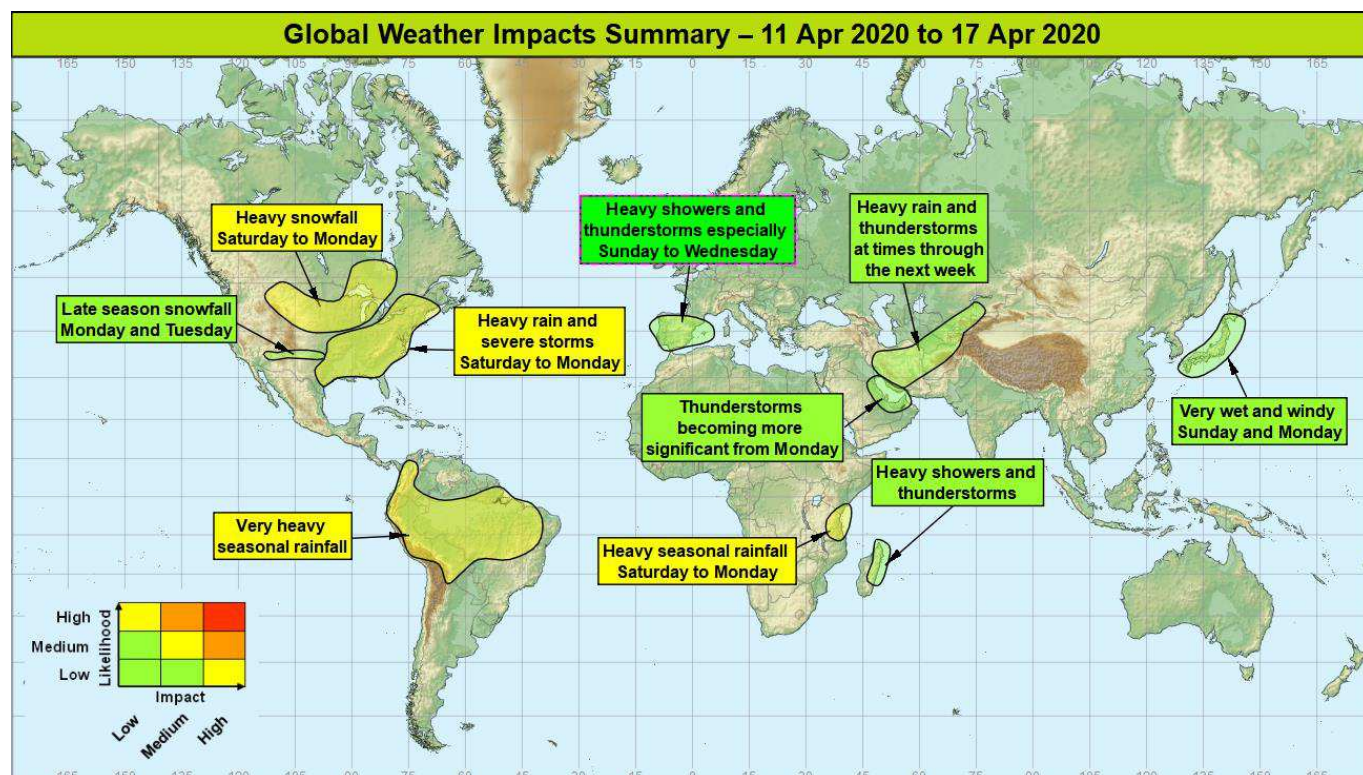


## Global Weather Impacts – Saturday 11<sup>th</sup> to Friday 17<sup>th</sup> April 2020

Issued on Saturday 11<sup>th</sup> April 2020

### HEADLINES

- Severe storms developing across southern and eastern USA this weekend and early next week.
- Late season severe winter storm across central parts of North America until Monday.
- Very heavy seasonal rainfall in the north of South America this coming week.
- Intense seasonal rains for coastal East Africa this weekend into Monday.



### DISCUSSION

#### Tropical Cyclones

No tropical cyclone activity is expected over the next 7 days – but see Tanzania/Kenya section below.

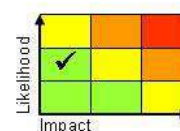
#### Europe

##### Parts of Spain and Portugal

##### Weather

Showers and thunderstorm will affect parts of Iberia every day through the next week, but with more widespread, intense thunderstorms likely from Sunday to Wednesday. During this period there is a threat of up to 30-50 mm falling in a few hours, with frequent lightning possible. However, confidence in where the worst conditions will be is low at the moment.

##### Discussion



This forecast may be amended at any time

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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A strongly cyclonic upper pattern will persist through the next week across and just west of Iberia. This upper pattern will be enhanced from Sunday as a major upper vortex is steering south from Ireland across western Iberia, with a warm plume being dragged north from NW Africa on the eastern flank of the vortex. The combination of a diffluent, cyclonic upper flow and the warmer plume will produce an environment for the development of significant deep convection and the potential for organised, long lasting storms. Forecast profiles show good vertical wind shear, but CAPE generally no more than 700J/Kg. So organisation of storms likely, but large hail very unlikely, with intense rainfall the highest likely impact.

## Expected Impacts

Flash flooding is the most likely impact, especially from Sunday to Wednesday. Lower likelihood of power / transport disruption from frequent lightning.

## North America

### Southern and eastern parts of the USA

#### Weather

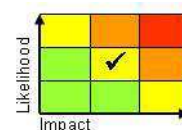
Severe thunderstorms are expected to break out today (Saturday) across parts of Texas and Oklahoma, before become more frequent and extensive as the whole complex moves east and northeast through Sunday and Monday. Intense rainfall (up to 150 mm in 24 hours), large hail, damaging winds and tornadoes are likely to be associated with these storms. The average April rainfall in the southern states is 100-150 mm, with the Eastern Seaboard usually seeing 50-100 mm through April.

#### Discussion

Models are in good broad agreement that a large mass of very warm, moist Gulf of Mexico air will move northwards across this region, to become engaged by both a relaxing cut-off vortex and a strong diffluent upper trough arriving from the north-west. Strong upper level winds on the periphery of relaxing vortex, and strong vertical wind shear will provide significant lift and instability to promote persistent and severe storms, and likely supercells. The severe storm threat for the Eastern Seaboard is lower, but intense rainfall still looks likely here

#### Expected Impacts

Localised flash flooding, hail damage, and wind damage, in the vicinity of the severe storms. Flash flooding also looks a threat for the Eastern Seaboard, perhaps impacting large cities.



### Central/northern parts of the USA and southern/central Canada

#### Weather

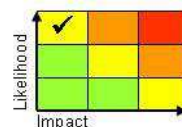
A marked cold plunge behind a rapidly deepening depression will bring significant snowfalls to this part of North America, with widely 15-30 cm of snow arriving into the west of the region today (Saturday), then quickly moving east and northeast during Sunday and Monday, on the north-western edge of the storm system described above. The snowfall will be accompanied by strong or gale force east to north-easterly winds generating blizzard conditions and significant drifting at times, particularly across central and eastern parts of this region.

#### Discussion

A strong cold front well forced by a diffluent upper trough is expected to bring significant snow fall to the west of the region on Saturday, merging with the system affecting south-eastern parts of the US on Sunday and Monday. As the gradient tightens on the northern flank of cyclogenesis initiated across Central US, blizzard conditions and drifting of the snowfall are likely to become more widespread.

#### Expected Impacts

This looks like a particularly severe late season winter storm that will produce difficult travel conditions with disruption to transport, and likely temporary disruption to utilities such as power/mobile phones. Agriculture (eg calving/lambing) likely to be significantly disrupted.



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VPN: n6225 4319 Email: [ggu@metoffice.gov.uk](mailto:ggu@metoffice.gov.uk)

**New Mexico, North Texas, Oklahoma****Weather**

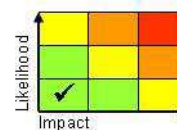
A spell of snow is expected early next week (Monday/Tuesday), bringing a temporary coverage of 5-10 cm of lying snow in some areas. This is unusually far south given the time of year.

**Discussion**

The cold plunge taking place over the weekend will allow cold air to extend unusually far south, interacting with a wave on the trailing cold front (forced by a short wave rounding the long wave upper trough) to bring a temporary spell of climatologically unusually far south snowfall. Good model agreement in this aspect, although lower confidence in coverage and longevity.

**Expected Impacts**

Some temporary transport disruption is likely.

**Central America**

Nil.

**South America****Much of Ecuador, Peru and Bolivia, western Colombia and northern Brazil****Weather**

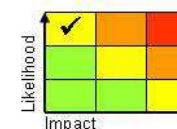
Enhanced shower and thunderstorm activity are signalled to continue across much of the northern Andes and Amazon through this period. A further 150-300mm of rainfall is likely to fall across the area. This represents locally more than double the average rainfall for parts of this region which have been very wet over recent weeks and months.

**Discussion**

The combination of the MJO moving east across this region during the next week, along with several Westward Inertio-gravity waves and a renewed South Atlantic Convergence pulse in the south of the region will greatly enhance the seasonal rainfall in this region.

**Expected Impacts**

Enhanced threat of further landslides and flash flooding, particularly in the steep terrain of the northern Andes. Flash flooding is a heightened threat in cities east of the Andes.

**Africa****Eastern parts of Tanzania and Kenya****Weather**

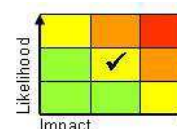
Heavy seasonal rainfall from frequent heavy showers and thunderstorms are expected through the next 2 or 3 days along the coast of Kenya and Tanzania associated with a weak tropical depression. Up to 300 mm of rain could fall in a few days, which is above the average for the whole of April.

**Discussion**

Most models produce a weak tropical cyclonic circulation which moves in from the Indian Ocean this weekend to produce more widespread heavy showers and thunderstorms to this part of the region.

**Expected Impacts**

Increased threat of flash flooding impacts that could impact the cities of Mombasa, Dar es Salaam and Zanzibar, flooding properties and potentially seriously impacting transport routes.



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**Eastern Madagascar****Weather**

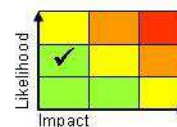
Enhanced heavy showers and thunderstorms are expected across eastern Madagascar in the next 4 or 5 days. 50-100 mm of rain is expected per day, with the northeast of the island particularly prone. April one of the wetter months across the islands, but as 150-200 mm of rain could fall in places, which represents around 50-75% the average rainfall for April.

**Discussion**

An enhanced easterly flow, plus a minor tropical depression moving to the north of the island is expected to bring more frequent heavy showers and thunderstorms to eastern Madagascar in the next 4 or 5 days.

**Expected Impacts**

Flash flooding in the major coastal cities is a threat during this event.

**Middle East****Across and around the Persian Gulf****Weather**

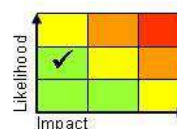
Through the next week thunderstorms are expected to affect the Persian Gulf and many areas around the Gulf. This weekend very little rainfall is expected from these storms, but strong winds and dense dust storms are likely. From Monday there is a higher likelihood that the thunderstorms will produce intense rainfall in places (up to 50 mm in a few hours), with a lower threat of hail. There will be a continued threat of strong winds and dense dust storms.

**Discussion**

An increasingly cyclonic upper pattern will develop through the weekend and persist through much of next week across the Arabian Peninsula, with the strengthening upper forcing engaging the northern edge of the resident warm plume at 700hPa. Much of the CB activity will be high based, initially 600hPa with limited ground reaching rainfall. However, as the forcing increases from Monday the base is likely to lower to 700hPa with the convective column above moistening with strengthening vertical wind shear in the convective column. This will result in locally intense rainfall reaching the ground, with the storms becoming organised and longer lasting. CAPE values could be high enough for the development of large hail.

**Expected Impacts**

Flash flooding and dense dust storms impacting transport networks, with some property flooding likely. Damaging winds and hail possibly associated with more severe thunderstorms.

**Asia****Iran, Afghanistan, Uzbekistan, Tajikistan and Kyrgyzstan****Weather**

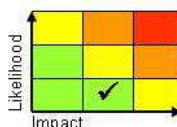
Further spells of persistent and locally heavy rain are expected to affect this region at times through the next week, with thunderstorms also expected. Across many parts of the areas highlighted 40-60 mm of rainfall will build up with as much as 100-150 mm possible over high ground. This equivalent to more than a month's worth of rainfall in the wettest areas, and the rainfall could combine with seasonal snow melt to exacerbate the potential flooding, but this is low confidence.

**Discussion**

A succession of Western disturbances embedded within the STJ will continue to transfer east across this region over the next week with the associated upper forcing engaging the northern side of the warm plume to produce areas of rain and thunderstorms.

**Expected Impacts**

Flash flooding looks like the main threat in this region.



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**Japan****Weather**

A period of very windy and wet weather is expected to transfer northeast across the large islands of Japan on Sunday and Monday, producing 50-125 mm of rain in just 24-36 hours (the average April rainfall in Japan between 75 and 125 mm). Gale force winds are also expected.

**Discussion**

A sharpening upper trough will drive a developing depression across or just to the south of Japan later this weekend and early next week.

**Expected Impacts**

Threat of flash flooding with a lower likelihood of landslides.

**Australasia**

Nil.

**Additional Information:**

Nil.

**Issued at:** 110500 UTC    **Meteorologists:** Paul Hutcheon

**Global Guidance Unit**

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

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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