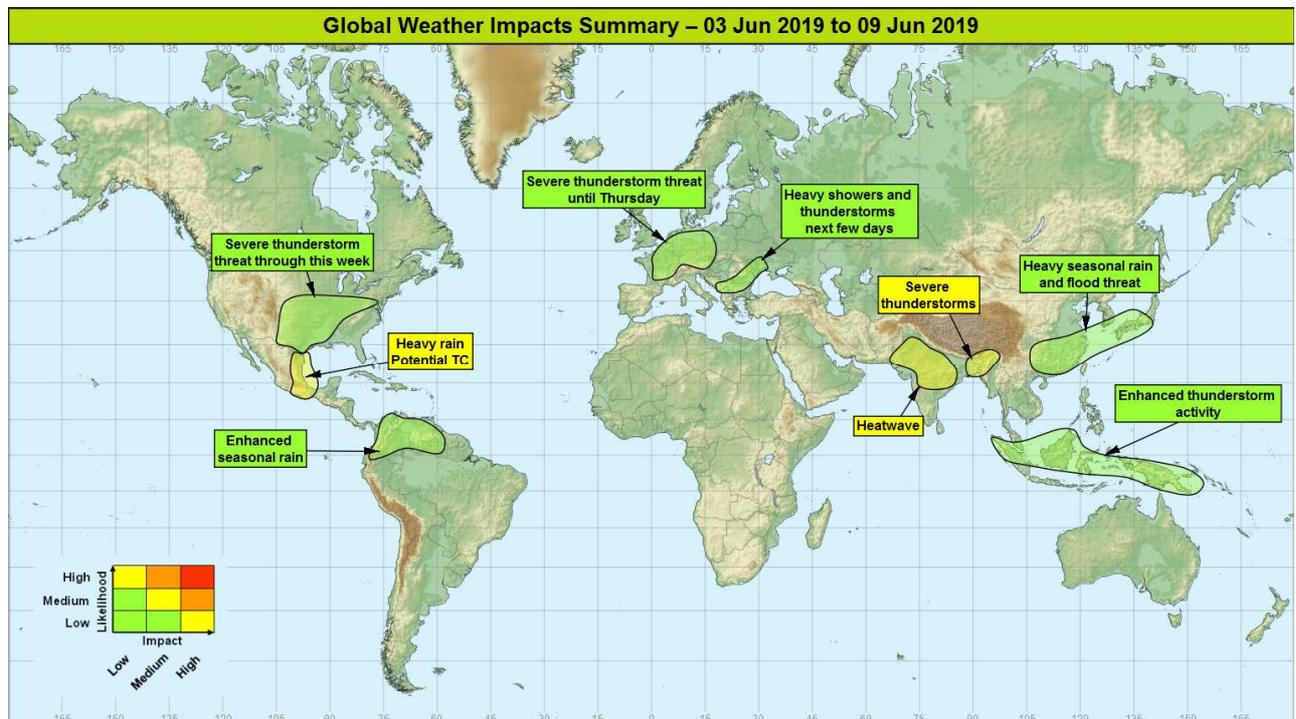


Global Weather Impacts – Monday 3rd June to Sunday 9th June 2019

Issued on Monday 3rd June 2019

HEADLINES

- Severe thunderstorms for northeast India and Bangladesh.
- Intense rainfall and threat of a tropical storm for Central America.
- Pre-monsoon heatwave intensifying across parts of India and Pakistan.
- Severe thunderstorms developing across the central USA this coming week.
- Thunderstorms and flash flood threat across southeastern Europe for the next few days.
- Threat of severe thunderstorms in western and central continental Europe.



DISCUSSION

Tropical Cyclones

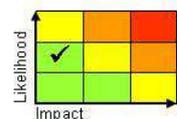
See *Central America and Caribbean* section

Europe

Southeast Europe and Ukraine Weather

Heavy showers and thunderstorms will continue across parts of this region through the next few days. The most intense rain will be during the afternoon and evenings with as much as 50-75 mm falling in places within a few hours. However, each day many areas will miss the heaviest rain. Over the course of the next few days cumulative rainfall totals of 100-150 mm may build up if areas see successive days of heavy rain, this perhaps most likely from western Ukraine through Romania, northern Bulgaria into Serbia. This would be over twice as much as average monthly rainfall. In addition to rain, thunderstorms will produce frequent lightning and hail. Heavy showers should ease in these areas from Wednesday.

Discussion



This forecast may be amended at any time

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A cut-off vortex will slowly drift northeast across Southeast Europe through the next few days. Daily open cell convection is likely, tending to be focused over mountainous areas. In addition, a number upper short-waves moving north on the forward side of the vortex will periodically engage low-level high WBPT plumes leading to areas of more organised convection/showers/thunderstorms at times and a risk of MCS developments. An upper trough digging down across Northwest Europe early next week should help displace the filling vortex NE'wards.

Expected Impacts

Localised flash flooding could occur each day along with an increased risk of landslides in mountainous areas. Interruption to power supplies and damage to infrastructure and property is possible due to lightning, hail and strong wind gusts. River flooding is not expected.

Western and central Europe

Weather

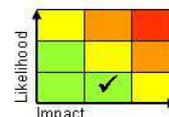
There is a threat of isolated severe thunderstorms developing across parts of central and western Europe (especially eastern France, Germany, Netherlands and Belgium) until Thursday. In the few places where these storms occur up to 30-50 mm of rain could fall in a few hours, along with large hail, frequent lightning and very strong winds. However, many areas will not see these storms.

Discussion

A warm continental plume across central and western Europe will be engaged by short wave upper troughs on Monday and Tuesday, before a longer wave upper trough moves in from the west from Wednesday. The result will be forecast profiles showing large CAPE (in excess of 2000 J/Kg), with enough vertical wind shear to produce organised deep convection, perhaps MCS type deep convection. There are still differences between models regarding the exact timing and shape of troughs, and so location of interaction with the plume, but there is enough evidence for a low likelihood of medium impacts from severe storms.

Expected Impacts

Flash flooding along with power outages and disruption to the transport (especially aviation) network is possible.



North America

Central USA

Weather

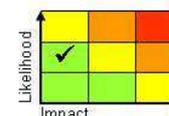
There is a significant threat of severe thunderstorms developing again across central parts of the USA through the coming week, mainly for the Central and Southern Plains, but also extending further east at times. These storms are likely to bring a combination intense rainfall (up to 100 mm in 6 hours), very strong winds, large hail and tornadoes. There is the potential for less severe, but high rain producing storms to move north into southern Texas during the second part of the week, bringing up to 300 mm of rain in 48 hours, which is 3 times the average June rainfall.

Discussion

The Pacific North American Index (PNA) is expected to become negative this coming week, increasing the severe storm threat again as very warm and moist Gulf air is drawn north across the Plains ahead of low latitude upper troughing across the Rockies. Breakaway shortwave upper troughs will extend the threat of severe storms eastwards at times. The Central American Gyre is expected to transfer north across eastern Mexico during the next few days, bringing even moister air northwards that could increase the flash flood threat in southern Texas.

Expected Impacts

Flash flooding along with damage to property and infrastructure from large hail, damaging winds and tornadoes. Disruption to travel, particularly aviation. Major river flooding continues across parts of central and southern USA and is likely to continue well into June.



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Central America and Caribbean

Southern and eastern Mexico and Guatemala

Weather

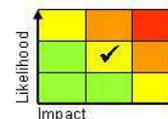
Further heavy rain and thunderstorms likely for the next few days, with the focus of the highest rainfall amounts shifting further north day to day. Some places will see up to 75-125 mm in a 24 hour period, with up to 150-250 mm accumulating through the next week in a few spots. There remains a 60% likelihood of a weak tropical storm developing just off eastern Mexico in the coming few days.

Discussion

An active convective regime remains in place, with a Central American Gyre being the focus for deep convection. This will enhance the onshore flow from the Gulf of Mexico over the weekend and into early next week with activity tending to ease further south as the Central American Gyre degenerates and moves north into Texas by the middle of next week.

Expected Impacts

Flash flooding, with significantly increased risk of landslides in mountainous areas. Lightning and strong gusty winds will be additional hazards.



South America

Ecuador, Colombia, Venezuela and Guyana

Weather

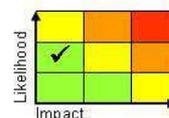
A continuation of the enhanced seasonal rainfall over northwest South America with a further 250-300mm in some places over the coming week. The highest rainfall totals most likely over east facing slopes of the Andes mountains in Colombia and Venezuela.

Discussion

The ITCZ remains shifted a little south relative to normal, with the reduction in the usual wet seasonal rains withdrawing northwards from this region delayed. A series of African Easterly Waves will result in peaks of rainfall during the coming week. Largest rainfall amounts are likely to be on Andes, as elevated terrain and orographic lift provide the most reliable trigger mechanisms for convection.

Expected Impacts

Flash flooding and landslides are possible, along with the potential for river flooding with this region having already experienced an anomalously wet month.



Middle East

Nil significant.

Asia

Northeast India, Bhutan and Bangladesh

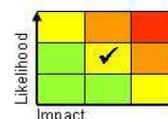
Weather

Daily rounds of severe thunderstorms are expected across this region through much of the next week. As well as intense rainfall (up to 150 mm daily, although many areas will miss the heaviest rain), large hail and strong winds are possible. Some places could see as much as 1000 mm of rain during the next week, this equivalent roughly twice the average monthly rainfall for this time of year. During next week there is an increased chance of severe thunderstorms developing further south over Bangladesh.

Discussion

Shortwave upper troughs in the sub-tropical jet will transfer east over northern India and Nepal to lead to destabilisation of the very warm and moist airmass, and the development of diurnal thunderstorms. High CAPE and vertical wind shear will aid the development of severe, long-lasting storms, with hail and strong winds additional hazards.

Expected Impacts



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Localised flash flooding and increased chance of landslides in mountainous areas bringing a danger to life. Large hail, strong winds and frequent lightning are additional hazards which may cause damage to property and disruption to transport and utilities. Increased but still very low likelihood of impacts for vulnerable populations within the Cox's Bazar district.

Much of India and Pakistan

Weather

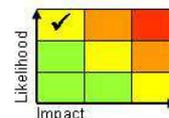
The pre-monsoon heat wave is expected to intensify across parts of India through the coming week, with maximum temperatures widely into the mid to high 40s of Celsius and locally into the low 50s Celsius, around 5 to locally 10°C above average. This event could become more significant through the following week or two due to the anticipated late arrival of the monsoon rains.

Discussion

There are signals that the arrival of the monsoon rains into India will be around a week later than usual. This will allow for an extended period of day on day temperature rises that could result in a prolonged pre-monsoon heat wave.

Expected Impacts

Increased threat of heat stress and power failures.



Southern and central China, western Japan and South Korea

Weather

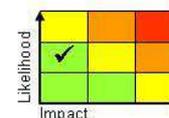
Very heavy rainfall will continue to affect parts of south-eastern China, and the Ryukyu Islands of Japan through Monday, but will then ease through Tuesday, before another pulse of heavy rainfall extends east from central China across western Japan and South Korea from midweek, developing a deep low in the East China Sea. As much as 250 mm is possible in places over 24 hours. In some areas this could lead to event totals of 350-400 mm. This would be over the average monthly rainfall for June (which is 150-300 mm). This rainfall is associated with active pulses of the seasonal Mei-yu rains. In addition, severe thunderstorms could produce large hail, very strong winds and frequent lightning.

Discussion

There is good model agreement for two upper trough events to move east and engage a surface warm plume and the seasonal monsoon (Mei-yu) during the next week. This will destabilise the low-level plume, resulting in large CAPE/vertical wind shear profiles bringing the threat of severe convection.

Expected Impacts

Flooding and flash flooding are likely to be the main impacts, especially in urban areas. Disruption to transport and infrastructure is also likely in what is a densely populated area. Lower likelihood of dangerous sea conditions in the East China Sea later in the week.



Indonesia, Brunei, Malaysia, Singapore and Papua New Guinea

Weather

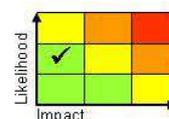
A period of enhanced thunderstorm activity will bring accumulations of up to 80-120 mm per 24 hours to some parts of this area. This could lead to accumulations over a few days of 300 mm. (For comparison the May/June average is around 200 mm).

Discussion

The MJO now in Phase 2 over the Indian Ocean is likely responsible for the enhanced rainfall signature over the next week or so. Activity probably increasing as the MJO moves E over the Indian Ocean.

Expected Impacts

Flash flooding and landslides in steeper terrain are likely to be the main impacts.



Australasia

Nil significant.

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Additional information

Large areas of smoke have been lifted from the northern Alberta wildfires in recent days, being transported eastwards across Canada, the northern USA and even into the Atlantic as an elevated plume. Periods of rain in the coming days should help to dampen the wildfires, allowing the downwind smoke plume to gradually thin.

Issued at: 030655 UTC **Meteorologist:** Paul Hutcheon

Global Guidance Unit

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