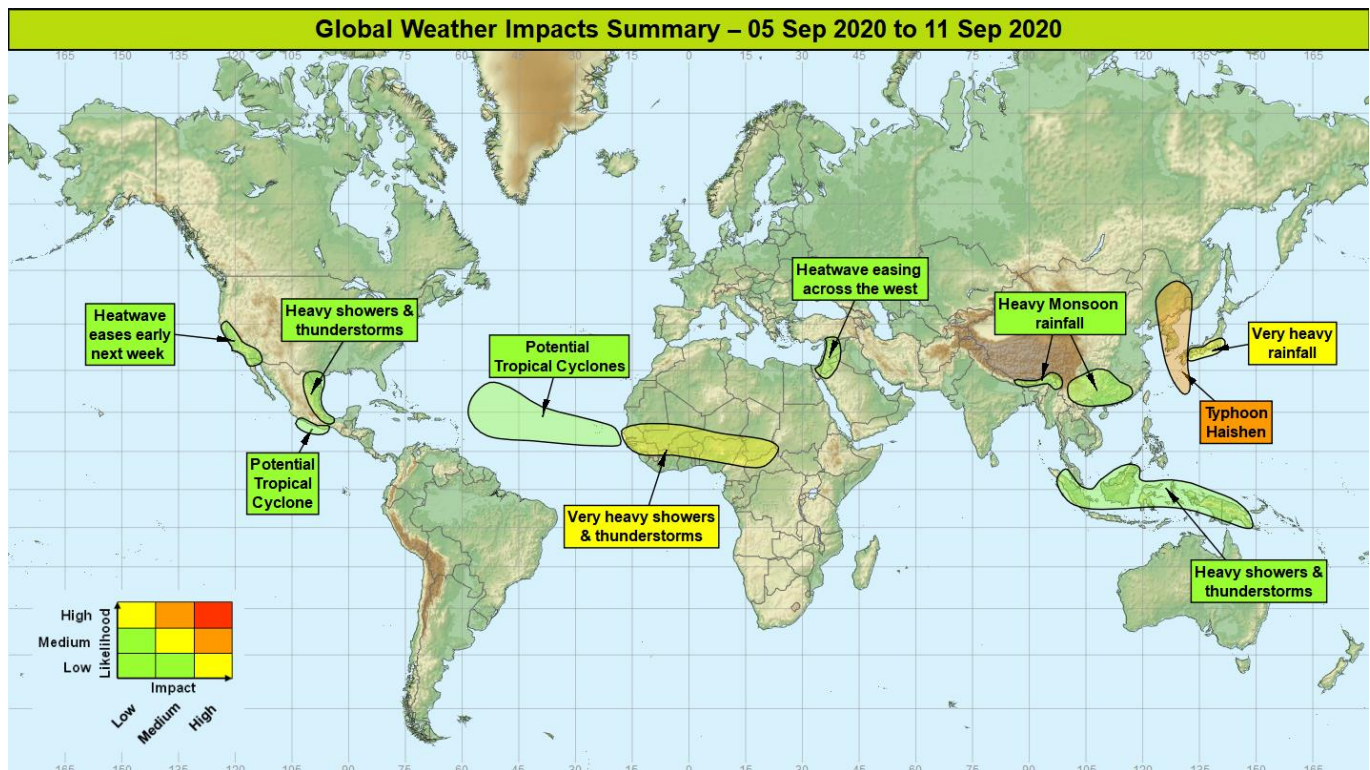


## Global Weather Impacts – Saturday 5<sup>th</sup> to Friday 11<sup>th</sup> September 2020

Issued on Saturday 5<sup>th</sup> September 2020

### HEADLINES

- Typhoon Haishen brings significant impacts to Japan and the Korean Peninsula this weekend.
- Continued heavy showers and thunderstorms across the Sahel region of West Africa.
- Potential for development of multiple Atlantic tropical cyclones, no significant impacts to land within the time period of this product.



### Tropical Cyclones

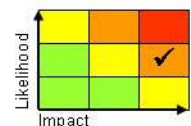
#### **Typhoon Haishen - West Pacific (Japan, Korea, northeast China and far east of Russia)**

Violent Typhoon Haishen has now begun its turn towards the north, likely crossing the Ryukyu Islands (Japan) today (Saturday), and then across the far west of Kyushu Island (Japan) on Sunday, before accelerating northwards and weakening across the Korean Peninsula and northeast China on Monday. This is a similar track to Typhoon Maysak earlier this week.

Haishen brings the risk of very destructive winds (mean speeds of 120mph) and a dangerous storm surge (~ 3 m), with very large waves for Japan and South Korea in particular. For all countries along the path of the typhoon copious amounts of rainfall (300-500mm).

#### **Discussion**

Near optimum environmental conditions have allowed the formation and maintenance of an extremely significant typhoon, with intensity through today perhaps fluctuating due to an eyewall replacement cycle. Over recent days the system has been steered slowly westwards by a strong upper ridge centred to the east of Japan, however the system has now rounded this ridge and is starting to gain latitude. Conditions remains favourable for Haishen to remain very strong or violent as it crosses the Ryukyu Islands (close to Kikai Island) later today, however thereafter a combination to reduced Ocean Heat Content (OHC), some land interaction, and increasing vertical wind shear (ahead of the approaching mid-latitude upper trough), will see an increasingly rapid weakening of the winds as it moves close by Kyushu on Sunday and across the eastern Korean Peninsula on Monday, and eventual decay (although heavy rain continues).



This forecast may be amended at any time

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**Expected Impacts**

Dangerous sea conditions across the region with significant wave heights of 10-15 M possible in the Pacific, East China Sea, and Sea of Japan. The combination of large waves and a storm surge up to 2-4 M above astronomical tides will likely lead to some coastal inundation of the small percentage of low lying land close to the storm's centre. Destructive winds (not just limited to coastal regions) will likely cause utility outages, damage to structures, and disruption to travel. However rainfall and associated flash and riverine flooding and the enhanced risk of landslides is felt likely to be the primary hazard. This especially so across the Korean Peninsula due to the very wet monsoon season (this will be the third such typhoon to affect the country in recent weeks), some evaluations and temporary displacement of citizens is likely.

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

**Tropical North Atlantic - Cabo Verde to the central tropical Atlantic****Weather**

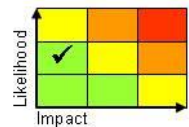
There is the potential for multiple disturbances moving west from West Africa across the tropical Atlantic to act as a focus for potential tropical cyclone development. There are several areas of possible development, with none posing any threat to land other than the Cabo Verde Islands where the systems remain weak during this period.

**Discussion**

Disturbances within the monsoon trough associated with African Easterly Waves (AEWs) could trigger tropical cyclone development in the coming days. There are significant model differences in the synoptic evolution of a number of potential development areas, which will likely interact with each other. Regardless if any of the disturbances develop into a tropical cyclones, with the presence of a slow moving tropospheric upper trough resulting in the region, would result in systems having slow forward speed and likely a tendency to curve to the north and remain across the open North Atlantic ocean.

**Expected Impacts**

Potential for some heavy rainfall bringing some minor flooding the Cabo Verde Islands.

**Eastern Pacific – southern coast of Mexico****Weather**

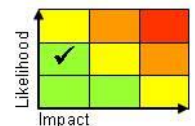
The remnants of Hurricane Nana have now crossed from the Caribbean into the east Pacific and are generating an area of enhanced heavy showers and thunderstorms along a portion of the Mexican coastline, these will continue to track west into the open Pacific today, with a slim chance of organisation into a tropical storm for a short time.

**Discussion**

The remnants of Nana have moved into the Gulf of Tehuantepec, and will move out into the Pacific today (Saturday). Upper level winds gradually increase shear across the region with only a slim chance of tropical cyclone formation today, with conditions very unfavourable thereafter.

**Expected Impacts**

Rough seas disrupting maritime transport and dangerous beach conditions along this stretch of coastline today.



\*\*\*\*\*

**Europe**

Nil.

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## North America

### Southwest USA and northwest Mexico

#### **Weather**

Over the weekend, heatwave conditions will impact much of California and northwest Mexico. Daytime maximum temperatures will be mid, perhaps locally high 40s°C, with the potential for Sunday to be one of the hottest ever days seen in California. The heatwave will begin to subside beyond Monday with temperatures then returning nearer to average.

#### **Discussion**

A major upper ridge across the region is leading to marked subsidence causing diabatic compression and heating of the air across the region. This subsidence will lead to largely cloud free conditions which coupled with light winds, will allow strong insolation across the area each day. Beyond Monday the pattern begins to re-orientate and allows cooler air to push southwards across the region.

#### **Expected Impacts**

Given that the weekend is a national holiday in the USA, impacts may be greater than usual. People and animals will be at risk of adverse heat health impacts with exposure. Electrical supplies may be stressed for demand for power from air conditioning units. Although wildfires continue to burn in the region leading to reduced air quality, light winds during this time will make fire containment fairly straightforward



**Texas, USA** – See *Central America and Caribbean* section

## Central America and Caribbean

### Northeastern Mexico and southern Texas

#### **Weather**

Heavy showers and thunderstorms will be much more frequent than usual across this region through until Monday. Showers may bring 50mm of rainfall in an hour or less, with many locations seeing 50-100mm of precipitation during this time, and some perhaps as much as 200-300mm. This would represent around a month's rainfall across the space of a few days.

#### **Discussion**

To the south of the major high pressure which is causing the extreme heatwave across the southwest of North America, enhanced easterly winds will blow across the Gulf of Mexico. These pick up ample moisture which will be deposited across the highlighted region, with the mountainous zones in particular (where convection released by ascent over orography) prone to some very high accumulations.

#### **Expected Impacts**

Increased risk of flash and riverine flooding, with the additional chance of landslides in mountainous regions.



## South America

Nil.

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## Africa

### Western Africa

#### **Weather**

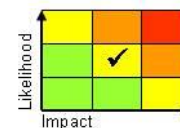
Further periods of prolonged, heavy showers and thunderstorms will affect the region at times in the coming week. Whilst not all areas will see heavy rain, each day 50-75 mm could fall in places within a few hours, and over this period the wettest areas may see 200-300 mm build up (most likely just inland from the Atlantic coast). This does tend to be the wettest time of the year for the areas highlighted but the forecast rainfall will still be equivalent to typical monthly amounts in places.

#### **Discussion**

The monsoon trough currently lies close to its northern extent from roughly Senegal towards southern Sudan. 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. Localised medium impacts are likely to continue to be seen across this wide region.

#### **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

### Syria, southeast Turkey, Iraq, Lebanon, and Israel

#### **Weather**

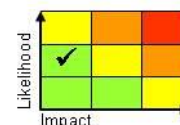
A continued spell of high temperatures with daily maxima well in excess of 40°C in places (which is some 5-8°C above normal for the time of year) will continue for a few days but will gradually ease across the west of the region.

#### **Discussion**

Large-scale subsidence from an upper-ridge coupled with light winds and strong insolation has led to some very high temperatures in recent days. Winds will gradually increase across the west of the region allowing temperatures along the more populated Mediterranean coastal strip to fall back closer to normal over the weekend.

#### **Expected Impacts**

Adverse effects on health of people (particularly children and elderly), and livestock exposed to the heat. Some increased demands on power networks likely due to increased energy demand for things such as air conditioning.



## Asia

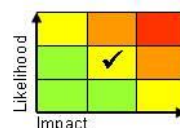
Korean Peninsula, southwest Japan and northeast China – see *Tropical Cyclones* section.

### Southern Japan

#### **Weather**

Enhanced rainfall, showers and thunderstorm activity is expected across this region through the weekend and into the early part of next week. During this time as much as 100mm of rainfall could fall at sea level, and 200-400mm over the mountains of the region. These totals would represent around a month's worth of rainfall in the space of 4 or so days.

#### **Discussion**



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The generally southerly monsoon flow will be enhanced by the passage of Typhoon Haishen to the west of the region through the weekend, with ascent of this moisture across the high mountains of Japan leading to high amounts of rainfall. Into early next week after Haishen completes its extra-tropical transition, the cold front extending south from this system (the de-facto monsoon front) will become slow moving across this region and continue to bring heavy rainfall.

## Expected Impacts

Flash and some riverine flooding is considered likely, as are landslides in regions where terrain is steep.

### Northern Bangladesh, eastern Nepal, far northeast of India and northern Myanmar

#### Weather

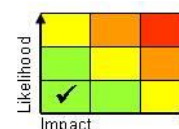
A further spell of enhanced shower and thunderstorm activity looks likely in this region over the weekend and the early part of next week. Up to 200 mm of rain could fall in a day in places, with an accumulated rainfall amount of up to 600 mm over the hills and mountains by early next week. Although this event would represent a significant proportion of the average September rainfall, it would not be an untypical amount during the peak monsoon season in July.

#### Discussion

As is typical the cause of the increased rainfall in this region looks like to be a modest increase in a more moist south-southwesterly from the Bay of Bengal. This broad pattern which leads to this setup is more likely when the BSISO1 index is in Phase 1 or 2, with this indeed occurring at the present time.

#### Expected Impacts

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



### Northern Vietnam and southern China

#### Weather

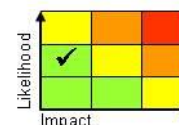
Shower and thunderstorm activity across this region will be well above average during this coming week. Showers could bring 50-100mm of rainfall to any location in a short duration, with the potential for 200-400mm for some spots through the week. Although these amounts are high for September, they would only represent just above average precipitation amounts for the wettest months of the year (June and July).

#### Discussion

In the wake of Typhoon Maysak and its extratropical transition and now to the west of Typhoon Haishen a strong than normal northerly flow has developed across this region. This has led to the monsoon frontal being drawn south across China, with the cold advection in its wake reducing geopotential heights and drawing the sub-tropical jet southwards too. This will lead to minor shortwave troughs engaging the monsoon front and generating enhanced precipitation.

#### Expected Impacts

Slight increase in the risk of flash flooding and landslides in mountainous areas. Perhaps a risk of some minor riverine flooding in smaller catchments.



### Indonesia, Malaysia, Papua New Guinea, Brunei and the Solomon Islands

#### Weather

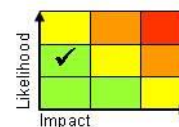
Heavy showers and thunderstorms will continue to be more frequent, intense and widespread than normal over the coming few days. Around 50-75 mm of rain could fall in a couple of hours in places, with overall accumulations through the week of around 150-250 mm.

#### Discussion

Higher than normal SSTs in the region, and enhanced easterly trade winds perhaps in part due to the developing La Niña like conditions (and the strengthening of the Walker Circulation), is fuelling deep convection, with showers and thunderstorms more intense and frequent than is usual for the time of year. This may well be further enhanced by the passage of the weak MJO oscillation across the region Maritime Continent in the coming.

#### Expected Impacts

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



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## **Australasia**

**Papua New Guinea**– see *Asia* section.

## **Additional Information**

### **Cox's Bazar, southeast Bangladesh**

Overall rainfall is expected to be below average until the middle of next week, with an increase to near or slightly above average precipitation than expected. Some thunderstorms are still possible at times, producing a threat of minor flash flooding at times over the Cox's Bazar area, but probably less-so than is usual for the time of year.

### **Yemen**

Shower and thunderstorm activity will remain below average over the weekend, then is signalled to increase above average next week, as a plume of moisture is drawn westwards across the region. This could see locally more than 100mm of precipitation fall in some of the wetter spots and lead to an increased risk of flash flooding and landslides across the central and western Highlands later next week. This event may be added into the normal sections over the coming days.

### **Sudan/South Sudan**

Further heavy showers and thunderstorms are expected through the coming 7 days across South Sudan and the south of Sudan. Up to 50-75 mm could fall in a 6 hour period in a few places, producing flash flooding. Accumulations over the next week look likely to be widely 25-50 mm, and locally as high as 100-125 mm. We are still in the wet season across this region and there has already been flooding in parts of the region. Therefore, further locally heavy seasonal rainfall could bring more flood impacts in places.

**Issued at:** 050300 UTC      **Meteorologists:** Nick Silkstone

**Global Guidance Unit**

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

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