrastructure and transport links are probable. River flooding of tributaries in the Brahmaputra basin is now being reported, and an enhanced risk of landslides is likely over the higher terrain.

### Northern Bay of Bengal, large parts of India and western Myanmar

#### Weather

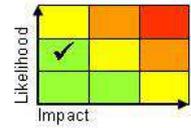
Heavy monsoonal rain is expected in these locations, with many areas seeing in excess of 200 mm, whilst some parts of central India and western Myanmar could see in excess of 500mm, very locally up to 800 mm. This is close to a month's worth of rain for Myanmar, but around three month's worth for central India. Meanwhile, heavier than normal monsoon rainfall is also expected for parts of western India, with 300-500mm of rain signalled over the next few days, which is getting close to a month's worth of rain for somewhere like Mumbai.

#### Discussion

The Indian Summer Monsoon is expected to continue in an active phase over the next few days, with a monsoon depression forming in the northern Bay of Bengal this weekend before drifting inland across northeastern and then central India through the first half of next week. As this system forms, enhanced southwesterly winds will pile frequent heavy showers onto the western coast of Myanmar, and as it drifts inland across India it will provide a focus for widespread heavy showers/thunderstorms. Enhanced showers/thunderstorms are also signalled over the next few days for the far west of India, again associated with enhanced monsoon flow.

#### Expected Impacts

Heavy and torrential rain will increase the threat of flash flooding and landslides. Strong winds in the Bay of Bengal posing a significant hazard for maritime operations/fishermen.



### Far east of China, south Japan and outlying islands.

#### Weather

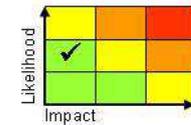
Torrential rain and severe thunderstorms associated with the seasonal rains in this part of the world will ease from the west over the next day or so, the greatest activity becoming confined to the region highlighted where 100-200, locally over 500 mm is expected to fall over the next 4-5 days. This is around a month to two month's worth of rain for locations in southern Japan.

#### Discussion

Strong convergence along the Mei-yu / Baiu / Changma front will continue to provide a focus for severe storms, however troughing running across the northeast of China over the weekend will tend to force the focus of activity across the region described, whilst formation of a monsoon depression in the South China Sea will tend to suppress convection over China with conditions improving for a time here.

#### Expected Impacts

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.



### Philippines (Western Luzon and Western Visayas)

#### Weather

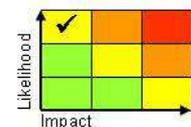
Frequent heavy showers and thunderstorms are likely to continue in this area over the next few days, with potential for 80-100 mm, locally 150 mm of rain in some locations per 24 hours. The heavy rain could affect the capital Manila at times, with up to 600 mm of rain possible during the next week in parts of the region which would be well in excess of a month's worth of rainfall at this time of year.

#### Discussion

A surge in the southwesterly monsoonal winds will lead to an increase in the frequency of heavy showers and thunderstorms. This may eventually culminate in a monsoon depression running northwest into China come the middle of next week, introducing maritime and coastal gales in the South China Sea.

#### Expected Impacts

Flash flooding, which will be particularly impactful should it affect significant urban areas such as Manila. There will also be an increased likelihood of landslides and fluvial flooding.



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## Vietnam, Cambodia, Laos, Hainan

### **Weather**

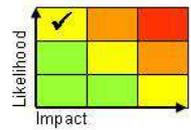
More frequent than normal heavy showers and thunderstorms are expected to develop in this area early next week; 75-100mm of rain falling per 24 hours and more widely 100-250 mm of rain per 24 hours from early to mid-week onwards. 300-600 mm of rain is likely by the end of this forecast period.

### **Discussion**

Enhanced showers and thunderstorms associated with an active period of the monsoon are expected to develop in this region, with a monsoon depression forming in the South China Sea and moving northwestwards inland early next week providing the focus for frequent and very heavy storms.

### **Expected Impacts**

Flash flooding, landslides, and localised wind/hail damage all likely. North Vietnam is especially prone, with conditions exacerbating current impacts being reported.



## Australasia

Nil.

## Additional information

Nil.

**Issued at:** 290300 UTC    **Meteorologists**    D J Harris / Laura Ellam

**Global Guidance Unit**

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

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