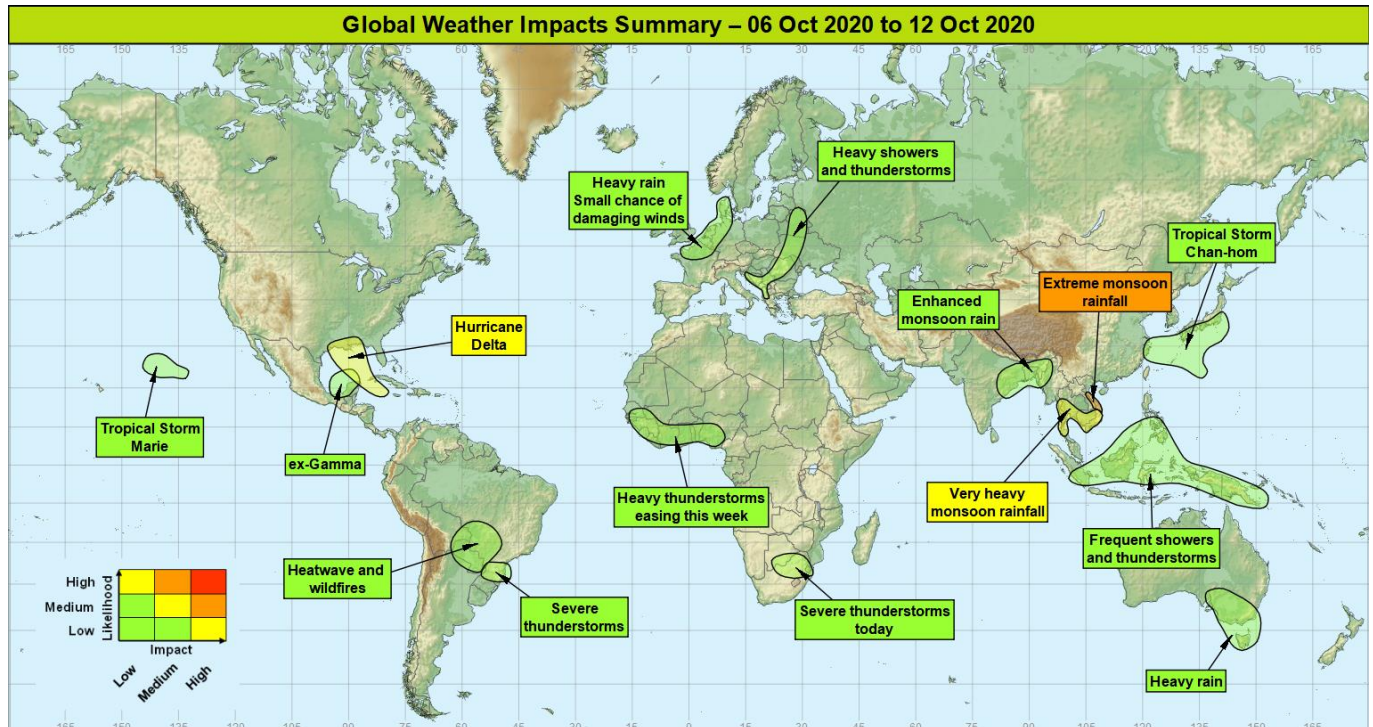


Global Weather Impacts – Tuesday 6th to Monday 12th October 2020

Issued on Tuesday 6th October 2020

HEADLINES

- Heavy rainfall across large parts of Southeast Asia, particularly extreme across Vietnam this week.
- Hurricane Delta impacting Cayman Islands today, before continuing north-westwards.



Tropical Cyclones

Hurricane Delta (Caribbean Sea – Cayman Islands, Cuba), Yucatan Peninsula

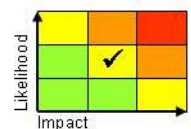
Weather

Winds of between 60 and 80mph and 50-80mm of rainfall are probable across the Cayman Islands (most likely Grand Cayman) as Delta passes by today, with further strengthening taking place as it then most likely threads between the western tip of Cuba and the Yucatan Peninsula. Wednesday will see the threat of heavy rains (100-150mm) for these areas, along with potential for sustained winds of 100 to 120 mph, although confidence in regional impacts across the disparate land areas is low by this time with uncertainties over the track. Later this week, Delta will head in the general direction of the US Gulf States, most likely making landfall on Friday between Pensacola, Florida and Houston, Texas.

Discussion

An area of thunderstorms south of Jamaica associated with a tropical wave consolidated into Tropical Storm Delta yesterday. Conditions over the Caribbean Sea are ripe for rapid development (low shear, high SSTs) as Delta begins to be steered around the subtropical ridge. Ensemble tracks currently favour Delta staying over the water between Mexico and Cuba, but small deviations left or right from this central track, which are highly likely in this formative stage, will change the distribution of heavy rain and strong wind significantly. Continued strengthening is likely over the next couple of days, before Delta is steered towards the southern Gulf States by a trough extending down from the US later this week.

Expected Impacts



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Modest flooding, and potentially significant wind damage impacts are probable across the Cayman Islands, with potential for more significant flooding across western Cuba and the north coast of Yucatan on Wednesday which could generate landslides. There is a threat of much more significant and long lasting wind damage across western Cuba and north-east Yucatan too. Impacts as Delta makes landfall in the southern US later this week are very uncertain given low confidence in track and landfall strength, although resilience is likely much lower in some places given landfalls of Laura, Marco and Sally this season.

Ex-Gamma (Yucatan Peninsula, Mexico)

Weather

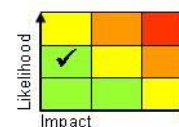
The tropical remnants of (Ex-) Gamma will move very slowly southwest across the southern Gulf of Mexico today, before most probably making landfall close to Campeche tomorrow, probably as a remnant low. The main hazard will come from rain. Large parts of coastal Yucatan along the Bay of Campeche will receive over 150mm, mainly through Weds and Thurs, with some locations seeing over 300mm. Mérida, state capital of Yucatan, typically receives around 130 mm of rainfall in October.

Discussion

Gamma has weakened over the past 24 hours, with development inhibited by strong and persistent shear and interaction with land, despite anomalously warm SST's. Most model output suggests that Gamma or its remnants will slowly move W then S before making landfall S of Campeche late Wednesday, although there is a small chance that Gamma could get swept up into the circulation of Delta as it passes by later Wednesday. Heavy tropical rains focussed into the Bay of Campeche will be the primary hazard over the coming few days.

Expected Impacts

Flash flooding and an enhanced risk of land and mudslides. Some disruption to transport and isolated wind damage is possible to poorly-built structures.



Tropical Storm Chan-Hom (Western Pacific)

Weather

Chan-hom currently lies some 700 miles south-southwest of Tokyo, and is expected to head generally northwest over open waters over the next day or two. Confidence in impacts across land areas is currently low, with the potential later this week to affect anywhere from the Ryukyu Islands to the south of Japan, and there is a chance that Chan-hom could recurve more quickly and stay to the south of Japan altogether. Regardless of track, the south of Japan is likely to experience some heavy rain (50-150mm), although not unusual for this location. There is a much lower probability that Chan-hom will continue west into China.

Discussion

Chan-hom resides in weak steering flow with a slow meandering likely over the next day or two before probably accelerating N then NE under increasing mid-latitude influence. The initial meandering leads to low confidence in the track by the time it potentially reaches land, with ensembles revealing a large spread with solutions spanning the areas described. This is reflected in the official guidance from JMA, which, along with NWP, suggests that there is a good chance that Chan-hom will reach typhoon strength but with low confidence in track.

Expected Impacts

Increased risk of damaging winds as well as flooding and landslides should the system make landfall later this week.



Tropical Storm Marie (Eastern Pacific Ocean)

Weather

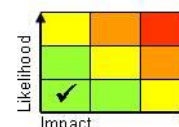
Marie has continued to weaken over the past 24 hours (1-minute sustained winds of 35 mph this morning) and is expected to become a remnant low imminently. Marie will not impact land.

Discussion

Marie remains in a hostile environment with no prospect of re-intensification. A steady spin down in the presence of low SSTs, large shear, and a dry/stable native air-mass is expected.

Expected Impacts

Nil.



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**Europe****France, Benelux, Germany and Denmark****Weather**

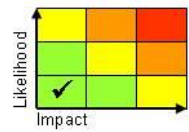
A spell of wet and potentially very windy weather will occur during Thursday and Friday. 50-75mm of rain is possible in a swathe which will extend anywhere from northern France to western Denmark, but more significantly there is low potential for wind gusts of between 60 and 80 mph. Whilst confidence in the rain event is higher, the location of the largest totals is very uncertain, and the threat of stronger winds is even lower confidence. Should significant winds occur, these would most likely impact parts of the Low Countries and Denmark.

Discussion

Whilst the system hasn't developed, there remains the potential for a significant frontal wave along the strong Atlantic baroclinic zone to undergo rapid cyclogenesis as it crosses the UK and into the North Sea, following a Shapiro-Keyser evolution with potential sting jet. That said, there has been a trend away from this idea over the past 48 hours, and whilst it still can't completely be ruled out, NWP and ensemble evidence suggests it now is a very low likelihood outcome. By this time tomorrow confidence will be much higher, with the evolution leading up to this possible event having occurred and will be assimilated into models.

Expected Impacts

Flash flooding is possible in places, and coastal flooding with dangerous seas and large waves. Disruption to travel is possible due to strong winds, with marine transport in particular at risk of being disrupted.

**Balkans, parts of Eastern Europe.****Weather**

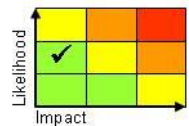
Persistent rain over the Dinaric Alps, and chance of severe thunderstorms inland, bring the potential for some areas within this region (most reliably the west facing slopes of the Dinaric Alps) to see 75-100mm of rain over the next 3-4 days.

Discussion

A slow moving cold front draped across eastern Europe will be the focus for heavy rain, and potentially severe thunderstorms in a high PWAT air mass bringing localised heavy downpours. On Wednesday a sharp upper trough and low level frontal wave will increase rainfall totals across the Dinaric Alps, before potentially inducing cyclogenesis and further severe storms across SE Europe. This then rippling north and pepping up rainfall across other parts of eastern Europe once again. Conditions improving by the weekend.

Expected Impacts

Increased risk of flash flooding and landslides, but not expected to be widespread.

**North America**

Mexico and southern USA – See *Tropical Cyclones* section.

Central America and Caribbean

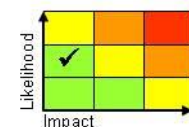
Cayman Islands, western Cuba – See *Tropical Cyclones* section.

South America

Bolivia, Paraguay, south-west Brazil, far north of Argentina

Weather

Heatwave conditions, coupled with strong winds continue this week. Temperatures widely mid to high 30s Celsius, locally into the low 40s Celsius, which is 7-12°C above average. Conditions will become increasingly conducive to the spread of wildfires, of which there are numerous within this region.

Discussion

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A sub-tropical high will persist across the region acting to suppress rainfall through the next several days. This will maintain high partial thicknesses across the region although some easing of conditions is expected next weekend. However, with the progression towards the summer half of the year, these temperatures, although extreme, become a little less unusual for many parts of this region through October.

Expected Impacts

Heat health impacts on vulnerable demographics, particularly in the south of the region, particularly given that this heatwave has been so prolonged. Increased likelihood of wildfire generation, bringing increasingly poor air quality and threat to communities.

South Brazil

Weather

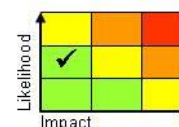
Thunderstorms will develop across this region during Wednesday, which will bring the threat of localised heavy rain (50-75mm in 3-6 hours), large hail, and damaging gusts of wind. This zone will very slowly move northwards through the course of Thursday and Friday, before easing over the weekend. Some places could see 100-150mm over the course of 3 days however.

Discussion

Gradual upper height falls, coupled with strong moisture convergence/isentropic lift, and diurnal destabilisation will lead to the generation of elevated thunderstorms early Wednesday which will then likely connect to the BL later on. Large PWAT, large CAPE with strong flow aloft favour heavy rain, large hail and potential for straight line winds. The convergence zone will slowly move northwards before a more pronounced shortwave upper trough swings across and clears the system into the Atlantic over the weekend.

Expected Impacts

Flash flooding, landslides in areas of higher terrain, and localised wind/hail damage to poorly built structures in particular are likely should the storms coincide with more populated areas.



Africa

Parts of Western Africa

Weather

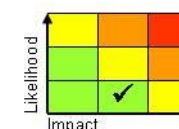
Further periods of heavy showers and thunderstorms will affect the region at times over the coming week. Whilst not all areas will see heavy rain, each day 50-75 mm could fall in places within a few hours, and over this period the wettest areas may see 150 mm build up. The gradual decline in activity looks likely to continue this week, with rainfall less heavy and widespread than a few weeks ago.

Discussion

Many parts of this area have experienced floods and flooding impacts in what has been an active period for African Easterly Waves. Further AEWs are expected in the coming days, although the main axis of heavier rainfall continues to push further south and will be across a region that has been anomalously dry overall during the past week. Thus the potential for impacts is lower, but given that this is near the end of what has been an active season, any impacts that do occur could be quite significant.

Expected Impacts

The potential for further flash and riverine flooding across much of the region, although less likely given antecedent conditions over the main focus region and not as widespread and severe as in the recent past.

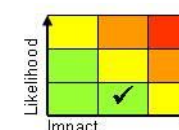


Botswana, South Africa, Eswatini

Weather

Slow moving heavy showers and thunderstorms will affect this region through today, becoming less widespread and severe on Wednesday, and easing by Thursday. Over 100mm could fall in a few hours in some locations. Large hail, and even an isolated supercell tornado are possible today.

Discussion



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A small scale upper vortex dislocating from the westerly current aloft will drift across a tropical plume resident in this region, leading to significant and energetic destabilisation. Large CAPE (2000 J/Kg), large low-level SRH and low cloud bases bring the potential for supercell tornadoes to develop, particularly today, and upscaling into an MCS is possible. Convective overturning and a less favourable upper pattern on Wednesday should see showers becoming less intense, before activity wanes completely on Thursday.

Expected Impacts

Flash flooding of urban areas, and possible very localised but significant wind damage/disruption to transport, homes and businesses.

Middle East

Nil.

Asia

Japan – See *Tropical Cyclones* section.

Eastern India, southern Bangladesh and western Myanmar

Weather

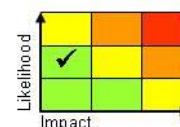
Heavy rain and thunderstorms will continue to affect the region over the next couple of days. Around 75 to 125 mm of rain is likely to fall. Average October rainfall in the region is approximately 150 mm. From midweek, activity will slowly decline.

Discussion

A monsoon depression will move slowly west into eastern India; directly enhancing showers over India, whilst the stronger flow around its eastern flank will enhance moisture transport and orographic lift/showers across Bangladesh/W Myanmar, particularly across the N of this region. From midweek, the depression is expected to decay and rain should ease accordingly.

Expected Impacts

Flash flooding, and landslides will be the primary hazard, although impacts are likely to be lower than recent weeks.



Cambodia, Laos, Thailand and Vietnam

Weather

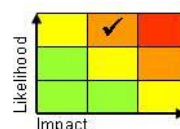
Showers and thunderstorms will continue to be more frequent, intense and widespread than usual. Thunderstorms are likely to become organised and long-lived at times leading to some torrential downpours and very high rainfall accumulations, especially from midweek. Accumulations of 200-300mm over the course of the next 4-5 days are expected.

Discussion

Background La Niña state is leading to generally enhanced convection across this part of southeast Asia. A cold surge in the wake of the monsoon front moving south across the South China Sea has enabled the development of a depression, which is signalled to move across the region, further enhancing rainfall.

Expected Impacts

Increasing risk of flash and riverine flooding along with landslides.

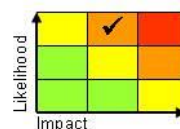


Vietnam

Weather

Frequent, heavy showers and thunderstorms will be a persistent feature of the weather over the next 4-5 days. The region highlighted is likely to see widely 600mm, but some places possibly as much as 1000mm in total, close to 2 months' worth of rain for Da Nang.

Discussion



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The depression described in the previous section (Cambodia, Laos...) will provide a strong easterly flow with abundant moisture, feeding in persistent heavy showers and thunderstorms. There is strong model agreement in this region seeing the largest rainfall totals, and although the GM's accumulations are highest (locally >1500mm which seems implausibly high), all global output suggests areas exceeding 500mm which could easily translate to locally 1000mm in prone locations.

Expected Impacts

Severe flooding, landslides, significant transport disruption.

Parts of Indonesia, Malaysia, Philippines, Brunei and Papua New Guinea

Weather

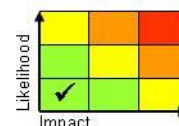
Heavy showers and thunderstorms will continue to be more frequent, intense and widespread than normal in the next few days. Within the broad area highlighted some spots in most of these countries will be at risk of seeing 100-150 mm of rainfall.

Discussion

Higher than normal SSTs in the region and enhanced easterly trade winds, due to the ongoing La Niña event, is providing good conditions to fuel deep and organised convection. This pattern is likely to persist for the foreseeable future.

Expected Impacts

Increase in the risk of flash flooding, and landslides in mountainous areas.



Australasia

Southern Australia

Weather

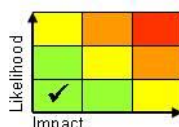
Spells of rain, heavy and prolonged at times, are expected to affect parts of South Australia and Victoria during this week. 40-60 mm of rain will fall fairly widely with up to 100 mm possible across inland parts of Victoria. This amount of rain is equivalent to over a month's worth at this time of year. Major urban areas such as Adelaide and Melbourne are likely to be affected.

Discussion

A slow moving cold front will bring pulses of heavy rainfall to central and southern parts of Australia this week. Several minor waves will enhance the rainfall with the potential, later in the week, or one of these to develop into a more significant depression, bringing a risk of strong winds. Temperatures will also be around 5-8°C below average.

Expected Impacts

Flash flooding will be the main impact and some disruption to travel around the region is possible.



Additional Information

Cox's Bazar, southeast Bangladesh

Heavy showers will affect the area over the next couple of days. 10-15 mm of rain is possible daily and by midweek overall accumulations could reach around 30 to 40 mm. Later in the week conditions are expected to become much drier.

Yemen

The development of very isolated, heavy showers is possible over the Western Highlands. Activity is expected to be around average for this time of year meaning many places will remain dry.

Sudan/South Sudan

The bulk of the shower activity will be seen in southern South Sudan through the next 7 days. 25-50mm of rain per day possible from daily showers and thunderstorms, with a lower likelihood of 75-100mm at any one location over the course of the coming week. This is fairly typical for the rainy season which is now on the decline. Most of Sudan will be dry, although the South Sudan border region could see sporadic, locally heavy showers.

East Pacific – Tropical Cyclones

Tropical Depression 19-E has formed in E Pacific, and is expected to develop into TS Norbert. No threat to land.

Issued at: 060730 UTC

Meteorologists: D J Harris / Chris Almond

Global Guidance Unit

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