

Climate Review for PR and USVI – March 2021



Synopsis: *The month of March ended wetter than normal for some portions of Puerto Rico, mainly due to conditions being more favorable for afternoon convection. There were two significant rainfall events over portions of the San Juan metro area that contributed to receiving well above normal rainfall. In contrast, the U.S. Virgin Islands climate sites had one of the top-10 driest March on record, while the mean temperatures were warmer than normal. By the end of the month, drought conditions improved for portions of Puerto Rico, although nearly 8% of the northwest remains under a “Moderate Drought” (D1). In the U.S. Virgin Islands, conditions worsened for St. John and St. Thomas, and are now under a “Severe Drought” (D2) classification.*

Observed Conditions:

March is usually the last month of the dry season across Puerto Rico and the U.S. Virgin Islands. Normal rainfall is around 1 to 5 inches across Puerto Rico, except the Luquillo Mountain range, which normally receives 5 to 11 inches of rain. For the U.S. Virgin Islands, normal rainfall is below 2 inches. With regards to temperatures in the month of March, daytime high temperatures are in the low to mid 80s across the lower elevations of the local islands, while the higher elevations of Puerto Rico experience daytime temperatures between the mid 60s to low 80s. Overnight lows are normally in the mid 50s near the Adjuntas municipality and some of the highest elevations, and in the upper 60s to low 70s across the lower elevations of Puerto Rico and the U.S. Virgin Islands.

March was more active in terms of rainfall than February over Puerto Rico. The atmosphere gradually transitioned into a pattern more conducive for afternoon shower activity. As a result, areas near the Luquillo Mountain range, the San Juan metro area, western interior and western Puerto Rico received 3 to 6 inches above the climatological mean (Figure 1). On the other hand, sections that normally don't benefit from the afternoon rainfall, stayed below normal, such as the southern slopes, eastern interior, Vieques, Culebra and the U.S. Virgin Islands. In fact, IST ended as the 6th driest March on record, while ISX ended as the 9th driest (Table 2). All climatological sites ended warmer than normal, and IST ended as the 7th warmest March on history (Table 1). No rainfall or temperature records were established this month (Table 3).

Two main rain events were identified this month, specifically in the latter third of the month. The first one was associated with a low level disturbance that contributed to the development of heavy and continuous rainfall, affecting the San Juan metro area and a significant portion of the interior, western, and northern Puerto Rico. The second event was triggered by a mid-level trough, once again affecting the same areas. Doppler radar estimates were as much as 3 to 5 inches, especially in the vicinity of San Juan during both events. For Puerto Rico, the Doppler radar in Cayey indicated 10 to 15 inches for the Luquillo Mountain Range, as well as some sections of the Hormigueros (SW PR) and Utuado (W-Interior) municipalities. There were 5 to 10 inches of rain across the San Juan metro area, the central and western interior and the west, and 1 to 3 inches elsewhere. For the U.S. Virgin Islands, as well as Vieques and Culebra, rainfall amounts were mainly under one inch. Across our COOP sites, the coolest temperature was 52 degrees at the Adjuntas Substation, and the warmest was 94 degrees at the Aguirre Station. The rainiest station was Toa Baja Levittown, with 9.09” (6.63” fell in a 24-hr period on March 21st).

After continuing deterioration through the first half of the month, the local drought conditions began to improve a little over Puerto Rico, but roughly 27% of the territory remains under “Abnormally Dry” (DO) conditions. Most of the northwestern quadrant remains under D0 classification, with nearly 8% under D1. A few sections in the southwest, as well as all of Vieques and Culebra are also under a D0 classification (Figure 3). In contrast, over the U.S. Virgin Islands, Saint Thomas and St. John now under D2, while St. Croix continues under D1 (Figure 4).

Looking Ahead:

The latest seasonal outlook issued by the Caribbean Climate Outlook Forum (CariCOF) for the 3-month period of April-May-June (AMJ) slightly favors the chances for below normal rainfall (Figure 5) and near normal temperatures (Figure 6). We are still under La Niña conditions; but the latest forecasts favor ENSO-Neutral conditions by the Spring season. **More info:** <http://rcc.cimh.edu.bb/climate-outlooks/>

Figures and Tables

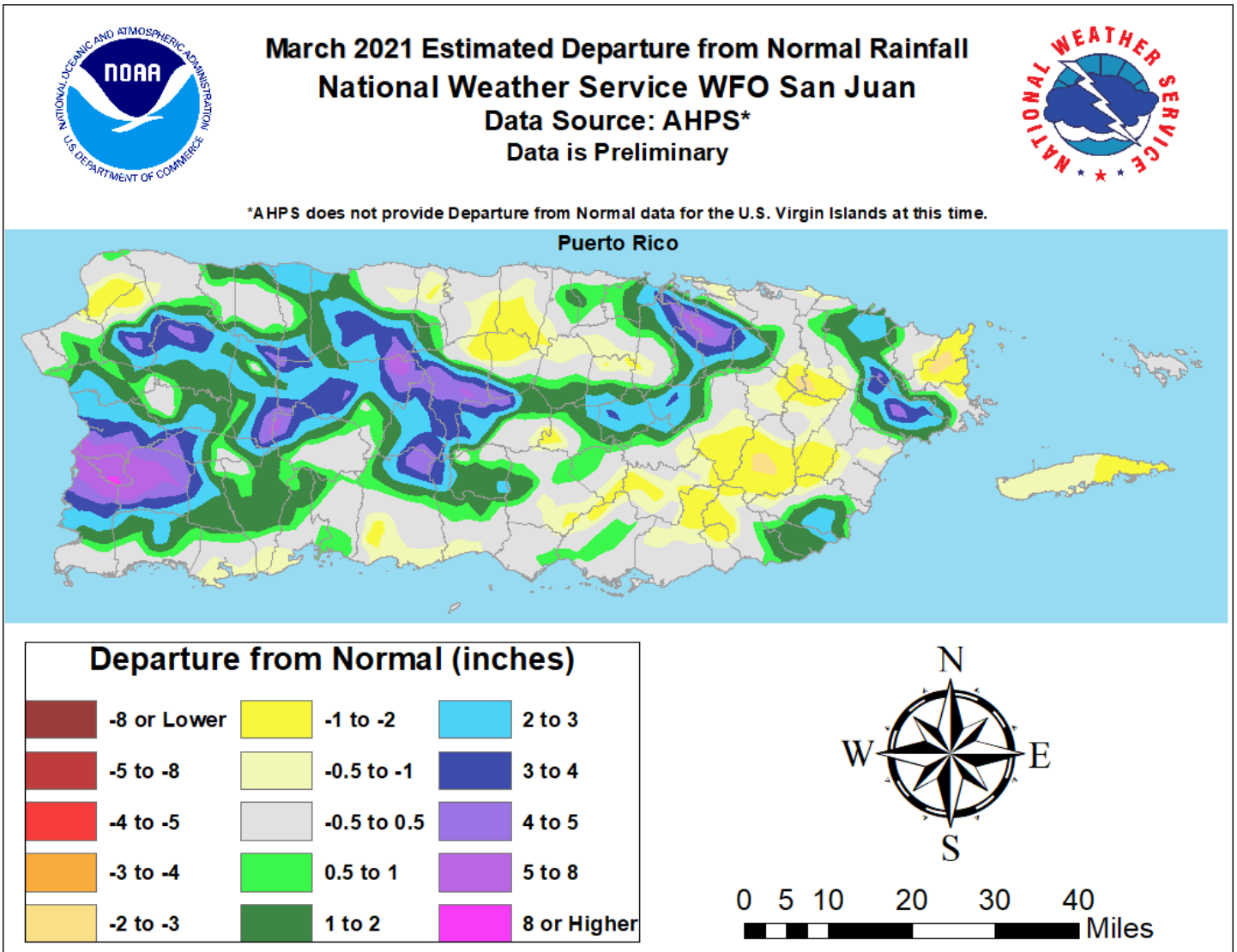


Figure 1. Departure from normal rainfall for the month of March 2021.



March 2021 Estimated Rainfall

National Weather Service WFO San Juan

Data Source: AHPs, COOP
Data is Preliminary

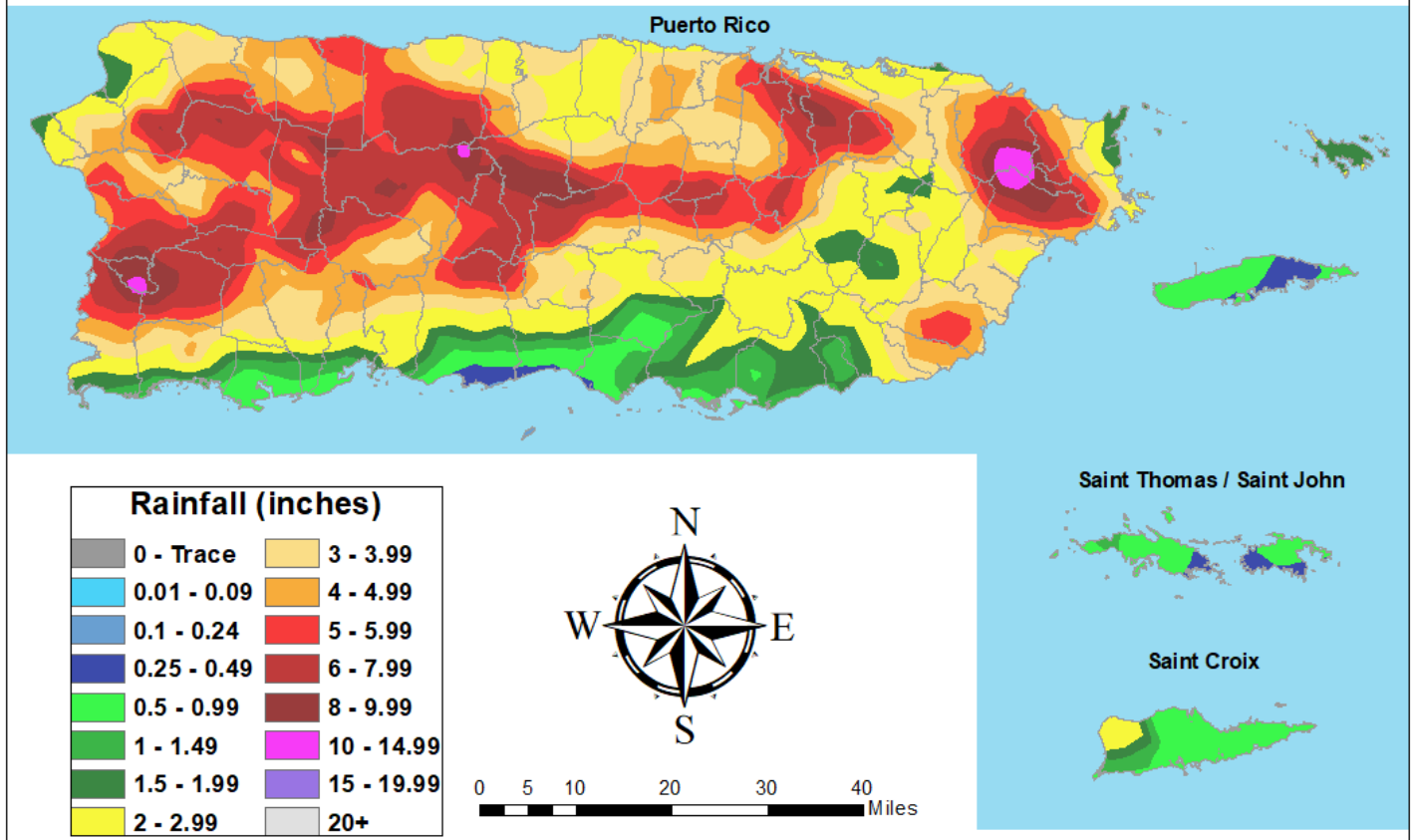


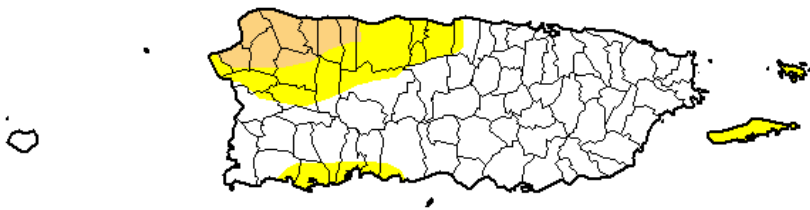
Figure 2. Total estimated rainfall for the month of March 2021.

U.S. Drought Monitor Puerto Rico

March 30, 2021
(Released Thursday, Apr. 1, 2021)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	73.17	26.83	8.03	0.00	0.00	0.00
Last Week <i>03-23-2021</i>	69.38	30.62	10.01	0.00	0.00	0.00
3 Months Ago <i>12-29-2020</i>	77.75	22.25	3.31	0.00	0.00	0.00
Start of Calendar Year <i>12-29-2020</i>	77.75	22.25	3.31	0.00	0.00	0.00
Start of Water Year <i>09-29-2020</i>	94.94	5.06	0.00	0.00	0.00	0.00
One Year Ago <i>03-31-2020</i>	100.00	0.00	0.00	0.00	0.00	0.00



Intensity:

- None
- 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. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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droughtmonitor.unl.edu

Figure 3. U.S. Drought Monitor for Puerto Rico. Released April 1st, 2021.

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

March 30, 2021
(Released Thursday, Apr. 1, 2021)
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. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

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Figure 4. U.S. Drought Monitor for the U.S. Virgin Islands. Released April 1st, 2021.

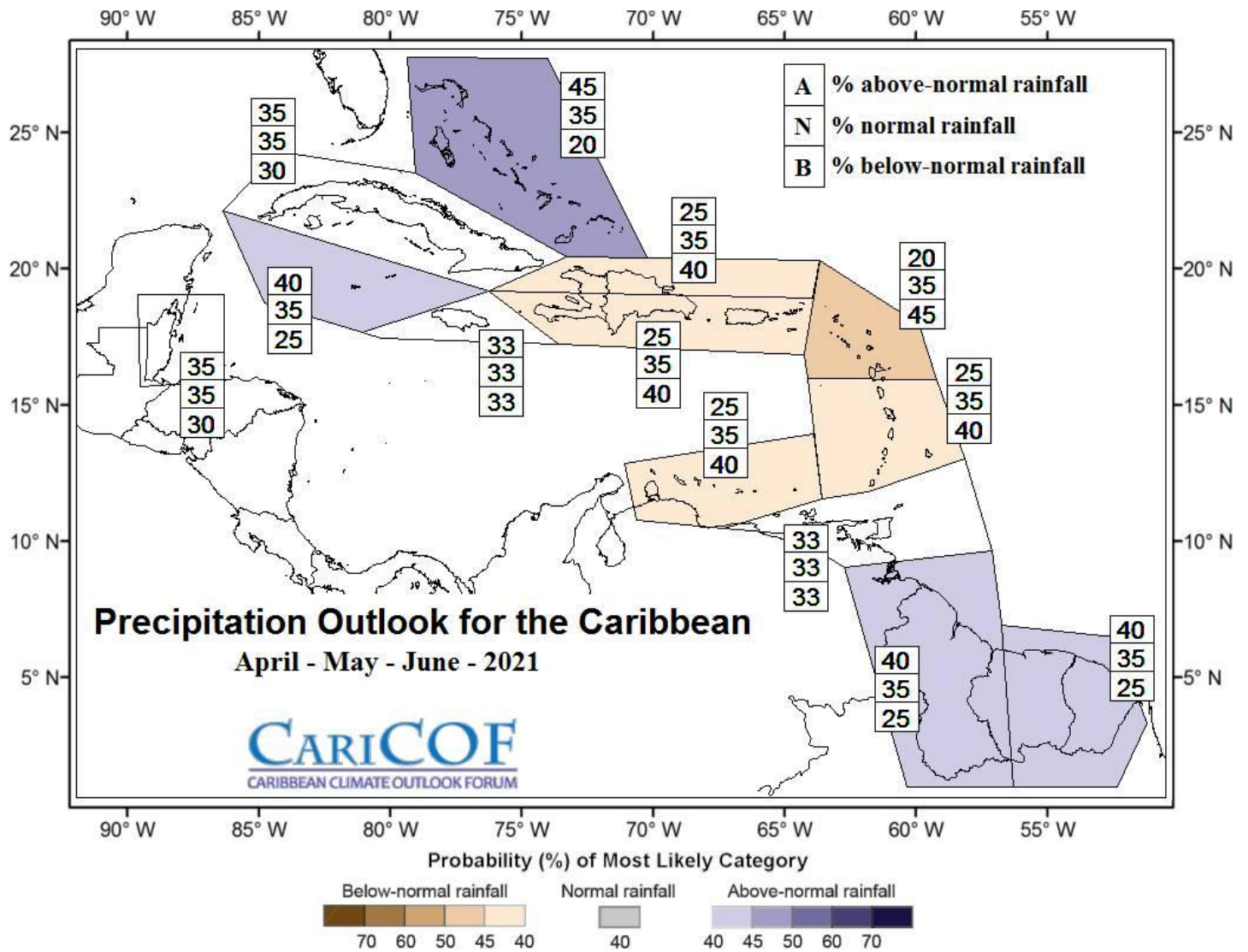


Figure 5. CariCOF 3-month rainfall forecast.

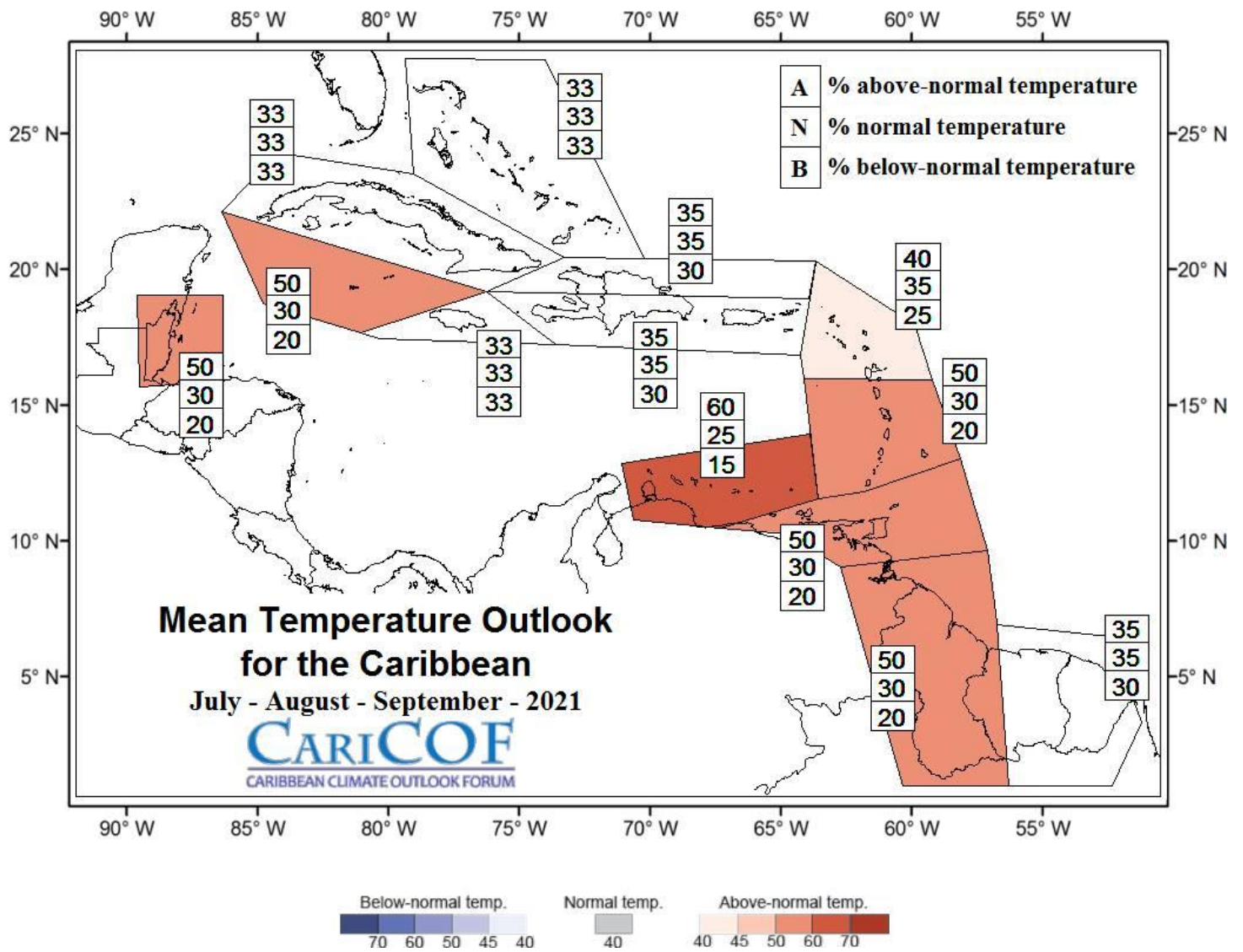


Figure 6. CariCOF 3-month temperature forecast

	Max Temp (°F)	Min Temp (°F)	Mean Temp (°F)	Monthly departure from normal Mean Temp (°F)
JSJ	89 – Mar 7 th *	70 – Mar 4 th	79.2	0.3
IST	90 – Mar 30 th	73 – Mar 3 rd *	80.7	1.3
ISX	88 – Mar 29 th *	67 – Mar 14 th	79.0	0.4

Table 1. Temperature highlights for the local international airports.

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

	Total Monthly Rainfall	Monthly departure from normal rainfall	Year-To-Date departure from normal rainfall.
JSJ	2.07''	0.12''	-0.93''
IST	0.61''	-0.81''	-1.93''*
ISX	0.55''	-1.01''	-2.06''

Table 2. Rainfall highlights for the local international airports.

*The official total rainfall for IST is missing 7 days of rainfall data in the month of February due to equipment problems. Significant rainfall was observed in a couple of days within that period. The radar estimated **1.39''** of rain during that 7-day period.

	Records Set or Tied This Month	Previous Record and Year
JSJ	-No Records-	N/A
IST	-No Records-	N/A
ISX	-No Records-	N/A

Table 3. Rainfall records that were set in March 2021