

Rainfall frequency and extreme forecasts

—

Wet days and Wet spells Outlooks July to September 2019

**Dr. Cedric VAN MEERBEECK¹, Dr. Teddy ALLEN¹, Dr. Simon MSONN²,
Ángel MUÑOZ², Wazita Scott¹, Dale Destin³**

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

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

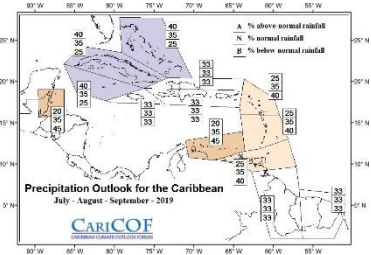
³Antigua and Barbuda Meteorological Services



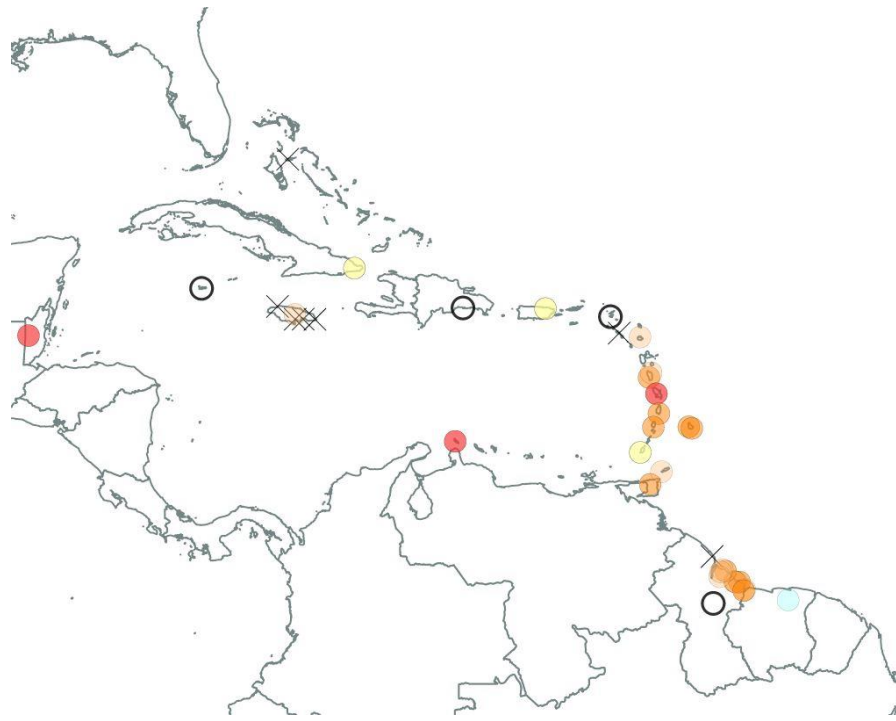
Wet day frequency shifts

Forecast for: July to September 2019

Precipitation outlook



JAS 2019
Frequency of wet days



USUALLY: Out of 92 days in Jul-Aug-Sep, there are about 35 to 59 wet days in relatively flat areas of Belize and the islands, but 50 to 65 in mountainous areas and in coastal Guianas (ABC Islands: 5-15).

FORECAST: JAS rainfall may be drier than usual in the ABC Islands, Belize and the Lesser Antilles. The forecast indicates about 10% fewer wet days especially in those areas and in Guyana (*medium to high confidence*), but not much change in other areas (*low confid.*).

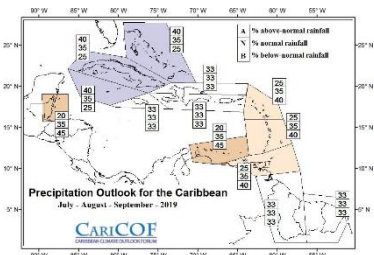
IMPLICATIONS:

- Surface wetness increasing slower than usual into the wet season for much of the region.
- Less reliable rains for agriculture than usual for the ABC Isls., Barbados, Belize, the Windward Islands and Guyana.

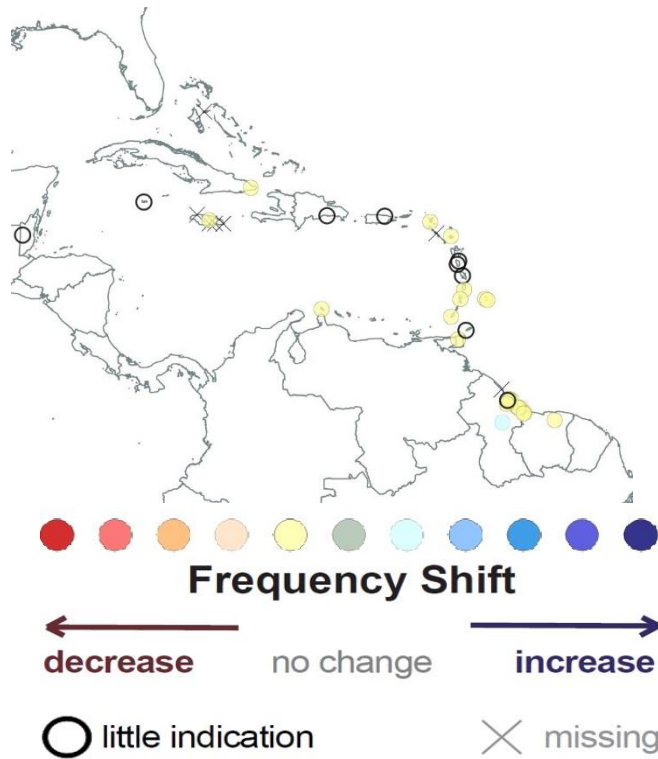
Wet spells frequency shifts

Forecast for: July to September 2019

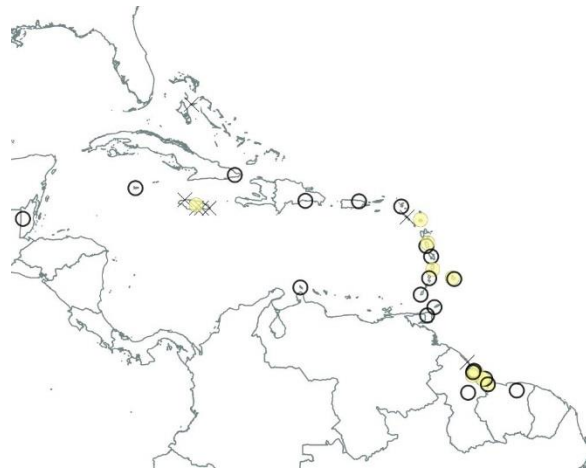
Precipitation outlook



JAS 2019 frequency of 7-day wet spells



JAS 2019 frequency of 7-day very wet spells



USUALLY: 3 to 6 wet spells (ABC Islands: up to 3) occur from July to September, with 1 to 3 of them ending up very wet (ABC Islands: up to 2).

FORECAST: JAS rainfall may be drier than usual in the ABC Islands, Belize and the Lesser Antilles. The forecast indicates about 10% fewer wet days especially in those areas and in Guyana (medium to high confidence) and possibly slightly fewer wet spells and very wet spells (*low confid.*), but not much change in other areas (*low confid.*).

IMPLICATIONS:

- Potentially delayed recharge of large water reservoirs and soil moisture in most of the islands with the possible exception of Guyana
- A reduced concern of flood potential across most of the region

Extreme wet spells frequency shifts

Forecast for: July to September 2019

USUALLY: Up to 1 extreme wet spells occur between July to September in most places, but up to 2 in mountainous areas.

FORECAST: JAS rainfall may be drier than usual in the ABC Islands, Belize and the Lesser Antilles. The forecast indicates about 10% fewer wet days especially in those areas and in Guyana (medium to high confidence) and possibly slightly fewer wet spells and very wet spells (*low 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.*)**

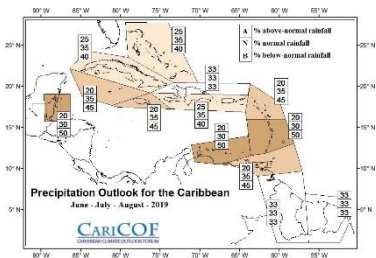
JJA 2019 frequency of extreme (top 1%) 3-day wet spells



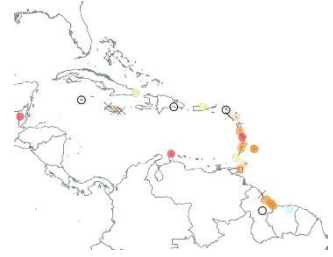
IMPLICATION:

Flash flood potential is expected to be of some concern throughout the period, particularly towards September.

Precipitation outlook



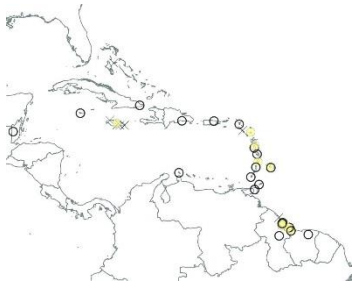
Wet days outlook



Wet spells outlook



Very wet spells outlook



July to September 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)	29-41	27-41	2.6-4.9	2.3-4.9	0.9-3	0.8-3.1	0-1
Aruba (Beatrix)	6-17	3-14	1.2-3.9	0.8-4.2	0.4-2.1	0.2-2.2	0-0.9	0-0
Barbados (CIMH)	37-48	31-46	3.4-6.4	3.1-6.3	1.4-3.2	1.4-3.5	0-1	0-1.2
Barbados (GAIA)	39-49	35-48	3.9-6.2	3.6-6.3	1.6-3.9	1.2-3.8	0-1	0-1.5
Belize (C. Farm)	37-49	29-46	2.8-5.6	2.9-6.1	1.3-3.4	1.3-3.6	0-1.1	0-1.4
Cayman	31-44	26-47	3.4-6.2	3.3-6.6	1.2-3.4	1.1-3.8	0-1	0-0.9
Cuba (Punta Maisi)	10-18	9-19	1.4-3.9	1.1-3.9	0.4-1.7	0.1-1.7	0-1	0-0.2
Dom. Republic (Las Americas)	24-34	21-34	3-5.1	2.7-5.3	1.7-3.3	1.2-3.3	0-1	0-1.3
Dominica (Canefield)	52-64	46-62	3.7-7.2	3.5-7.5	1.8-5.4	1.4-5.2	0-2.5	0-2.3
Dominica (Douglas Charles)	56-69	53-70	2.9-6.6	2.4-6.3	0.9-3.2	0.8-3.5	0-1	0-1.1
Grenada (MBIA)	39-48	35-52	3.9-6.4	3.1-6.3	1.7-3.6	1.3-4	0-2	0-1.6
Guyana_73	17-26	14-25	1.7-4.1	1.3-4.4	0.4-2.4	0.4-2.4	0-0.1	0-0.1
Guyana (Albion)	26-41	20-39	2.1-4.8	2-4.8	0.9-3	0.8-2.7	0-1	0-0.9
Guyana (Blairmont)	32-46	28-43	2.1-5.1	1.8-5.2	0.7-2.6	0.8-2.6	0-1	0-0.9
Guyana (Enmore)								
Guyana (Georgetown)	27-42	20-40	1.7-4.3	1.4-4.3	0.4-2.7	0.3-2.5	0-1	0-0.8
Guyana (Greatfall)	35-51	29-51	1.7-4.3	1.5-4.1	0.4-2.5	0.6-2.3	0-1	0-0.5
Guyana (New Amsterdam)								
Guyana (Skeldon)	31-44	28-43	1.8-4.7	1.7-4.5	0.7-2.6	0.5-2.5	0-1	0-0.8
Guyana (Timehri)	32-38	27-38	2.1-3.9	1.5-3.9	0.7-2.6	0.6-2.5	0-1	0-1.3
Guyana_Wales	45-58	40-57	2.1-4.7	2-4.7	0.9-2.6	0.7-2.3	0-1	0-0.4
Jamaica (Worthy Park)	39-52	36-51	2.1-4.3	2-4.7	0.9-2.6	0.7-2.6	0-0.8	0-0.5
Martinique (FDF Desaix)	28-42	25-41	2.6-5.6	2.4-5.4	0.9-3	0.8-3.1	0-2	0-1.5
Puerto Rico (San Juan)	53-64	47-61	3.9-7	3.4-6.8	1.7-3.7	1.3-3.4	0-1.4	0-1.6
St. Lucia (Hewanorra)	36-50	33-53	2.7-5.4	2.5-5.8	0.9-3.2	0.8-3.4	0-1	0-1.3
St. Maarten (TNM)	44-59	38-55	3.4-5.6	3.1-5.9	1.7-3.4	1.1-3.3	0-1.1	0-1.6
St. Vincent (ET Joshua)	33-49	30-52	2.2-5.7	2-5.3	0.9-3	0.7-2.8	0-1	0-1
Suriname (Zanderij)	56-65	50-65	3.4-5.5	3.1-5.7	1.3-3.3	1.3-3	0-1.1	0-1.4
Tobago (ANR Robinson)	36-51	35-54	1.9-3.4	1.7-3.6	0.7-1.7	0.6-2.6	0-1	0-1.4
Trinidad (Piarco)	47-59	45-57	4-6.4	3.6-6.4	1.5-3.4	1.5-3.3	0-1	0-1.3

brown is a decrease in frequency, **dark 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