Rainfall frequency and extreme forecasts

Wet days and Wet spells Outlooks September to November 2022

Dr. Cedric VAN MEERBEECK¹, **Dr. Teddy ALLEN**¹, Dr. Simon MASON², Dr. Ángel MUÑOZ², Wazita Scott¹, Dale Destin³

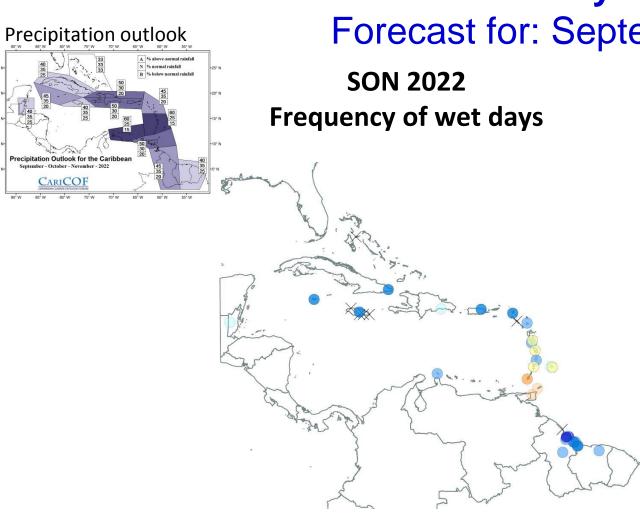
¹Caribbean Institute for Meteorology and Hydrology (CIMH), Barbados ²International Research Institute for Climate and Society (IRI), USA ³Antigua and Barbuda Meteorological Services











Wet day frequency shifts Forecast for: September to November 2022

USUALLY: Out of 91 days in Sep-Oct-Nov, there are about 35

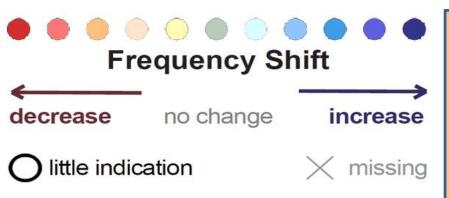
to 50 wet days (coastal Guianas: 20-35; ABC Islands: 10-20).

SEASONAL RAINFALL FORECAST:

High probability for at least as wet as usual across most of the region.

SEASONAL WET DAY FORECAST (day when rainfall > 1mm):

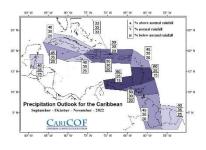
An increase in the number of wet days may be expected across most of the region (medium confidence) except for Barbados, Trinidad & Tobago and the Windward islands where fewer wet days than normal may be expected (low to medium confid.).



IMPLICATIONS:

- **Frequent rainfall-related disruptions of outdoor** activities and favourable conditions for moisturerelated pests and diseases in Belize and the islands.
- Less frequent disruptions of outdoor activities and drier conditions in the Guianas up until late November.

Precipitation outlook

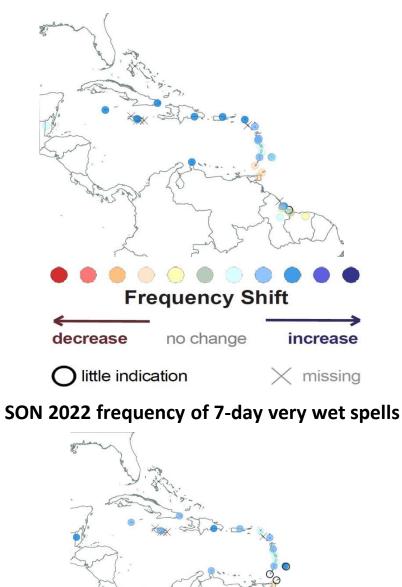


Wet days outlook



Wet spells frequency shifts Forecast for: September to November 2022

SON 2022 frequency of 7-day wet spells



USUALLY: Between 3 and 6 wet spells (coastal Guianas: 1-3) occur from September to November, with 1 to 4 of them ending up very wet (coastal Guianas: up to 2).

SEASONAL RAINFALL FORECAST:

• High probability for at least as wet as usual across most of the region.

WET SPELL FORECAST (top 20% of 7-day wet spells):

 More wet spells than usual are forecast across most of the region (*medium confidence*) except for Grenada, Suriname, Trinidad and Tobago where slightly fewer are expected (*low confid.*).

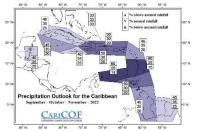
VERY WET SPELL FORECAST (top 10% of 7-day wet spells):

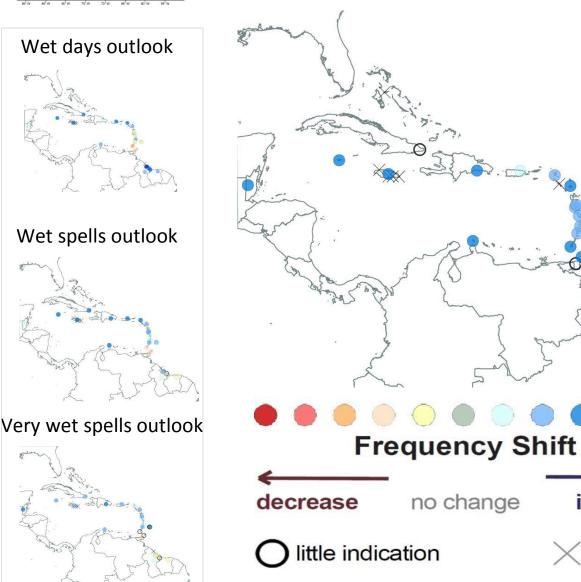
• More very wet spells than usual are forecast across most of the region (*medium confid.*) except in the Guyanas, Suriname, and Trinidad (*low confid.*).

IMPLICATIONS:

- Recharge rates of water reservoirs likely faster than usual in view of frequent wet spells.
- The high chance of successive very wet spells translates to a high flood potential in the islands and Belize, but moderate potential in the Guianas.

Precipitation outlook





Extreme wet spells frequency shifts Forecast for: September to November 2022

increase

missing

SON 2022 frequency of *extreme (top 1%)* 3-day wet spells

USUALLY: Up to 2 extreme wet spells occur from September to November, except in the Guianas where it is the dry season.

SEASONAL RAINFALL FORECAST:

 High probability for at least as wet as usual across most of the region.

EXTREME WET SPELL FORECAST (top 1% of 3-day wet spells):

• An increase in the number of 3-day extremely wet spells may be expected across most of the region (*low to medium confidence*) with possibly fewer expected in parts of Guyana and Suriname (*low confid.*).

IMPLICATIONS:

 The very high chance of occurrence of extreme wet spells in the islands and Belize translates to a high to extremely high potential for flash floods and cascading hazards.

September to No. of 7-day very wet spells (10% No. of 3-day extremely wet spells (1% November 2022 No. of wet days No. of 7-day wet spells (20% wettest) wettest) wettest) Climatology Climatology Climatology **Forecast** Climatology Forecast Forecast Forecast Antigua (VC Bird) 31-44 31-48 3.4-6 3.2-7.5 1.7-4.1 1.3-5.6 0-1.5 Aruba (Beatrix) 2.6-6.9 3.1-9.6 1.4-6.2 0-2.5 14-30 14-36 1.3-5.1 **Barbados (CIMH)** 39-50 35-52 4.3-6.9 3.9-8.1 2.1-4.3 2.4-5 0-3 **Barbados (GAIA)** 4.3-6.5 37-49 4.1-7.4 2.1-4.1 40-49 2-4.6 0-2 0.1-3.2 Belize (C. Farm) 31-48 31-56 3.3-5.6 3.2-6.5 1.7-3.4 1.9-4.2 0-2 3.9-6.2 Cayman 29-46 32-56 4.2-7.9 1.7-4.3 2.1-5.1 0-2.6 Cuba (Punta Maisi) 17-31 20-44 2.8-6.2 3.5-8.7 1.3-4.7 1.7-5.2 0-2 0-2.1 Dom. Republic (Las Americas) 3.4-6.2 1.6-5.4 0-2 29-38 24-45 3.4-8.9 1.3-4.3 **Dominica** (Canefield) 42-54 41-58 3-5.8 3-7.4 1.8-3.5 1.5-4.3 0-2 **Dominica (Douglas Charles)** 54-72 3.8-6 0-1.2 57-69 3.8-7.4 1.9-3.7 2-4.4 Grenada (MBIA) 3.9-6 32-47 3.2-6.3 1.5-4 0-1.5 36-49 1.8-3.9 Guyana 73 0.4-2.8 10-19 8-23 0.3-2.5 0-1.5 0-1.2 0-0 0-0 Guyana (Albion) 0.4-2.6 0-1 11-26 10-38 0.5-2.9 0-0.9 0-0.4 Guyana (Blairmont) 0.4-2.1 13-30 12-40 0.4-2.3 0-1.3 0-1.2 0-0 0-0 Guyana (Charity) Guyana (Enmore) 12-34 19-46 0.4-2.6 0.8-3.3 0-1.3 0-1.5 0-0 0-0 Guyana (Georgetown) 19-36 18-40 0.5-3 0.5-2.7 0.2-1.5 0.2-1.3 0-1 Guyana (Greatfall) 0.7-2.6 0.7-2.9 0-1.7 24-40 25-43 0-1.3 0-0.1 Guyana (New Amsterdam) 16-28 13-39 0.4-2.6 0.4-3.3 0-1.7 0-1.5 0-1 Guyana (Skeldon) 0.4-2.6 0.8-3.4 0.4-1.3 0.4-1.5 0-1 15-32 17-39 Guyana (Timehri) 31-42 28-49 1.3-3 1.2-3.2 0.4-1.7 0.5-1.7 0-0 0-0 **Guyana Wales** 1.3-3.2 0.4-2.2 0.4-1.7 25-40 29-46 1.4-4.1 0-0.7 Jamaica (Worthy Park) 3.3-5.6 3.8-7.7 1.8-3.4 1.7-4.3 0-2 29-46 31-56 Martinique (FDF Desaix) 4.1-6.4 2.2-4 53-62 48-64 3.9-7.7 2.4-3.9 0-2 Puerto Rico (San Juan) 3.4-5.6 1.6-4 39-52 40-57 3.5-7.6 1.3-3.4 0-1 St. Lucia (Hewanorra) 4.1-5.8 44-54 43-56 3.7-6.4 2.1-3.9 1.6-3.8 0-2 3.5-6 St. Maarten (TNCM) 3.8-8 0-2 38-50 38-56 1.7-3.4 1.5-3.9 St. Vincent (ET Joshua) 3.9-6.6 54-66 50-66 4-8.3 1.8-3.9 2.1-4.4 0-2.8 Suriname (Zanderij) 0.9-2.1 0.8-2.2 0-1.3 0.1-2.1 22-35 22-41 0-0.4 Trinidad (Piarco) 3.5-6 43-54 40-53 2.7-6 1.7-3.4 1-2.8 0-1 **Tobago (ANR Robinson)** 41-51 34-50 3.9-6 3.1-6.1 2-3.4 1.6-3.4 0-2





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