

Rainfall frequency and extreme forecasts

—

Wet days and Wet spells Outlooks December to February 2018-'19

Dr. Cedric VAN MEERBEECK¹, Dr. Teddy ALLEN¹, Dr. Simon MASON²,
Ángel MUÑOZ², Wazita Scott¹, Dale Destin³

¹Caribbean Institute for Meteorology and Hydrology (CIMH), Barbados

²International Research Institute for Climate and Society (IRI), USA

³Antigua and Barbuda Meteorological Services



Wet day frequency shifts

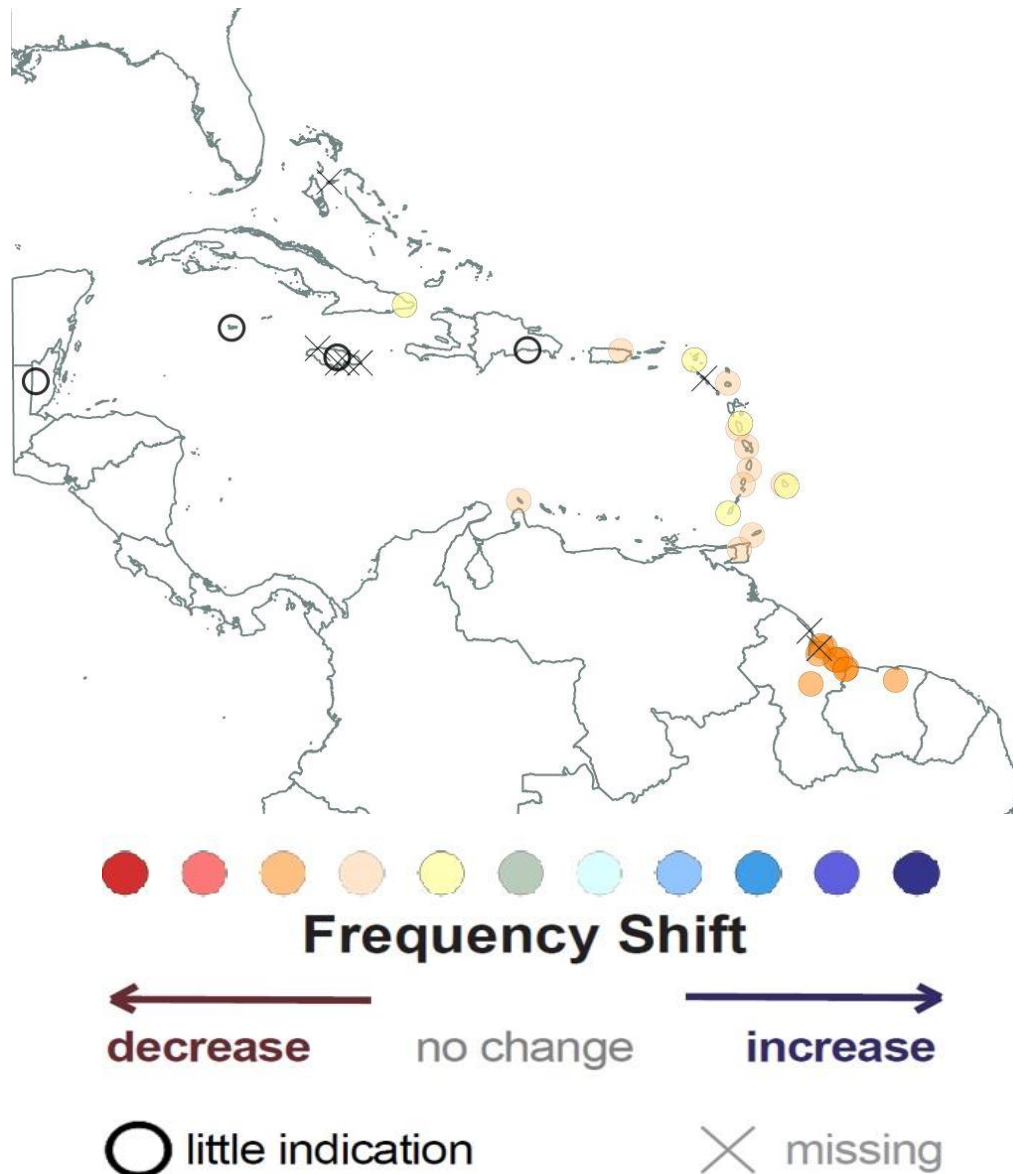
Forecast for: December 2018 to February 2019

Precipitation outlook

DJF 2018-'19
Frequency of wet days

USUALLY: Out of 90 days in Dec-Jan-Feb, there are about 25 to 40 wet days (ABC Islands: 10-35; coastal Guianas: 30 to 50).

FORECAST: DJF rainfall may be drier than usual in the Antilles and the Guianas, except in Cayman & Cuba (wetter than usual). The forecast indicates slightly fewer wet days from Puerto Rico east- and southwards (*low confidence*), and esp. in Guianas (*medium to high confid.*).



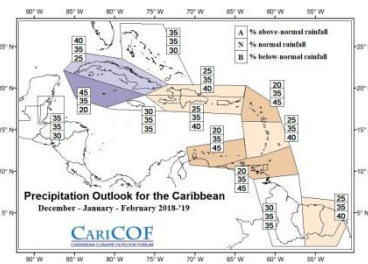
IMPLICATIONS:

- Frequency of rainfall disruptions of outdoor activities to decrease with time.
- Decreasing surface wetness will progressively make environmental conditions less conducive to mosquito breeding and moisture related pests, as well as, fire risk.

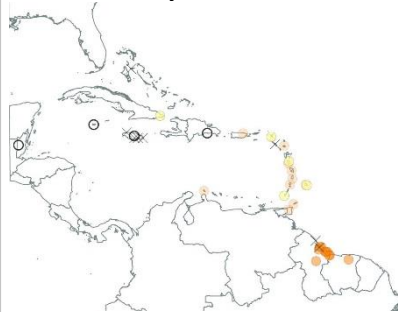
Wet spells frequency shifts

Forecast for: December 2018 to February 2019

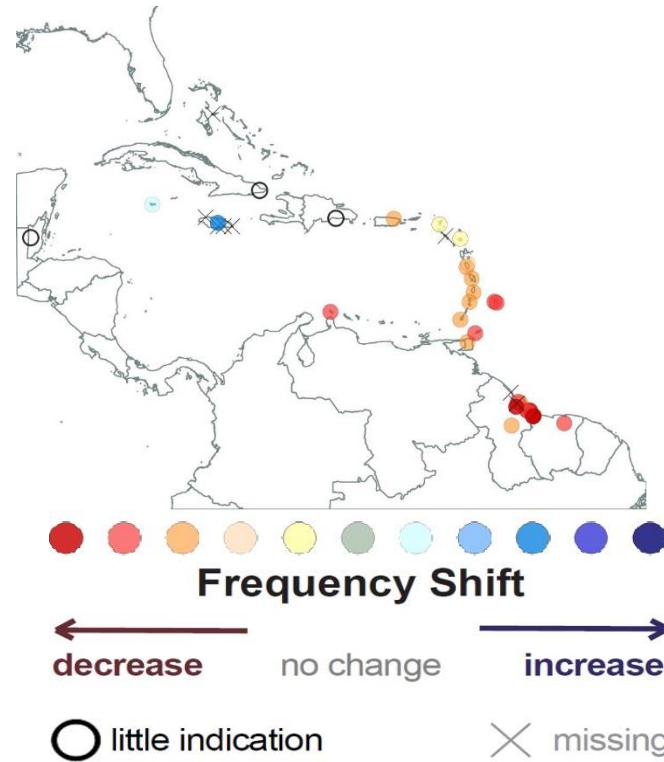
Precipitation outlook



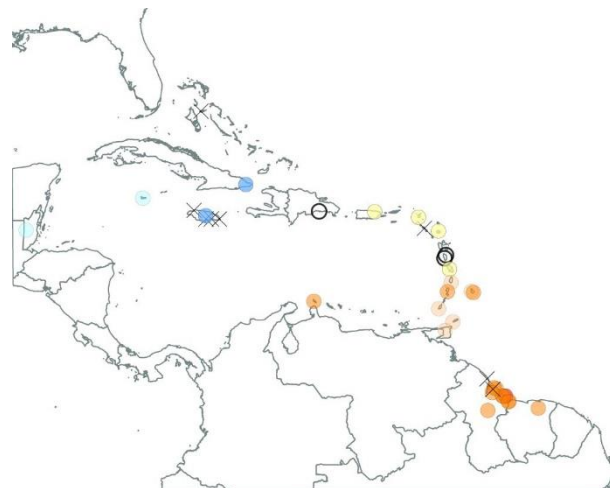
Wet days outlook



DJF 2018-'19 frequency of 7-day wet spells



NDJ 2018-'19 frequency of 7-day very wet spells



USUALLY: Between 1 and 3 wet spells occur from December to February (ABC Islands: 2 to 6; coastal Guianas: 1 to 5), with up to 1 or 2 of them ending up very wet (ABC Islands & coastal Guianas: up to 3).

FORECAST: DJF rainfall may be drier than usual in the Antilles and the Guianas, except in Cayman & Cuba (wetter than usual). The forecast indicates slightly fewer wet days, fewer wet spells and very wet spells from Puerto Rico east- and southwards (*low to medium confidence*), and esp. in Guianas (*medium to high confid.*).

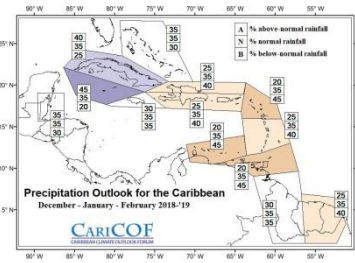
IMPLICATIONS:

- Potentially slightly faster than the usual depletion of large water reservoirs in Eastern Caribbean.
- Significant flood potential in coastal Guianas through early February, and elsewhere through December.

Extreme wet spells frequency shifts

Forecast for: December 2018 to February 2019

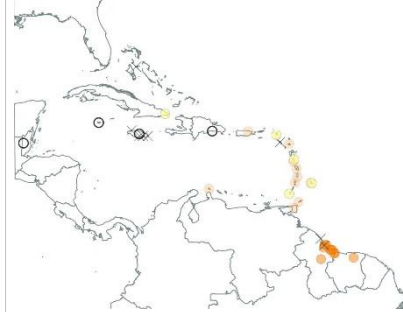
Precipitation outlook



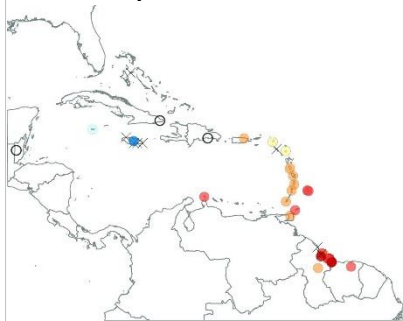
NDJ 2018-'19 frequency of extreme (top 1%) 3-day wet spells



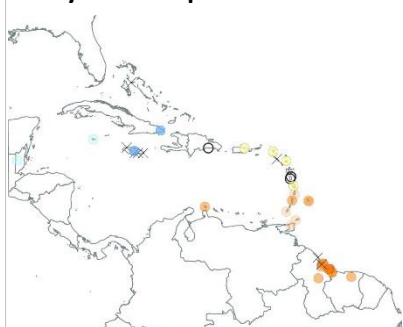
Wet days outlook



Wet spells outlook



Very wet spells outlook



USUALLY: Up to 1 extreme wet spells occur from December to February in Belize and in some islands (coastal Guianas: up to 2).

FORECAST: DJF rainfall may be drier than usual in the Antilles and the Guianas, except in Cayman & Cuba (wetter than usual). The forecast indicates slightly fewer wet days, fewer wet spells and very wet spells from Puerto Rico east- and southwards (*low to medium confidence*), and esp. in Guianas (*medium to high confid.*). **No significant change in the number of extreme wet spells is forecast.**

IMPLICATION:

Flash flood potential still is a concern throughout the region through December (January in the coastal Guianas).

December 2018 to February 2019

	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)	23-40	21-38	1.4-2	1.2-3.3	0.4-1.5	0.1-1.3	0-0	0-0
Aruba (Beatrix)	12-35	9-31	2.1-4	1-4.4	0.3-3.4	0.1-2.2	0-1	0-0.5
Barbados (CIMH)	21-44	20-39	0.9-1.7	0.3-1.7	0-1.3	0-1	0-0	0-0
Barbados (GAIA)	22-40	20-41	0.7-1.8	0.4-2.2	0-1.3	0-1	0-0	0-0
Belize (C. Farm)	21-40	20-39	1.4-2.6	1.1-4.1	0.4-1.7	0.3-2	0-0.9	0-0
Cayman	11-22	11-23	0.4-1.3	0.5-2.7	0-0.9	0-1.2	0-0	0-0
Cuba (Punta Maisi)	13-22	11-22	1.7-2.8	1.5-4.5	0.6-2.1	0.7-2.6	0-0	0-0
Dom. Republic (Las Americas)	15-23	12-24	0.9-0.9	0.4-2.3	0-1.3	0-1.3	0-0.2	0-0.4
Dominica (Canefield)	36-53	31-51	0.8-2.2	0-2.6	0-1.2	0-1.4	0-0	0-0
Dominica (Douglas Charles)	48-62	41-65	0.8-1.8	0.4-3	0-1.4	0-1.4	0-0	0-0
Grenada (MBIA)	20-38	15-40	0.7-2.2	0.2-2.6	0-1.9	0-1.5	0-0.9	0-0.7
Guyana_73	15-33	11-25	0.9-3	0.4-2.4	0.4-3.9	0.1-1.9	0-2	0-1.1
Guyana (Albion)	25-51	21-43	1.3-3.5	0.4-2.7	0.4-3.4	0.2-1.8	0-1.8	0-0.9
Guyana (Blairmont)	33-53	24-49	1.2-3.4	0.4-3	0.5-3.2	0.2-1.9	0-2	0-1.3
Guyana (Enmore)								
Guyana (Georgetown)	29-51	25-43	1.3-4.8	0-3.5	0.4-3.9	0.2-2.8	0-1	0-1.1
Guyana (New Amsterdam)	33-59	28-50	0.7-3	0.3-2.8	0-4.4	0-2	0-2	0-1.7
Guyana (Skeldon)								
Guyana (Timehri)	31-54	25-46	1-3.1	0.4-2.8	0.7-3.8	0.3-1.9	0-2	0-1.3
Guyana_Wales	27-48	23-44	1.2-2.9	0.7-2.5	0.4-2.7	0.2-1.7	0-2.2	0-0.7
Jamaica (Worthy Park)	38-64	32-53	1.3-3	0.8-2.6	0.4-3	0.1-1.9	0-1	0-1.4
Martinique (FDF Desaix)								
Puerto Rico (San Juan)	17-25	14-26	0.4-1.5	0.9-3.2	0-1.7	0.1-1.8	0-0	0-0
St. Lucia (Hewanorra)	43-59	38-57	0.9-2	0.4-2.5	0-1.3	0-1.1	0-0	0-0
St. Maarten (TNCM)	30-46	28-44	1.3-2.4	1.2-3.2	0.4-1.5	0.3-1.6	0-1	0-1
St. Vincent (ET Joshua)	29-46	28-45	0.9-1.8	0.6-2.1	0-1.3	0-1	0-0	0-0
Suriname (Zanderij)	30-47	29-48	1.7-3	1-4.6	0.1-2.1	0-2.1	0-1	0-1.1
Tobago (ANR Robinson)	42-60	37-58	0.9-2	0-2.2	0.1-1.7	0-1.2	0-0	0-0
Trinidad (Piarco)	42-54	36-52	1.6-2.7	1.2-2.9	0.4-2.1	0.4-1.6	0-1	0-1

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