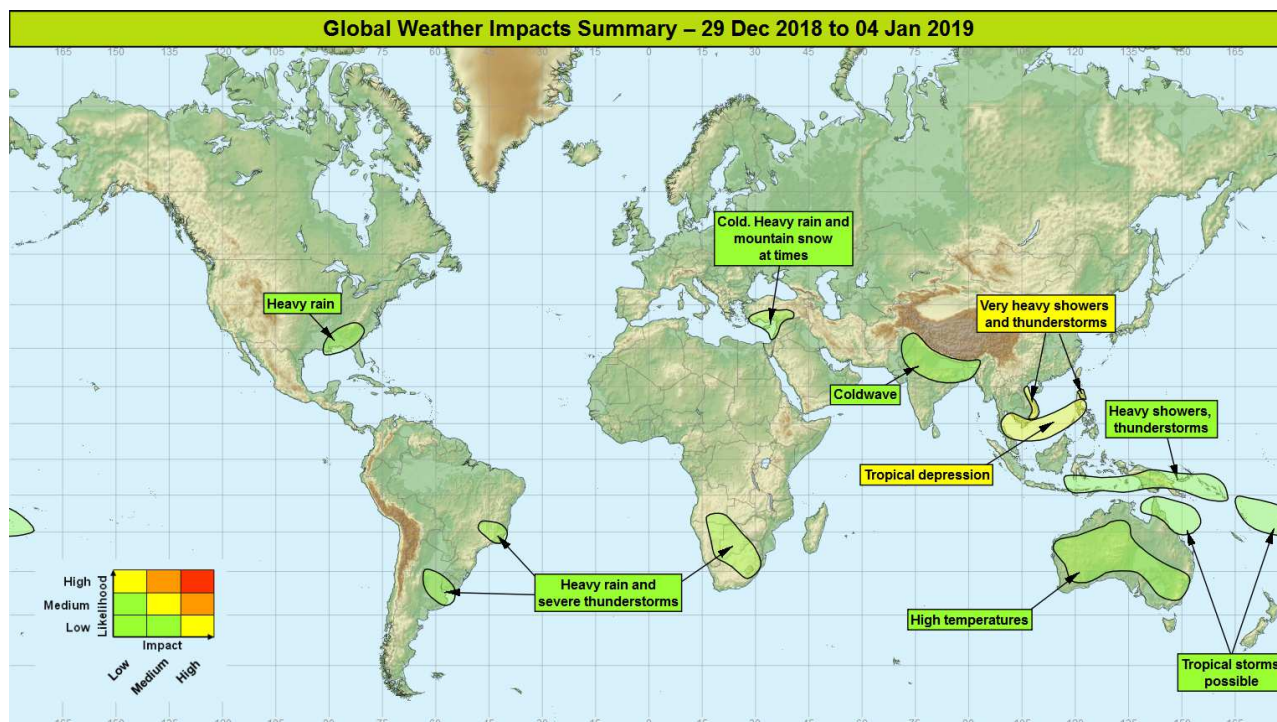


Global Weather Impacts – Saturday 29th December 2018 to Friday 4th January 2019

Issued on Saturday 29th December 2018

HEADLINES

- Tropical depression moving across the central Philippines into the South China Sea bringing heavy rainfall.
- Very heavy rainfall continues across central Vietnam and the northeastern Philippines.
- Potential for one or two further tropical storms to form in the southwest Pacific region.



DISCUSSION

Tropical Cyclones

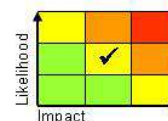
Philippines and South China Sea Weather

A tropical depression will move west across the central Philippines on Saturday before emerging in the South China Sea on Sunday. The main hazard will be from heavy rainfall. The heaviest rainfall is expected across Mindoro and eastern Luzon where 100-200 mm locally 500 mm is likely over the next 1-2 days. Thereafter, system is forecast to remain over open sea until the middle of next week, probably tracking towards the Gulf of Thailand. Some solutions see the landfall of a weak system in southern Vietnam or Cambodia, while other solutions track a more significant tropical storm towards the Malay Peninsula during the later part of the week.

Discussion

This tropical depression has struggled to intensify in the presence of persistent moderate vertical wind shear and land interaction across the Philippines. As it moves into the South China Sea conditions will become more favourable, and some modest strengthening is possible through into the middle of next week. Due to large model spread there is large uncertainty in the track of this system beyond this point.

Expected Impacts



This forecast may be amended at any time

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Prolonged heavy rain will likely cause some surface water flooding. There is an increased risk of landslides as a consequence of heavy rainfall in more mountainous areas (e.g. Mindoro). If the solutions that show a more coherent feature heading towards the Malay Peninsula prove accurate, the impacts listed above could affect some of Thailand's popular holiday resorts.

The following areas are currently being monitored for possible tropical cyclone development:

Gulf of Carpentaria and Coral Sea

Weather

There is a moderate to high likelihood of a tropical storm forming in either the Gulf of Carpentaria or Coral Sea during the early part of next week. Regardless of where the system develops it will be steered eastwards into the Coral Sea (potentially crossing Cape Yorke) and likely develop into a cyclone. This system is then signalled to potentially curve back south or south-westwards towards the Queensland coastline. Heavy rainfall is expected across the region with some locations likely to see well in excess of 500mm over the week.

Discussion

The monsoon trough has formed across this region with 2 distinct lows able to be identified within it. One of these is likely to deepen in the region over the weekend and with a continued signal for a tropical cyclone to form along it, the location of formation remains very uncertain. Presently the Coral Sea seems most likely to see a development later this weekend or early next week.

Expected Impacts

Heavier than usual monsoon rainfall across this region could bring some very localised flash flooding. With locally disruptive winds and sea states if a tropical storm or cyclone were to form. Although this region is sparsely populated, there are some populations centres such as Cairns.



Solomon Sea towards Fiji.

Weather

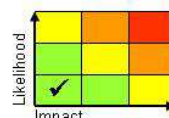
Within a broad zone of heavy showers and thunderstorms, there is a moderate likelihood of a tropical storm forming close to the Solomon Islands within the next 48 hours. If a storm develops, it would be steered southeastwards across Vanuatu Islands and towards Fiji. Even without development heavy rain and thunderstorm activity would affect this region.

Discussion

A low has developed on the monsoon trough close to the Solomon Islands, and through Saturday and Sunday conditions look moderately favourable for the development of a tropical depression or storm here. Any system would be steered southeastwards by the prevailing flow, where after crossing northern parts of Vanuatu it would become exposed to strong vertical wind shear (from the sub-tropical jet). This would likely cause slight weakening and extra tropical transition as the system loses symmetry early next week.

Expected Impacts

Heavier than usual monsoon rainfall across this region could bring some very localised flash flooding. With locally disruptive winds and sea states if a tropical storm or cyclone were to form.



Europe

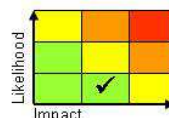
Levant, Turkey and northern Syria

Weather

Following rain and mountain snow that cleared the region yesterday, much colder conditions will follow with temperatures falling to between 5-10 °C below average across Turkey, Georgia and perhaps parts of northern Syria this weekend. A further spell of disturbed weather is likely from Sunday to Wednesday with the heaviest rainfall expected across the eastern Mediterranean coast of Syria and southern Turkey.

Discussion

A brief polar continental incursion allowing temperatures to fall widely below average. However, a succession of partially disrupting upper troughs over the weekend will bring another spell of unsettled weather through the first half of next week, although lower WBPT being drawn north will tend to limit precipitation totals. That said, many areas will already be sensitive to further precipitation due to previous events.



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Expected Impacts

Cold conditions becoming established across Turkey in particular could lead to widespread icy conditions and impacts to vulnerable people in the region. In addition, heavy rain is likely to cause surface water and localised river flooding, with an increased risk of landslides and avalanches in more mountainous areas.

North America

Southern Plains and southeast USA

Weather

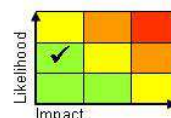
A spell of heavy rain is expected through Monday and Tuesday with some locations receiving 50-100 mm of rain. Consequently, taking into account the previous rainfall over the last few days, many locations are likely to receive the equivalent of a months' rainfall within a 6 day period.

Discussion

A major trough extension and partial disruption over the Four Corners regions will draw up another plume of higher WBPT air across the southeast USA early next week, following the significant winter storm that will cleared east overnight into Saturday. Whilst thunderstorm activity is possible with this system too, the combination of large CAPE and shear is not expected.

Expected Impacts

A wetting-up process from previous rainfall events has made an increasing number of catchments sensitive to further rainfall. This additional rainfall is likely to result in surface water and some river flooding, with impacts most likely across the Mid-Atlantic to southern Appalachians.



Central America and Caribbean

Nil significant.

South America

Central Brazil

Weather

The states of Gerais, Espirito Santo and Rio de Janeiro will see widespread heavy showers and thunderstorms through the next 5-6 days. Up to 300 mm of rain could accumulate during this time which would be more than a months' worth of rain during the rainy season.

Discussion

An upper trough has disrupted in this region, with the resultant vortex drifting north into this part of Brazil. The upper cold pool will sit above the monsoon WBPT plume, resulting in widespread, intense convection.

Expected Impacts

Flash flooding is likely, possibly impacting cities such as Bel Horizonte and Rio de Janeiro.



Northern Argentina and Uruguay

Weather

Frequent heavy showers and thunderstorms are expected to develop on Sunday and again through the next 5-6 days producing a combination of heavy, short-period rainfall, large hail, damaging wind gusts and a few tornadoes.

Discussion

Successive episodes of severe convection are expected as the seasonal warm plume is drawn south and engaged by shortwave upper troughs crossing South America. A combination of large CAPE (at times exceeding 4000 Jkg⁻¹) and vertical wind shear will support the development of persistent MCS and discrete supercells.

Expected Impacts



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Impacts will be fairly localised given the nature of showers, but flash flooding from heavy rainfall is likely, including around the capital city Buenos Aires. Additionally, large hail, frequent lightning and strong winds are likely to cause some damage to property and infrastructure, as well as pose a threat to life.

Africa

Southern Africa, including parts of Angola, Botswana and South Africa

Weather

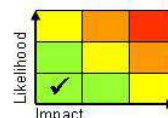
Heavy thunderstorms are expected across this region over the next week. These could locally bring 50-100mm of rainfall in a short period, with some locations potentially seeing over 200mm through the week. In addition to heavy rainfall, these will likely produce frequent lightning, strong downdraughts and large hailstones.

Discussion

A slow moving upper trough will overlay a zone of high WBPT air across the high landmass of southern Africa. Heating each day will allow the generation of severe thunderstorms, with the most severe likely to be from southeast Botswana across South Africa, here upper winds will support the generation of more long lived cells such as MCS.

Expected Impacts

The majority of the area highlighted is sparsely populated; however there are some large densely populated cities within it including Johannesburg. Impacts will be fairly localised given the nature of showers, but flash flooding from heavy rainfall is likely. Additionally, large hail, frequent lightning and strong winds are likely to cause some damage to property and infrastructure, as well as pose a threat to life.



Middle East

Syria and Levant – See *Europe* section.

Asia

Vietnam and northeast Philippines

Weather

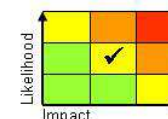
Enhanced shower and thunderstorm activity is expected in this region over the coming week, with the heaviest rainfall occurring in locations exposed to the prevailing northeasterly wind such as Vietnam and the northeast Philippines. Rainfall is expected to increase in association with a tropical depression (likely storm) in the South China Sea from Monday onward. Much of region highlighted will receive between 100-200mm over the next week, equivalent to around the average December monthly rainfall, with some locations receiving over 500mm, which equates to around a third of annual rainfall.

Discussion

The already strong E to NE'ly flow (cold surge) will be further enhanced by the likely tropical depression or storm that will cross the Philippines and move into the South China Sea over the next day or so. This will result in increased atmospheric moisture, and the production of a steady stream feed of heavy showers that will continually feed onto the coastlines of Vietnam and the northeastern Philippines.

Expected Impacts

Flash and alluvial flooding, will likely lead to damage to property, infrastructure and agricultural land, disruption to transport, and increased potential for landslides in more mountainous areas.



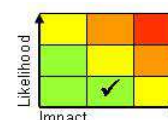
Parts of Indonesia, Timor-Leste, Papua New Guinea, Melanesia, through to Fiji.

Weather

Heavy showers and thunderstorms will bring above average rainfall to the region over the next week. Up to 100 mm could fall in any one location in a 24-hour period, but many places will also remain dry. 200-300 mm is likely to accumulate in some places by the end of this period, which is roughly a month's worth of rain.

Discussion

The presence of the MJO in phase 6 will continue to enhance convection significantly, with an increase in Equatorial Rossby Wave (ERW) activity. One or more tropical lows, described in the *Tropical Cyclone* section, may also act to organise shower and thunderstorm activity within this region.



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Expected Impacts

Flash flooding and enhanced risk of landslides are the most likely impacts.

Northern India, Pakistan, Nepal, Bhutan and Bangladesh

Weather

Below average temperatures are expected to persist across the region through the next week with minimum temperatures falling close to freezing in places. Patches of dense fog are also likely to develop which could be slow to clear during the morning.

Discussion

A cold front followed by a build of pressure across the region will result in a largely subsided airmass persisting with smoke and pollution becoming trapped within a relatively shallow boundary layer. A large diurnal range under clear skies will support some locally low minima, particularly in the north of the region.

Expected Impacts

Colder than average conditions and poor air quality may result in adverse health impacts for vulnerable populations exposed to these lower temperatures. Low visibility may result in delays for some rail and air transport in the region.



Australasia

Papua New Guinea, Solomon Sea, Fiji and northern Australia – see *Tropical Cyclone* and *Asia* sections.

Australia

Weather

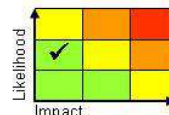
High temperatures have become established across a large part of the country. Temperatures have widely reached 8-12°C above average with daytime maxima reaching the high 40s °C in the interior and approaching 40°C in some of the more populous parts of the southeast. A cooling trend has begun along the south coast, and this area will expand northeastwards over the next few days. This will see temperatures returning to nearer normal, and certainly being less exceptional.

Discussion

Over the last week a slow-moving area of high pressure across the Tasman sea and a combination of subsidence producing adiabatic warming, strong insolation and warm advection, has lead to high temperatures across much of the country. Whilst all-time temperature records are unlikely to be broken, since January and February are typically hotter months, some December records may be broken. The progress of a cold front (and cloud cover ahead of it) will see temperatures across the southeast moderate over the coming days.

Expected Impacts

High temperatures will likely lead to heat health impacts among vulnerable populations. The high temperatures may also damage crops and lead to an increased risk of wildfires.



Additional information

On the 22nd December, a tsunami affected the coastline surrounding the Sunda Strait between Java and Sumatra. The weather in the region is characterised by scattered heavy showers and thunderstorms in association with the northeast monsoon. Showers and thunderstorms tend to form in the Strait overnight and through the early morning, and then inland (preferentially over mountainous areas) from around early afternoon. Much drier conditions have become established over the past couple of days, with below average rainfall forecast to continue through the next week.

Issued at: 290800 UTC **Meteorologist:** Nick Silkstone

Global Guidance Unit

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