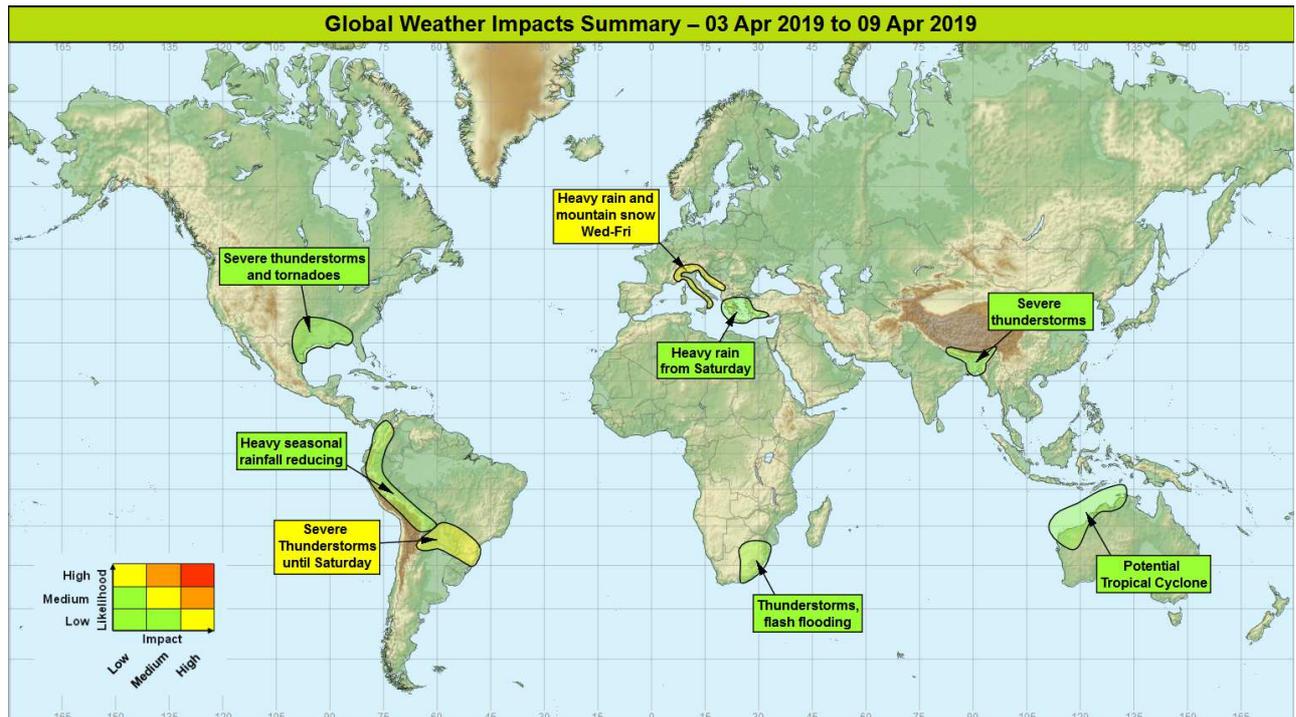


## Global Weather Impacts – Wednesday 3<sup>rd</sup> April to Tuesday 9<sup>th</sup> April 2019

Issued on Wednesday 3<sup>rd</sup> April 2019

### HEADLINES

- Rain and mountain snow affecting Italy, the Alps, and the Balkans through the next 2 or 3 days.
- Heavy rain and severe thunderstorms bringing flooding from Colombia to southeast Brazil.
- Severe thunderstorms likely across parts of North America and South Asia.



### DISCUSSION

#### Tropical Cyclones

There are presently no active tropical cyclones.

#### The following area is being monitored for potential tropical cyclone formation:

#### Northern Australia (Arafura and Timor Sea)

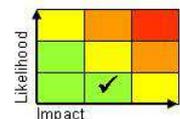
#### Weather

A tropical low looks likely to form near the coast of the Northern Territory over the coming days and track westwards, potentially becoming a tropical cyclone. There is growing confidence for its formation, but lower confidence in its subsequent track. There is a possibility of this system making landfall across the northern Western Australia coastline by early next week, perhaps bringing some heavy rain and very strong winds to coastal districts.

#### Discussion

Most deterministic models indicate the formation of a tropical low, and eventual tropical cyclone, during the rest of this week, likely due to organisation of convection along the monsoon trough by the passage of an equatorial Rossby wave. At this range there is naturally a large spread in solutions, with the system possibly ending up taking a similar track to Veronica a week or so ago.

#### Expected Impacts



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Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter  
Tel: +44(0)1392 884319 VPN: n6225 4319 Email: [ggu@metoffice.gov.uk](mailto:ggu@metoffice.gov.uk)

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Potential for flash flooding to bring travel disruption and damage to property. In addition, should a strong tropical cyclone develop, wind damage would be expected, with damage to buildings and interruptions to power supplies potential impacts. This area however is sparsely populated and used to tropical cyclones, with impacts likely to be relatively low.

### Europe

#### Much of Italy, southeast France, Switzerland and the western Balkans

##### **Weather**

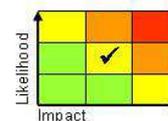
Heavy rain and mountain snow will affect the region from Wednesday through to Friday. The heaviest precipitation is expected to fall on the southern side of the Alps, where around 200 mm of rain could fall at low levels. At higher elevations of the Alps significant falls of snow (perhaps up to 2 metres) above 1200 metres above sea level are possible in the Italian Alps. Parts of the French and Swiss Alps could see up to 1 metre of fresh snow down to 500 metres above sea level through the next day or two.

##### **Discussion**

A cold front will sink southeast across western Europe by midweek, becoming increasingly active as an upper trough extends and disrupts, ultimately forming an upper vortex across southwestern Europe. A high WBPT plume will be drawn up ahead of the cold front, with this, along with forcing from the upper vortex, producing very heavy precipitation along the southern facing slopes of the Alps. The exact amount of snowfall will be difficult to estimate due to differences in the WBFL within the heavy precipitation plume. Heavy showers blossoming within the plume will bring heavy, thundery showers to the western side of Italy, and later the Dinaric Alps as the system progresses E, where higher WBFL will see most ppn realised as rain.

##### **Expected Impacts**

Surface water flooding is possible in low-lying areas, with deep fresh snow leading to a threat of avalanche at higher levels. The combination of flooding and heavy snowfall at higher elevations is likely to lead to disruption to travel in the region, risk to property and infrastructure, and danger to life particularly in the more vulnerable areas of the Balkans.



#### Greece and southwest Turkey

##### **Weather**

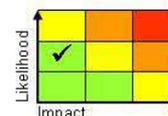
An areas of very heavy rainfall and some thunderstorms will spread east across this region over the weekend, with showers then continuing to affect the region in the early part of next week. The rain over the weekend could bring spot accumulations as high as 100mm in some locations, with showers next week able to locally bring a further 10-20mm each day. Precipitation will fall as snow over the regions mountains (above 1800 metres elevation)

##### **Discussion**

The cold front that will bring unsettled weather to parts of the Alps, Italy and Balkans will continue southeast and cross this region through the weekend. This feature remains well engaged by an upper trough (this time associated with the sub-tropical jet). A strong southeasterly wind in the warm conveyer ahead of the cold front, will lead to some marked orographic enhancement of rainfall across southeast facing hills.

##### **Expected Impacts**

Small chance of flash flooding causing disruption to travel and damage to property. Landsides could potentially be triggered in the mountainous terrain, with snow related hazards such as avalanche possible at greater elevations. Thunderstorms/lightning may trigger some localised disruption.



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## North America

### Southern USA and northeast Mexico

#### **Weather**

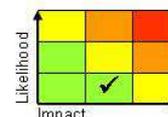
Heavy showers and potentially severe thunderstorms are possible across southern parts of the USA, with an initial peak on Thursday, before further events are signalled later in the weekend and early next week. Intense downpours of rain could bring as much as 50-100 mm in places in a few hours. Large hail, strong wind gusts and tornadic outbreaks will be additional localised hazards.

#### **Discussion**

Various short and longwave upper troughs transferring east at varying speeds across southern parts of the USA looks likely to engage plumes of high WBPT air drawn north from the Gulf of Mexico. There are still some spatial and temporal differences between models regarding the most likely areas and timings within which severe convection will occur.

#### **Expected Impacts**

Increased potential for flash flooding. Large hail and/or strong winds could cause damage to structures and vehicles. There is a risk some tornadic activity being spawned during these events. Some disruption to transport, particularly aviation (including transiting flights).



## Central America and Caribbean

Nil significant.

## South America

### Northern Argentina, Paraguay, far south of Brazil

#### **Weather**

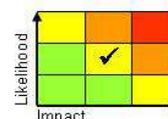
Heavy showers and severe thunderstorms are expected to develop across this region until Saturday. Each day in the worst affected areas as much as 75-100 mm of rain could fall which is roughly equivalent to a month's worth of rainfall. Depending on the exact location of where the most severe thunderstorms develop, 150-200 mm of rain is possible over a few days. Lightning, large hail and strong gusty winds associated with thunderstorms will be additional hazards. Over the weekend more benign weather is forecast in this region as storms both weaken and edge away to the northeast.

#### **Discussion**

An extrusion of the tropical air will become engaged by a succession of troughs in the subtropical jet extending over central parts of South America. This will aid the development of organised severe thunderstorms including the likelihood of MCSs. Through the weekend a final upper trough will force the formation of a surface depression (offshore from the River Plate), with this acting to drive a cold front northeast and displace the tropical air from this region.

#### **Expected Impacts**

Very heavy rainfall increases the chances of flash flooding as well as landslides in more mountainous terrain disrupting transport, flooding property and posing a danger to life. Parts of Paraguay could be more sensitive than usual with reports of flooding during March. Over the last 30 days a large proportion of Paraguay and parts of northern Argentina have seen more than double of their average rainfall. Lightning strikes, large hail and the potential for tornadoes will pose additional risks to lives and infrastructure.

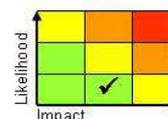


## Colombia, Ecuador, Peru and Bolivia

#### **Weather**

Heavy showers and thunderstorms are expected to initially be more numerous than normal along the northern Andes. Rainfall accumulations will vary by location due to the showery nature of the rainfall but locally a further 200-300 mm of rain is possible in a few locations over the next week, mainly west of the Andes for Colombia and Ecuador. From the weekend shower activity is forecast to become much reduced in the south, with much of Peru and Bolivia expected to see drier than average conditions.

#### **Discussion**



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Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter

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Despite the South American monsoon undergoing retreat across Brazil, abundant tropical moisture exists across the northern Andes to generate further heavy showers and thunderstorms. The cold front mentioned in the previous section will displace the tropical air northwards later this week, with the result being much reduced shower activity across much of Peru and Bolivia.

#### **Expected Impacts**

Flash flooding and landslides remain an ongoing threat in the mountainous areas, as well as downstream river flooding, with numerous reports of significant impacts in these countries again surfacing in recent days. With much of this region preconditioned by previous rainfall, further rain will produce some additional impacts.

### **Africa**

#### **Eastern South Africa, Lesotho, Swaziland and far south of Mozambique**

##### **Weather**

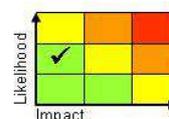
From Thursday onwards a spell of enhanced heavy showers and severe thunderstorms are expected to form in this region, with these showers tied to a diurnal cycle with activity peaking in the late afternoon and early evening. These storms have the potential to locally bring 50-100mm of rain in a short space of time, with the additional hazards of strong gusty winds, large hail and frequent lightning.

##### **Discussion**

A southward extrusion of the African monsoon plume looks likely to be engaged by a frequently re-forecast upper level cyclonic pattern, leading to significant and organised destabilisation. Forecast profiles highlight large CAPE and strong shear, with the potential for long lived storms to develop, whilst high precipitable water (PWAT) will allow high rainfall rates and locally large totals.

##### **Expected Impacts**

Flash flooding is the most likely hazard, with many large urban areas within this region (eg Johannesburg, Bloemfontein and Durban) particularly vulnerable. Many regions will miss the storms altogether however. Additional hazards are the likelihood of strong winds, and large hail, and frequent lightning all of which could bring some localised damage to people property, and infrastructure (such as utilities).



### **Middle East**

Nil.

### **Asia**

#### **Bangladesh, northeast India, and eastern Nepal**

##### **Weather**

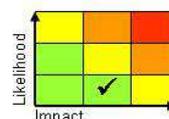
There is an increased likelihood of severe thunderstorms developing across this region during the next, which as well as producing large amounts of rainfall (50-100 mm) in a short space of time, will bring frequent lightning and a risk of, strong winds, large hail and a few tornadoes.

##### **Discussion**

We are approaching peak tornado season across this part of the world, and with very warm moist air in place at low levels, an elevated mixed layer at medium levels and various upper troughs in the sub-tropical jet (that remains close to the area). At times forecast profiles exhibit large amounts of CAPE and strong shear, strong outflow aloft and potential for supercells and tornadoes. Last Sunday a severe storm in this region injured hundreds of people and caused multiple fatalities as it moved through Nepal, with poorly building standards and aggravating factor.

##### **Expected Impacts**

Flash flooding is likely, along with lightning/large hail/strong gusty winds/isolated tornadoes causing a risk to life, plus damage to property and infrastructure.



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

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**Australasia**

**Northern Australia** – See *Tropical Cyclones* section.

**Additional information**

Nil.

**Issued at:** 030700UTC    **Meteorologist:** Nick Silkstone / Paul Hutcheon

**Global Guidance Unit**

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Global Guidance Unit, Operations Centre, Met Office, FitzRoy Road, Exeter

Tel: +44(0)1392 884319 VPN: n6225 4319 Email: [ggu@metoffice.gov.uk](mailto:ggu@metoffice.gov.uk)

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