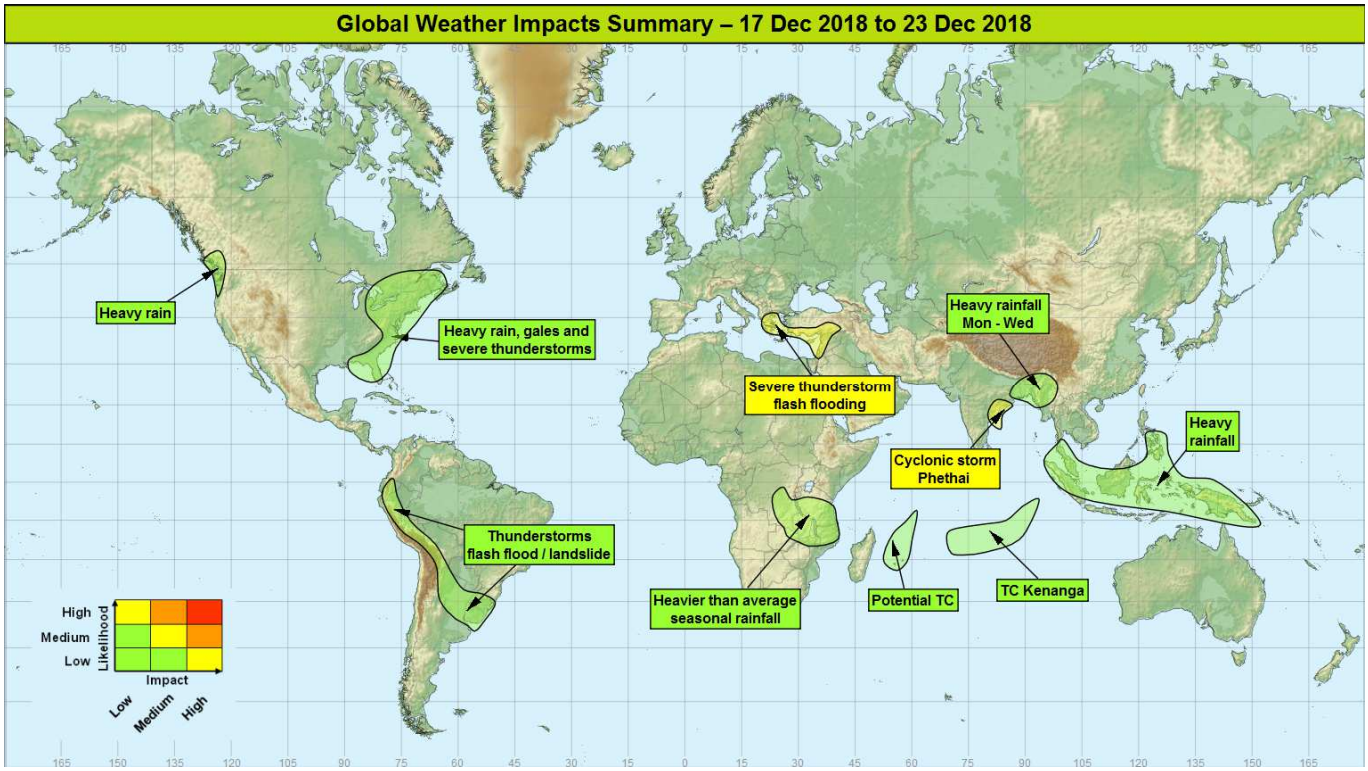
Daily Global Weather Impacts Assessment

Global Weather Impacts – Monday 17th December to Sunday 23rd December 2018

Issued on Monday 17th December 2018

HEADLINES

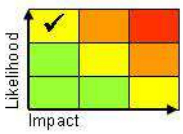
- Cyclonic storm Phethai bringing heavy rainfall to eastern India on Monday.
- Very unsettled in parts of southeastern Europe, western Levant and the eastern Mediterranean.



DISCUSSION

Tropical Cyclones

Cyclonic Storm Phethai (Bay of Bengal, eastern India)



Weather

Severe cyclonic storm Phethai was located 200 miles east-northeast of Chennai at 17/0300Z and was moving north at 15mph. Sustained winds are around 60mph with gusts to 70mph. Phethai is expected to make landfall this morning, though will likely have weakened to a cyclonic storm with sustained winds closer to 50mph, gusting to 60mph. Associated rainfall totals are likely to be in the 75-150mm range, with some coastal areas of Andhra Pradesh seeing more than 200mm. Whilst some significant impacts are likely this system is much weaker than Severe Tropical Cyclone Gaja which made landfall in southeast India earlier in the season.

Discussion

All main deterministic models indicate this system weakening before landfall due to the interaction of a low latitude upper trough moving in from the west. There is also some uncertainty about the exact landfall time and location for this late season system.

Expected Impacts

The most probable impacts are from heavy rain, bringing potentially unseasonable flash flooding.

This forecast may be amended at any time
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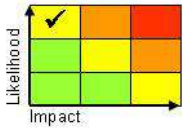
Moderate tropical storm Kenanga



Weather

Moderate tropical storm Kenanga is located near 11.9S 88.8E and is moving south-west at 12mph. Kenanga has sustained winds of 55mph, and is expected to strengthen somewhat over the coming days. However, the system is expected to stay well away from land throughout its life cycle.

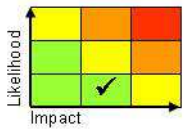
Discussion

The MJO moving through the region, along with a Rossby Wave couplet, led to the development of Kenanga over the weekend.

Expected Impacts

No significant impacts expected based on its current forecast track.

Potential Tropical Cyclone Southern Indian Ocean



Weather

There are increasing indications that a tropical cyclone will develop in the southern Indian Ocean through the next week. If a storm does develop, the current most likely track will be towards Mauritius and Reunion.

Discussion

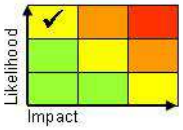
As the MJO moves from the Indian Ocean and into the Maritime Continent, conditions become more favourable for tropical cyclogenesis in the Southern Indian Ocean due to shedding of Equatorial Rossby Waves. Both deterministic and ensemble products suggest the potential for another tropical cyclone development during the next week.

Expected Impacts

Should a tropical storm develop, based on tracks signalled by numerical models, it would bring threat of heavy rain and potentially destructive winds.

Europe

Greece, southern Turkey, Cyprus and western Levant



Weather

Several spells of heavy showers and thunderstorms are expected to affect this part of southeastern Europe and into the Levant region through the next 5 to 7 days. As much as 250 mm of rain could accumulate during this time, especially in southern Turkey, with up to 100 mm of rain possible in 24 hours. Large hail and frequent lightning also possible. Greece is most likely to see this severe weather from Tuesday. Southern Turkey will see the most severe conditions until Wednesday or Thursday, with Cyprus most likely to be impacted from Monday or Tuesday, then into Levant coastal fringe from Wednesday.

Discussion

A succession of marked upper troughs will drive areas of severe convection eastwards across southeastern Europe, the eastern Mediterranean and the Levant region at times through the next week.

Expected Impacts

Flash flooding looks likely at times, with the possibility of crop damage from large hail and power disruption from frequent lightning.

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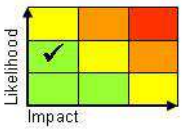
North America

Eastern, south-eastern United States and south-eastern Canada



Weather

By mid-week a rapidly deepening area of low pressure is expected to develop in the Gulf of Mexico, before pushing quickly northeast across much of the east and south-east of the United States, and, by the weekend, into south-eastern Canada. The will be followed by a plunge of Arctic air, which will sweep south across the Great Lakes and into New England through the end of the week. Widespread, heavy rain is likely, with many areas seeing 30-50mm of rainfall. Coastal areas of the Carolinas could see as much as 150mm from the storm. As cold air tucks into the rear of the system late in the week, parts of northern New England, Maine as well as southern Quebec could see temporary blizzard conditions. Gales or severe gales will also develop in association with the storm, whilst some severe thunderstorms are likely for the Gulf Coast.

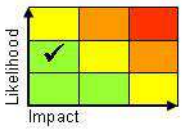
Discussion

A major synoptic-scale trough is signalled by all models to extend, then disrupt, across the southern Plains by mid-week. Strong forcing on the forward side is expected to phase in with WBPT in excess of 18˚C leading to marked cyclogenesis over Texas. The resulting low pressure is then signalled to deepen some 20hPa (bottoming out around 980hPa) in 36 hours as it is picked up by strong SSW'ly upper flow and steered NNE across the E of the US and into Canada.

Expected Impacts

Flash-flooding, disruption to travel as well as power supplies. For context, many places across the east of the United States, particularly in Virginia and the Carolinas, have already had the wettest year on record (Washington having reported 1558mm up to the end of last week).

Far southwest of Canada, and extreme northwest of United States



Weather

A succession of Pacific weather systems will see a further 200 to 350 mm of through the coming week, although much of this will be over high ground areas and locked up as snow. This is a fairly typical occurrence for this time of the year in this region, but further significant flooding is likely in Vancouver, where 100mm, half a month's worth of rain, could fall by the end of the week. As well as the rainfall, severe gales or storm force winds are expected to impact coastal regions at times, with very large waves likely.

Discussion

A number of frontal systems are expected to drive in from the Pacific, with a strong orographic modulation to precipitation. Despite this being a fairly usual occurrence here for the time of year, models do show anomalously high rainfall totals with respect to climate. Vancouver in particular, often close to the warm sector/triple points of the various systems may see especially heavy rain at times, but most of the heaviest precipitation will be locked up as snow over the western slopes of the Cascades and coastal mountain ranges as well as the high ground of Vancouver Island and across the Olympic Mountains.

Expected Impacts

Vancouver has already seen flooding impacts, with further flooding likely here. Very heavy mountain snowfall will increase the avalanche risk and will produce power and transport network impacts. Coastal flooding and wind damage is expected to be associated with each system.

Central America and Caribbean

Nil significant.

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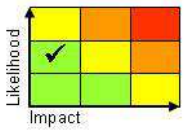
South America

Uruguay, northern Argentina, far south of Brazil, Bolivia, Peru and Ecuador



Weather

Severe thunderstorms are expected to affect parts of Uruguay, northern Argentina and southern Brazil from today (Monday) to Friday. Up to 150 mm of rain could fall in 24 hours with large hail, frequent lightning and tornadoes possible. Bolivia, Peru and Ecuador will see heavier than usual monsoon rainfall this coming week, resulting in up to 300 mm of rainfall in places which is over a month's worth of rain.

Discussion

An active pulse of the South Atlantic Convergence Zone (SACZ) will occur from Monday. As repeated plumes of tropical moisture are drawn south, organised and very deep, vigorous convection is likely to develop, particularly along the south of the plume. Significant CAPE and vertical wind shear is present on forecast profiles, offering potential for large hail, gusty winds, and the odd tornado or two. The pulses of the SACZ will feed north to enhance monsoon rainfall further north at times.

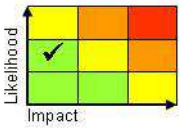
Expected Impacts

Flash flooding is likely, with an enhanced risk of landslides. Damage to infrastructure and property from large hail and lightning strikes also possible.

Africa

Reunion and Mauritius – see *Tropical Cyclones* section

Tanzania, northern Mozambique, Malawi, northern Zambia, southeast Democratic Republic of Congo



Weather

Heavier than usual seasonal rainfall is expected to accumulate through the coming week, with as much as 200 mm of rainfall likely in places. This would be close to the monthly average occurring in a week.

Discussion

There is a strong model signal for heavier than climatological rainfall falling across this part of Africa during the next week.

Expected Impacts

Enhanced likelihood of flash flooding and landslides compared to normal through the next week.

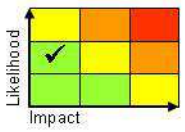
Middle East

Western Levant region – see *Europe* section

Asia

Eastern India – see *Tropical Cyclones* section

Northeast India, Bangladesh and northern Myanmar



Weather

Areas of heavy rain and showers will extend north across this region through today and Tuesday, before decaying towards midweek. This unseasonable heavy rainfall (up to 50-100 mm) could affect Cox's Bazaar in Bangladesh for a time. The average December rainfall in this region is no more than 15 mm.

Discussion

A warm plume associated with Cyclonic Storm Phethai will extend north across this region and will be engaged by an advancing low latitude upper trough moving in from the west to bring heavy rainfall to parts of northeast India, Bangladesh and Myanmar that are usually dry at this 'northeast monsoon' time of year.

Expected Impacts

The most probable impacts are from heavy rain, bringing potential unseasonable flash flooding.

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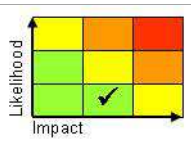

Much of Indonesia, southern and central Philippines, southern Thailand Malaysia, Singapore and Papua New Guinea

Weather

Enhanced heavy shower activity is likely to continue in this region through much of the next week, with some places seeing 100-150 mm of rain in a 24 hour period due to intense of frequent thunderstorm activity.

Discussion

The MJO will move through this region during the next week and will combine with other tropical waves to produce enhanced rainfall in parts of this region which will result in a higher than usual threat of significant flood and landslide impacts.

Expected Impacts

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

Australasia

Papua New Guinea – see *Asia* section

Additional information

Nil.

Issued at: 170810 UTC **Meteorologist:** Jason Kelly **Global Guidance Unit**

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