

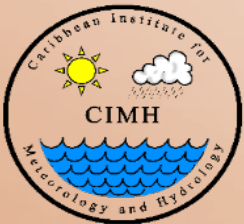
Heat Outlook for September to February 2023-24

—

Excessive heat can be expected until 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



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CARICOF
CARIBBEAN CLIMATE OUTLOOK FORUM

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

Public health:

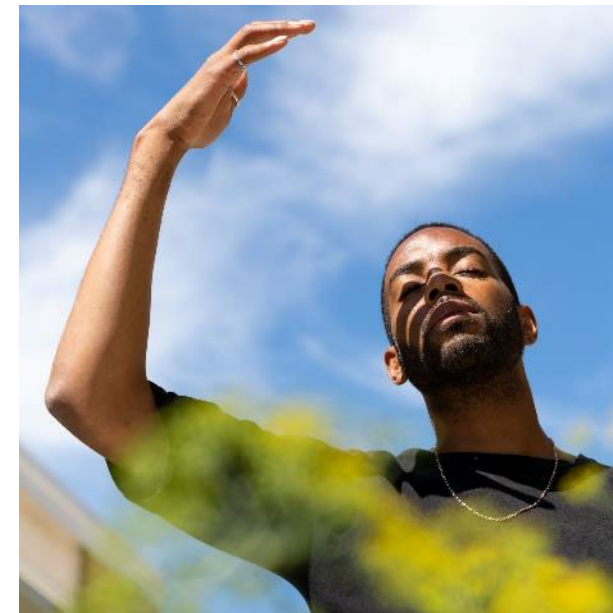
- *strong* increase in mild heat symptoms
- *notable* increase in heat illnesses, fainting episodes, hospitalisations, health services
- *likely* increase in biological risk (e.g. Aedes mosquito borne diseases, gastrointestinal disease)
- *exacerbation* of vulnerability in patients with chronic illness, 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 excessive heat from 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 excessive heat, particularly 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 excessive heat from August to October



DRM:

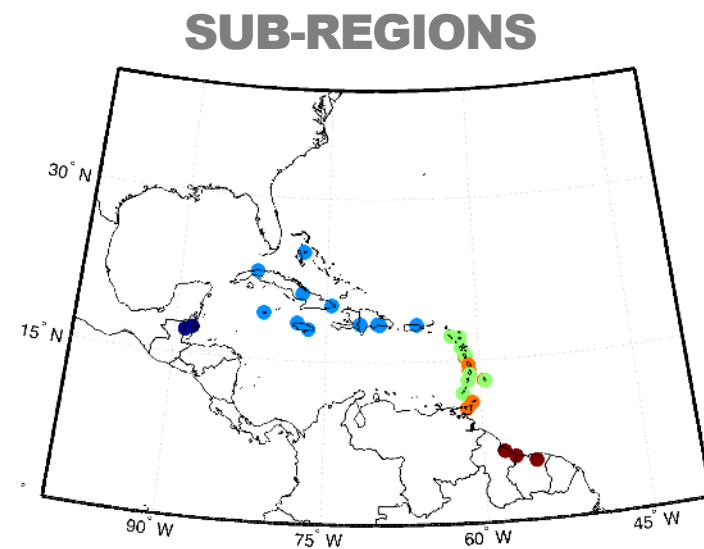
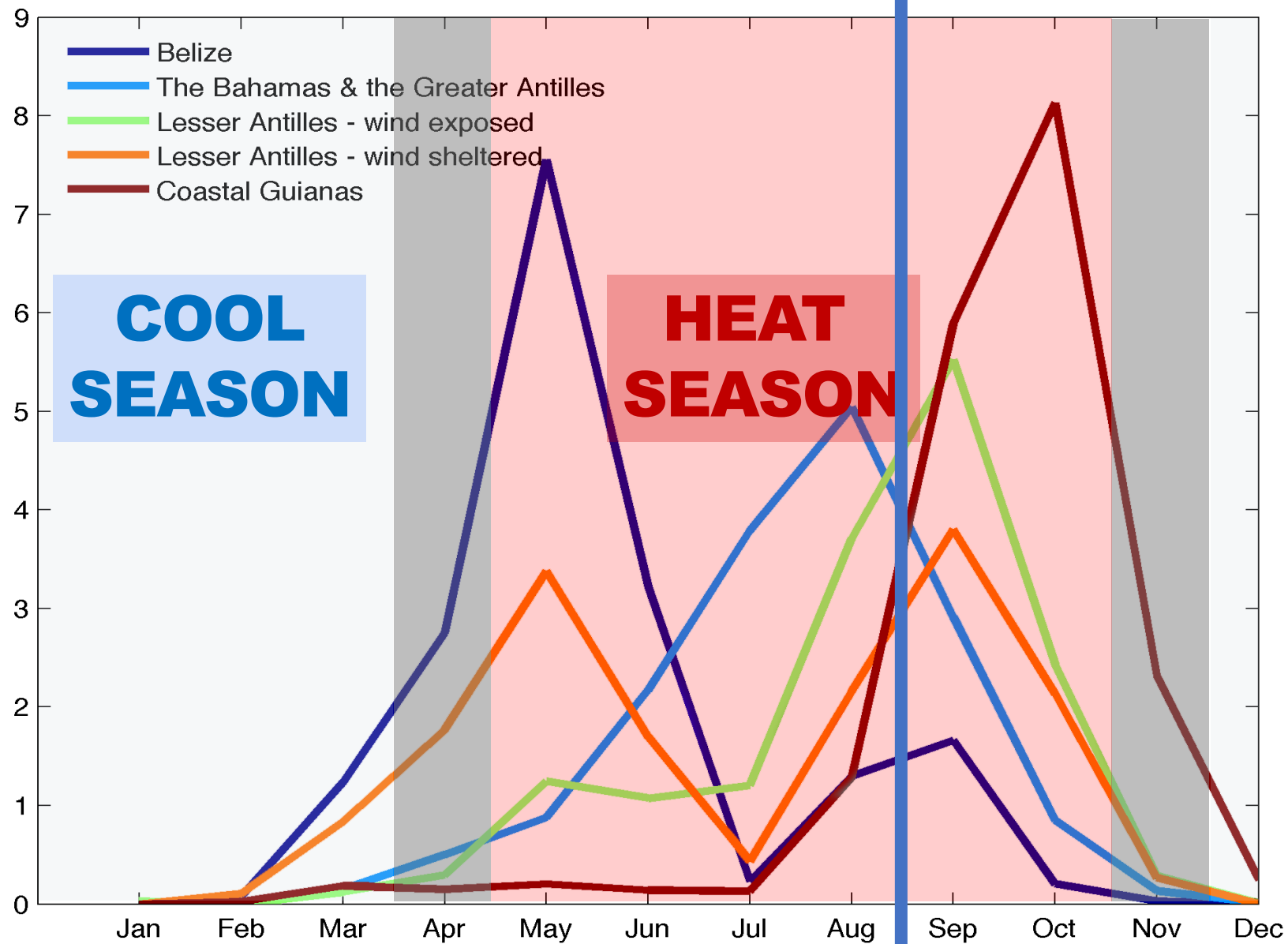
- *Risk:* potentially increased mortality and increased need for cooling strategies immediately post disaster (e.g. intense heat after passage of tropical cyclone); increased wildfire potential (if fuel stock is dry)
- *Operations:* likely reduced productivity of warehouse staff if unprotected



Child care and education:

- *Learning:* significantly reduced productivity and reduced learning ability of students at the start of the 2023-2024 school year
- *Child Protection:* potential increase in aggression during prolonged heatwaves

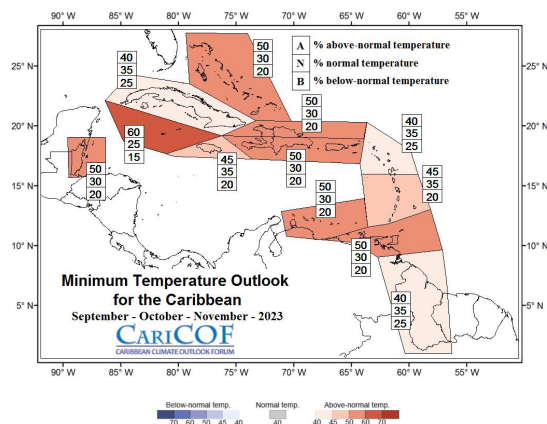
Number of days per month
spent in heatwaves



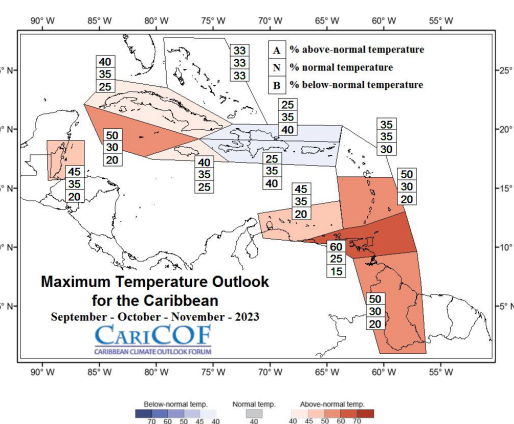
Overall, how hot will the next three to six months be?

Sep-Oct-Nov 2023

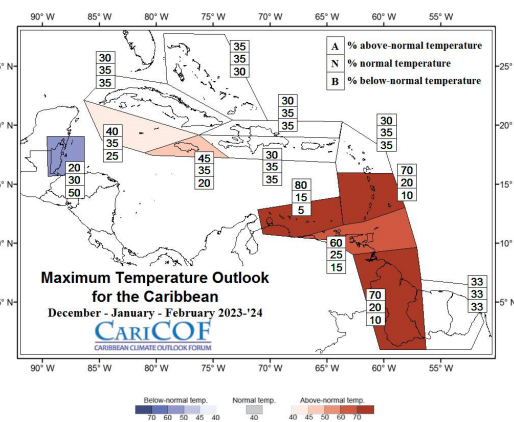
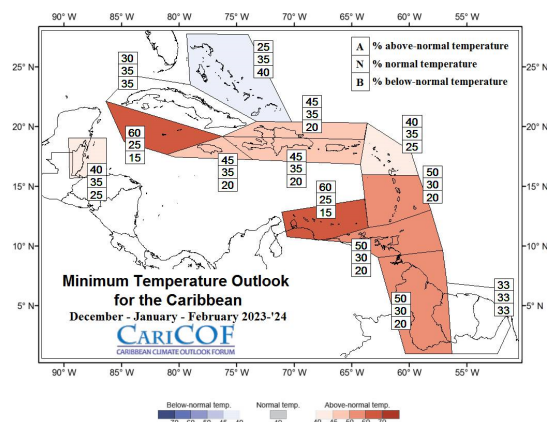
Night-time



Daytime



Dec-Jan-Feb 2023-24



← Milder Usual Hotter →

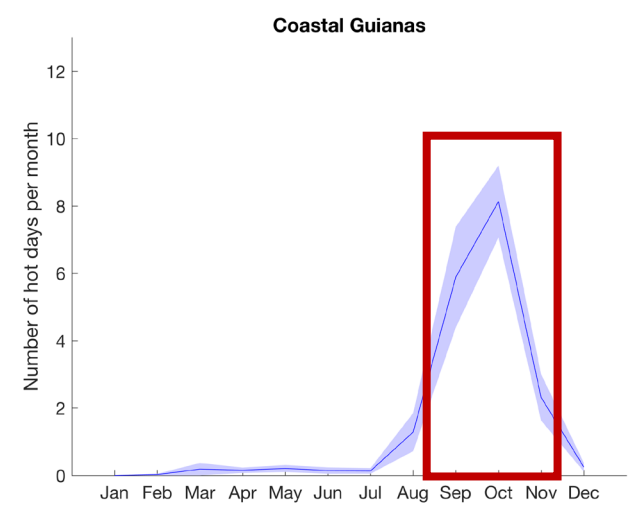
FORECAST

1. September to November – marking the last two months of the Caribbean Heat Season and the transition month of November – is forecast to be hotter than usual with intense night-time and daytime heat prevailing until October or early-November.
2. Though milder temperatures should prevail from late-November, they will remain warmer than usual for most.

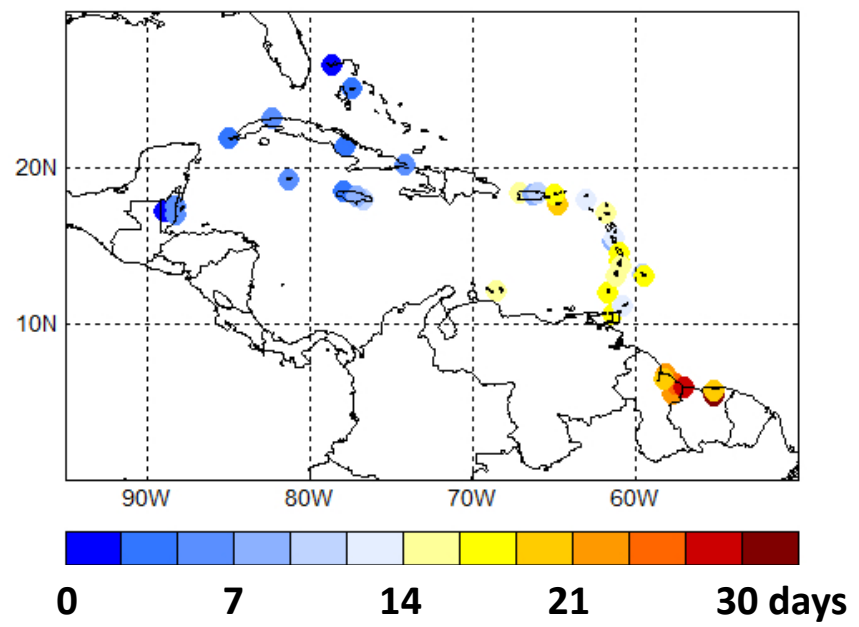
IMPLICATIONS

- Frequent and intense episodes of heat stress in the vulnerable population & small livestock because of high temperature and peaking humidity through September (Bahamas, Greater Antilles) or October (elsewhere).
- Significant uptick in cooling need.

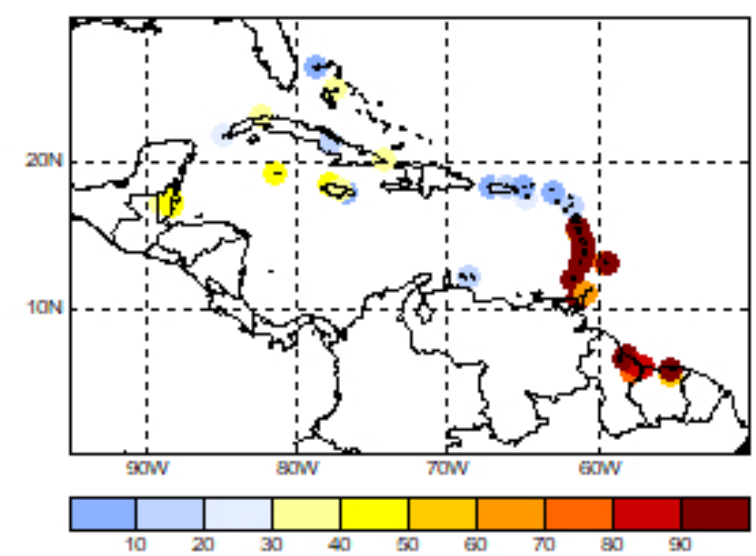
How many heatwave days to expect for **September to November 2023**, i.e., the peak of the heat season in The Guianas?



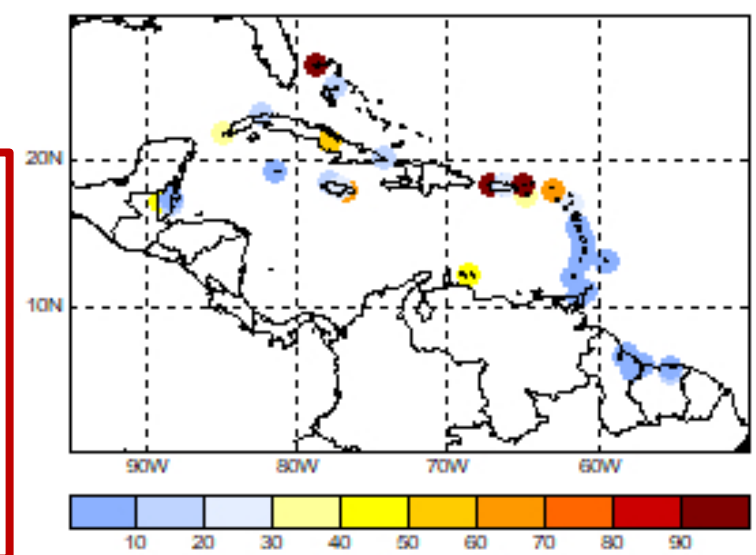
Heatwave days between Sep. & Nov. (1985-2016 avg.)



Prob. at least 30 heatwave days in SON 2023



Prob. no more than 5 heatwave days in SON 2023




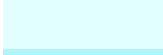
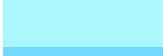




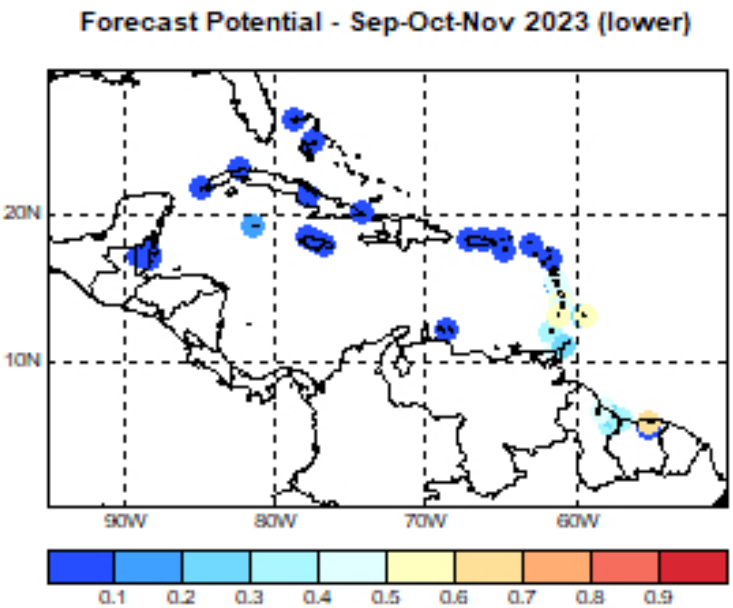
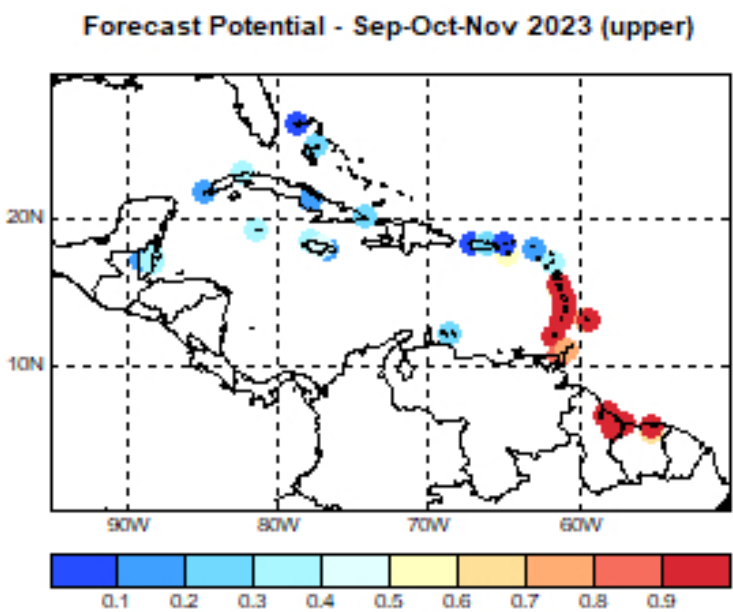
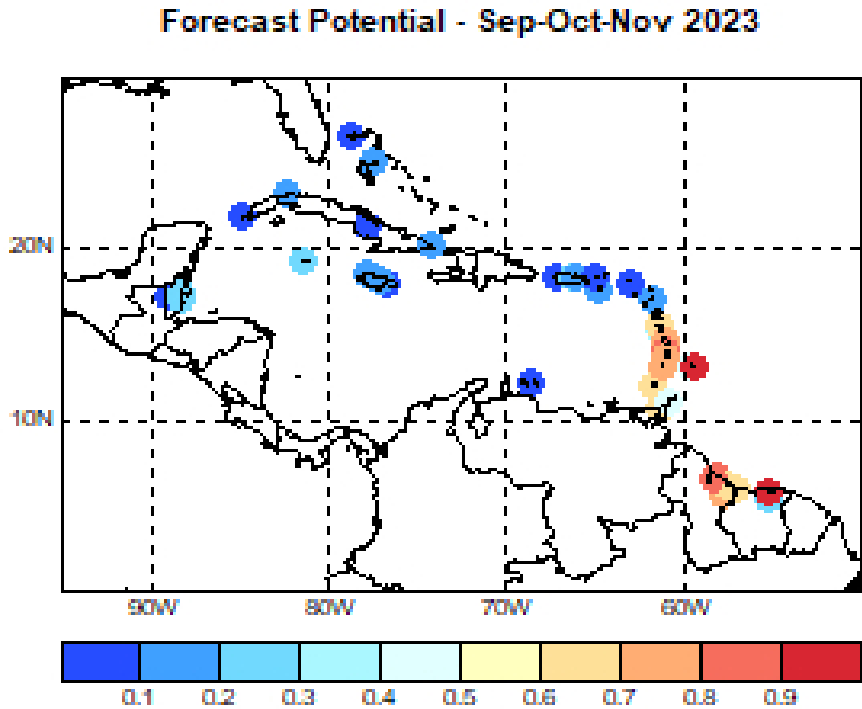
USUALLY: 20-30 heatwave days in coastal Guianas; 10-15 heatwave days in the Lesser Antilles; 5-10 heatwave days elsewhere.

FORECAST: Strong increase in the number of heatwave days in Barbados, coastal Guianas, Trinidad & Tobago, and the Windward Islands; *very likely* at least 30 heatwave days in Barbados, coastal Guianas, and the Windward Islands; *likely* at least 30 in Trinidad & Tobago.

Heat impact potential during Sep-Oct-Nov 2023?

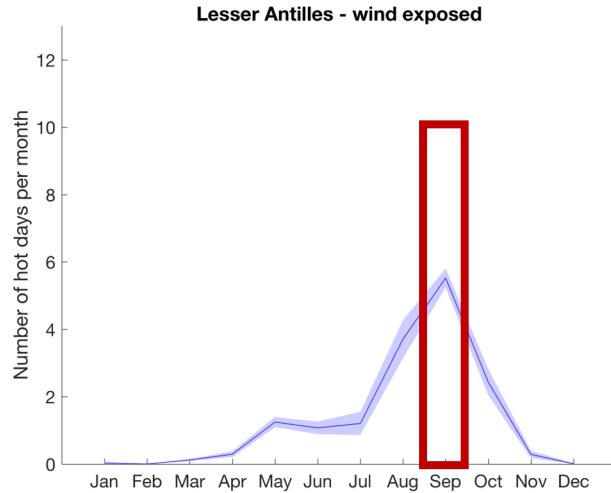
(i.e., percentage of time spent in heatwaves during SON 2023)

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%

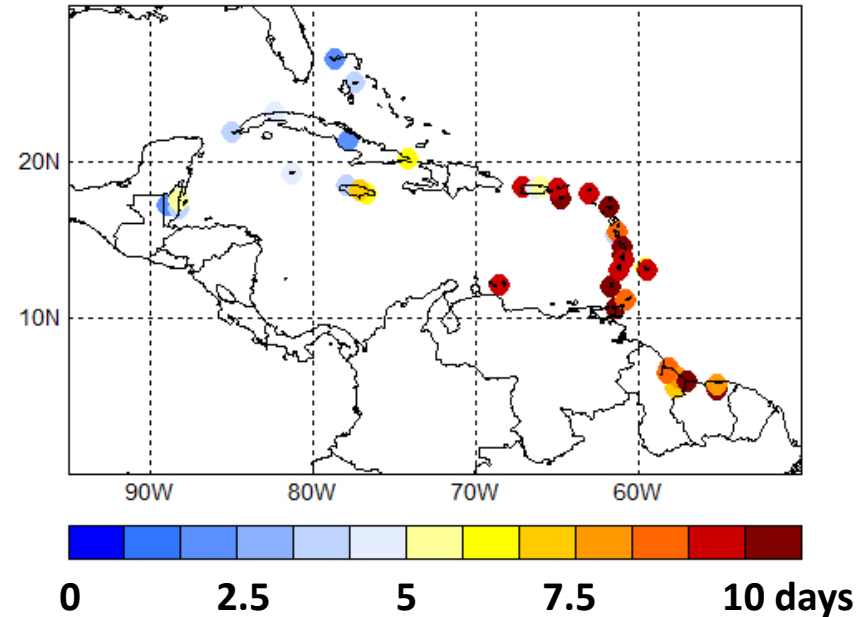


FORECAST: High to extremely high heat potential in Barbados, coastal Guianas, Trinidad, and the Windward Is.; slight to moderate potential in Belize and Cayman Islands; marginal to slight potential elsewhere (*left centre map*);
extr. high potential likely in Barbados and in the coastal Guianas; possible in most of the Windward Is. (top right map).

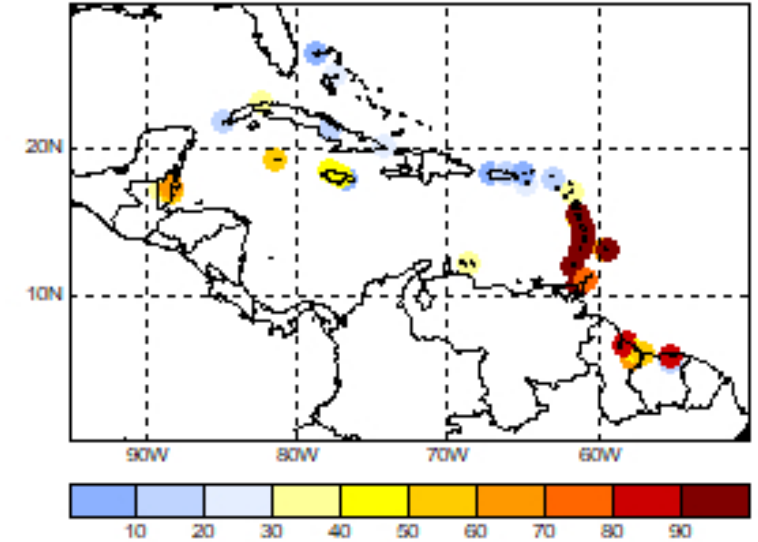
How many heatwave days to expect in September?



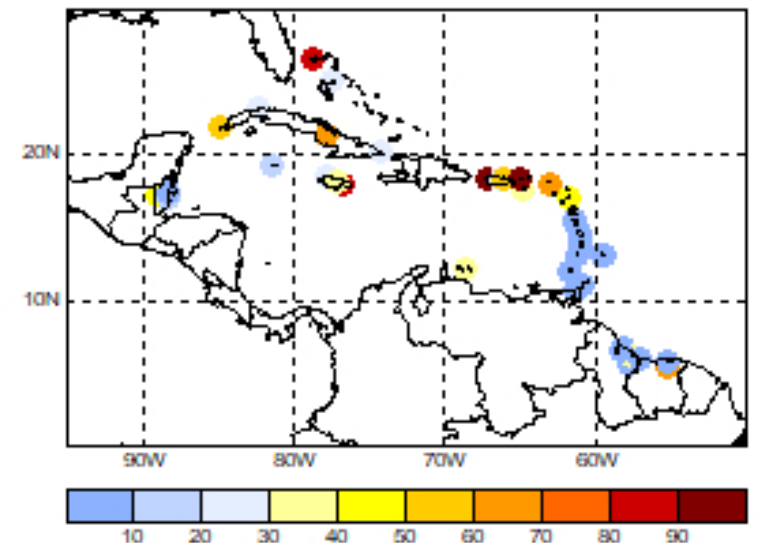
Heatwave days in September (1985-2016 avg.)



Prob. at least 15 heatwave days in September 2023






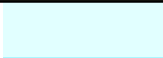
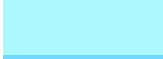


Prob. no more than 5 heatwave days in September 2023



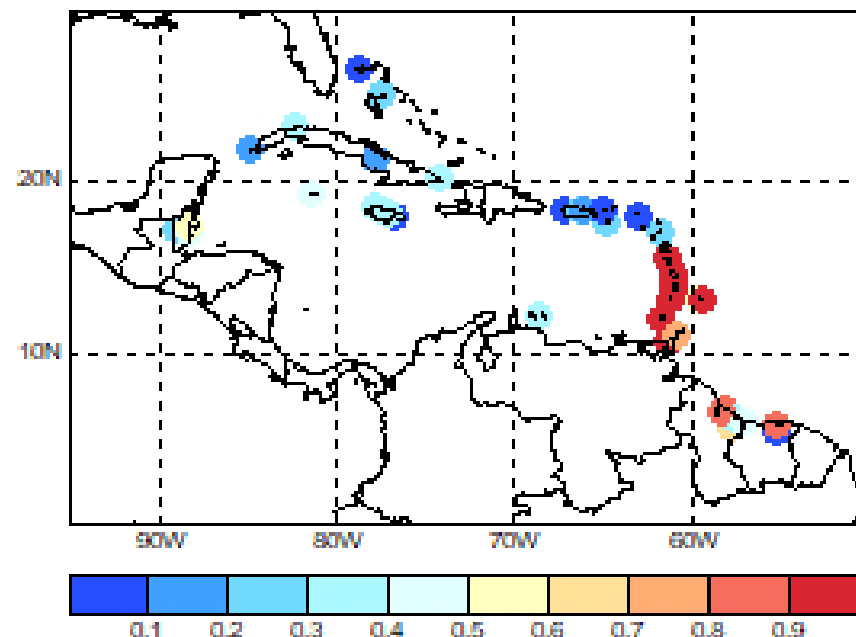
USUALLY: 8-10 heatwave days in coastal Guianas, Lesser Antilles, Puerto Rico; 5-8 in Belize, Eastern Cuba, Jamaica; no more than 5 elsewhere.
FORECAST: Strong increase in the number of heatwaves in Barbados, Belize, coastal Guianas, Trinidad & Tobago, and the Windward Is.; *likely* at least 15 heatwave days in Barbados, coastal Guianas, Trinidad & Tobago, and the Windward Is.; *possibly* in ABC Is., Belize, Cayman Is., parts of Cuba, and Jamaica.

Heat impact potential during September 2023?

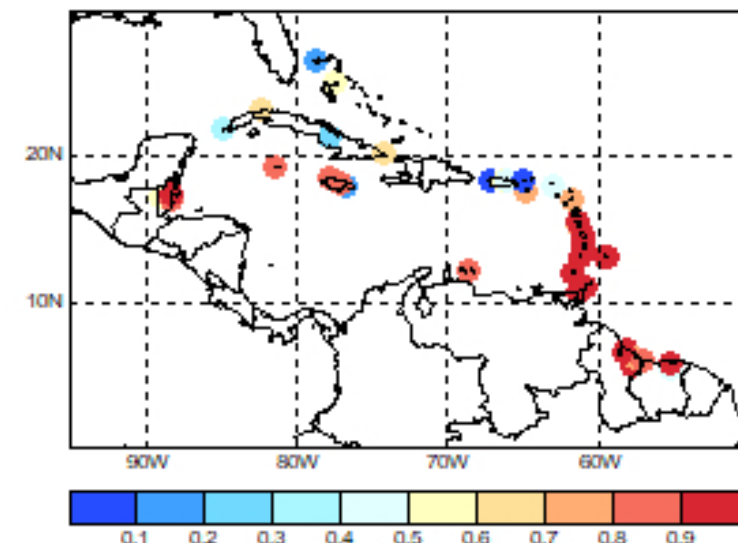
(i.e., percentage of time spent in heatwaves during Sept. 2023)

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%

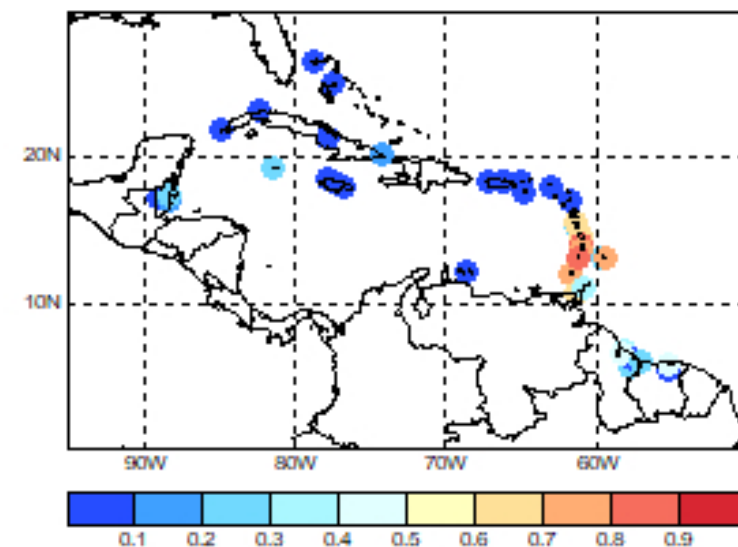
Forecast Potential - September 2023



Forecast Potential - September 2023 (upper)








Forecast Potential - September 2023 (lower)

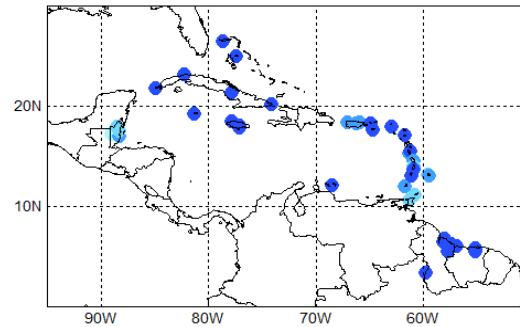


FORECAST: High to extremely high heat potential in Barbados, coastal Guianas, Trinidad & Tobago, Windward Is.; moderate to high potential in Belize; slight to moderate potential in ABC Is., Greater Antilles, Leeward Is. (*left centre map*); **very likely** extr. high potential in Barbados, coastal Guianas, Trinidad & Tobago, Windward Is.; **possibly** in ABC Is., Belize, Cayman Is., Jamaica (*top right map*).

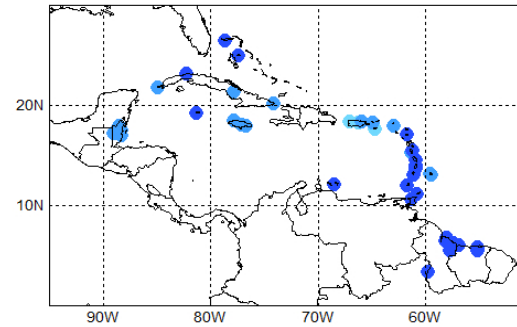
Historical monthly heat impact potential due to heatwaves during the heat season

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%

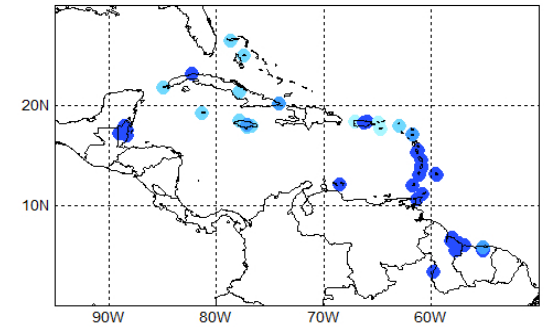
May



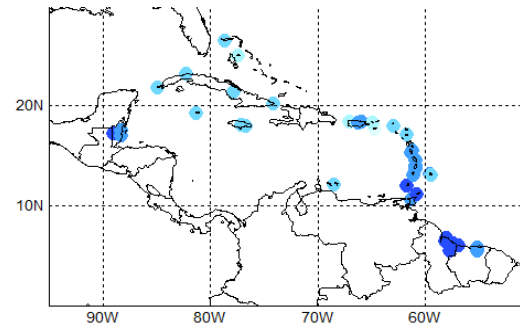
June



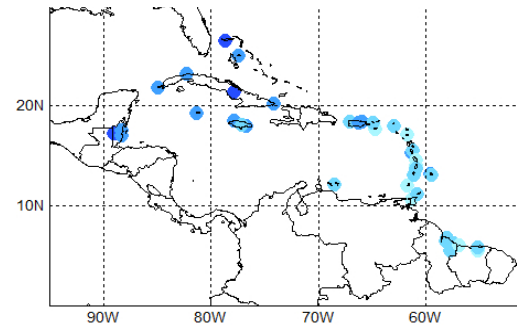
July



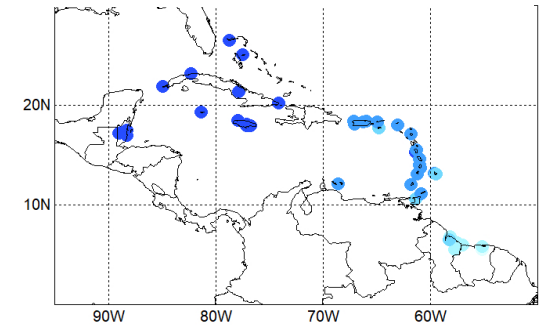
Aug



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.



**Regional climate data, information, tools,
experimental and operational products
are available at
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