

Rainfall frequency and extreme forecasts

—

Wet days and Wet spells Outlooks May to July 2019

**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

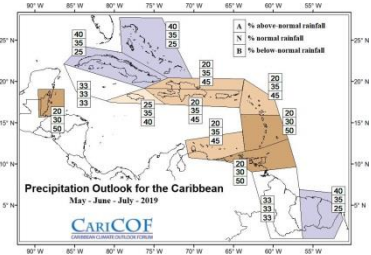
³Antigua and Barbuda Meteorological Services



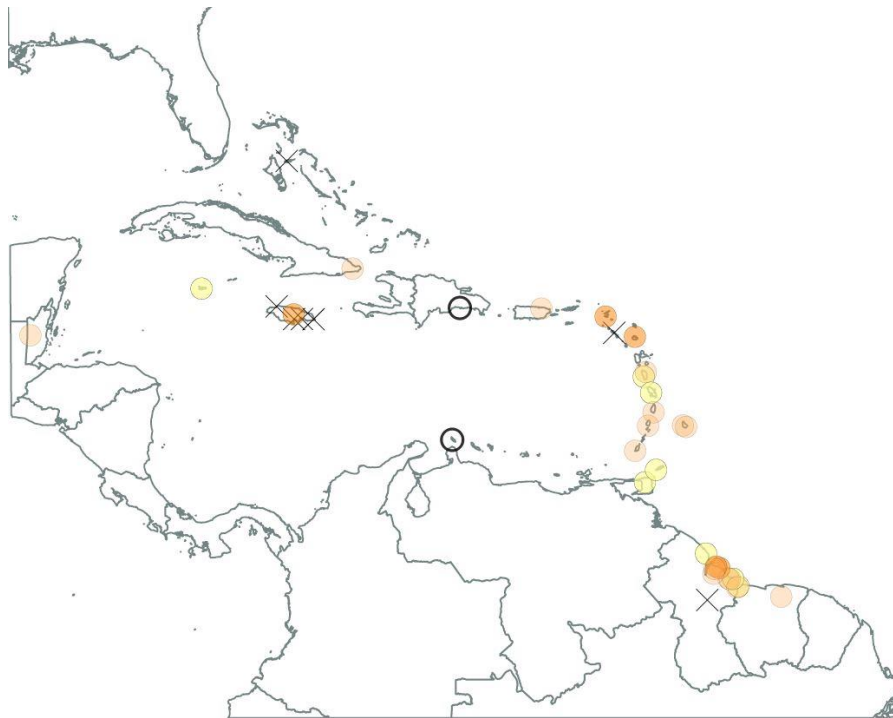
Wet day frequency shifts

Forecast for: May to July 2019

Precipitation outlook



MJJ 2019
Frequency of wet days



USUALLY: During May-June-July, about 25 to 40 days out of a total of 92 days are wet days in relatively flat areas in the islands, and 45 to 65 in mountainous areas and in coastal Guianas (ABC Islands: 5-15).

FORECAST: MJJ rainfall may be wetter than usual in The Bahamas, Cuba and E Guianas, but drier than usual in Belize and the remainder of the Caribbean islands. The forecast indicates **slightly fewer wet days throughout the region** (*low to medium confidence*).

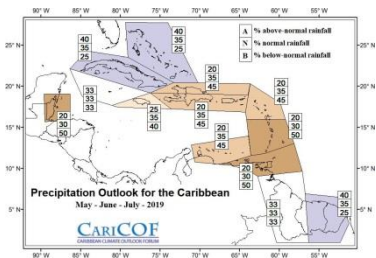
IMPLICATIONS:

- Frequency of outdoor activity disruptions due to rainfall should increase towards June, though fewer than usual.
- Decreasing surface wetness as most places (except the ABC Islands) transition into the wet season, progressively decreasing wild fire potential.

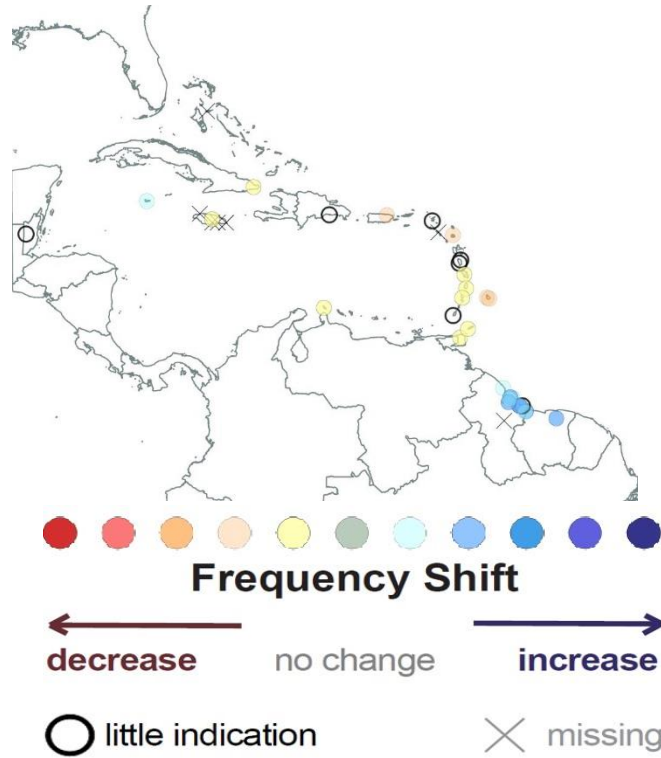
Wet spells frequency shifts

Forecast for: May to July 2019

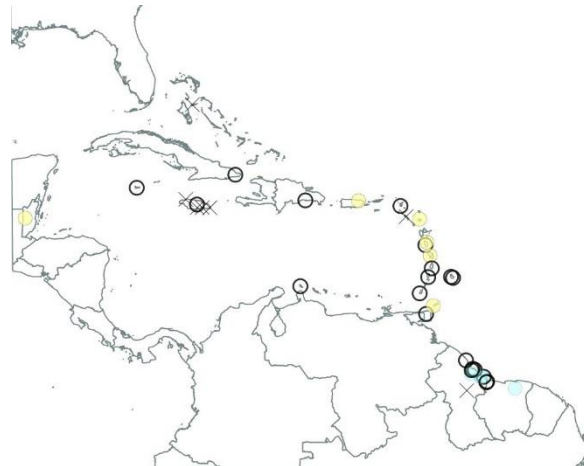
Precipitation outlook



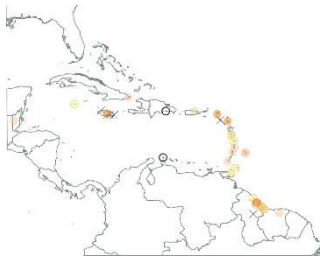
MJJ 2019 frequency of 7-day wet spells



MJJ 2019 frequency of 7-day very wet spells



Wet days outlook



USUALLY: 1 to 5 wet spells (coastal Guianas: 4 to 7) occur from May to July, with 2 or 3 of them ending up very wet (ABC Islands: up to 1; coastal Guianas: 1 to 5).

FORECAST: MJJ rainfall may be wetter than usual in The Bahamas, Cuba and E Guianas, but drier than usual in Belize and the remainder of the Caribbean islands. The forecast indicates slightly fewer wet days throughout the region (*low to medium confidence*) and possibly slightly fewer wet spells and very wet spells in the islands (*low confid.*), except a slight increase in wet spells in the Guianas (*low to medium confid.*).

IMPLICATIONS:

- Potentially slightly faster than usual recharge of large water reservoirs and soil moisture in the Guianas, but slightly slower elsewhere.
- Flood potential is a concern, especially in the Greater Antilles, Belize and coastal Guyana.

Extreme wet spells frequency shifts

Forecast for: May to July 2019

USUALLY: Up to 1 extreme wet spell occur between May to July (Guianas: up to 2).

FORECAST: MJJ rainfall may be wetter than usual in The Bahamas, Cuba and E Guianas, but drier than usual in Belize and the remainder of the Caribbean islands. The forecast indicates slightly fewer wet days throughout the region (*low to medium confidence*) and possibly slightly fewer wet spells and very wet spells in the islands (*low confid.*), except a slight increase in wet spells in the Guianas (*low to medium confid.*). **A slight increase in the number of extreme wet spells is forecast for many places (*low to medium confid.*).**

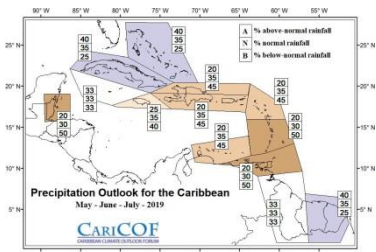
MJJ 2019 frequency of extreme (top 1%) 3-day wet spells



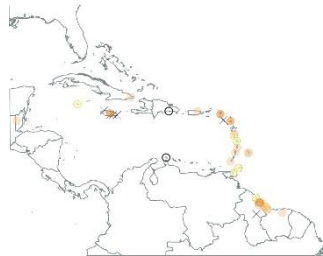
IMPLICATION:

Flash flood potential throughout the region is expected to be of concern throughout the period in most places, especially in the Greater Antilles.

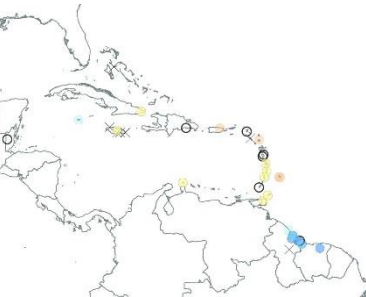
Precipitation outlook



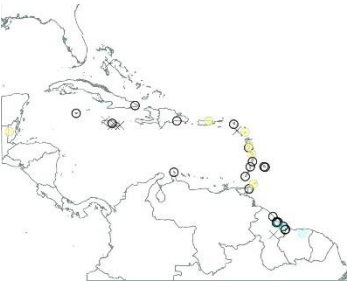
Wet days outlook



Wet spells outlook



Very wet spells outlook



May to July 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) | 20-38 | 19-34 | 1.4-4.5 | 1.3-3.9 | 0.4-2.9 | 0.4-2.6 | 0-1 | 0-0.7 |
| Aruba (Beatrix) | 6-13 | 5-13 | 0.4-2.6 | 0.4-2.4 | 0.1-1.5 | 0.1-1.5 | 0-1 | 0-1.1 |
| Barbados (CIMH) | 24-42 | 23-39 | 1.3-4.8 | 1.2-4.3 | 0.5-2.2 | 0.5-2.3 | 0-1 | 0-0.2 |
| Barbados (GAIA) | 26-44 | 25-40 | 2.1-4.3 | 1.7-4.2 | 0.4-2.1 | 0.4-2.3 | 0-1 | 0-1.1 |
| Belize (C. Farm) | 28-40 | 27-39 | 2-5.1 | 2.1-5.1 | 1.3-3 | 1-3 | 0-1.1 | 0-1.8 |
| Cayman | 24-35 | 22-36 | 2.9-5.2 | 2.7-5.9 | 1.2-3.4 | 1.1-3.5 | 0-1 | 0-1.6 |
| Cuba (Punta Maisi) | 8-18 | 6-16 | 1.5-3.4 | 1-3.6 | 0.4-2.1 | 0.1-2.2 | 0-1 | 0-1.2 |
| Dom. Republic (Las Americas) | 18-30 | 18-31 | 1.3-4.3 | 1.7-5 | 0.4-2.9 | 0.4-4.3 | 0-1 | 0-0.7 |
| Dominica (Canefield) | 35-58 | 35-57 | 2.1-5.2 | 2.2-5.7 | 0.9-3.1 | 0.8-3.1 | 0-1.1 | 0-0.5 |
| Dominica (Douglas Charles) | 45-66 | 42-65 | 1.7-4.7 | 1.7-4.8 | 0.5-2.2 | 0.6-2.5 | 0-1 | 0-1.2 |
| Grenada (MBIA) | 30-45 | 28-43 | 2-4.8 | 1.9-5.2 | 0.7-2.8 | 0.6-3 | 0-1 | 0-1.6 |
| Guyana_73 | 30-41 | 28-41 | 3.9-6.9 | 4.1-7.4 | 1.6-3.4 | 1.2-4.6 | 0-1 | 0-1.8 |
| Guyana (Albion) | 44-57 | 42-58 | 3.9-7.2 | 3.5-7.6 | 2.1-3.9 | 1.6-4.5 | 0-1 | 0-1.9 |
| Guyana (Blairmont) | 50-67 | 47-65 | 3.5-7.5 | 4.4-8.7 | 1.4-4.9 | 1.8-5.5 | 0-2 | 0-2.3 |
| Guyana (Enmore) | 48-63 | 43-61 | 3.7-6.9 | 3.1-7.9 | 1-4.3 | 0.9-4.6 | 0-1.5 | 0-1.7 |
| Guyana (Georgetown) | 56-68 | 50-67 | 3.7-7.2 | 3.9-7.6 | 1.4-3.9 | 1.3-4.6 | 0-1 | 0-1.4 |
| Guyana (New Amsterdam) | 50-65 | 46-63 | 4-7.3 | 4.3-8.3 | 1.7-4.7 | 1.7-4.8 | 0-1.5 | 0-1.7 |
| Guyana (Skeldon) | 49-63 | 45-61 | 4-7.3 | 4.1-7.7 | 1.7-4.5 | 1.6-5 | 0-1.9 | 0-1.7 |
| Guyana (Timehri) | 57-71 | 54-71 | 3.9-7.3 | 4-7.4 | 1.7-4.3 | 1.4-4.7 | 0-2 | 0-2.4 |
| Jamaica (Worthy Park) | 25-40 | 21-38 | 2.6-5.2 | 2.2-5.6 | 1.3-3 | 1-3.2 | 0-1.9 | 0-2.2 |
| Martinique (FDF Desaix) | 42-57 | 39-57 | 2.1-4.9 | 2.1-4.9 | 0.9-2.8 | 0.6-2.4 | 0-1 | 0-0.3 |
| Puerto Rico (San Juan) | 29-46 | 27-44 | 2.1-5.2 | 1.7-4.9 | 0.9-3.3 | 0.9-3.2 | 0-1 | 0-1.3 |
| St. Lucia (Hewanorra) | 30-51 | 31-48 | 1.7-5 | 1.7-4.6 | 0.4-2.4 | 0.4-2.6 | 0-0.9 | 0-0.3 |
| St. Maarten (TNM) | 24-39 | 20-36 | 1.2-3.9 | 1.3-4.1 | 0.4-3 | 0.3-2.5 | 0-1 | 0-1.4 |
| St. Vincent (ET Joshua) | 44-64 | 42-61 | 2-5.1 | 1.5-4.7 | 0.7-2.6 | 0.5-2.5 | 0-1 | 0-1.4 |
| Suriname (Zanderij) | 58-70 | 54-71 | 4.1-6.7 | 4-8.1 | 1.8-3.9 | 1.6-5 | 0-2 | 0-2.2 |
| Tobago (ANR Robinson) | 41-56 | 39-56 | 3.4-5.9 | 3-5.7 | 1.4-3 | 1.4-2.9 | 0-1 | 0-1.3 |
| Trinidad (Piarco) | 33-46 | 31-46 | 2.2-4.7 | 1.8-5.1 | 0.7-3 | 0.6-3.2 | 0-1 | 0-1.4 |



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