

Climate Review for PR and USVI – July 2019



Synopsis: After dry conditions in the early days of July, a few significant rainfall events were noted across the local area with multiple rainfall records broken, and some temperature records as well. Many areas in Puerto Rico and the U.S. Virgin Islands observed higher than normal rainfall, which included the local international airports. The overall area with any drought classification by the U.S. Drought Monitor has been slowly decreasing for the past few weeks, except in areas that did receive below normal rainfall.

Observed Conditions:

Normally during the month of July it is normal to observe periods of hot and fair weather with haze due to Saharan dust with occasional days of showers and thunderstorms as tropical waves pass by. This month was no exception, some days were hot, some were rainy, some days were both hot and rainy, and in a few instances the days were cooler than normal. Several records were broken this month, both rainfall and temperature records, in fact this month we had a rare daily low-temperature record that was tied and one that was broken. With regards to rainfall, many areas received higher rainfall than normal across Puerto Rico and the U.S. Virgin Islands. That said, portions of central and southern Puerto Rico managed to receive below normal rainfall, adding to the rainfall deficit, which is currently estimated to be between 12 and 24 inches across portions of south, central and eastern interior of Puerto Rico and the western sections of the Luquillo Mountain Range.

The local drought conditions (Figure 1) improved from the previous month. Puerto Rico now has 12.03% coverage area classified as “Severe Drought” (D2), the area under “Moderate Drought” (D1) is now at 9.69% and the “Abnormally Dry” (D0) area is at 20.64%. In addition, the area under any kind of drought classification (D0-D4) decreased to 42.37%. Even though the U.S. Virgin Islands all received higher than normal rainfall, it was mostly due to short term rainfall events, but there is still a rainfall deficit in the long term. Therefore, all three islands were given the classification of D1, which is an improvement from last month’s D2 (Figure 2).

The departure from normal rainfall estimates this month ranged from 14 to 18 inches above normal across northwestern and northeastern Puerto Rico to about 3 inches below normal across portions of the eastern and central interior as well as southern Puerto Rico (Figure 3). The total monthly rainfall estimates by the Doppler radar ranged from under an inch across southwestern Puerto Rico, to over 20 inches across portions of western and northeastern Puerto Rico. Saint John island had an estimate of over 5 inches of rain once again this month, while Saint Thomas has estimates that reach 10 inches across the western portion of the island, and Saint Croix observed generally less rainfall compared to the other islands, ranging from 3 to 6 inches (Figure 4).

The local international airports observed above normal rainfall (Table 1), in fact, it was the wettest July on record for the Saint Thomas international airport. The local international airports observed mean temperatures that were near normal, all within a degree of normal (Table 2). However, several records were tied or broken, both in high and low temperatures (Table 3). The overall highest temperature observed in July across any of our local COOP stations was 100°F at the Ponce 4E station and the lowest temperature was 60°F at the Aibonito 1 S and Toro Negro stations.

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). The weak El Niño is forecast to become to ENSO-neutral within the next 3 months with 55-60% confidence. With ENSO-neutral conditions there is less skill in the expected impacts as variability increases with no clear signal for rainfall or temperature drivers. August is a relatively wet month, with more tropical waves moving through, so any wet spells could bring some relief to the drought conditions. **More info:** <http://rcc.cimh.edu.bb/climate-outlooks/>

Figures and Tables

U.S. Drought Monitor Puerto Rico

August 6, 2019
(Released Thursday, Aug. 8, 2019)
Valid 8 a.m. EDT

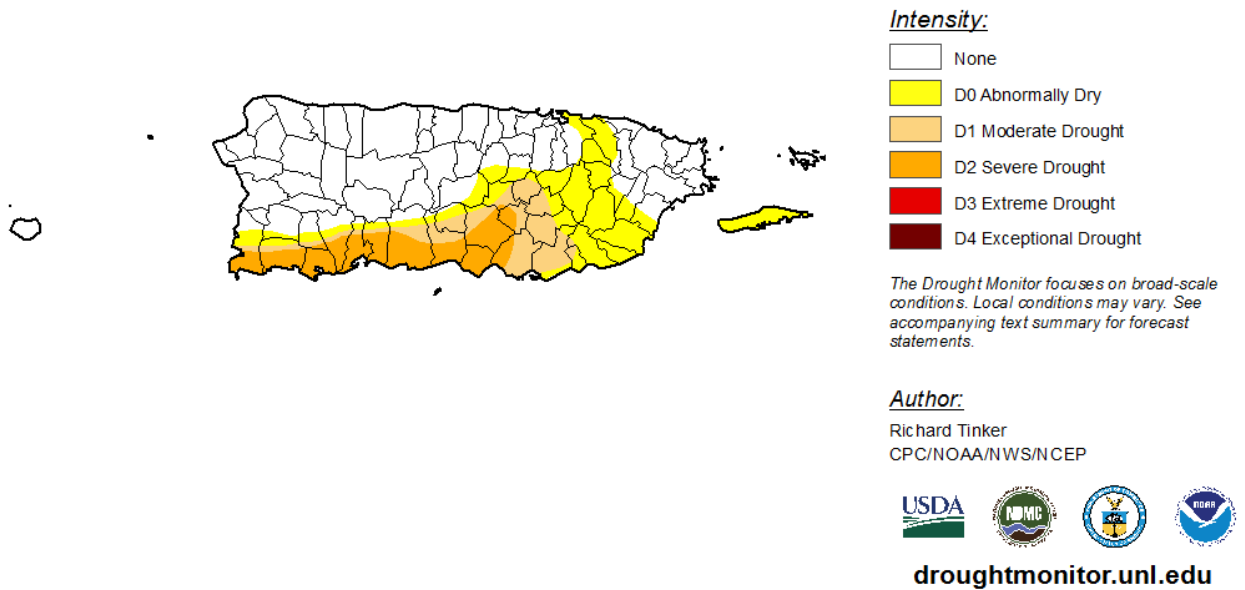


Figure 1. U.S. Drought Monitor for Puerto Rico. Released August 8, 2019.

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

August 6, 2019
(Released Thursday, Aug. 8, 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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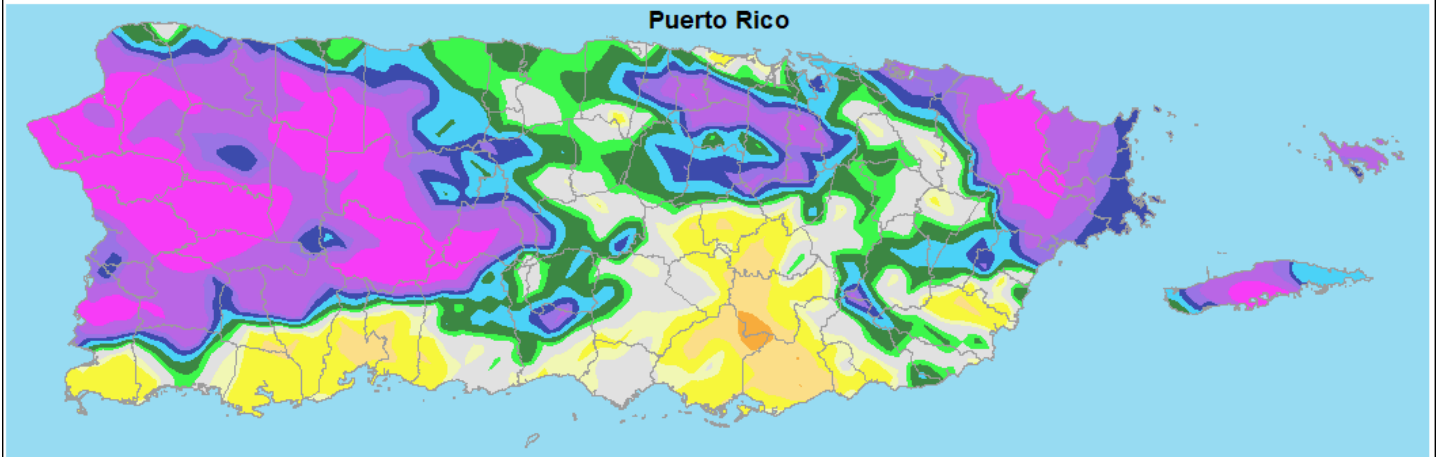
Figure 2. U.S. Drought Monitor for the US. Virgin Islands. Released August 8, 2019.



July 2019 Estimated Departure from Normal Rainfall
National Weather Service WFO San Juan
Data Source: AHPS*
Valid for July 1, 2019 to August 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)		
-8 or Lower	-1 to -2	2 to 3
-5 to -8	-0.5 to -1	3 to 4
-4 to -5	-0.5 to 0.5	4 to 5
-3 to -4	0.5 to 1	5 to 8
-2 to -3	1 to 2	8 or Higher

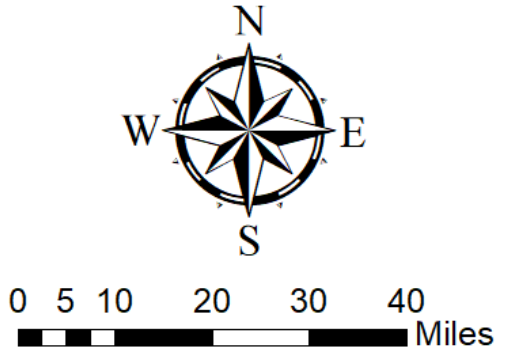


Figure 3. Departure from normal rainfall for the month of July 2019.



July 2019 Estimated Rainfall

National Weather Service WFO San Juan

Data Source: AHPS
Data is Preliminary

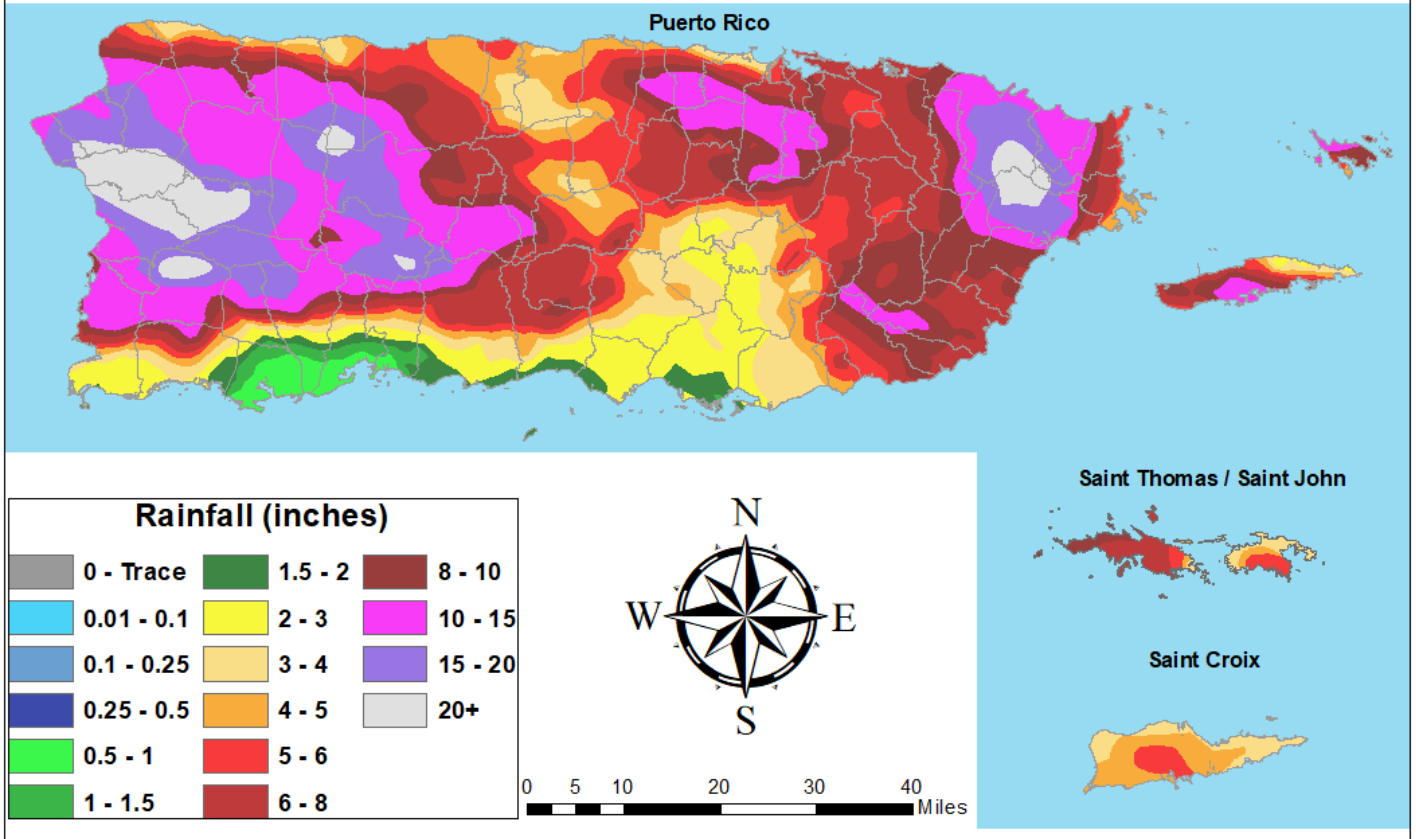


Figure 4. Total estimated rainfall for the month of July 2019.

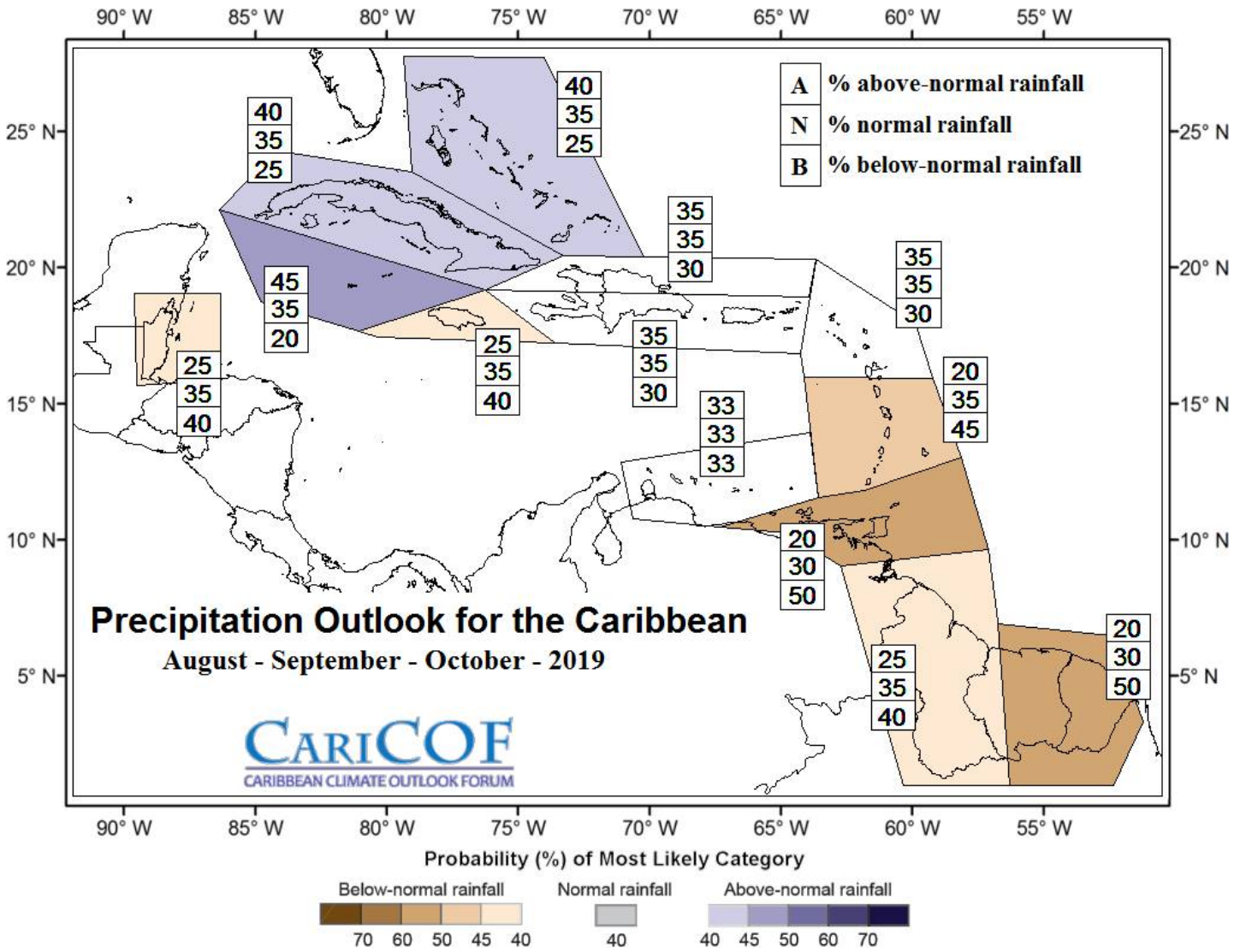


Figure 5. CariCOF 3-month rainfall forecast.

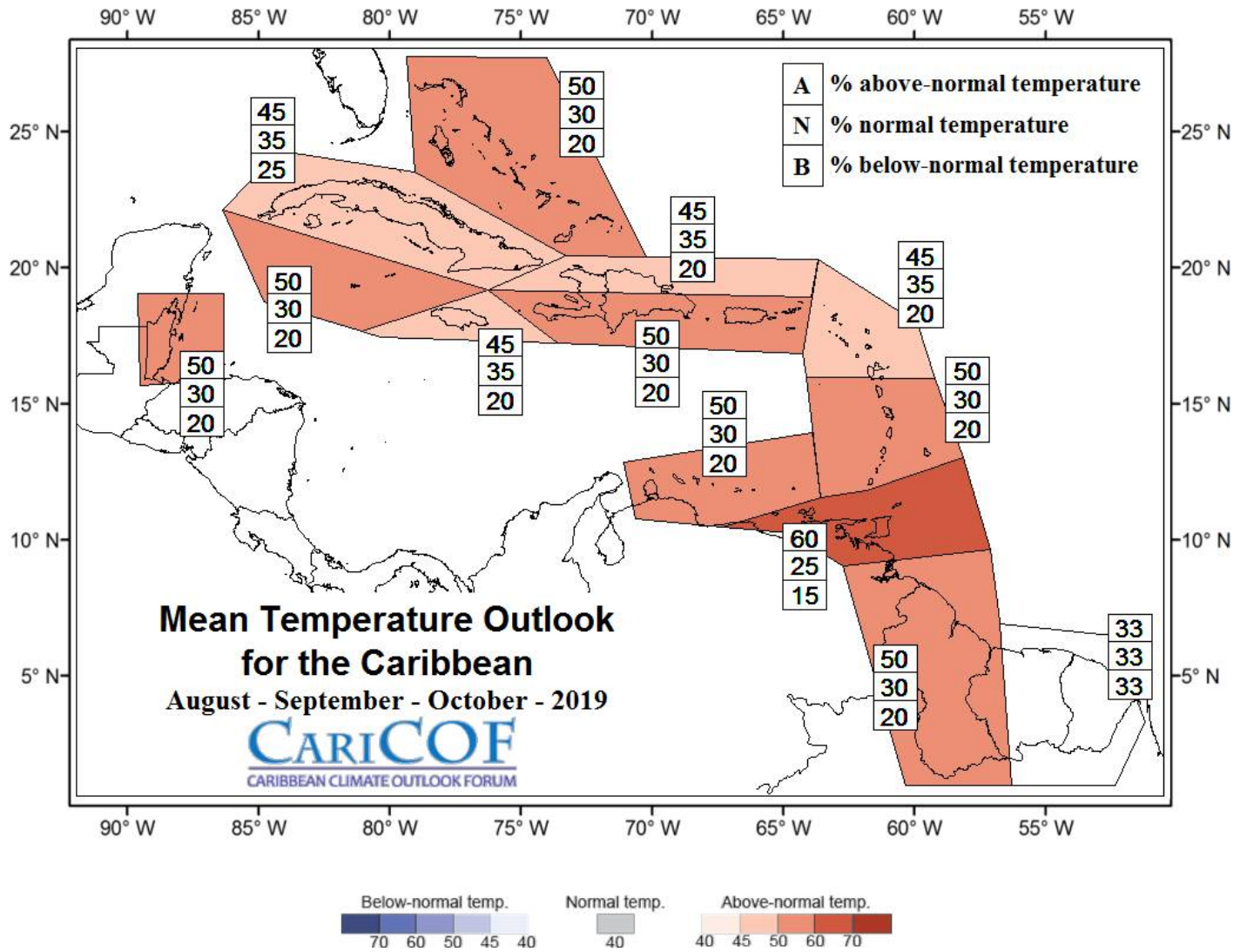


Figure 6. CariCOF 3-month temperature forecast.

	Total Monthly Rainfall	Monthly departure from normal rainfall	Year-To-Date departure from normal rainfall.
JSJ	6.72"	1.65"	-8.11"
IST	7.75"	4.90"	0.28"
ISX	4.67"	1.63"	-1.23"*

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	93 – July 23 rd	75 – July 31 ^{st*}	84.0	0.6
IST	93 – July 18 ^{th*}	74 – July 31 st	84.5	0.5
ISX	93 – July 24 th	73 – July 11 th	83.4	-0.2

Table 2. Temperature highlights for the local international airports.

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

	Records Set This Month	Previous Record and Year
JSJ	Daily Rainfall - July 30 - 2.35"	2.08" - 2006
	Max Temperature - July 4 - 92°F	92°F - 1997
	July 23 - 93°F	92°F - 1980
IST	Monthly Rainfall - 7.75"	7.41" - 1958
	Daily Rainfall - July 31 - 4.88"	1.43" - 2016
ISX	Daily Rainfall - July 11 - 0.48"	0.23" - 1960
	July 25 - 1.19"	0.75" - 1993
	Max Temperature - July 4 - 92°F	92°F - 2014
	July 24 - 93°F	93°F - 2017
	Min Temperature - July 11 - 73°F	73°F - 2011

Table 3. Records that were set in the month of July 2019