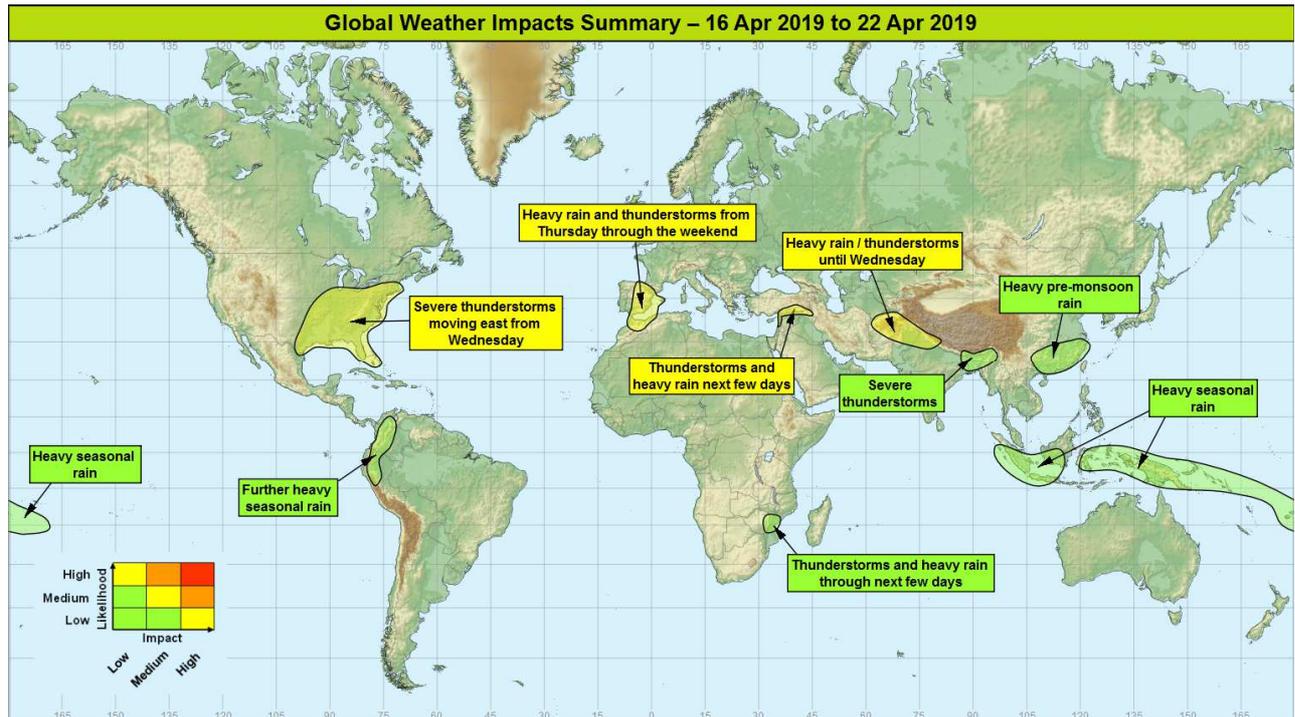


## Global Weather Impacts – Tuesday 16<sup>th</sup> April to Monday 22<sup>nd</sup> April 2019

Issued on Tuesday 16<sup>th</sup> April 2019

### HEADLINES

- Further significant potential for tornado outbreak over the Central / Southeast US from midweek
- Potential for flooding across Middle East and parts of south-west Asia this week.
- Heavy rain, strong winds and cold across and around eastern Spain.



### DISCUSSION

#### Tropical Cyclones

There are no tropical cyclones or areas of interest through the next week.

#### Europe

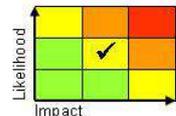
#### Southwest France, central and eastern Spain and the Balearic Islands

#### Weather

An area of heavy showers and thunderstorms will develop across central Spain on Thursday, before moving into eastern Spain on Friday and through the weekend, perhaps affecting the southwest of France and the Balearic Isles for a time.

Up to 75-100 mm of rain could fall in a 24 hour period (especially for eastern Spain), with event totals of 150 mm possible. The rainfall totals will be smaller through the rest of the highlighted region. Strong winds are also likely to be associated with this event.

#### Discussion



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

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A cut-off vortex is expected to become slow moving over Spain later this week, the accompanying cyclogenesis and backing flow through depth drawing a PS14 WBPT plume from North Africa. Isentropic ascent and some convective destabilisation within this plume will lead to development of heavy rain, which could be orographically enhanced in places given the strengthening E to NE'ly flow. The trough disruption and mesoscale detail is uncertain at this range, with models indicating a variety of solutions with respect to the position of the plume at maximum engagement. Frequent showers/thunderstorms will be present widely beneath the upper vortex but in lower WBPT/lower PWAT air. The whole complex will gradually sink southwards through the period.

### Expected Impacts

Localised flash flooding is likely, possibly affecting areas popular with tourists and ex-pats. Strong winds at the coast could lead to some minor coastal flood impacts, whilst there is also a low risk of localised damage to buildings and infrastructure due to lightning.

### North America

#### Central/Eastern USA, Bahamas.

##### Weather

Following recent severe weather across this region this past weekend, a further zone of severe thunderstorms looks likely to develop in the vicinity of Texas on Wednesday evening into Thursday morning, extending east and north-east through the rest of the week. Strong winds, tornadoes, heavy rain and large hail are all expected; 50-100mm could fall in a matter of a few hours.

##### Discussion

Following the recent tornado outbreak, the progressive synoptic pattern will allow the atmosphere to recharge as a sharply extending and eventually disrupting upper trough generates strong northward advection of warmth and moisture from the south mid-week. This will allow the development of severe storms within the systems warm sector, which will steadily drive eastwards from Wednesday before clearing the Eastern Seaboard over the coming weekend.

##### Expected Impacts

The recent severe weather has already led to fatalities in these areas. Potential exists for further flash flooding. Large hail could cause damage to structures and vehicles. Tornadoic activity is also a significant threat with this event, with associated localised catastrophic damage.

### Central America and Caribbean

#### Bahamas – see North America

### South America

#### Western Colombia, Ecuador and far northwest of Peru

##### Weather

Further heavy seasonal rain is expected this week, following what has been a very wet rainy season. The rains will come in the form of thunderstorm activity that could produce intense rainfall (up to 75 mm in a few hours). Through the next 7 days up to 250 mm of rain could fall in places along the Andes. This equates to over 50% of the average April rainfall falling within a week.

##### Discussion

There continues to be a strong model signal for enhanced rain through the next week in this region. Weak tropical waves may well help enhance the deep convection as they pass through the region over the coming week. This will come on top of what has already been an impactful start to this current rainy season in Colombia.

##### Expected Impacts

Potential for further flooding and risk of landslides.

### Africa

#### Central Mozambique and eastern Zimbabwe

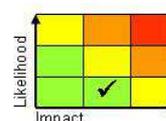
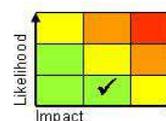
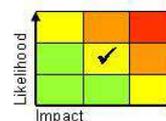
##### Weather

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Heavy showers and thunderstorms are expected to affect this region through the next 3 days, with the most frequent storms likely on Wednesday. There is a risk of 25-50 mm of rain falling in places, with strong winds also possible in association with the thunderstorms.

## Discussion

An upper trough moving east across South Africa will push a cold front north across southeastern parts of Africa during the next few days, becoming less well defined and slow moving. This cold front will be the focus for the deep convection across the region for a few days.

## Expected Impacts

Flash flooding is a risk, although this type of impact will be isolated.

## Middle East

### Lebanon, western and northern Syria, northern Iraq and northwest Iran

#### Weather

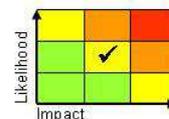
Increased shower and thunderstorm activity is expected across this region over the next few days. Up to 25-50 mm of rain falling per day in some places, most likely in far north of Iraq where 80-100 mm is probable over the 48 hour period, which is 2 to 3 times the average rainfall for the whole of April. Following something of a break on Thursday, further persistent showers are expected on the western slopes of the west coastal mountain ranges of Syria and Lebanon, where 20-40 mm per day could lead to totals exceeding 100mm through this week.

#### Discussion

A marked upper trough will transfer east across the region through Tuesday and Wednesday, engaging a warm plume. This will lead to deep convection, especially across south-east Turkey and northern Iraq that could result in intense rainfall. Following transient ridging on Thursday, a resumption of a cyclonic upper pattern will lead to persistent orographically generated showers on the west coasts of Syria and Lebanon through until the end of the weekend.

#### Expected Impacts

Flash flooding, hail, strong winds and dense lifted dust plumes are all likely in parts of this region. The heavy rainfall is likely to produce a threat of river flooding too, especially into the Tigris catchment in northern Iraq. These impacts are likely to affect some of the regions of northern Iraq and western Iran that have seen severe flooding in the past month. Western Syria and Lebanon will become increasingly prone to flooding into the coming weekend.



## Asia

### Much of Afghanistan, northern Pakistan, and northwest India and western Nepal

#### Weather

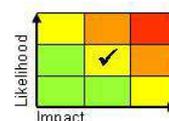
Extensive cloud and rain, with thunderstorms, across this region slowly clearing eastwards over the next few days, with conditions steadily improving from the west to clear completely by Thursday. Parts of Afghanistan could see a further 25-50 mm of rain on Tuesday on top of large rainfall totals seen in recent days, before clearing later on Tuesday. Pakistan and northwest India will see a wet next few days due to thunderstorms producing up to 75-100 mm, with western Nepal seeing up to 50 mm from thunderstorms on Wednesday.

#### Discussion

A major upper trough will gradually relax eastwards across the region through the next few days, continuing to engage a plume of high WBPT (>19°C) to generate areas of rain and severe thunderstorms.

#### Expected Impacts

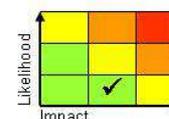
Severe flash flooding is likely in places. Afghanistan and Northern Pakistan are likely to see increased flood and landslide impacts due to the combination of heavy rain and continued snow melt.



## Bangladesh and northeast India

#### Weather

There is a continued threat of severe thunderstorms developing across this region during the next week, which as well as producing large amounts of rain (50-100 mm) in a short space of time, will bring frequent lightning and a risk of damaging winds, large hail and a few tornadoes. Southern Bangladesh will become more at threat from severe thunderstorms from Friday.



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## Discussion

We are in the peak tornado season across this part of the world, with a southerly flow bringing very warm moist air north from the Bay of Bengal and various upper troughs in the sub-tropical jet (that will move south through the next 7 days). At times forecast profiles exhibit large amounts of CAPE and strong shear, strong outflow aloft and potential for supercells and tornadoes.

## Expected Impacts

Localised flash flooding is possible, with lightning/large hail/strong gusty winds likely, with a lower risk of isolated tornadoes.

## Southeast China

### Weather

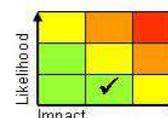
The south-eastern part of China will see further heavy pre-monsoonal rain through the next 7 days, with many places seeing the average April rainfall (150-250 mm) falling in just a few days. Thunderstorms are likely at times which could produce intense rain (100 mm in 6 hours), with the most intense storms likely to affect the region from Thursday to Saturday.

### Discussion

Short wave upper troughs in the sub-tropical jet will engage the warm plume across south-eastern China to produce pulses of very heavy pre-monsoonal rain through the next few days. Forecast profiles show the potential for embedded high based thunderstorms within the plume. The heaviest rain and greatest risk of thunderstorms are likely within the PS24C 850hPa WBPT that gradually pushes north through the week and is then engaged by short wave upper troughs within the jet.

### Expected Impacts

Flash flooding is the most likely impact, with an increasing threat of river flooding and landslides. The majority and most intense rain and storms move away south from the coastline near Hong Kong.



## Western Indonesia

### Weather

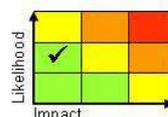
The shower and thunderstorm activity is likely to become more frequent and intense next week with more places than usual likely to see 50-100 mm of rain in a 24 hour period (mostly falling in a 6 hour period).

### Discussion

The MJO is likely to develop in the Indian Ocean next week, aiding larger scale deep convection in the eastern Indian Ocean and western part of Indonesia.

### Expected Impacts

Increasing threat of flash flooding and landslides.



## Eastern Indonesia, Papua New Guinea, Solomon Islands and Fiji

### Weather

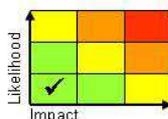
Heavier than usual rain is expected through the next week across this region. Up to 300 mm of rain could fall in places, with some places seeing the average April rainfall falling within a week.

### Discussion

An active ITCZ and South Pacific Convergence Zone will produce heavier than usual rain across this region, perhaps enhanced by at least one Equatorial Rossby Wave.

### Expected Impacts

Flash flooding will be the most likely impact. Increased threat of river flooding and landslides too.



## Australasia

Papua New Guinea, Solomon Islands and Fiji – see Asia section

## Additional information

Nil.

**Issued at:** 160755 UTC **Meteorologists:** Paul Hutcheon / D J Harris

**Global Guidance Unit**

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