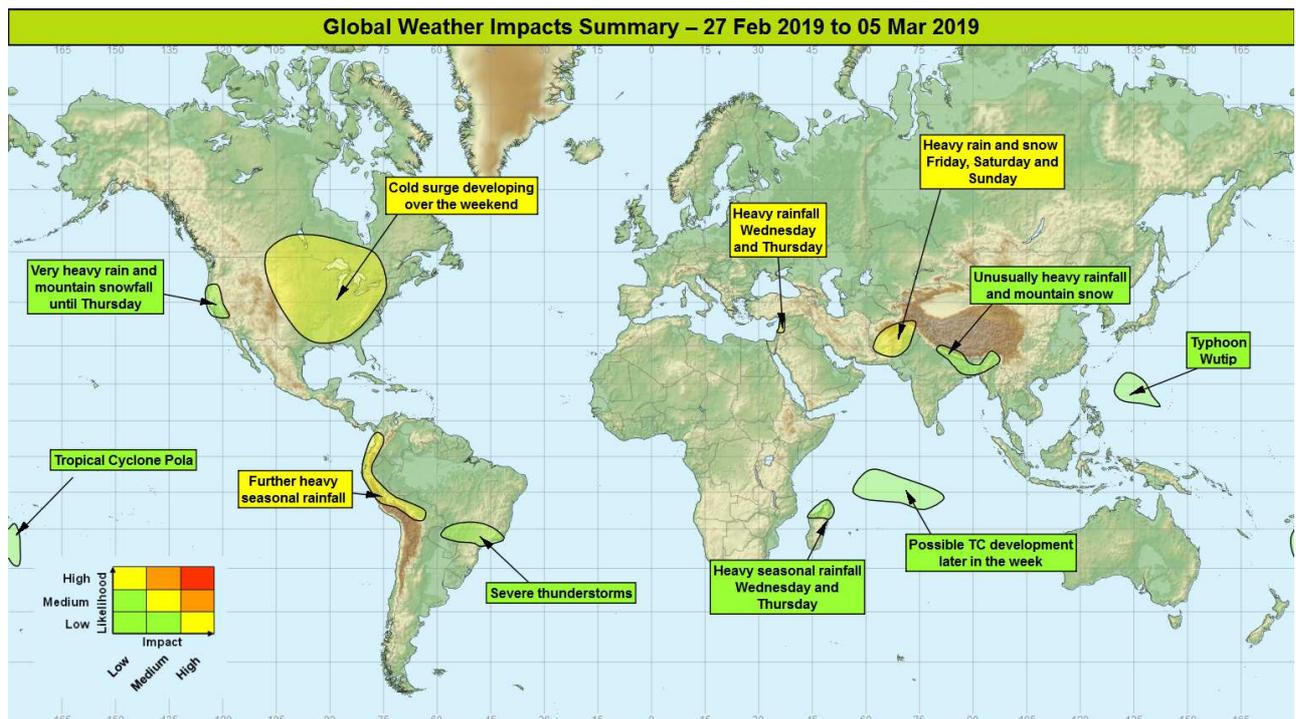


Global Weather Impacts – Wednesday 27th February to Tuesday 5th March 2019

Issued on Wednesday 27th February 2019

HEADLINES

- Unusually heavy rainfall for Nepal, northern India and Bangladesh on Wednesday and Thursday with a risk of large hail and tornadoes.
- Heavy rainfall causing major flooding in parts of Peru, Colombia and Bolivia.
- Heavy rain and major snowfall likely across Pakistan and Afghanistan at the end of the week.



DISCUSSION

Tropical Cyclones

Typhoon Wutip (Northwest Pacific)

Weather

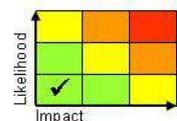
Typhoon Wutip was located near 16.0 degrees North 139.9 degrees East at 27/0345Z, and was moving slowly north. Sustained winds associated with Wutip were 106 mph, with gusts to 150 mph. During the next few days Wutip is expected to significantly weaken as it tracks slowly westwards across open water away from any land.

Discussion

There are reports that Typhoon Wutip was the strongest ever February Typhoon. However, there is still good model agreement for this weakening evolution of Wutip during the 3-4 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.



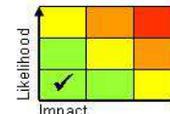
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Tropical Cyclone Pola (Southwest Pacific)

Weather

Tropical Cyclone Pola formed during Tuesday and is currently around 450km east of Suva, Fiji moving steadily south-southwest between Fiji and Tonga staying over open water.



Discussion

An area of deep convection associated with an equatorial Rossby wave became organised into a tropical cyclone during Tuesday to the east of Fiji. Models are consistent in their southerly track over the next few days with some models showing the potential for slight intensification. RSMC Fiji maintains Pola as a category 2 cyclone for the next few days with little overall change in intensity.

Expected Impacts

Pola is expected to stay over open water. The main threat will come from large waves over parts of the south and east coasts of Fiji and western Tonga.

Southwest Indian Ocean

Weather

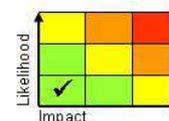
There is an increasing likelihood of a tropical cyclone development in the Southwest Indian Ocean over the weekend, but any development will remain away from land.

Discussion

The MJO will move across 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

Nil significant.

North America

Southern Oregon and northern California

Weather

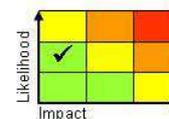
This region of the Pacific West will see several spells of very wet weather through to Thursday. This could result in 200-300 mm of rain accumulating, which is three times the average February rainfall. The rain will fall as snow on higher ground, increasing the snow pack across the Sierra Nevada.

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, in association with a marked 1000-500hPa thickness cold pool, 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.

Expected Impacts

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



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Eastern Canada, central & eastern USA

Weather

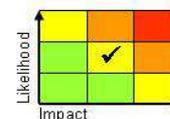
Over the weekend and early next week an intense plunge of cold air will move south across much of the eastern half of North America. Temperatures will be widely 10-15C below average with the cold air reaching as far as the Gulf of Mexico. This will be accompanied by snow and strong winds in the north, with the potential for large lake-effect snow accumulations around the Great Lakes.

Discussion

A deep area of low pressure will be steered NE along the eastern seaboard by a strong jet stream. In its wake, cold air will be drawn south from the Canadian Arctic to affect large parts of eastern North America.

Expected Impacts

The extreme cold will have health impacts across the region and is likely to lead to some travel disruption. In addition, lake-effect snow, ice and ice-accretion may lead to some very localised severe disruption.



Central America and Caribbean

Nil significant.

South America

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

Weather

Heavy showers and thunderstorms are expected across parts of the northern Andes region through this period, 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

Along the Pacific coastline north of NE Peru there are positive SST anomalies, 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 American monsoon and South Atlantic Convergence Zone as it moves north from Argentina.

Expected Impacts

Flash flooding and landslides are a threat in the mountainous areas, with a risk of downstream river flooding. Parts of Peru, Colombia 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 areas.



Southeast Brazil and eastern Paraguay

Weather

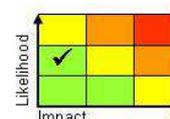
An area of severe thunderstorms is expected to continue transferring northwards over the next 2 or 3 days. Rainfall totals in isolated locations may reach 75-150 mm, with much of this falling in a short period of time; in addition other hazards associated with severe thunderstorms will be present.

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

Potential for flash flooding. In addition large hail, frequent lightning, strong, gusty winds and the odd tornado may bring significant but highly localised impacts.



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Africa

Northeastern Madagascar

Weather

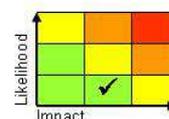
Heavy showers and thunderstorms are expected to affect northeastern parts of Madagascar on Wednesday and Thursday. Up to 200 mm of rain could fall, with much of this perhaps falling in a few hours each day.

Discussion

The influence of a convectively coupled equatorial Rossby wave and the progression of the MJO will produce an enhanced threat of heavy seasonal rainfall in northeastern Madagascar through the rest of this 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

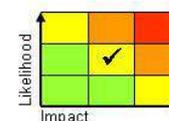
Heavy showers and thunderstorms will affect Lebanon and the west of Syria on Wednesday and Thursday. Up to 50 mm of rain could fall in a 6-12 hour period, with an isolated event total of up to 150 mm possible. This compares to a February average rainfall of around 120 mm. The rain will fall as snow on the mountains. In addition, 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.

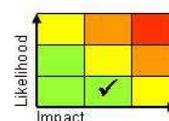
Northern India, Nepal and Bangladesh

Weather

Heavy showers and thunderstorms (falling as snow above 2300 metres) will run east across northern India and Nepal over the next 2 days. Up to 100 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, large hail and perhaps tornadoes. 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

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.



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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.

Afghanistan and Pakistan**Weather**

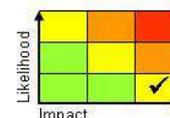
A period of heavy rain and snowfall will affect large parts of Pakistan and Afghanistan on Friday and Saturday before clearing eastwards on Sunday. Some places are likely to see up to 200mm of rainfall or up to 2m of snowfall with highest accumulations likely near the central Afghanistan-Pakistan border (mainly southwest of Kabul) and the far NE of Pakistan.

Discussion

A marked upper trough will cross the area on Friday and Saturday pushing a deep low pressure system eastwards across Pakistan and Afghanistan, and producing copious amounts of precipitation.

Expected Impacts

This has the potential to produce severe disruption from snowfall across mountainous areas, perhaps closing mountain passes. Previous heavy snowfall events have led to the collapse of buildings through weight of snow in these regions and this is certainly possible during this event. In addition, there will be a risk of avalanche, while at low levels some flooding is likely. For now the worst conditions are expected over relatively sparsely populated regions, but if this shifts to major population centres we are likely to escalate to amber on the impact matrix.

**Australasia**

Samoa and Tonga – See *Tropical Cyclones* section.

Additional information

Nil.

Issued at: 270800 UTC **Meteorologist:** Neil Armstrong

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