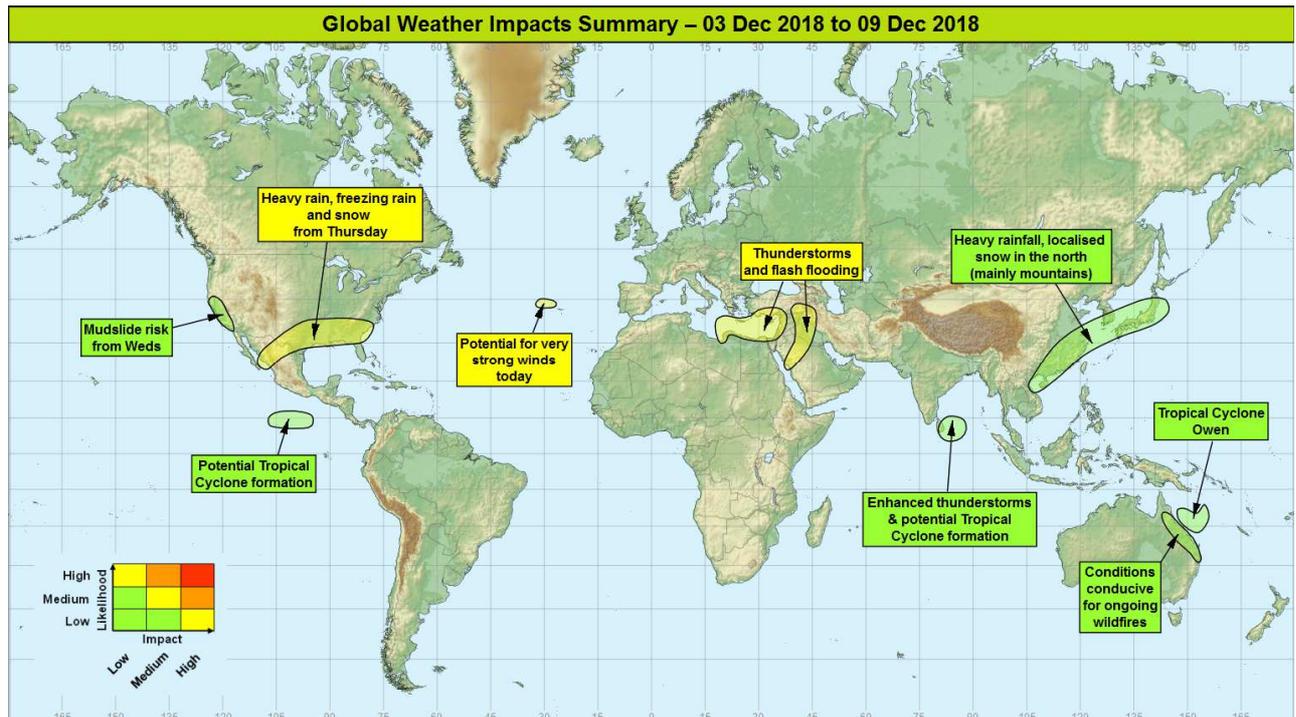


Global Weather Impacts – Monday 3rd December to Sunday 9th December 2018

Issued on Monday 3rd December 2018

HEADLINES

- Further bouts of thunderstorms are likely across the eastern Mediterranean and parts of the Middle East.
- Storm Etienne (named by Portugal) will bring very strong winds to the Azores today.
- Heavy snow and freezing rain is possible across the Central Southern US from Thursday.



DISCUSSION

Tropical Cyclones

Tropical Cyclone Owen
Weather

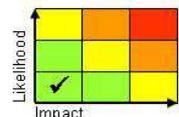
On Sunday, Tropical Cyclone Owen formed in the Coral Sea. The latest official advisory (0600 GMT) indicated sustained winds of 53 mph, although latest satellite data suggests that these could be nearer 63 mph. Owen has been moving slowly to the southeast, but is now forecast to turn towards the west. As it drifts slowly west, Owen is forecast to dissipate into a tropical low over open waters during the next couple of days.

Discussion

The track of Owen continues to be fairly uncertain, although the official track guidance and vast majority of solutions now take the feature slowly and erratically westwards in the direction of Australia. This track will take Owen into a region of strong vertical wind shear, with dry medium level air being advected into the systems western flank from the Australian Continent. Both these factors will cause the system to decay over open waters.

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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Potential areas of Tropical Cyclone development

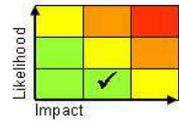
Bay of Bengal, Sri Lanka
Weather

Discussion

A Mixed Rossby Gravity wave (MRG) currently in the South China Sea and associated with an area of enhanced convection will continue westwards across the Malay Peninsula and emerge into the Bay of Bengal in the middle of the week. Here it will experience favourable conditions for the slow development into a tropical cyclone, with warm SSTs (29°C) fuelling vigorous deep convection, good poleward and equatorward upper level outflow, and low vertical wind shear.

Expected Impacts

Rough seas are likely to affect busy shipping lanes in the region, and vigorous convection may disrupt some aviation routes from Europe and the Middle East towards Southern Asia and Australia. Heavy rainfall across Sri Lanka may cause some localised flash flooding.



Northeast Pacific
Weather

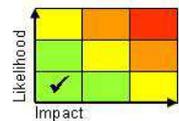
There is a small risk that a tropical cyclone could form in this region (just south of the Mexican coastline) during the later part of this working week. If a storm were to form it would likely track north or northeast towards the Mexican coastline next weekend.

Discussion

A zone of shear instability associated with the a transitory breakdown of the ITCZ is signalled to form a low level circulation (tropical low) in this region during the later part of the working week. This region is currently associated with an area of deep convection with the ITCZ bowing north of 10°N, and this can often be a precursor to the development of a cyclone.

Expected Impacts

A tropical cyclone in this region may generate rough seas, posing a risk to small maritime craft and producing dangerous surf along beaches. If the system were to reach Mexico, heavy rainfall could affect western parts of the country.



Europe
Eastern Mediterranean and parts of the western parts of the Middle East
Weather

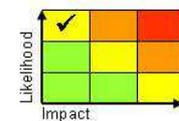
Further heavy showers and thunderstorms will affect this region over the coming days with the focus for activity in this area will migrating eastwards with time from Crete, towards Turkey, Syria and Iraq by the middle of the week. Locally 50-100mm may fall from these storms each day.

Discussion

A cut-off vortex will move slowly east across this region and be repeatedly reinforced by further trough extensions to its rear. A combination of this upper forcing and fuelling of convection from warm seas will result in a surface low forming within the broad area of deep convection. Some solutions show that this low may show may take on some warm core characteristics (low risk Medcane like circulation).

Expected Impacts

Thunderstorms will lead to a continued threat of flash flooding, with additional hazards to from a combination of strong winds, large hail, frequent lightning and a few tornadoes/waterspouts. Landslides are also possible across more mountainous parts of southern Turkey and Cyprus.



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Azores

Weather

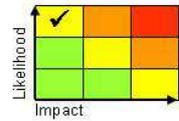
An area of low pressure will rapidly deepen as it crosses the Azores this afternoon (Monday) and is likely to bring very strong winds to the islands. Mean wind speeds may reach 50 mph, with gusts in 70, to locally 80mph range. This low has been named “Storm Etienne” by the Portuguese Met Service, but is likely to have significantly weakened by the time it reaches northwest Europe.

Discussion

A sharp upper trough is currently engaging a cold frontal wave and allowing this to undergo a period of rapid deepening. Global models signal pressure falls of 25-30 hPa within 24 hours, allowing the event to be classified as explosive cyclogenesis. As the feature moves northeast away from the Azores it will become increasingly detached from upper forcing, the low will fill, and winds surrounding it will significantly ease.

Expected Impacts

Strong winds will likely disrupt air, sea and road travel across the islands. In some locations the winds are likely to reach speeds capable of causing structural damage to some buildings, fell trees, and likely leading to short outages in some utilities. Large waves are expected, with coastal impacts likely, including waves throwing beach material onto sea fronts and some flooding of coastal roads.



North America

California

Weather

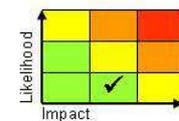
Over the coming week further spells of heavy rain and mountain snow will affect parts of California. In general daily totals will not exceed 10mm at low levels, but 20, perhaps as much as 40mm very locally could occur over the hills and mountains (where falling as snow over the highest peaks). Through the coming week some locations could see total precipitation totals exceed 60mm.

Discussion

A slow moving upper trough and frontal system is expected to pass across this area through Weds-Fri, bringing some slow moving areas of rain and showers on its northern flank to areas recently affected by significant wildfires. Rainfall totals have been trending downwards in recent model runs, with only a very low likelihood of rainfall totals/rates high enough to generate impacts from flooding/mudslides.

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, but not expected.



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Mexico and southern United States from California to Arkansas

Weather

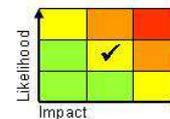
An area of heavy precipitation is expected to run across this region between Thursday and Sunday. Over 200 mm of rainfall is possible in some locations, however along the northern boundary of precipitation, quite extensive snowfall (up to 20-30cm) is possible and this may affect some states that are unusually far south including north Texas, Oklahoma, Arkansas, and Tennessee. There is also the potential for a narrow swathe of freezing rain (rain which freezes instantly onto surfaces causing a glaze of ice).

Discussion

Cold air of Arctic origin is becoming entrenched across the continental United States. This 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 developing wave along the polar front. This will produce an area of heavy precipitation, along the northern boundary of which precipitation will fall into cold air and bring both freezing rain and 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 than routine. Where freezing rain occurs, travel disruption and power/utilities outages are likely to be more widespread and significant.



Central America and Caribbean

Northern Mexico – See *North America* section.

Western Mexico – See *Tropical Cyclones* section.

South America

Nil significant weather is forecast.

Africa

Northern Egypt and northern Libya – See *Europe* section.

Middle East

Turkey, Iraq, Iran, Syria and Saudi Arabia

Weather

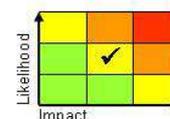
Frequent thunderstorms are forecast to affect this region through to the end of Thursday, and continue for much of the rest of the week in the western zone (Eastern Mediterranean). Each day precipitation totals could reach 25-50mm in a few locations, with this often falling over an hour or so. Over the period some of the wettest locations such as the Zagros Mountains, Levantine and Turkish coasts and Cyprus could see in excess of 100mm of precipitation.

Discussion

The upper vortex and subsequent troughs responsible for the unsettled weather in the eastern Mediterranean will draw a plume northeast from tropical Africa and the Red Sea across this region. As the vortex engages this plume heavy and locally severe thunderstorms are expected to break out, with storms being a mixture of surface and medium level rooted cells.

Expected Impacts

Thunderstorms will lead to a continued threat of flash flooding, with additional hazards to from a combination of strong winds (locally lifting dense dust plumes), large hail, frequent lightning. Landslides are also possible across more mountainous parts of the region.



Asia

Sri Lanka and southeast India – See *Tropical Cyclones* section.

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Eastern China, South Korea, North Korea and Japan

Weather

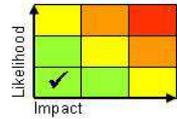
An active cold front is likely to be slow moving across this region through next week. Pulses of heavy rainfall and thunderstorms are likely to move north-east, with some strong and gusty winds and large hail likely. Up to 100 mm per day could fall, with some parts of south-western Japan in particular perhaps seeing upward of 250 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 China and 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 locally cause additional impacts on transport, utilities and businesses.



Australasia

Queensland, Australia – also see Tropical Cyclones section.

Weather

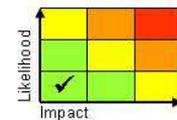
Heat wave conditions are expected to peak across a large part of Queensland on Monday. A thundery breakdown is forecast to begin today (Monday), but signals are that these storms are likely to initially bring more lightning than rainfall, and may in the short term ignite further wildfires. However through Tuesday and Wednesday rainfall and decreased heat are likely to lessen the fire risk across much of the state.

Discussion

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. Fire danger ratings in the state have reduced from severe to very high over the past 24 hours.

Expected Impacts

Whilst the region is relatively sparsely populated, rapidly developing and spreading wildfires pose a threat to small communities. Thunderstorms may result in increased ignition of wildfires initially, however by Wednesday the balance is firmly expected to be towards rainfall with very localised flash flooding possible.



Additional information

Nil.

Issued at: 030925 UTC **Meteorologist:** Nick Silkstone / D J Harris

Global Guidance Unit

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