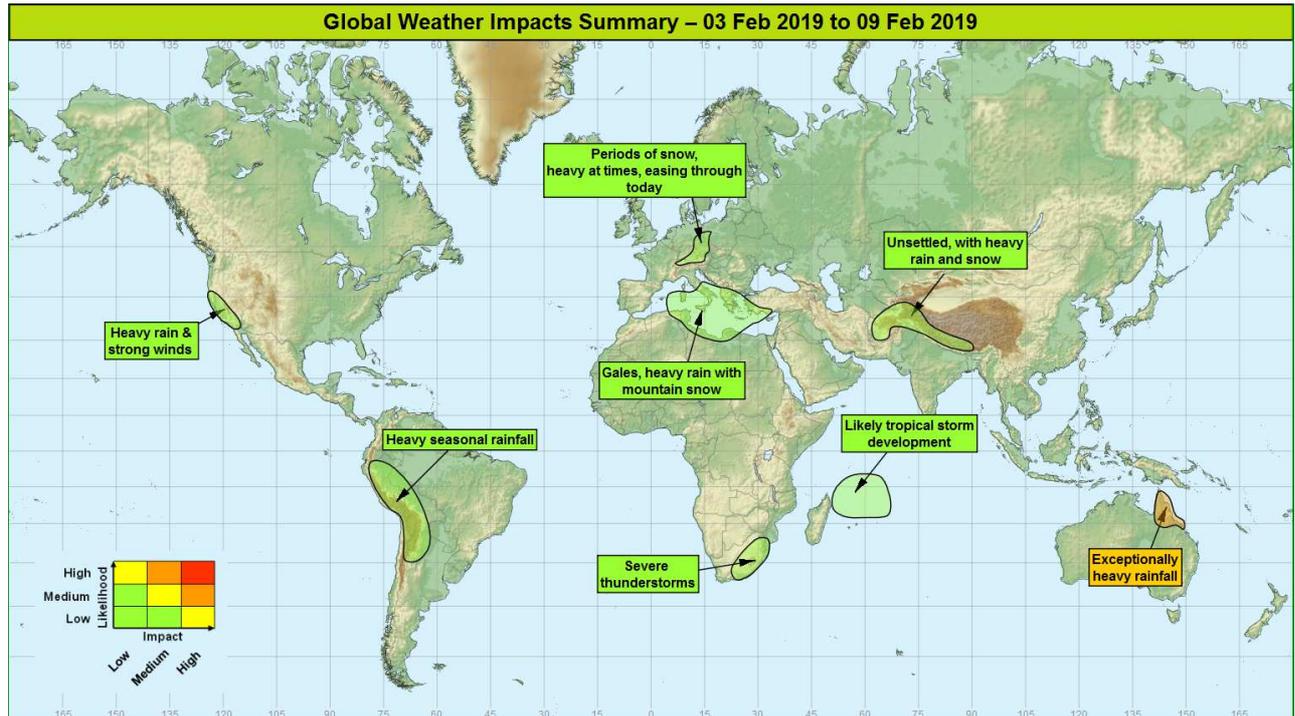


Global Weather Impacts – Sunday 03rd to Saturday 08th February 2019

Issued on Sunday 03rd February 2019

HEADLINES

- Exceptional, perhaps unprecedented, amounts of heavy monsoon rainfall over north-eastern Australia.
- Further widely unsettled weather for the Mediterranean and adjacent countries.
- Heavy rain and mountain snow across California easing through the next few days.



DISCUSSION

Tropical Cyclones

There are currently no active tropical cyclones.

The following region is being monitored for potential tropical cyclone development:

South-western Indian Ocean

Weather

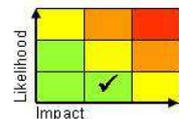
There is a high chance of tropical storm development in the south-west Indian Ocean by the end of the coming week. There is uncertainty as to whether one, or two, systems will develop.

Discussion

The southern portion of a Rossby Wave couplet which was spawned by the passage of the MJO last week is signalled to interact with enhanced convection in the area, resulting in one, or perhaps two tropical storms. Whilst deterministic and EPS model spread is quite large with respect to timing and location of any developments, they do offer some commonality in that none signal a major landfall of any system during this time period.

Expected Impacts

Main impact will be on maritime activities as landfall is not currently anticipated.



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Europe

Much of southern Europe and the Mediterranean, along with northern parts of Morocco, Algeria, Tunisia and Libya

Weather

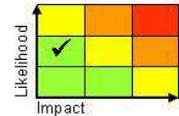
Remaining very unsettled during the coming week, initially across the west, then later for central and eastern parts. Periods of heavy rain and thunderstorms will affect much of this region. Through the next week many locations could see 50-100 mm of rainfall. Peak event totals are likely to be over the mountainous parts of the Peloponnese (Greece), with some 150-200mm possible here. At higher elevations heavy snow is likely, mainly above 1000 M. Very strong winds will also be seen across large parts of this region, with gales and very rough seas likely. The winds will be strong enough across parts of North Africa to lift dense dust storms that could extend north into southern Europe at times.

Discussion

The major upper trough extension currently undergoing disruption over Sardinia and Corsica is expected to complete its disruption later today. The resultant surface and upper vortex will then be the main driver for very disturbed weather through the next five days. Both systems will come erratically east, with some improvement in conditions across the west of the area into early next week. Various shear vorticity lobes are signalled to come S into the upper vortex, renewing it and maintaining its activity well into next week.

Expected Impacts

Flash and river flooding are significant threats in this region, with an enhanced likelihood of landslides in areas where the terrain is steep. Dangerous marine conditions are expected, with large waves and the possibility of coastal flooding. Heavy snowfall chiefly over the region's mountains. Lifted dust storms may impact on aviation and air quality across North Africa and southern Europe.



Central Europe

Weather

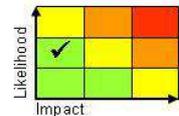
Periods of snow, heavy at times, will affect the region through the rest of today. Some 5-10cm of snow is likely, locally 15-20cm, especially over higher ground of southern Germany, Switzerland and Austria.

Discussion

An area of low pressure will push north-east across eastern Europe through today. On its western flank strong cold advection will ensure precipitation falls as snow, this heavy at times and blowing around in strong and gusty northerly winds.

Expected Impacts

Disruption to some of the major airports in the area is likely, as well as impacts on other transport and power infrastructure.



North America

California

Weather

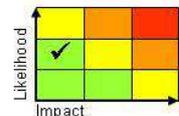
Heavy rain, with snow on the Sierra Nevada mountains, is expected to affect much of California through Sunday, including Los Angeles, before conditions ease into early next week. As much as 100 to 150 mm of rain could fall near the coast, with peak rainfall of 350 mm in the mountains (accumulating as snow at above 1500 M). Gales will continue near coastal California, as well as over the Sierras (where blizzards are likely) though today, easing into early next week.

Discussion

A slow-moving winter storm, just off the coast of California, has pushed several very active frontal systems east across the area. As fronts continue inland, they will weaken somewhat, but further pulses of heavy, showery rain (and mountain snow) are likely into the early part of next week.

Expected Impacts

Flash-flooding brought disruption to Los Angeles on Saturday, and further flash-flooding is likely during the next few days, mainly due to antecedent conditions. Snowfall over the Sierra Nevada mountains may disrupt travel on high passes and will enhance the risk of avalanches here.



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Central America and Caribbean

Nil significant.

South America**Peru, Bolivia, northern Chile, Ecuador, northwest Argentina and western Brazil****Weather**

Frequent heavy showers and thunderstorms will affect this area through the coming week, resulting in heavy seasonal rainfall. Up to 100 mm of rain is possible in 24 hours, with a weekly peak total of up to 600 mm (around three times the monthly average).

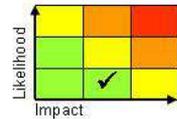
There is the potential for significant water to run towards the Pacific through the desert regions of north-western Chile and south-western Peru. Across northern Argentina, severe thunderstorms are likely, bringing short period torrential downpours, large hail and gusty winds and the risk of tornadoes. Conditions here should become much more settled from Tuesday.

Discussion

A north-shifted SACZ, as well as a south-shifted ITCZ are expected to combine for the next week or so, leading to periods of intense showers and thunderstorms across the region. Sea breezes will lead to convergence, whilst a couple of short-wave UTs cross N Argentina early in the period, all combining to generate a very unstable atmosphere.

Expected Impacts

Flash flooding and landslides are a significant threat in the mountainous areas. Flash flooding also possible if thunderstorms impact urban areas. Disruption to aviation, as well as large hail, gusty winds and tornadoes. Across the desert regions the unusually high level of rainfall runoff may bring severe flooding in the usually dry alluvial plains that many people live and farm along.

**Africa**

Northern parts of Morocco, Algeria, Tunisia and Libya – See *Europe* section.

Madagascar, La Reunion and Mauritius – See *Tropical Storms* section.

Central and eastern South Africa, Lesotho, Swaziland and southwest Mozambique**Weather**

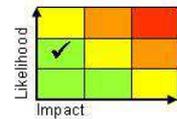
Severe thunderstorms are expected to affect this region until Tuesday, with the peak activity tending to migrate northeast with time. These storms will produce intense rainfall, with up to 75-100 mm of rain falling in a few hours (the equivalent of a month's worth of rain). Frequent lightning, large hail and strong winds are also likely.

Discussion

A complex upper trough will become slow moving and constantly reinforced across southeast South Africa, with the marked upper forcing engaging a very warm plume that has been brought south from sub-tropical latitudes. The trough is likely to disrupt, with the N portion pulling away to the NW, whilst the S portion clears to the E allowing for a diminution of activity by Tuesday. Before then, large CAPE (2000-2500 J/kg), with good vertical wind shear will likely lead to the development of long-lived, and potentially severe thunderstorms.

Expected Impacts

Severe thunderstorms will bring the threat of flash flooding, large hail damage, frequent lightning that could disrupt aviation and power networks, and strong, gusty winds.

**Middle East**

Nil significant.

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Asia

Afghanistan, Pakistan, northern India and Nepal

Weather

Rainfall and heavy mountain snow will move east across this region later today through to Thursday. Across Afghanistan 50-100 cm of snowfall could affect the high mountains, with up to 20 cm possible in Kabul, although here perhaps turning to wet snow or even sleet at times. As the disturbance continues east, it will affect Kashmir and Nepal, where the precipitation will become even heavier. 1-2 metres of snowfall is likely across the southern Himalayas. It will also draw some unusually cold air south across much of Pakistan and NW India.

Discussion

A very amplified upper pattern across Eurasia will lead to a major trough extension across the area. Strong, confluent flow on the trough's forward side will lead to isentropic lift, frontogenesis and the blossoming of precipitation across western Afghanistan through today, with the resulting surface disturbance pushing E ahead of the trough as the pattern begins to progress. Shortwaves running into the rear of the trough will maintain activity, ensuring an unsettled week across the area.

Expected Impacts

Snowfall over the mountains will likely block some high road passes in the region and enhance the risk of avalanches. Overall the impact of the snowfall is likely to be positive as it will top up the snowpack in the region, when this melts in the spring and early summer it provides much of this region's water prior to the monsoon arrival. Below average temperatures may impact vulnerable populations.



Australasia

Northern Queensland, Australia

Weather

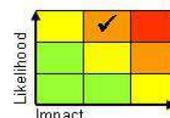
Frequent spells of intense rainfall and thunderstorms are expected throughout the next week. Urban areas along the northern Queensland coastline are likely to see some intense downpours; this includes Cairns, Townsville and Mackay. At this stage, large parts of northern Queensland look likely to see a further 200-400 mm during this period with some areas seeing a further 1000mm. Average monthly rainfall for this region is between 200-500 mm. Townsville has reported 924 mm of rain in the past seven days, compared to its yearly average of just over 1100 mm. Woolshed, just southwest of Townsville, has reported 1554 mm over the past 7 days, which is likely to be an all time record.

Discussion

The monsoon trough currently sits over the north of Queensland focussing convection here. A tropical low is embedded within it and this will probably help to focus severe convection and heavy rainfall. In addition, the MJO now moving over the western Pacific (Phase 7) may be having some influence in enhancing activity here. The main models are now in pretty good agreement as to the areas affected, and the likely rainfall totals.

Expected Impacts

Rainfall will be the primary cause of impacts, with severe flash and river flooding ongoing in and around Townsville, with other parts of northern Queensland at threat. This is leading to the disruption of transport and utilities, with increasing numbers of properties being flooding. There is the potential for some isolated communities to be cut-off for a number of days or weeks. Since Townsville (a city of around 180,000 people) is being severely impacted, and the Australian military are now involved in humanitarian efforts, with this event being called an unprecedented flood event for the city, this event remains as high likelihood of medium impacts.



Additional information

Nil.

Issued at: 031040 UTC **Meteorologist:** Jason Kelly/D J Harris

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