

DOMINICA CLIMATIC NEWSLETTER



SEASONAL CLIMATE OUTLOOK SUMMARY

Previous Season Forecast; Sept-Oct-Nov (SON) 2023:

The usual amounts of rainfall are likely (medium confidence). Day and night-time temperatures are very likely to be higher than usual.

Sept-Oct-Nov (SON) 2023 Observations:

Above-normal to normal rainfall totals were recorded with warmer than usual temperatures.

Current Season Forecast; Dec-Jan-Feb (DJF) 2023/24

Below normal to normal rainfall totals are likely (low to medium confidence). Warmer than to the usual Day and nighttime temperatures are possible.

2023 Atlantic Hurricane Season Summary

- NOAA's August 2023 updated outlook indicated that an above-normal season was most likely, with lower odds for a near- or below-normal season.
- The outlook called for a 60% chance of an above-normal season, along with a 25% chance for a near-normal season and a 15% chance for a below-normal season (70% probability).
- 14-21 Named Storms, 6-11 Hurricanes, 2-5 Major Hurricanes
- Accumulated Cyclone Energy (ACE) range of 105%-200% of the median (measures the strength and duration of tropical storms and hurricanes).

Observed Conditions

- Twenty (20) tropical storms formed which confirmed an above normal season based on the new 1991 to 2020 climatology.

2023 Atlantic Hurricane Season Summary cont..

- Seven (7) of these became hurricanes of which 3 were major hurricanes (category 3 or higher on the Saffir-Simpson Hurricane Wind Scale) and that was normal.
- The Accumulated Cyclone Energy (ACE), which activity in the basin was about 20 percent above average.
- Dominica was not directly affected, however, the island was placed under watches and warnings for Tropical Storm Bret in June and Hurricane Tammy in October.

2023 Record Heat Season

The heat season runs officially from May to October. The 2023 season recorded several record breakers particularly for daytime high temperatures. The Canefield station recorded 15 heatwaves with the longest being 37 days. At Douglas-Charles 10 heatwaves were recorded with the longest being 36 days. (Heatwave: Three or more consecutive hot days when daily highs are equal to or exceeds 32.9°C at Canefield and 31.5 °C at Douglas-Charles)

Record breaking heat: How Bad was It?

RECORD HIGH TEMPERATURES

2nd highest daily peak temperature
36.6 °C (August 27th, 2023)

Record High (36.7 °C September 4th, 2022)

Recorded at the Canefield Airport



Canefield Airport

- Warmest Average Daytime Highs (May to November 2023)
- Warmest Average Nighttime Lows (August and September 2023)

Douglas-Charles Airport

- Warmest Average Daytime Highs (August, September & November 2023)
- Warmest Average Nighttime Lows (no record breakers)

Looking Back

2023 Wet Season

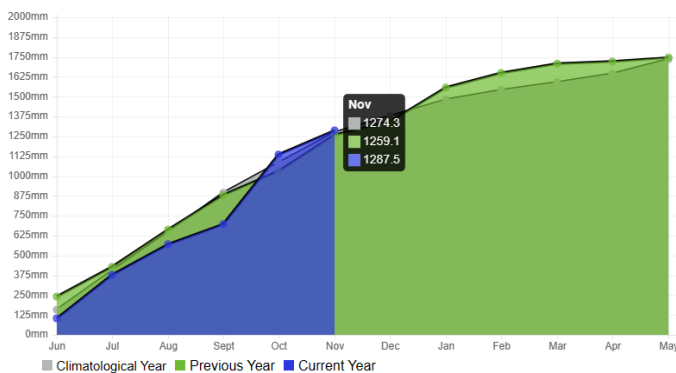
The wet season runs from June to November each year.

Wet Season RAINFALL CLIMATOLOGICAL NORMAL (1991-2020)		
RAINFALL	CANEFIELD AIRPORT	DOUGLAS-CHARLES AIRPORT
Normal	1099.6 to 1348.2mm	1465.2 to 1758.7mm
2023 Total	1287.5mm (normal)	1261.9mm (below normal)
TEMPERATURE AVERAGE (2006-2020)		
Average Maximum	32.0°C to 32.3°C	30.4°C to 30.9°C
2023 Average Maximum	33.6°C (above normal)	31.4°C (above normal)
Average Mean	27.9°C to 28.2°C	27.3°C to 27.7°C
2023 Average Mean	29.1°C (above normal)	28.0°C (above normal)
Average Minimum	23.8°C to 24.2°C	24.1°C to 24.5°C
2023 Average Minimum	24.6°C (above normal)	24.6°C (above normal)

Canefield Airport

Canefield, Dominica - Accum. Rainfall Water Year

(Location: 15.33962°N, -61.392°W)

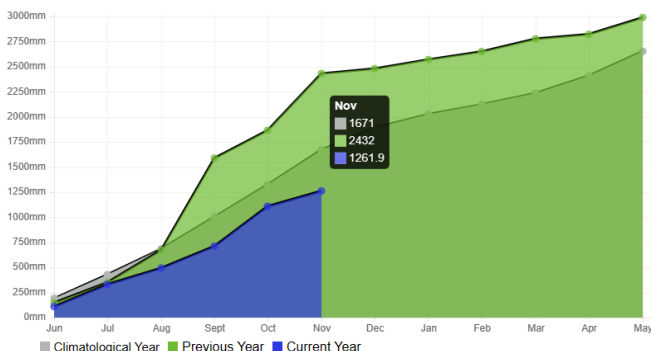


- ◆ The accumulated rainfall total of 1287.5mm at the Canefield Airport was as usual.
- ◆ Warmer than usual temperatures for both day and night were observed.

Douglas-Charles Airport

Douglas-Charles, Dominica - Accum. Rainfall Water Year

(Location: 15.547°N, -61.2993°W)



- ◆ Less rainfall than usual was accumulated at the Douglas-Charles Airport. A total of 1261.9mm was recorded.
- ◆ Like the Canefield Airport warmer than usual conditions were observed.

Sept-Oct-Nov (SON) 2023 Season

September-October-November (SON) Season RAINFALL CLIMATOLOGICAL NORMAL (1991-2020)		
RAINFALL	CANEFIELD AIRPORT	DOUGLAS-CHARLES AIRPORT
Normal	434.3 to 699.0mm	730.4 to 1051.1mm
SON 2023 Total	717.1mm (above normal)	768.2mm (normal)
Wet Days Normal	42 to 54 days	57 to 69 days
SON 2023 Wet Days Total	45	51
TEMPERATURE AVERAGE (2006-2020)		
Average Maximum	31.8°C to 32.2°C	30.4°C to 30.8°C
SON 2023 Average Maximum	33.5°C (above normal)	31.5°C (above normal)
Average Mean	27.6°C to 27.9°C	27.1°C to 27.4°C
SON 2023 Average Mean	28.8°C (above normal)	27.8°C (above normal)
Average Minimum	23.4°C to 23.7°C	23.6°C to 23.9°C
SON 2023 Average Minimum	24.2°C (above normal)	24.0°C (above normal)

Canefield Airport:

- ◆ Rainfall for the period was above normal with a total of 717.1mm.
- ◆ There were 45 wet days during SON, which is usual.
- ◆ Daytime and night-time temperatures were warmer than usual with an average maximum of 33.5°C and minimum of 24.2°C. The highest peak daily temperature was 36.0°C, observed in September.

Douglas-Charles Airport:

- ◆ Rainfall was normal with a total of 768.2mm.
- ◆ There were 51 wet days during SON, which is slightly less than normal.
- ◆ Daytime highs were warmer than usual with an average maximum of 31.5°C and nighttime lows were normal with an average minimum of 24.0°C.

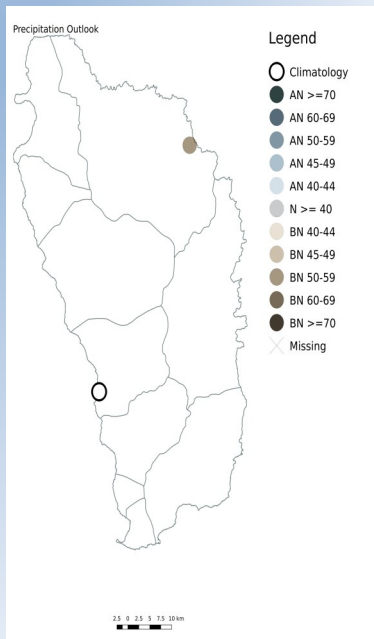
INFLUENCING FACTORS

- An El Niño event has been declared, with Sea Surface Temperatures (SSTs) in the eastern equatorial Pacific now exceeding 1.5°C above average, indicative of strong El Niño conditions. Models indicate a likely further warming of the eastern Pacific to exceed 1.5°C, with El Niño conditions in DJF (100% confidence) and MAM (90% confidence). El Niño is marked by a warmer cool season. Rainfall tends to be lower than usual in the southeastern half of the region, but higher than usual in the far north.
- SSTs have hovered around 1°C to 2°C above average in much of the Tropical North Atlantic (TNA), reaching record high values across vast ocean areas. Models are confidently forecasting increasingly warm SSTs of 0.5°C to 2°C (or more) above average across the Caribbean Sea and the TNA. Warm SSTs in and around the Caribbean tend to contribute to higher air temperatures with above-average humidity, seasonal rainfall totals and an increased frequency of extreme rainfall through the end of the year.

Dec-Jan-Feb (DJF) 2023/ 2024 Outlook

RAINFALL FORECAST

- ◆ As we transition to the dry season a reduction in wet days is expected but that decrease should be gradual. About 32 to 74 days are expected.
- ◆ A slight increase in the frequency of 7-day wet spell is possible.
- ◆ Flash flood potential is expected to decrease as we transition from the wet to dry season but remains a concern during the start of the season.
- ◆ Rainfall accumulations are likely to be less than to the usual amount at Douglas-Charles and surrounding areas. Meanwhile, models are giving little information for the Canefield area.
- ◆ At least two 7-day dry spells and one 15-day dry spell are possible (low confidence)
- ◆ Models indicate that there are no drought concerns up to the end of February.
- ◆ The second half of the dry season March—May 2024 is expected to accumulate above normal to the normal rainfall amounts.



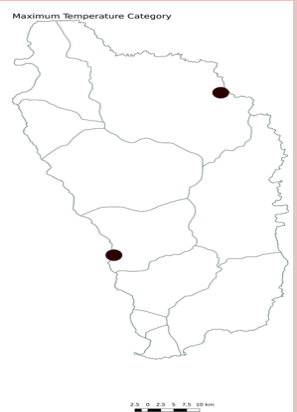
TEMPERATURE FORECAST

- ◆ We are now transitioning into the cool season and as usual temperatures are expected to become relatively cooler.
- ◆ Daytime highs and night-time lows are expected to range from being warmer than usual to the usual.

Night-time Lows



Daytime Highs



Milder

Usual

Hotter

December-January-February Season CLIMATOLOGICAL NORMAL (1991-2020)

RAINFALL	CANEFIELD AIRPORT	DOUGLAS-CHARLES AIRPORT
Normal	209.6 to 367.8mm	323.3 to 480.4 mm
Wet Days Normal	36 to 53 days	49 to 63 days
7-Day Wet Spell Normal	1 to 4 spells	1 to 3 spells
7-Day Dry Spell Normal	n/a	0 to 1

TEMPERATURE AVERAGE (2006-2020)

Average Maximum	29.9°C to 30.4°C	28.7°C to 28.9°C
Average Mean	25.8°C to 26.1°C	25.4°C to 25.8°C
Average Minimum	21.6°C to 22.0°C	22.2°C to 22.7°C

SECTORAL IMPLICATIONS



HYDROLOGY

- ◆ River discharge should remain relatively the same in December and January with a slight decrease by February.
- ◆ Caution should be taken during heavy rainfall as this could result in;
 - ⇒ Increased water levels and surface runoff.
 - ⇒ Some rivers may flood low-lying bridges impacting traffic.
 - ⇒ The usual overflowing of gutters and ravines.
 - ⇒ Ponding in saturated areas as well as on unlevelled grounds.



AGRICULTURE

- ◆ Employ water management techniques such as; water harvesting, irrigation scheduling, weeding and mulching to maintain adequate soil moisture.
- ◆ To minimize loss select crop varieties that can thrive in adverse weather conditions and are susceptible to pest and diseases.
- ◆ Employ proper drainage on farms for excessive rainfall events.
- ◆ Farmers are encouraged to continue doing their field sanitation measures such as de-leaving, nutrient management and proper water storage techniques to minimize mosquito breeding environments.
- ◆ Livestock farmers need to ensure that an adequate supply of fresh quality water is stored during the dry period.
- ◆ Maintain proper records of inputs and the crop under cultivation and/or livestock being reared.

MOON PHASES

Dec: LQ 5th, NM 12th, FQ 19th, FM 27th

Jan: LQ 4th, NM 11th, FQ 18th, FM 25th,

Feb: LQ 2nd, NM 09th, FQ 16th, FM 24th,



TOURISM

- ◆ Winter season in most source market may increase demand for Caribbean vacations. Marketing efforts could focus on attracting visitors to the generally sunny, warm, breezy weather with excellent air quality .
- ◆ Strong winds and rough seas are common during the season. Tour operators should keep informed of weather information from the Meteorological office before venturing out on tours and excursions.
- ◆ Clear to mild levels of sargassum are likely into February.
- ◆ Coral bleaching concern decreases throughout the season.



HEALTH

- ◆ Respiratory Complications are likely to be lower due to the less frequent episodes of Saharan dust incursions.
- ◆ Where episodes of flooding may occur there is an increased risk of ear, nose, and throat infections and gastroenteritis from contact with and consumptions of contaminated water.
- ◆ Manage water storage containers properly to reduce mosquito breeding areas and incidents of vector-borne diseases such as Dengue, Chikungunya and Zika.
- ◆ During the December and January UV radiation is expected to be low. From February the concentration is expected to begin increasing. On sunny days, cautions should be taken to minimize exposure which could lead to skin damage.
- ◆ Healthcare personnel should always maintain a state of readiness as severe weather events could occur at any-time.

Source: Dominica Meteorological Service (DMS) in collaboration with the Caribbean Institute for Meteorology and Hydrology (CIMH) & National Oceanic and Atmospheric Administrative (NOAA)

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