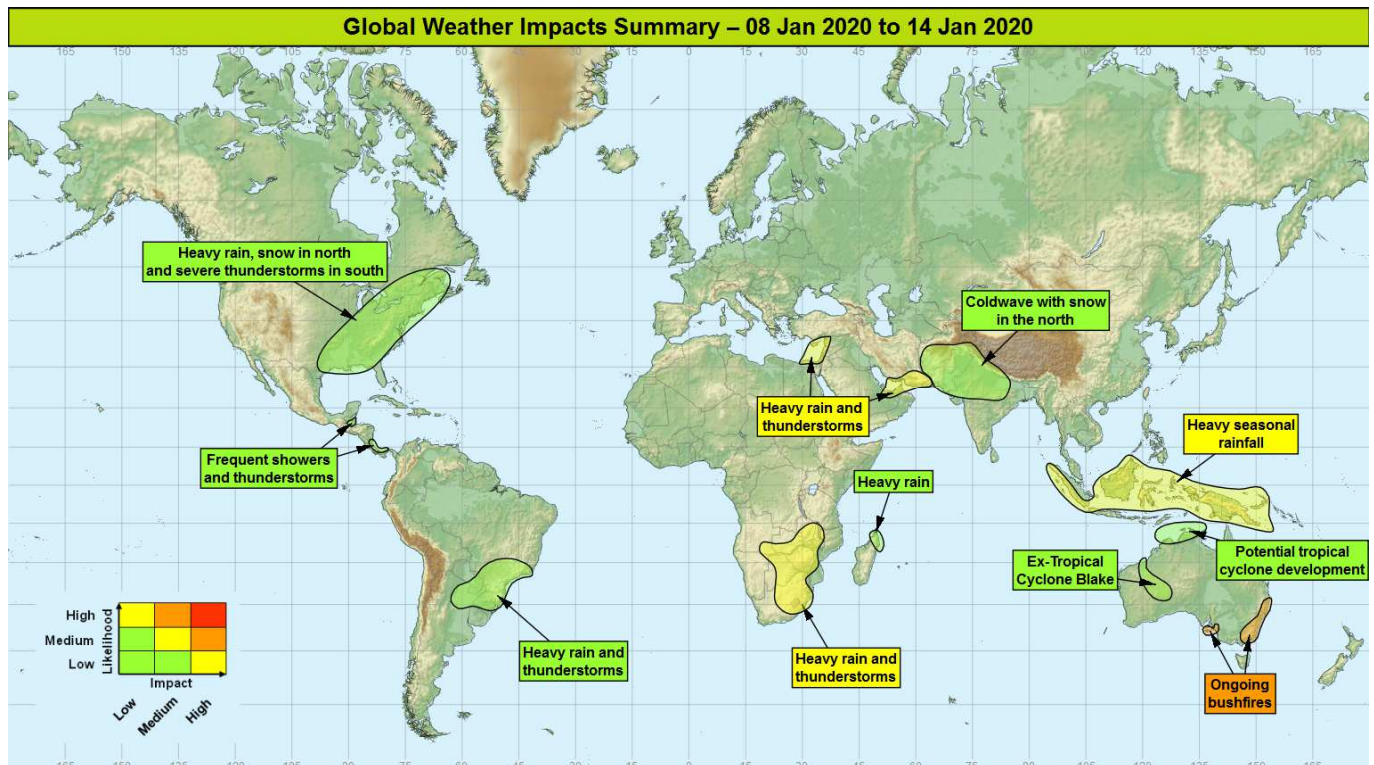


Global Weather Impacts – Wednesday 8th January to Tuesday 14th January 2020

Issued on Wednesday 8th January 2020

HEADLINES

- Fire weather conditions deteriorating across southeast Australia with poor air quality continuing.
- Heavy rain and thunderstorms affecting the eastern Mediterranean, Persian Gulf, southern Africa and Maritime Continent.
- Out-of-season severe thunderstorm risk across southern USA on Friday and Saturday.



DISCUSSION

Tropical Cyclones

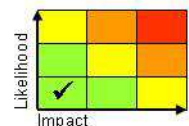
There are currently no named tropical cyclones. The following area is being monitored for potential development:

Arafura Sea (including Northern Australia)

Weather

A tropical depression centred just to the north of Australia's Northern Territory, over the Arafura Sea, is likely to develop into a tropical cyclone today whilst moving slowly west-southwest. It is expected to bring large amounts of rainfall to areas adjacent to the coastline, including Darwin, with between 200 and 500 mm rain falling over the next two to three days. Having weakened upon crossing land, its future track/strength is very uncertain as it skirts the north coast of Australia (continuing to bring heavy rain) and probably eventually exits into open water over the Indian Ocean later this week.

Discussion



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There is reasonable model agreement in the idea of a tropical cyclone forming, moving inland and decaying, and then eventually moving over the open Indian Ocean and restrengthening into a strong tropical cyclone. However, with potential for a prolonged period of land interaction with the rugged and complex coast of northern Australia, which could always pull it further inland and cause it to dissipate, the track in the relatively near future is very uncertain. Either way, a lot of rainfall is expected along parts of the coast, although (with the exception of Darwin) it is sparsely populated with impacts are most likely to be low.

Expected Impacts

Flash flooding of (in general) a sparsely populated area, although small risk of significant flooding for Darwin on Thursday and Friday.

Europe

Cyprus, northern Egypt, Israel, Lebanon, Jordan, western Syria and southern Turkey

Weather

Heavy showers and thunderstorms are expected to continue through today and tomorrow, with showers falling as snow above around 1500 metres. Precipitation will vary significantly on a local scale, but where the storms are most frequent (likely the Levantine coast), a further 75-100 mm is possible, which is around 50-60% of the January average for the region. Isolated tornadoes are possible, and lightning will be an additional hazard. Conditions will improve from Friday.

Discussion

An upper vortex which has spawned a vigorous surface low over the eastern Mediterranean, aided by low static stability due to underlying very warm SSTs, is degenerating into an upper trough but will continue to be reinforced by further trough extensions over the next couple of days. This will help to maintain and anchor the surface low, before the block finally breaks down allowing an upper ridge to topple across the region on Friday. Thunderstorms will be frequent around the circulation, and the largest rainfall totals will be where steering flow pushes these onto the coasts – most likely the Levant.

Expected Impacts

The main impact is likely to be from localised flash flooding, and landslides in areas of steep terrain. Very localised damage to property/infrastructure is possible from lightning strikes or tornadoes.



North America

Southern and eastern USA and far southeast Canada

Weather

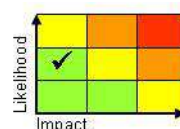
Heavy precipitation is expected to develop from the southern Plains into the Ohio Valley on Friday. The majority of this will be rain, except on the far northern and western periphery of the system, with 50-100 mm, locally 200 mm, possible from northeast Texas across the mid-Mississippi Valley. Severe thunderstorms, including a risk of out-of-season tornadoes, are likely across the southern USA. This active weather pattern is expected to transfer slowly east over the weekend with disruptive snow and/or freezing rain increasingly likely across the mid-Mississippi Valley, Midwest, Great Lakes and New England regions. Meanwhile, the potential for severe thunderstorms continues for the Deep South.

Discussion

A mid-latitude trough is signalled to move east across the United States later this week, with warm, moist air drawn north from the Gulf of Mexico ahead of this. Phasing between the trough and warm, moist low-level plume will likely lead to heavy rain. There is likely to be sufficient shear as well as available CAPE for severe thunderstorms, with the greatest risk on Friday and Saturday across western Texas, Arkansas and northern Louisiana. By Sunday, as the cold front sweeps east, lines of storms are likely to develop further east, from northwest Florida up towards the Carolinas.

Expected Impacts

Flash flooding likely with damage from large hail, lightning and tornadoes possible. Winter hazards will affect power and transport networks in the far north of this region.



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Central America**Belize, Guatemala, Nicaragua, Costa Rica and Panama****Weather**

Increased frequency of showers and thunderstorms over the next few days will lead to some areas seeing 100-200mm, much of which could fall in a day or two. This is around half the January average for the south of the region, and around a month's worth in the north of the region.

Discussion

An enhanced easterly flow developing over the next few days in response to a strengthening Atlantic High and pressure falls close to Panama will see near gales developing over the Caribbean Sea. This will drive more frequent showers and thunderstorms across the region, with local topography also concentrating showers, parts of northeast Guatemala and northwest Panama look most prone.

Expected Impacts

Increased risk of localised flash flooding, and landslides in steeper terrain.

**South America****Northeast Argentina, southern Brazil, southeast Paraguay and central Bolivia****Weather**

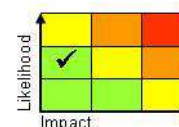
A wide area of heavy rain and thunderstorms currently affecting parts of Paraguay, south-east Brazil and Bolivia (bringing around 50-70, locally 90 mm of rain in 6-12 hours quite widely), will become slow moving over the next day or two, bringing a further 100-150 mm in a few places before conditions improve. A second spell of thundery rain is then expected to develop over parts of northern Argentina and the far south of Brazil towards the end of the weekend/early next week, bringing similar conditions that will slowly work their way northwards.

Discussion

The SACZ will be active over the next couple of days, with heavy showers/thunderstorms generated within the inner tropical plume axis, but in the absence of any strong forcing from aloft such that convection is likely to be fairly random but also widespread and intense. A lull in activity is expected towards the end of this week, before another pulse of activity arrives in the form of a second cold front pushing north to increase baroclinicity and instability once again. Without significant troughing aloft, profiles are deeply moist and unstable but lack the wind profile require for supercell/tornado development.

Expected Impacts

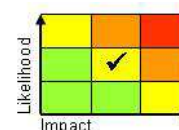
Increased likelihood of flash and river flooding, and landslides in steeper terrain. Frequent lightning strikes may be an additional local hazard.

**Africa****Madagascar, Mozambique, Malawi, Zimbabwe, Zambia, Angola, Namibia, Botswana, South Africa, Lesotho and eSwatini****Weather**

Heavy showers and thunderstorms are expected to be more frequent than normal across the region through the next week. Rainfall will vary significantly across relatively small distances but there is potential for locally 100-150 mm to fall in 24 hours, much of this falling in a few hours. Across southern parts of this region, including South Africa, Lesotho, eSwatini and Botswana, locally severe thunderstorms may produce large hail and frequent lightning.

Discussion

An enhanced phase of the ITCZ is expected to bring above average thunderstorm activity across northern parts of the highlighted region. However, upper troughs within the mid-latitude flow further south is expected to draw tropical moisture towards South Africa spawning several episodes of locally severe thunderstorms over the coming days.

Expected Impacts

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Whilst parts of this region have been experiencing severe drought and rainfall would be welcome, the intensity of rainfall is likely to cause some flash flooding. Large hail and frequent lightning may lead to transport disruption, damage to property, infrastructure and crops. Impacts are considered to be slightly lower across northern Madagascar with rainfall easing here relative to recent days.

Middle East

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

Asia

Southern Persian Gulf, southern Iran and southwest Pakistan

Weather

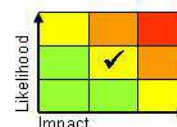
From Thursday, an area of showery rain arriving from the southwest is expected to become increasingly heavy and organised, with a risk of isolated embedded thunderstorms. This is likely to bring widely 50-75 mm, locally 100-150 mm of rainfall across the region before the rain finally eases and clears away to the east on Sunday.

Discussion

A plume of very warm, moist air drawn NE from Saudi Arabia will be engaged by a significant broadscale trough driving east across the region through Friday and Saturday – this the same trough affecting the eastern Mediterranean currently. Forecast profiles indicate strong synoptic ascent and high PWAT but convective instability is fairly modest, with the primary hazard being heavy rainfall.

Expected Impacts

Flash flooding likely with disruption to property, infrastructure and transport links.



Northern India, Pakistan and Afghanistan

Weather

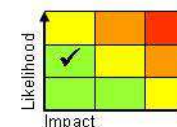
Cold conditions already in situ across Afghanistan and Pakistan will extend southeast into northern India over the next couple of days. This is the most recent in a line of cold spells across this part of the world going back to November, which have claimed a number of lives. Minimum temperatures will be of the order -5 to 5 °C, and will be accompanied by settled conditions and the return of dense fog and very poor air quality.

Discussion

A cold front originating from a “western disturbance” (which recently brought heavy snowfall to Kabul) continues southeast, cold advection and ridging aloft contributing to settle conditions building into the cold air behind. This will provide good radiation conditions overnight, and the expectation of dense fog and poor air quality due to fires set for heating, transport and industrial activity. All of which will contribute to temperatures some 5-10 Celsius below normal. The pattern is likely to repeat in the face of the next disturbance which looks likely to arrive early next week.

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.

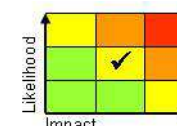


Indonesia, Brunei, Malaysia, Papua New Guinea and Timor-Leste

Weather

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 significant impacts similar to those seen across parts of Sumatra and western Java in the last week. Heavy rain in this region in particular is likely, and will exacerbate ongoing impacts.

Discussion



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Enhanced convection is evident on imagery across the region in response to a strengthening MJO and an active ITCZ which is likely to lead to continued above average convection across the region. The latter will drive frequent showers onto the western coast of Sumatra and Java, maintaining the recent much wetter than average conditions.

Expected Impacts

Increased likelihood of flash flooding and landslides. Recovery from flooding in Jakarta will be slowed.

Australasia

Northern Australia – See *Tropical Cyclones* section.

Northwest Australia (Ex-Tropical Cyclone Blake)

Weather

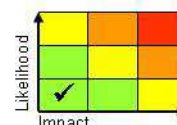
Tropical Cyclone Blake made landfall close to Wallal Downs Airport on Eight Mile Beach, Western Australia overnight (UK time) and as a result of interaction with land soon became an ex-Tropical Cyclone with sustained winds below 40mph. The main hazard from the remnants of Blake will be from heavy rainfall – 50-100mm, locally 200 mm is likely in along a swathe deep into the centre of Western Australia.

Discussion

Blake made landfall overnight and has since begun to decay. Tropical moisture associated with the system will sweep southwards bringing heavy rain, and in the south of Western Australia an approaching cold front and upper trough will interact with this moisture plume generating heavy rain and thunderstorms over the next 2-3 days.

Expected Impacts

Heavy rainfall leading to flash flooding in places, potentially impactful for any of the small towns along its path but in general the area is very sparsely populated so overall impacts are expected to be minimal for a system of this nature.



Southern and eastern Australia

Weather

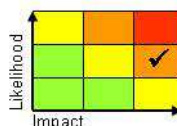
Numerous bushfires continue across parts of South Australia, Victoria, eastern New South Wales and southeast Queensland. With a temporary improvement in fire weather conditions at the beginning of the week, widely dry conditions have now redeveloped across existing firegrounds including large fires ongoing in Kangaroo Island (SA), East Gippsland (eastern Victoria) and coastal New South Wales. A deterioration in fire weather conditions will continue to deteriorate through Thursday into Friday with severe or extreme fire danger likely. A southerly cool change is expected to transfer east during Friday bringing a short spell of strong winds and unpredictable fire behaviour as the wind direction changes. Along the cold front and in association with larger fires, lightning could trigger further fires. Fire weather conditions should improve over the weekend as a combination of cooler temperatures, higher humidity and lighter winds develop. Through early next week, widely dry conditions are expected to prevail but generally light winds should limit fire spread and support containment efforts.

Discussion

High confidence for another spell of above average temperatures to affect this bushfire impacted region through the rest of the week. A cold front will then push north across SE Australia this weekend to bring some rain and much cooler air (temperatures back to average), but with strong winds ahead and behind the front.

Expected Impacts

The sheer size of existing fires will generate large areas of very poor or hazardous air quality over a much wider region, including Canberra and Sydney. Air quality further away from major fires will be dependent on wind direction but poor air quality is expected to persist for several weeks yet. Whilst containment efforts have been underway in recent days, there is an increased likelihood of rapid fire development and spread of existing fires during the next 48-60 hours.



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Additional Information

Nil.

Issued at: 080850 UTC

Meteorologists: D J Harris / Matthew Lehnert

Global Guidance Unit

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