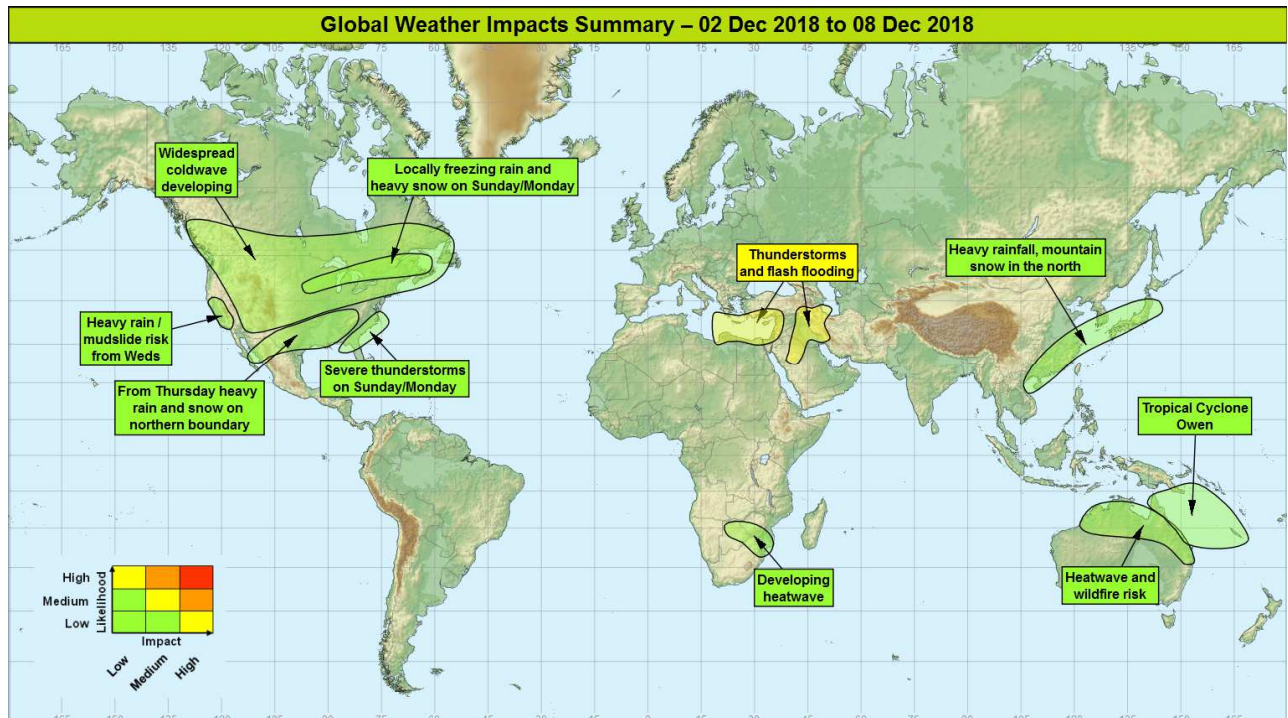


## Global Weather Impacts – Saturday 1<sup>st</sup> December to Friday 7<sup>th</sup> December 2018

Issued on Sunday 2<sup>nd</sup> December 2018

### HEADLINES

- Further bouts of thunderstorms are likely across the eastern Mediterranean and Levant.
- Very cold across much of North America with a plethora of winter hazards over the coming week.
- Tropical Cyclone Owen has formed over the northern Coral Sea, but will remain over open water.



### DISCUSSION

#### Tropical Cyclones

##### Tropical Cyclone Owen

##### Weather

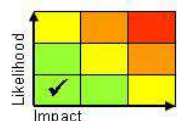
The tropical low over the northern Coral Sea has this morning developed into Tropical Cyclone Owen (Category 1, sustained winds of 40 mph, gusts to 60 mph). Owen has been moving to the south-southeast through this morning, but its movement has recently slowed to around 5 mph. Owen is expected to strengthen further through today and is likely to develop sustained winds of 55-60 mph within the next 24 hours whilst remaining firmly over open waters.

##### Discussion

The tropical low forced by Equatorial Rossby Wave activity near the Solomon Islands has recently become better organised, and has now become a Cat 1 Tropical Cyclone (Atlantic Tropical Storm equivalent). The track of Owen is extremely uncertain (tracks from the various ensemble solutions range from Fiji to Australia), with steering flow remaining light and the system slow moving for the next few days.

##### Expected Impacts

Owen will generate rough seas, posing a risk to small maritime craft and producing dangerous surf along beaches. Heavy rainfall from the much weakened remnants of the system may impact parts of northern Queensland later next week.



This forecast may be amended at any time

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## Europe

### Eastern Mediterranean and parts of the Middle East

#### **Weather**

Further heavy showers and thunderstorms will affect this region over the coming days, with the next area beginning to affect southern Greece (primarily Crete) today, and then this area will migrate eastwards to affect Turkey, Syria and Iraq by mid next week. Locally 50-100mm may fall from these storms each day.

#### **Discussion**

A further upper trough disruption will occur across the central Mediterranean today (Sunday). As the subsequent cut-off vortex moves slowly east, it will be repeatedly reinforced by further trough extensions to its rear. In addition to generating wide areas of instability across the eastern Med, this vortex will draw a plume of high WBPT air north from Arabia and engage this across Syria and Iraq through Tuesday and Wednesday. Some severe storms here will be capable of producing large hail, and strong winds that are able to lift areas of dust.

#### **Expected Impacts**

Thunderstorms will lead to a continued threat of flash flooding, with additional hazards to property, infrastructure and life from a combination of strong winds (lifted dust), large hail, frequent lightning and a few tornadoes/waterspouts. Landslides are also possible across more mountainous parts of southern Turkey and northern Iraq.



## North America

### California

#### **Weather**

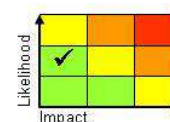
Over the coming week further spells of heavy rain and mountain snow will affect parts of California. In general daily totals will not exceed 10mm at low levels, but 25-50mm is possible over the hills and mountains (where falling as snow over the highest peaks). Through the coming week some locations could see total precipitation totals exceed 100mm.

#### **Discussion**

As a major upper vortex comes to lie just offshore California on Wednesday, a return to unsettled conditions. Is likely during the later parts of next week. After the initial vortex clears to the east of the area on Friday, a further extending upper trough may run into the area from Saturday to maintain the precipitation.

#### **Expected Impacts**

In regions affected by recent wildfires, burn scars will be at an increased likelihood of ash and mudslides as well as debris flows due to heavy rainfall. Flash flooding of urban areas and some minor disruption to air transport is also possible.



### Florida, Georgia and the Carolinas

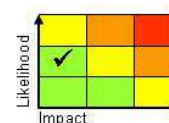
#### **Weather**

#### **Discussion**

A cyclonic upper flow has been induced across the region by the trough passing by to the northwest. This flow has drawn warm moist air northwards from the Gulf at low levels, with the cyclonic upper flow cooling temperatures aloft. A mixture of ingredients from forecast profiles suggest that strong straight line winds are likely to be the main hazard associated with this area of storms, whilst the tornado threat is higher today.

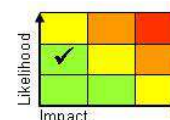
#### **Expected Impacts**

Thunderstorms will give a threat of flash flooding, with additional hazards to property, infrastructure and life from a combination of strong winds, large hail, frequent lightning and a few tornadoes. Storms may cause short-lived disruption to utilities and travel in the region where they occur. In addition rainfall rates will be high enough to allow some flash flooding to occur.



### Northeast USA and southeast Canada

#### **Weather**



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Another active spell of weather is expected to this region this weekend through the next 36 hours as an area of low pressure transfers northeast from the High Plains, through the Great Lakes, into the North Atlantic by late Monday. Although many locations will experience heavy rainfall, the area highlighted is likely to see heavy snowfall and across southeast Canada some isolated freezing rain. Perhaps 25 to 50 cm of snow could fall in parts of the northern plains, with freezing rain generally confined to the Ottawa and Montreal region of Canada.

## Discussion

An upper trough is has engaged a warm plume that originated from the Gulf of Mexico with and an area of low pressure developed to the lee of the Rockies on Thursday. The low is now transferring northeast, and with precipitation on the northwest flank of this feature falling into cold low level air, it is falling as snow and locally freezing rain. As the upper trough is fast moving, the low will also transfer northeast quickly and move out into the Atlantic by late Monday.

## Expected Impacts

Although not unusual for this portion of North America through the winter months, the weather is still likely to cause some short term disruption. For example heavy snowfall and freezing rain have the ability to close roads, and create significant delays at busy airports.

## Much of Continental North America.

### Weather

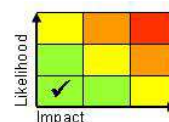
A north to north-westerly flow following in the wake of the low (mentioned in the previous section) will draw Arctic air across this region from Canada. Although these temperatures are not unusual in the north, they will be exceptionally cold across Central and southern parts of the USA with some locations seeing temperatures approaching 10°C below normal. Although most locations will be dry, snowfall is expected over many of the high mountains, and lake effect snow showers may occur downwind of the Great Lakes.

### Discussion

In the wake of the low the long lived north to north-westerly flow will allow air from Arctic Canada to be drawn all the way down to the southern states of the USA. The surface ridge/high formed by the cold advection will help maintain the cold wind direction, with these conditions likely to be maintained through much of the coming week.

### Expected Impacts

Where snowfall occurs short term disruption to utilities and transport is possible.



## Mexico and southern United States from California to Arkansas

### Weather

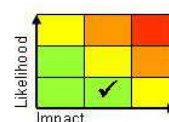
An area of heavy precipitation is expected later next week, probably over the weekend. Over 100 mm is possible in some locations, however along the northern boundary of precipitation, quite extensive snowfall is possible and this may affect some states that are unusually far south including Oklahoma, Kansas and Arkansas.

### Discussion

The cold air which will become entrenched across the continental states will result in the polar front (and polar front jet) being located at unusually southern latitudes. Within this jet a shortwave trough will quickly run east across the region later next week, and induce a wave along the polar front. This will produce an area of heavy precipitation and a shallow surface low, and along the northern boundary of the wave precipitation will fall into cold air and bring unusual early season snowfall to some southern and central states.

### Expected Impacts

Heavy rainfall from this event alone is likely to cause some flash flooding across the desert regions of New Mexico and Texas. However the unusual early season snowfall along the northern limits of this features precipitation bands is felt likely to bring utility outages and marked travel disruption to a region within which snowfall is less usual.



## Central America and Caribbean

### Northern Mexico – See *North America* section.

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

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## South America

Nil significant weather is forecast.

## Africa

**Northern Egypt** – See *Europe* section.

## Southeastern parts of Africa

### **Weather**

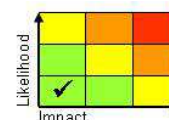
A heat wave will develop across Botswana, Zimbabwe, Mozambique, Swaziland and eastern parts of South Africa over the next day or so and continue through the coming week. Daytime temperatures will widely be around 10°C above normal, which will see some locations exceed 40°C.

### **Discussion**

Northwesterly winds will draw warm air southeast from the high interior of the African Continent; this will bring above average temperatures to a wide area that will be maintained through much of the coming week. The high temperatures may just be enough to trigger an isolated thunderstorms during the afternoon.

### **Expected Impacts**

Impacts to agriculture are possible where cultivated crops are susceptible to such heat. However the main impacts are likely to be to human and animal health where heat over these temperatures places additional physical stresses on particularly the older and more vulnerable elements of the population.



## Middle East

**Syria and Iraq** – See *Europe* section.

## Asia

## Eastern China, South Korea, North Korea and Japan

### **Weather**

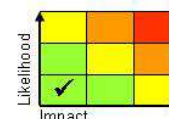
An active cold front is likely to be slow moving across this region through next week. Pulses of heavy rainfall and thunderstorms are likely to move north-east, with some strong and gusty winds and large hail likely. Up to 100 mm per day could fall, with some parts of south-western Japan in particular perhaps seeing upward of 200 mm over a few days. Towards the northern limits of the precipitation band snowfall is likely; whilst much of this is likely to be across the mountains some snowfall to lower levels is possible in the likes of Korea.

### **Discussion**

A strong thermal gradient exists across this region between the frigid, Siberian air to the north, and the moist tropical air to the south. A strong jet aloft will induce waves along the front, bringing pulses of intense rainfall and thunderstorms. These waves will keep the front in a similar location for several days, allowing some large rainfall/snowfall totals to accumulate.

### **Expected Impacts**

Flash flooding, large hail and gusty winds could lead to disruption to travel, including the busy shipping lanes through this region. Towards the north of the region snowfall is likely to cause additional impacts on transport, utilities and businesses.



## Australasia

**Coral Sea coastline and surrounding islands** – See *Tropical Cyclones* section.

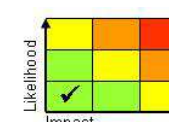
## Queensland

### **Weather**

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Heat wave conditions are expected to persist across a large part of Queensland, as well as some largely uninhabited parts of Northern Territories, through the next couple of days. Fire danger ratings in the state are back as high as severe, maintaining the risk for rapid fire development and spread. There is a growing signal for a thundery breakdown starting on Monday, but signals that these storms are likely to initially bring more lightning than rainfall, and may in the short term ignite more fires and exacerbate the problems.

**Discussion**

Fire weather conditions have improved slightly through the past couple of days but the dry and hot conditions are forecast to continue through the next couple of days. On Monday (and more especially into Tuesday) as an upper trough is expected to engage the resident warm plume across southern Queensland. This will result in the triggering of thunderstorms followed by a transition to somewhat cooler conditions midweek.

**Expected Impacts**

Whilst the region is relatively sparsely populated, rapidly developing and spreading wildfires pose a threat to small communities. Heat wave conditions may have an adverse on human and animal health. Thunderstorms may result in increased ignition of wildfires initially, then where rain falls localised flash flooding and damage to property and infrastructure.

**Additional information**

Nil.

**Issued at:** 020920 UTC **Meteorologist:** Nick Silkstone / D J Harris

**Global Guidance Unit**

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