# Rainfall frequency and extreme forecasts

# Wet days and Wet spells Outlooks November to January 2021-'22

**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









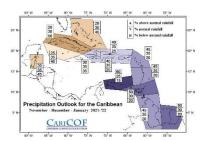






# Wet day frequency shifts

## Precipitation outlook



Forecast for: November to January 2021-'22

NDJ 2021-'22 Frequency of wet days





USUALLY: Out of 92 days in Nov-Dec-Jan, there are usually about 35 to 50 wet days (coastal Guianas: 30-55; ABC Islands: 20-45).

FORECAST: At least the usual rainfall totals or wetter from Hispaniola east and southward, possibly accompanied by a slight increase in the number of wet days compared to the usual in any of these areas north of 15°N (low to medium confidence), and probably a larger increase in many of these areas south of 15°N (medium to high confid.), but possibly drier than usual in most of the Greater Antilles and Belize.

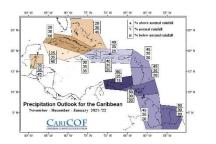
#### **IMPLICATIONS:**

 Outdoor activity disruptions and environmental conditions conducive to moisture related pests due to rainfall should slowly decrease in frequency towards the end of January in the islands and in Belize, whereas a steep increase is excepted from late-November onwards in the Guianas.

# Wet spells frequency shifts

## Forecast for: November to January 2021-'22

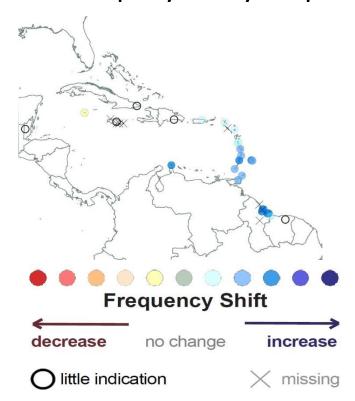
## Precipitation outlook



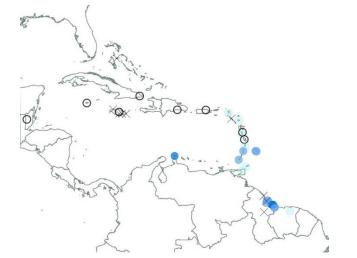




NDJ 2021-'22 frequency of 7-day wet spells



NDJ 2021-'22 frequency of 7-day very wet spells



USUALLY: Between 2 and 5 wet spells occur from November to January, with 1 to 3 of them ending up very wet (coastal Guianas: up to 3).

FORECAST: At least the usual rainfall totals or wetter from Hispaniola east and southward, possibly accompanied by a slight increase in the number of wet days, wet spells and very wet spells compared to the usual in any of these areas north of 15°N (low to medium confidence), and probably a larger increase in many of these areas south of 15°N (medium to high confid.), but possibly drier than usual in most of the Greater Antilles and Belize.

## **IMPLICATIONS:**

- Effective recharge of large water reservoirs and increased soil moisture saturation in view of the many wet spells at least through November in the Caribbean Islands and in Belize.
- The chance of successive very wet spells translates to flood potential being high in the islands and Belize until December and becoming high in the Guianas in late-November.

# **Extreme wet spells frequency shifts**

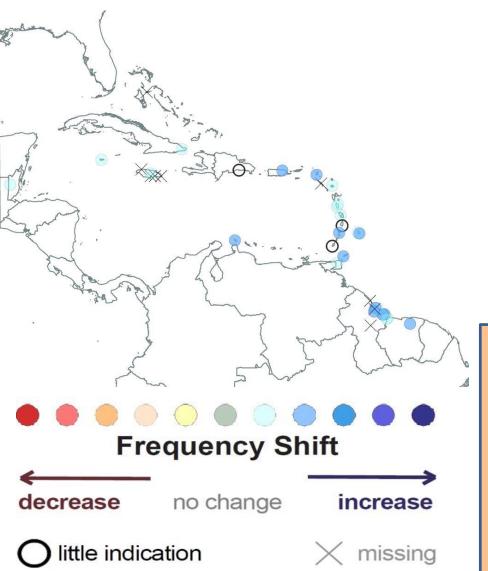
Forecast for: November to January 2021-'22



NDJ 2021-'22 frequency of extreme (top 1%) 3-day wet spells

USUALLY: Up to 2 extreme wet spells occur from November to January (Belize and the Greater Antilles up to 1).

Wet days outlook Wet spells outlook Very wet spells outlook



FORECAST: At least the usual rainfall totals or wetter from Hispaniola east and southward, possibly accompanied by a slight increase in the number of wet days, wet spells, very wet spells and extreme wet spells compared to the usual in any of these areas north of 15°N (low to medium confidence), and probably a larger increase in many of these areas south of 15°N (medium to high confid.), but possibly drier than usual in most of the Greater Antilles and Belize.

## **IMPLICATIONS:**

 In view of the high chance of extreme wet spells in the islands and in Belize until December, the potential for flash floods and associated hazards is expected to be high or even extremely high, whereas, in the coastal Guianas, it is expected to increase from moderate in early-November to extremely high in December and January.

November to Janua	ary								
2022	No.	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)	29-44	28-46	2.1-4.7	2.1-5.2	0.9-2.6	0.8-3	0-1	0-1.4	
Aruba (Beatrix)	19-45	20-52	2.7-8.1	3.5-11.5	0.9-5.4	1.6-6.9	0-2	0-2.6	
Barbados (CIMH)	30-47	31-51	1.8-4.7	2.1-6	0.9-2.7	0.9-3.6	0-1	0-1.9	
Barbados (GAIA)	32-45	30-47	2-4.7	1.9-5.9	0.9-3	0.9-3.4	0-1.5	0-2.3	
Belize (C. Farm)	30-46	26-48	1.8-5.2	1.8-5.2	0.9-2.8	0.7-2.6	0-1	0-1	
Cayman	18-26	15-30	0.9-3	0.7-3.5	0.4-2.1	0.2-2.1	0-1	0-1.9	
Cuba (Punta Maisi)	17-27	16-31	2.6-4.7	2.4-5.1	0.9-2.6	0.9-3.1	0-1	0-1.3	
Dom. Republic (Las Americas)	20-28	18-31	1.7-3.4	1.5-4.4	0.4-1.7	0.5-2.1	0-0.9	0-0.9	
Dominica (Canefield)	41-53	40-56	2-3.4	1.8-4.7	0.6-2.2	0.7-2.4	0-1	0-1.4	
Dominica (Douglas Charles)	55-66	53-70	1.8-4.7	1.7-5.8	0.5-2.6	0.6-3	0-1	0-1.6	
Grenada (MBIA)	30-43	29-49	2.2-4.6	2.3-5.6	0.9-2.6	1.2-3.5	0-1.2	0-1.8	
Guyana_73	15-32	19-36	1.3-4.7	1.4-4.9	0.4-3	0.7-3.7	0-2	0-2	
Guyana (Albion)	27-49	27-56	1.4-5.1	1.9-7.2	0.4-3	0.9-3.6	0-1	0-2.1	
Guyana (Blairmont)	30-56	31-60	1.8-4.8	2.1-6.2	0.5-2.6	0.9-3.8	0-2	0-2.3	
Guyana (Charity)									
Guyana (Enmore)	27-52	33-61	1.7-4.9	2.2-6	0.9-3.4		0-1.4	0-2.1	
Guyana (Georgetown)	37-60	38-64	1.3-5.6	1.8-7.7	0.9-4.3	1.1-4.9	0-3	0-3.6	
Guyana (Greatfall)									
Guyana (New Amsterdam)	30-52	32-57	1.7-4.3	1.9-6.3	0.7-3	1.1-3.9	0-2	0-2.9	
Guyana (Skeldon)	32-45	31-50	1.7-4.3	1.6-4.7	0.4-2.5	0.7-2.8	0-1.7	0-1.9	
Guyana (Timehri)	40-64	43-68	1.7-5.3	2.1-6.8	0.9-3.2	0.9-3.9	0-1	0-1.7	
Guyana_Wales									
Jamaica (Worthy Park)	22-28	19-31	1.7-3	1.4-3.1	0.3-2.1	0.3-2	0-1	0-0.5	
Martinique (FDF Desaix)	51-62	49-66	2.6-4.7	2.1-6.2	0.9-2.6	0.8-2.6	0-1	0-1.4	
Puerto Rico (San Juan)	38-51	37-56	2.6-5.3	2.7-5.8	0.9-2.6		0-1	0-1.1	
St. Lucia (Hewanorra)	39-50	36-55	1.8-3.6	1.9-5	0.9-2.6	0.7-2.7	0-1	0-1.2	
St. Maarten (TNCM)	34-52	34-54	2.2-5.3	2.5-6.6	1.3-3.2	1.1-3.4	0-1	0-2.6	
St. Vincent (ET Joshua)	50-66	49-67	2.2-4.7	2.1-6.4	1-2.6	1-3.2	0-1	0-1.7	
Suriname (Zanderij)	39-52	37-54	1.7-3.4	1.6-3.6	0.4-1.7	0.6-3.5	0-1	0-1.6	
Tobago (ANR Robinson)	36-51	36-51	2.1-4.1	1.6-5.4	0.9-2.4	0.9-2.5	0-1	0-1.6	
Trinidad (Piarco)	36-46	34-50	2.6-4.5	2.4-5.5	1.3-3	1.1-3.1	0-1	0-1.7	



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