

# Heat Outlook for July to December 2023

**Excessive 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, 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**  
CARIBBEAN CLIMATE OUTLOOK FORUM

# Health: Greater frequency of mild heat symptoms due to excessive heat, particularly towards August & September

## Public health:

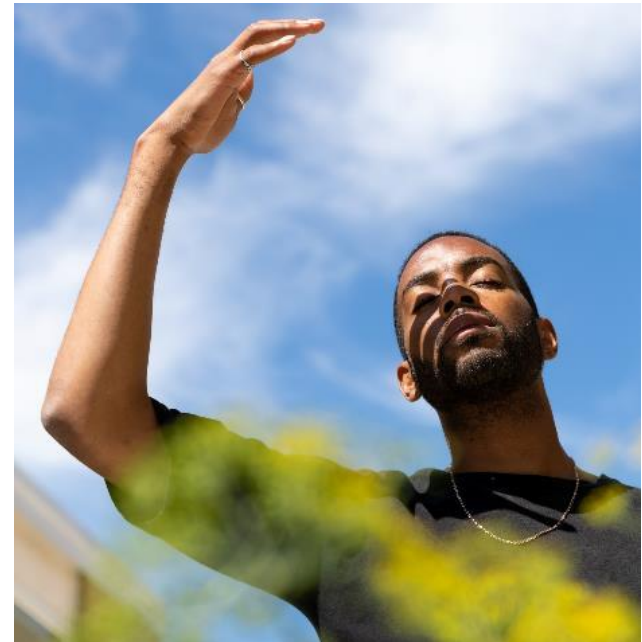
- *strong* increase in mild heat symptoms
- *notable* increase in heat illnesses, fainting episodes, hospitalisations, health services
- *likely* increase in biological risk (e.g. Aedes mosquito borne diseases, gastrointestinal disease)
- *exacerbation* of vulnerability in patients with chronic illness,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

## 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, particularly in August & September



## DRM:

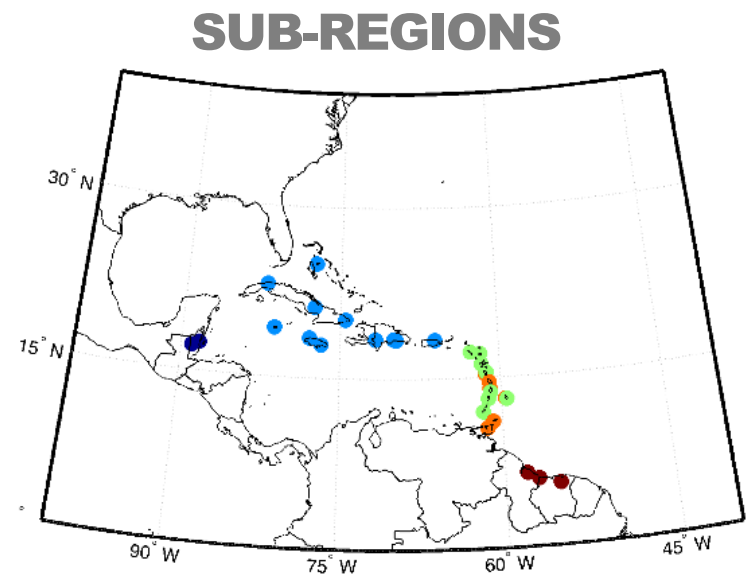
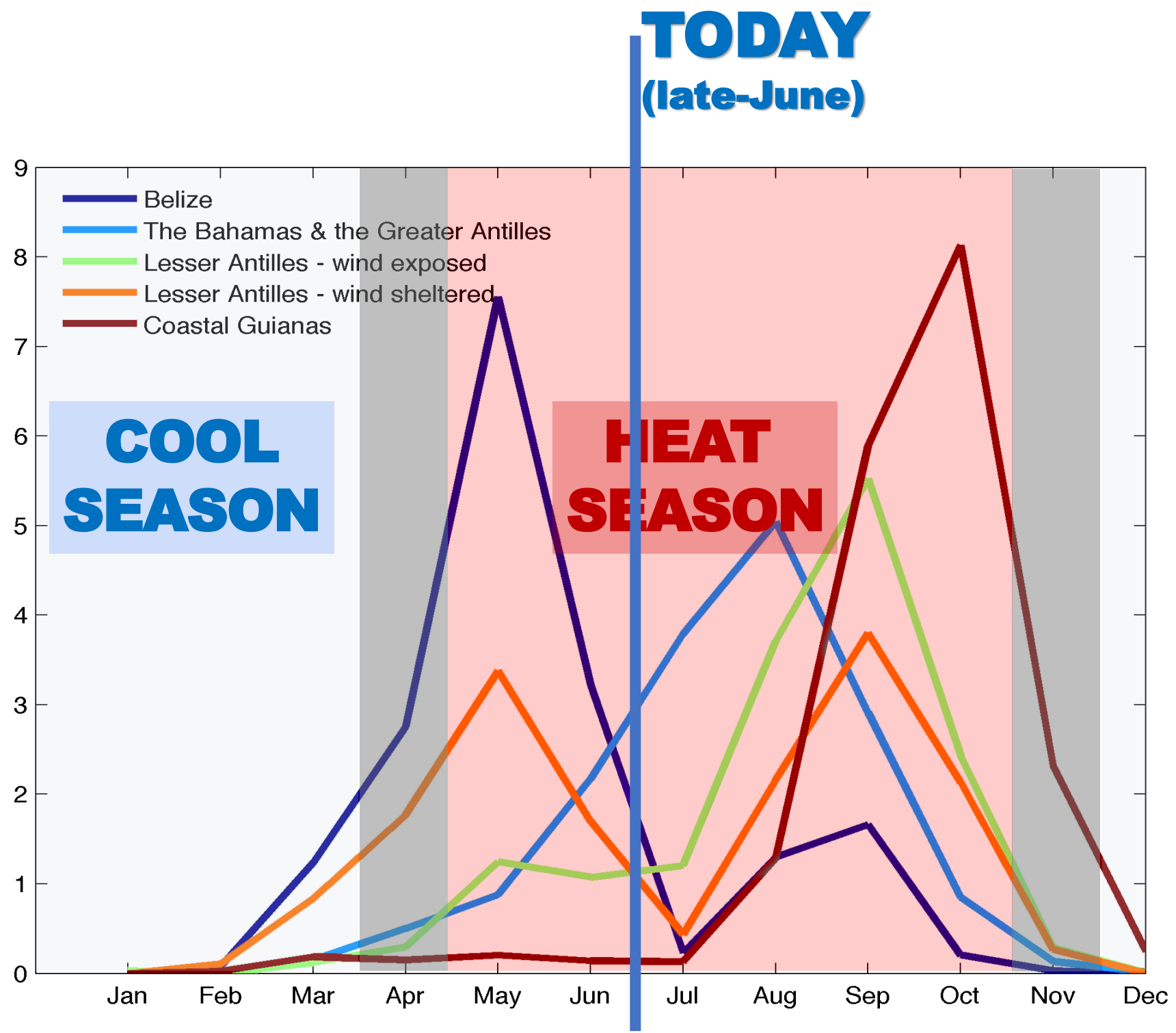
- *Risk:* potentially increased mortality and increased need for cooling strategies immediately post disaster (e.g. intense heat after passage of tropical cyclone); increased wildfire potential (if fuel stock is dry)
- *Operations:* likely reduced productivity of warehouse staff if unprotected



## Child care and education:

- *Learning:* significantly reduced productivity and reduced learning ability of students 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

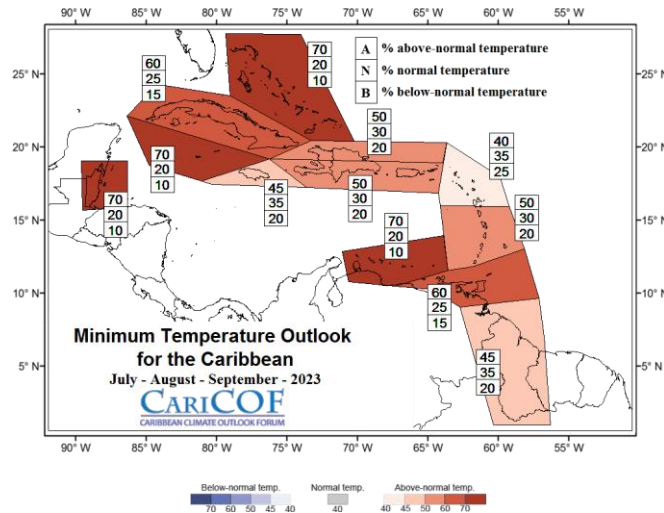




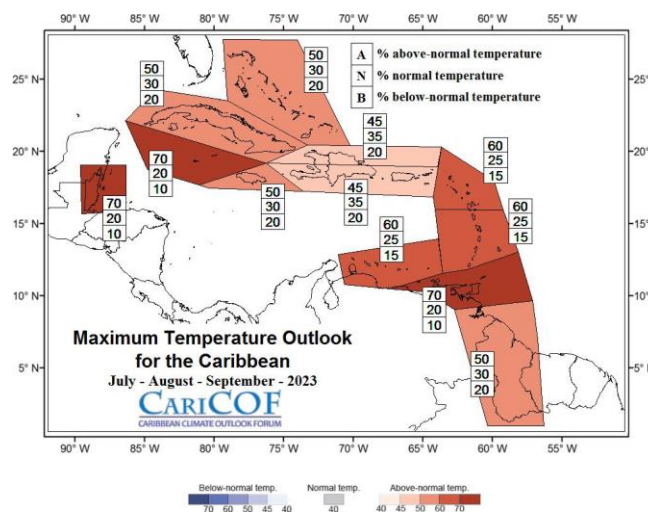
# Overall, how hot will the next three to six months be?

Jul-Aug-Sep 2023

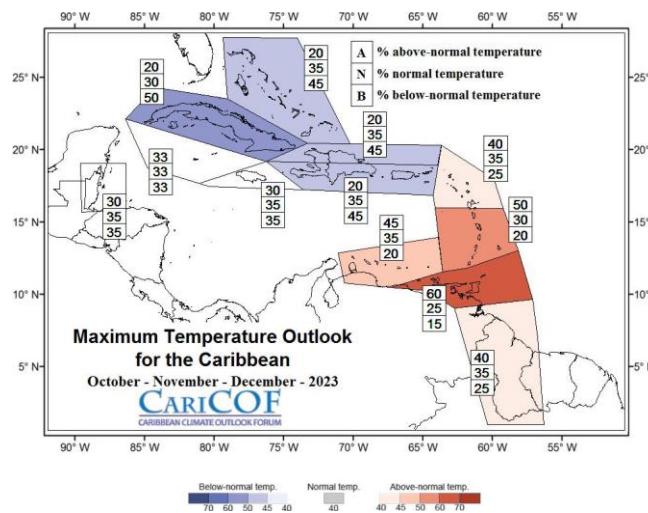
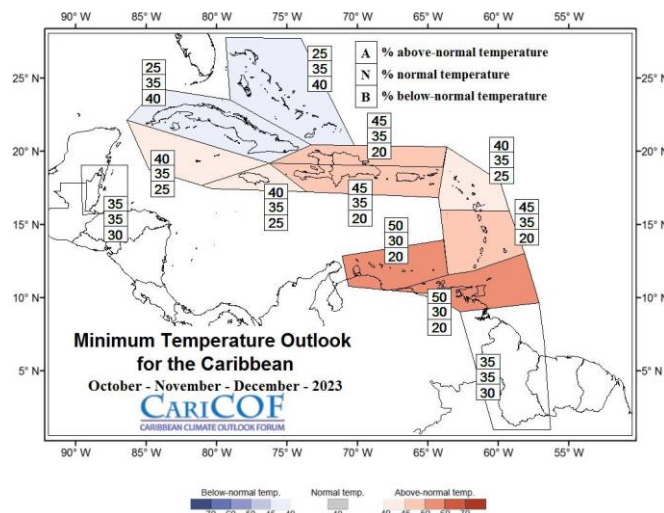
## Night-time



## Daytime



Oct-Nov-Dec 2023



← Milder Usual Hotter →

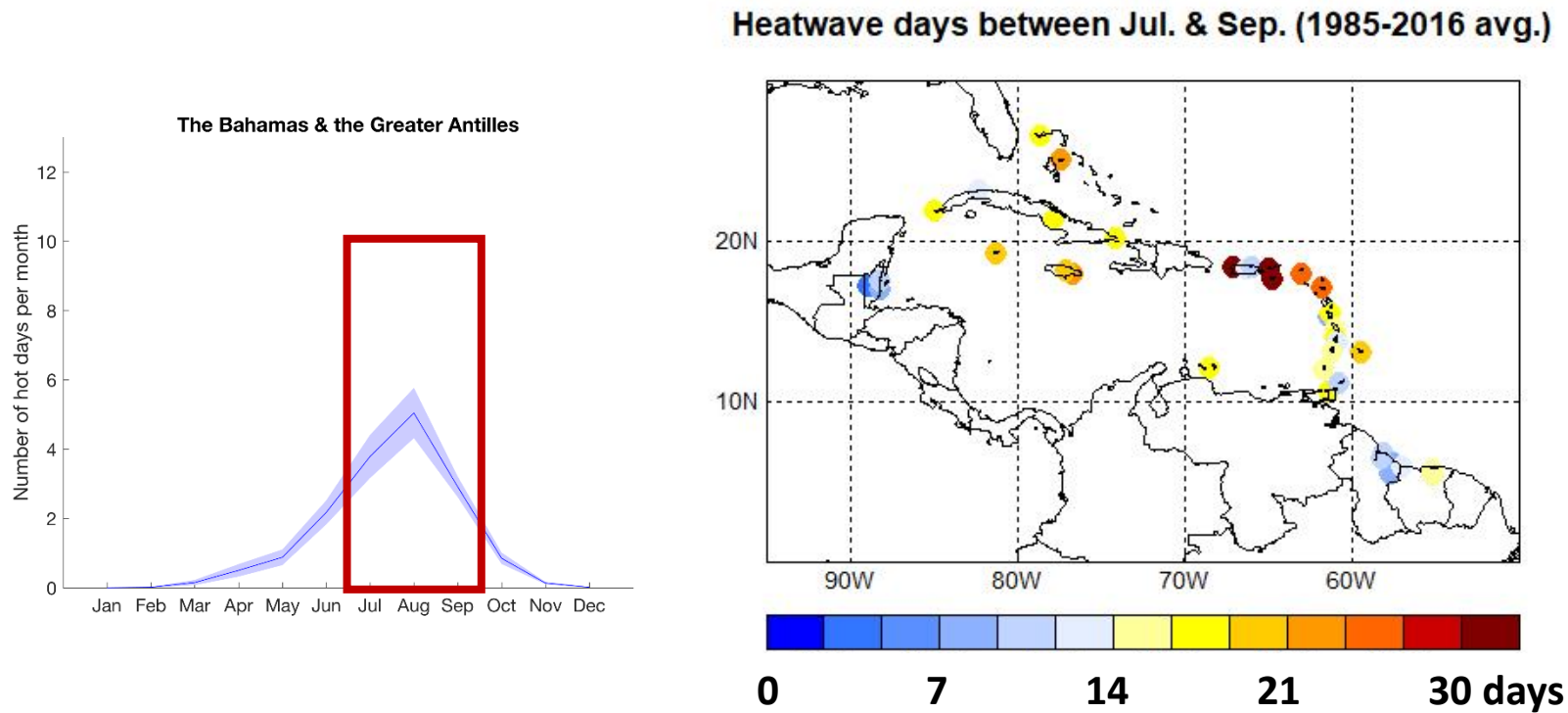
## FORECAST

1. July to September, marking the peak of the Caribbean Heat Season (April/May to October) is forecast to be hotter than usual.
2. Intense night-time and daytime heat is expected in much of the Caribbean from August to September/October, while temperatures are expected to cool steadily from November.

## IMPLICATIONS

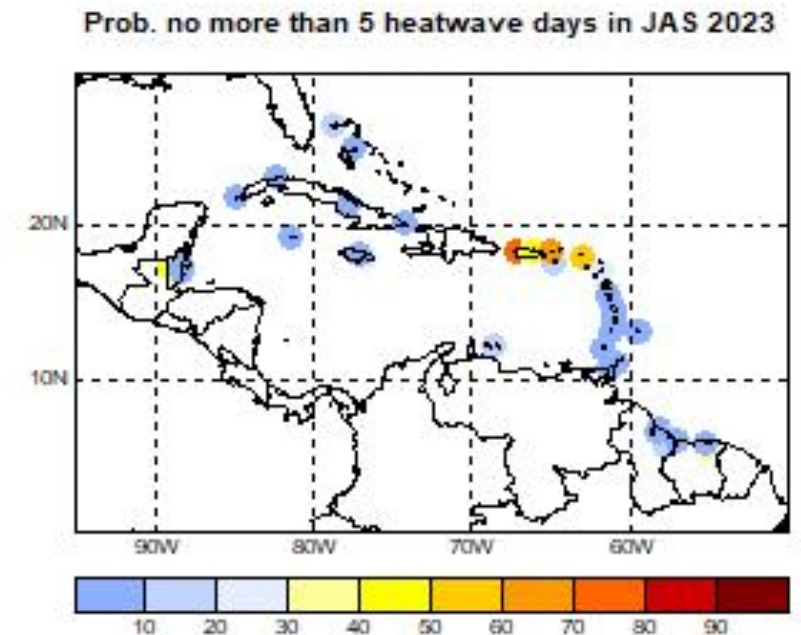
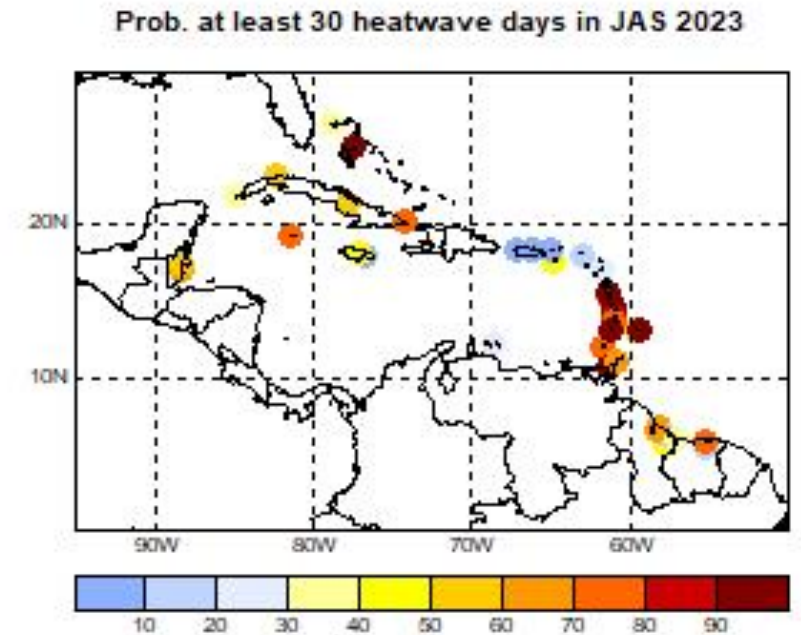
- Frequent and, possibly intense episodes of heat stress in the vulnerable population & small livestock because of high temperature and increasing humidity through September.
- Cooling need rising sharply towards August and September.

# How many heatwave days to expect for July to September 2023, i.e. the peak of the heat season in The Bahamas and the Greater Antilles?



**USUALLY:** About 30 heatwave days in the USVI; 15-20 in The Bahamas and across the Antilles; no more than 15 elsewhere.

**FORECAST:** A strong increase in the number of heatwaves in The Bahamas and across the Antilles (with the possible exception of Puerto Rico and the USVI); **likely at least 30 heatwave days, with the possible exception of the ABC Is., Puerto Rico & the USVI.**

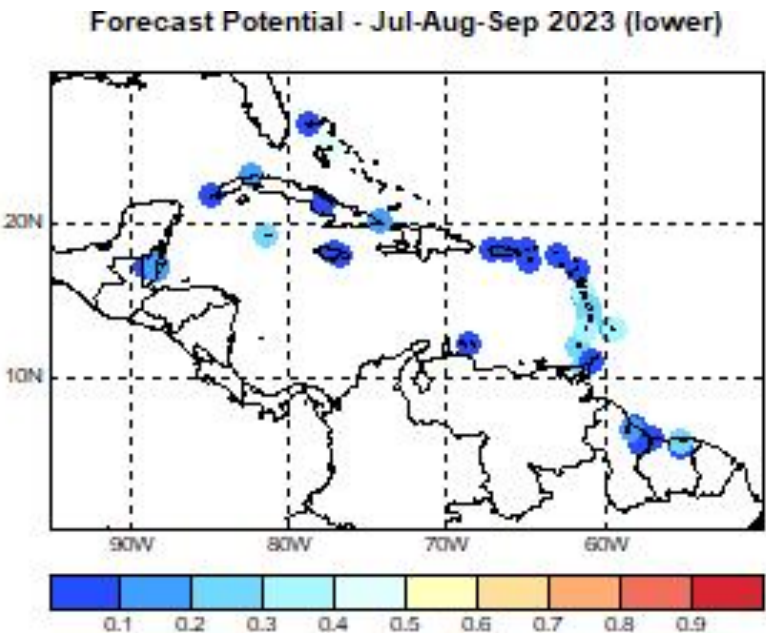
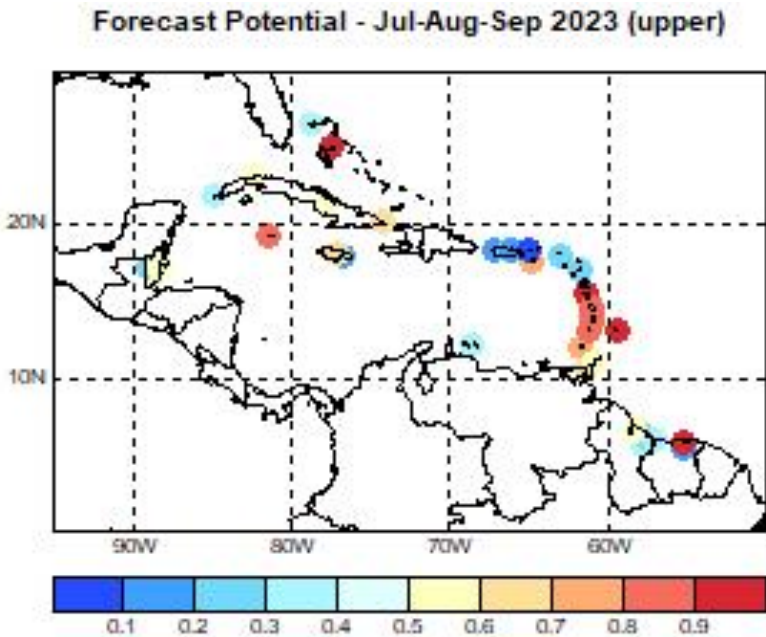
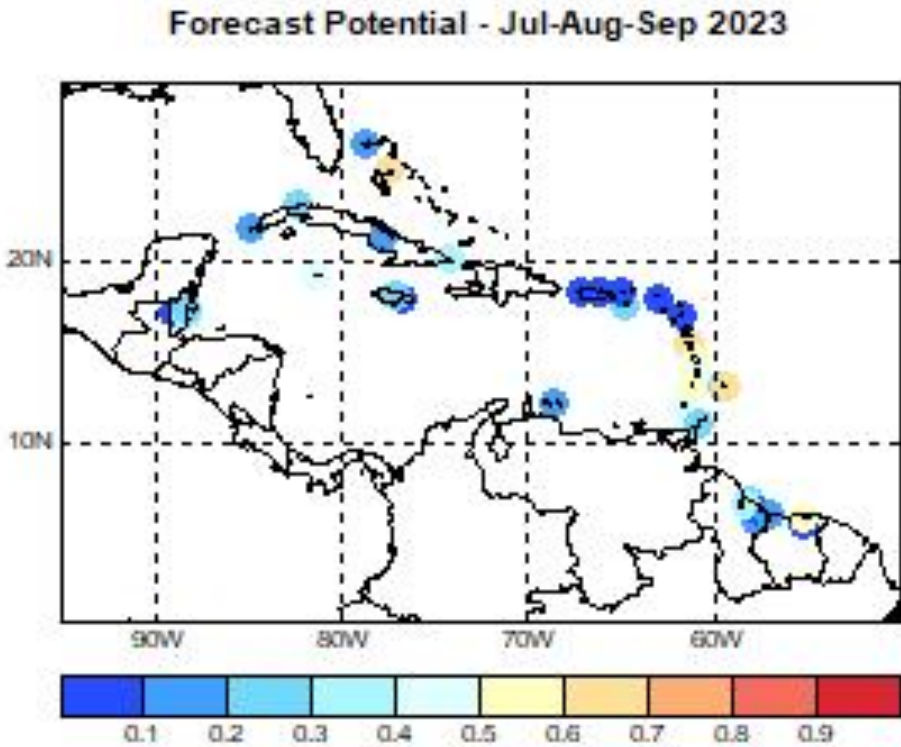




# Heat impact potential during Jul-Aug-Sep 2023?

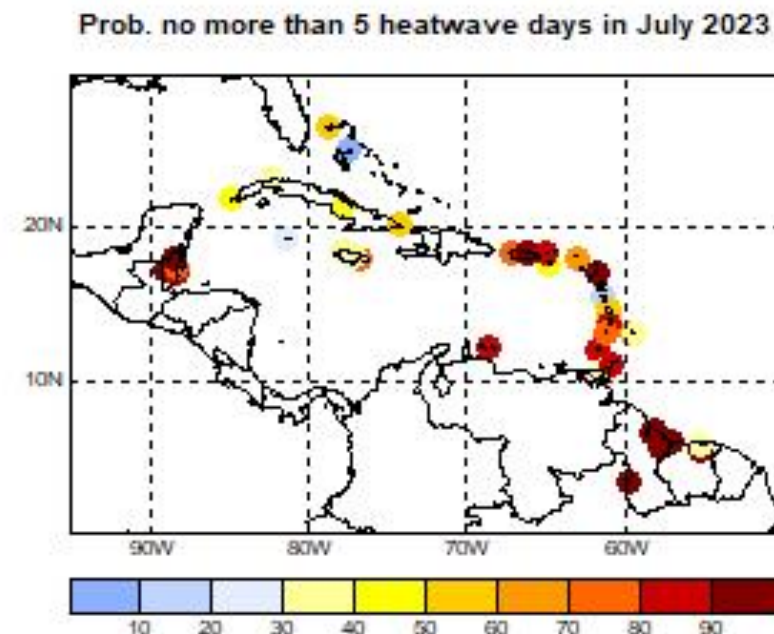
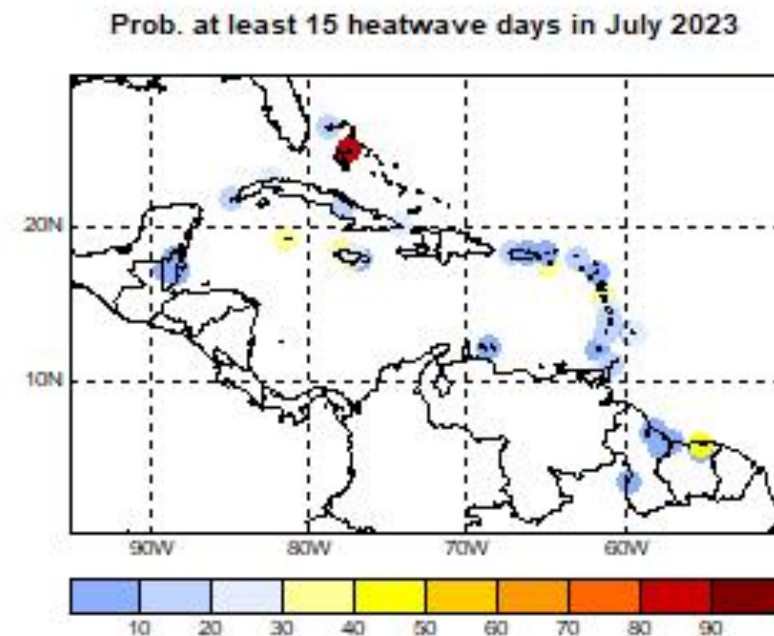
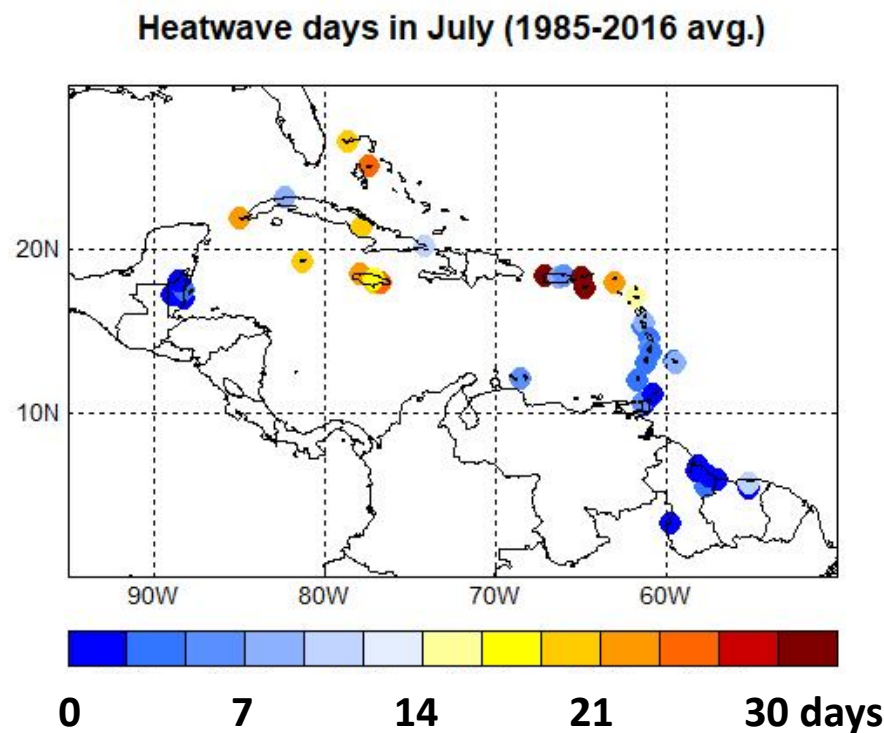
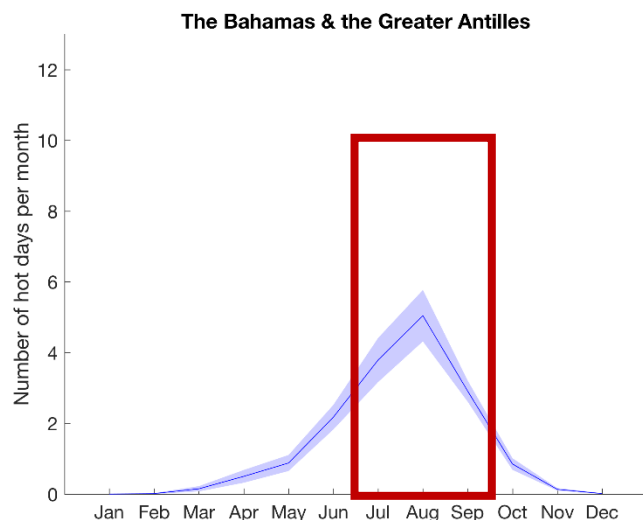
(i.e., percentage of time spent in heatwaves during JAS 2023)

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



**FORECAST:** High potential in parts of The Bahamas, Barbados, parts of Suriname, and in the Windward Is.; moderate potential in Belize, the Greater Antilles (except Puerto Rico), St. Croix, parts of the Guianas, and Trinidad; marginal to slight elsewhere (*left centre map*); **possibly extr. high potential in The Bahamas, Barbados, Grand Cayman, St. Croix, parts of Suriname and the Windward Is.** (*top right map*).

# How many heatwave days to expect for July?








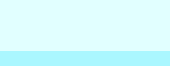

**USUALLY:** About 30 heatwave days in the USVI; 15-20 in The Bahamas, across the Greater Antilles and Leeward Islands; no more than 15 elsewhere.

**FORECAST:** An increase in the number of heatwaves in The Bahamas and across the Antilles (with the possible exception of Puerto Rico and the USVI); **likely at least 15 heatwave days in The Bahamas.**

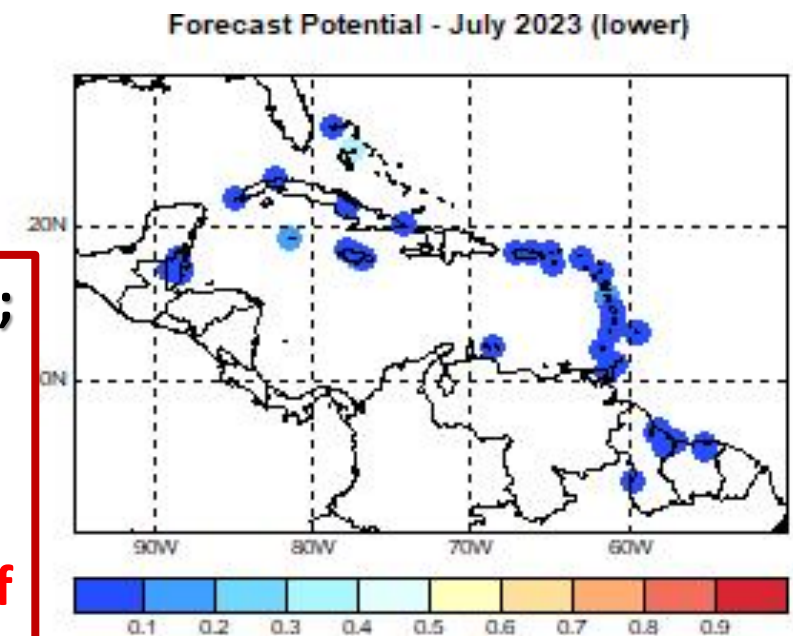
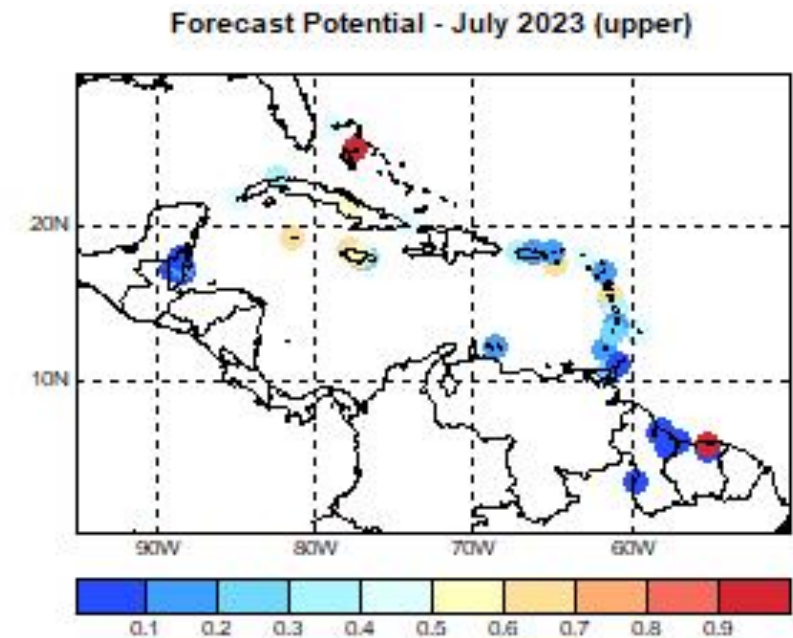
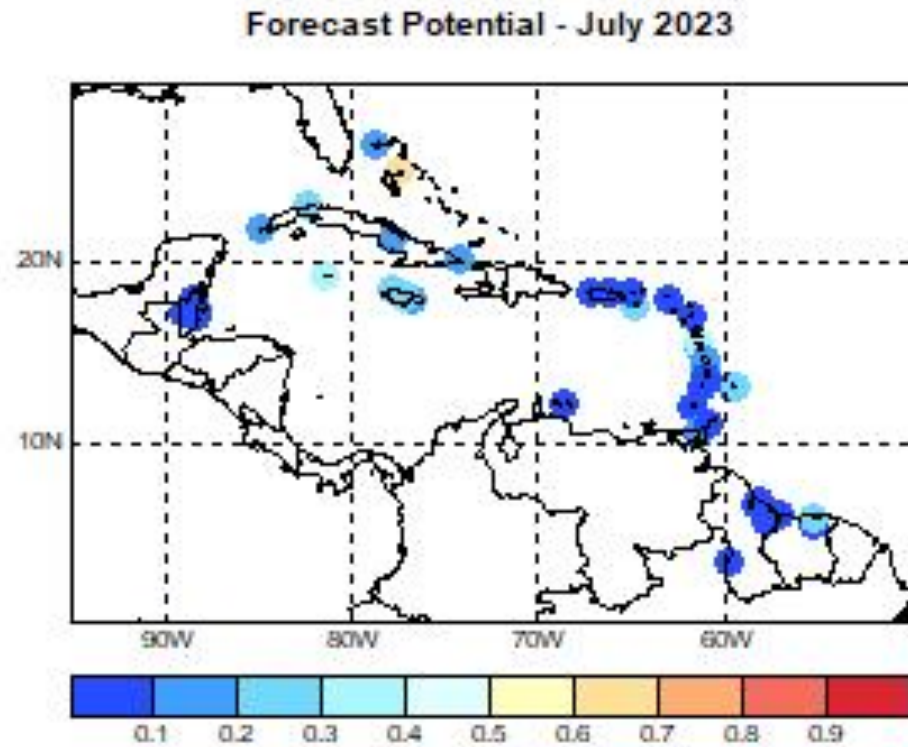


# Heat impact potential during July 2023?

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

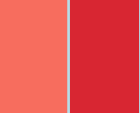


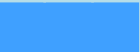

Heat impact potential	Colour codes	Percentage of time spent in heatwaves
EXTREMELY HIGH		>80%
HIGH		50-80%
		
MODERATE		20-50%
		
SLIGHT		10-20%
MARGINAL		0-10%

**FORECAST:** High potential in the Northwestern Bahamas (*left centre map*); slight to moderate potential in Barbados, Dominica, across the Greater Antilles (except in Puerto Rico), Martinique, St. Croix and parts of Suriname; marginal potential elsewhere; **possibly extremely high potential in The Bahamas and parts of Suriname** (*top right map*).

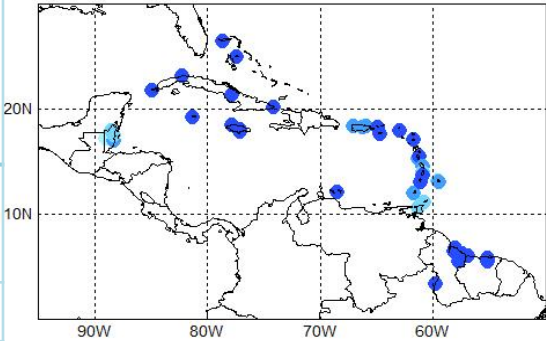




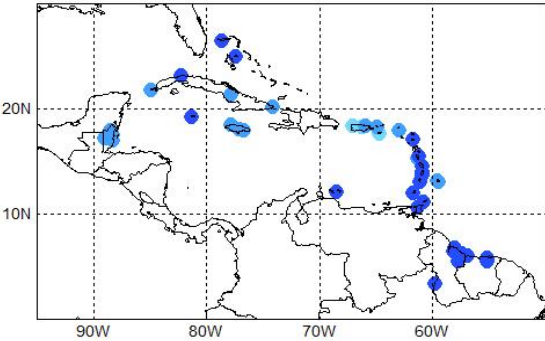
# Historical monthly heat impact potential due to heatwaves during the heat season

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

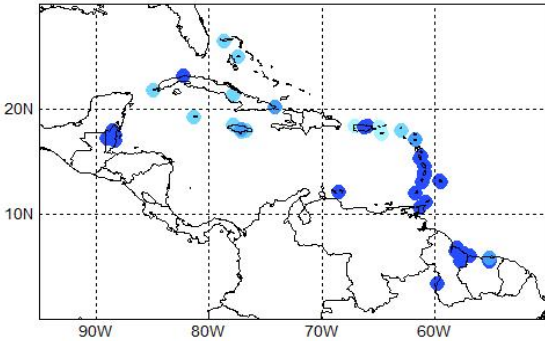
May



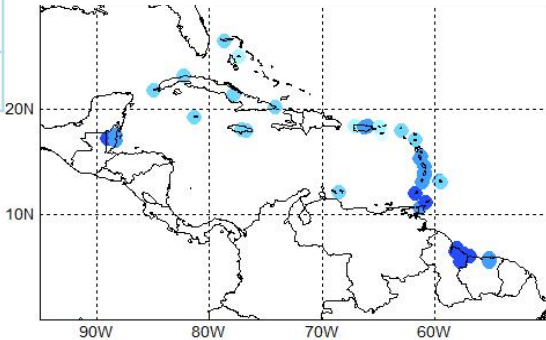
June



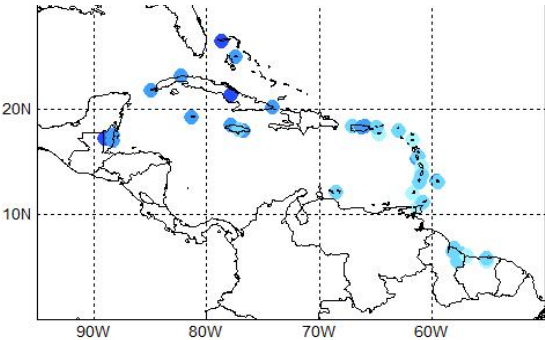
July



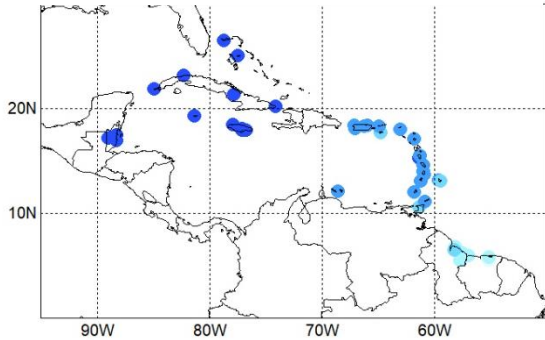
Aug



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,  
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