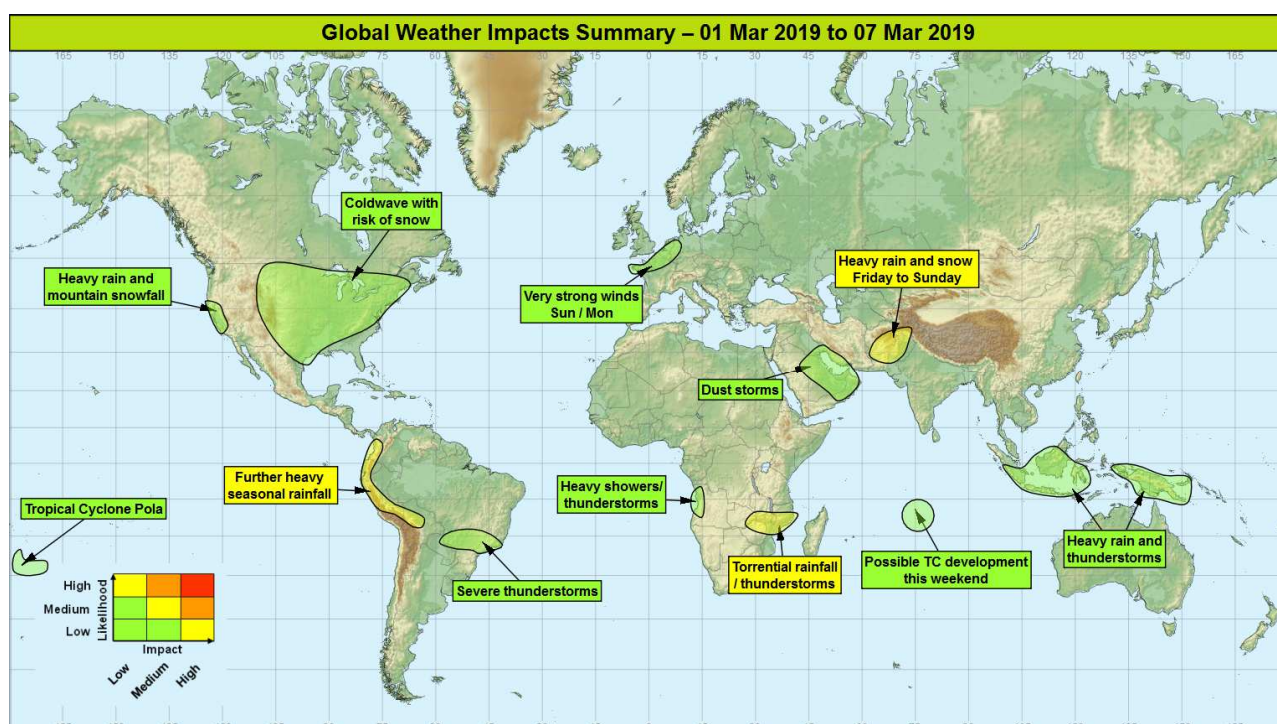


Global Weather Impacts – Friday 1st March to Thursday 7th March 2019

Issued on Friday 1st March 2019

Headlines

- Heavy rainfall causing major flooding in parts of Peru, Colombia and Bolivia.
- Heavy rain and major snowfall likely affecting Afghanistan, northern Pakistan and North-western India through the next few days.
- Very heavy rainfall likely to affect parts of south-eastern Africa.



DISCUSSION

Tropical Cyclones

Severe Tropical Cyclone Pola (Southwest Pacific)

Weather

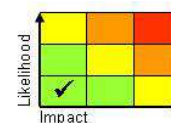
Pola remained a potent cyclone through Thursday as it continued to move south over the open waters of the south pacific Ocean. Pola is expected to make an eastward turn today which will take the cyclone into an increasingly hostile environment. No interaction with land is expected before Pola undergoes extra-tropical transition.

Discussion

Pola is presently in a favourable environment, however increasingly it will encounter vertical wind shear and cooler sea surfaces through Friday. An approaching trough will erode the sub tropical ridge forcing Pola to make an eastward turn. This trough and associated baroclinic zone will eventually absorb Pola, with extra-tropical transition expected this weekend.

Expected Impacts

Pola is expected to stay over open water with no impacts to land.



This forecast may be amended at any time

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The following areas are being monitored for possible development:

Indian Ocean

Weather

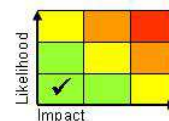
There is a high likelihood of a tropical cyclone developing in the central Indian Ocean over the weekend, but any development will remain away from land.

Discussion

The MJO continues to move across the Indian Ocean, shedding equatorial Rossby waves that will transfer slowly westwards. An area of enhanced convection in the central Indian Ocean look likely to undergo development, enhanced by the aforementioned Rossby waves, with now good model agreement for the development of a tropical system in the central Indian Ocean over the weekend.

Expected Impacts

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



Europe

Northern France, NW Germany and The Low Countries

Weather

A spell of very strong winds is likely to extend east across this region of the near continent on Sunday night into Monday. Gusts of wind 50 to 60 mph seem possible for a time.

Discussion

A strong trans Atlantic jet interacting with a baroclinic zone will lead to the development of vigorous low pressure systems which are likely to run quickly east. As always there is some uncertainty as to the track, depth and location of these features, and so the location and strength of the strongest winds. However a period of very windy weather does seem likely across this region of the near continent.

Expected Impacts

Some disruption to travel is likely, including aviation and marine. Risk of some disruption to power supplies.



North America

California

Weather

A prolonged period of extremely heavy rainfall has affected California in recent weeks, leading to severe flooding and mandatory evacuations in some places, with some communities only accessible by boat. Venado recorded 520 mm of rainfall in 48 hours up to midday Wednesday UK time, while Whiskeytown Lake saw almost 600 mm fall in 72 hours. After a couple of days respite, a further area of low pressure moving in from the Pacific will bring more very heavy rainfall (and mountain snowfall) this weekend. This could produce a further 50 to 100 mm of rainfall, with up to 150 mm falling on the western side of Sierra Nevada. A further period of wet weather looks possible late in the forecast period.

Discussion

A strong south-shifted Pacific jet stream has fed 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. There are signs of a shift in the pattern later next week, with lows taking a more usual track further north.

Expected Impacts

River flooding is ongoing, although levels may have peaked in some areas after reaching the highest levels seen for 25 years. Further flash and river flooding is possible this weekend. Increased likelihood of landslides. Increasing avalanche threat in the Sierra Nevada.



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Eastern Canada, central & eastern USA

Weather

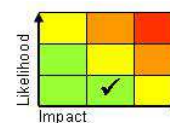
Over the weekend and early next week an intense plunge of cold air will move south across much of the eastern half of North America. Temperatures will be widely 10-15 °C below average with the cold air reaching as far as the Gulf of Mexico. Areas of low pressure forming over the southern USA are expected to track close to the eastern coast on Saturday, then again early next week, bringing a threat of significant snowfall to the major cities of the eastern USA.

Discussion

Areas 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 central and eastern North America. There is the potential for a nor'easter-type development to impact the eastern seaboard early next week, although models still show some uncertainty in the track and shape of this feature at this time.

Expected Impacts

The extreme cold could impact vulnerable populations, especially in more southern areas which are less used to such conditions. Risk of significant disruption to travel and power supplies.



Central America and Caribbean

Nil significant.

South America

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

Weather

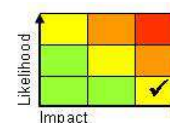
Heavy showers and thunderstorms are expected to continue across parts of the northern Andes region through this period, extending into parts of Peru and Bolivia east of the Andes. Up to 100 mm of rain is possible each day in isolated locations (falling within the space of a few hours) with some places seeing a further 200-400 mm of rain over the next week, which would be slightly higher than the monthly average. The most recent flood impacts have been reported from Peru where homes and bridges have been destroyed and many thousands of people impacted.

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 remain an ongoing 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. The most recent flood impacts have been reported from Peru where homes and bridges have been destroyed and many thousands of people impacted.



Southeast Brazil and eastern Paraguay

Weather

An area of severe thunderstorms is expected to continue transferring northwards over the weekend. Rainfall totals in isolated locations may reach 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.



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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.

Africa**Northern Mozambique, southern Malawi, northern Zimbabwe and eastern Zambia****Weather**

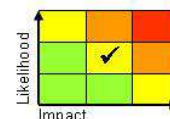
There is a risk of heavy rainfall spreading west to affect parts of Mozambique, Malawi, Zimbabwe and Zambia over the weekend into early next week. A small but potent tropical low looks likely to track west into the region, bringing severe thunderstorms and locally torrential rainfall. It's possible that some locations may see 300-500 mm of rainfall over a few days, which represents 1 to 1 ½ months worth of average rainfall.

Discussion

Progression of the MJO through the Indian Ocean favours enhanced rainfall in this region. The rainy season has been weak so far, so this rainfall could be welcome to the agriculture industry. GM develops a small tropical low west of Madagascar which then moves west to produce some very heavy rainfall across the region. This solution now has support from EC leading to increased confidence.

Expected Impacts

Risk of severe flash and river flooding. Although large parts of the region are thinly populated, impacts to major cities are possible such as transport disruption and disruption to power supplies.

**Western Angola****Weather**

Enhanced thunderstorm activity is also likely to affect parts of western Angola through into this weekend. These could produce 50 to 100 mm of rainfall in a short period, which is close to the monthly average.

Discussion

An upper trough to the south may be responsible for the enhanced convection in the region. The eastward progressing MJO usually favours suppressed activity, and a decrease is evident later this weekend.

Expected Impacts

Further flash and river flood impacts are possible. In recent days many thousands have been affected in Malanje province, with four people killed in the capital Luanda.

**Middle East****Persian Gulf and surrounding region.****Weather**

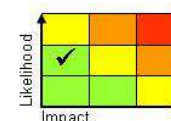
A surge of very strong NW winds is expected to surge through this region today. These winds, known locally as The Shamal, are likely to generate large dust storms which will affect many of the major cities and transport hubs of the region. Conditions should ease through Saturday.

Discussion

An upper trough will drive a cold surge across the region with strong to gale force winds SE. These winds have already generated lifted dust across Jordan and southern Syria, and this will be drawn across the region.

Expected Impacts

Impacts to travel to and through the region, especially aviation. Possible impacts to vulnerable population groups.



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Asia

Afghanistan, northern Pakistan and northwest India

Weather

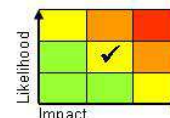
A period of rain and snowfall will affect large parts of Pakistan, particularly the north, Afghanistan and heavy northwest India on Friday and Saturday before clearing eastwards on Sunday. Some places are likely to see up to 200mm of rainfall or up to 2m of snowfall with highest accumulations likely near the central Afghanistan-Pakistan border (mainly southwest of Kabul) and the far NE of Pakistan. For some parts of the region this represents around 4 to 5 times their normal monthly rainfall.

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 significant 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 and mountainous regions.



Indonesia, Malaysia and Papua New Guinea

Weather

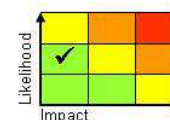
Above average rainfall is expected across the interior of many Maritime Continent islands through the next week. Whilst downpours are expected to be rather localised, they are likely to develop in a similar place each day with 100-150 mm of rain possible falling in 24 hours with some places likely to receive around 400 mm over the next week. In a typical 7-day period, this region normally receives around 50-100 mm.

Discussion

Despite the MJO phase not being supportive of widespread convection and enhanced rainfall across the region, this allows diurnal convection driven by the land-sea breeze cycle to become dominant. Since this is a cyclical process, convection is likely to develop over similar areas each day particularly along the central spine of narrow islands such as Java and East Britain.

Expected Impacts

An increased likelihood of flash flooding leading to localised damage to infrastructure and property, including major cities such as Jakarta.



Australasia

Papua New Guinea – See *Asia* section.

Additional information

Nil.

Issued at: 010815 UTC **Meteorologist:** Mark Sidaway

Global Guidance Unit

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