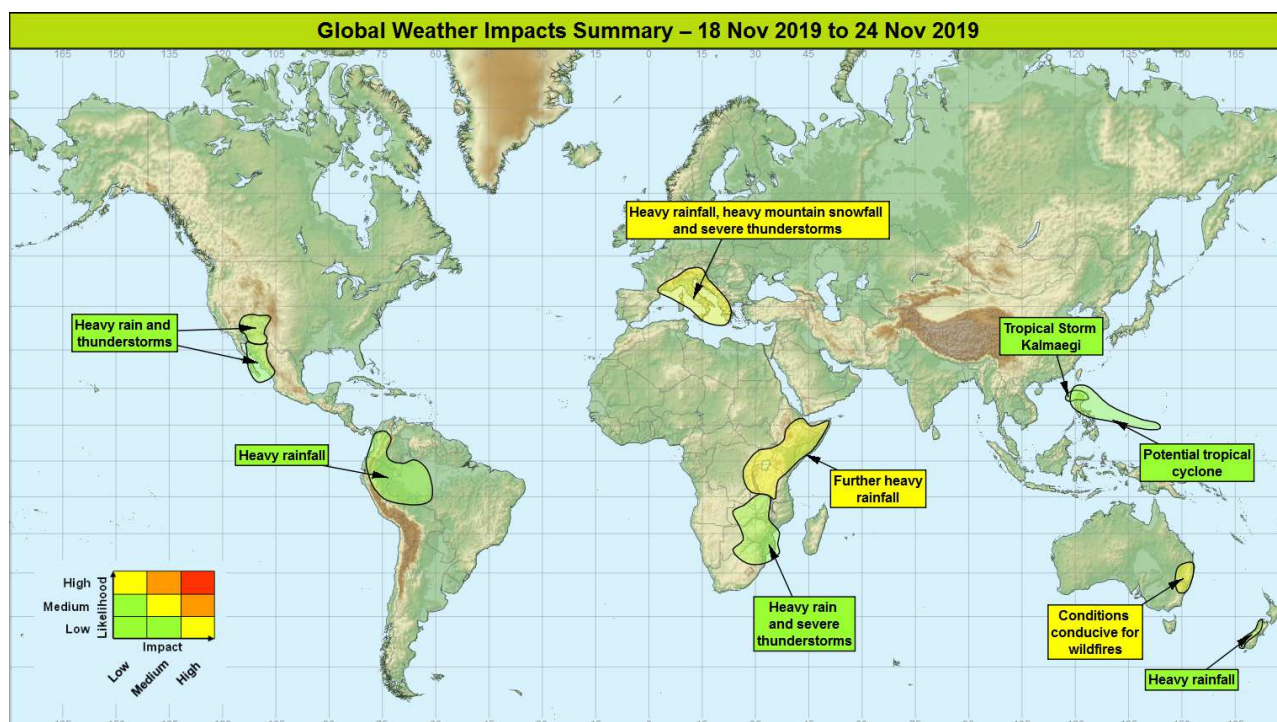


**Global Weather Impacts – Monday 18<sup>th</sup> to Sunday 24<sup>th</sup> November 2019**

Issued on Monday 18<sup>th</sup> November 2019

**HEADLINES**

- Remaining very unsettled in parts of southern Europe.
- Increasing rainfall in East Africa increasing flood threat.
- Ongoing elevated wildfire risk in eastern Australia.
- Tropical Storm Kalmaegi impacting the northern Philippines during the next few days.



**DISCUSSION**

**Tropical Cyclones**

**Tropical Storm Kalmaegi, Philippine Sea and far north of Luzon (Philippines)**

**Weather**

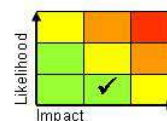
Tropical Storm Kalmaegi has been slow-moving in the Philippine Sea for several days. Kalmaegi is forecast to become better organised and temporarily intensify during Monday, perhaps with 10 minute sustained winds of 70 mph. Official guidance and preferred evolution has Kalmaegi making landfall over the north of Luzon later Monday or early Tuesday. However, this aspect is still uncertain and there is still a small probability that the system could turn away to the north or south and not make landfall at all. There is the potential for damaging winds, but very heavy rainfall (200-300mm) is expected to be the most impactful weather event association with Kalmaegi through the next few days.

**Discussion**

Environmental conditions are marginal for further intensification of Kalmaegi, with warm sea surface temperatures offset by strong shear and entrainment of dry air. At this point it is likely to become slow-moving close to the mountainous island of Luzon (northern Philippines). There remains significant spread in tracks leading to low confidence in amounts of rainfall and likely impacts for Luzon, though with better agreement than previously.

**Expected Impacts**

Potential for flash flooding and landslides. Strong winds and dangerous seas for north and east coasts of Luzon.



This forecast may be amended at any time

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*The following area has been identified for possible tropical cyclone development affecting land over the next week:*

## **Western Pacific Weather**

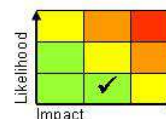
An area of thunderstorms across the western Pacific developed into a tropical depression on Sunday. It is likely to strengthen a little as it moves towards the Philippines later in the week. This system has the potential to bring very heavy rainfall (up to 300 mm) and damaging winds to a similar region of northern Luzon, which is expected to be affected by Tropical Storm Kalmaegi in the next few days.

### **Discussion**

The tropical depression could strengthen to become a tropical storm by midweek as it tracks towards the central or northern Philippines. There are significant uncertainties for this evolution, track and intensity at this time, but this system could impact a similar region that is expected to be affected by Tropical Storm Kalmaegi.

### **Expected Impacts**

Impacts possible in the Philippines later this week. Potential for flash flooding and landslides. Strong damaging winds, storm surge and rough seas.



## **Europe**

### **Italy, southeast France, the southern Alps (into Switzerland and Austria), Greece, western Balkans and parts of the central / western Mediterranean**

#### **Weather**

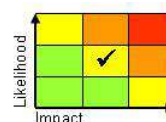
The prolonged very unsettled conditions look set to continue through the coming week with further active weather systems moving across this region bringing further periods of heavy rain and severe thunderstorms. The heaviest rain is likely to be focused on south-facing high ground of Italy and perhaps southeast France, along with the southern Alps (fringing into Switzerland and Austria). Some locations could see as much as 200-300 mm of precipitation over the coming week (around twice the average November rainfall), with this rain falling in a region that has already seen a very wet autumn. The precipitation will fall as snow above 1000-1500 metres, resulting in further very heavy snowfall, maintaining a high avalanche threat.

### **Discussion**

A strongly cyclonic upper pattern will dominate through the coming week, leading to a continuation of very unsettled conditions as significant upper forcing engages warm plumes drawn northwards across the region. Upscale growth of thunderstorms into MCS is expected. In addition, precipitation will be modulated by orography to act as a focus for the heaviest rainfall accumulations, although above 1000-1500 metres this will fall as snow.

### **Expected Impacts**

Increased likelihood of flash flooding causing damage to property and infrastructure. Frequent lightning strikes, large hail and tornadoes/waterspouts could also produce localised significant damage. Further significant mountain snowfalls is expected which will maintain a high avalanche threat, especially in the Alps.



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## North America

### Southwest USA

#### **Weather**

The remnants of Tropical Storm Raymond are likely to affect southwestern parts of the USA, especially Arizona and New Mexico during the midweek period. This will bring heavy rainfall to this desert region, with around 50-75 mm of rain falling quite widely and up to 150 mm in places. This is several times more than the November average, which for Phoenix is around 15mm. It is possible that in places a month's worth of rain could fall in less than six hours.

#### **Discussion**

A plume of tropical air, associated with the remnants of Tropical Storm Raymond, is expected to interact on Wednesday with a northeastward-moving upper vortex to produce heavy showers and severe thunderstorms. A disrupting midlatitude trough arriving from the west through Wednesday is also expected to engage the plume, allowing the disturbed weather to continue at least through Thursday. This is desert region of the USA, with typically very low rainfall at this time of year.

#### **Expected Impacts**

Flash flooding is likely.



## Central America and Caribbean

### Baja California Peninsula and northwest Mexico

#### **Weather**

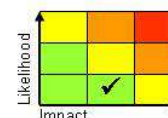
The remnants of Tropical Storm Raymond are expected to bring very heavy rainfall to the region, first to Baja California then to northwest Mexico, with 100-200 mm of rain until midweek.

#### **Discussion**

Raymond degenerated into a remnant low on Sunday. The combination of the remnants of Raymond and a cut-off upper low developing to the west of the Baja Peninsula will bring the potential for heavy rain over the course of several days, especially with the upper low expected to only slowly move northeastwards during the coming week.

#### **Expected Impacts**

Flash flooding and landslides are likely.



## South America

### Western Colombia, Ecuador, Peru, western Brazil and northern Bolivia

#### **Weather**

Continued enhanced shower and thunderstorm activity is likely across this region through much of the coming week. Up to 100 mm of rainfall is possible each day, with some places seeing as much as 400-500 mm in total this week (equivalent to the average November rainfall), although these totals are likely to be very localised. Conditions should ease later this week.

#### **Discussion**

The progression of the MJO (currently in phase 8) has allowed on uptick in convection across equatorial South America. Each day, diurnal heating is able to release deep and energetic convection, leading to slow and locally severe storms each day. Marked upper level divergence is evident across tropical regions of South America, which will aid the longevity of severe convection across the region.

#### **Expected Impacts**

Increased threat of flash and river flooding with landslides increasingly likely in mountainous areas. This follows on from a recent wet period across the region with significant river flooding reported over the last couple of weeks.



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## Africa

### Eastern South Africa, Eswatini, parts of Mozambique, Zimbabwe and Zambia

#### **Weather**

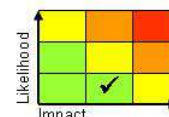
Heavy showers and severe thunderstorms will continue to affect this region at times through the next 5 days (especially around midweek). Thunderstorms will produce frequent lightning, large hail and strong, gusty winds. 50-100mm of rain could fall in a day, with some significant totals in a few hours.

#### **Discussion**

A warm plume will be the focus for further deep convection through the next week, with engagement from an upper trough crossing South Africa around midweek likely to result in a peak in activity. Serious multi-year droughts have affected parts of this region, and to a degree this rain will be welcome, however the short duration over which large amounts of precipitation are likely to accumulate will likely cause some serious localised issues.

#### **Expected Impacts**

Although drought conditions are affecting this region and rainfall in-part welcome, the intensity of rain over a short period will likely cause flash flooding, with a risk of property damage from frequent lightning, large hail and strong wind gusts (including in association with tornadoes which have been reported in South Africa).



### Somalia, Djibouti, Ethiopia, Kenya, western Tanzania, Uganda, Burundi, Rwanda and eastern Democratic Republic of Congo (DRC)

#### **Weather**

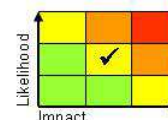
Heavy showers and thunderstorms will become heavier and more widespread through this week. The heaviest rainfall is expected to be across the Kenyan Highlands, western Tanzania, Rwanda, Burundi and eastern DRC where up to 200 mm of rain could accumulate through the week (over a month's worth of rain). Elsewhere, rainfall accumulations will be lower, but still above average.

#### **Discussion**

A combination of the MJO moving across Africa and the positive IOD phase continuing, will promote above-average rainfall across this region in the coming week.

#### **Expected Impacts**

An increased risk of flash flooding and landslides in the region, with further river flooding possible in Somalia.



## Asia

Luzon (Philippines) – See *Tropical Cyclones* section.

## Australasia

### Parts of eastern Australia

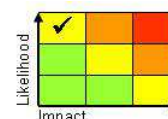
#### **Weather**

Numerous wildfires are already affecting parts of New South Wales and Queensland, between Sydney and Brisbane. With no significant rainfall expected in the next 3 or 4 days, along with likely strong wind events at times, the wildfire threat will remain very high in the region. There is the potential for some rain later this week and at the weekend which could help the situation, but the associated thunderstorms and strong winds could also spark new wildfires or spread existing wildfires due to dry lightning events.

#### **Discussion**

This early season wildfire event has already claimed a number of lives, with good model agreement for predominantly dry and at times windy conditions to continue this week. Transient upper troughs could bring thunderstorms to the affected areas from late week, but it is unclear whether these storms will bring much needed rainfall or just dry lightning events.

#### **Expected Impacts**



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Fires will bring a danger to life and environmental damage across a wide area. Smoke could bring poor air quality to densely populated urban centres, with a risk of some impacts in the Sydney and Brisbane region possible.

#### **New Zealand Weather**

Successive bands of heavy rain and strong winds will continue to move east across New Zealand over the period, with the most unsettled conditions focused on the western side of South Island. 100-150 mm will build up quite widely on western parts of the Southern Alps with more isolated totals of 300-400 mm possible. Whilst these amounts of rainfall are not particularly unusual in these areas this follows on from a wet period making impacts more likely. Conditions turning drier for a time midweek before rain returns by the weekend.

#### **Discussion**

A mobile pattern will see a succession of active frontal zones run eastwards across New Zealand, maintaining unsettled conditions. As is normally the case, orographic enhancement of rainfall over western parts of the Southern Alps will see high rainfall totals build up here.

#### **Expected Impacts**

Increased threat of flooding and landslides which could primarily cause transport disruption.



#### **Additional Information**

Nil.

**Issued at:** 180820 UTC    **Meteorologists:** Laura Ellam / Paul Hutcheon

**Global Guidance Unit**

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