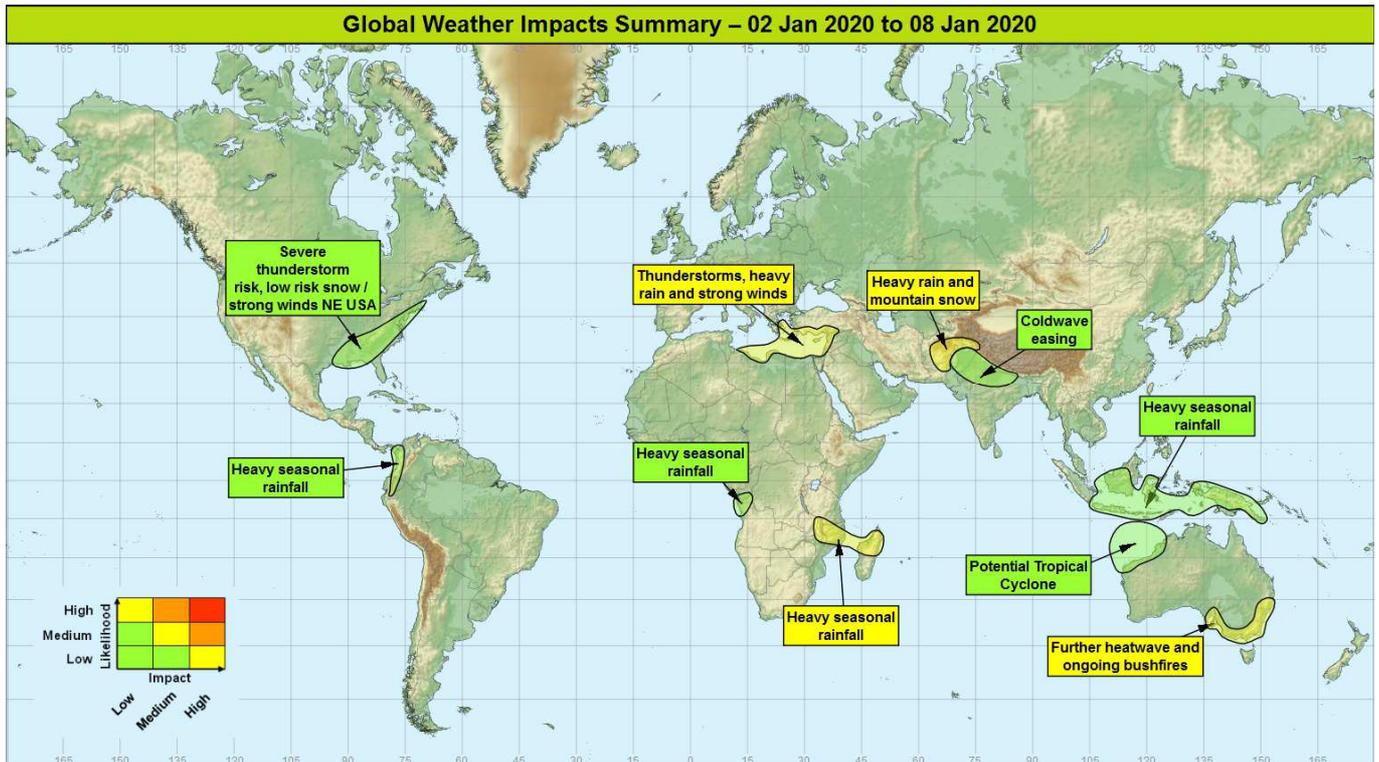


Global Weather Impacts – Thursday 2nd January to Wednesday 8th January 2020

Issued on Thursday 2nd January 2020

HEADLINES

- Heavy rain and thunderstorms affecting the east Mediterranean and adjacent coasts.
- Conditions conducive for further wildfire growth and spread in Australia later this week.
- Continued heavy seasonal rainfall in parts of eastern Africa and Madagascar.



DISCUSSION

Tropical Cyclones

There are no active tropical cyclones at present. The following area is being monitored for potential:

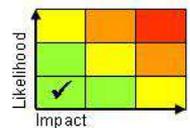
South-east Indian Ocean Weather

There is potential for the gradual development of a tropical cyclone in the Timor Sea this weekend, with any system likely to be steered southwestwards either across or close to the sparsely populated northwest of Australia early next week. This could evidently bring strong winds and heavy rainfall to the region.

Discussion

A cold front will make progress across western Australia and reach the Timor Sea this weekend. This feature will draw tropical air southeastwards leading to deep convection, with vorticity maintained across the frontal boundary helping organise this. A closed circulation is expected to develop over the weekend, with conditions highly favourable for a tropical cyclone to form (SSTs of >32°C), and be steered southwestwards towards the northwest of Australia. A marked MJO expected to emerge in this region over the weekend or early next week; this fits the narrative of a significant risk of tropical cyclone formation.

Expected Impacts



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Risk of potential impacts across the far northwest of Australia from strong winds and heavy rainfall should the system pass close to or over the region next week. Given the sparse populations and low vulnerability of the region impacts are likely to be very slight.

Europe

Eastern Mediterranean including southern Turkey, Crete, Cyprus, western Syria, Lebanon, Israel, and northern Libya and Egypt

Weather

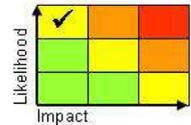
Further spells of very unsettled weather with heavy rain, thunderstorms and some mountain snow are expected over the next 7 days. Precipitation accumulations will be highly variable but some places could receive over 200 mm over the week, with the potential for 50 mm or so to fall within a few hours. Strong to gale force winds will build rough seas at times through the Aegean Sea. Thunderstorms may spawn a few waterspouts/tornadoes in the eastern Mediterranean.

Discussion

A highly amplified upper pattern will see an almost semi-permanent upper trough/vortex across the Eastern Mediterranean, spawning surface lows in the same region. This will promote shower/ thunderstorm activity over the comparatively mild underlying seas. Showers will be focussed onto the various WBPT plumes wrapping around the surface lows, and driven onto the coasts by the steering flows. Cold air will often feed south the Aegean, meaning that a fair amount of these showers will fall as snow to relatively low elevations across in the region. Crete in particular will likely see significant hill snow above 700-800 M elevation.

Expected Impacts

Increased likelihood of flash flooding, river flooding and landslides in areas where terrain is steep. Significant snowfall will lead to travel disruption across high roads of Greece (and the islands), with perhaps an unusually high risk of avalanches. Localised damage to property and infrastructure is also possible from lightning and waterspouts moving onshore. Dangerous sea conditions are likely at times through the Aegean Sea.



North America

Southeastern and eastern USA

Weather

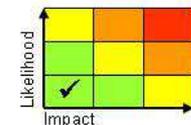
Between Thursday and Saturday another area of low pressure is expected to bring further heavy rain and thunderstorms to some of the southeastern states. A few storms are likely to become severe bringing a threat of damaging winds and isolated tornadoes close to the Gulf coastline. The low is likely to deepen as it tracks north-east and could bring a short lived period of snow and strong winds to the north-eastern USA later on Sunday.

Discussion

A further complex longwave trough (and several shortwaves ahead of it) will develop a shallow surface low to the lee of the Rockies that will track NE. Ahead of this low moisture drawn up from the Gulf will be overlain by strong vertical shear capable of producing bow line segments and perhaps a few discrete cells. Convective initiation may be a challenge due abundant cloud cover in the moisture plume, and weak surface heating at this time of year. As the deepening system runs away to the north-east it is likely to draw cold air down from Canada, which threatens a spell of snow and strong winds for some north-eastern parts of the USA.

Expected Impacts

Flash flooding is possible, as well as localised damage to property and infrastructure from strong winds and lightning. Lower risk of short lived winter impacts for some major cities of the NE USA on Sunday.



Central America

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Southern Panama – See *South America* section.

South America

Panama, western Colombia, Ecuador

Weather

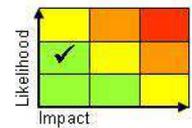
Continued heavy seasonal rainfall in the form of more widespread / frequent thunderstorms will affect areas close to the northern Andes Mountains, and southern extremity of Central America through the next week. Up to 100-200 mm of rainfall is expected in places (this is getting towards the average for the whole of January in parts of this region).

Discussion

With the South American Monsoon now extending well southward, daily rounds of showers and thunderstorms are expected to form to the west of the Andes of Colombia and Ecuador. The region highlighted has seen above average rainfall during the past weeks. Beyond the next week a signal for the emergence of a strong MJO in phase 4 or 5 is likely to lead to precipitation accumulations falling below average in this area.

Expected Impacts

Enhanced likelihood of flash flooding and landslides



Africa

Parts of eastern Africa, including Madagascar and Mozambique

Weather

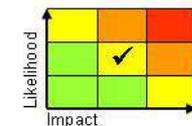
Although less pronounced than previous weeks slightly more widespread / frequent thunderstorms are expected to continue across this region, with well above average activity expected to persist across Madagascar. A further 100mm could fall across parts of eastern Africa, with nearer 400mm possible across northern Madagascar.

Discussion

During Tropical Cyclone Calvinia's extratropical transition, the mid-latitude cold front associated with the system was pushed northeast to reach this region, before becoming slowly moving as the steering flow weakened against the regions trades. In this locality the near stationary front will be engaged by various troughs in the sub-tropical jet, causing shower and thunderstorm activity to continue at above normal levels.

Expected Impacts

There will be an enhanced likelihood of some flash flooding and landslides given the already wet conditions. River flooding has been reported across parts of northern Mozambique.



Gabon, Republic of Congo, DRC and northwest Angola

Weather

More frequent shower and thunderstorm activity is expected across this region over the coming days, before activity returns to near normal levels by the beginning of next week. During this time locally 50-100mm of precipitation could fall within a day (often falling over a much shorter duration). These values potentially close average value for the whole of January for this region which has been much wetter than average during previous weeks.

Discussion

A strong surge in the Harmattan winds across the Sahara are expected to penetrate all the way down into the Gulf of Guinea. These will both enhance convergence along the ITCZ (enhancing shower and thunderstorm activity), and lead to the zone of convergence becoming slightly south shifted compared to climatology. As this surge in the Harmattan eases next week precipitation in this region is expected to return close to climatology.

Expected Impacts

There will be an enhanced likelihood of some flash and river flooding. Although a greater risk of landslides in areas where terrain is steep.



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Middle East

Western Syria, Lebanon and Israel – See *Europe* section.

Asia

Afghanistan and northwestern Pakistan

Weather

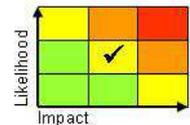
A spell of heavy rain will continue into Thursday with some locations (including Kandahar in Afghanistan) at risk of receiving around 50 mm of rain. This would be equivalent to a quarter of the annual average rainfall (190 mm) falling in 24 hours. Further north, heavy snow is likely to continue to fall above 1700 metres (including within Kabul). A severe cold spell will follow this event with minimum temperatures falling to less than -10°C in Kabul, before further very wet and snowy weather spreads across the country from Sunday.

Discussion

A diffluent upper trough associated with a strong jet left exit continues to engage a weak baroclinic zone, generating heavy precipitation over the Hindu Kush and Central Highlands of Afghanistan, and some deep convection in the higher WBPT plume across the southwest. Beyond Thursday an extremely cold airmass overspreads the country leading to exceptionally low temperatures, before a further upper trough causes a repeat of this pattern from Sunday. This is concerning though as the next event will include some much warmer air getting into the southwest of the country, with this leading to snow melt across the mountains, which in addition to repeated spell of heavy rainfall here could lead to severe flooding across Kandahar province for example. Further northeast further snowfall is likely from this next event.

Expected Impacts

Flash flooding likely across the southwest, with disruptive snowfall for many other regions. The severe cold between the two events will likely lead issues for vulnerable and exposed populations and a rapid return to poor air quality as fires are needed for heat. During the second event the flooding has the potential to be more severe across the southwest.



North India and eastern Pakistan

Weather

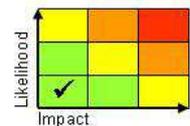
Temperatures have now recovered to nearer average across northern India and Pakistan, however a further cold spell is expected later this week and into early next week across the north of this region. Cold waves in this region are usually accompanied by areas of dense fog and much poorer than normal air quality.

Discussion

A continued succession of western disturbances originating from the Mediterranean and are expected to cross the region over the coming week. With suppressed daytime temperatures due to cloud cover as the disturbances cross, and cold airmasses being drawn south across this region as the disturbances wanes. Colder than average temperatures will contribute to much poorer than average air quality in the region due to a strong surface inversion and increased demand for heating.

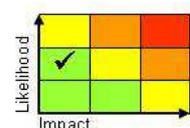
Expected Impacts

Poor visibility has already, and will continue to, affect air, road and rail networks in the region. Below average temperatures are also likely to have a human health impact to vulnerable people exposed to near freezing overnight temperatures.



Central and eastern Maritime Continent

Weather



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Scattered heavy showers and thunderstorms will be more frequent than usual over the next week. Some places are likely to receive up to 100-200 mm per day although rainfall amounts will be highly variable from location to location. Much of this region has been anomalously dry over recent months, however this rainfall falling over a short duration will still likely lead to some modest and highly localised impacts similar to those seen across parts of Sumatra and western Java in recent days.

Discussion

Over recent days a marked cold surge and the passage of an equatorial Kelvin Wave has brought enhanced shower and thunderstorm activity to the region. This weekend or early next week models are consistently signalling the emergence of a strong MJO in the region which would lead to continued above average convection across the region.

Expected Impacts

Increased likelihood of flash flooding and landslides.

Australasia**Parts of southern and eastern Australia****Weather**

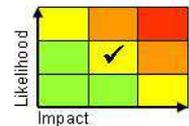
Numerous bush fires continue across parts of Victoria, eastern New South Wales, south-eastern Queensland and Australian Capital Territory with dry conditions persisting across much of the region. Following a respite from the severe heat through the middle of this week, a further burst of heat from the northwest looks likely, with maximum temperatures rising above 45°C in some places later this week (15°C above average).

Discussion

Ahead of a further cold front hot dry air drawn from the interior of the continent by strong gusty winds will the extremely hazardous fire weather conditions developing across many regions where numerous large wildfires are already burning. The cold front will bring some welcome rainfall across parts of Southern Australia and Victoria, but this rainfall is unlikely to reach New South Wales in any great quantity. In New South Wales thunderstorms along the cold front may actually end up igniting more wildfires.

Expected Impacts

The sheer size of many ongoing fires will continue to produce large amounts of small particulates that will contribute to hazardous air quality for several weeks to come, affecting heavily populated areas such as Sydney. Since September the bushfires have killed 18 people, and destroyed over 1200 homes across NSW and Victoria. A state of emergency has been declared for New South Wales which will begin on Friday, and last for a week.

**Additional Information**

Nil.

Issued at: 020815 UTC **Meteorologists:** Nick Silkstone / Mark Sidaway

Global Guidance Unit

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