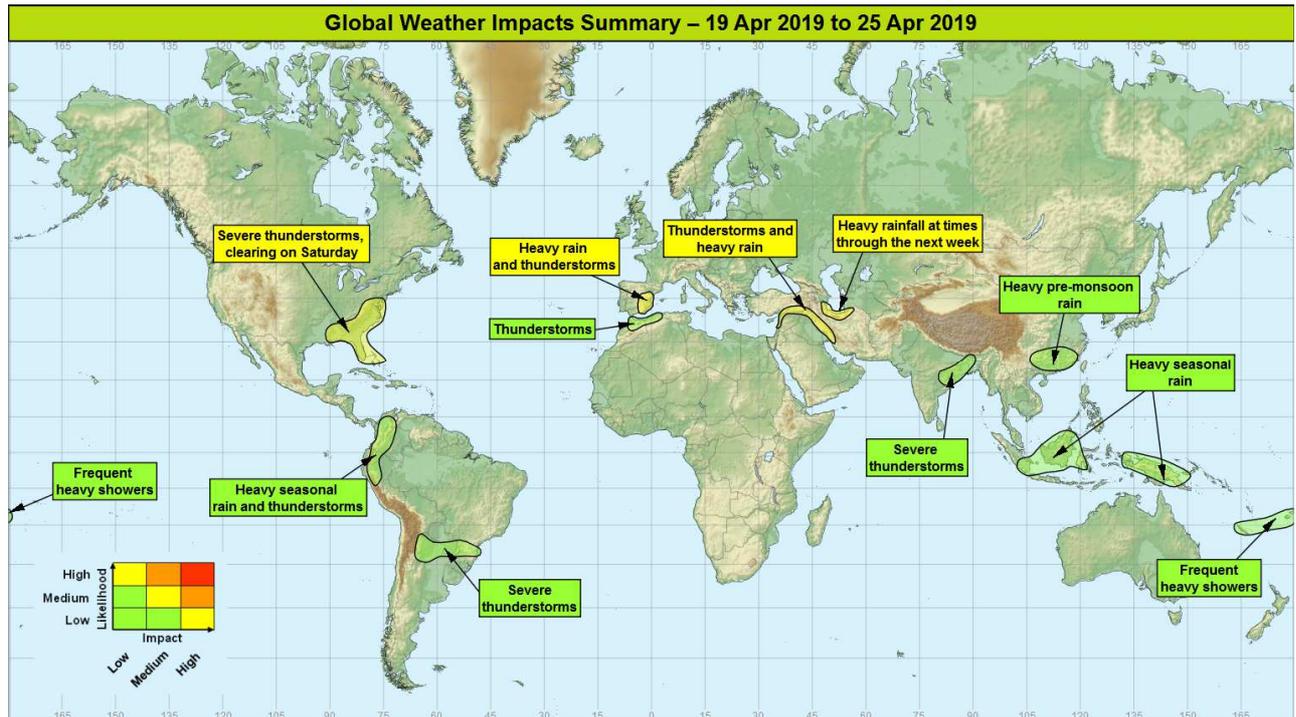


## Global Weather Impacts – Friday 19<sup>th</sup> April to Thursday 25<sup>th</sup> April 2019

Issued on Friday 19<sup>th</sup> April 2019

### HEADLINES

- Heavy rain and locally strong winds over southeast Spain until early next week.
- Severe thunderstorms/tornado potential over E USA, clearing through Saturday.
- Further heavy showers and thunderstorms over parts of the Middle East and southwest Asia.



### DISCUSSION

#### Tropical Cyclones

There are currently no tropical cyclones and no developments are expected over the coming days.

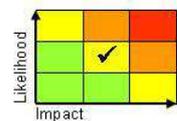
#### Europe

##### Southeast Spain Weather

Periods of persistent, heavy, and at times thundery rain are likely to affect this part of Iberia until at least the end of the weekend, and perhaps into next week. Total rainfall for the event is likely to be widely 50-75mm, though in some more mountainous areas, totals of 150-250mm could be achieved, which is many times more than the average for April of 20-40mm.

##### Discussion

A cut off upper low will slowly sink S across Iberia over the next few days, the accompanying cyclogenesis and backing flow through depth drawing a PS14 WBPT plume from North Africa. Strong shortwave forcing, isentropic ascent, orographic enhancement and convective destabilisation will all aid to generate heavy rain. As would be expected when convective and orographic components are main drivers of rainfall totals, models continue to offer slight differences in coverage and intensity, though sufficient commonality exists for confidence in the event to be high.



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## Expected Impacts

Localised flash flooding is likely, possibly affecting areas popular with tourists. 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. Impacts on aviation could also be significant.

## North America

### Eastern USA and the Bahamas

#### Weather

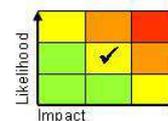
Severe thunderstorms will transfer east across the eastern USA through today (Friday), before clearing during Saturday. Strong winds, tornadoes, heavy rain and large hail are all expected; 50-100 mm could fall in a matter of a few hours. This area of disturbed weather will transfer across the Bahamas this weekend, but even though severe thunderstorms are not expected, intense rainfall from thunderstorms remains a significant threat.

#### Discussion

A cut-off vortex travelling across central and southern parts of the US generated extensive severe convection across parts of the Gulf Coast through Thursday. A further major trough extension/disruption is signalled through Friday, leading to favourable conditions for further severe convection. The SPC have issued an enhanced to moderate risk of severe storms for Friday and into Saturday, extending from the Florida Panhandle, NNE to SE Virginia.

#### Expected Impacts

Localised flash flooding is likely, whilst large hail could cause damage to structures and vehicles. Tornadoic activity is also a significant threat with this event, with associated damage and/or destruction.



## Central America and Caribbean

**Bahamas** – see North America section

## South America

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

#### Weather

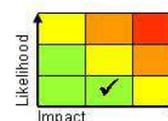
Further heavy seasonal rain is expected this week, following what has already been a very wet rainy season. The rains will come in the form of thunderstorm activity that could produce intense rainfall (up to 75 mm in a few hours). Through the next 7 days up to 250 mm of rain could fall in places along 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, whilst the weak El Nino conditions may also be driving this. 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.

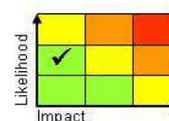


### North Argentina, Paraguay, Uruguay, south Brazil

#### Weather

Enhanced showers and thunderstorms, locally severe, are expected to develop over this coming weekend, with frequent lightning and the risk of tornadoic activity. 50-80 mm, locally 100 mm could fall in some places per day, with 100-150 mm in areas most affected through the course of the event.

#### Discussion



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A gradual southward migration of tropical air is expected lead to an increasingly unstable atmosphere, prone to release of deep convection, with torrential showers as a result. Later in the weekend, and early next week, a sharp trough/cut-off vortex on the northern periphery of the sub-tropical jet will engage this warm plume, allowing more organised storms to develop. Forecast profiles depict large CAPE, PWAT, and strong low-level helicity with increasing potential for supercells by the end of the weekend.

## Expected Impacts

Localised flash flooding, increased chance of landslides in mountainous areas, and localised risk to life and property through frequent lightning strikes and/or strong winds.

## Africa

### Northeast Morocco and northwest Algeria

#### Weather

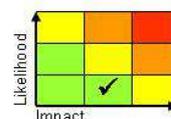
The rain area affecting southeast Spain over the next few days may sink far enough south to affect this region on Friday, with thunderstorms likely to develop over the weekend. Where thunderstorms and heavy showers develop, 20-40 mm could fall in a few hours, perhaps as much as 50 mm in a day. This equivalent to nearly a month's worth of rainfall in these areas.

#### Discussion

The upper vortex described above is expected to sink south across the area over the coming weekend, before degenerating into a trough. This will provide excellent conditions for the release of deep instability – profiles are moist through depth and the NE'y flow on the backside of the induced low (see southeast Spain) would support frequent triggering over mountains inland.

#### Expected Impacts

Flash flooding may occur, particular in steep portions of the Atlas.



## Middle East

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

#### Weather

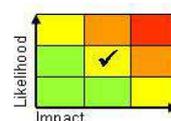
Increased shower and thunderstorm activity is expected across this region at times through the next 3 or 4 days. Up to 25-50 mm of rain in 24 hours is likely in some places, with up to 100 mm of rain accumulating in places over the next 4 or 5 days, especially in northern Iraq and the Levant coastal mountains. This is 2 to 3 times the average rainfall for the whole of April.

#### Discussion

A succession of upper troughs will transfer east across the region at times through the next week, leading to deep convection, especially across northern Iraq and the Levant coastal mountains, that could result in intense rainfall.

#### Expected Impacts

Flash flooding, hail, strong winds and dense lifted dust plumes (away from rain areas) are all likely in parts of this region. The heavy rain 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 could become increasingly prone to flooding into the coming weekend.



## Asia

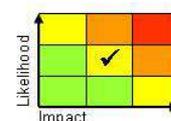
### Western Iran – see Middle East section

### Northern Iran

#### Weather

Periods of heavy showers and thunderstorms are expected across the far north of Iran, along the Caspian Sea coastline and across the Alborz mountain range. Up to 150 mm of rain could fall through the next week which is 3 times the average April rainfall.

#### Discussion



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A succession of upper troughs will combine with the northern edge of a warm plume, aided by convergence across the Alborz mountains and moisture from the Caspian Sea to produce periods of thunderstorms and heavy rainfall through the next week.

## Expected Impacts

Flash flooding is likely to be the biggest threat with this event. Northern Iran has suffered from severe flooding during the last month, although much of the impacts from this event should be just to the north of Tehran.

## Southwest Bangladesh and northeast India

### Weather

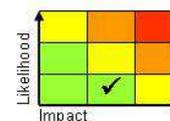
Isolated, but potentially severe thunderstorms are likely to develop across India today (Thursday), this zone then slowly migrating northeast over the next few days, with Bangladesh increasingly likely to see severe storms over the coming weekend. Some of these storms could produce large rainfall amounts (50 mm in a few hours), whilst lightning and hail are likely. Strong, gusty winds and dust storms could also occur in association with the worst storms.

### Discussion

Sporadic thunderstorms are likely to develop across northeast India over the next couple of days, courtesy of a weakly cyclonic upper pattern but mainly significant low level warmth. Cloud bases will be relatively high, with the main hazard likely to be strong gusty winds in association with downdraughts. A number of shortwave troughs in the jet across N India and Bangladesh over the weekend will allow for more organised storms to develop, and whilst a tornado couldn't be ruled out, forecast profiles mainly show uni-directional flow within deep instability.

### Expected Impacts

Localised flash flooding is possible, with lightning/large hail/strong gusty winds likely, but a lower risk of isolated tornadoes. The strong gusts could result in significant dust storms in some cases.



## Southeast China

### Weather

Further heavy pre-monsoonal rain is expected over the next few days, with many places seeing the average April rainfall (150-250 mm). In addition, thunderstorms are likely at times which could produce intense rain (100 mm in 6 hours).

### Discussion

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 PS24°C 850hPa WBPT that gradually pushes north through the next few days whilst being engaged by short wave upper troughs within the sub-tropical jet.

### Expected Impacts

Flash flooding is the most likely impact, with an increasing threat of river flooding and landslides.



## Western Indonesia, Papua New Guinea

### Weather

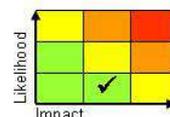
The usual shower and thunderstorm activity is likely to become more frequent and intense with more places than usual likely to see 50-100 mm of rain in a 24 hour period (mostly falling in a 6 hour period).

### Discussion

The emerging MJO is likely to assist in maintaining larger scale deep convection in the eastern Indian Ocean and western part of Indonesia. Across Papua New Guinea a persistent feed of showers/thunderstorms arriving from the west and developing in situ may realise locally large totals.

### Expected Impacts

Increasing threat of flash flooding and landslides.

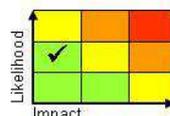


## Australasia

### Fiji, south Vanuatu, New Caledonia

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**Weather**

More frequent showers and thunderstorms than normal with 50-80mm, locally 100mm falling in 12-18 hours, and some locations could receive 250-350 mm over the next several days.

**Discussion**

The SPCZ will become slow moving over the next few days, leading to a persistent train of heavy showers and thunderstorms affecting the area. Small N/S oscillations in the zone will lead to sig variations in detail for the local islands, but the broad envelope of heavy showers is well agreed upon by the main models.

**Expected Impacts**

An increased flash flood and landslide risk given the persistent nature of the showers, the event spanning a number of days.

**Additional information**

Nil.

**Issued at:** 190645 UTC    **Meteorologists:** Jason Kelly / Paul Hutcheon

**Global Guidance Unit**

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