

# Heat Outlook for April to September 2024

**Near-record heat can be expected until October (particularly in August and September)**

## Participating countries and territories

Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, Cayman Islands, Cuba, Curaçao, Dominica, Dominican Republic, French Guiana, Grenada, Guadeloupe, Guyana, Haiti, Jamaica, Martinique, Puerto Rico, St. Barth's, St. Kitts & Nevis, St. Lucia, St. Maarten/St. Martin, St. Vincent & the Grenadines, Suriname, Trinidad & Tobago and the US Virgin Islands



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CARIBBEAN CLIMATE OUTLOOK FORUM

# Health: Greater frequency of heat symptoms due to excessive heat, peaking in August & September

## Public health:

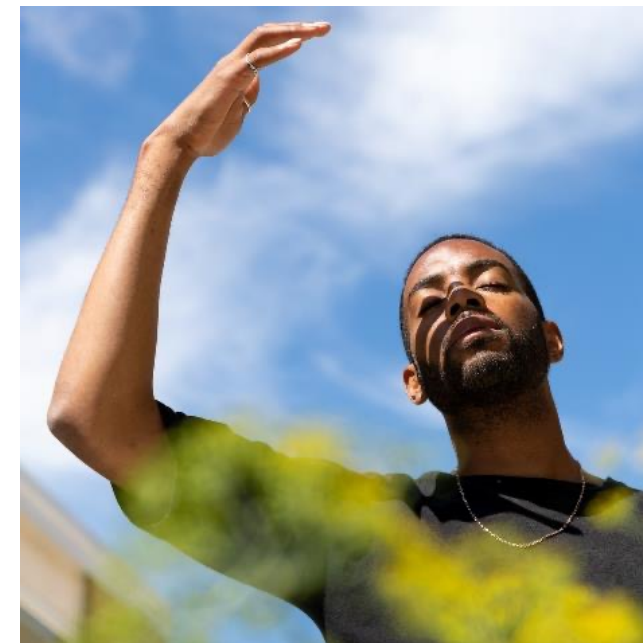
- *strong* increase in mild heat symptoms
- *notable* increase in heat illnesses, fainting episodes, hospitalisations, health services
- *likely* increase in biological risk (e.g. Aedes mosquito borne diseases, gastrointestinal disease)
- *exacerbation* of vulnerability in patients with chronic illness, children, pregnant women and the elderly

## Occupational health:

- *potential* increase in exhaustion during intense outdoor activity
- *significantly* reduced labour performance and productivity if unprotected

## Well-being:

- *significantly* increased sweating and water consumption
- snacking/binge eating leading to acute negative health impacts (hypertension, diabetes) and weight gain
- *increased* fatigue, irritability and aggression during prolonged heatwaves



# Agriculture:

Expect impacts from near-record heat, peaking in August to October

## Livestock:

- *increased* cooling and ventilation need to mitigate heat stress in small and large livestock
- stunted growth rate of broilers and egg production of layers
- *likely* reduced dairy production

## Crop agriculture:

- *exacerbation* of any evolving drought conditions leading to increased wilting
- *strongly* reduced productivity between 10 AM and 3 PM

## Fisheries:

- *increased* water temperatures potentially reducing catch of reef fish, die-off and migration of pelagic fish
- *significant* potential for coral reef bleaching

## Forestry:

- *exacerbation* of any evolving drought conditions
- increased wildfire potential if fuel stock is dry



# Tourism – Energy – Water:

Expect impacts from near-record heat, peaking in August & September

## Tourism:

- *Heat adaptation* – significantly increased demand for AC and refrigeration and associated costs in hotels
- *Diving operations* – significant potential coral reef bleaching, resulting in long-term reduction in demand

## Energy:

- *Production* – reduced efficiency of power generation; potential increase in interruptions as a result of spikes in cooling demand
- *Demand and consumption* – significantly increased cooling need in households, hotels, restaurants

## Water:

- *Quantity and quality* – water reservoir levels potentially decreasing due to increased evapotranspiration; potential increase in algal blooms
- *Consumption* – likely increase in households, hotels and power utilities



# DRM – Child Care & Education

Expect impacts from near-record heat, peaking in August & September



## DRM:

- *Risk:* potentially increased mortality and increased need for cooling strategies immediately post disaster (e.g. intense heat after passage of tropical cyclone); increased wildfire potential (if fuel stock is dry)
- *Operations:* likely reduced productivity of warehouse staff if unprotected

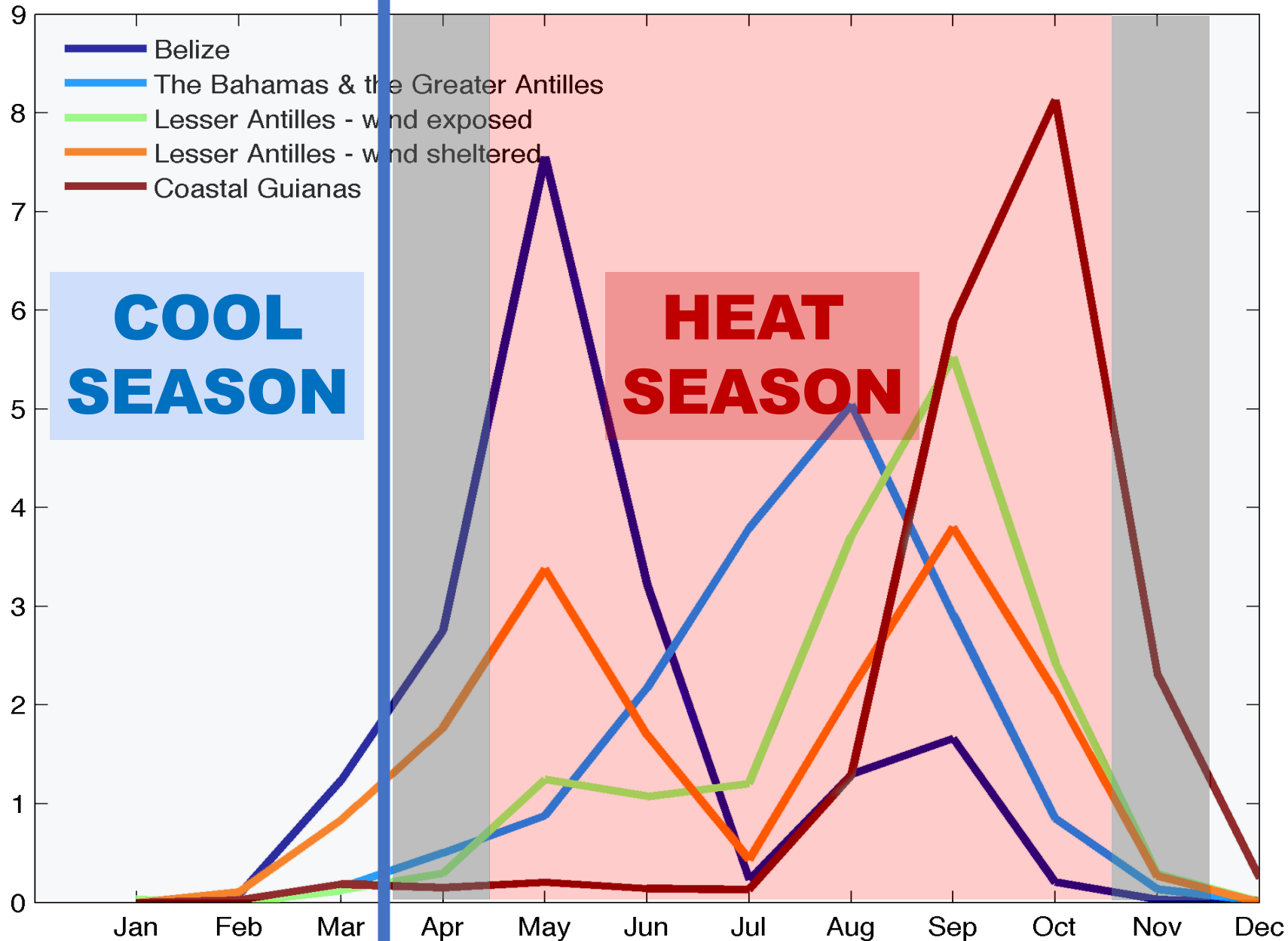


## Child care and education:

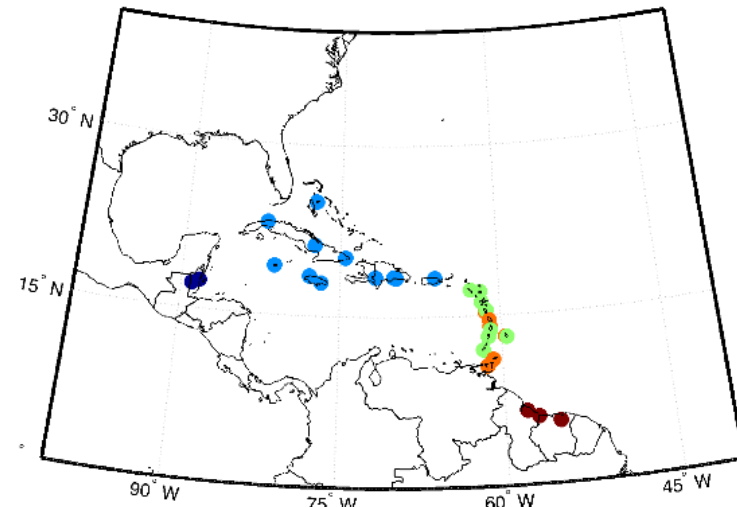
- *Learning:* significantly reduced productivity and reduced learning ability of students during the summer semester and at the start of the 2024-2025 school year
- *Child Protection:* potential increase in aggression during prolonged heatwaves

**TODAY**  
**(late-March)**

Number of days per month  
spent in heatwaves



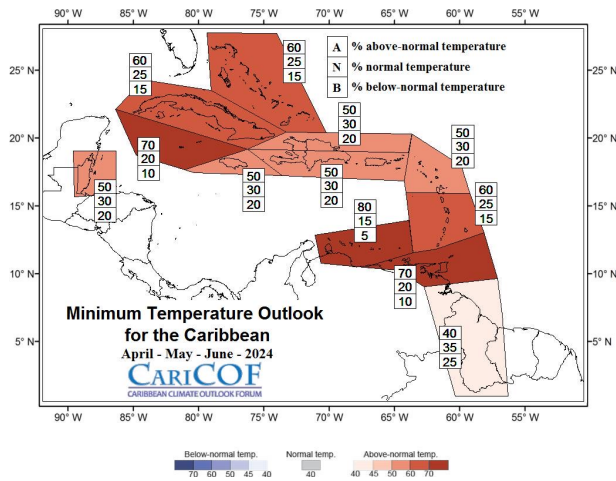
**SUB-REGIONS**



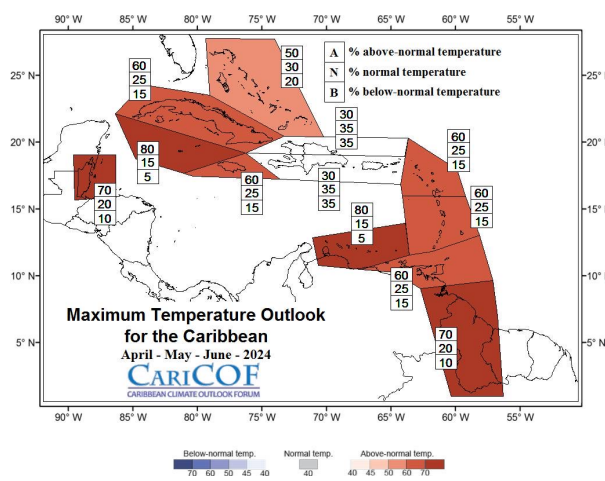
# Overall, how hot will the next three to six months be?

Apr-May-Jun 2024

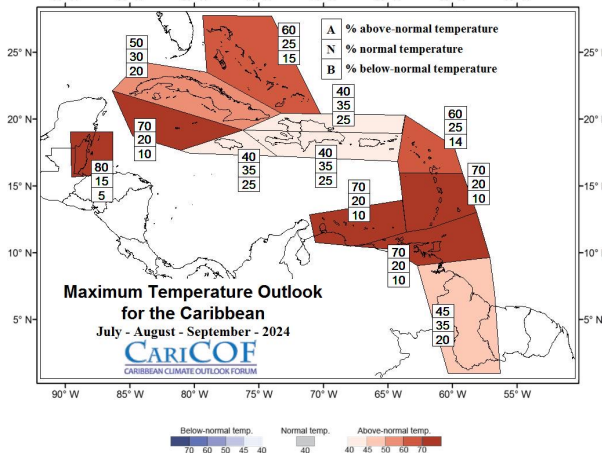
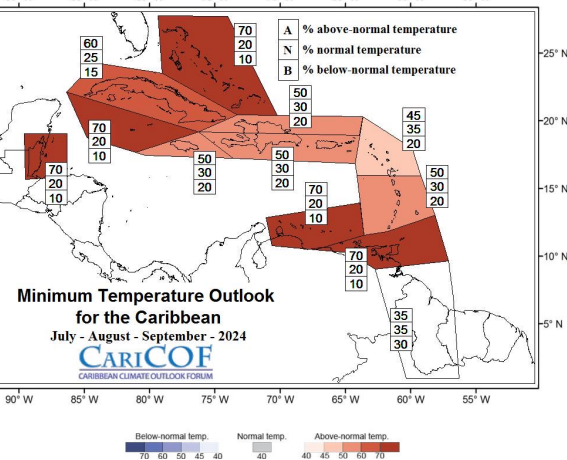
## Night-time



## Daytime



Jul-Aug-Sep 2024



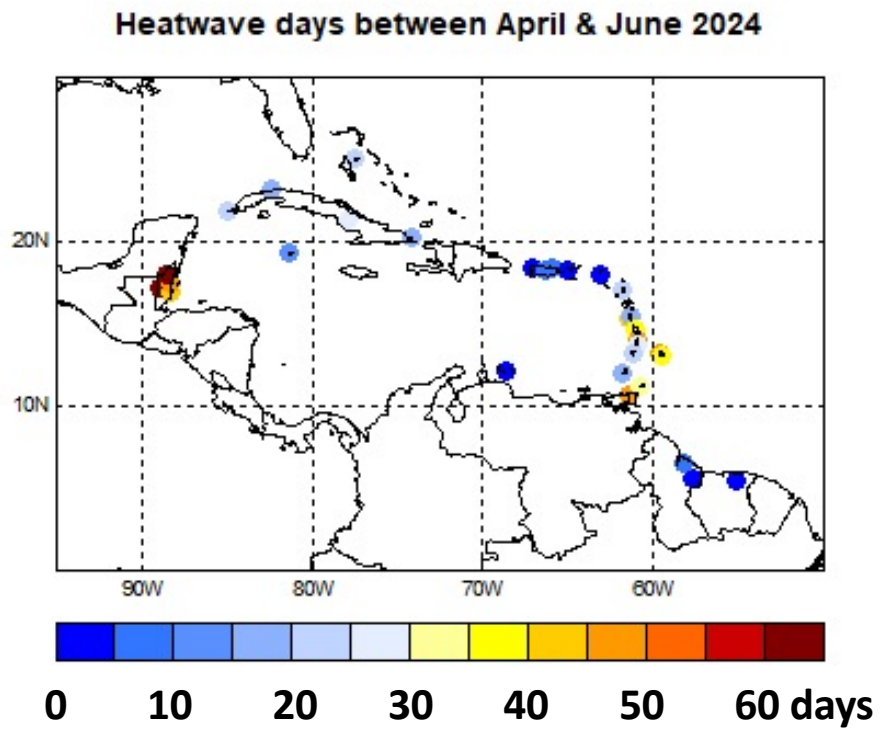
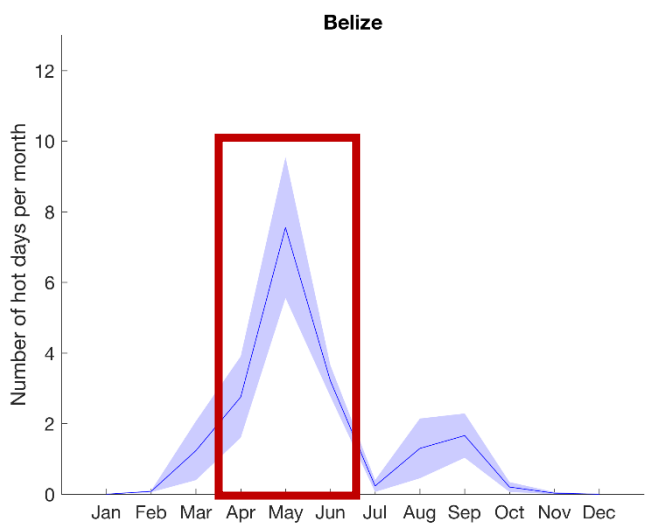
## FORECAST

1. April to June, marking the transition into and early part of the Caribbean Heat Season in the Caribbean Islands and Belize is forecast to be hotter than usual.
2. Intense, (near-)record night-time and daytime heat is expected by August and September.

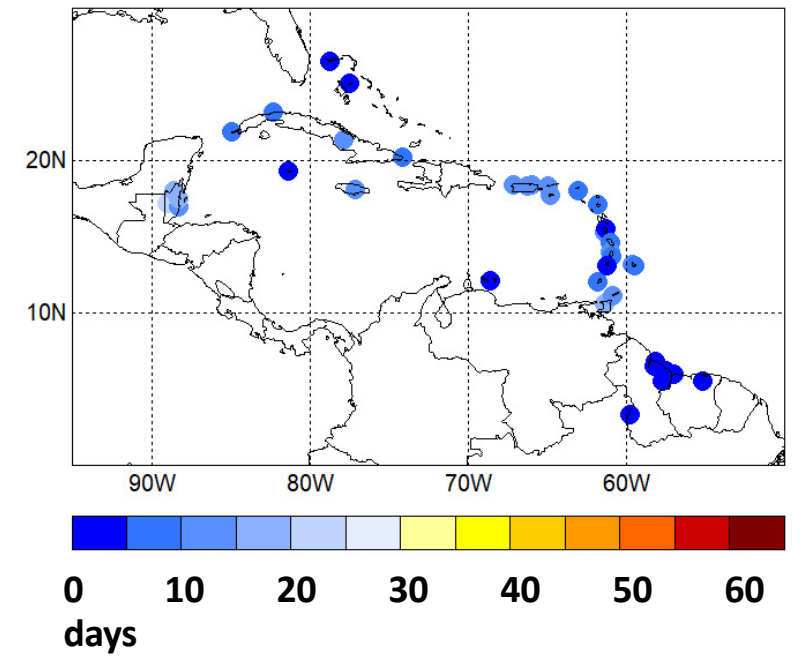
## IMPLICATIONS

- Increasingly frequent and possibly intense episodes of heat stress in the vulnerable population & small livestock because of high temperature and increasing humidity through September.
- Cooling need rising earlier and faster than in most other years, peaking in August and September.

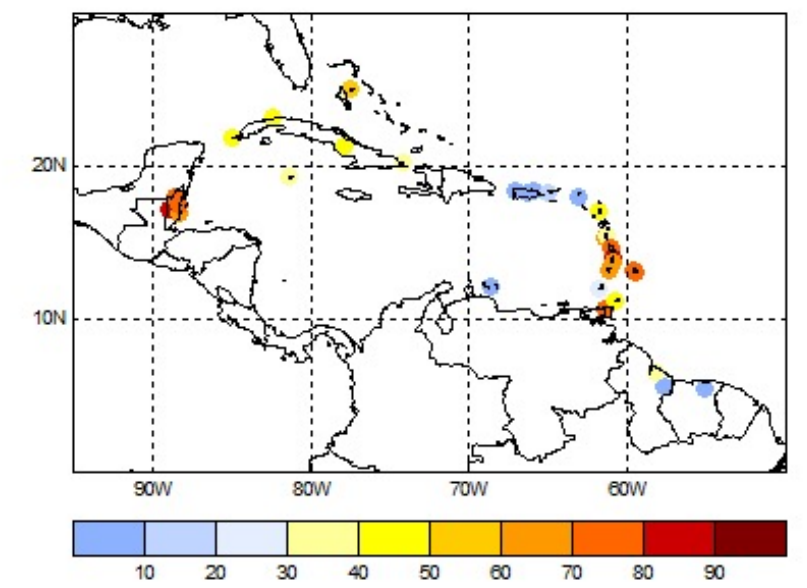
# How many heatwave days to expect for April to June 2024 (i.e., the peak heat season in Belize)?



Heatwave days between April & June (1985-2016 avg.)



Prob. at least 30 heatwave days between Apr & Jun 2024





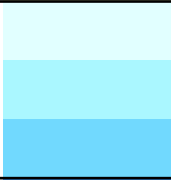

**USUALLY:** 15-20 heatwave days in inland Belize & Trinidad; 5-15 in Jamaica, Cuba & Puerto Rico; less than 10 elsewhere.

**FORECAST:** 50 or more heatwave days in inland Belize; 30 to 50 in Barbados, Trinidad & Tobago and leeward locations in the Windward Islands; **likely at least 30 heatwave days in Barbados, Belize, Dominica, Saint Lucia, Trinidad & Tobago.**

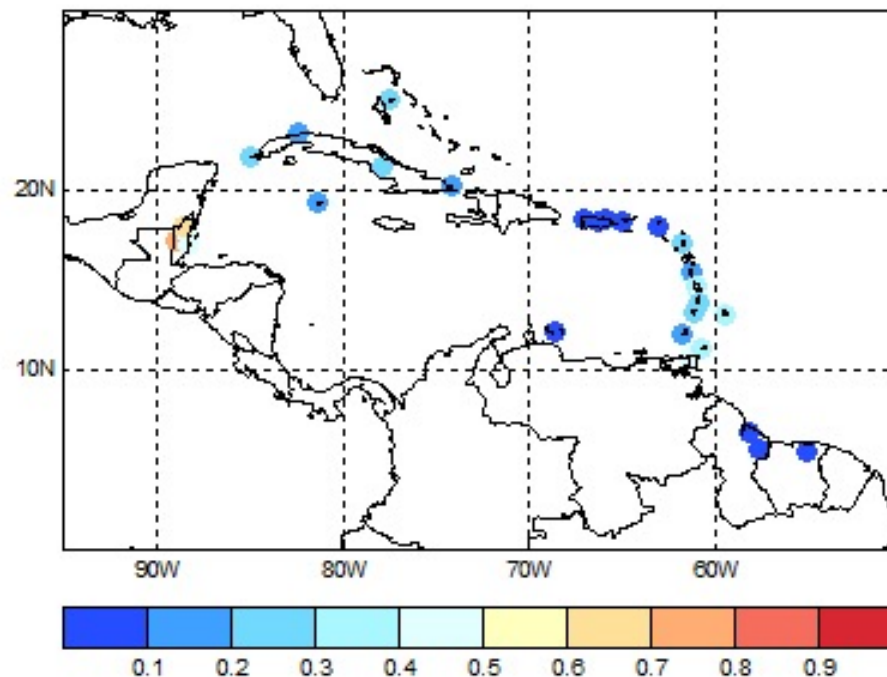


# Heat impact potential during **Apr-May-Jun 2024?**

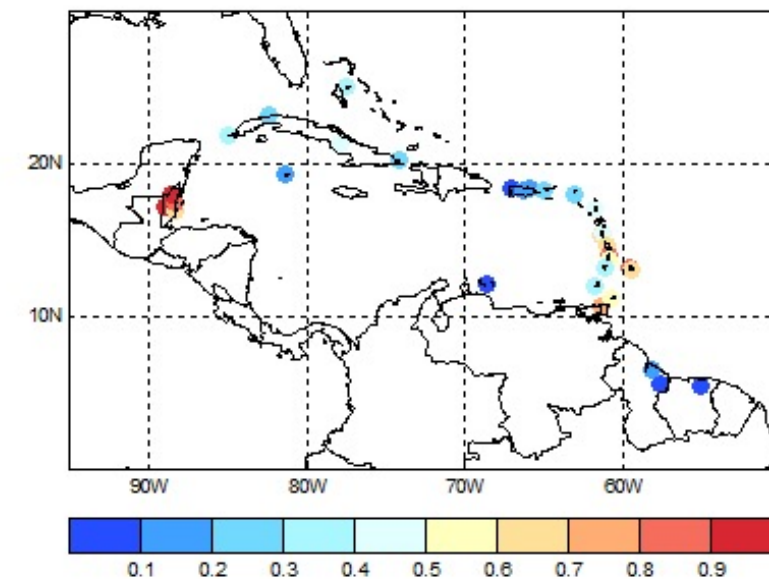
(i.e., percentage of time spent in heatwaves during AMJ 2024)

Heat impact potential	Colour codes	Percentage of time spent in heatwaves
<b>EXTREMELY HIGH</b>		>80%
<b>HIGH</b>		50-80%
<b>MODERATE</b>		20-50%
<b>SLIGHT</b>		10-20%
<b>MARGINAL</b>		0-10%

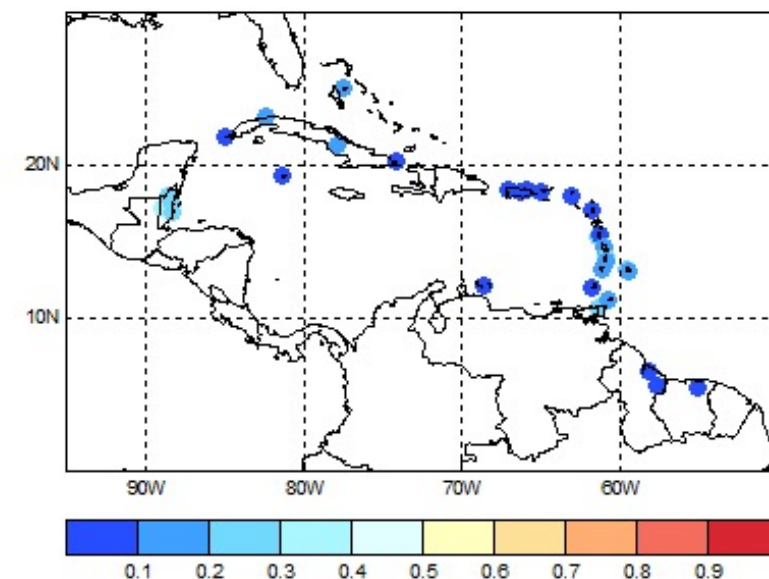
Forecast Heat Impact Potential - Apr-May-Jun 2024



Heat Impact Potential - Apr-May-Jun 2024 (upper)






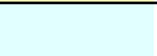
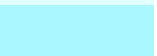


Heat Impact Potential - Apr-May-Jun 2024 (lower)

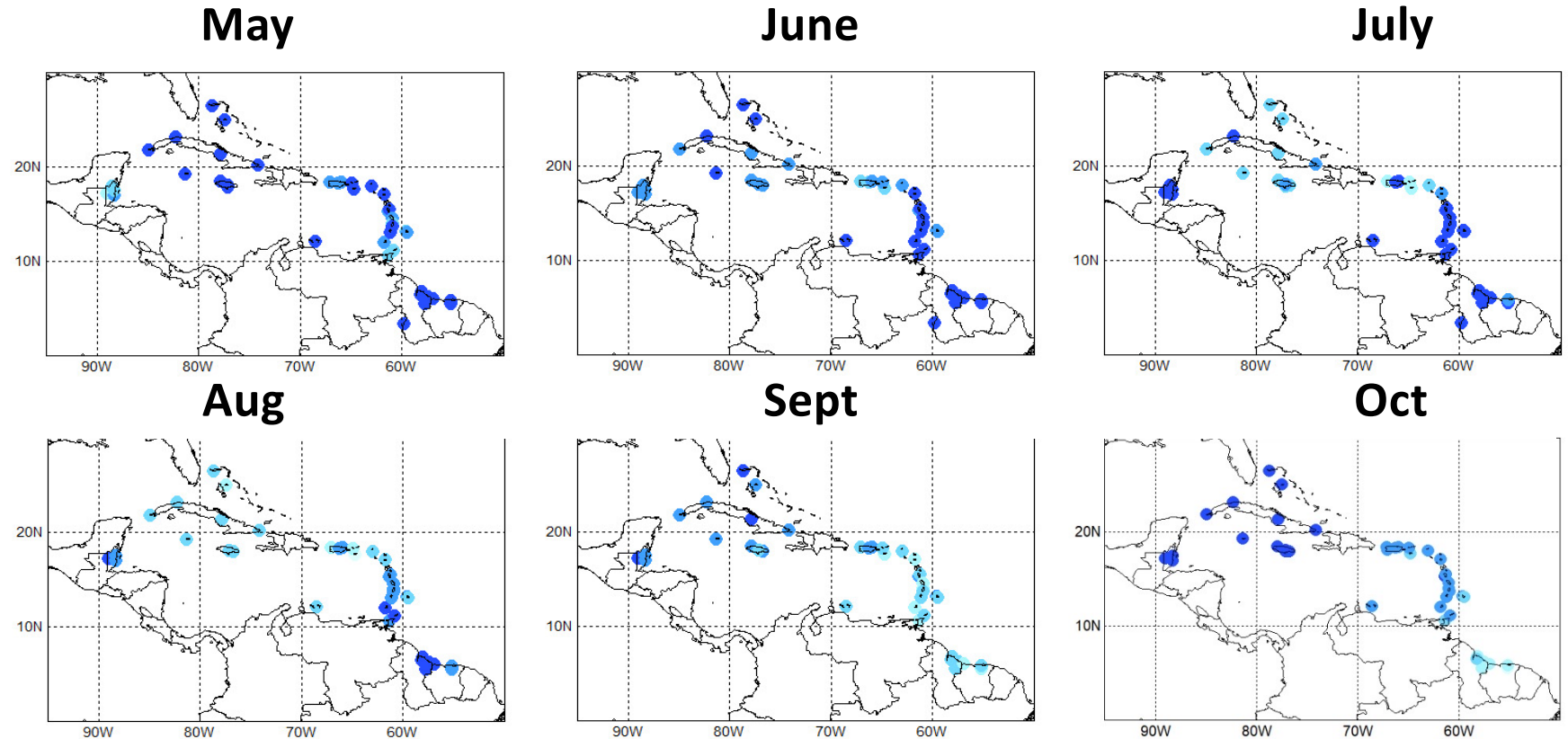


**FORECAST:** High potential in Belize; moderate potential in Barbados, Trinidad & Tobago, the Windward Islands; slight to moderate potential in The Bahamas, Cayman Islands, Cuba; marginal to slight potential in the ABC Islands, Guianas, Puerto Rico, Leeward Islands (left centre map);

**extr. high potential possible in Belize. (top right map).**

# Historical monthly heat impact potential due to heatwaves during the heat season

Heat impact potential	Colour codes	Percentage of time spent in heatwaves
EXTREMELY HIGH		>80%
HIGH	 	50-80%
MODERATE	 	20-50%
SLIGHT		10-20%
MARGINAL		0-10%



- May: Moderate potential in Belize; marginal to slight elsewhere.
- Jun.: Slight potential in Barbados and areas from St. Martin westwards; marginal elsewhere.
- Jul.: Slight to moderate potential in the Greater Antilles & Leeward Is.; marginal to slight elsewhere.
- Aug.: Moderate potential in Barbados & islands westwards of Guadeloupe; marginal elsewhere.
- Sep.: Moderate potential in the ABC Is., Lesser Antilles, Guianas; marginal to slight elsewhere.
- Oct.: Moderate potential in Barbados, the Guianas & St. Croix; marginal westwards of Hispaniola; slight elsewhere.



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**Regional climate data, information, tools,  
experimental and operational products  
are available at  
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The prototype for this product was developed with the generous support  
of the American People through the USAID funded BRCCC Programme in 2017.

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