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State of the Climate in August 2021

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Summary

- August 2021 was extremely unsettled and consistently wet across much of Trinidad and Tobago, with fourteen (14) consecutive days of rainfall and twenty-five in total, along with at least four of what can be considered as high impact weather events.
- Mean maximum temperatures for August were below average throughout the country, with a moderate departure (-0.4°C) from average.
- Mean minimum temperatures for August were also below average, but with a much smaller departure (-0.1°C) from average.
- August rainfall was above average over much of Trinidad and Tobago, except for northeast Tobago, where below average totals were recorded.
- For Trinidad as a whole, surplus rainfall totals ranged between 3% and 51% higher than average.
- For southwest Tobago, rainfall totals were near 48% above average, while in northeast Tobago deficit rainfall totals were near 18% below average.

Temperature

The month of August 2021 in Trinidad and Tobago can be branded as being much cooler than average conditions across the Caribbean. Trinidad and Tobago mean temperature for August 2021 was 28.0°C, which was 0.2°C cooler than the 1991-2020 long term average. This was the 2nd coolest August in the last 13 years in terms of mean temperature but tied (with 2006) as the eleventh (11th) warmest mean August temperature on record in the 76-year record. The mean August temperatures of 29.1°C in 2015 and 2011 remain the warmest on record at 0.9°C above the long term average, followed closely by 2016 at 0.8°C above average.

The cooling was also felt in the maximum day temperatures. August mean maximum temperature was 32.2°C, which was 0.4°C cooler than the long-term average. August 2021 tied (with 2004, 2006 & 1988) as the 13th warmest mean maximum temperature on record. Eight of the 10 warmest Augusts have occurred since 2008 with August 1998 and 1989 still ranking in the top 10 warmest August on record.

The highest maximum temperature for the month was 33.8°C, ranking 17th in the record for warmest August temperature at a full 2.0°C less than the record warmest August maximum temperature of 35.8°C, which occurred in 2017. August 2021 was also the 2nd lowest extreme maximum temperature in the last 19 years, for August. Only August 2019, with an extreme temperature of 33.5°C, was lower. Mean minimum temperatures for August were also below average, but the anomalies were small. The mean minimum temperature for August 2021 was 23.8°C, which was 0.1°C below the average, but still in the top 10 warmest mean minimum temperatures for August, and tied (with 2012 & 1997) as the 8th August-nights warmest minimum temperatures on record.

Rainfall

The month of August was considerably unsettled, and produced significant amounts of rainfall. At Piarco, August rainfall total was 386.8 mm which was 132.5 mm more than the 255.3 mm long-term average (1991-2020) or 151% of average. This ranked August rainfall total at Piarco, as the seventh (7th) wettest August in the 76-year period of record and second (2nd) wettest in the last decade. Only August 2020 was wetter in the decade, while August of 1949 remains the wettest August on record with 464.7 mm. August was also the wettest month for the first eight months of the year. Rainfall was also above average at Crown Point, Tobago.

Much of the month's rain fell over the 13-day period from August 12-24, with rainfall occurring on each day of the period, amounting overall to amounting to 314.6 mm or 81% of the month's total. There were significant rain events (20 mm or more) on the 8th, 12th, 14th, 15th, 17th and 18th. Piarco had its wettest August day in the last 27 years and 5th wettest August day on record, when 92.4 mm of rain fell on the 18th. Other notable very wet and very heavy rainfall days during the very wet 13-day period were the 12th (64.1 mm), 14th (47.8 mm) and 17th (53.8 mm). August 15th, 1993 remains the wettest August day on record with 144.2 mm. The rainfall surpluses were consistent across Trinidad, but varied across Tobago. Areas further northeast than Piarco and southern Trinidad received between 104% and 139% of average rainfall.

Climatic Influencers and Extremes

The month was a very lively month for Tropical Waves and the Inter-tropical Convergence Zone (ITCZ) activity that combined to produce most of month's rainfall. A train of tropical waves, nine (9) in total, occurred on the 02nd, 07th, 13th, 18th, 20th, 22nd, 24th, 26th, and 30th. Some of these occurred with, or modulated ITCZ activities on the 17th, 18th, 20th, 21st, 22nd, 24th, 26th, 28th and 30th.

There were four particularly significant weather events, which occurred in August. On August 3, intense and at times torrential bursts of rainfall was sufficient to cause rivers in and around the city of Port of Spain to spill their banks and cause parked cars to be carried or washed away. The rainfall was associated with hind-leg of a tropical wave after the passage of the wave axis on the 2nd.

On August 14th, feeder-band activity from Tropical Storm Grace, which was located well north of Trinidad and Tobago, at 16.2 N, 58.7 W, brought widespread hazardous conditions of heavy rainfall across portions of the country. Close to 50 mm (2 inches) of rainfall triggered flooding in low-lying communities within some river catchments and urban areas with easily overwhelmed storm-water drainage systems, as well as caused deadly landslides. Several areas in north and south Trinidad reported landslides, including one at Rancho Quemado that resulted in one death and another at Buenos Ayres that caused the roadway to be impassable, while landslides were reported in Belmont, St Ann's, Morvant, Malick, Santa Cruz, San Juan and Petit Bourg. Across in Tobago, a landslide was reported along the Bloody Bay road. The month also spawned a tornado on August 17 that damaged homes and vehicles in the village of Los Iros, South Trinidad.

On August 17th and 18th, a complex tropical weather system consisting of a Tropical Wave and the ITCZ brought sustained heavy and at times torrential rainfall across most of the country. At Piarco, close to 100 mm fell in 24 hours

on the 18th and in excess of 50 mm on the 17th leading to close to 150 mm (6 inches) in 48 hours. The 24-hour rainfall on the 18th was the 5th highest for August in the historical record. This led to riverine and widespread flash flooding across the country.

Trinidad and Tobago Weather Extremes During August 2021				
Trinidad			Tobago	
Hottest day	33.8°C	10 th & 11 th	32.4°C	28 th
Coolest day	25.9 °C	18 th	30.1°C	23 rd
Coolest night	21.9°C	19 th	22.7°C	03 rd
Warmest night	25.3°C	28 th	26.0°C	17 th
Wettest day	92.3mm	24-hour ending 8:00am on the 19 th	78.4mm	24-hour ending 8:00am on the 15 th
Heavy rain days	12 th , 14 th , 15 th , 17 th , 18 th	Days with ≥ 25.0 mm	15 th	Days with ≥ 25.0 mm
Wettest 7-day	291.2mm	12 th to 18 th	150.3mm	14 th to 20 th

Kenneth Kerr
Chief Climatologist,
Trinidad and Tobago Meteorological Service