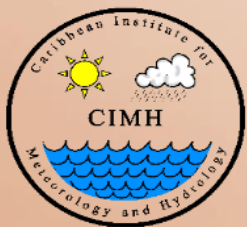


Heat Outlook for September 2024 to February 2025

Near-record heat causing episodes of significant heat stress can be expected through October, particularly in September

Participating countries and territories

Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, Cayman Islands, Cuba, Curaçao, Dominica, Dominican Republic, French Guiana, Grenada, Guadeloupe, Guyana, Haïti, 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



caricof@cimh.edu.bb

CARICOF
CARIBBEAN CLIMATE OUTLOOK FORUM

Health: Greater frequency of heat symptoms due to excessive heat, peaking in September (& October in the Guianas)

Public health:

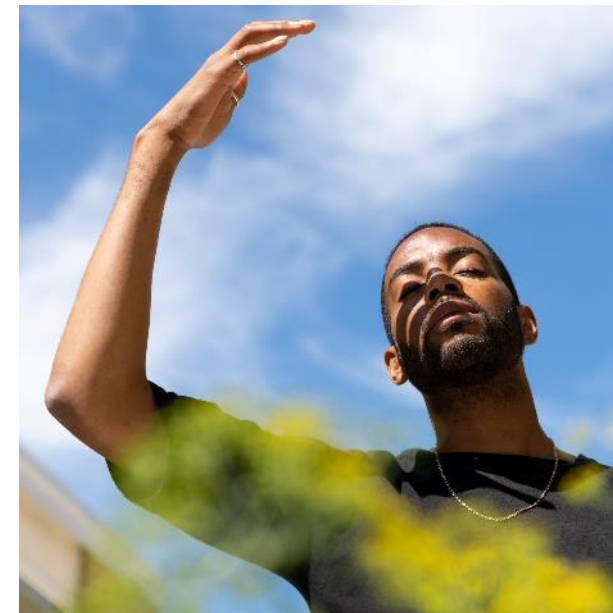
- *strong* increase in mild heat symptoms
- *significant* increase in heat illnesses, fainting episodes, hospitalisations, health services
- *likely* increase in biological risk (e.g. Aedes mosquito borne diseases, gastrointestinal disease), especially combined with rainfall extremes
- *exacerbation*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

Occupational health:

- *significant* 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 September to October



Livestock:

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

Crop agriculture:

- *exacerbation* of any evolving drought increasing crop wilting
- *strongly* reduced productivity between 10 AM and 3 PM

Fisheries:

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

Forestry:

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



Tourism – Energy – Water:

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

Tourism:

- **Heat adaptation** – significantly increased demand for AC and refrigeration and associated costs in hotels
- **Diving operations** – significant potential for mass 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** – strongly increased cooling need in households, hotels, restaurants

Water:

- **Quantity and quality** – recharge of water reservoirs along the wet season slowed down 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 September & October



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 (particularly where fuel stock is dry)
- **Operations:** *likely* reduced productivity of warehouse staff if unprotected

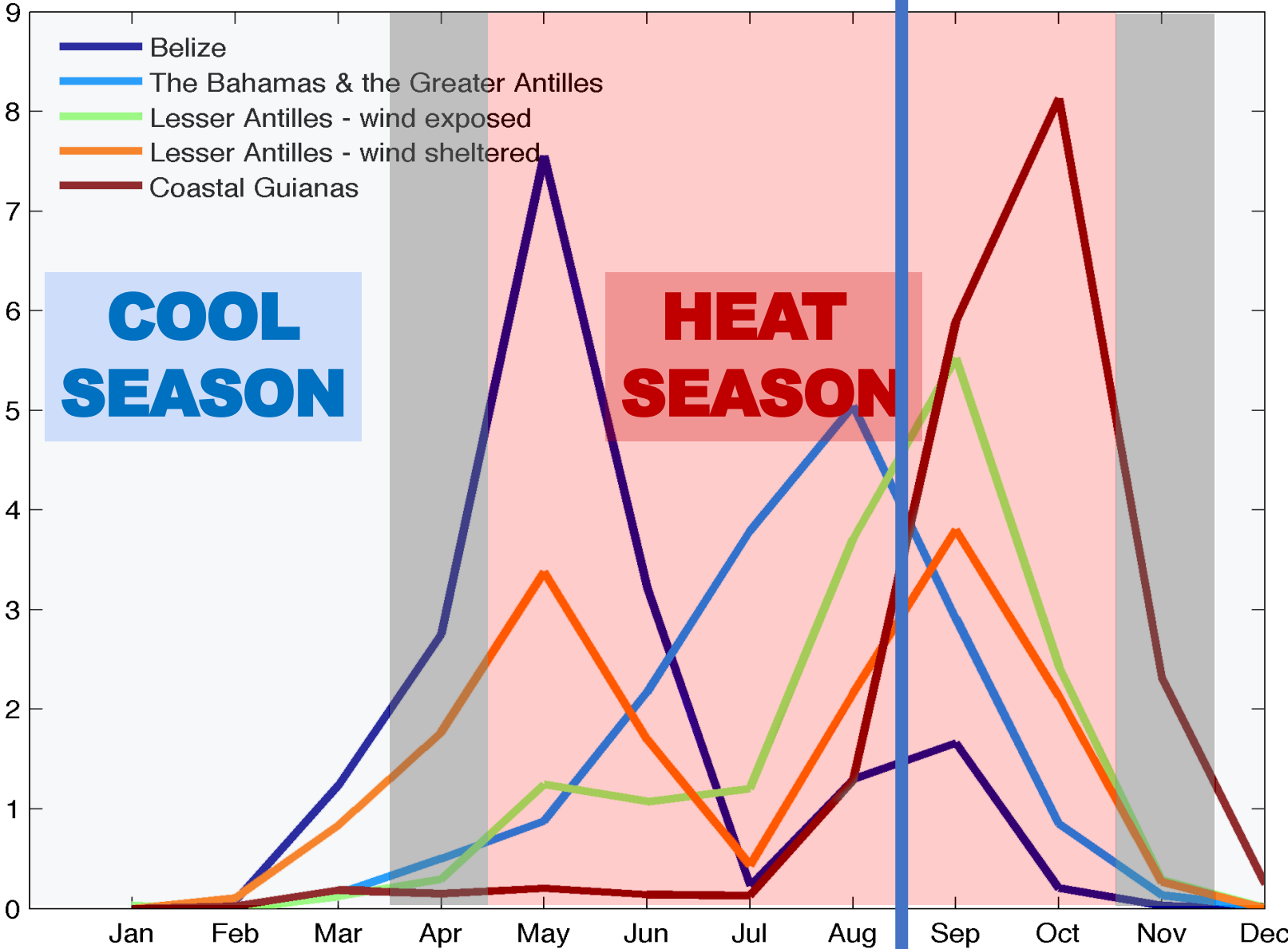


Child care and education:

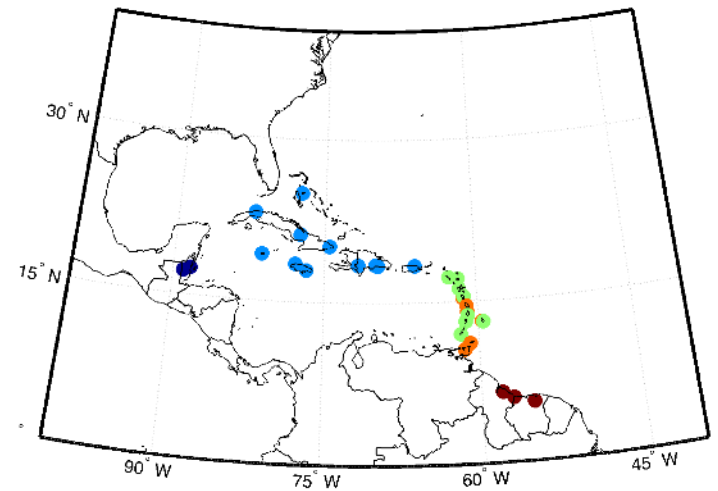
- **Learning:** *significantly* reduced productivity and reduced learning ability of students during the summer semester and at the start of the 2024-2025 school year
- **Child Protection:** *potential* increase in aggression during prolonged heatwaves

TODAY
(late-August)

**Number of days per month
spent in heatwaves**



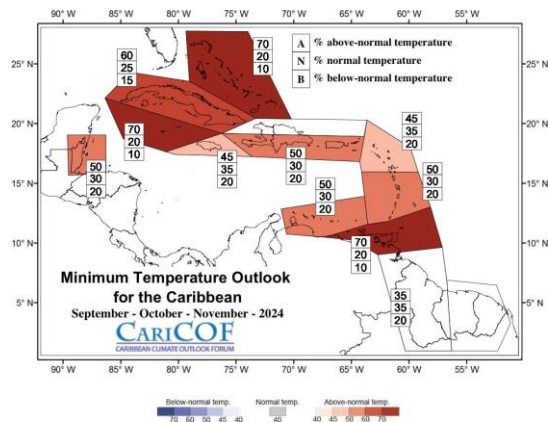
SUB-REGIONS



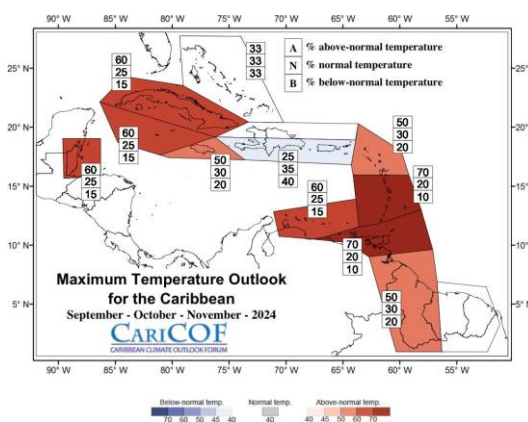
Overall, how hot will the next three to six months be?

Sep-Oct-Nov 2024

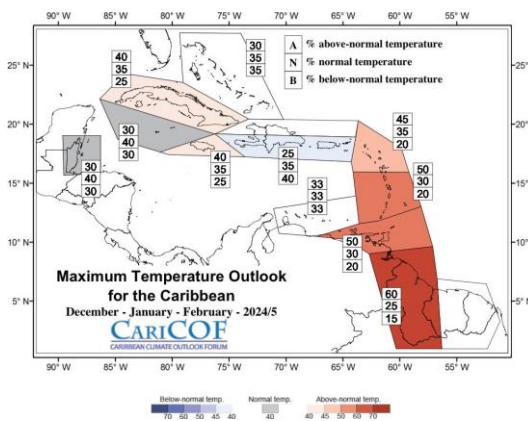
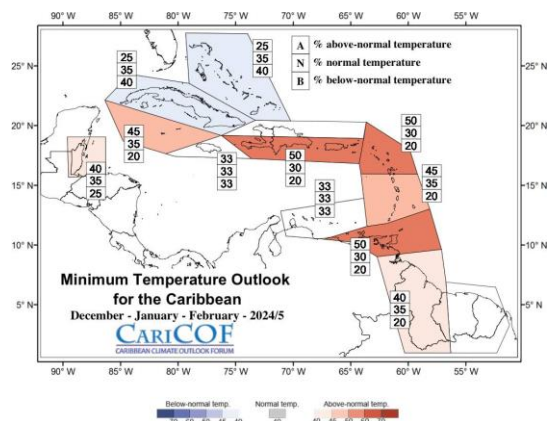
Night-time



Daytime



Dec-Jan-Feb 2024-25



← Milder Usual Hotter →

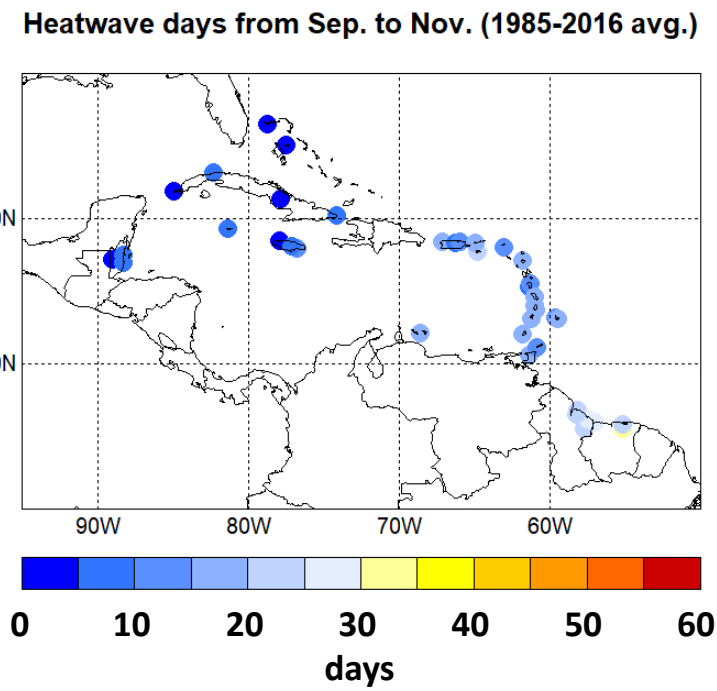
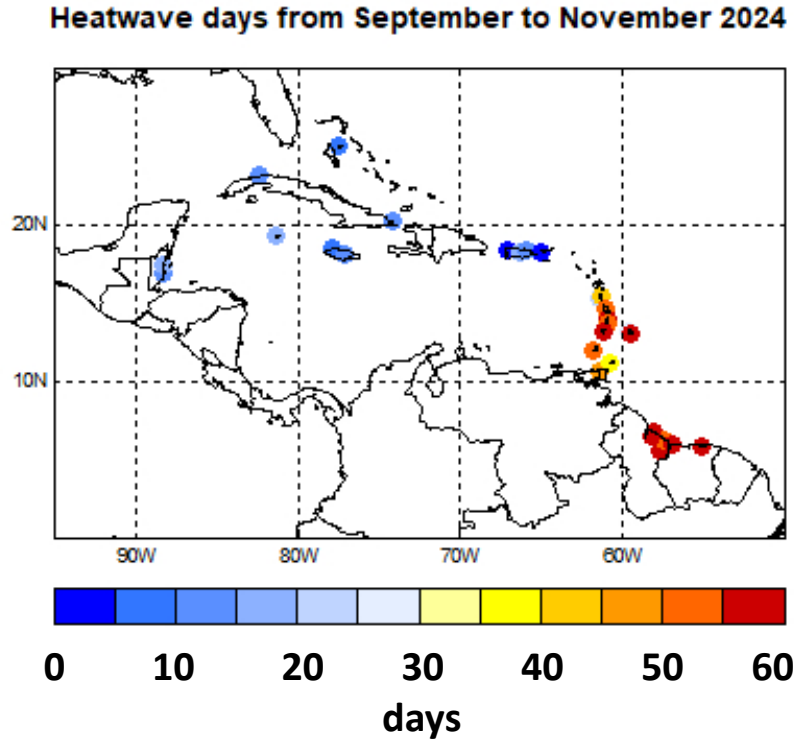
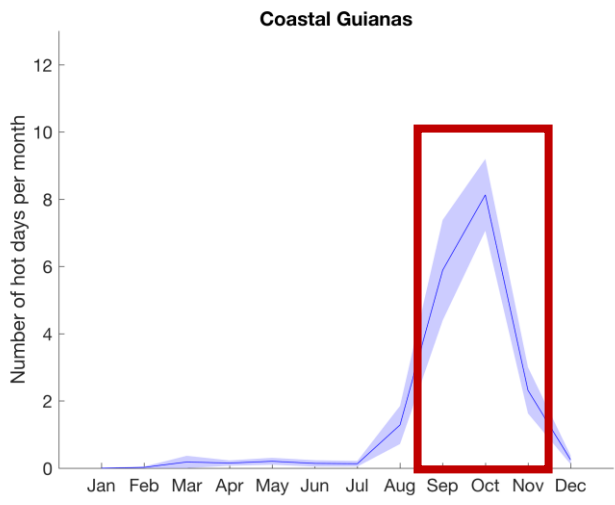
FORECAST

1. September (peak of the Heat Season) to November (transition from Heat to Cool Season) in the Caribbean (incl. Guianas) is forecast to be considerably hotter than usual.
2. Intense, (near-)record night-time and daytime heat, with increasing humidity through September or October.
3. Episodes of excessive heat should be rare from December to February despite the possibly warmer than usual temperatures.

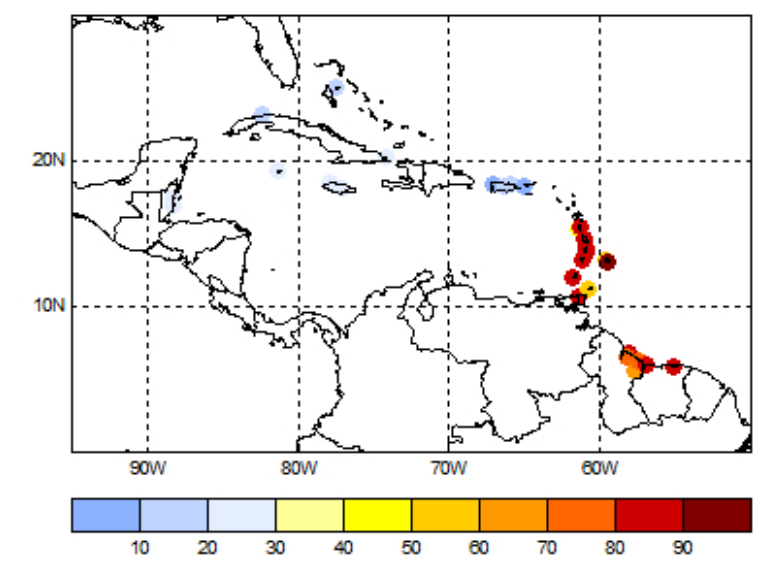
IMPLICATIONS

- Frequent, very likely intense (and persistent) episodes of heat stress in the vulnerable population & small livestock because of high temperature and increasing humidity.
- Cooling need may reach record levels in September.

How many heatwave days to expect for **September to November 2024** (peak of the heat season in the Guianas)?



Prob at least 30 heatwave days between Sep & Nov 2024





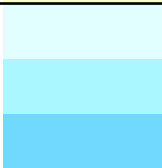
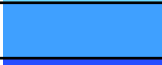

USUALLY: 15-30 heatwave days in ABC Islands, coastal Guianas, Puerto Rico, Lesser Antilles; 5-15 heatwave days elsewhere.

FORECAST: 50 or more heatwave days in Barbados, Guianas, Trinidad, Windward Islands; 25-50 heatwave days in ABC Islands, Belize, Tobago;

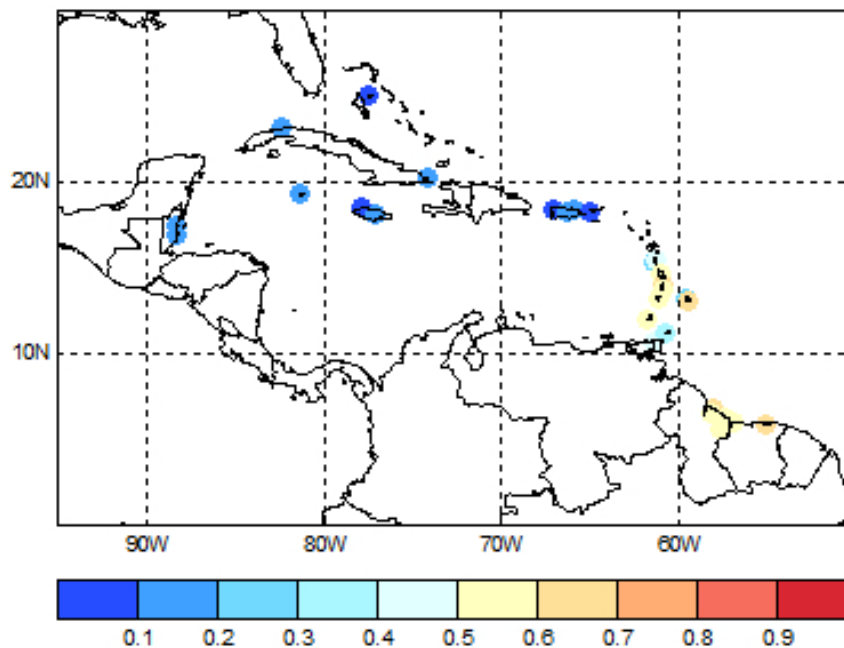
likely at least 30 heatwave days in Barbados, Guianas, Trinidad & Tobago, Windward Islands.

Heat impact potential* during Sep-Oct-Nov 2024?

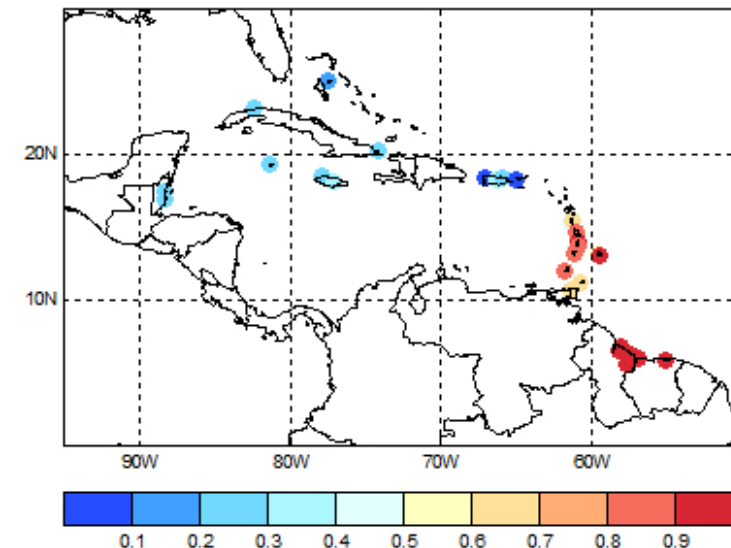
*heat impact potential = percentage of time spent in heatwaves during SON 2024

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%

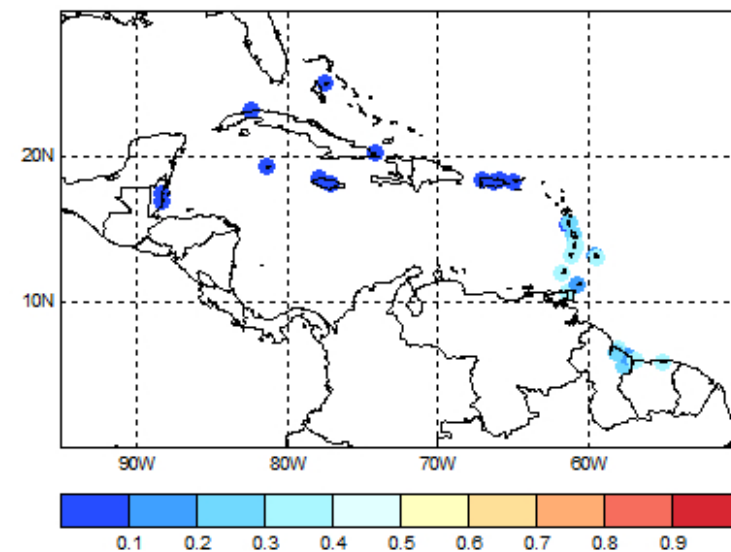
Heat impact potential - Sep. to Nov. 2024



Heat impact potential - Sep. to Nov. 2024 (upper)








Heat impact potential - Sep. to Nov. 2024 (lower)

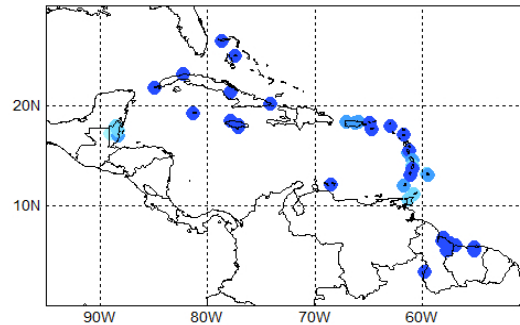


FORECAST: *High potential in Barbados, Guianas, Trinidad, Windward Is.; moderate potential in Belize, Cayman Is., Tobago (left centre map); high potential further possible in Tobago (top right map).*

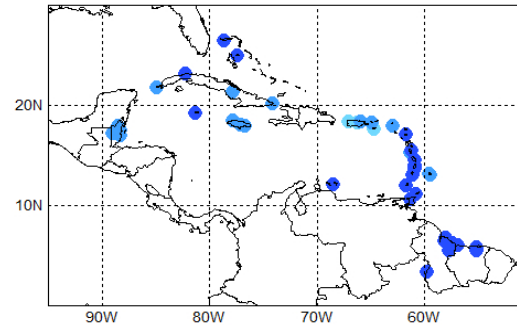
Historical monthly heat impact potential due to heatwaves during the heat season

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%

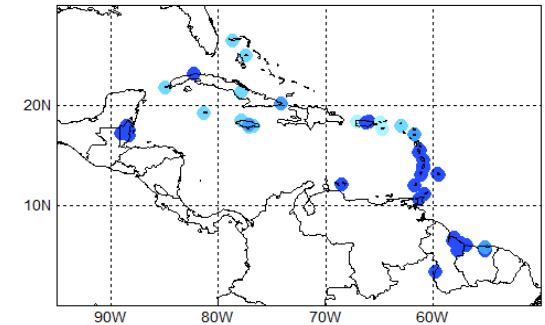
May



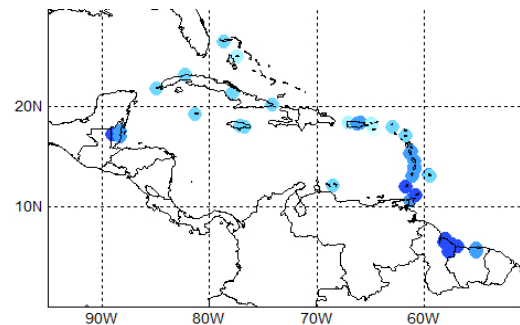
June



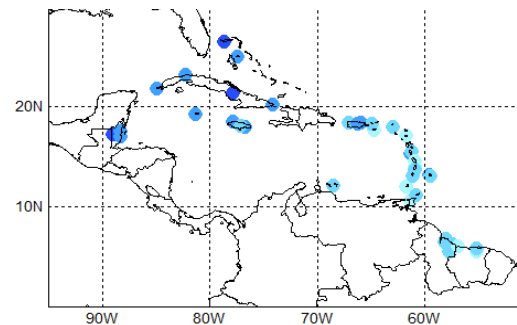
July



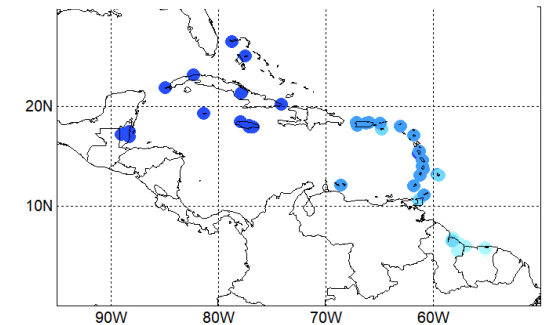
Aug



Sept



Oct



- 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.



CARICOF
CARIBBEAN CLIMATE OUTLOOK FORUM

**Regional climate data, information, tools,
experimental and operational products
are available at
rcc.cimh.edu.bb**

Coordination: Caribbean Institute for Meteorology & Hydrology
Contact: caricof@cimh.edu.bb
Authors: Dr. Cédric J. Van Meerbeeck – *Climatologist* (cmeerbeeck@cimh.edu.bb)
and Mrs. Janice Reid – *ClimSA Project intern*

The prototype for this product was developed with the generous support of the American People through the USAID funded BRCCC Programme in 2017.

Development Team: Dr. Cedric J. VAN MEERBEECK¹ (cmeerbeeck@cimh.edu.bb), Dr. Simon MASON²,
Dr. Hannah Nissan², Dr. Teddy ALLEN², Ms. Wazita Scott¹

¹Caribbean Institute for Meteorology and Hydrology (CIMH), Barbados

²International Research Institute for Climate and Society (IRI), USA