DOMINICA METEOROLOGICAL BULLETIN

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2018 IN REVIEW

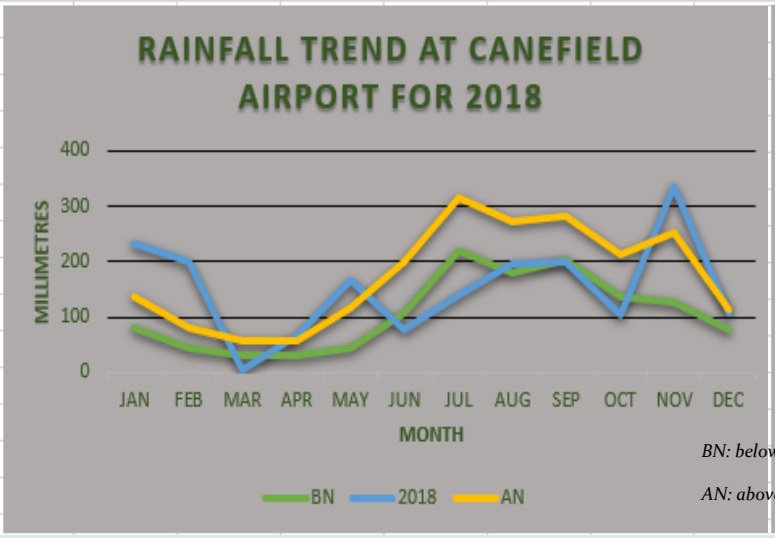
Meteorological Statistics

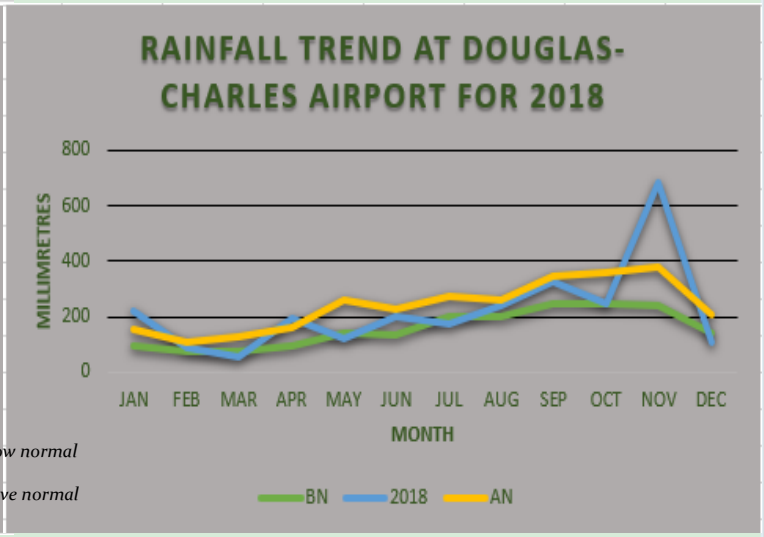
Normal rainfall amounts were recorded for 2018 at the Canefield and Douglas-Charles Airports Mean daily temperature was above the average at Canefield and below the average at Douglas-Charles.

	CANEFIELD AIRPORT	DOUGLAS-CHARLES AIRPORT
Rainfall		
Total	1823.3mm	2665.4mm/ 104.9in
Wettest month	November (335.0mm/ 13.19in)	November (683.5mm/ 26.91in)
Driest month	March (5.1mm/ 0.20in)	March (55.2mm/ 2.17in)
Wettest day	May 10th (63.7mm/ 2.51in)	November 10th (178.4mm/ 7.02in)
Temperature		
Mean	27.3C	26.5C
Hottest month	July (28.5°C)	July (27.5°C)
Coolest month	February (25.6°C)	February (25.3°C)
Highest temperature	34.3°C (September 14th)	32.0°C (October 3rd)
Lowest temperature	19.2°C (February 1st)	19.4°C (February 1st)
Wind		
Average	South-east @ 5kts/ 9kmh	East south east @ 9kts/ 17kmh
Thunderstorm		
Total days	23	14
Month with highest	August (6)	August (4)
Sunshine		
Annual average	NA	221.3 hours out of the possible 366.5 hours
Max daily	NA	11.6 hours (June 14th)

Table 1: Significant data recorded at the airports (DMS)

IN THIS ISSUE





BN: below normal

AN: above normal

Figs (1) and (2): Rainfall charts for 2018 (DMS)

The Hurricane Season

The season officially ended November 30th. In May , the US National Oceanic and Atmospheric Administration (NOAA) forecast a 75-percent likelihood of having a near- or above-normal Season. An average hurricane season produces 12 named storms of which 6 become hurricanes with 3 developing into major hurricanes.

	Forecast	Actual
Named storms	10-16	15
Hurricanes	5-9	8
Major Hurricanes	1-4	2

2018 Atlantic Basin Storm Names

~~Alberto~~	~~Kirk~~
~~Beryl~~	~~Leslie~~
~~Chris~~	~~Michael~~
~~Debby~~	~~Nadine~~
~~Ernesto~~	~~Oscar~~
~~Florence~~	Patty
~~Gordon~~	Rafael
~~Helene~~	Sara
~~Isaac~~	Tony
~~Joyce~~	Valerie

Two of the main factors that contributed to the predictions are the possibility of a weak El Niño developing and near-average sea surface temperatures across the tropical Atlantic Ocean and Caribbean Sea.

Dominica was placed under tropical cyclone watches and warnings during the passage of Tropical Storm Beryl in July and Tropical Storms Isaac and Kirk in September. Thankfully, these systems had no significant impact on the island.

Tropical waves and trough systems posed a bigger threat this season. A low-level trough with favorable upper-level support produced significant rainfall across the island from November 4th to 11th, resulting in flooding , landslides and rockfalls mainly across the northern half of the island on the 10th.

Fig 3: Landslide in Dos D'ane, November 10, 2018 (DMS)

Fig 4 (middle) Flooding at Portsmouth and Fig. 5 (bottom) at Douglas-Charles Airport, November 10th, 2018 (DMS)

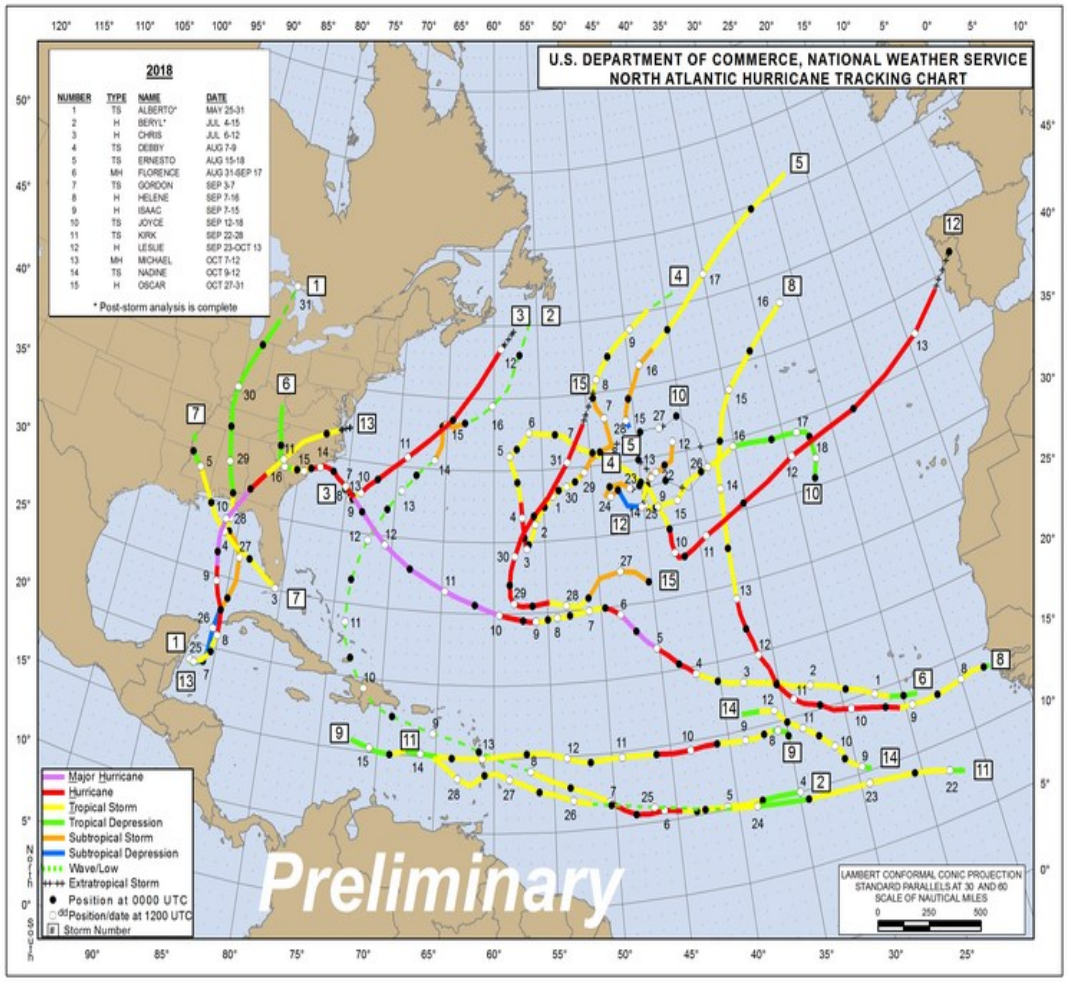


Fig. 6: Atlantic Tropical Cyclone tracks for 2018 (NHC)

LOOKING AHEAD

Dominica's dry season officially runs from December to May each year. Rainfall received during the dry season is usually generated by the annual migration of the North Atlantic Subtropical High, low-level clouds which move with the easterly trade winds, southward dipping frontal boundaries and trough systems. Seas are cooler and thunderstorms and rainfall activity are relatively low. On average approximately 40% of the annual rainfall is recorded in elevated and eastern areas and approximately 25% along the western coast. Reduced cloud cover generally results in more solar radiation reaching the surface. Day-time temperatures are likely to be above normal and night-time temperatures are coolest.

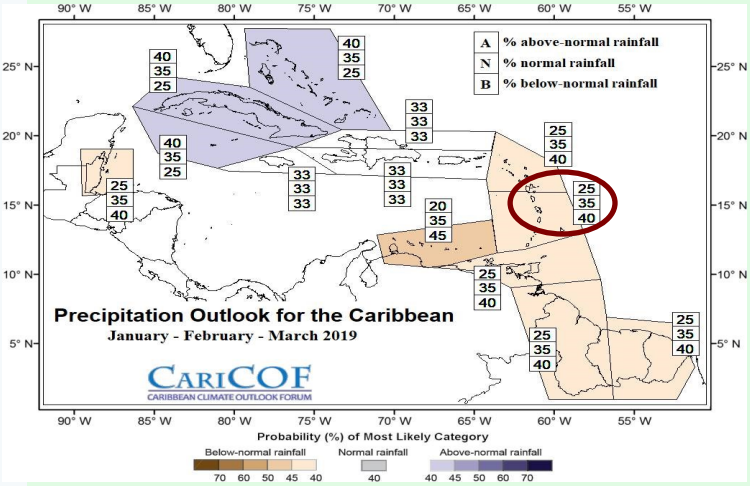
Previous season: Oct-Nov-Dec (OND) 2018 Forecast: Slightly below to normal rainfall and slightly normal air temperatures. Actual: Normal to above normal rainfall was accumulated for the season. Night-time temperatures were normal to below while day-time peak and average temperatures normal.

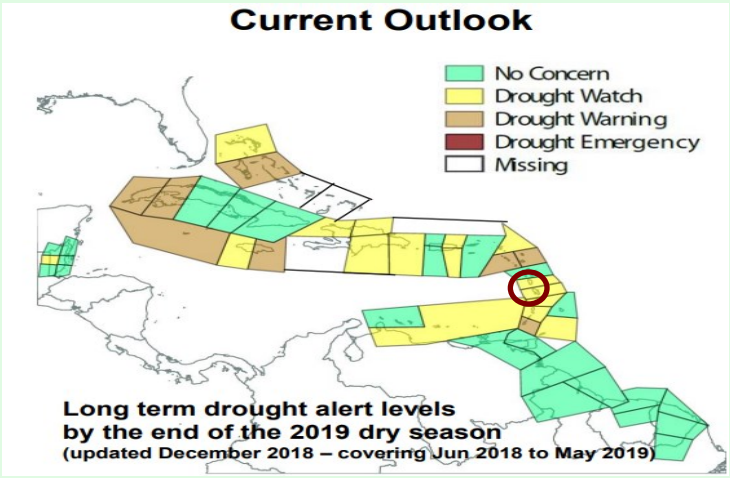
Current season: Jan-Feb-Mar (JFM) 2019: With projections for El Niño conditions to persist, chances of recurrent dry spells during the dry season are increased; extreme drought is unlikely. Rainfall is expected to be the usual or drier. Wet days and wet spells are expected to become least frequent as the season progresses. Temperatures across the Eastern Caribbean are forecast to be warmer than usual but not uncomfortable.

This dry season, the island was able to begin its transition in December 2018, with a marked reduction in significant rainfall events as a weak El Niño developed (warming of the Eastern Equatorial Pacific Ocean). El Niño tends to shift the odds towards drier conditions with less shower activity in the Lesser Antilles. However, any drought-like situation which arises is projected to be short-lived as rainfall amounts for Apr-May-Jun 2019 are tending towards normal to above normal . Meteorological drought is defined as shortfall in rainfall accumulations over a period of usually three months. Such deficits may lead to an agricultural drought if preventative measures are not put in place.

JANUARY-FEBRUARY-MARCH CLIMATOLOGY		
Accumulated Rainfall (30 years)		
Parameters	***Canefield Airport***	***Douglas-Charles Airport***
Normal	159.0 to 275.9mm	248.3 to 390.8mm
Wet days	28 to 46	43 to 59
7 day wet spell	0 to 3	1 to 2
7 day dry spell	NA	0 to 2
Temperature (15 years)		
Average Maximum	29.7 to 30.2°C	28.4 to 29.0°C
Mean	25.7 to 26.0 °C	25.3 to 25.7°C
Average Minimun	21.5 to 21.9°C	22.0 to 22.6°C

SEASONAL RAINFALL AND DROUGHT OUTLOOK FOR JAN-FEB-MAR 2019





SECTORAL IMPLICATIONS

Rivers	Discharge (m^3/s)
Belfast River	2.6
Boeri River	2.3
Castle Bruce River	5.3
Colihaut River	0.2
Coulibistri River	0.8
Dublanc River	0.5
Hampstead River	2.5
Layou River	9.5
Macoucheri River	2.4
Pagua River	2.1
Picard River	1.6
Springfield River	0.9

Table 2. shows the 2018 estimated monthly average discharge of some of the rivers around Dominica. (Please note that high flows are not included).

- Reduction in river discharge is anticipated. This is the volume of water flowing through a river channel at any given point and is measured mainly in cubic meters per second.
- As a consequence of a decrease in discharge, a slight increase in the water temperature and decline in dissolved oxygen in the rivers is projected. Hence, aquatic life may be stressed.
- River tubing may also be affected with a decrease in the volume of water flowing through the channel.
- It will be a challenge to do river measurement using the Float Method (simplest method used) in the low flowing rivers for the next three months.
- Potentially slightly faster than usual depletion of large water reservoirs due to reducing wet spell frequency
- Decreasing surface wetness due to decreasing wet day frequency may progressively make environmental conditions less conducive for mosquito breeding.

- Measures should be put in place to provide supplemental water for crops.
- Ensure irrigation and water conservation techniques are employed.
- Increasing number of dry spells and air temperatures may be a concern at critical growing phases of certain crops.
- Adequate and increased shading and water may be required for livestock.
- Coral bleaching heat stress is not a concern at this time due to cool sea-surface temperatures in the region.

For Regional Sectoral Bulletins (Agriculture, Health and Tourism). Visit: https://rcc.cimh.edu.bb/

DOMINICA METEOROLOGICAL SERVICE

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