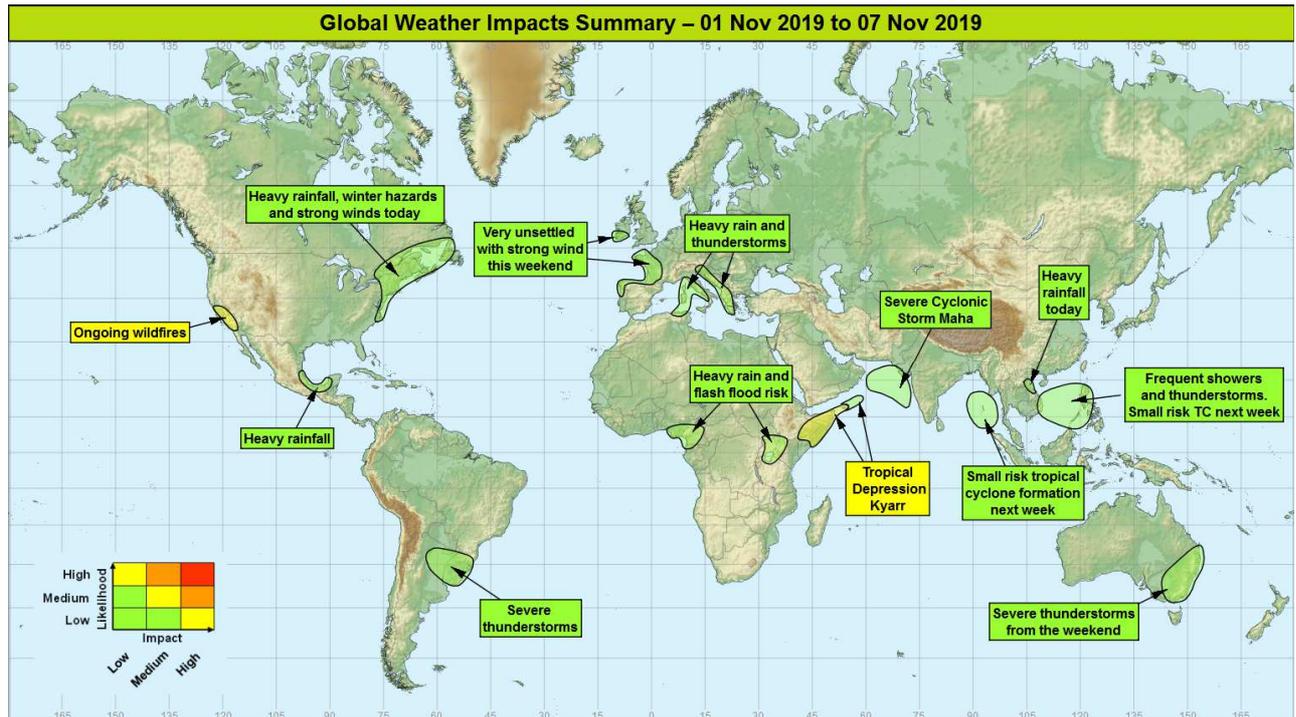


**Global Weather Impacts – Friday 1<sup>st</sup> to Thursday 7<sup>th</sup> November 2019**

Issued on Friday 1<sup>st</sup> November 2019

**HEADLINES**

- “Kyarr” could bring significant rainfall to Somalia this weekend – in addition with “Maha” this is the first recorded instance of two simultaneous Arabian Sea tropical cyclones.
- Elevated wildfire conditions persist across south-west California today.



**DISCUSSION**

**Tropical Cyclones**

**Tropical Depression Kyarr (Arabian Sea)**

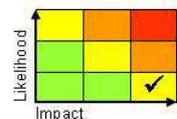
**Weather**

Kyarr weakened significantly overnight and further weakening is expected over the next 12-24hrs. The remnants of this tropical system are still expected to affect Socotra and mainland northeast Somalia from the weekend, bringing a period of heavy rainfall. 50-100 mm of rain is likely to fall up to the middle of next week. This is equivalent to 6 months worth of rain for many parts of this region.

**Discussion**

Kyarr achieved an estimated minimum pressure of 915 hPa on Sunday, surpassing Super Cyclonic Storm Gonu in 2007. The intensity, based on official advisories from IMD, equalled that of Gonu. Kyarr’s satellite presentation has continued to degrade over the past 24 hours and is expected to decay into a remnant low within the next 24 hrs as it moves southwestwards towards Somalia. It remains uncertain as to whether or not Kyarr will pass directly over Socotra but regardless the system will likely bring impactful rain to the region. The area at threat of heavier rainfall has also extended southwestwards to cover the Jubba and Shabelle river catchments from Sunday onwards, these catchments are already in flood.

**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)

The main impact from Kyarr is expected to be over Socotra, northeast Somalia and the far east of Ethiopia from this weekend from the heavy rainfall of this decaying system that will pose a significant threat of flooding.

### **Severe Cyclonic Storm Maha (Arabian Sea)**

#### **Weather**

Maha formed on Wednesday close to the Lakshadweep Islands to the west of Kerala in Southern India, and has steadily intensified to become a Severe Cyclonic Storm. Maha could strengthen further as it heads northwest into the central Arabian Sea over the next few days. The future track is very uncertain, although there is now stronger evidence for landfall across northwest Indian, rather than Oman, during the middle of next week.

#### **Discussion**

Maha formed in response to the organisation of an area of deep convection by an Equatorial Rossby Wave. This is the first time on record (dating back to the early 1970s) that two named storms have existed simultaneously over the Arabian Sea. There remains a large model spread in terms of future intensity but reasonable consistency from model and ensemble output for the system to head north-west over the open sea over the next couple of days. There is very low confidence in the future track with steering flow becoming weak – reflected in a large ensemble spread, although there is a growing majority now for landfall across northwest India rather than Oman.

#### **Expected Impacts**

As Maha strengthens large swells/rip-currents could affect Arabian Sea coastlines. Very low likelihood of more significant wind/rain impacts by the middle of next week, with potential for a strong cyclone to make landfall across a wide area.

The following areas are being watched for tropical cyclone formation over the next 7 days.

### **Andaman Sea and Bay of Bengal**

#### **Weather**

The much weakened circulation associated with the remnants of Tropical Storm Matmo will cross the Indochina Peninsula and emerge into the Andaman Sea on Sunday. Over the following few days the circulation will lie in a region marginally favourable to allow thunderstorms to gradually develop into a tropical cyclone as it moves northeast.

#### **Discussion**

The circulation associated with Matmo, remains a distinct feature as it crosses the Indochina Peninsula. This circulation will continue to promote thunderstorm activity surrounding it, and as it moves into the Bay of Bengal underlying sea surface temperatures will increase to over 30°C, providing even more energy for convection, however windshear is expected to be marginally favourable.

#### **Expected Impacts**

Some isolated flash flooding possible in urban areas around the Andaman Sea. If a cyclone develops rough seas will also develop in the region.

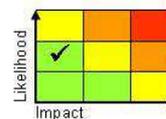
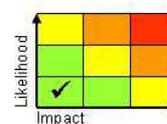
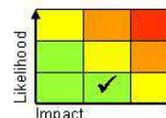
### **Europe**

### **Italy, Greece, western parts of the Balkans, parts of northern Africa**

#### **Weather**

Following recent heavy rainfall in this region, further active weather systems are expected to move across this region over the coming week bringing persistent, heavy rain and thunderstorms focussed on south-west facing high ground of Italy, the Balkan region, and western Greece. Many places will see 50-100 mm on wetter days, with some prone spots seeing as much as 200 mm per day – in excess of 300 mm is likely to have fallen in a few places during this event by early next week. This will be accompanied by strong wind gusts, especially coasts and to the north-east of high ground.

#### **Discussion**



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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)

A cyclonic upper pattern will persist through the next week leading to a continuation of unsettled conditions. As upstream mobility increases this will see a number of Atlantic plumes drawn across the region from Saturday which will see precipitation increasingly modulated by orography and act as a focus for heavy rain and thunderstorms.

**Expected Impacts**

Increased likelihood of flash and river flooding causing damage to property and infrastructure. Lightning strikes, large hail and tornadoes could also produce localised significant damage, particularly in the south of this region.

**Southwest Ireland, western France, northern Spain and Portugal**  
**Weather**

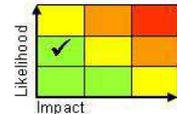
Conditions will turn increasingly unsettled from Friday onwards with spells of very strong wind and heavy rain. Around 50-100mm of rain will fall quite widely with parts of northwest Spain potentially having 200-300mm. Winds will be strong at times over the weekend, with gusts widely 50-60 mph in coastal areas, perhaps reaching 80 mph in a few locations.

**Discussion**

South-shifted Atlantic mobility is expected to breakthrough later this week and into the weekend. This will steer a number of Atlantic systems into northwest Europe. With the PFJ axis likely to become established near 45 North there will be the potential for several deep low pressure systems to develop on its cold side bringing a risk of stormy conditions into the southwestern British Isles initially and then later Biscay and adjacent coasts.

**Expected Impacts**

Strong winds may bring disruption to transport and damage to infrastructure which could lead to power outages. Dangerous coastal conditions due to large waves and spray. Increased, but low likelihood of flooding.



**North America**

**California**

**Weather**

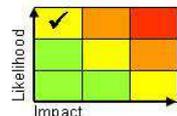
Although fire weather conditions will improve into Friday (down to only elevated levels), numerous wildfires continue to burn across the region. Thereafter, conditions that support rapid growth and expansion of fires are forecast to ease, with much improved conditions next week. A combination of low humidity, dry fuel and strong winds are responsible for this situation.

**Discussion**

A strong pressure gradient generated by the cold dense air overspreading the Rockies (tied in with the recent cold plunge which brought snow to North-Central US) continues to bring strong, dry Santa Ana and "Diablo" winds, with humidities generally less than 10%. Some diurnal relaxation of the gradient will occur as warming of the cold air mass takes place. Through the weekend the pressure gradient reduces significantly, in addition to the gradual trend to less strong winds as the continental air mass experiences net warming.

**Expected Impacts**

Extensive damage/destruction of forest, property and infrastructure in areas affected, with buildings razed to the ground. Power interruptions are also likely, in part as a preventative measure to reduce wildfire triggering. Poor air quality will be an additional hazard.

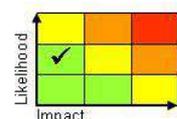


**Far NE USA and southeastern Canada**

**Weather**

An area of heavy rainfall (up to 50-100 mm in 24 hours) will affect the far northeastern USA and southeastern Canada through Friday. The more southeastern parts of this area could also see thunderstorms, with freezing rain and snow likely on the northwestern fringe of this area. Strong winds or even gales are possible in places too.

**Discussion**



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

A marked upper trough will engage a strong baroclinic zone across the east of North America to drive an active cold front east across the region. Forecast profiles are conducive for deep convection ahead of the cold front, with very cold on the northern and western edge of the frontal zone producing a snow or freezing rain threat. The development of a deep frontal depression will result in the threat of very strong winds too.

**Expected Impacts**

Flash flooding looks like the main impact, with a lower likelihood of large hail and lightning damage from severe storms. Winds could be strong enough to cause some impacts from fallen trees, with winter hazards possibly impacting transport and power networks on the northern and western fringes of this system.

**Central America and Caribbean**

**Southeast Mexico**

**Weather**

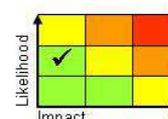
The Gulf of Mexico coastline of southern Mexico will likely see intense rainfall through the next few days with up to 200-300 mm expected in places. Intense thunderstorms could produce as much as 50-100 mm in a few hours.

**Discussion**

A cold front will become slow moving across south-eastern Mexico, producing prolonged heavy rainfall here with embedded deep convection likely due to the high sea surface temperatures of the Gulf of Mexico and Bay of Campeche.

**Expected Impacts**

Flash flooding and landslides look like the most impactful events in this region.



**South America**

**Uruguay, southern Paraguay, northeast Argentina and southern Brazil**

**Weather**

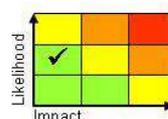
Spells of heavy rain and severe thunderstorms are expected to affect this region today and then again over the weekend. Rainfall totals of 100-150 mm are possible in places each day. This equivalent to over a month's worth of rainfall (although this will only be in a few isolated locations). Frequent lightning, large hail and strong wind gusts will be additional hazards.

**Discussion**

The SACZ will become increasingly active during this period, enhanced by a southward extension of tropical air over central South America. This will allow a mixture of surface based and elevated convection (triggered by minor upper short waves) with severe thunderstorms possible across the area.

**Expected Impacts**

Flash flooding, transport disruption and a small risk of property damage from hail and wind gusts.



**Africa**

**Somalia and the far east of Ethiopia** – See *Tropical Cyclones* section.

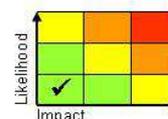
**Northern Algeria, and Tunisia** – See *European* section.

**Parts of central (inc. Cameroon) and eastern (inc. Tanzania) Africa**

**Weather**

Conditions are expected to be close to or even drier than normal over the coming days so whilst there will be heavy showers and thunderstorms in places any areas seeing above average rainfall will be very localised. However, with recent reports of impacts due to flooding in these regions there is likely to be heightened sensitivity following a wetter than average period recently.

**Discussion**



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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)

A strong positive Indian Ocean Dipole (IOD) event continue although with the MJO now in Phase 3/4 this may be temporarily reducing the rainfall signal over east Africa. Based on the strength of the positive IOD event (largest since at least 2001) above average rainfall is likely to return over the coming weeks.

**Expected Impacts**

Continued increased likelihood of both flash flooding and flooding along some of the regions rivers. In additional there will be an enhanced risk of land/mudslides in areas of steep terrain.

**Middle East**

**Oman and Socotra** – See *Tropical Cyclones* section.

**Asia**

**Northeastern Vietnam**

**Weather**

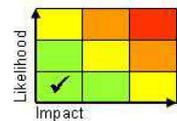
An area of enhanced thunderstorms associated with the moisture plume from ex-tropical storm Matmo will allow one further day of heavy showers and thunderstorms across northeastern Vietnam. Some locations are likely to see 100-200mm during Friday, perhaps falling over a short duration.

**Discussion**

There is very good model agreement for large rainfall totals across parts of northeastern Vietnam today. This is associated with a region where a high precipitable water plume (left by Matmo) is pushed against the topography of northeast Vietnam ahead of a developing cold surge. During Saturday this cold surge will undercut/displace the plume resulting in a marked downturn in thunderstorm activity.

**Expected Impacts**

An increased likelihood of flash flooding and landslides across this region through today, with this risk markedly reducing over the weekend.



**Areas around the South China sea, especially Vietnam**

**Weather**

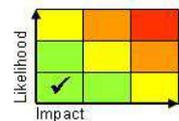
Prolonged heavy showers and thunderstorms are expected to affect central Vietnam for several days potentially bringing 200-400mm of rainfall to some locations. Other locations surrounding the South China Sea could see 100-200mm of rainfall over the coming week. Competing environmental factors make it difficult to determine whether or not the gradual formation of a tropical cyclone will occur, regardless the rainfall from this system is expected to be the principle hazard.

**Discussion**

An Equatorial Rossby Wave (ERW) will cross the Philippines today and emerge into the South China Sea. A cold surge which progresses southwest along the western South China Sea is likely to generate strong winds to the west of this circulation (increasing low level vorticity). The cold surge is however signalled to remain isolated from the centre where deep organised thunderstorm activity is likely to continue. Although some environmental factors such as warm underlying SSTs, low wind shear and good upper level outflow will promote cyclone formation, dry air to the west of the circulation (associated with the cold surge) will act to impinge this.

**Expected Impacts**

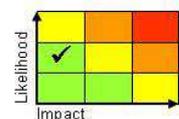
Flash flooding is the most likely impact, for many locations. However across Vietnam which has experienced recent wet weather from Tropical Storm Matmo some rivers are also likely to flood. If a tropical cyclone does develop some stronger winds and rougher seas are likely in the region next week.



**Australasia**

**South-eastern Australia**

**Weather**



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

Severe thunderstorm activity is expected to transfer northwards across south-eastern parts of Australia this weekend and into next week. Up to 100 mm of rain could fall in a few hours, with large hail, frequent lightning and strong winds also likely. Ahead of the storms temperatures will be 5-10 Celsius above average, but temperatures will fall back to average or even below average in the wake of the storms.

**Discussion**

An active cold front will push northwards across south-eastern parts of Australia from the weekend, with strong forcing from a sharp upper trough combining with very warm pre-cold frontal air to produce conditions for severe thunderstorm development,

**Expected Impacts**

Danger to life from flash flooding, large hail and frequent lightning. Aviation and power network disruption also likely.

**Additional Information**

Nil

**Issued at:** 010820UTC

**Meteorologists:** Nick Silkstone / Brent Walker

**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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