

# Rainfall frequency and extreme forecasts

—

## Wet days and Wet spells Outlooks April to June 2024

**Dr. Cedric VAN MEERBEECK<sup>1</sup>, Dr. Teddy ALLEN<sup>1</sup>, Dr. Simon MASON<sup>2</sup>,  
Dr. Ángel MUÑOZ<sup>2</sup>, Wazita Scott<sup>1</sup>, Dale Destin<sup>3</sup>**

<sup>1</sup>Caribbean Institute for Meteorology and Hydrology (CIMH), Barbados

<sup>2</sup>International Research Institute for Climate and Society (IRI), USA

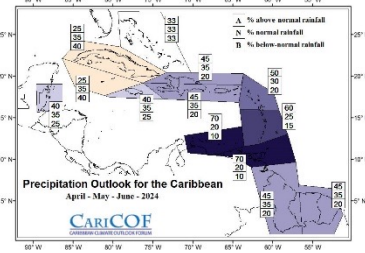
<sup>3</sup>Antigua and Barbuda Meteorological Services



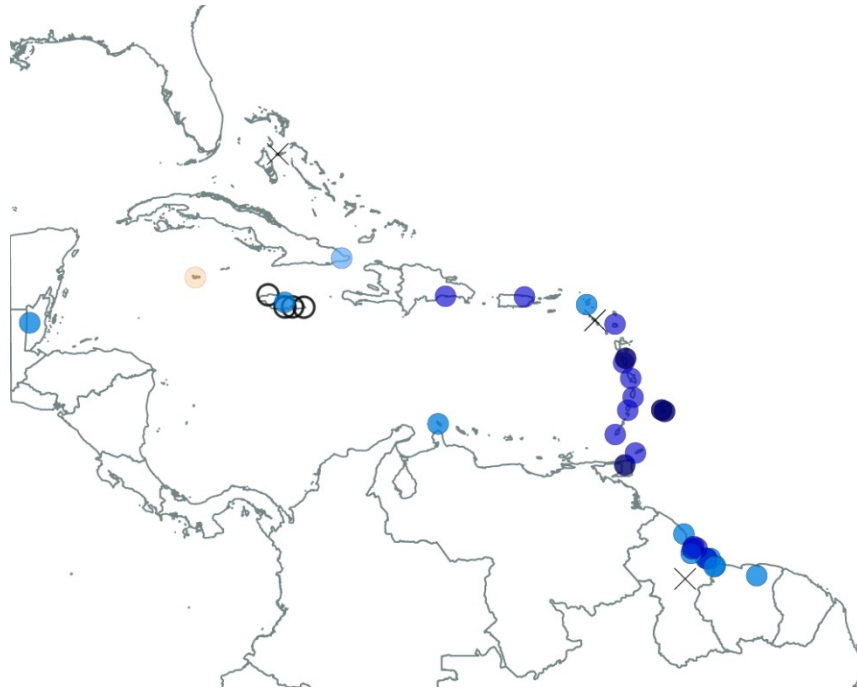
# Wet day frequency shifts

## Forecast for: March to May 2024

### Precipitation outlook



### AMJ 2024 Frequency of wet days



**USUALLY:** Across the region during April-May-June, about 25 to 40 days out of a total of 91 days are wet days (coastal Guianas: 45 to 60 days; ABC Islands: 10 or less).

**FORECAST:** AMJ may be drier than the usual in Grand Cayman and Cuba, but as wet as usual or wetter elsewhere.

- *A faster than usual increase in the number of wet days towards June is expected across most of the region (medium to high confidence).*

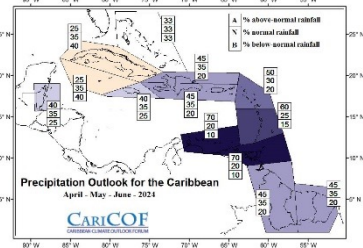
### IMPLICATIONS:

- More frequent wet days than usual translates to an early transition into the wet season along with an increase in outdoor activity disruptions, but replenishing moisture to surfaces and vegetation.
- The above impacts make environmental conditions increasingly conducive to moisture-related pests, but decrease wildfire potential towards May and June.

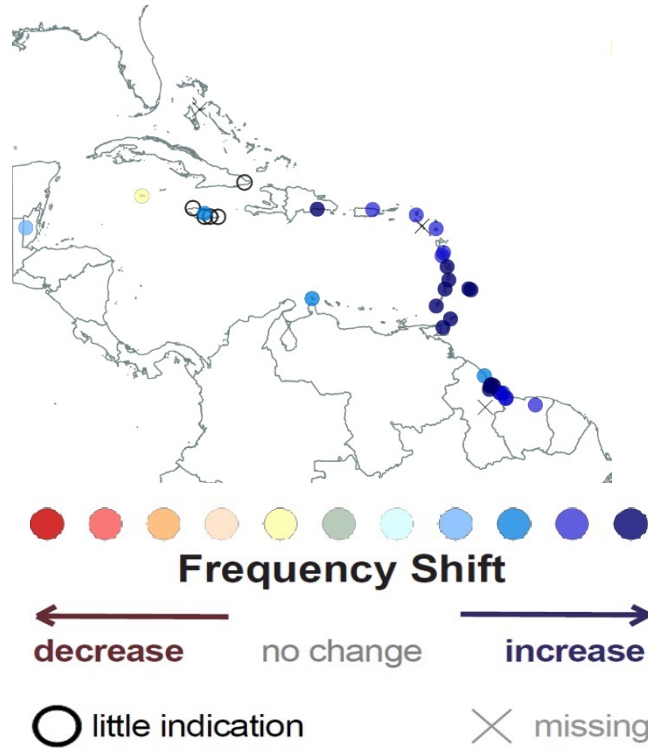
# Wet spells frequency shifts

## Forecast for: April to June 2024

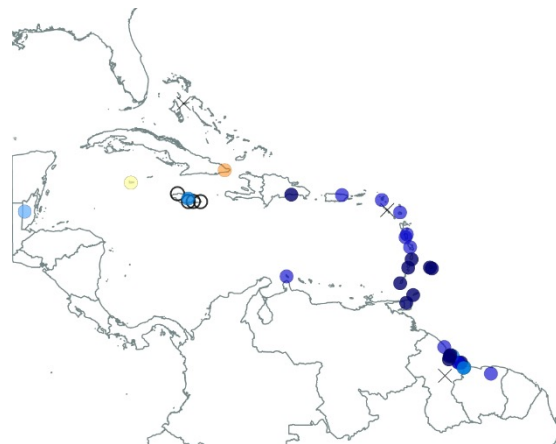
### Precipitation outlook



### AMJ 2024 frequency of 7-day wet spells



### AMJ 2023-24 frequency of 7-day very wet spells



**USUALLY:** 1 to 4 wet spells (ABC Islands up to 2; coastal Guianas: 3 to 6) occur from April to June, with 1 or 2 of them ending up very wet (ABC Islands: up to 1; coastal Guianas: 1 to 4).

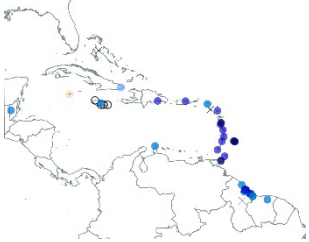
**FORECAST:** AMJ may be drier than the usual in Grand Cayman and Cuba, but as wet as usual or wetter elsewhere.

- *A faster than usual increase in the number of 7-day wet and very spells is expected across the region (medium to high confidence) but, possibly, a slower increase than usual in eastern Cuba and Grand Cayman (low confidence).*

### IMPLICATIONS:

- Water recharge rates in smaller and larger surface reservoirs and in rivers will likely accelerate into April and May, particularly in the southern Caribbean and the Guianas.
- Flooding potential is expected to rapidly increase to high in April and May when the wet season returns.
- These trends may manifest much faster than in most years.

### Wet days outlook



# Extreme wet spells frequency shifts

## Forecast for: April to June 2024

**USUALLY:** Up to 1 or 2 extreme wet spells occur between April to June (Guianas: up to 2 or 3).

**FORECAST:** AMJ may be drier than the usual in Grand Cayman and Cuba, but as wet as usual or wetter elsewhere.

- *More extreme wet spells are expected across most of the Lesser Antilles, Belize, the Dominican Republic, the Guyanas, and Puerto Rico (medium confidence) with no change expected in the ABC islands, Grenada, and Sint-Maarten.*

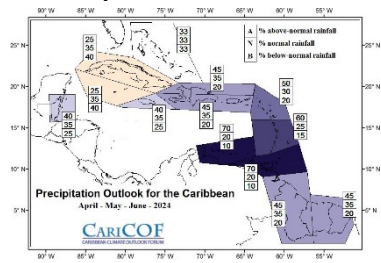
### AMJ 2024 frequency of extreme (top 1%) 3-day wet spells



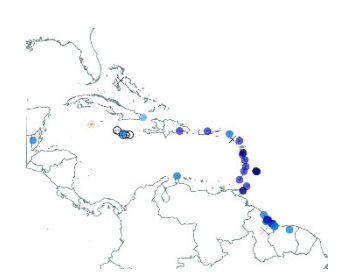
### IMPLICATIONS:

- A rapid increase in the chance of extreme wet spells and the associated potential for flash floods and cascading hazards in April and May is forecasted to lead to high potential across most of the region (with the likely exception of the ABC Islands).

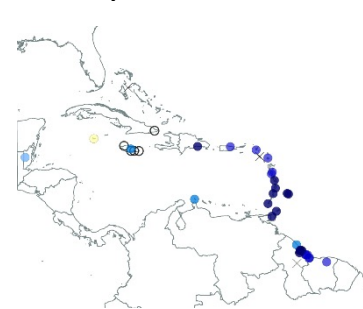
### Precipitation outlook



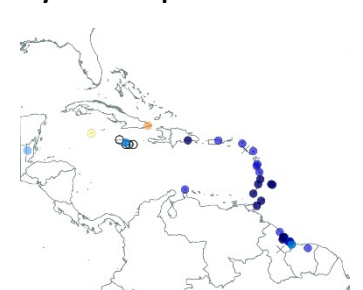
### Wet days outlook



### Wet spells outlook



### Very wet spells outlook



# April to June 2024

	No. of wet days		No. of 7-day wet spells (20% wettest)		No. of 7-day very wet spells (10% wettest)		No. of 3-day extremely wet spells (1% wettest)	
	Climatology	Forecast	Climatology	Forecast	Climatology	Forecast	Climatology	Forecast
Antigua (VC Bird)	18-32	22-44	1.5-4.3	2-7.2	0.4-2.6	1-4.7	0-1	0-1.5
Aruba (Beatrix)	4-9	4-14	0.4-1.7	0.4-2.8	0-1.3	0.2-1.9	0-1	0-0
Barbados (CIMH)	18-36	26-49	0.9-4.1	2-7.2	0.4-1.9	1.1-4	0-0.5	0-0.3
Barbados (GAIA)	19-37	27-49	0.9-4.1	2.2-7.3	0.4-2.6	1.4-4.8	0-1	0-1.2
Belize (C. Farm)	17-28	20-34	1.3-3	1.3-4.2	0.5-2.1	0.6-2.7	0-1	0-1
Cayman	18-29	15-29	2.1-3.9	1.3-4.5	0.9-2.6	0.6-3.5	0-1	0-1.2
Cuba (Punta Maisi)	8-18	8-21	1.3-3.4	0.8-4.3	0.4-2.1	0-2	0-1	0-0.9
Dom. Republic (Las Americas)	17-31	20-42	1.7-4.8	2.6-8.5	0.6-3.4	1.5-6.6	0-1	0-1.9
Dominica (Canefield)	29-45	33-60	1-3.5	1.7-7.1	0-2.5	0.6-3.9	0-0	0-0
Dominica (Douglas Charles)	41-64	50-81	1.1-5.1	2.1-7.8	0.4-2.9	0.9-5.1	0-2	0-2.4
Grenada (MBIA)	19-35	26-49	1.3-3.6	2.1-6.9	0.2-2.2	1.2-4.4	0-1	0-0.6
Guyana_73	27-41	30-47	2.8-6	3.7-9	1.5-3.4	1.7-5.5	0-1	0-1.7
Guyana (Albion)	38-52	41-59	2.6-5.8	3.7-8.8	1.3-3	2.4-5.2	0-2	0-2
Guyana (Blairmont)	44-58	44-64	2.8-6.2	3.9-8.2	1.3-3.4	1.9-6.4	0-1.1	0-1.8
Guyana (Charity)								
Guyana (Enmore)	42-54	47-63	2.7-5.6	4.3-9.4	1.3-3	1.5-4.7	0-1	0-1.5
Guyana (Georgetown)	46-59	49-65	3-6.4	4.5-9.4	1.3-3.6	2.1-6.2	0-1	0-1.4
Guyana (Greatfall)								
Guyana (New Amsterdam)	43-60	47-68	3-6.2	4-8.5	1.5-3.9	2.1-6.1	0-2	0-2.2
Guyana (Skeldon)	41-57	45-63	3.2-6.4	4-9	1.1-3.9	1.7-6.4	0-1	0-1.5
Guyana (Timehri)	49-61	51-68	3-6.4	4.2-10.2	1.1-3.6	2.3-7	0-2	0-1.9
Guyana_Wales								
Jamaica (Worthy Park)	20-37	23-47	2.4-4.9	2.4-6.8	0.9-3	1-4.6	0-2	0-2.1
Martinique (FDF Desaix)	35-51	39-65	1.3-3.6	2.4-6.8	0.4-2.1	1-3.5	0-1	0-1.6
Puerto Rico (San Juan)	25-42	30-52	1.8-4.9	2.5-7.6	0.9-3.9	1.5-5.6	0-1.5	0-1.8
St. Lucia (Hewanorra)	26-43	31-57	1.1-4.3	2.2-7.8	0.2-2.1	1-3.6	0-1	0-1.1
St. Maarten (TNM)	22-33	23-37	1.3-3.4	2-5.3	0.4-2.1	0.8-3.2	0-1	0-0.5
St. Vincent (ET Joshua)	33-56	41-70	1.1-4.1	1.9-6.8	0.4-2.1	1.2-3.5	0-1	0-1
Suriname (Zanderij)	57-69	59-74	3.4-7.1	4.6-10.1	1.8-4.3	2.3-6.3	0-2	0-2
Tobago (ANR RobinNDJ)	27-44	35-58	1.3-4.1	2.7-7.6	0.4-1.9	1.2-3.5	0-1	0-1.5
Trinidad (Piarco)	22-36	27-47	1.3-3.4	2.3-7.2	0.4-2.1	1.2-3.6	0-1	0-1.7

**brown** is a decrease in frequency, **light blue** an increase, **grey** none are expected



**CARICOF**  
CARIBBEAN CLIMATE OUTLOOK FORUM

*caricof@cimh.edu.bb*

*rcc.cimh.edu.bb*

Caribbean Institute for Meteorology and Hydrology

TEL: (246) 425-1362/3 | FAX: (246) 424-4733