

# Climate Review for PR and USVI – September 2019



*Synopsis: A few significant events were registered during the month of September across the local islands, with the most important one being Tropical Storm Karen in the latter part of the month. In fact, the drought classification was reduced across Puerto Rico, but abnormally dry conditions and moderate drought persisted across the southern coast. For the U.S. Virgin Islands, drought conditions improved and now none of the islands remain under any drought category. Rainfall amounts were above normal across the northern third and western interior of Puerto Rico. On the other hand, rainfall amounts were below normal across the west coast, as well as the southwestern and southeastern sections of Puerto Rico. In terms of temperature, San Juan ties as the warmest September on record, while St. Thomas ended as the 8<sup>th</sup> warmest.*

## Observed Conditions:

In the month of September, we observed hot temperatures, periods of heavy rain and some days with fair weather and haze due to Saharan dust, all of which are common for this time of year. This month we had the added rainfall from Tropical Storm Karen, which brought up to 5 inches of rain in some areas of Puerto Rico. A few records were tied or broken this month, both in rainfall and temperature. With regards to rainfall, many areas received higher rainfall than normal across Puerto Rico and the U.S. Virgin Islands. That said, portions of eastern and southern Puerto Rico managed to receive below normal rainfall, adding to the year-to-date rainfall deficit, which is estimated to be between 12 and 24 inches across portions of south, central and eastern interior of Puerto Rico as well as the western sections of the Luquillo Mountain Range.

The local drought conditions (Figure 1) improved from the previous month in basically all areas. Puerto Rico now has no area classified as “Severe Drought” (D2), the area under “Moderate Drought” (D1) is now at 7.93% and the “Abnormally Dry” (D0) area is at 10.01%. In addition, the area under any kind of drought classification (D0-D4) decreased to 17.94%. The U.S. Virgin Islands all received higher than normal rainfall once again, therefore the drought classification improved and there is no drought classification for any of the islands (Figure 2).

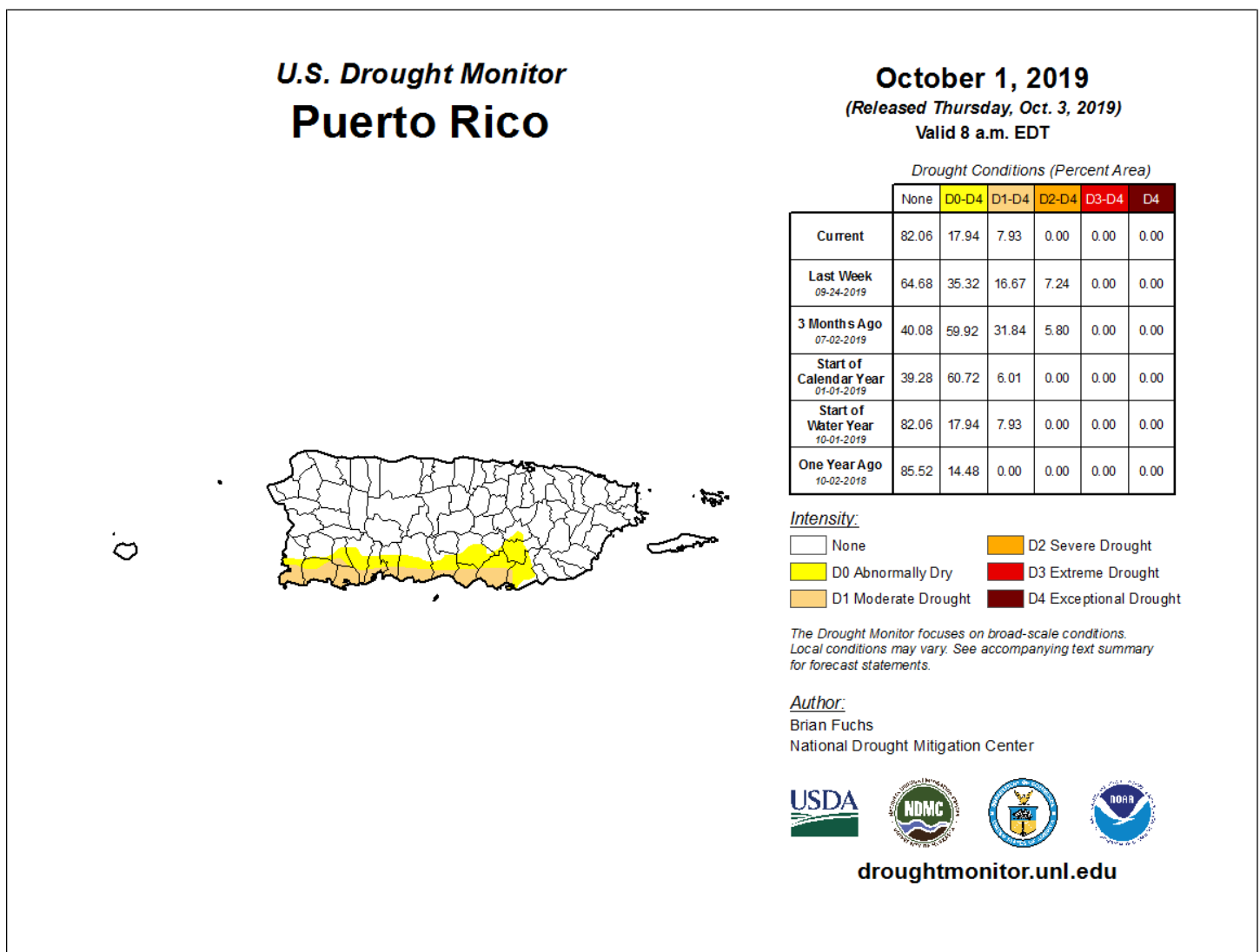
The departure from normal rainfall estimates this month ranged from 14 inches above normal across northwestern Puerto Rico to about 7 inches below normal across portions of the Luquillo Mountain Range (Figure 3). The total monthly rainfall estimates by the Doppler radar ranged from just over 3 inches across the eastern interior of Puerto Rico, to almost 24 inches across portions of northwestern Puerto Rico. The U.S. Virgin Islands observed from just over 1 inch to almost 10 inches of rain (Figure 4).

The Saint Thomas and Saint Croix international airports observed below normal rainfall, but the San Juan international airport observed above normal rainfall (Table 1). The Saint Thomas and Saint Croix international airports observed mean temperatures that were within a degree of normal (Table 2), but San Juan observed over a degree higher than normal. Several high temperature records were either tied or broken at the San Juan airport, which included a tie for the warmest September on record. Meanwhile a rainfall record was broken in Saint Thomas, associated with Tropical Storm Karen (Table 3). The overall highest temperature observed in August across any of our local COOP stations was 99°F at the Ponce 4E station and the lowest temperature was 61°F at the Adjuntas station.

## Looking Ahead:

The latest seasonal outlook issued by the Caribbean Climate Outlook Forum (CariCOF) favors near normal rainfall for the next 3 months (Figure 5) and above normal temperatures (Figure 6). ENSO-neutral conditions are expected to persist through the OND months, and possibly through JFM. ENSO-neutral conditions do not have a significant impact on seasonal temperature or rainfall forecasts, but it does add uncertainty. October is considered to be a wet month; any wet spells could bring some relief to the drought conditions. **More info:** <http://rcc.cimh.edu.bb/climate-outlooks/>

## Figures and Tables



**Figure 1.** U.S. Drought Monitor for Puerto Rico. Released October 3, 2019.

# U.S. Drought Monitor U.S. Virgin Islands

**October 1, 2019**  
(Released Thursday, Oct. 3, 2019)  
Valid 8 a.m. EDT



### Intensity:

- ⊗ No Data
- No Drought or Dryness
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

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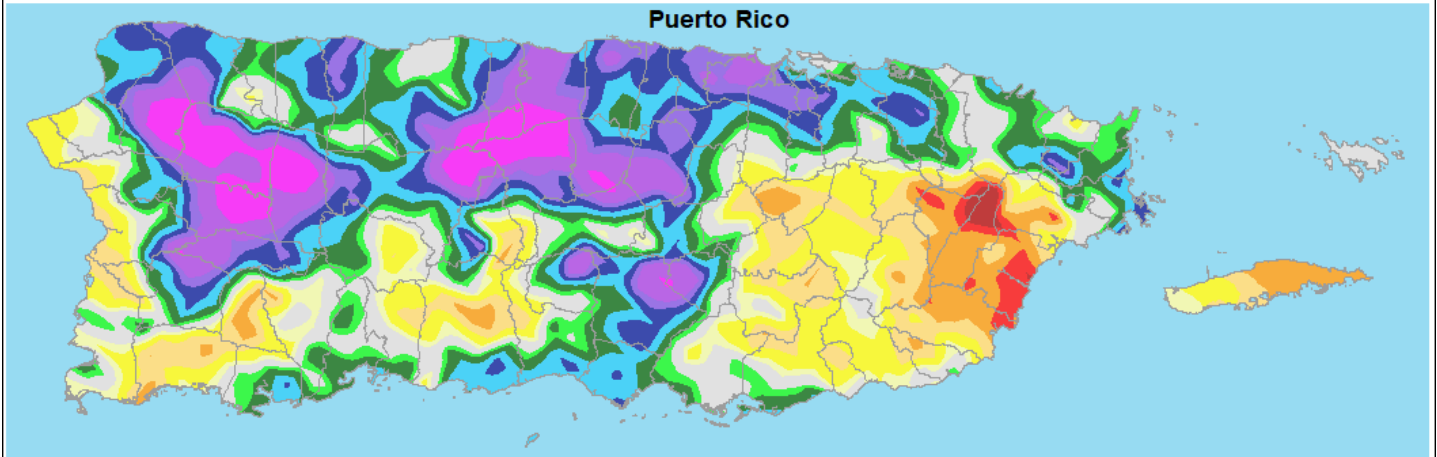
**Figure 2.** U.S. Drought Monitor for the US. Virgin Islands. Released October 3, 2019.



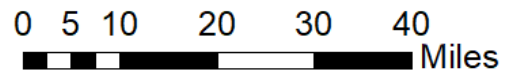
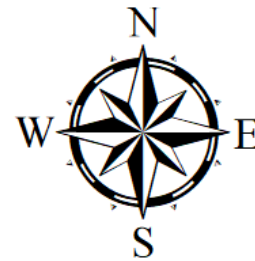
**September 2019 Estimated Departure from Normal Rainfall**  
**National Weather Service WFO San Juan**  
Data Source: AHPS\*  
Valid for September 1, 2019 to October 1, 2019  
Data is Preliminary



\*AHPS does not provide Departure from Normal data for the U.S. Virgin Islands at this time.



**Departure from Normal (inches)**



**Figure 3.** Departure from normal rainfall for the month of September 2019.



# September 2019 Estimated Rainfall

National Weather Service WFO San Juan

Data Source: AHPS

Data is Preliminary

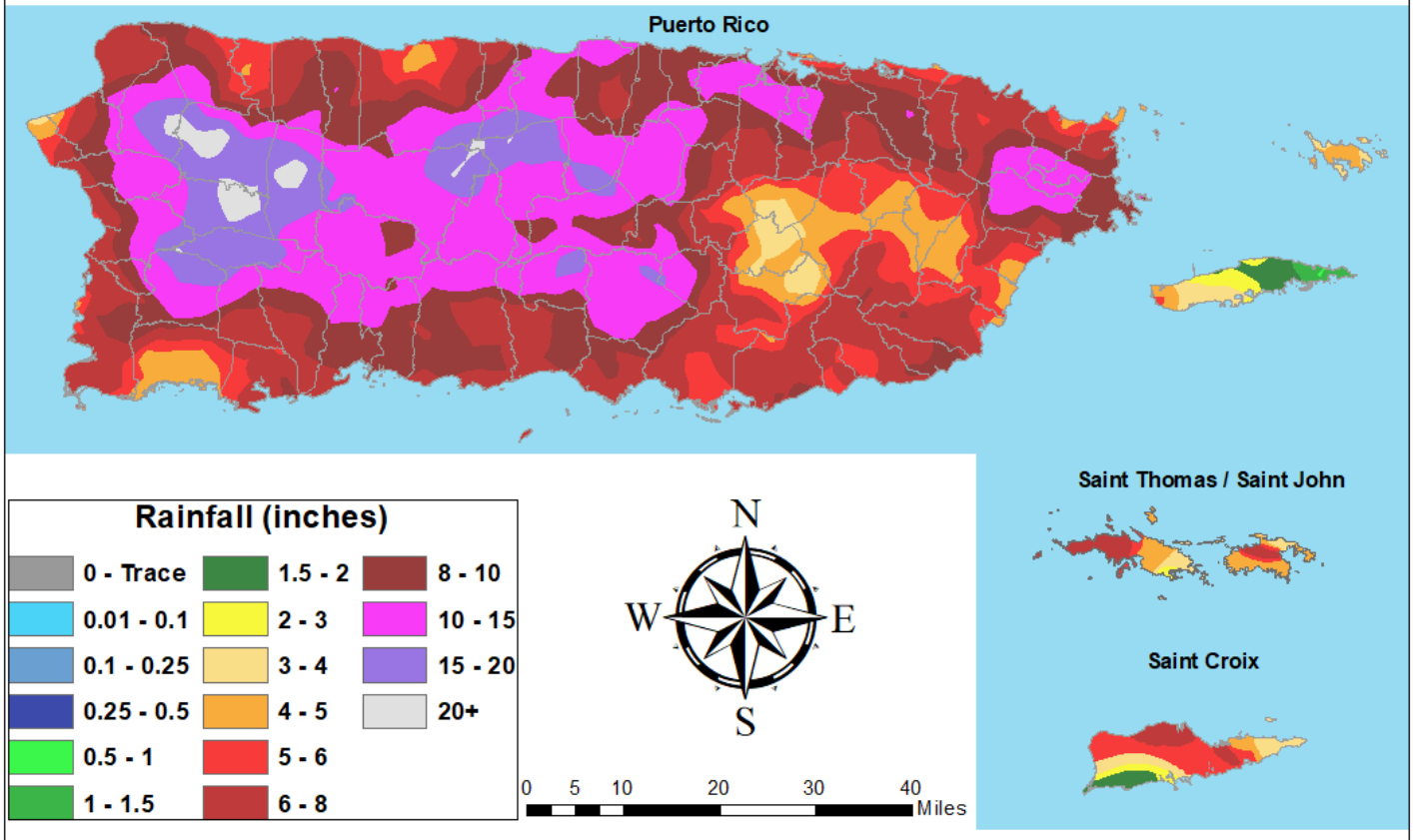
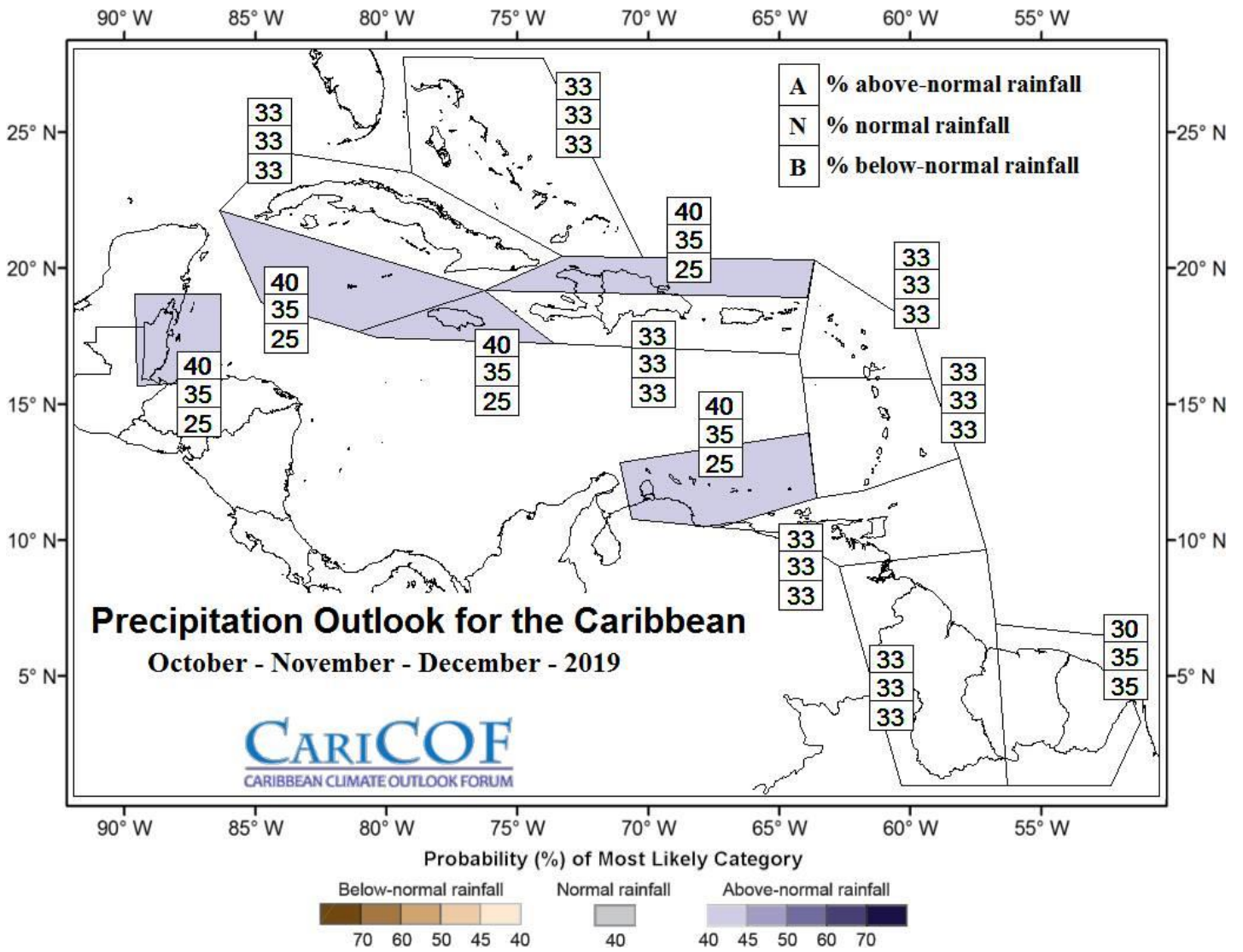
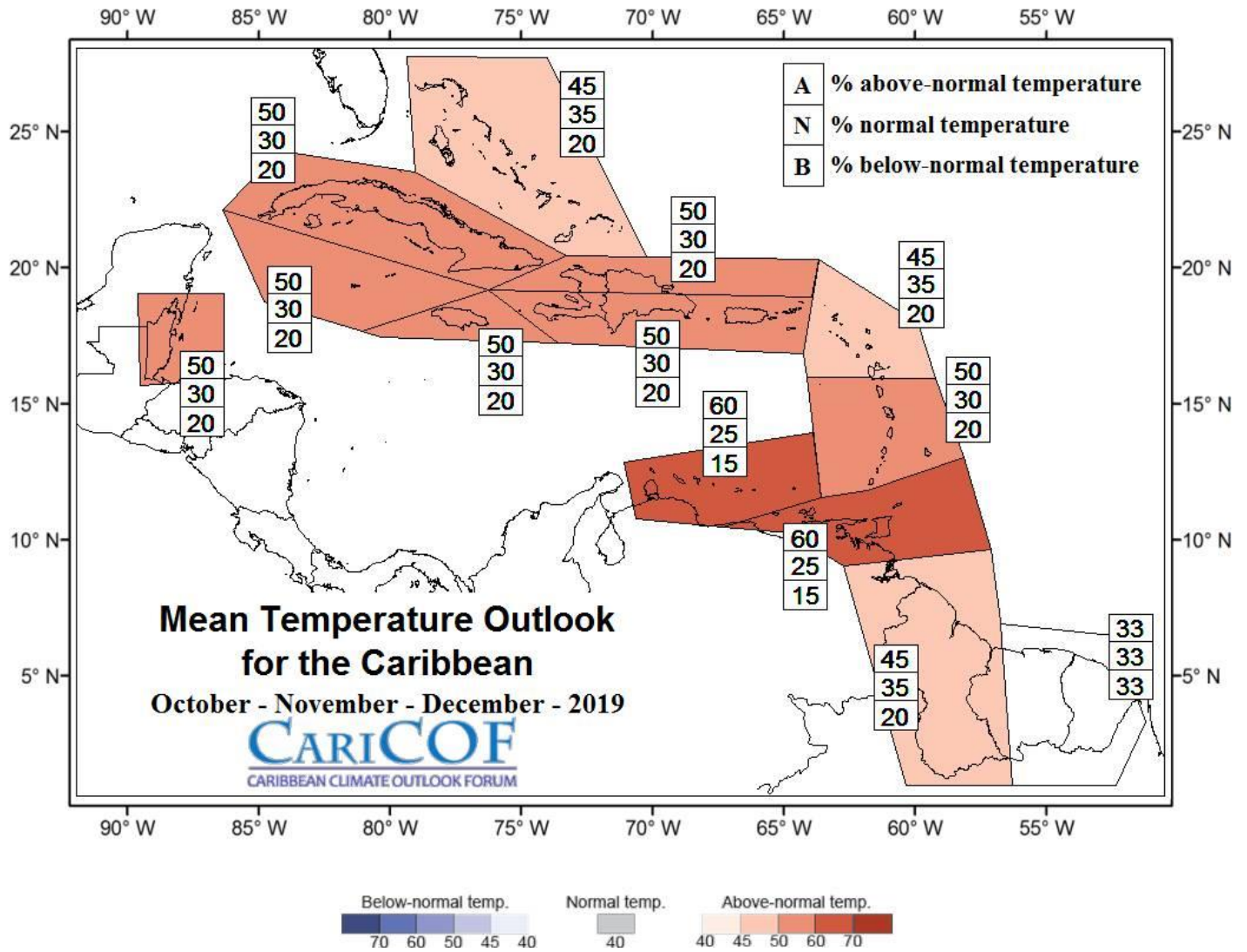


Figure 4. Total estimated rainfall for the month of September 2019.



**Figure 5.** CariCOF 3-month rainfall forecast.





**Figure 6.** CariCOF 3-month temperature forecast.

	Total Monthly Rainfall	Monthly departure from normal rainfall	Year-To-Date departure from normal rainfall.
JSJ	9.54"	3.77"	-5.42"
IST	3.51"	-2.07"	0.71"
ISX	1.88"	-2.98"	-3.63"*

**Table 1.** Rainfall highlights for the local international airports.

\*Due to missing data, the Year-To-Date departure from normal rainfall for ISX does not include the months of January and February.

	Max Temp (°F)	Min Temp (°F)	Mean Temp (°F)	Monthly departure from normal Mean Temp (°F)
JSJ	95 – Sept. 21 <sup>st</sup> *	76 –Sept. 22 <sup>nd</sup> *	84.9	1.3
IST	92 – Sept. 15 <sup>th</sup>	75 – Sept. 29 <sup>th</sup> *	84.6	0.6
ISX	92 – Sept. 22 <sup>nd</sup> *	75 – Sept. 17 <sup>th</sup> *	83.2	0.1

**Table 2.** Temperature highlights for the local international airports.

\*Date of last occurrence. This temperature was observed in more than one day.

	Records Set or Tied This Month	Previous Record and Year
JSJ	Daily Max Temp. – Sept. 21 <sup>st</sup> – 95°F	94°F – 1999
	Sept. 13 <sup>th</sup> – 94°F	94°F – 2017
	Sept. 2 <sup>nd</sup> – 94°F	94°F – 2010
	Monthly Average Temp. – 84.9°F	84.9°F – 2012
IST	Daily Rainfall – Sept. 24 <sup>th</sup> – 1.23"	1.02" - 1990
ISX	NONE	N/A

**Table 3.** Records that were set or tied in the month of September 2019