DOMINICA CLIMATIC NEWSLETTER

VOL 5 ISSUE 01 | March – May | YEAR 2020

Seasonal Climate Outlook Brief Summary

December-January-February (DJF) 2019-2020— Wetter than usual conditions were recorded. The total number of wet days were as usual. Significant dry-spells were recorded. Warmer than usual conditions were recorded at Canefield while at Douglas-Charles cooler than usual nighttime and daily mean temperatures were recorded.

Forecast: Above to normal rainfall with medium chances for at least three 7-day dry spell. Warmer than to usual conditions.

March-April-May (MAM) 2020 Forecast—Little can be said at this time as it relates to rainfall totals. Medium chances of having at least three 7-day dry spells. Warmer than to usual temperatures expected.

Looking Back

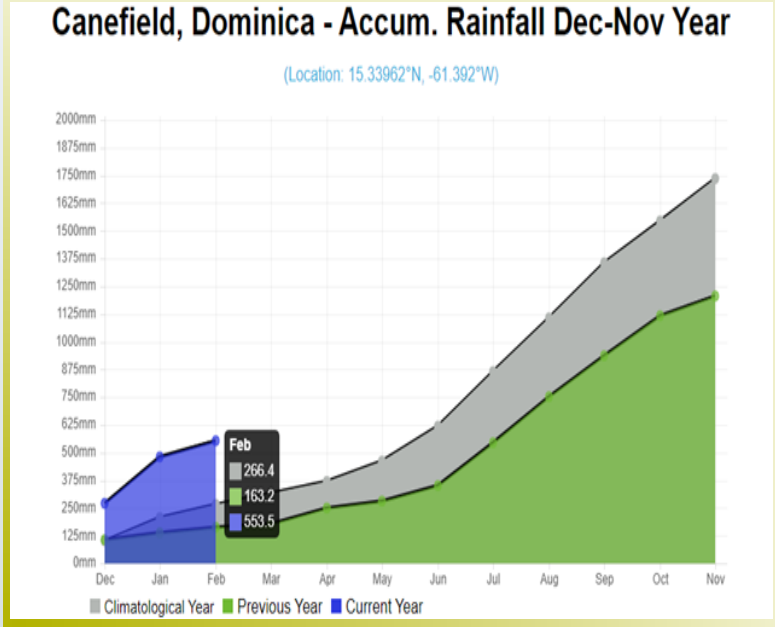
December-January-February (DJF) 2019/2020

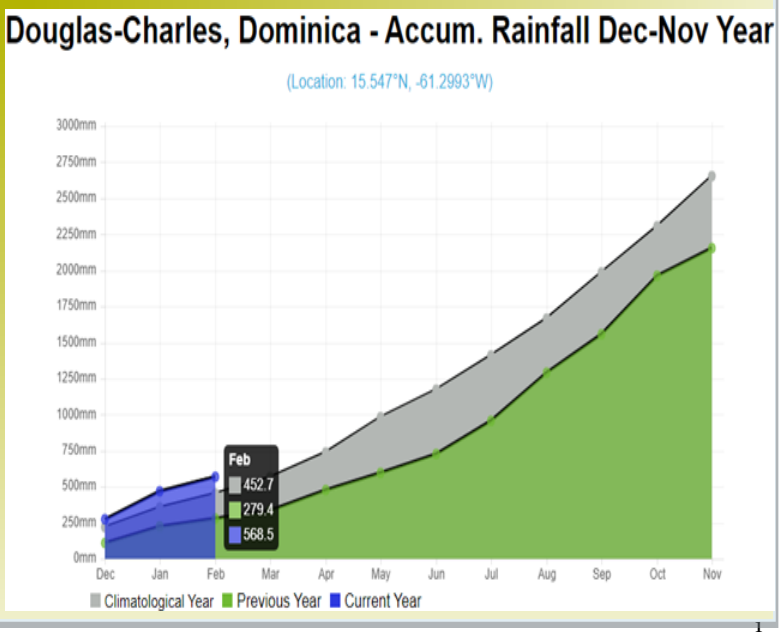
Canefield Airport

- Wetter than usual conditions were recorded for the first half of the dry season.
- The total number of wet days was within normal range.
- There were two significant dry spells in excess of 10 days. December into early January recorded a 13-day dry spell. Mid January into early February recorded a 17-day dry spell.
- Warmer than usual temperatures were recorded throughout the season.

Douglas-Charles Airport

- The Douglas-Charles Airport also recorded wetter than usual conditions.
- The total number of wet days also remained within normal range.
- Unstable conditions following the passage of a trough system on December 13th resulted in daily rainfall total of 105.8mm.
- There were also two significant dry spells. There was an 8-day dry spell in December and a 14-day dry spell January into early February.
- Daytime peak temperatures were warmer than usual. However, nighttime temperatures and the daily mean were both cooler than usual.





Looking Back

December-January-February (DJF) 2019/2020

December 2019 -January-February 2020 Season CLIMATOLOGICAL NORMAL (30YEARS)		
RAINFALL	**CANEFIELD AIRPORT**	**DOUGLAS-CHARLES AIRPORT**
Normal	204.1 to 333.5mm	314.8 to 470.1mm
2019/20 Total	553.5mm (above normal)	568.5mm (above normal)
Wet Days Normal	36 to 53 days	49 to 63 days
2019/20 Wet Days Total	37	53
7-Day Dry Spells Normal	n/a	0 to 1
2019/20 7-Day Dry Spells	2	2
TEMPERATURE 15YRS AVERAGES		
Average Maximum	29.8°C to 30.2°C	28.5°C to 28.9°C
2019/20 Average Maximum	30.5°C (above normal)	29.1°C (above normal)
Average Mean	25.8°C to 26.1°C	25.5°C to 25.8°C
2019/20 Average Mean	26.4°C (above normal)	25.4°C (below normal)
Average Minimum	21.6°C to 22.0°C	22.3°C to 22.8°C
2019/20 Average Minimum	22.3°C (above normal)	21.7°C (below normal)

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.

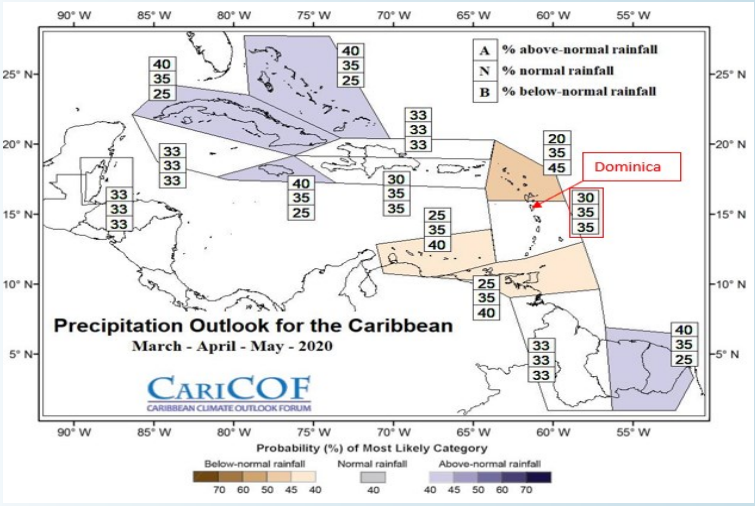
Climatic Outlook (*March-April-May (MAM) 2020)*

INFLUENCING FACTORS

Climate conditions in the Tropical North Atlantic and Caribbean Recent observations:

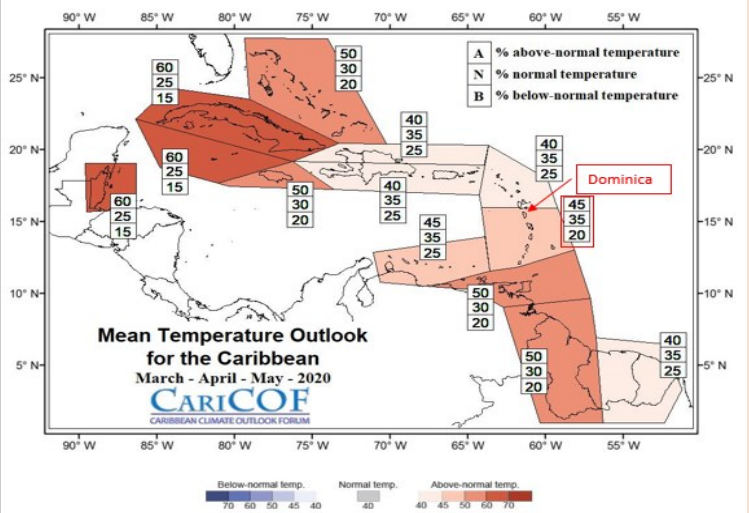
- Sea Surface Temperatures (SSTs) in the Tropical North Atlantic (TNA) and across much of the Caribbean Sea continue to be slightly above average. SSTs have warmed (~1.0°C above average) but remain near average farther east in the TNA.
- Sustained warm SST anomalies up to about +1°C are expected across the Caribbean Sea, while TNA SSTs are expected to be near normal to slightly above normal (0.5°C).
- Warm SSTs throughout the Caribbean may contribute to above-average seasonal surface temperatures across the region. In addition, those environmental factors favour a wetter transition from the dry to the wet season towards May and June.

Rainfall Forecast



- Little can be said at this time for rainfall expectations towards the end of May. Please keep updated.
- Despite the low confidence in rainfall probabilities , the island is in the peak of the dry season which increases the chances of drier conditions. An increase in rainfall activity usually occurs by May during the transition period from dry to wet season.
- The frequency of wet days is forecast to remain just about normal.
- At least one 3-day extreme wet spell is possible from April which could result in flash flooding.
- There is a 60% probability of having at least three to five 7-day dry spells. The chance of having at least one 10 to 15 day dry spell exists. (Low to medium confidence)

Temperature Forecast



- Both day and night time temperatures are expected to be warmer than to usual. Temperatures may at times become uncomfortably hot especially by May, as the island enters it's heat season.

Climatological Normal (*March-April-May (MAM)*

March-April-May Season CLIMATOLOGICAL NORMAL (30YEARS)		
RAINFALL	CANEFIELD AIRPORT	DOUGLAS-CHARLES AIRPORT
Normal	106.5 to 231.0mm	305.5 to 556.1mm
Wet Days Normal	21 to 35 days	36 to 60 days
7-Day Dry Spells Normal	n/a	0 to 4
TEMPERATURE (15YRS AVERAGES)		
Average Maximum	30.6°C to 31.3°C	29.2°C to 29.8°C
Average Mean	26.7°C to 27.2°C	26.0°C to 26.5°C
Average Minimum	22.5°C to 23.1°C	22.9°C to 23.2°C

SECTORAL IMPLICATIONS

Agriculture

- Farmers are encouraged to continue their ''on the farm" cultural practices and must be vigilant against all pests and diseases.
- As we move into the second half of the dry season, farmers need to study their soil moisture content and ensure that their soil is given adequate attention. Composting is one way to achieving the right soil moisture content. It would also be essential for vegetables and other short term crops.
- With a decrease in rainfall totals, farmers must ensure that proper water storage on the farm is practiced and that precautionary measures are taken during dry and hot days.

- Increasing temperatures can reduce plant photosynthetic and transpiration efficiencies which collectively can negatively impact yield. During extreme heat periods soil water content must be kept at adequate levels to provide for plant uptake and to minimize the impacts of higher soil temperatures. Prolonged heat stress results in root shrinkage, anatomical deformations and weak root to soil contact which limits water and nutrient supply.
- Livestock farmers must ensure that quality water and shelter is provided to the animals especially during dry spells. Ensure that animals are on elevated grounds and away from rivers during wet periods, as flash floods could occur.

SECTORAL IMPLICATIONS

Hydrology

- The physical and chemical properties of the rivers will be affected as we move through the latter half of the dry season and then transition into the wet and heat season.
- Expect for the continuation of normal to slightly below normal flow for most of rivers. Temporary increase in river flow is likely in river catchments especially in rainfall prone areas during extreme wet spells.

- The river temperature is expected to increase as the air temperature increases. However, this will not significantly affect the water quality of the rivers.
- The solubility of oxygen and other gases will decrease with increase water temperature. However, it should not have any drastic effect on aquatic life.
- Shallow water trees will continue to be evident in low flowing rivers. E.g. Algae. Photosynthesis should increase in rivers where algae is normally present.

Tourism

- The latter half of the dry season usually experiences an increase in rainfall activity towards May. This transition period into the wet season may differ annually. With low predictability in the rainfall forecast at this time, tourism operators are encouraged to continue to monitor for updated information and daily weather advisories issued by the Dominica Meteorological Services.
- Cooling needs will increase especially during dry spells and more so towards the end of the dry season as the island enters its heat season.
- Sea temperature is expected to increase towards the end of May. However, it will remain below coral bleaching thresholds.
- At all times, tourism operators should maintain a state of readiness, by creating communication plans and response protocols to deal with sudden eventualities.

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

Health

- Higher temperatures towards May, can increase the risk of morbidity from heat stress in vulnerable persons, especially young children and the elderly.
- 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.
- Increased allergens in the atmosphere may occur from plant materials (e.g. pollen) driven by increased wind speeds and reduced washing out by rain.
- These factors may also trigger increased incidence of upper respiratory tract symptoms. There may be an increase in symptoms in persons with asthma and in persons prone to allergic rhinitis due to local dust, kicked up when the ground surface is dry.

World Meteorological Day (March 23rd, 2020)

Climate & Water

Fresh water is vital for life. On average, a human being cannot survive more than three days without it. Water is essential for the production of our food, virtually all of our goods and services and for the environment.

The world now faces increasing challenges posed by water stress, floods and droughts and lack of access to clean supplies. There is an urgent need to improve forecasting, monitoring and management of water supplies and to tackle the problem of too much, too little or too polluted water.

DOMINICA METEOROLOGICAL SERVICE
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Source: Caribbean Institute for Meteorology and Hydrology (CIMH) & National Oceanic and Atmospheric Administrative (NOAA)