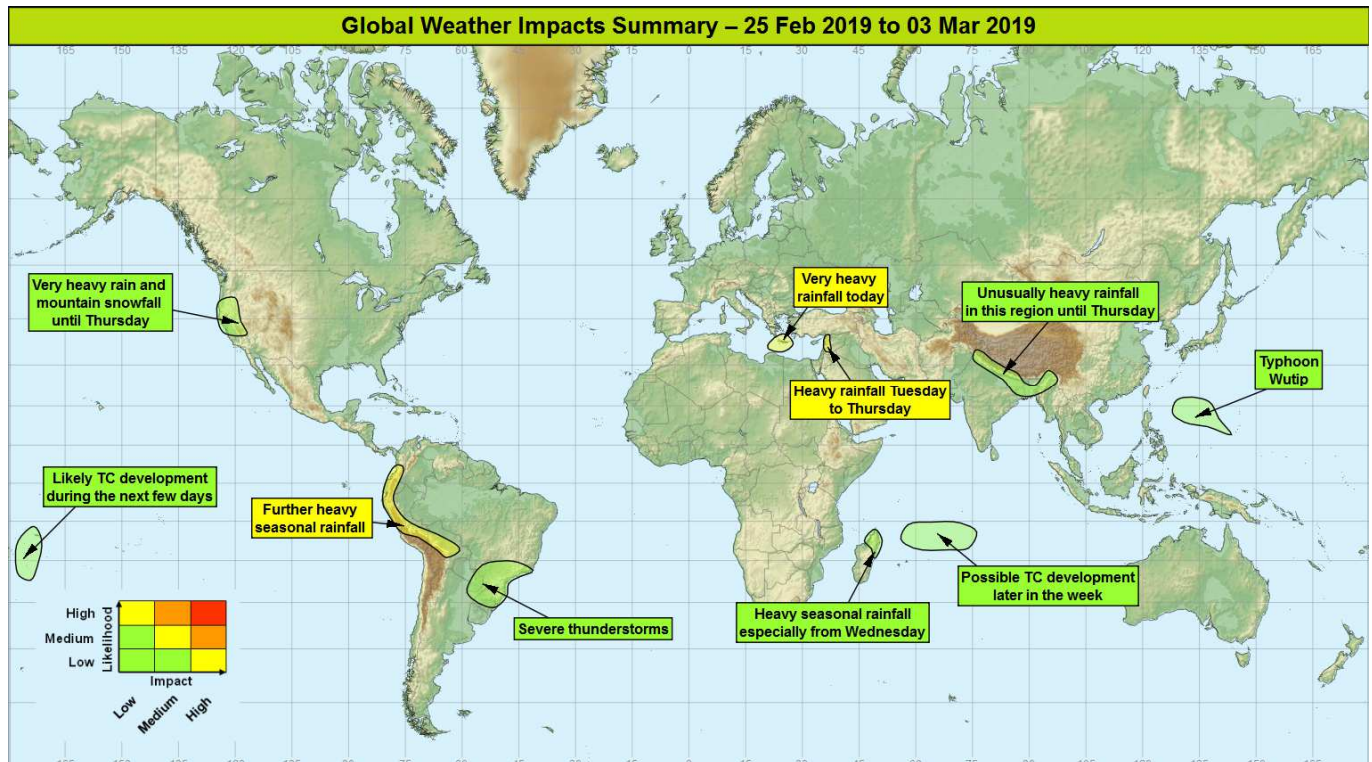


Global Weather Impacts – Monday 25th February to Sunday 3rd March 2019

Issued on Monday 25th February 2019

HEADLINES

- Heavy rain and thunderstorms continuing over Colombia, Ecuador, Peru and Bolivia with flooding likely.
- Significant flash flood threat to Crete today.
- Flash flood threat transferring east into the Levant coastline from Tuesday to Thursday.
- Unusually heavy rainfall for Nepal, northern India and Bangladesh until Thursday.



DISCUSSION

Tropical Cyclones

Typhoon Wutip (Northwest Pacific)

Weather

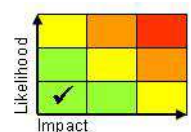
Typhoon Wutip is located near 13.6 degrees North 140.2 degrees East at 25/0300Z, and was moving slowly west-northwestwards. Sustained winds associated with Wutip were 115 mph, with gusts to 161 mph. During the next few days Wutip is expected to significantly weaken as it tracks slowly northwestwards across open water away from any land.

Discussion

There are reports that Typhoon Wutip could be the strongest ever February Typhoon. However, there is still good model agreement for this weakening evolution of Wutip during the 4 or 5 days. The loss of strength next week will be due to Wutip moving far enough north to encounter increased wind shear from the sub-tropical jet while also encountering slightly cooler water.

Expected Impacts

The forecast track of Wutip keeps it over open waters, with the only impacts for marine transport in the vicinity of the tropical system.



This forecast may be amended at any time

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The following area has potential for Tropical Cyclone development:

Southwest Pacific (Samoa and Tonga)

Weather

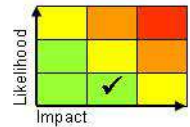
There is the potential for a tropical cyclone to develop close to Samoa through Monday, before tracking south across Tonga on Tuesday and Wednesday. Tropical Storm force winds are likely, along with up to 200 mm of rain in 24 hours across Tonga, which is very close to the average February rainfall.

Discussion

An equatorial Rossby wave could assist in the development of a tropical cyclone just west of Samoa today, with growing model support for this. All models do track a system south across Tonga through the next 2 or 3 days, but with uncertainty on the intensity of this system. RSMC Fiji has placed a moderate to high probability of a tropical cyclone development by Tuesday.

Expected Impacts

If this system develops, there is a threat of flash and coastal flooding along with potential modest wind damage.



Southwest Indian Ocean

Weather

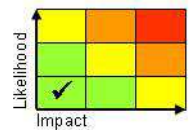
There is an increasing likelihood of a Tropical Cyclone development in the Southwest Indian Ocean later this week, but any development will remain away from land.

Discussion

The MJO will move into the Indian Ocean this week and will likely create Equatorial Rossby Waves that will transfer slowly westwards. It is likely that one of these waves will help develop a Tropical Cyclone later in the week, but there remains poor model agreement for details of any development at this stage.

Expected Impacts

Impacts will be restricted to maritime transport from very strong winds and high seas.



Europe

Crete

Weather

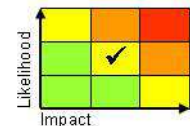
Very heavy rainfall is expected across Crete on Monday. Frequent, heavy showers and thunderstorms will produce up to 200 mm of rainfall, which compares to average February rainfall of 50-100 mm. The peak rainfall accumulations look most likely on the northern side of Crete, especially across western Crete. The rain will fall as snow above 1500 metres, resulting in unusually large amounts of mountain snowfall. In addition to the rain, there will be a threat of gales across the island, again especially in the west, and very rough seas around the Island.

Discussion

The central Mediterranean vortex will relax east across Crete through Monday. The upper forcing will engage a warm plume that has transferred north from eastern Libya, forming an occlusion that will be aligned west to east across Crete. Forecast profiles show skinny CAPE deep convection that could result in persistent heavy showers across Crete. Strong to gale northerly winds could also enhance rainfall through additional uplift across the northern slopes of the Crete mountains. EFAS output shows 20-year return period flash flooding and extreme runoff accumulations.

Expected Impacts

Significant threat of flash and river flooding, with an increased likelihood of landslides.

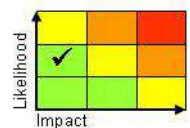


North America

Southern Oregon and northern California

Weather

This region of the Pacific West will see several spells of very wet weather through to the middle of the week. This could result in up to 400 mm of rain accumulating, which is three times the average February rainfall. The rain will fall as snow on higher ground, increasing the snow pack across the Sierra Nevada.



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Discussion

A strong south-shifted Pacific jet stream will feed in a constant stream of Pacific moisture (known as the 'Pineapple Express'), resulting in a series of frontal systems impacting this part of the Pacific coastline that has seen very heavy rainfall (mountain snowfall) in recent months. The snowfall could descend as low as 800 metres above sea level initially, but the snow level will gradually rise through the next few days to 1500-2000 metres. There are still model differences regarding the position and persistence of frontal activity in this region.

Expected Impacts

Flash, and an increasing likelihood of river, flooding. Increased likelihood of landslides. Increasing avalanche threat in the Sierra Nevada.

Central America and Caribbean

Nil significant.

South America

Northern Andes region (Southern Colombia, Ecuador, Peru and Bolivia)

Weather

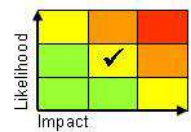
Frequent heavy showers and thunderstorms are expected to continue across the northern Andes region through much of the next week, extending into parts of Peru and Bolivia east of the Andes. Up to 100 mm of rain is possible each day in isolated locations (falling within the space of a few hours) with some places seeing a further 300-400 mm of rain over the next week, which would be slightly higher than the monthly average, coming on top of heavy seasonal rains through the last few months.

Discussion

On Thursday 14th February, NOAA declared weak El Niño conditions in the Pacific (although the Australian Bureau of Meteorology maintains ENSO neutral conditions). Along the South American Pacific coastline north of NE Peru there are positive SST anomalies (as often seen on El Niño events), and these indicate a weakening of trade winds and the Humboldt Current in this region. This setup allows sea breezes to draw moist oceanic air to the usually dry western Andes, with an unusually high frequency of heavy showers and thunderstorms occurring here. There is also likely to be an input from the South Atlantic Convergence Zone as it moves north from Argentina.

Expected Impacts

Further flash flooding and landslides are a significant threat in the mountainous areas, even for places downstream of the mountains (where it may have been dry) as rainfall draining off the mountains causes usually dry rivers to rapidly rise and fall. Parts of Peru and Bolivia to the east of the Andes appear to have been badly affected so far, with a state of emergency declared in a number of provinces. Information on further impacts from the ongoing storms has been difficult to come by in recent days. Therefore, we continue to assess this event as yellow (medium likelihood of a medium impact event).



Southeast Brazil, eastern Paraguay and the far northeast of Argentina

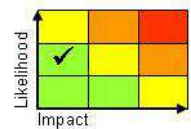
Weather

An area of severe thunderstorms is expected to continue transferring northwards over the 4 or 5 days. Rainfall totals in isolated locations may reach 75-150 mm, with much of this falling in a short period of time; in addition other hazards associated with severe thunderstorms will be present.

Discussion

A southward extrusion of the monsoon plume across this region will continue to be engaged by an upper trough in the sub-tropical jet stream, resulting in a South Atlantic Convergence Zone event, producing an active band of severe thunderstorms moving northwards across this region.

Expected Impacts



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Potential for flash flooding. In addition large hail, frequent lightning, strong, gusty winds and the odd tornado may bring significant but highly localised impacts. Early next week the severe thunderstorms could reach some of the more populated and mountainous cities along Brazil's Atlantic coastline (such as Sao Paulo and Rio de Janeiro), with landslides will become an increased threat.

Africa

Northeastern Madagascar

Weather

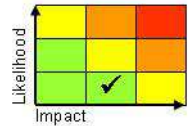
Heavy showers and thunderstorms are expected to affect northeastern parts of Madagascar through the next week, especially on Wednesday and Thursday. Up to 400 mm of rain could fall, with much of this perhaps falling in a few days, which close to the average February rainfall.

Discussion

The influence of a convectively coupled equatorial Rossby wave and the advancing MJO will produce an enhanced threat of heavy seasonal rainfall in northeastern Madagascar through the week. The rainy season has been weak so far, so this rainfall could be welcome to the agriculture industry.

Expected Impacts

Increasing threat of flash flooding and landslides through the week.



Middle East

Lebanon and western Syria

Weather

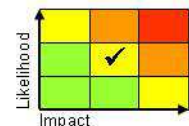
Through Tuesday, Wednesday and Thursday heavy showers and thunderstorms will affect Lebanon and the west of Syria. Up to 50 mm of rain could fall in a 6-12 hour period, with an isolated event total of up to 150 mm possible. This compares to a February average rainfall of around 120 mm. The rain will fall as snow on the mountains. Strong winds will pose a threat of dense lifted dust storms across Syria and Iraq.

Discussion

An upper trough will sweep east across the region, destabilising the boundary layer to produce deep convection. An upper ridge will follow to bring a more benign spell of weather. WBFL will lower from 2200 metres to 1500 metres through this period, which will allow heavy snowfall to affect land above 2000 metres initially, but eventually down to 1300 metres.

Expected Impacts

Flash flooding and mountain snow impacts are likely to disrupt land transport and life in the region.



Asia

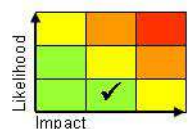
Northwest Pacific – See *Tropical Cyclones* section.

Northern India, Nepal and Bangladesh

Weather

Heavy showers and thunderstorms (falling as snow above 2300 metres) will run east across northern India and Nepal between Monday and Thursday. Up to 150 mm of rainfall could fall in places, with up to 100-150 cm of snow over the mountains. Across Bangladesh and northeast India unusually heavy rainfall is expected during this period, producing up to 50-100 mm of rain in a few hours, along with a threat of frequent lightning. Late February is usually still the dry season with an average February rainfall of around 20 mm, but heavy populated cities like Dhaka (and possibly Kolkata) could see 5 to 10 times the average monthly rainfall in just 4 days this week.

Discussion



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A sharp upper trough in the subtropical jet will engage a resident high wet bulb potential temperature plume, leading to mass ascent, with strong orographic enhancement of the precipitation taking place as deep southwesterly flow runs into the Himalayas. Across Bangladesh a low level warm, moist southerly flow will combine with the strong upper level westerlies to produce unusually deep convection for the time of year. CAPE may not be high enough to develop supercell storms with large hail and tornadoes, but intense rainfall is expected.

Expected Impacts

Flash flooding will be a significant threat in the region, with heavy snowfall over the mountains severely disrupting travel across high mountain passes, and increasing the likelihood of avalanches. There is also a low likelihood of large hail and tornado damage in parts of Bangladesh and northeast India, although flooding looks like the most likely impact.

Australasia

Samoa and Tonga – See *Tropical Cyclones* section.

Additional information

Nil.

Issued at: 250800 UTC **Meteorologist:** Paul Hutcheon

Global Guidance Unit

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