



CARIBBEAN DROUGHT BULLETIN



What is it?

- Tracks how dry spells or droughts, and to a lesser extent excessive rainfall, have developed in the past few months and up to a year.
- Maps drought situations at regional and national levels and for one-, three-, six- and 12-month time periods.
- Short- and long-term drought outlooks and drought alert maps.
- Headline news on drought impacts affecting the region's climate-sensitive sectors.

Where to find it

The Caribbean Drought Bulletin is published by the 15th of each month. View and download the latest issue at:
<http://rcc.cimh.edu.bb/bulletins/drought/latest>



How it can help you

The Caribbean Drought Bulletin offers evidence-based support for drought early warning. It can help:



THE AGRICULTURE SECTOR assess water availability for cropping, livestock, pest and disease management options on monthly to annual time periods. It helps in planning and selecting appropriate resources and production methods.



THE DISASTER MANAGEMENT SECTOR guide coordination for a drought response.



THE ENERGY SECTOR gauge how hydropower supply may be affected in meeting seasonal energy demands and predict energy production costs, as well as demands for cooling and desalination.



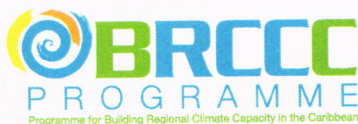
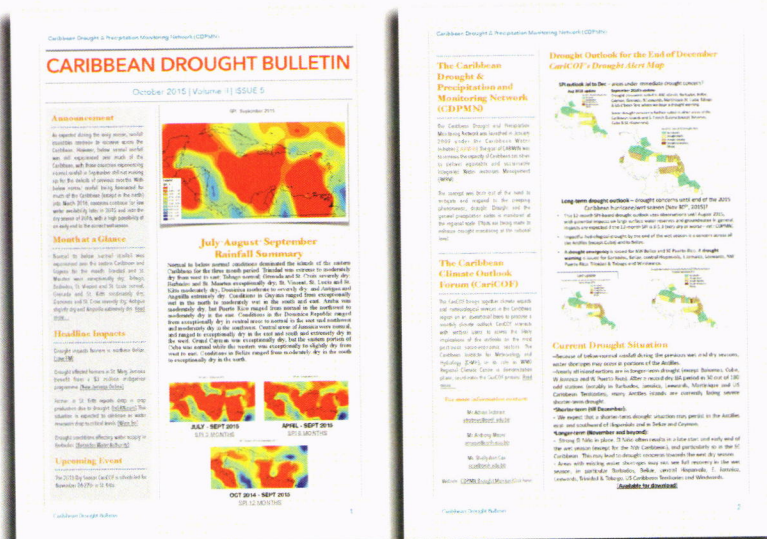
THE HEALTH SECTOR examine drought conditions to prepare communities for risk, including limited access to food and potable water for drinking and sanitation.



THE TOURISM SECTOR monitor and predict water availability for hotel and public infrastructure, as well as mitigate operational shortages.

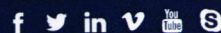


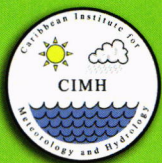
THE WATER SECTOR monitor and predict water levels, production and delivery needs, as well as raise public awareness of and inform government action on pending water crises.



This sheet was produced to help the six targeted Caribbean climate-sensitive sectors understand how our climate products can support their decision making.

For more information visit: rcc.cimh.edu.bb
 or contact: The Caribbean Institute for Meteorology and Hydrology
rcc@cimh.edu.bb or 1-246-425-1362 / 1-246-425-1363





CARICOF CARIBBEAN CLIMATE OUTLOOK FORUM DROUGHT OUTLOOK



What is it?

- Identification of the region's ongoing and emerging drought concerns.
- Advance notice of expected drought alert levels for the coming season.
- Overview of shorter- and longer-term concerns in map and textual formats.
- Definition of the relationship between drought alert levels and the action levels they trigger.

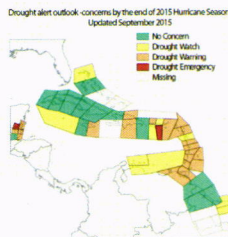
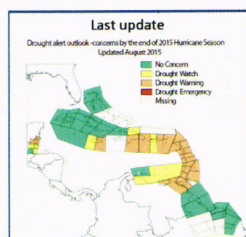
Where to find it

The CariCOF Drought Outlook is published on the 1st of each month. View and download the latest version at:
<http://rcc.cimh.edu.bb/outlooks/drought/latest>



Long-term drought outlook – drought concerns until end of the 2015 Caribbean hurricane/wet season (Nov 30th, 2015)?

- This 12-month SPI-based drought outlook uses observations until August 2015, with potential impacts on large surface water reserves and groundwater. In general, impacts are expected if the 12-month SPI is ≤ -1.3 (very dry or worse – ref.: CDPMN).
- Impactful hydrological drought by the end of the wet season is a concern across all the Antilles (except Cuba) and in Belize.
- A **drought emergency** is issued for NW Belize and SE Puerto Rico. A **drought warning** is issued for Barbados, Belize, central Hispaniola, E Jamaica, Leewards, NW Puerto Rico, Trinidad & Tobago and Windwards.



How it can help you

The CariCOF Drought Outlook provides early-warning information. It also suggests actions as practical information on how to effectively handle drought conditions across the region. It can help:



THE AGRICULTURE SECTOR mitigate and adapt to near-future water shortages through irrigation, pest management, mulching, seed selection, crop insurance, and water harvesting and conservation.



THE DISASTER MANAGEMENT SECTOR release public service announcements and activate response plans.



THE ENERGY SECTOR take water conservation measures to achieve optimal balance of supply and demand. It can also enhance dam management for reliable hydro-power generation.



THE HEALTH SECTOR implement disease surveillance and manage the distribution of emergency water supply to help prepare for drought conditions.



THE TOURISM SECTOR integrate conservation efforts to reduce service interruptions and plan for changes in water, food and energy supply.



THE WATER SECTOR advise government on water rationing/restrictions, intensify resource protection including leak detection and distribution system repairs.



THE CariSAM PORTAL



What is it?

The CariSAM portal supports the Caribbean Society for Agro-Meteorology (CariSAM), a community of agricultural and food security practitioners (including forestry), meteorologists, climatologists and others from related fields.

It also builds the capacity of agricultural practitioners to use climate information and links them to key agencies and specialists at national, regional and international levels.

The portal serves as:

- A weather and climate information resource for the Caribbean agriculture and food security sector.
- A source that supports meteorologists and climatologists to provide better tailored climate information products and services for the sector. These include national and regional agro-meteorological bulletins, climate outlooks and weather forecasts.
- A publication hub showcasing state-of-the-art applied research in agro-meteorology and related sciences from the region and around the world.
- A discussion forum featuring sessions designed to facilitate collaboration and dialogue on important agro-meteorological issues in the Caribbean.
- An online training centre offering webinars and courses to enhance the knowledge and application of weather and climate information and use of new tools.

How it can help you

The CariSAM portal and its resources can help:



THE AGRICULTURE AND FOOD SECURITY SECTOR to mainstream its use of weather and climate information to adapt to climate variability, change and extremes.



THE DISASTER MANAGEMENT SECTOR through the provision of information to better manage risks related to weather and climate extremes in the sector.



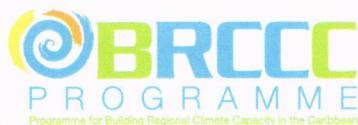
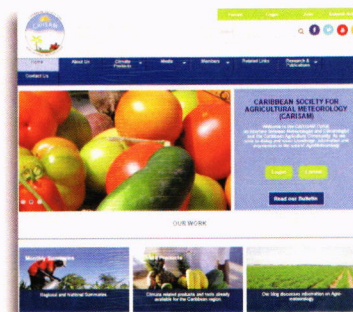
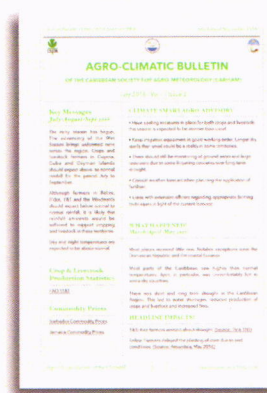
THE WATER SECTOR address demand issues from the agriculture and food security sector, which is the single largest user of water in the Caribbean.

Where to find it

The CariSAM portal can be accessed at:
<http://carisam.cimh.edu.bb/>



Users are invited to register for an account on the website in order to participate in discussion forums.



This sheet was produced to help the six targeted Caribbean climate-sensitive sectors understand how our climate products can support their decision making.

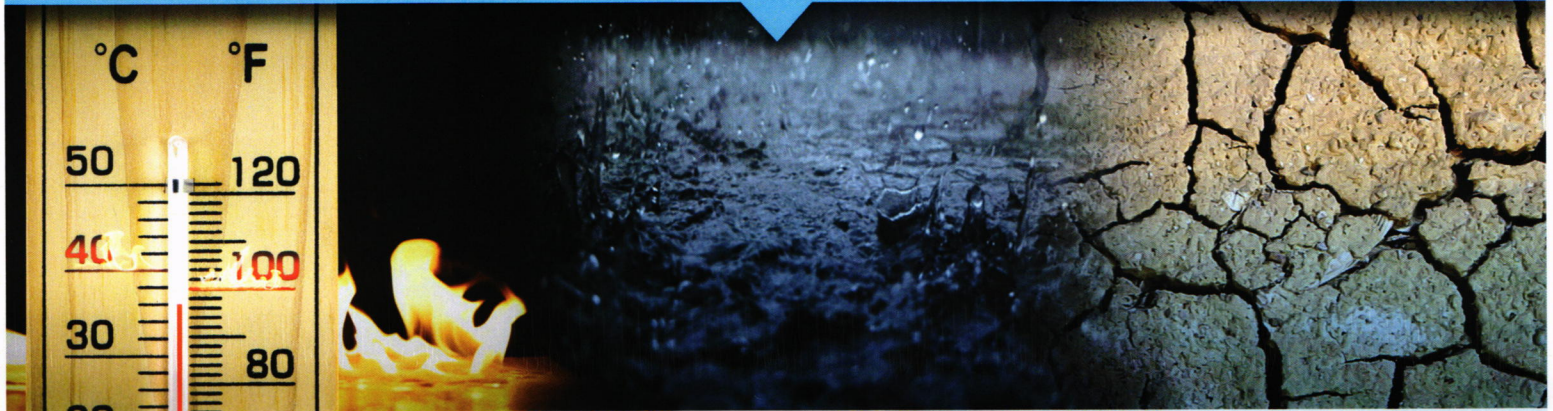
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CARIBBEAN CLIMATE OUTLOOK NEWSLETTER



What is it?

- A summary of recent and expected seasonal climate events and their headline impacts throughout the Caribbean.
- Consensus rainfall, temperature and drought outlooks for the coming three to six months in map and textual formats.
- An explanation of the outlooks in context of ongoing global and regional climate conditions.

Where to find it

The Caribbean Climate Outlook Newsletter is published on the 1st of each month. View and download the latest issue at:
<http://rcc.cimh.edu.bb/newsletters/climate-outlook/latest>



How it can help you

As a regional to sub-regional level decision support tool, the Caribbean Climate Outlook Newsletter can help:



THE AGRICULTURE SECTOR gain greater awareness of the current climate context, expected water stress and their potential impacts on operations.



THE DISASTER MANAGEMENT SECTOR assess climate risk to mitigate it.



THE ENERGY SECTOR allocate resources to secure sufficient cooling water for energy production, as well as the adequate power supply for expected cooling needs. It can also help support dam management for reliable hydro-power generation.



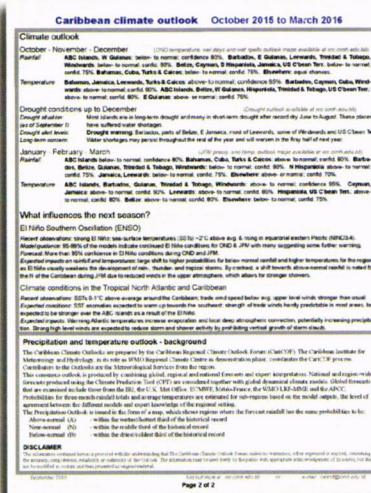
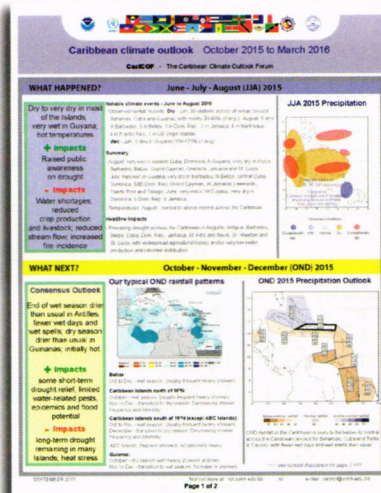
THE HEALTH SECTOR evaluate heat stress levels, as well as estimate the spread of vector-borne and water-borne diseases.



THE TOURISM SECTOR map where and when climate conditions may disrupt or favour specific operations, including outdoor activities, and estimate cooling needs.



THE WATER SECTOR assess the potential for water production and distribution, as well as map areas possibly facing infrastructure damage.





WET DAYS / WET SPELLS OUTLOOK



What is it?

- A companion piece to the Seasonal Precipitation Outlook contextualizing how wet it is going to be in the next three months.
- Maps how wet days and extreme rainfall will deviate from the normal historical scenario.
- Tabulates a comparison of the usual and the forecast wetness.
- Headline news on drought impacts affecting the region's climate-sensitive sectors.

Where to find it

The Wet Days / Wet Spells Outlook is published on the 1st of each month. View and download the latest issue at:
<http://rcc.cimh.edu.bb/outlooks/wetdays/latest>



How it can help you

The Wet Days / Wet Spells Outlook guides how rainfall-reliant operations may have to deviate from business as usual planning. It does this by suggesting several implications resulting from the expected wetness in the coming three months. It can help:



THE AGRICULTURE SECTOR identify favourable or inclement climate conditions before they occur to support crop planning and optimize yield. It also helps farmers to prepare for extreme rainfall events and related hazards.



THE DISASTER MANAGEMENT SECTOR identify periods in which there is an increased potential for flash flooding, landslides and mudflows.



THE ENERGY SECTOR inform hydro-power dam management and operations to mitigate the effects of sudden changes in dam levels due to extreme precipitation.



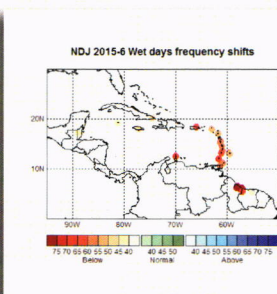
THE HEALTH SECTOR identify periods of increased risk of vector proliferation and disease outbreaks, trigger preparedness actions and implement surveillance.



THE TOURISM SECTOR map how often rainfall may disrupt or favour specific operations including outdoor activities.



THE WATER SECTOR assess water availability, water quality and water infrastructure to protect production and distribution against extreme rainfall-related risks.



November to January 2015 Forecast		Number of wet days in NDJ 2015		Number of 7-day wet spells in NDJ 2015 (20% wettest)		Number of 7-day very wet spells in NDJ 2015 (10% wettest)		Number of 7-day extremely wet spells in NDJ 2015 (1% wettest)	
Climatology	Forecast	Climatology	Forecast	Climatology	Forecast	Climatology	Forecast	Climatology	Forecast
Antigua (VC Bird)	28-44	28-41	2-5	3.3-5.5	0-1	0-2	0-1	0-0	0-0
Aruba (Boonin)	18-46	12-30	2-11	0-8-2	0-4	0-0	0-0	0-0	0-0
Barbados (CMB)	30-47	20-42	2-6	0-3-3	0-3	0-2	0-1	0-1	0-1
Barbados (SMA)	31-46	17-41	2-6	1-4-6	0-4	0-1	0-1	0-0	0-0
Belize (C. Farm)	30-46	24-46	1-7-6	1-3-2	0-4	0-1	0-1	0-1	0-1
Cayman	10-26	10-28	0-1-4	0-1-4	0-0	0-0	0-1	0-1	0-1
Cuba (Punta Maiz)	17-29	10-27	0-1-4	2-2-4	1-4	1-4-7	0-1	0-1	0-1
Dominica (Landscape)	40-54	27-51	2-6-5	1-4-7	0-1	0-2	0-1	0-1	0-1
Dominica (Douglas Charles)	55-67	30-46	1-8-5	1-8-5	0-1	0-1	0-1	0-1	0-1
Dom. Republic (Las Americas)									
Grenada (MBA)	29-49	13-30	2-8-9	0-0-1	0-0-7	0-0-2	0-1	0-1	0-1
Guyana (ARMS)	26-49	19-35	5-1-4	0-1-1	0-4	0-1-1	0-1	0-1	0-1
Guyana (SMA)	30-55	20-39	0-2-4	0-1-8	0-5-4	0-1-1	0-1	0-1	0-1
Guyana (SMA)	36-60	30-40	5-7	0-1	1-4-4	0-0-0	0-1	0-1	0-1
Guyana (New Amsterdam)	30-51	24-39	1-6-2	0-1	0-1	0-1-4	0-2	0-1	0-1
Guyana (Tandah)	40-44	14-30	5-7	0-1-1	0-4	0-0-0	0-1	0-1	0-1
Jamaica (Mortley Park)	21-28	16-29	5-9	5-1-1	1-7-4	1-4-7	0-1	0-1	0-1
Martinique (EPF Group)	48-62	14-31	1-6	0-8-7	0-2	0-1-1	0-1	0-1	0-1
Puerto Rico (San Juan)	38-51	31-47	18-13	0-0	18-13	0-0	0-1	0-1	0-1
St. Lucia (Pheasant)	38-52	32-48	18-14	11-13-1	15-14	12-13-1	0-1	0-1	0-1
St. Martin (MCM)	34-52	20-40	10-13	11-13-1	15-14	12-13-1	0-1	0-1	0-1
St. Vincent (T. Joubert)	30-46	46-59	18-14	12-13-1	15-14	12-13-1	0-1	0-1	0-1
Suriname (Zandvoort)	38-52	36-50	18-13	12-13-1	15-13	12-13-1	0-1	0-1	0-1
Tobago (AIR Robinson)	31-46	31-46	10-13	12-13-1	15-14	12-13-1	0-1	0-1	0-1
Trinidad (Pheasant)	36-51	33-46	18-13	12-13-1	15-14	12-13-1	0-1	0-1	0-1



CARIBBEAN CLIMATOLOGY

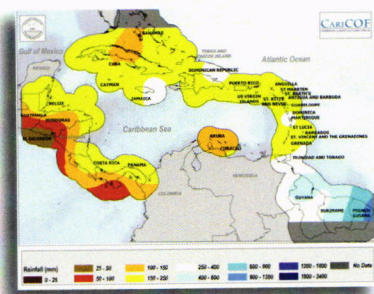


What is it?

- Online archive of weather station-based characteristics of Caribbean climate, covering rainfall and temperatures.
- Regional maps showing historical averages of three-monthly rainfall at a glance.
- Monthly and three-monthly rainfall and temperature statistics and records for each territory. These are listed by weather station for a detailed historical context of seasonal climate variations.
- These weather station statistics and records are also made available for the 1981-2010 historical reference period ('reference climatologies') as well as for the entire period of record ('extended climatologies') of each station.

Where to find it

Caribbean Climatology is updated monthly ('extended climatologies') or every decade ('reference climatologies'). View and download it at: <http://rcc.cimh.edu.bb/climate-monitoring/caribbean-climatology/>





CARICOF
CARIBBEAN CLIMATE OUTLOOK FORUM

SEASONAL CLIMATE OUTLOOKS

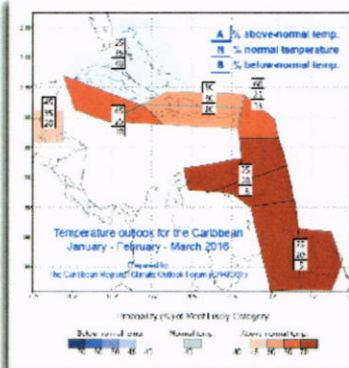
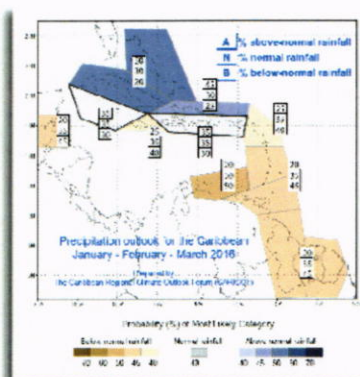


What are they?

- Maps detailing minimum, mean, maximum temperature and precipitation forecasts across the region for three-month periods.
- Each category is, historically speaking, equally likely (33%). Forecast probabilities for each category then show forecast likelihoods of rainfall sums or temperature averages being below-normal, near-normal ("usual") or above-normal.
- Consensus information based on a combination of objective global and regional climate model inputs and local/regional climate expertise.

Where to find them

CariCOF Seasonal Climate Outlooks are published on the 1st of each month. View and download them at:
<http://rcc.cimh.edu.bb/outlooks/temperature-precipitation/latest>



How they can help you

The CariCOF Seasonal Climate Outlooks provide a first warning on pending impactful temperature or rainfall deviations from the usual situation for a given season. They can help:



THE AGRICULTURE SECTOR identify favourable or inclement climate conditions before they occur to support crop planning and optimize yield.



THE DISASTER MANAGEMENT SECTOR draw attention to climate-related risks before they become issues.



THE ENERGY SECTOR expect production level fluctuations and allocate adequate resources.



THE HEALTH SECTOR trigger preparedness actions for heat stress levels, vector proliferation and disease outbreaks.



THE TOURISM SECTOR activate monitoring of water availability and prepare for operational disruptions.



THE WATER SECTOR assess water infrastructure to protect production and distribution against climate-related risks.

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Programme for Building Regional Climate Capacity in the Caribbean



This sheet was produced to help the six targeted Caribbean climate-sensitive sectors understand how our climate products can support their decision making.

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CARIBBEAN CORAL REEF WATCH

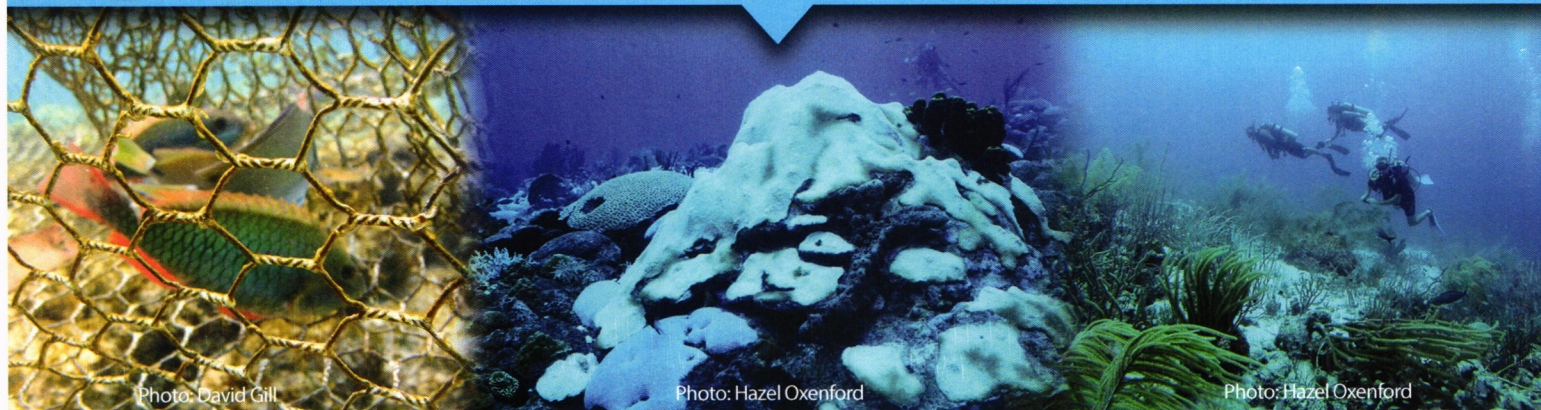
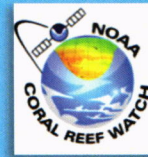


Photo: David Gill

Photo: Hazel Oxenford

Photo: Hazel Oxenford

What is it?

- Tracks the current sea surface temperatures and the related coral reef health, globally and regionally.
- Maps regional thermal stress levels and coral bleaching potential with a lead time of 20 weeks.
- Provides a detailed outlook for countries most at risk of coral bleaching.

Where to find it

The Caribbean Coral Reef Watch is normally published monthly between May and December, to correspond with the season in which bleaching can occur in the region.

View and download the latest issue at:
<http://rcc.cimh.edu.bb/bulletins/coralreef/latest>



How it can help you

The Caribbean Coral Reef Watch is an early warning tool for a key natural resource of the Caribbean. This bulletin can help:



THE AGRICULTURE SECTOR AND FOOD SECTOR (IN PARTICULAR FISHERIES)

identify the actual and potential severity and duration of coral bleaching as impacted by risk factors, such as agricultural run-offs including chemicals, which impact the quality and quantity of fish stock over time.



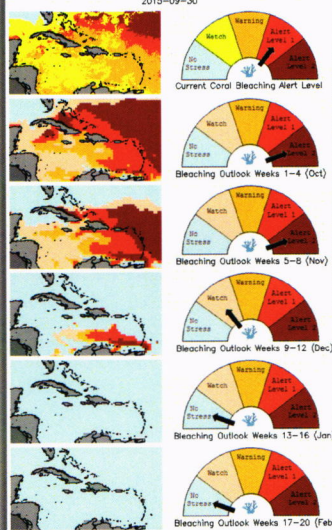
THE DISASTER MANAGEMENT SECTOR

by providing alert levels that can inform the development and execution of coral reef bleaching response plans.

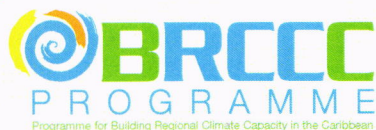
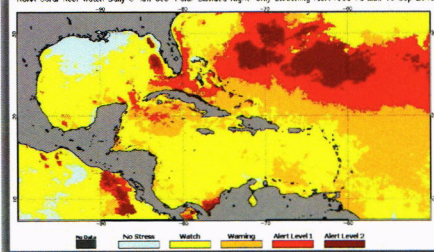


THE TOURISM SECTOR inform hotels, dive shops, marine tour operators and policy makers of potential bleaching threats. With advance warning of an impending coral bleaching event, stakeholders can better manage their business and destination operations.

Caribbean Satellite Bleaching Alert Area and Outlook
2015-09-30



NOAA Coral Reef Watch Daily 5-km Geo-Polar Blended Night-Only Bleaching Alert Area 7d Max 19 Sep 2015



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CARICOF
CARIBBEAN CLIMATE OUTLOOK FORUM

CariCOF Outlook Generator (CAROGEN)



What is it?

- The CariCOF Outlook Generator (CAROGEN) is a platform for meteorological services to generate and deliver national and region-wide forecasts that drive seasonal climate outlooks using the Climate Prediction Tool (CPT).
- An online portal that allows meteorological services from Caribbean Climate Outlook Forum (CariCOF) member countries to submit and access historical daily and monthly temperature and precipitation data.
- A portal that offers public access to view climatological norms, summary climate statistics and basic monitoring tools for daily and monthly rainfall and temperature data organized by country and weather station, dating back to 1971.

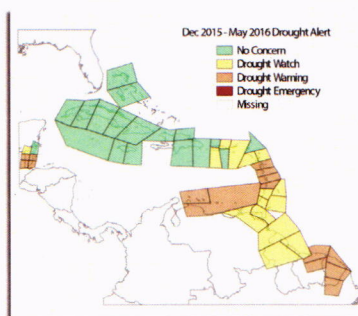
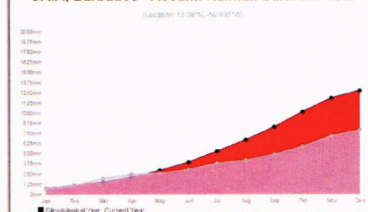
Where to find it

CAROGEN can be accessed at: <http://carogen.cimh.edu.bb/>

Summary statistics of weather station data are searchable without a login. If you are a member of a national meteorological service in the region and would like to upload data, please contact us at: carogen@cimh.edu.bb or caricof@cimh.edu.bb



GAIA, Barbados - Accum. Rainfall Calendar Year

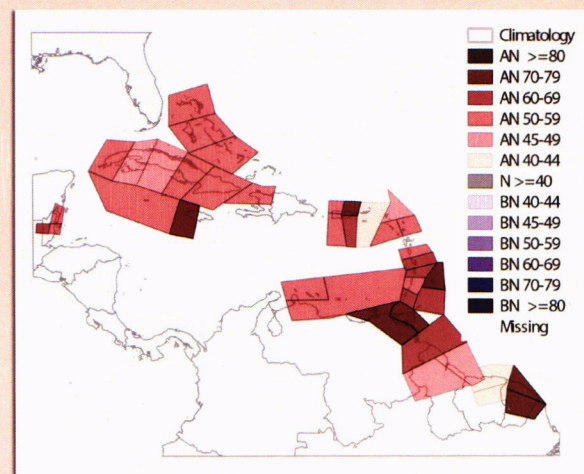


How it can help you

CAROGEN supports the development of national and regional climate forecasts by Caribbean meteorological services. Outlooks based on these forecasts provide climate-sensitive sectors with key information to support their decision-making and build climate resilience.

The CAROGEN platform helps meteorological services to:

- Adopt a high standard of production for climate outlooks that is uniform across the region.
- Use a time-efficient and user-friendly of production for climate outlooks and related climate information.
- Track the evolution of rainfall and temperature conditions across the region in real-time.



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This sheet was produced to help Caribbean meteorological services understand how the CariCOF Outlook Generator can improve how they develop climate forecasts.

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