Dominica Meteorological Service

DOMINICA CLIMATIC NEWSLETTER

VOL 4 ISSUE 04 | December – February | YEAR 2019 –2020

Seasonal Climate Outlook Brief Summary

September-October-November (SON) 2019—Slightly below to normal rainfall was recorded with a decrease in the usual number of rainfall days at Canefield but the usual at Douglas-Charles. Warmer than usual daytime peak temperatures were recorded at both stations. The east coast experienced cooler than usual nights while the west coast was as usual.

Forecast: Slightly less than to the usual amounts of rainfall. A significant decrease from the usual in the frequency of wet days. Warmer than to usual daily maximum temperatures. Nighttime temperatures to be at least as warm as the usual.

December-January-February (DJF) 2019–2020 Forecast—Above to normal rainfall with medium chances for at least three 7-day dry spells. Warmer than to usual conditions expected.

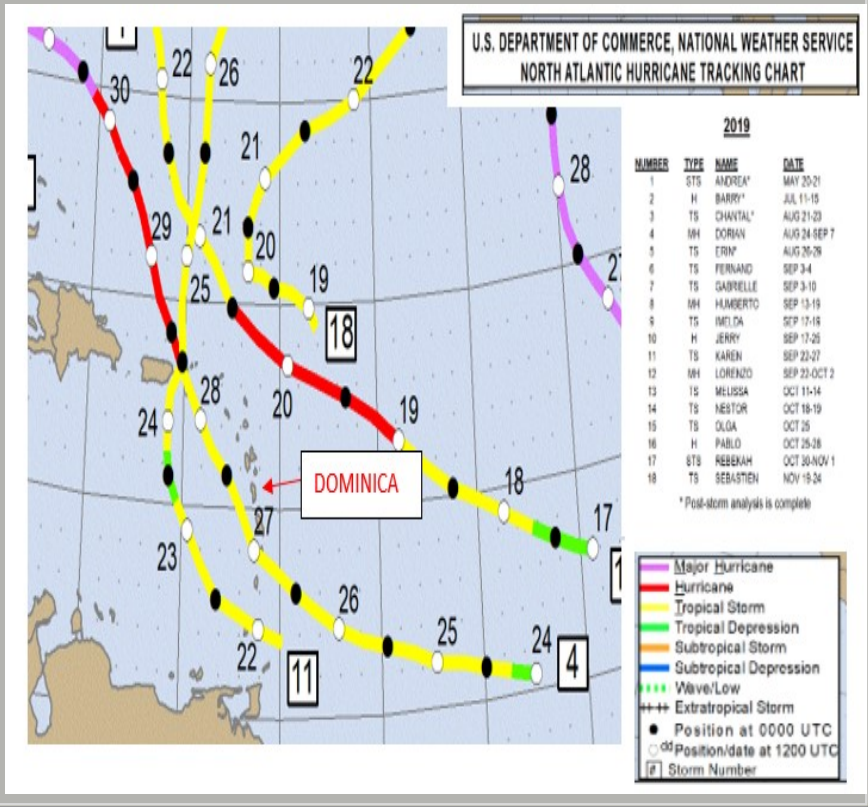
2019 ATLANTIC HURRICANE SEASON

In its May 2019 outlook, The National Oceanic and Atmospheric Administration (NOAA) predicted a near normal season with 9 to 15 named storms of which 4 to 8 could become hurricanes, including 2 to 4 major hurricanes. An ongoing El Niño event which normally suppresses tropical storm activity, warmer than average sea surface temperatures and an enhanced West African Monsoon which favours hurricane activity influenced this forecast. In August, with the cessation of the EL Nino event, NOAA's updated forecast increased the likelihood for an above-normal season. This called for 10 to 17 named storms, of which 5 to 9 would become hurricanes with 2 to 4 major hurricanes.

The 2019 Hurricane season officially ended on November 30th. There were 18 named storms of which 6 became hurricanes and 3 became major hurricanes. The seasonal long term average is 12 named storms, 6 hurricanes and 3 major hurricanes. Overall, the season was above normal.

This was a relatively quiet season for Dominica with only one tropical cyclone presenting a direct threat to the island.

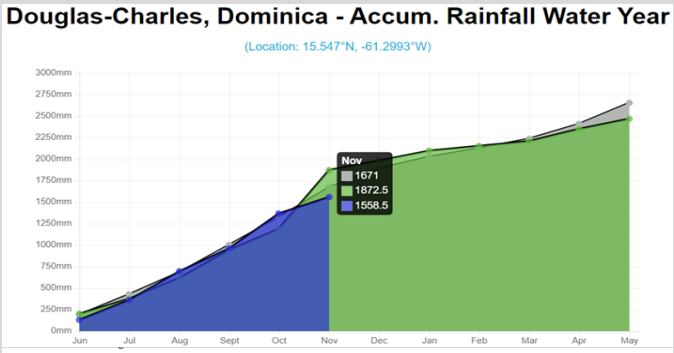
- Tropical Storm Dorian affected the Windward Islands on August 27th. A tropical storm watch was issued for Dominica. Dorian passed about 90miles south of Dominica and generated significant showers across parts of the island with winds gusting to tropical storm force and choppy sea conditions.
- Tropical Storm Jerry despite passing north of the leeward island on September 19th, resulted in deteriorated sea conditions as the system generated northerly swells across the island chain.
- On September 22nd, Tropical Storm Karen entered the Caribbean Sea through the southern Windward Islands. Karen's northerly track west of the Lesser Antilles resulted in coastal flooding along the west coast of Dominica, from the 22nd to the 25th.

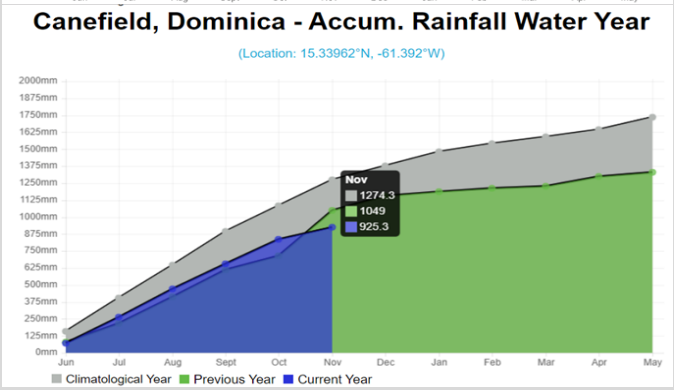


2019 WET-SEASON OBSERVATIONS (JUNE TO NOVEMBER)

RAINFALL

⇒ The 2019 Wet-Season varied slightly across the island. The Douglas-Charles Airport was as wet as usual while the Canefield Airport recorded slightly below its usual. The 2019 season accumulated less rainfall than that of 2018. At Douglas-Charles the accumulated monthly rainfall fluctuated near normal throughout, while Canefield maintained below normal accumulations.



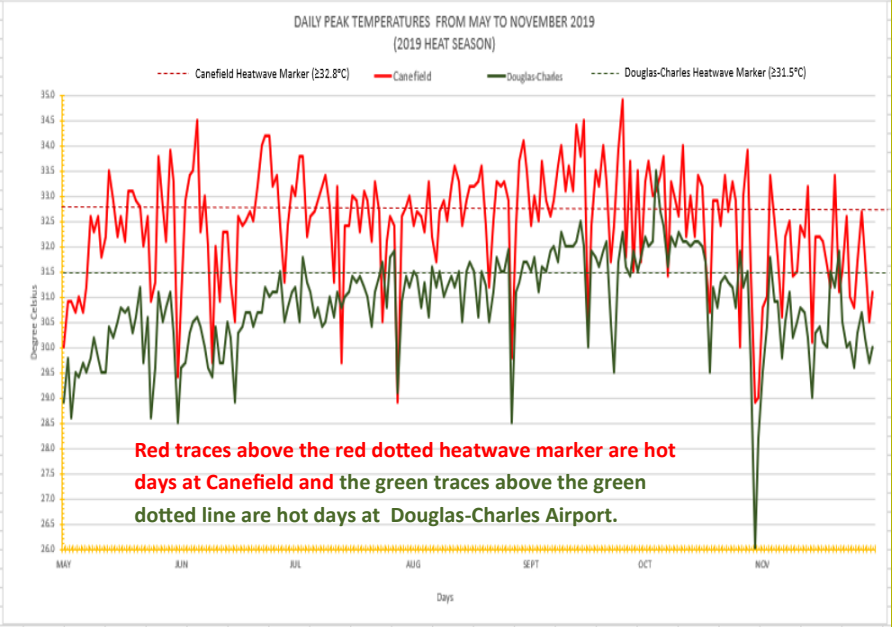


⇒ At Douglas-Charles about 64% of the days from June to November were wet while 52% of days were wet at Canefield. There were a few dry spells within the wet season. Significant spells were recorded in September (8-day dry spell), October (9-day dry spell) and November (7-day dry spell) at Canefield. The wettest 3-day spell was recorded from September 14th to 16th with a total of 97.0mm at Canefield. At Douglas-Charles, October 29th to 31st was the wettest 3-day spell with a total of 194.5mm. Flooding occurred across parts of Dominica on the 30th.

⇒ The wettest month for Dominica was August with a total of 333.8mm at Douglas-Charles and 207.9mm at Canefield. The wettest day at Canefield was July 28th (54.3mm) produced by a tropical wave. At Douglas-Charles, August 27th with a total of 110.6mm was the wettest day. Rainfall was produced during the passage of Tropical Storm Dorian.

TEMPERATURE

⇒ The heat season runs from May to November in the Eastern Caribbean. The 2019 season in Dominica recorded warmer than usual daily maximum temperatures. This resulted in an above normal heat season. Heat waves were recorded most frequently at Canefield with a total of 26 waves. Significant heat waves were recorded in September which had the longest wave of nine days. June and October both recorded a 6-day heatwave. At Douglas-Charles nine heat waves were recorded. Late September to October 17th had the longest heatwave of twenty days. There was also a 12-day heatwave in September.



A heatwave is two or more consecutive hot days with peak temperatures of 32.8°C and higher at Canefield and areas along the west coast and 31.5°C at Douglas-Charles and its environ.

⇒ Night times however, were much cooler than usual at Douglas-Charles but the usual at Canefield.

⇒ The highest temperature at Canefield was 34.9°C on September 25th and 33.5°C on October 4th at Douglas-Charles. The lowest temperatures were recorded in November with a record breaker of 18.8°C recorded on the 30th at Douglas-Charles. At Canefield, the lowest value was 21.9°C recorded on the 29th. The warmest months on average were June (28.8°C) at Canefield and July (27.5°C) at Douglas-Charles.

DOMINICA'S CLIMATE

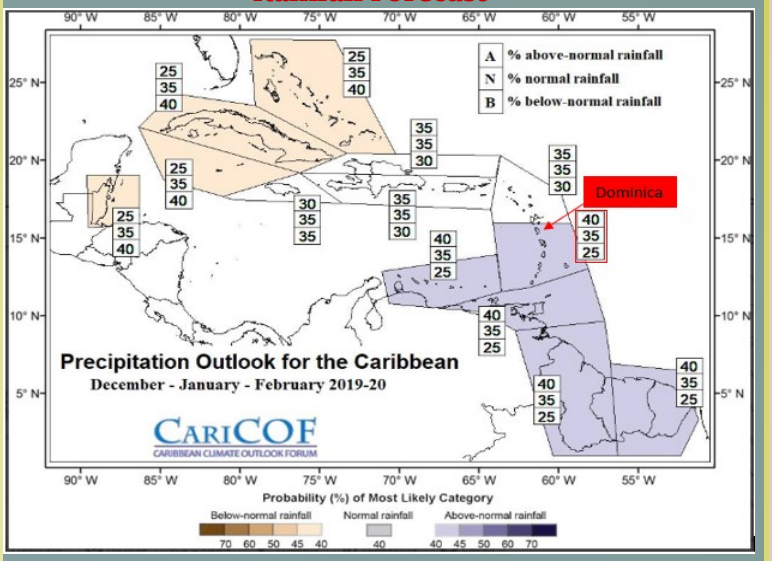
Rainfall received during the dry season are usually generated by the annual migration of the North Atlantic Subtropical High, low level clouds which move with the easterly trade winds, southward dipping frontal boundaries and trough systems. The dry season runs from December to May when the seas are 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.

CLIMATIC OUTLOOK (DECEMBER-JANUARY-FEBRUARY (DJF)2019-2020)

INFLUENCING FACTORS

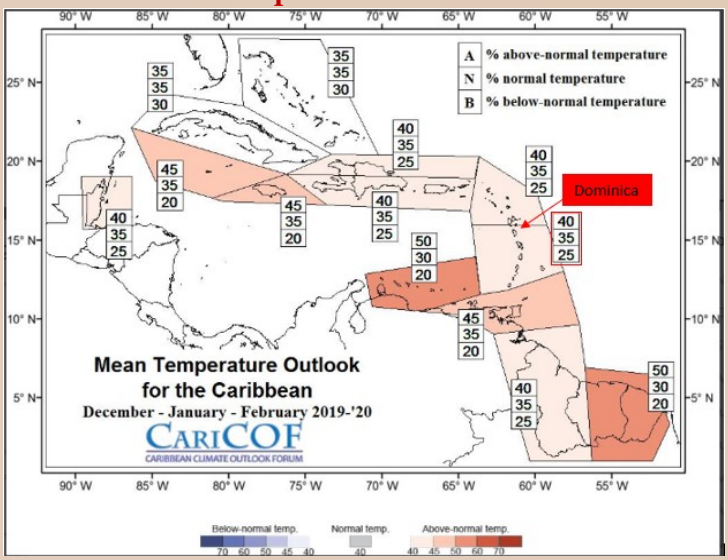
- **Climate conditions in the Tropical North Atlantic and Caribbean Recent observations**: Sea Surface Temperatures (SSTs) in the Tropical North Atlantic (TNA) and the eastern Caribbean Sea continue to be slightly above average. SSTs have warmed through most of the Lesser Antilles (~0.5°C above average) but, remain near average east of the Windward Islands. Slightly above average TNA SSTs are expected to maintain through to February. Warm SSTs throughout the Caribbean may contribute to above-average seasonal surface temperatures across the region. Those environmental factors favour a wetter dry season.

Rainfall Forecast



- The first half of the dry season is forecast to have slightly more than or the usual rainfall amounts.
- There is no significant change from the usual number of wet days(≥1.0mm).
- There is a 40% chance for at least three 7-day dry spells (consecutive dry days where rainfall is less than 1.0mm). The chances of having at least one 15-day dry spell is very low, more so on the east coast.
- There is no short term drought concern, however, due to slightly below normal rainfall especially along the west coast during the past two years some hydrological drought concerns remain as the island moves into it's dry season.

Temperature Forecast



- Both day and night time temperatures are expected to be slightly warmer than to usual but comfortable as the island moves into it's cooler time of year.

December–January-February (DJF) Climatology

December-January-February Climatology		
ACCUMULATED RAINFALL CLIMATOLOGICAL NORMAL (30YEARS)		
	CANEFIELD AIRPORT	DOUGLAS-CHARLES AIRPORT
Normal	204.1 to 333.5mm	314.8 to 470.1mm
Wet Days	36 to 53 days	49 to 63 days
TEMPERATURE AVERAGE (15YEARS)		
Average Maximum	29.8°C to 30.2°C	28.5°C to 28.9°C
Average	25.8°C to 26.1°C	25.5°C to 25.8°C
Average Minimum	21.6°C to 22.0°C	22.3°C to 22.8°C

SECTORAL IMPLICATIONS

Agriculture

- With decreasing rainfall totals as the island moves through the dry season and following a slightly drier than usual wet season, along the west coast, farmers need to carry out measures to conserve water. Water conservation techniques (e.g. mulching) as well as water management practices (e.g. irrigation) may be employed.
- Irrigate in the early morning preferably. The chance of strong winds are lower. Evaporation rates are also lower.
- To minimize the effects of surface runoff farmers are advised to maintain drains around crop beds and or plant crops on raised beds; house animals on high ground and or on raised pens; store fertilizer away from moisture and water sources.
- Agricultural pest and diseases may increase after excess periods of rainfall. Monitor and employ recommended treatment as necessary.

Hydrology

- Rainfall amounts generally decrease into the dry season which results in lower levels of soil moisture.
- With a forecast for more rainfall than usual during the first half of the season it is likely that soil moisture levels will not be as low as usual but, a gradual decrease is anticipated into the second half of the season.
- River levels are not expected to lower significantly during the first half of the dry season. Chances for flash flooding is low at this time however, caution must be taken especially during prolonged wet spells .
- A gradual drop in discharge is anticipated especially as the island enters into the second half of the dry season.
- Though fresh water temperatures are expected to decrease, it will not negatively affect fresh water habitats.

Tourism

- The first half of the dry season is usually strongly affected by trough systems, strong winds and rough seas which may affect outdoor and water activities. Trough systems also produce prolonged wet spells which could result in landslides, increased water flows in rivers and waterfalls. This can present a threat to visitors.

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

Tourism

- At all times, tourism operators should maintain a state of readiness, including communication plans and response protocols to deal with sudden eventualities.
- Ocean temperatures are expected to cool towards the end of February, with no coral bleaching expected beyond December.
- Tourism operators are advised to monitor daily weather advisories issued by the Dominica Meteorological Services.

Health

- Morbidity from excessive heat due to high temperatures across the region should not be an issue in the period of interest. Though dangerous UV radiation will be at its annual minimum in December and January, excessive exposure can cause skin damage across the population on sunny days.
- Increased use of containers for water storage and the presence of stagnant water may potentially create more breeding sites for mosquitoes, especially those associated with mosquito borne diseases, such as Dengue, Chikungunya and Zika which are of great concern.
- Trough systems sometimes produce prolonged rainfall during the dry season which can result in a range of hazards including landslides and flash floods. Health practitioners and administrators should maintain a state of readiness.
- Psycho-social impacts are still being felt from impacts from Tropical Storm Erika and Hurricane Maria. When disasters have seasonal patterns, like hurricanes and floods, anxiety among survivors will increase as alerts on isolated events arise. Health Care Professionals are therefore advised to be sensitive to these issues, as they interact with patients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Source: Caribbean Institute for Meteorology and Hydrology (CIMH) & National Oceanic and Atmospheric Administrative (NOAA)