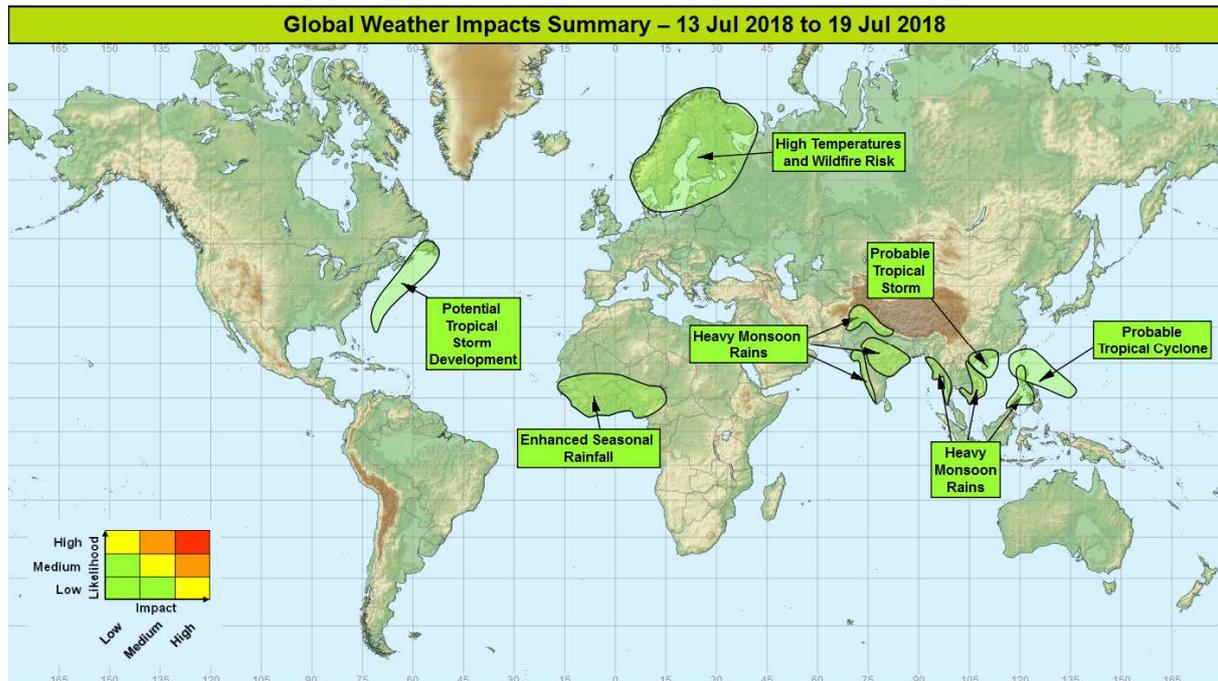


Global Weather Impacts – Friday 13 July 2018 to Thursday 19 July 2018

Issued on Friday 13 July 2018

HEADLINES

- Heavy monsoon rains will affect large parts of South and Southeast Asia.
- Further tropical storms may develop in the Philippine Sea, South China Sea and possibly the Atlantic over the coming week.

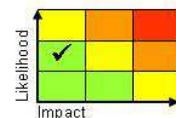


DISCUSSION

Tropical Cyclones

Potential Tropical Storm (North Atlantic)

A broad trough of low pressure, associated with the remnants of Beryl is located about 350 miles west of Bermuda. This is producing an elongated and disorganized area of showers and thunderstorms. Over the next couple of days environmental conditions may support the development of a tropical or subtropical system as this area transfers north-northeastward, taking a very similar path to Hurricane Chris earlier in the week.



By the end of the weekend, this system will have moved over colder waters of the northwest Atlantic and will begin to feel the influence of mid-latitude flow (wind shear), which will limit development. If development does occur, around this point the system will undergo an extra-tropical transition.

Numerical Weather Prediction (NWP) models are consistent with the track of this system remaining off the eastern seaboard of the USA, with the potential an extra-tropical system to graze Newfoundland. However there is disagreement within the model solutions as to whether the development will reach sufficient strength to be named “Debby”.

This forecast may be amended at any time

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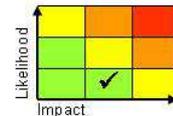
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The remnants of Hurricane Beryl are moving slowly northeast across the open waters of the northwest Atlantic. During the next 48 hours conditions look conducive for the re-development of a tropical storm in this region. If this does occur it will be steered northeast remaining over open ocean, before transitioning to mid-latitude low pressure and running close to Newfoundland in Canada.

Large waves are likely to pose a hazard to small craft off the eastern seaboard of the USA and Canada, and in addition these large waves may break on beaches.

Probable Tropical Cyclone Development (Philippine Sea, Northwest Pacific)

Two areas of enhanced convection to the north of New Guinea that are both associated with a convectively coupled Equatorial Rossby Waves (ERW), are likely to merge into one common circulation by late Friday. Develop of a tropical storm is then likely to occur in this region over the next couple of days as it moves west-northwest. Early next week this system will likely move into the South China Sea, somewhere between the Philippines and Taiwan, with the potential for it to have developed into a significant typhoon by this time.



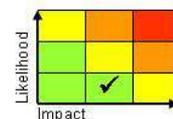
NWP shows a high degree of uncertainty around this feature, with speed of development, subsequent track, and the potential intensity of the subsequent system. I believe this is in a large part due to the complicated beginning of the system being from two convectively coupled ERW rotating around a common centre of gravity. Recent ASCAT satellite passes support NWP in suggestion the southeastern most ERW currently is the dominating feature with a closed surface circulation, with the centre of gravity closest to this feature. However this feature is forecast to degrade into an open wave over the next 24 hours, with the northeastern most features developing the closed circulation, and becoming the feature that NWP suggests will develop into a tropical storm, with the low level vorticity associated with the other ERW subsumed by this system. This process is highly uncertain, and hence confidence in this development will likely remain low until the rationalisation of the two circulations occurs, most likely late on Saturday.

Two areas of thunderstorms in the Philippine Sea are expected to merge on Saturday, with conditions then favourable for the development of a tropical storm over the following day or so. Any system that forms is expected to track generally west to northwest, towards the South China Sea, with the possibility of becoming a typhoon by early next week. Due to complications in the initial development, the track and confidence in this is fairly low, however interests in the Philippines, Taiwan and Southern China should keep a watch on this system.

At this range, the impacts are likely to be confined to strong winds and large waves leading to hazardous sea conditions over the Philippine Sea and adjacent coasts. If the system does develop and track near the Philippines or Taiwan, strong winds may threaten some of the infrastructure on the islands; while heavy rains bring a risk of flooding and increased incidences of landslides..

Probable Tropical Storm Development (South China Sea).

A weak closed circulation sits in the Gulf of Tonkin (between Hainan Island and northern Vietnam) and will remain slow moving over the weekend with intermittent deep convection surrounding the centre. Over half latest of the deterministic and ensemble NWP available at the time of writing allows this circulation to deepen over the weekend with the winds surrounding it reaching tropical storm strength. Early next week the circulation is then likely to track a short distance northwest and make a landfall across the North Vietnam Coastline.



Low level wind convergence between the cyclonic flow associated with the circulation and the prevailing southwesterly monsoon winds across this region is likely to lead to the generation of persistent heavy bands of showers and thunderstorms across northern Vietnam over the following few days. Beyond that the moist footprint of the system will remain a focus for enhanced shower/thunderstorm activity across northern Vietnam for much of the following week

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An area of low pressure in the Gulf of Tonkin may deepen enough to become a tropical storm in the next few days, this will then move the short distance northwest and possibly make a landfall across the Vietnam coastline. Bands of heavy showers and thunderstorms will be associated with this system, and these will bring heavy rainfall across northern Vietnam over the coming week. Each day rainfall accumulations of 100-200mm may occur, with totals over the week exceeding 800-1000mm in some spots. Impacts are largely expected from heavy rainfall across northern Vietnam. Flash floods could also bring impacts to large urban areas such as Hanoi. This region is mountainous and increased incidences of landslides will be a major hazard. This area is popular with British travellers.

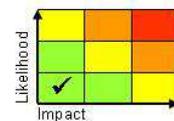
Europe

Scandinavia and Northwestern Russia.

As a surface and upper high builds across Scandinavia early next week, the low level east to southeastly flow will draw in even warmer air than that already in place. 1000-850hPa thickness will at 141dm inside the Arctic Circle during the middle of next week. This will see maximum temperature increase from the high 20s as we have seen this week, into the low 30s next week.

Fine and settled weather will be in place across much of Scandinavia and northwest Russia into early next week. After an already warm spell in this region temperatures are expected to climb further and reach into the low 30s of degrees Celsius, including within the Arctic Circle.

These temperatures may break some station records and are likely to glean attention in the media. The chief short term hazard will be the enhanced risk of wildfires.



North America

Nova Scotia, Newfoundland, Canada

See Tropical Cyclone section.

Central America and Caribbean

Nil significant.

South America

Nil significant.

Africa

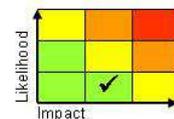
Equatorial West Africa and southern Sahel

The African Easterly Jet remains strong during the next few days and will continue to help generate and maintain further active African Easterly Waves that propagate westwards across the region bringing periods of heavy rainfall and dust storms on the northern flanks. Into the middle of next week the jet is expected to weaken for a time, and this may then reduce the number and intensity of waves.

Areas of intense thunderstorms will continue to affect central Africa, producing spells of torrential rainfall. Many locations in this region will see 25-50mm of rainfall over the next 5-7 days, with as much as 250mm likely in some locations (and this falling in a short duration over just one or two events).

These storms will also produce strong winds and dense dust storms on their northern fringe (over the southern Sahel). Rainfall in the region between Senegal and Liberia looks particularly heavy and problematic over the coming week.

Flash flooding is likely, along with an increased likelihood of landslides. Flash flooding will pose a threat to life, as well as damaging infrastructure and transport networks (e.g. roads and bridges). Meanwhile, large scale thunderstorms near the West Africa coast may result in re-routing of some air traffic.



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Middle East

Nil significant.

Asia

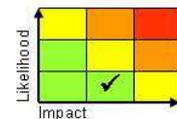
Parts of India, Pakistan, Nepal, Bangladesh, western Myanmar, and the extreme south-western Thailand.

An enhanced southwest monsoon flow will persist across the region through the next week, bringing very high rainfall accumulations over upslopes and hills that face into the prevailing wind. The Somali low level jet will reach speeds of over 70 knots in the days ahead; a surge in this is correlated with enhanced rainfall accumulations over western India a few days later. In addition to the strong monsoon flow precipitation will be enhanced may by a series of monsoon depressions that form across Eastern India and the Bay of Bengal and then track northwest towards Pakistan.

Persistent heavy rain and thunderstorms are expected over through the next 7 days. 50-150mm of rainfall may occur each day within this region, with some locations recording totals in excess of up to 800mm over the period.

Cox's Bazar humanitarian camp in southeast Bangladesh should remain just to the north of the heaviest rains but is still expected to experience occasional showers and thunderstorms over the coming week.

This amount of rainfall is not overly unusual for this region at this time of year. However, these regions are now moving into a further week where rains remain above the norm. This will help maintain a high likelihood of flooding and landslides, posing a danger to life, as well as damage to property and infrastructure.

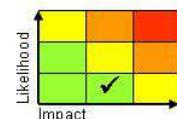


Philippines, Laos, Vietnam, Cambodia, and the far south of China.

The Madden Julian Oscillation has emerged and is strengthening over Maritime Continent. This has led an enhanced monsoon flow across the region. With enhanced convection expected across much of the region each days. There is also a greater than average potential for tropical storm or typhoon activity over the South China and Philippine Seas over the coming week.

Enhanced monsoon rains are signalled in this region over the coming week, and will be in the form a heavy showers and thunderstorms. Most locations highlighted within the map should see daily precipitation accumulations of 25-50mm, with peaks in excess of 100mm each day. Over the week some locations may see in excess of 500mm of precipitation. On Thursday 110mm of rainfall was recorded at Subic Bay in the Philippines.

Impacts include the usual enhanced likelihood of flash flooding, and landslides in mountainous areas. With the possibility of these impacts affecting the highly populated Greater Manila Metropolitan Area, and also parts of Southeast Asia popular with British travellers.



Australia

Nil significant.

Additional Information

FIFA Football World Cup, Russia – The 2018 Football World Cup continues until 15th July. The forecast for the next England match against Belgium in St Petersburg on Saturday 14th July. The forecast for the match is for warm and sunny conditions. Temperatures are likely to be between 24 and 27 Celsius (falling with time).

Flooding along Yangzi and Yellow Rivers, China – Although rainfall across this region looks generally suppressed over the coming days, the large nature of the river catchments means that rainfall from previous weeks is now beginning to cause flooding along these two major rivers. It is very difficult to assess the impacts from flooding along these rivers, as the large number of hydro electric dams can be manipulated to heavily modify river flow. However reports over the previous day or so have suggested some of these dams have reached capacity and are now having to discharge water, with Chinese authorities having to evacuate some settlements at risk from flooding.

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