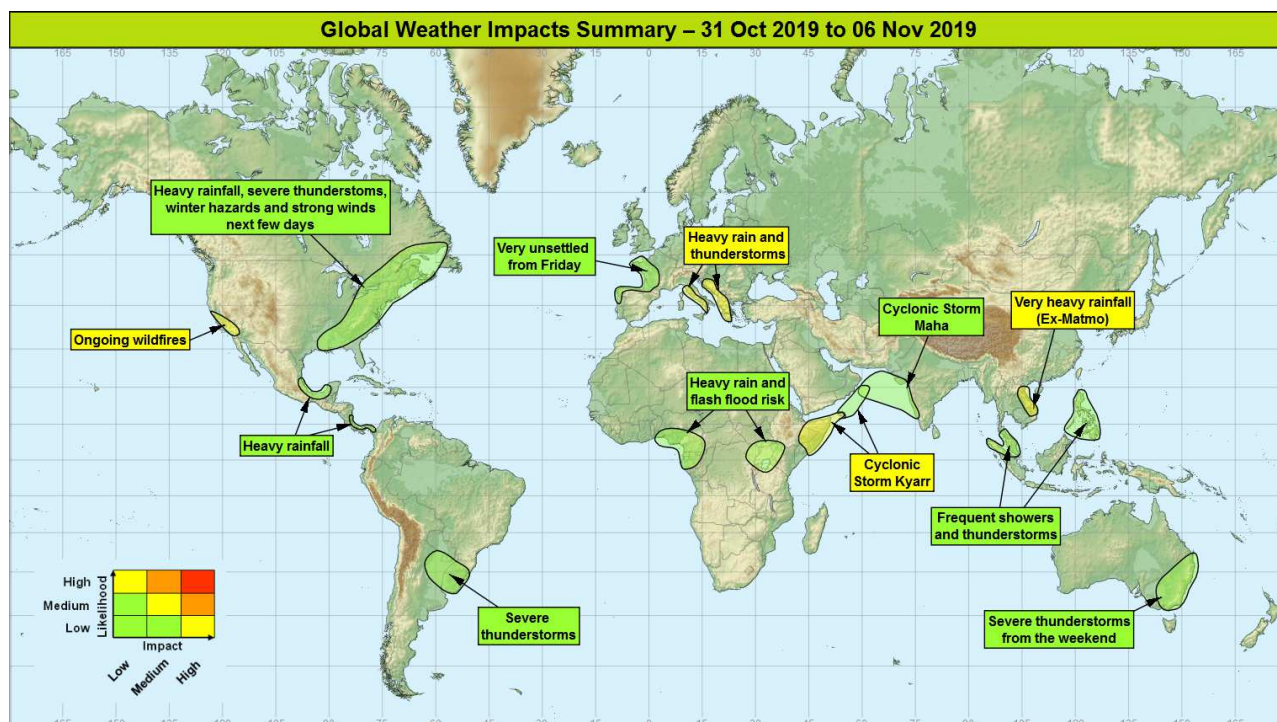


Global Weather Impacts – Thursday 31st October to Wednesday 6th November 2019

Issued on Thursday 31st October 2019

HEADLINES

- Intense rainfall across eastern Vietnam over next few days, associated with Ex-Matmo
- “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.
- Extremely critical wildfire conditions persist across south-west California next day or two.
- Very heavy rainfall accumulating from the weekend in parts of southern Europe.



DISCUSSION

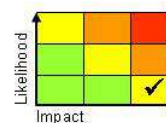
Tropical Cyclones

Cyclonic Storm Kyarr (Arabian Sea)

Weather

Kyarr is currently located around 800 miles northeast of the island of Socotra, and is expected to head due south-west over the next few days whilst continuing to weaken. It is expected to reach Socotra by Saturday, making landfall over north-east Somalia by Sunday. This system will be close enough to the southern Omani coast on Thursday to bring 10-20mm of rain through thunderstorms and also generating large waves offshore. The main impact is expected to come from heavy rain, with up to 50-100 mm possible in Socotra, northeast Somalia and the far east of Ethiopia from the weekend through to the middle of next week. This is equivalent to 6-12 months worth of rain for many parts of this region.

Discussion



This forecast may be amended at any time

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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 significantly degraded over the past 24 hours and is expected to weaken as it heads SE'ward over the next few days. Models and ensembles are consistent in terms of the track with little spread, it remains unclear as to whether or not Kyarr will pass directly over Socotra but regardless the weakening system has the potential to bring impactful rain to the region. Rainfall totals continue to vary widely between models, but it looks like the risk of higher accumulations of 200 mm has lowered during recent model runs. The area at threat of heavier rainfall has also extended southwards to cover the Jubba and Shabelle river catchments that are already in flood.

Expected Impacts

Dangerous swells and rip currents are likely to affect much of the Arabian Sea coastline through the next few days, with dangerous marine conditions affecting this busy shipping lane. 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 severe flooding.

Cyclonic Storm Maha (Arabian Sea)

Weather

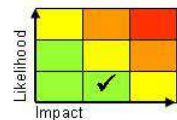
Maha formed on Wednesday close to the Lakshadweep Islands to the west of Kerala in Southern India. Strong winds and heavy showers are expected in this region today, as Maha steadily strengthens but also heads out north and north-westwards out into the Central Arabian Sea over the next few days. The future track is very uncertain but there is a low probability of a strong cyclone making landfall in Oman some time (probably early) 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 1970's) 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 which gives tracks making landfall anywhere from the Yemen/Oman border to the north-west of India.

Expected Impacts

Wind/rain unlikely to cause significant impacts to Lakshadweep Islands or parts of south-east India, but should Maha strengthen as forecast an increased likelihood of large swells/rip-currents affecting Arabian Sea coastlines. Very low likelihood of more significant wind/rain impacts early next week with potential for a strong cyclone to make landfall, most likely (but still low probability) on the Omani coastline.



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Europe

Italy, Greece and western parts of the Balkans

Weather

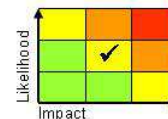
Following recent days of showers and thunderstorms for many parts of this region, a general respite is expected with much drier conditions for most over the next couple of days. However, through this weekend and into the following week, a couple of active weather systems are expected to move across this region bringing persistent, heavy rain with embedded thunderstorms focussed on south-west facing high ground of Italy, the Balkan region, and western Greece. Many places will see 50-100 mm per day, 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

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.



Western France, northern Spain and Portugal

Weather

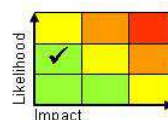
Conditions will turn increasingly unsettled from Friday onwards with spells of heavy rain followed by heavy showers. This will see rainfall totals of 50-100mm build up quite widely with parts of northwest Spain potentially seeing 200-300mm. There is also the potential for a number of disruptive strong wind events, more especially from Saturday onwards although confidence is currently low for details.

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 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.



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North America

California

Weather

Extremely Critical (the highest category) fire weather conditions are expected over the next day or two in parts of south-west California – much of western California will experience elevated wildfire conditions during this time. 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, but it may not be until the weekend or even early next week before the pressure gradient reduces significantly. That said, there will be a gradual trend to less strong winds as the continental air mass experiences net warming, allowing fire-fighting efforts to become more effectual. The Kincade fire in the Sonoma Valley has become California’s biggest of 2019, has burnt 75,000 hectares. Over 120 structures have been destroyed and a further 90,000 are threatened.

Expected Impacts

Extensive damage/destruction of 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.



Eastern USA and southeastern Canada

Weather

An area of heavy rainfall (up to 75-125 mm in 24 hours) will affect many parts of eastern USA and southeastern Canada through the next few days. The more southeastern parts of this area could also see severe 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

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 severe storm development 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.



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Central America and Caribbean

Southeast Mexico and southern parts of Central America

Weather

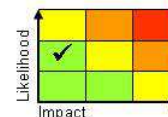
These areas of Central America will see the most intense rainfall through the next week with up to 200-300 mm expected in places. Intense thunderstorms could produce as much as 50-100 mm in a few hours. Southeast Mexico will see the peak rainfall between Thursday and Sunday, with southern parts of Central America seeing peak rainfall from Saturday.

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. Further south the cause of the heavier rainfall looks to be a Caribbean upper vortex (from a disrupted upper trough) that drifts south later this week to destabilise the resident high WBPT plume, with undoubtedly a contribution from African Easterly Wave activity too.

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

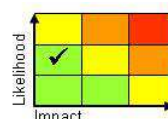
Spells of heavy rain and severe thunderstorms are expected to affect this region over the next couple of days and then again over the weekend. Rainfall totals of 100-150 mm are possible in places each day. This equivalent to over a month's worth of rainfall (although this will only be in a few isolated 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.

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

A strong positive Indian Ocean Dipole (IOD) event continue although with the MJO now in Phase 3 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 addition there will be an enhanced risk of land/mudslides in areas of steep terrain.



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Middle East

Oman and Socotra – See *Tropical Cyclones* section.

Asia

Ex-Matmo (South-east Asia, especially Vietnam)

Weather

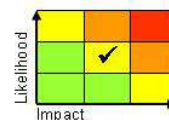
Matmo made landfall on Wednesday and has since become a remnant low. The remnants of this system and the enhanced E'ly flow in its wake are expected to bring very heavy rainfall to parts of central and northern Vietnam with 600-800mm possible over the next few days. Parts of Cambodia and Laos could see 100-150mm as the weakened system continues eastwards. As the remnants of Matmo exit into the Bay of Bengal next week, it could redevelop into a tropical cyclone.

Discussion

An Equatorial Rossby wave was the trigger for the enhanced convection that formed Matmo across the South China Sea, and as this feature continues eastwards it may help the decayed remnants to reconsolidate into another tropical cyclone over the Bay of Bengal next week. There is very good model agreement for large rainfall totals across a large swathe of Vietnam as enhanced moisture and E'ly flow feed in frequent torrential thunderstorms.

Expected Impacts

An increased likelihood of flash flooding and landslides across the Indochina peninsula, mainly the central and northern coastal region of Vietnam.



Indonesia (north Sumatra) and peninsular Malaysia

Weather

More frequent than normal showers and thunderstorms are expected to affect these areas over the next few days, with further rainfall (widely 50-100mm, and locally 300-400mm) building up by the end of this forecast period.

Discussion

The position of the monsoon trough and the presence (albeit weak) of the Phase 3 MJO is signalled to generate larger than normal rainfall accumulations across this area (and indeed others, such as Borneo. Despite the strong IOD, SST anomalies in this region are near to slightly above normal, so offer little resistance. Parts of this region have already been affected by flooding over the past few days.

Expected Impacts

Continued increased risk of flash and river flooding, and exacerbation of current flooding, leading to damage to homes, businesses, and displacement of people.



Philippines

Weather

More frequent than normal rainfall (heavy showers/thunderstorms) are expected over a large part of the country, with 30-50mm in many places per day, some areas seeing 150-250mm over the next 5-7 days. There is also a low likelihood of a tropical cyclone developing in the South China Sea next week.

Discussion

Similarly to above, a combination of the MJO and active monsoon trough will generate more frequent than normal thunderstorms across this region. Activity is also expected to be enhanced by a number of Equatorial Rossby Waves running east to west across the country over the coming days.

Expected Impacts

Localised flash flooding is the most likely impact.



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Australasia

South-eastern Australia

Weather

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

An extra-tropical cyclone in the Central Atlantic, west of the Azores, has undergone tropical transition and has been named Sub-Tropical Storm Rebecca by the NHC – this posing no significant threat to land although may bring unsettled conditions to the NW Azores during the next few days.

Issued at: 310810UTC **Meteorologists:** D J Harris / Paul Hutcheon

Global Guidance Unit

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