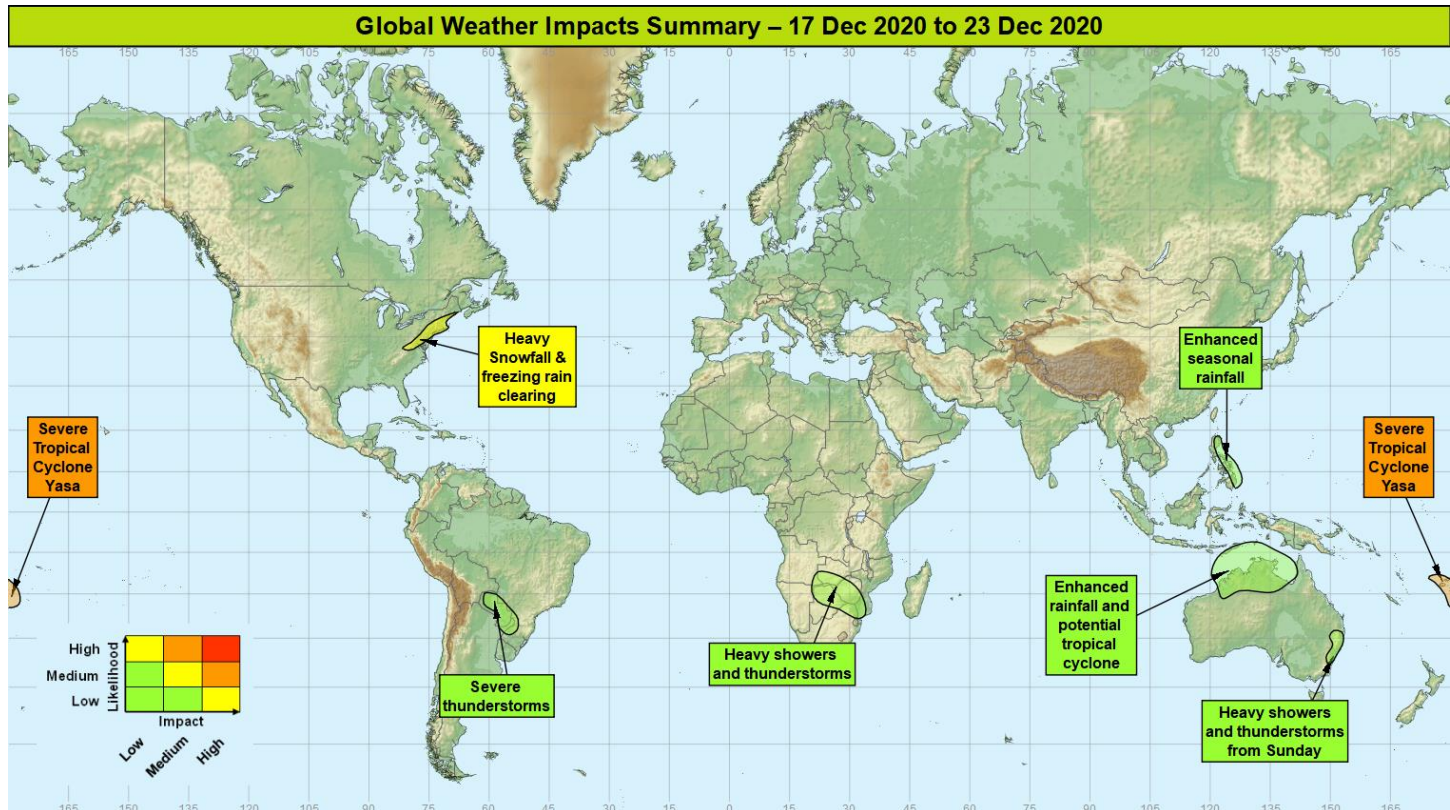


Global Weather Impacts – Thursday 17th to Wednesday 23rd December

Issued on Thursday 17th December 2020

HEADLINES

- Severe tropical cyclone Yasa currently impacting Fiji.
- Significant, potentially historic, winter storm ongoing across the northeast USA – expected to ease later today and into tomorrow.

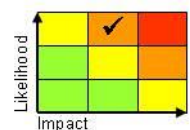


Tropical Cyclones

Severe Tropical Cyclone Yasa (Fiji)

Weather

Severe Tropical Cyclone Yasa, named on Sunday, is the first tropical cyclone of the season in the South Pacific. At the time of this update (17/0800UTC) imagery shows the eye of the system to be crossing the island of Vanua Levu. This track should mean the most heavily populated island of Viti Levu, which hosts the capital city Nadi and the international airport may avoid the most destructive winds, although hurricane force winds are still likely here. Although now starting to weaken, Yasa likely maintains mean wind speeds in excess of 120mph. Further weakening is expected through the next 24 hours, however Yasa is likely to continue to produce hurricane-force winds and will bring heavy rainfall widely across the islands with 250-500mm signalled to fall in a day or so. Typically around 325mm is seen in the very wettest months of the year in this region



Discussion

This forecast may be amended at any time

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Although some weakening is signalled over the next 24 hours, Yasa is still expected to be a very powerful storm as it passes across Fiji through today. The system will continue to be steered towards the east-southeast as an upper trough approaches from the west. The official track takes Yasa directly across Vanua Levu then back out into the ocean. Thereafter, a continued track to the southeast then southwest is signalled, likely passing west of Tonga, with the system gradually weakening as it passes over ever-lowering SSTs, but still capable of bringing damaging winds to Fiji's numerous small islands.

Expected Impacts

Flash and riverine flooding likely along with an enhanced risk of landslides across Fiji's main large and mountainous islands. Winds are likely to be strong enough to cause damage to buildings and infrastructure with a threat of some destruction close to the central track of Yasa. High waves and storm surge capable of inundating low lying coastal regions. Disruption to transport and utilities is expected. Yasa has the potential to be of similar strength to Cyclone Harold which impacted Fiji during April 2020.

Other named tropical storm

Tropical storm Zazu continues to meander southwest in the southwest Pacific, and is now well clear of any land. It will diminish over open waters in the next few days.

The following areas are also being monitored for tropical cyclone development that may impact land over the coming 7 days.

Timor Sea (Northern and northwestern Australia)

Weather

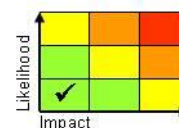
An area of enhanced shower and thunderstorm activity in the monsoon trough across the northwest of Australia may consolidate into a tropical low close to the northern coastline of Australia in this region later this week. There is a low risk that this system could strengthen into a tropical storm. Regardless of development heavy rainfall is expected across this sparsely populated region with many locations seeing 200-300mm through the coming week, locally more if a tropical cyclone does form.

Discussion

An Equatorial Rossby Wave (ERW) will move gradually west and enhance vorticity along the monsoon trough. This and the enhanced convection associated with it could consolidate vorticity and potentially allow a tropical storm to form in this region, if this process happens quickly a cyclone could form in the Gulf of Carpentaria, but more likely will occur in the Timor Sea later in the week.

Expected Impacts

Due to the area being sparsely populated, impacts will be minimal, but flash and riverine flooding are possible, along with storm surge and strong winds.



Europe

Nil.

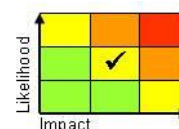
North America

Eastern/Northeastern USA

Weather

An ongoing, potentially historic, winter storm will continue through the first part of today across this area, before clearing into the western Atlantic later today and into Friday. Event total snowfall will widely be in the 15-30cm range, with some parts of the region seeing almost double this. As well as heavy snow, freezing rain will occur, this mainly in the south of the highlighted area. Ice deposition will occur when freezing rain develops. Snow will die out from west to east, leaving a cold night across the region.

Discussion



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Major cyclogenesis has led to a deep area of low pressure, which has track NE up the Eastern Seaboard. Cold air on its N'ern and W'ern flanks has led to heavy snow, whilst further S and E, slightly warmer air aloft, as well as moderating influences of the Atlantic have led to mixed-phase ppn, including freezing rain. Surface ridging a cold airmass will follow SE across these areas overnight and through tomorrow.

Expected Impacts

Significant disruption to transport, travel and utilities, some of which may take several days to repair.

Central America and Caribbean

Nil.

South America

Paraguay, northern Argentina and southern Brazil

Weather

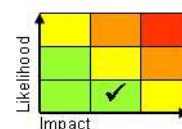
Further bouts of heavy showers and severe thunderstorms are likely to affect this region at times through the coming week. Rainfall totals will vary over short distances, but in the wettest locations 50-75, locally 100 mm of rain could fall in a short period. The Paraguayan capital Asuncion sees 150 mm of rainfall on average through December. Large hail and tornadoes are also possible.

Discussion

Lobes of forcing acting on the resident warm plume will trigger repeated bouts of convection through the coming days. Extreme amounts of available CAPE (locally in excess of 3000J/kg) will lead to some very intense and long-lived cells.

Expected Impacts

The main impacts are likely to be from flash flooding. Large hail, tornadoes and very strong winds are additional hazards, and may lead to impacts on transport, travel and crops.



Africa

Areas of southern-central Africa

Weather

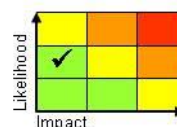
The rainy season continues across this region with further enhanced shower and thunderstorm activity over the coming week. Showers will be capable of bringing 50-100 mm of rainfall in a short duration with some locations seeing as much as 150-250 mm during the week. Typical December rainfall totals in this region are around (200-250 mm).

Discussion

As is typical for the time of year the plume of tropical air has been drawn southwards across the region of high topography, with weakening mid-latitude fronts (are their moisture footprints) making some northwards progress across the far south of the continent. This will lead to diurnal rounds of deep convection, aided by enhanced surface convergence close to the frontal zones. Profiles tend to show low shear, high precipitable water suggesting the heavy rainfall and lightning the most probable hazards.

Expected Impacts

Some flash and minor riverine flooding expected with an enhanced risk of landslides. Lightning will be an additional hazard.



Middle East

Nil

Asia

Parts of The Philippines

Weather



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Seasonal heavy showers and thunderstorms will be more frequent and intense than usual through the coming week, with the most at-risk regions highlighted. Here, rainfall totals of 50-100mm could occur in just an hour or so, with isolated spots in these regions perhaps seeing 250-500mm of rainfall through the coming week. Typically this region sees around 300-400mm of rainfall during the whole of December.

Discussion

Within the context of the La Nina background state which favours above-average convection across this region, the passage of at least one Kelvin Wave and Equatorial Rossby Wave (ERW) couplets through this area will lead to further enhanced convection. PWAT is in excess of 60 mm with a high skinny CAPE environment suggestive of heavy rainfall being the primary hazards.

Expected Impacts

Potential for flash flooding and an enhanced risk of landslides.

Australasia

Fiji – See *Tropical Cyclones* section.

Northern and northwestern Australia – See *Tropical Cyclones* section.

Southeast Queensland and northeast New South Wales, Australia

Weather

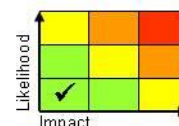
After a brief lull in shower activity following very disturbed weather over recent days, another bout of unsettled weather is likely across this region later in the weekend and into next week. Daily rainfall totals of 20-40mm are likely across quite a large area, whilst some places may see over 100mm in association with heaviest showers.

Discussion

Another mid-latitude trough crossing central and southern Australia will lead to warm air being drawn S across the area, before being engaged by the trough. Heavy showers and thunderstorms will result, though intensity and spatial coverage are uncertain due to disparate handling of the track of tropical storm Yasa. Its proximity to the E will dictate the progression of the mid-latitude trough.

Expected Impacts

Increased risk of flash and riverine flooding.



Additional information

Northern India, Pakistan, Afghanistan and parts of eastern China

Urban pollution will continue to generate high levels of air pollution in this area over the coming months. Hazardous air quality has continued to be reported in cities in the area including Delhi, Varanasi, Lahore, and Kabul.

Large parts of central and eastern Asia

Very cold air from Siberia/Russia will affect these areas through the coming week, with temperatures 5-10°C below average, with some very cold nights. This will impact upon vulnerable members of the population lacking shelter and heating, particularly in places like Pakistan and northern India.

Issued at: 170815UTC

Meteorologists: Jason Kelly/Mark Sidaway

Global Guidance Unit

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