

Rainfall frequency and extreme forecasts

—

Wet days and Wet spells Outlooks May to July 2024

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

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

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

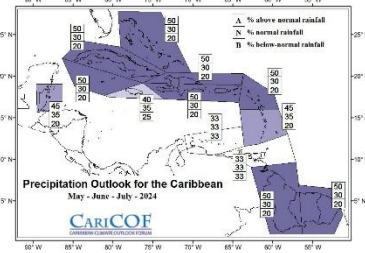
³Antigua and Barbuda Meteorological Services



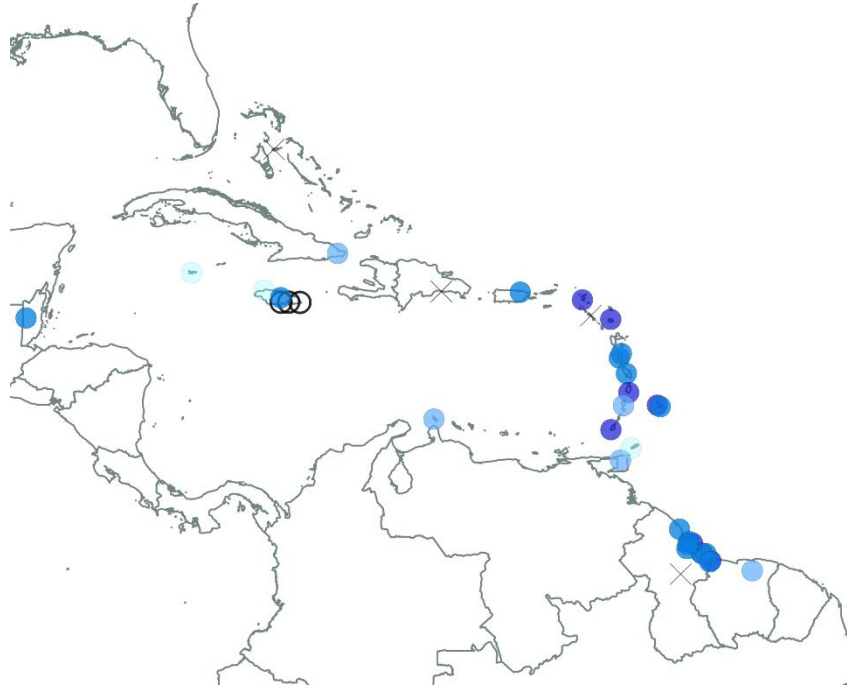
Wet day frequency shifts

Forecast for: May to July 2024

Precipitation outlook



MJJ 2024 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: The majority of the region is expected to be wetter than usual during MJJ.

- *A faster than usual increase in the number of wet days towards summer is expected across most of the region (medium to high confidence).*

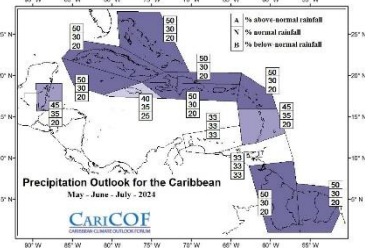
IMPLICATIONS:

- More frequent wet days than usual translates to an early transition into the wet season along with an increase in outdoor activity disruptions, but replenishing moisture to surfaces and vegetation.
- The above impacts make environmental conditions increasingly conducive to moisture-related pests, but decrease wildfire potential towards May and June.

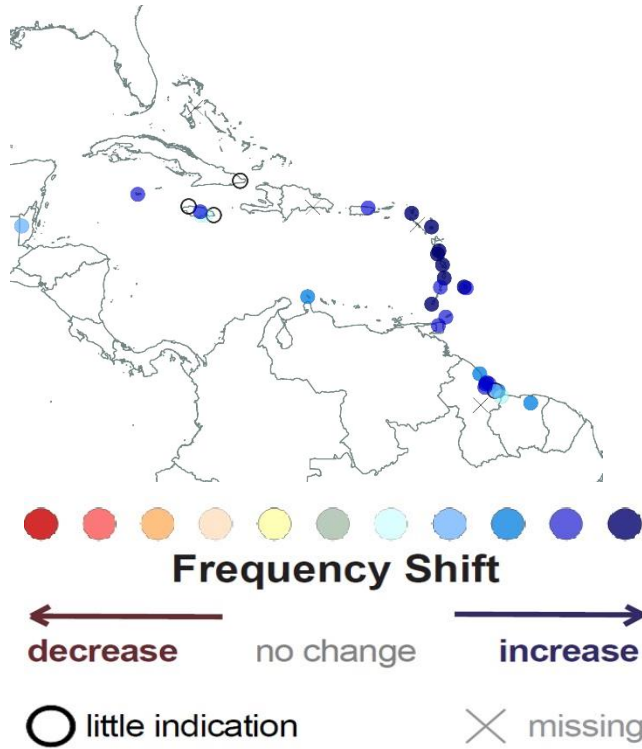
Wet spells frequency shifts

Forecast for: May to July 2024

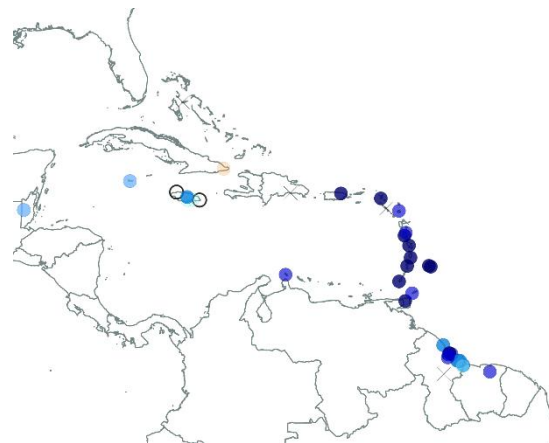
Precipitation outlook



MJJ 2024 frequency of 7-day wet spells



MJJ 2024 frequency of 7-day very wet spells



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).

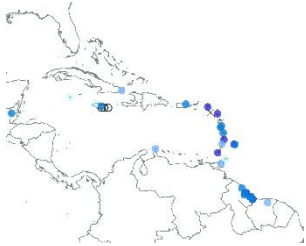
FORECAST: The majority of the region is expected to be wetter than usual during MJJ.

- *A faster than usual increase in the number of 7-day wet and very spells is expected across the region (medium to high confidence) but, possibly, a slower increase than usual in eastern Cuba (low confidence).*

IMPLICATIONS:

- Water recharge rates in smaller and larger surface reservoirs and in rivers will likely accelerate, thus progressively bringing drought relief in affected areas.
- Flooding potential is expected to become high in May as the wet season returns.
- These trends may manifest much faster than in most years.

Wet days outlook



Extreme wet spells frequency shifts

Forecast for: May to July 2024

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

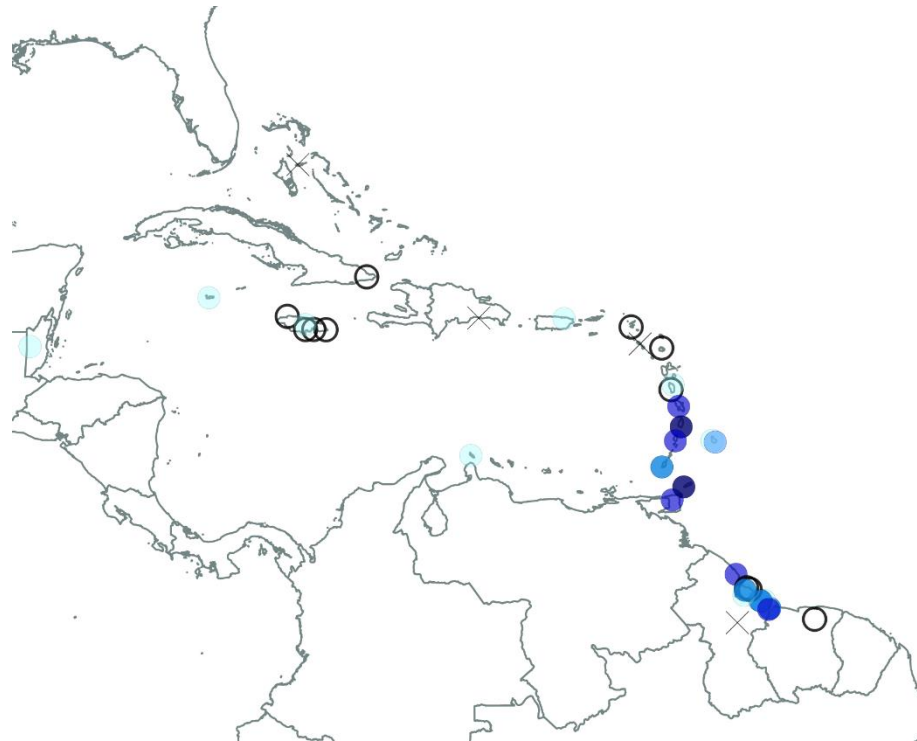
FORECAST: The majority of the region is expected to be wetter than usual during MJJ.

- *More extreme wet spells are expected across Aruba, Belize, Cayman Island, the Windward Islands, the Guyanas, and Puerto Rico (medium to high confidence) with little change expected in the Greater Antilles, the Leeward Islands and Suriname.*

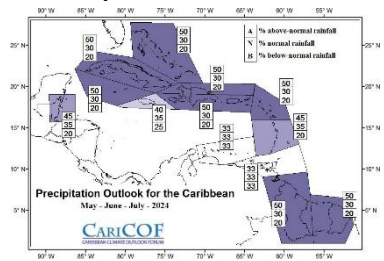
IMPLICATIONS:

- An increase in the chance of extreme wet spells and the associated potential for flash floods and cascading hazards in May is forecasted to lead to high potential across most of the region (with the likely exception of the ABC Islands and the possible exception of low-lying areas and small islands of the Leeward Islands).

MJJ 2024 frequency of extreme (top 1%) 3-day wet spells



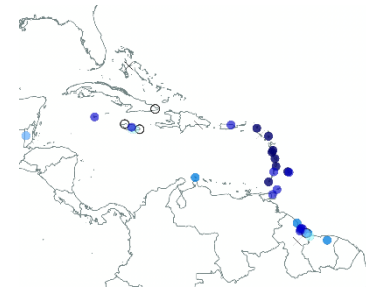
Precipitation outlook



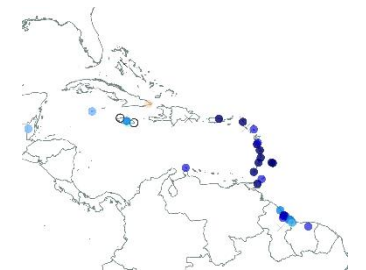
Wet days outlook



Wet spells outlook



Very wet spells outlook



May to July 2024

| | 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) | 21-38 | 26-53 | 1.3-4.9 | 2.7-8.2 | 0.4-3.2 | 1-5.8 | 0-1 | 0-1.1 |
| Aruba (Beatrix) | 6-12 | 6-16 | 0.7-2.4 | 0.9-3.9 | 0.2-1.3 | 0.5-2.2 | 0-1 | 0-0.6 |
| Barbados (CIMH) | 24-42 | 28-52 | 1.3-5.2 | 3-8.6 | 0.5-2.2 | 1.4-4.2 | 0-1 | 0-0.6 |
| Barbados (GAIA) | 27-45 | 29-51 | 2.1-4.9 | 2.9-7.2 | 0.4-2.7 | 1.4-5.3 | 0-1 | 0-1.5 |
| Belize (C. Farm) | 28-40 | 29-45 | 2.4-5.1 | 2.5-6.1 | 1.3-3 | 1.1-3.9 | 0-1.1 | 0-1.7 |
| Cayman | 25-36 | 22-40 | 3-5.5 | 3.8-8.7 | 1.1-3.4 | 1.3-5 | 0-1 | 0-1.5 |
| Cuba (Punta Maisi) | 8-18 | 7-23 | 1.3-3.6 | 0.8-4 | 0.2-2.1 | 0-2 | 0-1 | 0-1.1 |
| Dom. Republic (Las Americas) | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Dominica (Canefield) | 38-60 | 41-71 | 2.5-5.5 | 4-9.7 | 1.3-3.4 | 1.9-5.1 | 0-1.2 | 0-0.9 |
| Dominica (Douglas Charles) | 47-66 | 49-80 | 1.9-5 | 3.3-8.8 | 0.5-2.2 | 1.2-4.8 | 0-1 | 0-1.3 |
| Grenada (MBIA) | 30-48 | 34-56 | 2-5 | 3.3-9 | 0.7-2.8 | 1.7-5.5 | 0-1 | 0-1.8 |
| Guyana_73 | 30-42 | 32-54 | 3.9-6.9 | 3.8-7.4 | 1.8-3.4 | 1.7-5.3 | 0-1 | 0-1.7 |
| Guyana (Albion) | 44-58 | 45-67 | 3.9-7.2 | 4-8.5 | 2-3.9 | 2.3-6.3 | 0-2 | 0-2.9 |
| Guyana (Blairmont) | 49-67 | 50-72 | 3.4-7.3 | 3.7-8.1 | 1.3-4.9 | 1.5-6.7 | 0-2 | 0-2.3 |
| Guyana (Charity) | | | | | | | | |
| Guyana (Enmore) | 47-63 | 51-78 | 3.4-6.9 | 4-11 | 0.9-4.3 | 1.3-7.6 | 0-1.6 | 0-2 |
| Guyana (Georgetown) | 54-68 | 55-79 | 3.5-7.3 | 4.7-9.6 | 1.3-4.1 | 2.4-8 | 0-1 | 0-1.3 |
| Guyana (Greatfall) | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| Guyana (New Amsterdam) | 50-65 | 51-72 | 3.8-7.3 | 4.2-8.6 | 1.7-4.5 | 2-6.2 | 0-1.8 | 0-2.3 |
| Guyana (Skeldon) | 49-63 | 49-74 | 3.9-6.9 | 3.6-7.9 | 1.7-4.3 | 1.6-5.6 | 0-2 | 0.4-2.6 |
| Guyana (Timehri) | 56-71 | 57-83 | 3.9-7.3 | 4.3-8.4 | 1.7-4.3 | 2.1-7.1 | 0-2 | 0-2.4 |
| Guyana_Wales | | | | | | | | |
| Jamaica (Worthy Park) | 25-41 | 26-52 | 2.6-5.6 | 3-8.2 | 1.3-3 | 1.3-4.7 | 0-2 | 0-2 |
| Martinique (FDF Desaix) | 43-59 | 43-67 | 2.1-5.1 | 3.5-8.5 | 0.9-3 | 1.7-4.6 | 0-1 | 0-1.8 |
| Puerto Rico (San Juan) | 29-47 | 32-60 | 2.2-5.8 | 3.2-9.3 | 0.9-3.9 | 2.2-6.3 | 0-1 | 0-1.5 |
| St. Lucia (Hewanorra) | 32-51 | 37-62 | 1.7-5.3 | 3.5-8.5 | 0.4-2.6 | 1.4-4.3 | 0-1 | 0-1.2 |
| St. Maarten (TNM) | 24-37 | 26-46 | 1.3-3.9 | 2.6-7 | 0.4-3 | 1.2-4.4 | 0-1 | 0-0.8 |
| St. Vincent (ET Joshua) | 44-64 | 44-69 | 2-5.1 | 2.5-7.2 | 0.9-3 | 1.4-4.4 | 0-1 | 0-1.5 |
| Suriname (Zanderij) | 58-70 | 56-79 | 4.2-6.7 | 4.3-9 | 1.8-4 | 2.1-6.4 | 0-2 | 0-2.2 |
| Tobago (ANR RobinNDJ) | 41-57 | 40-62 | 3.2-6.2 | 3.8-7.7 | 1.3-3 | 1.9-3.9 | 0-1 | 0-1.7 |
| Trinidad (Piarco) | 32-46 | 32-50 | 2.4-4.7 | 3.1-7.6 | 0.9-3 | 1.3-5 | 0-1 | 0-2.8 |

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



CARICOF
CARIBBEAN CLIMATE OUTLOOK FORUM

**Regional climate data, information, tools,
experimental and operational products
are available at
rcc.cimh.edu.bb**

Coordination:
Contact:
Authors:

Caribbean Institute for Meteorology & Hydrology
caricof@cimh.edu.bb
Dr. Teddy Allen and Dr. Cedric Van Meerbeeck



CARICOF
CARIBBEAN CLIMATE OUTLOOK FORUM