March 2017 Climate Review for Puerto Rico and U.S. Virgin Islands.

Synopsis: Although March is a climatologically dry month across the local islands, March 2017 can be described as a wet month.

Summary

An active weather pattern was observed during March as a series of weather features affected the region, giving several sectors of the islands above to well above normal rainfall. A frontal boundary affected the region from March 5th to March 7th, producing rounds of numerous showers across most of Puerto Rico and the USVI. This weather feature also created very hazardous marine conditions. After a fair weather pattern around the middle of the month, a more active weather pattern returned from March 20th through the end of the month as a slow moving mid to upper-level trough developed across the western Atlantic. This produced a persistent southerly flow that helped to bring in abundant low to mid-level moisture across the region. This created a favorable environment for several rounds of moderate to heavy showers, which affected several sectors of the islands from time to time.

Based on the Cooperative Observer Network Data (COOP), 192 % of the normal rainfall was observed across PR. Preliminarily, an average rainfall total of 5.48 inches was measured, which is 2.62 inches above normal (Table 1). Across St. Thomas/St. John and St. Croix, an average rainfall total of 1.57 and 6.22 inches was observed respectively. In terms of temperature, the mean temperature for PR was 75.4ºF, which is approximately 1.1ºF warmer than the 30-year average from the National Centers for Environmental Information (NCEI).

At the primary climatological data sites, a rainfall total of 6.40 and 5.83 inches was observed at Henry E. Rohlsen Airport in Saint Croix (TISX) and Cyril E King Airport in St Thomas (TIST), respectively. This is 4.84 and 4.41 inches above the normal rainfall at TISX and TIST, respectively. In fact, March 2017 ended as the wettest March on record at TISX and the 2nd wettest March on record at TIST.

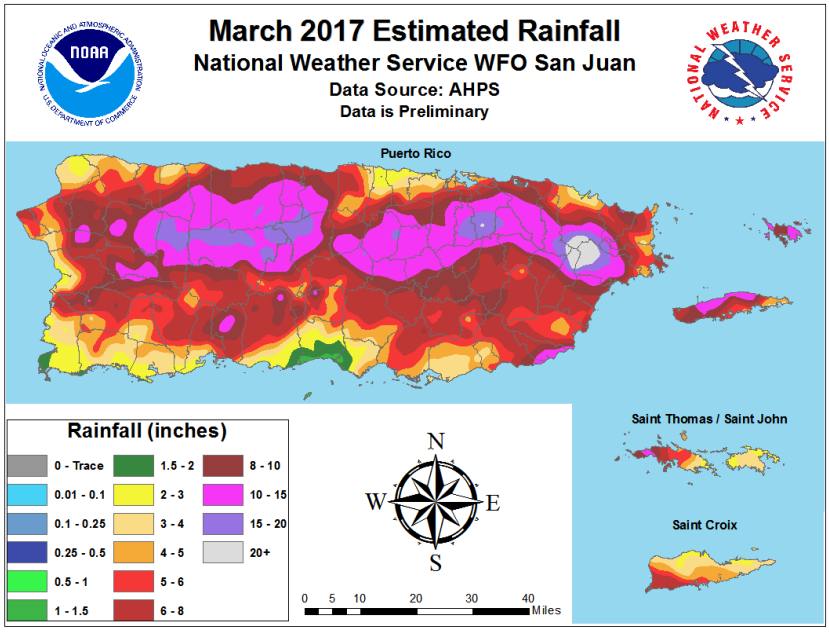


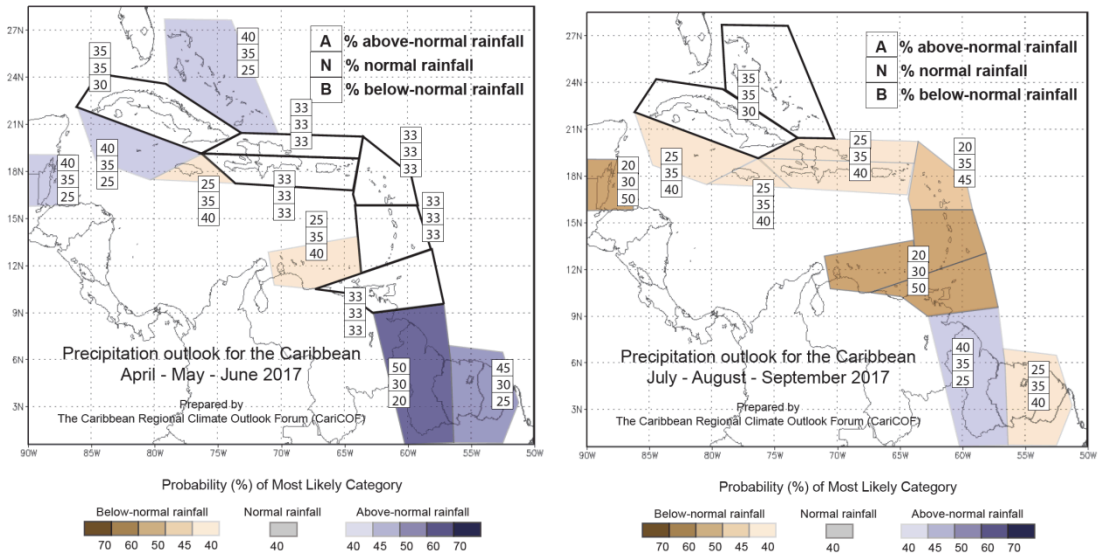
Figure 1. Rainfall Totals based on AHPS

Looking Ahead

ENSO-neutral conditions are favored to continue through at least the Northern Hemisphere spring 2017, with increasing chances for El Niño development into the fall. However, forecasts made in March are notoriously unreliable due to the so-called spring predictability barrier.

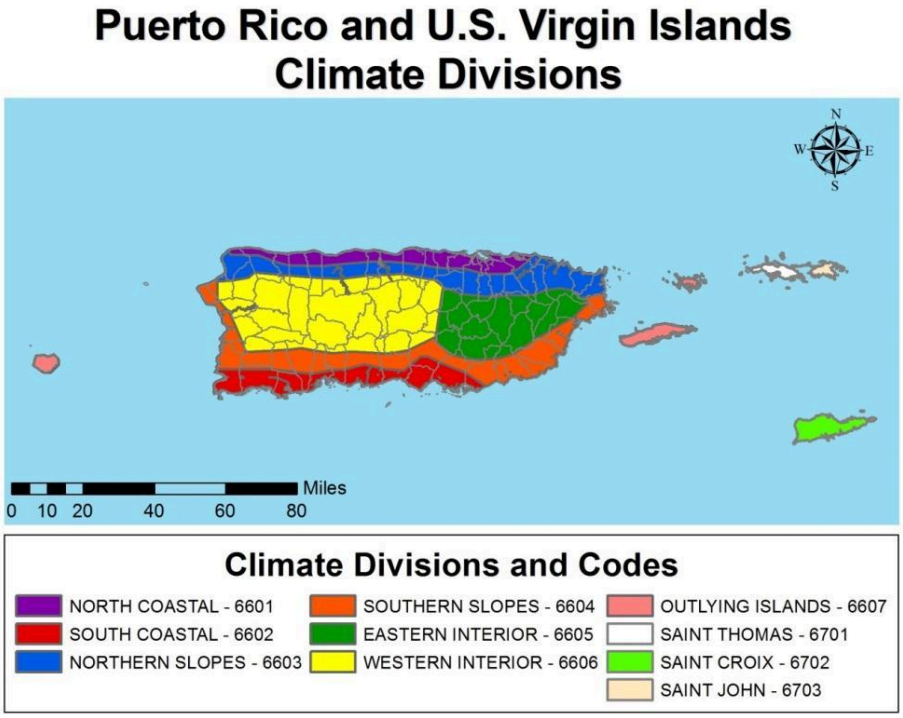
Tropical North Atlantic Sea Surface Temperatures (SSTs) tend to remain slightly above average in the eastern half of the Caribbean Sea and around the US east coast, while the remainder of the region sees SSTs around average. Current anomalies are expected to persist throughout AMJ and JAS. As ENSO conditions are currently neutral, no impact on Caribbean rainfall is expected. However, with a possible El Niño forecasted by JAS, there are increased chances for drier than normal conditions in much of the Caribbean.

Warm SSTs in the NW Caribbean may lead to above-average humidity and atmospheric instability going out of the dry season, which tilts the odds towards a wetter first half of the wet season. With SSTs remaining above average throughout the regions, air temperatures are also expected to be warmer than average.



More Info: http://rcc.cimh.edu.bb/long-range-forecasts/caricof-climate-outlooks/

Average Rainfall Accumulation per climate zones based on COOP



	North Coastal	South Coastal	Northern Slopes	Southern Slopes	Eastern Interior	Western Interior	All PR	St Thomas / St John	St Croix
Observed (March)	5.71	2.08	3.65	1.87	10.20	7.47	5.48	1.57	6.22
Normal (March)	2.87	1.78	3.23	2.28	3.90	3.10	2.86	1.47	1.53
% PON (March)	**199**	**117**	**113**	**82**	**262**	**241**	**192**	**107**	**407**
Accumulated YTD	11.56	3.88	10.51	3.68	16.13	14.69	10.50	5.16	10.26
Normal accumulation YTD	9.89	4.85	10.46	6.14	12.51	8.87	8.79	5.90	5.14
% PON accumulated YTD	**117**	**80**	**100**	**60**	**129**	**166**	**119**	**87**	**200**

Table 1. March 2017 and Year to date (YTD) Rainfall (inches). Percent of Normal (PON).

Historical Rainfall and Temperature

	Puerto Rico		San Juan Area		IST		ISX	
1	2005	0.35”	2005	T	2008	0.01”	1951	0.17”
2	1957	1.10”	1951	0.45”	1959	0.36”	2003	0.29”
3	1951	1.13”	1924	0.46”	1984	0.44”	2005	0.39”

Table 2. Driest March on record.

	Puerto Rico		San Juan Area		IST		ISX	
1	2012	9.19”	1927	9.38”	2004	6.23”	2017	6.40”
2	1972	5.86”	2012	9.27”	2017	5.83”	1985	4.15”
3	1963	5.67”	1913	7.18”	1961	4.37”	2012	3.81”

Table 3. Wettest March on record.

	Puerto Rico**		San Juan Area		IST		ISX	
1	2010	76.9 °F	1983	82.2 °F	1993	81.8 °F	2010	80.6 °F
2	2007	76.6 °F	1981	80.9 °F	1994	81.7 °F	1983	80.6 °F
3	1983	76.5 °F	2010	80.7 °F	1979	81.3 °F	1973	80.5 °F

Table 4. Warmest March on record.

	Puerto Rico**		San Juan Area		IST		ISX	
1	1940	67.5 °F	1951	73.8 °F	2009	76.5 °F	1951	75.8 °F
2	1943	67.6 °F	1907	74.0 °F	2000	76.5 °F	1982	75.9 °F
3	1941	68.2 °F	1939	74.1 °F	1955	76.6 °F	1955	75.9 °F

Table 5. Coolest March on record.

**** Following years are not included : 1956, 1957, 1961, 1697 and 1973****

	Puerto Rico	San Juan Area	IST	ISX
Temperature	74.3 °F	78.9 °F	79.4 °F	78.6 °F
Rainfall	2.86”	1.95”	1.42”	1.56”

Table 6. Normal Values for March

Monthly and Seasonal Highlights for Primary Climatological Data Sites.

	March
San Juan Area	4th wettest
IST	2nd wettest
ISX	wettest

Table 7. March 2017

Additional Highlights Based on COOP Data

Wettest Days

Station	Inches (inches)	Date
PALMA SOLA	3.99	3/7/2017
MOROVIS 1 N	3.9	3/7/2017
AIBONITO 1 S	2.94	3/30/2017

Highest Maximum Temperatures

Station	Temperature (°F)	Date
AGUIRRE	92	3/6/2017
PONCE 4 E	91	3/6/2017
JUNCOS 1 SE	90	3/29/2017

Lowest Minimum Temperatures

Station	Temperature (°F)	Date
ADJUNTAS SUBSTN	53	3/2/2017
MARICAO 2 SSW	56	3/8/2017
PONCE 4 E	58	3/6/2017

Data is preliminary and has not undergone final quality control by the National Centers for Environmental Information / NCEI/. Therefore, this data is subject to revision. Report based on data received until April 10th 2017.

Puerto Rico Climate Record Period: 1940 to 2017
San Juan Metro Area Climate Record Period: 1898 to 2017 (Primary climatological site)
Cyril E. King Airport/St Thomas Climate Record Period: 1953 to 2017 (Primary climatological site)
Henry E. Rohlsen Airport/St Croix Climate Record Period: 1951 to 2017 (Primary climatological site)