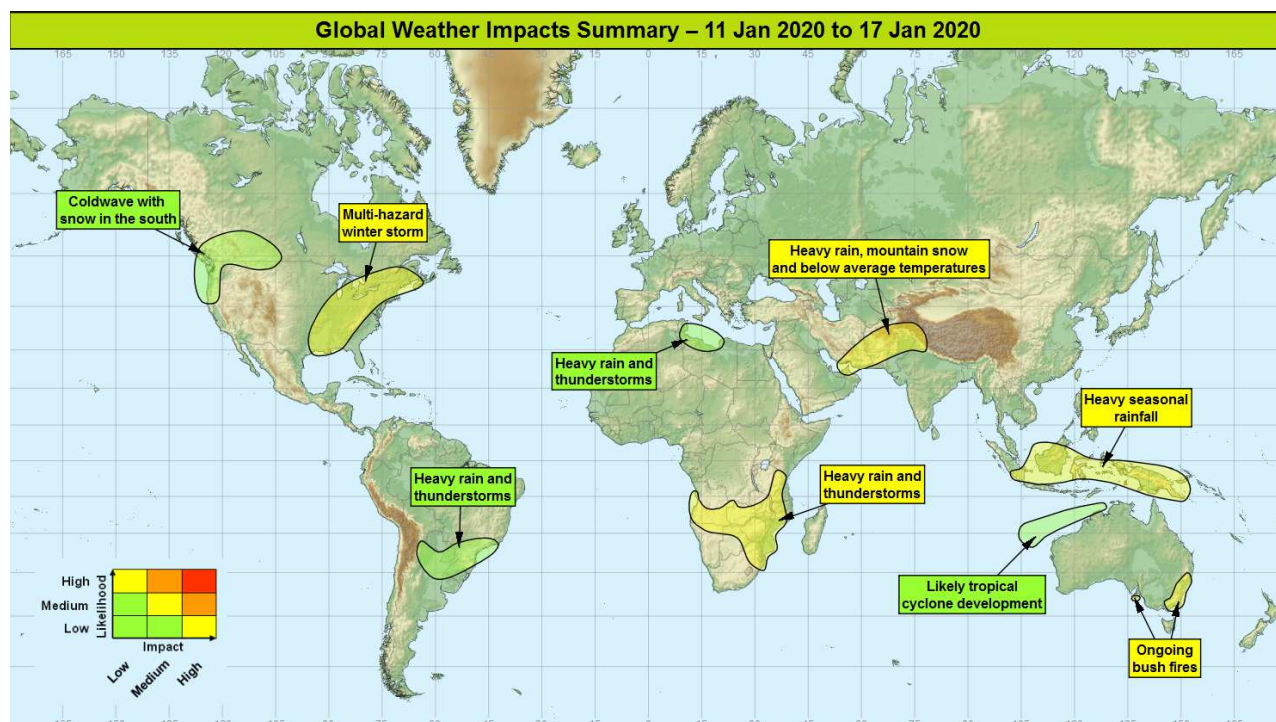


## Global Weather Impacts – Saturday 11<sup>th</sup> to Friday 17<sup>th</sup> January 2020

Issued on Saturday 11<sup>th</sup> January 2020

### HEADLINES

- Heavy rain and thunderstorms affecting the Persian Gulf, southern Africa and Maritime Continent.
- Multi-hazard severe weather event underway across eastern North America.
- Improving fire weather conditions across southeast Australia this weekend but increasing thunderstorm risk from midweek.



### DISCUSSION

#### Tropical Cyclones

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

#### Northern Australia Weather

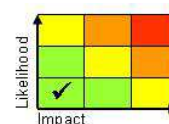
A tropical low continues to move west over open water off the north Kimberley coast and is expected to rapidly intensify as it moves into the southeast Indian Ocean over the next 48 hours. Heavy rain affecting the north Kimberley coast will ease over the weekend with a further 75-100 mm locally. The developing core of damaging winds is expected to remain offshore though.

#### **Discussion**

The effect of land interaction is now decreasing and the tropical low will continue to become more organised in an otherwise favourable environment for intensification. However, the effects of what is likely to be a significant tropical cyclone (for the basin) is expected to be limited as it moves away from land.

#### **Expected Impacts**

Heavy rainfall may cause localised flash flooding along the north Kimberley coast over the weekend. Strong winds affecting a similar area will lead to large wave and strong rip currents.



**This forecast may be amended at any time**

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**Europe**

Nil.

**North America****Eastern USA and southeast Canada****Weather**

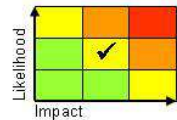
A strong storm system will continue to affect a large portion of the central and eastern USA and southeast Canada over the weekend. Severe thunderstorms capable of damaging winds and tornadoes are expected across parts of the southeast on Saturday. Further north, a mixture of heavy rain, snow and freezing rain is expected. Event totals of 50-100 mm, locally 200 mm, of rain is expected to fall, with 50-70 cm of snow probable in northern parts of the region. Significant ice accumulations are possible across parts of southeast Canada and New England due to freezing rain. Another winter storm could affect a similar region during the second half of next week.

**Discussion**

A squall line ongoing just ahead of a cold front will move eastward during Saturday. Forecast profiles support moderate instability but strong deep-layer shear will favour damaging wind gusts. A 60-80 knot low level jet will also support isolated tornadoes across the southeast US. Further north, a negatively tilted upper trough will support cyclogenesis with the surface low lifting northeast across the Great Lakes into New England by Sunday. Tropical air will overrun the surface warm front here leading to a spell of persistent and locally heavy freezing rain. Further north and west of the surface low, heavy snow is expected. A similar evolution is possible through the second half of next week.

**Expected Impacts**

Flash flooding likely with damage from large hail, lightning and tornadoes possible. Winter hazards will affect power and transport networks in the north of this region. Potential significant freezing rain event on Sunday in southeast Canada and parts of New England could bring widespread, severe disruption to travel along with power outages.

**Western Canada and northwest USA****Weather**

The prolonged cold spell is expected to intensify further over this weekend and into next week, with all-time low temperature records under threat of being broken in places, especially in British Columbia. Temperatures will widely be 5-10 °C below average and as much as 15-20 °C across parts of western Canada. Heavy snow will affect the USA Rockies at times, with over a metre of fresh snow building up in upland areas of Washington and Oregon.

**Discussion**

A persistent blocking pattern, with a weaker than normal Aleutian low, has allowed conditions to turn exceptionally cold across western Canada, potentially reaching a nadir early next week with all-time low temperature records for the region under threat. This negative PNA pattern will allow conditions to be more unsettled further south, with various frontal systems bringing heavy snow to the US Rockies through the next week.

**Expected Impacts**

Heavy snow could bring some travel disruption in the Rockies, but also to populated parts of the Lower Mainland (Greater Vancouver), and possibly short-term power outages. Cold weather related health impacts are possible in some of the major population centres in western Canada, e.g. Calgary, especially for vulnerable groups.

**Central America**

Nil.

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**South America****Southeastern Brazil, northern Argentina and Paraguay****Weather**

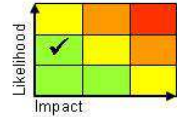
Heavy showers and thunderstorms will continue to affect the region through the next week. The most intense and frequent storms are likely to be across eastern Brazil; here 150-300 mm of rain could accumulate through the period. Elsewhere, rainfall amounts will be typically lower, with daily accumulations of 25-50 mm with up to 100-150 mm in places through the period.

**Discussion**

After a lull in activity, heavy showers and thunderstorms will become more widespread again as cold front approaches the region from the south. 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****Southeast Africa****Weather**

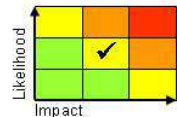
Heavy showers and thunderstorms are expected to be more frequent than normal across the region through the next week. Rainfall will vary significantly across relatively small distances but there is potential for locally 100-150 mm to fall in 24 hours, much of this falling in a few hours. Across southern parts of this region, 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**

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.

**Tunisia and Libya****Weather**

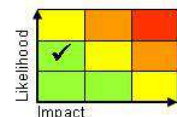
Heavy rain, thunderstorms and strong winds are expected to develop across the region early next week. The heaviest rain and strongest winds are likely to be across Tunisia on Tuesday. Coastal regions could have around 50-100 mm of rain, similar to average for the entire month.

**Discussion**

An upper trough will extend across the western Mediterranean, ultimately disrupting and forming a cut-off upper vortex over north Africa. This will interact with a high WBPT plume to produce a deep depression, with areas of heavy rain and embedded thunderstorms developing in the plume. In areas where ppn fails to become heavy, some areas of lifted dust may form.

**Expected Impacts**

Flash flooding will be the main hazard. Where rainfall is light some dense areas of lifted dust could develop, impacting health and travel across the region.



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## Middle East

### Southern Persian Gulf, southern Iran, Afghanistan, Pakistan and northern India

#### **Weather**

Heavy rain and thunderstorms will move northeast across the region over the weekend, clearing northeast Afghanistan on Monday. Around 50-75 mm of rain will fall quite widely, with 100-150 mm in places. Across central and northern parts of Afghanistan precipitation will fall as snow, with 15-30 cm, locally 50 cm accumulating. Widely colder than average temperatures (typically 5-10 °C below normal) are expected to follow across Afghanistan, southeast Iran and Pakistan next week with severe frost developing over snow cover. With settled conditions prevailing, air quality is likely to deteriorate significantly in urban areas.

#### **Discussion**

A plume of very warm, moist air drawn northeast from Saudi Arabia is being engaged by an upper trough moving east across the region. Forecast profiles indicate strong synoptic ascent and high precipitable water but convective instability is fairly modest, with the primary hazard being heavy rainfall. Precipitation is likely to fall as snow over central and northern Afghanistan, mainly above 1500 metres.

#### **Expected Impacts**

Flash flooding likely with disruption to property, infrastructure and transport links. Heavy snow may cause further travel disruption and heighten the risk of avalanche. Poor visibility will 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 freezing overnight temperatures.



## Asia

### Pakistan, Afghanistan and India – see *Middle East* section.

### Indonesia, Brunei, Papua New Guinea, Timor-Leste and the Solomon Islands

#### **Weather**

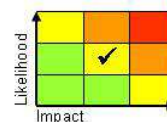
Heavy showers and thunderstorms will be more frequent than usual over the next week, although with the focus gradually transferring eastwards through this region. Some places are likely to receive up to 100-200 mm per day, although rainfall amounts will be highly variable from location to location. Much 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.

#### **Discussion**

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. Flood recovery in Jakarta will be slowed.



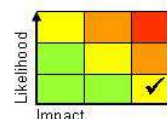
## Australasia

### Northern Australia – see *Tropical Cyclones* section.

### Southern and eastern Australia

#### **Weather**

Numerous bushfires continue across parts of South Australia, Victoria and eastern New South Wales. A cold front resulted in a sudden change in wind direction and gusty winds on Friday but winds are now easing across the affected region. Lower temperatures, lighter winds and higher humidity is resulting in lower fire danger ratings being issued by Australian authorities over the weekend and early next week. From Wednesday, isolated thunderstorms are likely to develop across Victoria and eastern New South Wales bringing a combination of very localised heavy rainfall but also a risk of lightning.



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**Discussion**

Whilst fire weather conditions will improve over this weekend in the post-front airmass, it looks increasingly likely that gradual warm advection in combination with height falls aloft will support an increased likelihood of isolated thunderstorms developing across eastern New South Wales and Victoria from Wednesday. The high-based nature of these thunderstorms will mean that dry lightning-induced fires are possible, but locally heavy rainfall falling on scorched, hydrophobic soil could lead to flash flooding and debris flows.

**Expected Impacts**

Existing fires will continue to produce a large amount of fine particulates and contribute to areas of very poor or hazardous air quality. Localised heavy rainfall could lead to flash flooding and debris flows if falling on burn scars whilst lightning activity poses a risk of new fire development.

**Papua New Guinea and the Solomon Islands** – See *Asia* section.

**Additional Information**

An ongoing drought continues to affect much of Thailand resulting in low river levels and impacts to water supplies in parts of Bangkok. Half of the major reservoirs are less than half full with the rainy season not arriving until May with the onset of the southwest monsoon. No significant rainfall is expected over the next week and temperatures are expected to remain warmer than average.

**Issued at:** 110300 UTC    **Meteorologists:** Matthew Lehnert

**Global Guidance Unit**

**This forecast may be amended at any time**

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