## **Rainfall frequency and extreme forecasts**

### Wet days and Wet spells Outlooks March to May 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

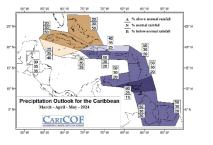








#### Precipitation outlook



### Wet day frequency shifts Forecast for: March to May 2024

MAM 2024 Frequency of wet days

**Frequency Shift** no change decrease increase little indication missing USUALLY: Out of 90 days in Mar-Apr-May, there are about 15 to 30 wet days in low lying, 30-50 in mountainous locations (ABC Islands: 1-10; coastal Guianas: 30-50).

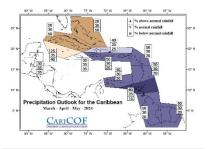
FORECAST: MAM may be drier than the usual throughout the northwest part of the region, but as wet as usual or wetter elsewhere.

• A faster than usual increase in the number of wet days towards May 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 the May.

#### Precipitation outlook



#### Wet days outlook



# MAM 2024 frequency of 7-day wet spells Frequency Shift no change decrease increase O little indication $\times$ missing MAM 2023-24 frequency of 7-day very wet

### Wet spells frequency shifts Forecast for: March to May 2024

USUALLY: Up to 3 wet spells (coastal Guianas: up to 5) occur from Mar to May, with up to 2 of them ending up very wet (coastal Guianas: up to 3).

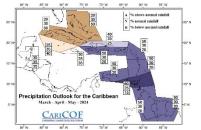
FORECAST: MAM may be drier than the usual throughout the northwest part of the region, but as wet as usual or wetter elsewhere.

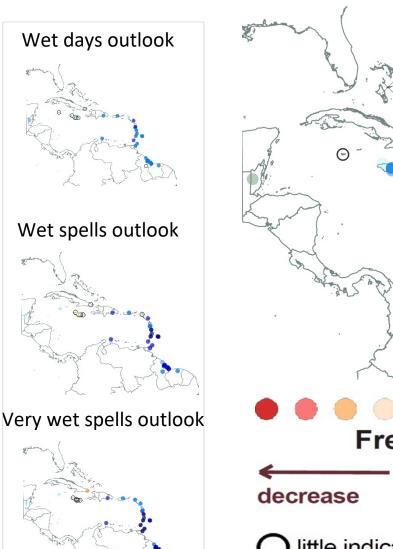
• A faster than usual increase in the number of 7-day wet and very spells is expected across the Guyanas, for most of the Lesser Antilles, and in Puerto Rico and the Dominican Republic (medium to high confidence) but, possibly, a slower increase than usual in eastern Cuba and Jamaica (low confidence).

### **IMPLICATIONS:**

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

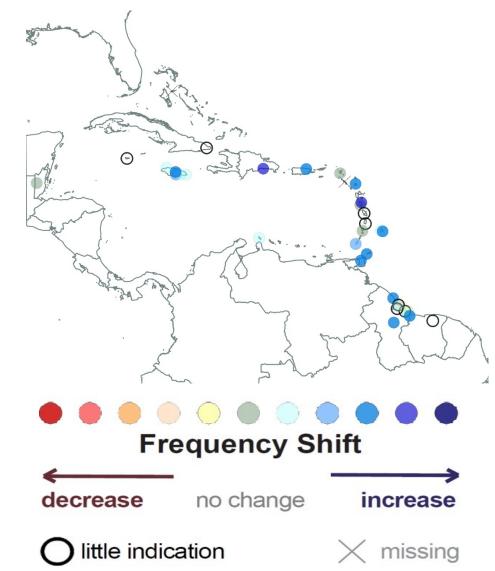
#### Precipitation outlook





### **Extreme wet spells frequency shifts** Forecast for: March to May 2024

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



# USUALLY: Up to 1 extreme wet spell occurs from March to May

FORECAST: MAM may be drier than the usual throughout the northwest part of the region, but as wet as usual or wetter elsewhere.

• More extreme wet spells are expected across most of the region (medium to high confidence) except in Belize, Sint-Maarten, and Saint Vincent where no change in the usual is expected.

### **IMPLICATIONS:**

While the chance of extreme wet spells and the
associated potential for flash floods and cascading
hazards is low in March in most years, a rapid
increase in April and May is forecasted to lead to
high potential across most of the region.

March to May 2024	No	No. of wet days		No. of 7-day wet spells (20% wettest)		No. of 7-day very wet spells (10%		No. of 3-day extremely wet spells (1%	
	Climatology	Forecast	Climatology	Forecast	Climatology	wettest) Forecast	Climatology	wettest) Forecast	
Antigua (VC Bird)	17-29	19-40	1.1-4.3	1.6-6.2	0.4-2.6	0.5-4.1	0-1	0-1.5	
Aruba (Beatrix)	2-10	3-18	0.4-1.3	0.5-2.8	0-0.9	0.1-2.4	0-0	0-0	
Barbados (CIMH)	14-28	18-38	0.4-2.6	1-4.6	0-1.7	0.3-3.2	0-0.5	0-0.2	
Barbados (GAIA)	15-30	19-40	0.4-2.8	1.2-5.1	0-1.7	0.6-3	0-1	0-1.1	
Belize (C. Farm)	10-22	9-24	0.4-1.9	0.5-2.5	0-1.3	0.1-1.5	0-0	0-0	
Cayman	9-22	7-25	0.9-2.6	0.9-3.4	0.4-1.6	0.2-2.4	0-1	0-0.9	
Cuba (Punta Maisi)	8-20	7-22	1.3-3.9	1.1-4.3	0.4-1.7	0-1.7	0-1	0-0.9	
Dom. Republic (Las Americas)	13-26	16-33	1.1-3.9	1.8-6.1	0.4-2.3	0.9-4.3	0-1	0.1-1.6	
Dominica (Canefield)	22-35	24-40	0-2.5	0.5-4	0-1.6	0-2.5	0-0	0-0	
Dominica (Douglas Charles)	36-60	42-73	1.3-3.6	1.5-6	0-2.1	0.4-3.6	0-2	0.3-2.9	
Grenada (MBIA)	10-26	13-44	0-1.9	0.6-3.9	0-1.1	0.2-3.3	0-0	0-0	
Guyana_73	21-34	24-40	1.8-5.7	2.6-8.1	0.9-3	1.3-4.9	0-1	0-1.4	
Guyana (Albion)	28-45	31-52	1.9-4.3	2.7-6.3	0.9-3	1.5-4.5	0-1	0-1.4	
Guyana (Blairmont)	31-48	33-54	1.9-4.7	2.5-6.6	0.9-3	1.5-6.2	0-1	0-1.4	
Guyana (Charity)									
Guyana (Enmore)	32-44	34-53	1.8-4.7	2.1-6.7	0.9-2.6	1.1-3.7	0-1.3	0-1.2	
Guyana (Georgetown)	34-50	34-55	1.8-4.3	2.4-6.2	0.9-2.1	1.4-3.9	0-1	0-1.1	
Guyana (Greatfall)	39-60	30-70	2.1-5.2	2.3-7.4	0.8-3.4	1.1-6.8	0-2	0-3.7	
Guyana (New Amsterdam)	34-48	34-58	1.9-4.7	2.7-6.7	0.9-3	1.6-5.5	0-1	0-1.8	
Guyana (Skeldon)	34-49	35-56	1.8-5.1	2.7-7.9	0.9-3	1.3-5.2	0-1	0.1-1.6	
Guyana (Timehri)	35-54	37-59	1.7-4.7	2.6-6.3	0.5-2.6	1.4-5.4	0-2	0-1.6	
Guyana_Wales									
Jamaica (Worthy Park)	20-33	20-36	2.1-4.3	1.7-4.7	0.7-2.6	0.4-3.5	0-1	0-2	
Martinique (FDF Desaix)	29-47	30-56	0.9-3.4	1.4-5.4	0.4-1.9	0.7-3.3	0-0	0-0.6	
Puerto Rico (San Juan)	25-38	26-45	0.9-3.7	1.6-5.3	0.7-2.7	0.9-4.5	0-1.1	0-1.7	
St. Lucia (Hewanorra)	21-39	22-47	0.5-3	1.2-4.9	0-1.7	0.4-3.1	0-1	0-0.6	
St. Maarten (TNCM)	21-33	20-37	0.9-3	1-3.6	0.4-1.4	0.5-2.2	0-1	0-0.1	
St. Vincent (ET Joshua)	31-51	33-62	0.4-3	1.2-5.6	0-1.7	0.5-2.6	0-0	0-0	
Suriname (Zanderij)	48-61	48-67	2.6-5.9	2.9-8	1.7-3.5	1.3-6.1	0-2	0-1.9	
Tobago (ANR RobinNDJ)	14-31	18-45	0-1.7	0.9-3.5	0-0.9	0.3-1.9	0-0	0-0.4	
Trinidad (Piarco)	13-33	16-41	0.4-2.4	0.9-4.3	0-1.5	0.6-2.9	0-1	0-1.6	

grey none are expected

light blue an increase,

brown is a decrease in frequency,



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