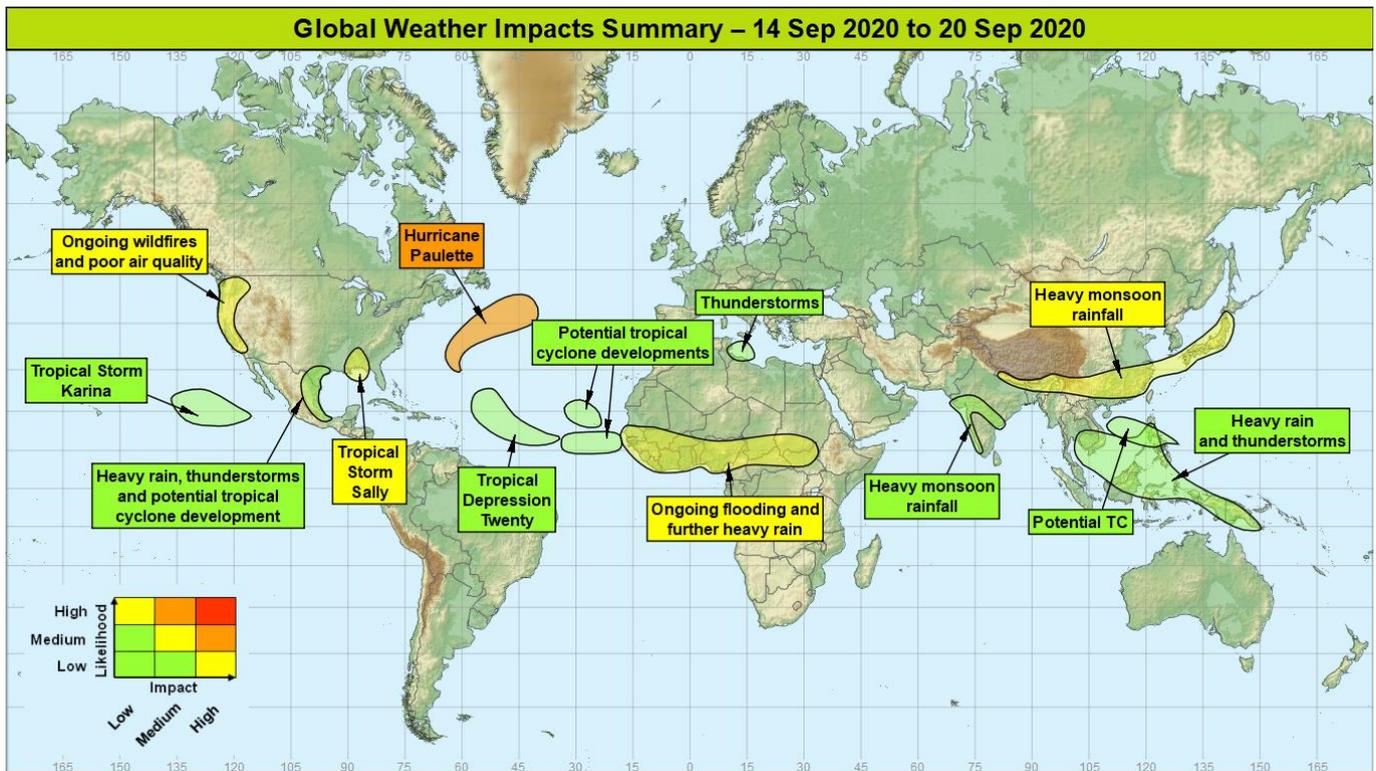


## Global Weather Impacts – Monday 14<sup>th</sup> to Sunday 20<sup>th</sup> September 2020

Issued on Monday 14<sup>th</sup> September 2020

### HEADLINES

- Hurricane Paulette expected make landfall over Bermuda today.
- Tropical Storm Sally likely to make landfall as a hurricane near New Orleans tomorrow.
- Flooding likely to be exacerbated across parts of Africa and south Asia by further monsoon rainfall.
- Wildfires ongoing across the western USA maintain poor air quality.



### Tropical Cyclones

#### Hurricane Paulette (North Atlantic including Bermuda)

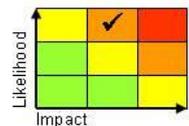
##### Weather

Hurricane Paulette will make landfall over Bermuda very shortly as a category 1 or possibly category 2 Hurricane, bringing damaging winds (85-100 mph mean speed), 75-150 mm of rain and a large storm surge and waves. Once past Bermuda Paulette will accelerate away into the North Atlantic where it will eventually become an extra-tropical system.

##### Discussion

There is excellent model agreement now for the track of Paulette, with all major models taking Paulette directly over Bermuda today. Environmental conditions appear favourable to Paulette to continue strengthening during the next 48 hours or so, with only occasional intrusions of dry mid-level air briefly interrupting the intensification process. Today (Monday), the vertical shear is forecast by the global models to decrease to near zero, which should allow for significant strengthening to occur. In fact, it is highly probable that Paulette will continue to intensify as the hurricane passes over Bermuda. By 48 hours when the hurricane is expected to be north of Bermuda, baroclinic interaction with a deep-layer trough is forecast to aid in the intensification process with Paulette possibly becoming a major hurricane around 48 hours.

##### Expected Impacts



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

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Were the centre of Paulette pass close to or over Bermuda hurricane force winds are likely to cause damage to property and infrastructure. Storm surge and heavy rain are likely to cause a combination of surface water and coastal flooding will extend much further away from the centre. That said Bermuda has proven to be very resilient in dealing with such things in recent years.

**Tropical Storm Sally (Gulf of Mexico including Florida, Mississippi, Alabama and Louisiana)**

**Weather**

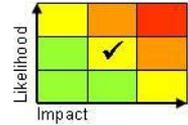
Sally is now moving towards the Louisiana/Mississippi coast, making landfall probably in the vicinity of New Orleans on Tuesday, although even at this stage there is a fair degree of uncertainty in this aspect. However, before making landfall, Sally is likely to strengthen into a hurricane with maximum sustained winds in the region 80-90 mph, most likely a category 1 hurricane. Whilst there remains some uncertainty in the exact track and intensity, impacts from winds, storm surge and heavy rainfall are expected to extend far from the centre. The heaviest rainfall is likely to affect the central Gulf Coast region where 250-300 mm, locally 600 mm, is possible. For context, this region typically receives 130-150 mm in September.

**Discussion**

Dynamical and statistical model guidance points to continued development of Sally over the northeast Gulf of Mexico prior to landfall which most models suggest will occur close to or just to the west of New Orleans on Tuesday. Given the small size of the system, high resolution models such as HWRF may provide better intensity guidance; and lends a higher likelihood of a hurricane developing prior to landfall (and low likelihood of major hurricane) than global model guidance implies.

**Expected Impacts**

Sally is expected to produce surface water and riverine flooding across portions of the Gulf coast from Louisiana to Alabama through to the middle of the week which is likely to cause flooding property and damage to infrastructure. Hurricane conditions are expected to develop along this coastline later today in association with a life threatening storm surge from the mouth of the Mississippi River east to the Alabama/Florida border. There is a low likelihood of more significant impacts affecting this region in the event Sally undergoes rapid intensification.



**Tropical Depression 20 – Tropical North Atlantic**

**Weather**

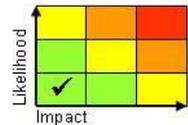
Tropical Depression 20 is drifting slowly west across the central Atlantic and is expected to become a tropical storm later today (Monday), with continued strengthening into a hurricane is expected through the coming week. However the storm is expected to remain over the open ocean with no direct impacts to land.

**Discussion**

Due to the negative influence of the long low-level westerly fetch associated with the monsoon trough that the cyclone is embedded within, it will likely another 24 hours or so for the low-level wind field to become better organised. However, once that occurs, environmental conditions are expected to be favourable for steady strengthening of this system through the week, perhaps becoming a major hurricane by Thursday or Friday. The new NHC intensity forecast is similar to the previous advisory forecast, and lies near the upper end of the intensity guidance envelope.

**Expected Impacts**

Nil.

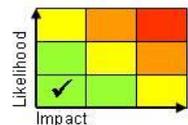


**Tropical Storm Karina – Eastern Pacific**

**Weather**

Karina lies around 600 miles SW of the southern tip of Baja California with sustained winds of around 45 mph. This system is expected to track slowly toward the northwest through the next couple of days and remain well away from any land.

**Discussion**



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

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Karina's likely track will take the system into an increasingly hostile environment, with weakening and dissipation expected around midweek.

**Expected Impacts**

Nil.

*The following areas are being monitored for potential tropical cyclone development affecting land:*

**Tropical North Atlantic (Particularly between West Africa and the Windward Isles)**

**Weather**

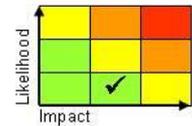
An area of heavy showers and thunderstorm has cleared Cabo Verde, and has a high likelihood of developing into a tropical cyclone as it moves away from land early this week (The NHC rate this as a 70% chance. Irrespective of development, further frequency thunderstorms and heavy rain are expected to affect the islands today. There is a low probability (10%) of another tropical disturbance in the area in the next few days, as further African Easterly Waves (AEWs) move off the African coast.

**Discussion**

The westernmost portion of a strong African Easterly Wave has now developed into a tropical depression and is expected to undergo continued strengthening as it moves west over the next few days. There appears to be stronger support for a weakness to appear in subtropical ridge, in part due to the effect of Paulette moving into the mid-latitudes. Meanwhile, the easternmost portion of this tropical wave is currently affecting Cabo Verde. However, development into a tropical cyclone is unlikely to pose a direct threat to land.

**Expected Impacts**

Ongoing risk of flash flooding and landslides over Cabo Verde today. Otherwise, nil.



**Gulf of Mexico (including southern USA and eastern Mexico)**

**Weather**

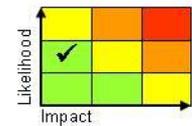
Another disturbance south of Texas will move slowly southwest towards northeast Mexico this week, however this looks very unlikely to strengthen into a tropical storm. Despite this, above average rainfall is expected across much of eastern Mexico and south Texas over the next week. 150-200 mm of rain is expected quite widely along the coast from Corpus Christi to Veracruz.

**Discussion**

The disturbance south of Louisiana has a lower likelihood of development compared to that which spawned Sally but the broad circulation will maintain enhanced onshore flow along the Gulf of Mexico coast from south Texas and along the Caribbean coastline of Mexico.

**Expected Impacts**

Increased likelihood of flash flooding, particularly for coastal cities of south Texas and eastern Mexico. Should a tropical cyclone develop, then impacts from large waves and strong winds are also possible.



**Western Pacific Ocean east of The Philippines**

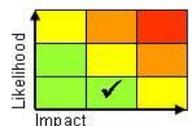
**Weather**

A tropical Disturbance is expected to cross The Philippines through the next couple of days. Models suggest that this may then undergo some development as it moves west across the South China Sea, and may well become a tropical storm toward the end of the week, by which time it will likely be approaching eastern Vietnam.

**Discussion**

There is a good deal of spread in models at present, both in terms of the track and likely extent to which any development occurs. The latest EC suggests a well organised system offshore eastern Vietnam by Friday, a solution supported by GFS. However at present GM is much less keen on development.

**Expected Impacts**



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

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While the system may bring enhanced rainfall to The Philippines in the short term, the greater risk of any impacts would be to eastern Vietnam at the end of the week into next weekend, with a risk of damaging winds and flood impacts.

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## Europe

### Malta, Tunisia and northwest Libya

#### **Weather**

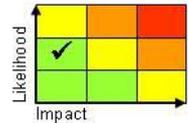
Slow-moving thunderstorms are expected to continue to develop across the region at the beginning of this week - affecting Malta, coastal parts of Tunisia and northwest Libya. 75 -100 mm of rainfall is locally possible, often falling in under 2-3 hours.

#### **Discussion**

A cut-off low that was responsible for flooding in Cagliari, Sardinia on Thursday will continue to migrate southeast into the central Mediterranean and draw upon the abundant low-level moisture to trigger slow-moving thunderstorms that will move onshore and/or develop over land in response to diurnal heating.

#### **Expected Impacts**

Localised flash flooding and lightning strikes causing damage to property and infrastructure.



## North America

### Southern USA and eastern Mexico – see *Tropical Cyclones* section.

#### Western USA

#### **Weather**

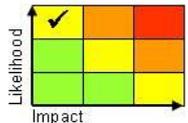
Whilst fire weather conditions have temporarily improved, persistent hot and dry conditions will continue to pose issues for existing wildfires. Winds are likely to steadily increase across the region leading to an increase in wildfire-spread potential. Air quality is expected to remain very poor across a wider part of western USA, particularly California, Oregon and Washington.

#### **Discussion**

The upper ridge will give way to an increasingly cyclonic regime across the west which will support an increase in gradients across the region. Whilst model guidance increases gradients through the middle of next week, dry and windy conditions become increasingly likely in all output by Thursday.

#### **Expected Impacts**

Wildfires will continue to burn in the region, leading to reduced air quality with little wind to disperse particulates at first. Winds are likely to increase next week which is likely to make fire containment more difficult.



## Central America and Caribbean

### Lesser Antilles – see *Tropical Cyclones* section.

## South America

Nil.

## Africa

### Cabo Verde – see *Tropical Cyclones* section.

### Tunisia and northwest Libya – see *Europe* section.

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## Sub-Saharan Africa

### Weather

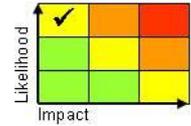
Further periods of prolonged, heavy showers and thunderstorms will affect the region at times in the coming week. Whilst not all areas will see heavy rain, each day 50-75 mm could fall in places within a few hours, and over this period the wettest areas may see 200-300 mm build up. This does tend to be the wettest time of the year in the region, but the forecast rainfall will still be significant, especially given recent flooding events in the past week.

### Discussion

The monsoon trough currently lies close to its climatological northern extent from roughly Senegal towards southern Sudan and Ethiopia. Along and to the south of this trough lies moisture-laden air, with the African Easterly Jet periodically buckling due to the passage of African Easterly Waves.

### Expected Impacts

The potential for further flash and riverine flooding across much of the region, with an enhanced risk of landslides in areas where terrain is steep (such poorly located settlements on the edge of expanding cities). Along the northern boundary of the highlighted region strong wind gusts from thunderstorms will likely trigger dust storms reducing air quality and impacting travel.



## Middle East

Nil.

## Asia

### Nepal, northeast India, northern Bangladesh, Bhutan, northern Myanmar, southern China and Japan

### Weather

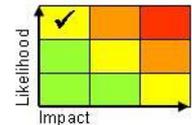
Further spells of heavy rain and thunderstorms are expected over large parts of southern and southeastern Asia in the coming week thanks to an active monsoon. It won't be wet all the time, there will be drier interludes between the rains, but the intensity and frequency of showers will bring some large totals of rain over the next week, after what has already been a particularly wet monsoon season. The heaviest rainfall is expected across Nepal, Bhutan and northeast India where 100-150 mm falling in a few hours in some locations is expected, with totals for the week over 500 mm in places.

### Discussion

A developing La Niña and negative Indian Ocean Dipole pattern is projecting similar to a phase 3/4 MJO across southern Asia and is likely to maintain above average rainfall here through the next week. Meanwhile, upper troughs within the mid-latitude flow further north will bring spells of heavy rain to Japan as it draws upon the retreating monsoon moisture here.

### Expected Impacts

Increased risk of flash flooding and landslides in mountainous areas. Risk of flash flooding and riverine flooding in small catchments and urban areas.



## Southern and central India

### Weather

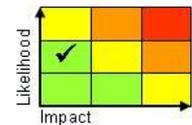
An active pulse in monsoon rains is expected over the next week across much of southern India. Overall the highest rainfall totals are likely to build up over the Western Ghats with 200-300mm building up in places over the next few days. Elsewhere, many areas will see 100-150 mm of rain.

### Discussion

The Monsoon trough to the north will strengthen the southwesterly flow over the coming days bringing an abundance of warm and moist air onshore, this combined by orography and large scale ascent provided by the withdrawing MJO, will lead to some heavy and prolonged showers and thunderstorms in the coming days.

### Expected Impacts

Increased risk of flash flooding in places.



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**Indonesia, Malaysia, southern Philippines, Brunei and Papa New Guinea**

**Weather**

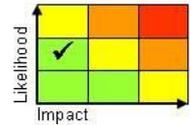
Heavy showers and thunderstorms will continue to be more frequent, intense and widespread than normal over the coming few days. Around 50-75 mm of rain could fall in a couple of hours in places, with overall accumulations through the week of around 150-250 mm.

**Discussion**

Higher than normal SSTs in the region, and enhanced easterly trade winds, in part due to the developing La Niña like conditions, is fuelling deep convection, with showers and thunderstorms more intense and frequent than is usual for the time of year.

**Expected Impacts**

Slight increase in the risk of flash flooding, and landslides in mountainous areas.



**Philippines and South China Sea, including eastern Vietnam** – see *Tropical Cyclones* section.

**Australasia**

Nil.

**Additional Information**

**Cox's Bazar, southeast Bangladesh**

Whilst showers and thunderstorms can't be ruled out each day, drier than average conditions are expected over the next week. This will reduce the risk of impacts from flash flooding. There are signs however, of it becoming wetter over next weekend and into next week

**Yemen**

The development of isolated heavy showers is likely to remain focused over the Western Highlands. Activity is expected to be slightly below average for the time of year.

**Sudan/South Sudan**

Daily heavy showers and thunderstorms are expected through the next week across South Sudan and the south of Sudan. Probably wettest in parts of South Sudan with 75-125 mm building in a few locations. This is now the latter part of the wet season which means localised flash flooding events are a little more likely where the heaviest showers fall.

**Mainland Europe, away from Iberia**

Whilst not likely to cause too many impacts, a late-summer heatwave is likely for parts of Mainland Europe, peaking early this week. Temperatures are likely to be widely some 5-8 °C above normal, with parts of France seeing temperatures some 8-12 °C above normal. This would bring maximum temperatures into the high 30s °C in places.

**Issued at:** 140710 UTC

**Meteorologists:** Chris Almond / Mark Sidaway

**Global Guidance Unit**

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

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