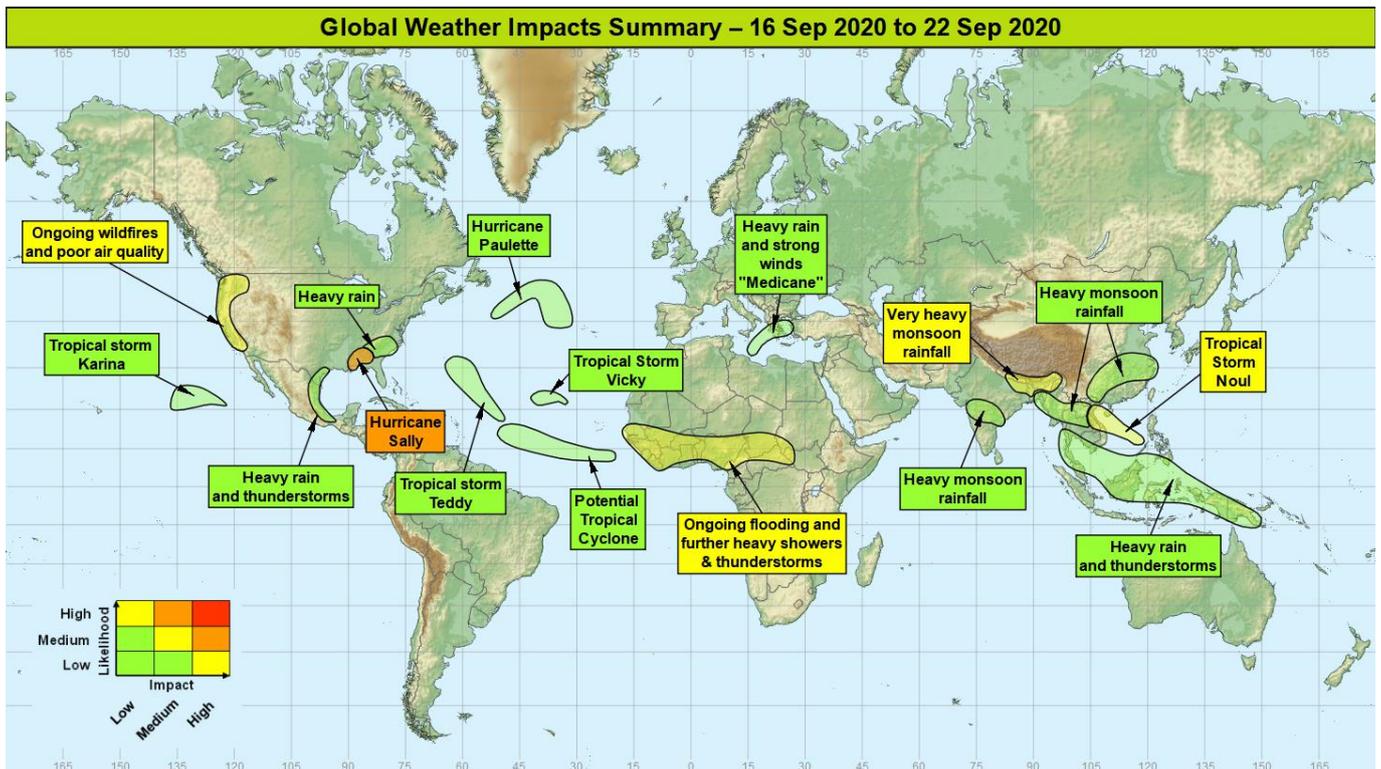


## Global Weather Impacts – Wednesday 16<sup>th</sup> to Tuesday 22<sup>nd</sup> September 2020

Issued on Wednesday 16<sup>th</sup> September 2020

### HEADLINES

- Hurricane Sally will move onshore over the Alabama coast today; hazards include extreme rainfall.
- Tropical Storm Noul will impact Vietnam later this week, and bring heavy rainfall to a wide area.
- Flooding continues across parts of West Africa, with further showers and thunderstorms.
- Wildfires ongoing across the western USA maintain poor air quality.



### Tropical Cyclones

#### Hurricane Sally (Gulf of Mexico including Mississippi, Alabama and Louisiana)

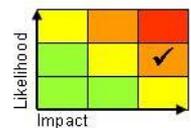
##### Weather

The slow-moving Hurricane Sally, recently upgraded to category 2 on the Saffir-Simpson Scale (sustained winds of 100mph), is expected to shortly move ashore across southern Alabama. This will bring hurricane force winds, a significant storm surge (>2 metres) including for the relatively densely populated Mobile Bay area, and extreme rainfall with 350-500mm of rainfall possible (typically just 140mm per month in this area). As Sally moves inland through the next 24 hours wind speeds will rapidly weaken, however the heavy rainfall will continue for some time.

##### Discussion

The slow moving Sally has now reached peak intensity and has begun its decaying trend, this due to a combination of land interaction, increased westerly wind shear, and reduced SSTs due to the slow moving nature of the system over the shallow northern Gulf. As the system moves inland it will rapidly spin down, with the majority of moisture becoming increasingly displaced to the northeast of the surface circulation with the rain being chiefly in this area.

##### Expected Impacts



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

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Inland flooding from both surface water and river causes are expected to be the primary impact across a wide areas, given the rainfall totals expected flood levels could reach historically high levels in some areas. A significant storm surge will lead to some inundation of low laying coastal areas from the mouth of the Mississippi to northwestern Florida, with this surge levels likely peaking this morning. Strong winds will likely cause some damage to buildings and other infrastructure.

## **Tropical Storm Noul (South China Sea)**

### **Weather**

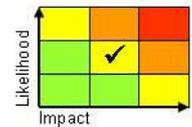
An area of showers and thunderstorms across the South China Sea has consolidated into Tropical Storm Noul overnight, this system is now expected to be steered northwestwards reaching the coastline of central Vietnam on Friday. Through this time the systems intensity is expected to remain fairly steady, with the chances of the Noul strengthening to becoming a typhoon very slim. The main hazard will be heavy rainfall with around 100 mm expected to fall widely along the track, and as much as 400mm over the mountains of Vietnam / Laos.

### **Discussion**

An Equatorial Rossby Wave (ERW) organisation shower and thunderstorms activity has moved across the Philippines and now emerged into the South China Sea. In this region the environmental humidity is high, as it the underlying SSTs at 30-31°C, however the system will experience moderate to strong easterly wind shear (20-25 knots) which will limit the pace of intensification of the storm, and likely just prevent it becoming a typhoon before landfall.

### **Expected Impacts**

Both surface water and fluvial flooding is expected across the areas from Friday and over the weekend, with an enhanced risk of landslides in mountainous areas. Strong winds will develop rough seas will lead to dangerous conditions for fishing and maritime transport, and in addition these winds may damage low quality and temporary buildings.



## **Hurricane Paulette (North Atlantic)**

### **Weather**

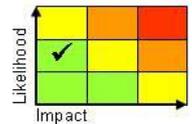
Hurricane Paulette continues its passage northeast across the open North Atlantic, before slowing, weakening to a tropical storm and then beginning to push slowly southwards on Thursday. It will probably remain over the open ocean, with just a small risk of the system bringing some gusty winds and heavy showers to the Azores over the weekend.

### **Discussion**

Paulette has now become entrained within the mid-latitude flow, with a shortwave upper trough perhaps aiding some slight intensification of the system for a short time today. During Thursday a subtle amplification of the pattern is signalled to lead to this shortwave upper trough extending and disrupting, which would cut off Paulette from the mid-latitude flow. This would lead to the system being steered slowly southwards ahead of a developing upper ridge, with the warm underlying seas able to maintain convection and the systems tropical storm status.

### **Expected Impacts**

Small risk of some minor disruption to transport from strong winds if the system moves close by the Azores this weekend.



## **Tropical storm Teddy (Tropical Atlantic)**

### **Weather**

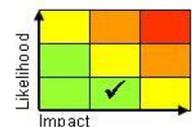
Teddy will continue to track generally in a northwestwards direction across the open North Atlantic Ocean, soon strengthening into a hurricane, before becoming a major hurricane. Early next week there is a small chance that this system could move close by Bermuda.

### **Discussion**

Teddy will be moving through a favourable environment for gradual intensification for the next several days as it is steered northwest by the sub-tropical ridge to its northeast, underlying SSTs remain high and vertical wind shear remains low.

### **Expected Impacts**

Potential for Teddy's track to take it close to Bermuda through the early to mid-part of next week. This could bring large swells/storm surge, strong winds and heavy rain to the island.



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**Tropical Storm Vicky (Tropical Atlantic)****Weather**

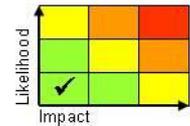
Tropical Storm Vicky is tracking west across the open North Atlantic Ocean and is expected a decay into a tropical depression through today.

**Discussion**

Vicky will be a very short-lived tropical cyclone as strong westerly wind shear will continue to significantly tilt the system and lead to a dislocation of low-level and mid-level centres. This will mean that the system will likely weaken below tropical storm strength through the next 24-36 hours.

**Expected Impacts**

Nil.

**Tropical storm Karina (eastern Pacific)****Weather**

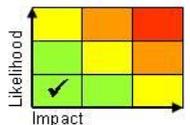
Tropical storm Karina is moving generally westward across the tropical eastern Pacific. It should remain over open waters for the next few days, before dissipating later in the week.

**Discussion**

Karina will move over lowering SSTs and is expected to ingest dry air over the next few days, which will lead to weakening, and eventual dissipation, of the storm.

**Expected Impacts**

Nil.



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

**Tropical North Atlantic (to the west of West Africa)****Weather**

An area of showers and thunderstorms well to the south of the Cabo Verde Island will continue to be steered gradually west-northwestwards across the tropical Atlantic. During this time conditions will become marginally favourable for the system to develop into a tropical cyclone, although during this period any system that develops will be no threat to land.

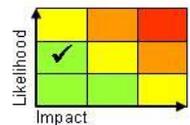
In addition to this system, further waves may emerge from west Africa next week (specific areas not highlighted) and have a small risk of developing into a tropical cyclone in the eastern tropical Atlantic, and a minimal chance of impacts for the Cabo Verde Islands.

**Discussion**

An African Easterly Wave continues to produce disorganised shower and thunderstorm activity. Environmental conditions appear to be conducive for slow development of the system this week as the wave moves westward across the open ocean. Further waves currently across Africa also have a small chance of developing into weak tropical cyclones in the eastern Atlantic next week.

**Expected Impacts**

Nil for the highlighted system, but a minimal risk of flash flooding impacts should any subsequent wave move close by the Cabo Verde Islands next week.



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## Europe

### Central Mediterranean, Greece and western Turkey

#### **Weather**

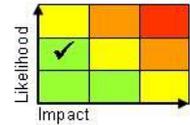
An area of showers and thunderstorms off the northern Libyan coastline has formed into a Mediterranean tropical-like cyclone "Medicane". This will be steered northeastwards through the coming days and likely bring tropical storm force winds to some parts of the region, and heavy rainfall in the form of showers and thunderstorms on the northeast of the surface circulation. Parts of Greece could see 100-200mm of rainfall on Thursday and Friday.

#### **Discussion**

Within a small pocket of unstable moist air off the Libyan coastline a Medicane appears to have formed today. Some unofficial forecasting centres have labelled this feature Cassilda, however with this being unofficial we recommend not using this in external communications. The evolution of this system appears fairly complex, with increasing and decreasing shear with the passage in an upper trough that may also modulate the depth of the surface low through semi-baroclinic processes too. Hence other than the heavy rainfall for parts of Greece confidence in the evolution of this feature is low.

#### **Expected Impacts**

Some minor surface water and riverine flooding (in smaller catchments) is possible across parts of Greece. Strong winds will lead to rough seas (impacting maritime transport), and bring some dangerous beach conditions.



## North America

Mississippi, Alabama, Louisiana and Florida – See *Tropical Cyclones* section.

### Southeastern States of the USA

#### **Weather**

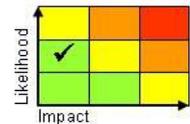
As the remnants of Hurricane Sally are steered northeastwards across the southeastern states of the USA they will continue to bring heavy rainfall to the region. 100-200mm could fall across a fairly wide region in the period of just 24 hours or so, this region typically sees around 80-100mm in total during September.

#### **Discussion**

As the remnants of Sally become embedded in a region of modest mid-latitude flow which will steer the remnants only slowly northeastwards, baroclinic processes will take over and will continue to generate heavy precipitation from the system. This will likely see more than a months' worth of rainfall with just the space of 24 hours, leading to some significant impacts.

#### **Expected Impacts**

Significant surface water and riverine flooding (in smaller catchments) is likely.



### Wildfires (Western USA)

#### **Weather**

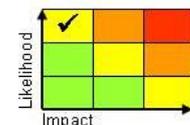
Hot and dry conditions are ongoing in the areas of western North America where numerous wildfires are ongoing. However through much of this period winds remain relatively gentle, helping with fire containment (although larger fires can generate their own wind), across the north of the area some cooler temperatures and rainfall is also expected later this week.

#### **Discussion**

Little change in the situation initially, but towards the end of the week a relatively active frontal system will approach the northern part of this area bringing some much-welcome rain.

#### **Expected Impacts**

Continued poor air quality through this week.



## Southern Texas

See *Central America and Caribbean*.

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## Central America and Caribbean

### Eastern Mexico and parts of southeast Texas

#### **Weather**

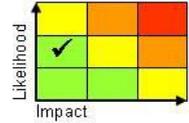
An enhanced area of shower and thunderstorm activity across the western Gulf of Mexico will remain slow moving across this area through the coming days. This area is still being monitored for a low risk of the formation of a tropical cyclone (however with the risk being so low (and area of enhanced rainfall so large) it was decided to include outside the tropical cyclone section. This system could bring 50-100mm of rainfall in a short duration, with the potential for more than 200mm of rain too fall in some parts through the coming week.

#### **Discussion**

A slow moving tropical wave in the western Gulf of Mexico leads to an area of enhanced shower and thunderstorm activity, and also an enhanced northeasterly flow on its northern and western flanks. These effects both combine to bring well above average rainfall along this section of coastline and the hills inland through the coming week, with it not impossible that a tropical cyclone could form over the weekend (chance rated at just 10-20%).

#### **Expected Impacts**

The potential for flash and riverine flooding across much of the region, with an enhanced risk of landslides in areas where terrain is steep.



## South America

Nil.

## Africa

### Much of Sub-Saharan Africa, including the southern Sahel region.

#### **Weather**

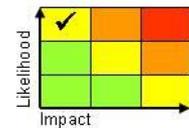
Further periods of heavy showers and thunderstorms will affect the region at times in the coming week. Whilst not all areas will see heavy rain, each day 50-75 mm could fall in places within a few hours, and over this period the wettest areas may see 200 mm build up. Although forecast rainfall totals are not especially high, given ongoing flooding in the region they are still felt likely to at least maintain the current flooding in some areas.

#### **Discussion**

The monsoon trough currently lies close to its climatological northern extent (although some transient slight withdrawal across parts of the Sahel now evident). 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.

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**Asia**

**South China Sea, Vietnam, and Laos** – See *Tropical Cyclone* section.

**Nepal, northeast India, northern Bangladesh, Bhutan, northern Myanmar, and the far northwest of Thailand**

**Weather**

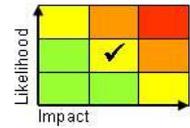
Enhanced shower and thunderstorm activity will continue across this region through the coming days bringing above average rainfall to much of the southern Himalayas, from Monday and into Early next week the remnants of Tropical Storm Noul (having crossed the Indochina Peninsula) will arrive in the region bringing exceptional rainfall accumulations. Some places are signalled to see 600-800mm, with the majority of this signalled early next week.

**Discussion**

The lower frequencies oscillations including the MJO and BSISO favour heavy rainfall progressing northwards across this region. With the likely arrival remnants of Tropical Storm Noul likely to lead to an extreme period of rainfall by both brining abundant deep moisture (for efficient precipitation generation), and a marked cyclonic surface circulation which will lead strong southerly winds developing extreme orographic precipitation on the southern facing mountains.

**Expected Impacts**

Increased risk of surface and flash flooding, and the additional risk of landslides in mountainous areas. From Monday the risk of all these impacts will likely significantly increase.



**Central India**

**Weather**

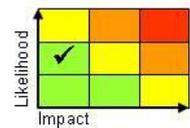
An active pulse in monsoon rains is expected over the next few days as a shallow monsoon depression progresses northwestwards. Just as the initial feature clears, the arrival of the remnants of Tropical Storm Noul from Monday will likely see a further bout of heavy rainfall. Locally 100-200mm of rain will fall during the initial event, with a further significant totals possible in this area (or the area just to the northeast) early next week.

**Discussion**

The steady northwestwards progress of a shallow monsoon depression will lead to a northwest moving area of enhanced shower and thunderstorm activity. The lower frequency oscillations support this with the BSISO in phase 4 or 5 supporting enhanced precipitation across central India.

**Expected Impacts**

Increased risk of flash flooding in places.



**Parts of China, Laos, Thailand, Myanmar, and Bangladesh.**

**Weather**

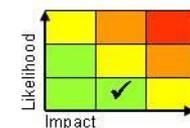
The remnants of Tropical Storm Noul will cross this region between Saturday and Monday bring enhanced showers and thunderstorm activity. Although there will be some local variations a broad corridor of 100-200 mm of precipitation is expected, with peaks over 400mm in the mountains. Although average precipitation accumulations vary widely across this region, Mandalay in Myanmar for example typically sees 155mm of precipitation across the whole of September.

**Discussion**

The decaying tropical cyclone will continue to organise deep convection within the deep plume of enhanced moisture around the system. As this is steered northwestwards across the Indochina peninsula there are hints that the cyclonic circulation will survive intact.

**Expected Impacts**

Increased risk of surface and flash flooding, and the additional risk of landslides in mountainous areas.



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**Northern Vietnam, central and southern China****Weather**

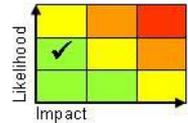
Enhanced rainfall across the south of the country in association with the withdrawing monsoon front. Between 100-200mm will likely fall in some locations, with these areas typically seeing 50-100mm in the whole month of September.

**Discussion**

Strong convergence along the withdrawing monsoon front will be enhanced by the passage of the tropical cyclone across Vietnam. The result being much enhanced precipitation stretching northeastwards from northern Vietnam. Given this region has seen above average precipitation in recent months, this event will likely bring some impacts.

**Expected Impacts**

Increased risk of surface and flash flooding, and the additional risk of landslides in mountainous areas.

**Much of the Maritime Continent****Weather**

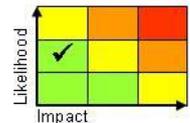
Heavy showers and thunderstorms will continue to be more frequent, intense and widespread than normal over the coming week. Within the broad area highlighted some spots in most countries will be at risk of seeing 100-250mm of rainfall, with much of this perhaps coming in a short duration during just the one event.

**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. This combines with the MJO currently active and moving across the area, and a marked Kelvin Wave (KW) which will quickly progress east and enhance convection over the coming days.

**Expected Impacts**

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

**Australasia**

Nil.

**Additional Information****Cox's Bazar, southeast Bangladesh**

See *Parts of China, Laos, Thailand, Myanmar, and Bangladesh* section.

**Yemen**

The development of isolated heavy showers is likely to remain focused over the Western Highlands. Activity is expected to be around average for the time of year, with a signal for activity to reduce over the weekend.

**Sudan/South Sudan**

Daily heavy showers and thunderstorms are expected through the next week across South Sudan and the far-south of Sudan. Probably wettest in parts of South Sudan with 30 to 60 mm building in a few locations – which is not unusual at this time of year. 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 5-10°C above normal, with parts of France seeing temperatures some well in to the 30s.

**Issued at:** 160700 UTC

**Meteorologists:** Nick Silkstone / Jason Kelly

**Global Guidance Unit**

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