## Rainfall frequency and extreme forecasts

# Wet days and Wet spells Outlooks September to November 2019

**Dr. Cedric VAN MEERBEECK**<sup>1</sup>, **Dr. Teddy ALLEN**<sup>1</sup>, Dr. Simon MSONN<sup>2</sup>, 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>Antiqua and Barbuda Meteorological Services















## Wet day frequency shifts

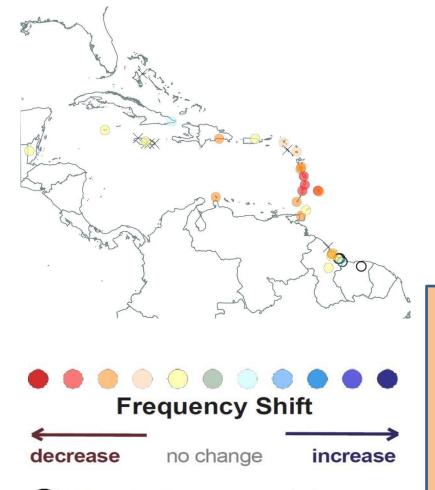
Precipitation outlook



Forecast for: September to November 2019

missing

SON 2019 Frequency of wet days



little indication

USUALLY: Out of 91 days in Sep-Oct-Nov, there are about 35 to 50 wet days (coastal Guianas: 20-35; ABC Islands: 10-20).

FORECAST: SON rainfall may be drier than usual in the Barbados, Belize, Guianas, and Windwards. The forecast indicates about 10-15% fewer wet days especially in most of those areas (medium to high confidence), but little change in other areas (low confid.).

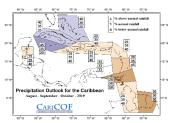
#### **IMPLICATIONS:**

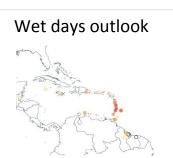
- Surface wetness during the peak of the wet season may be slightly lower than usual, particularly in Barbados and the Windwards.
- Less reliable rains for agriculture than usual for the ABC Isls., Barbados, and Windwards.

## Wet spells frequency shifts

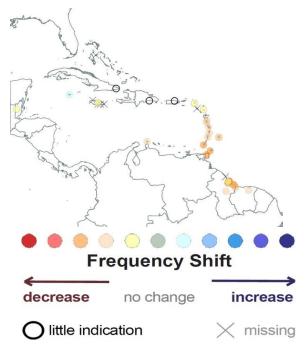
## Forecast for: September to November 2019

#### Precipitation outlook

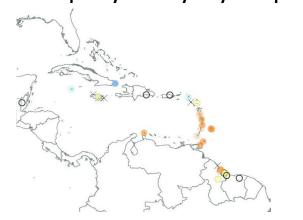




SON 2019 frequency of 7-day wet spells



SON 2019 frequency of 7-day very wet spells



USUALLY: Between 3 and 6 wet spells (coastal Guianas: 1-3) occur from September to November, with 1 to 4 of them ending up very wet (coastal Guianas: up to 2).

FORECAST: SON rainfall may be drier than usual in the Barbados, Belize, Guianas, and Windwards. The forecast indicates about 10-15% fewer wet days especially in most of those areas (medium to high confidence), and possibly slightly fewer wet spells (medium confid.), but not much change in other areas (low confid.).

#### **IMPLICATIONS:**

- Potentially slower recharge of water reservoirs and soil moisture in Barbados and Windwards, but accelerated depletion in the Guianas.
- Slightly reduced, but considerable concern of flood potential across most of the region in view of the number of very wet spells.

## **Extreme wet spells frequency shifts**

Forecast for: September to November 2019

#### Precipitation outlook

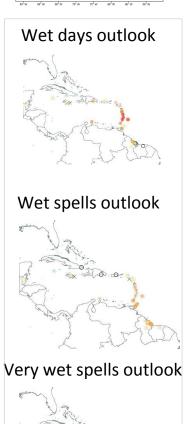


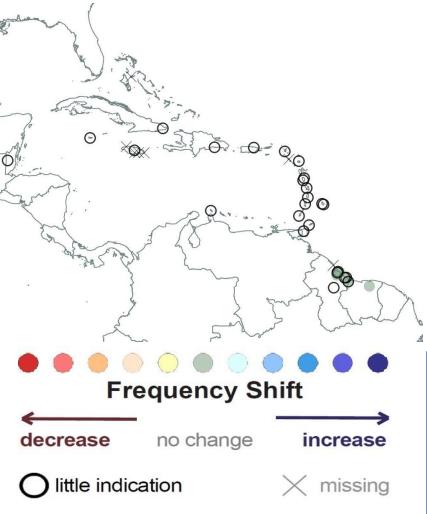
**SON 2019 frequency of** *extreme (top 1%)* **3-day wet spells** 



FORECAST: SON rainfall may be drier than usual in the Barbados, Belize, Guianas, and Windwards. The forecast indicates about 10-15% fewer wet days especially in most of those areas (medium to high confidence), and possibly slightly fewer wet spells (medium confid.), but not much change in other areas (low confid.).

No significant change in the number of extreme wet spells is forecast for most areas (low confid.)





### **IMPLICATION:**

Considerable flash flood potential is expected in view of the usual peak in extreme wet spell occurrence at this time of the year.

September to	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)		70
November 2019	Climatology	Forecast	Climatology	Forecast	Climatology	Forecast	Climatology	Forecast	expected
Antigua (VC Bird)	31-44	29-42	3.3-6	2.8-5.9	1.6-4.1	1.1-4.3	0-1.4	0-1.9	d
Aruba (Beatrix)	14-30	10-27	2.6-6.9	2.2-5.9	1.3-5.1		0-2.5	0-2.3	â
Barbados (CIMH)	38-50	31-46	4.3-6.9	3.4-6.6	2-4.3		0-2.9	0-2.5	are
Barbados (GAIA)	40-49	36-47	4.3-6.5	3.8-6.4	2.1-4.1		0-2	0-2.4	<u>e</u>
Belize (C. Farm)	31-48	30-50	3.3-5.6	2.9-5.7	1.7-3.4	1.4-3.5	0-1.9	0-1.7	grey none
Cayman	29-46	27-46	3.9-6.4	3.8-6.9	1.7-4.3	1.9-4.8	0-2.6	0-2.5	\ \{\gamma}
Cuba (Punta Maisi)	17-31	17-37	2.9-6.2	2.8-6.9	1.3-4.6	1.8-4.8	0-2	0-1.9	g
Dom. Republic (Las Americas)	28-38	22-38	3.4-6.2	3-6.6	1.3-4.3	1.3-4	0-2	0-1.7	
Dominica (Canefield)	42-54	37-51	3-5.8	2.4-5.8	1.7-3.5	1.2-3.5	0-2	0-2.1	se,
Dominica (Douglas Charles)	57-69	51-67	3.8-6	3.4-6.2	1.9-3.7		0-1.2	0-1.9	an increase,
Grenada (MBIA)	35-48	30-45	3.9-6	2.9-6.1	1.7-3.9		0-1.5	0-1.7	ncr
Guyana_73	10-19	9-20	0.4-2.7	0.3-2.4	0-1.3	0-1.3	0-0	0-0	. <u> </u>
Guyana (Albion)	11-26	9-30	0.4-2.6	0.1-2.2	0-0.9	0-1.1	0-0.4	0-0.5	
Guyana (Blairmont)	13-30	10-29	0.4-2.1	0.1-2.1	0-1.3	0-1.3	0-0	0-0	light blue
Guyana (Charity)									¥
Guyana (Enmore)	12-34	10-31	0.4-2.6	0.1-2	0-1.3	0-1.1	0-0.1	0-0	<u></u>
Guyana (Georgetown)	19-36	17-36	0.5-3	0.3-2.3	0.3-1.5		0-1	0-1	
Guyana (Greatfall)									>
Guyana (New Amsterdam)	16-28	12-32	0.4-2.6	0.3-2.2	0-1.7	0-1.4	0-1	0-0.7	Suc
Guyana (Skeldon)	15-32	15-38	0.5-2.6	0.5-2.5	0.4-1.3	0.3-1.4	0-0.7	0-0.4	ane
Guyana (Timehri)	31-42	28-44	1.3-3	1.1-2.7	0.4-1.7	0.4-1.6	0-0	0-0	ecrease in frequency,
Guyana_Wales	25-40	21-35	1.3-3.2	0.8-3.3	0.4-1.7		0-0.7	0-0.7	in f
Jamaica (Worthy Park)	29-46	27-46	3.2-5.6	3.1-6.1	1.7-3.4	1.2-3.6	0-2	0-1.8	se
Martinique (FDF Desaix)	53-62	44-59	4-6.4	3.2-6.8	2.2-3.9		0-2	0-2.3	ea
Puerto Rico (San Juan)	38-52	36-51	3.4-5.6	3-6.3	1.4-3.4	1.4-3.7	0-1	0-1.4	ecr
St. Lucia (Hewanorra)	44-54	38-49	4-5.8	3.5-5.8	2.1-3.9		0-2	0-2	a d
St. Maarten (TNCM)	38-50	34-50	3.3-6	3.1-6.1	1.7-3.4	1.7-3.8	0-2	0-1.9	
St. Vincent (ET Joshua)	54-66	48-61	3.9-6.7	3.5-6.5	1.8-3.9		0-2.8	0-2.7	brown is
Suriname (Zanderij)	22-35	21-38	0.9-2.1	0.8-2	0-1.3	0-2.2	0-0.3	0-0.1	Ş
Tobago (ANR Robinson)	43-54	37-51	3.4-6	2.7-5.5	1.7-3.4		0-1	0-1.6	ā
Trinidad (Piarco)	41-51	37-51	3.7-6	3-5.5	2-3.4	1.3-2.9	0-2	0-1.9	l

10F



caricof@cimh.edu.bb rcc.cimh.edu.bb Caribbean Institute for Meteorology and Hydrology TEL: (246) 425-1362/3 | FAX: (246) 424-4733