

**THE ATLANTIC HURRICANE SEASON SUMMARY – 2015**  
**SPECIAL FOCUS ON ANTIGUA AND BARBUDA**



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**Updated April 15, 2016**



**Satellite Image Courtesy NOAA: Tropical Storm Erika – Aug 27, 2015**

# The Atlantic Hurricane Season Summary – 2015 Special Focus on Antigua and Barbuda

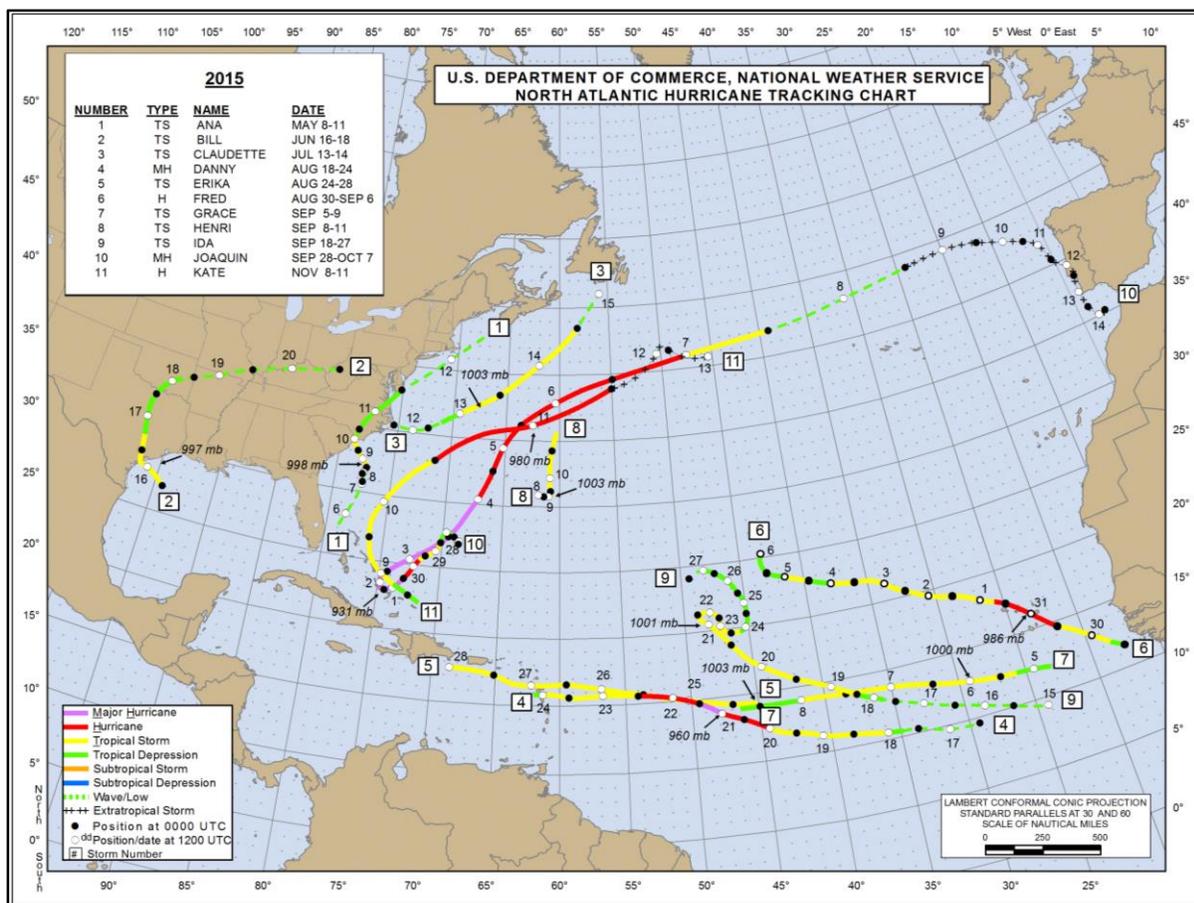
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## The Season in Brief

The 2015 Atlantic hurricane season was below average. It produced 11 named storms. Of the eleven, four became hurricanes and two reached major hurricane status - category three (3) or higher on the Saffir-Simpson Hurricane Wind Scale. The strongest tropical cyclone for the season was Major Hurricane Joaquin with peak winds of 155 mph and minimum pressure of 931 millibars.



Map 1: Tropical cyclone tracks for the 2015 hurricane season (Courtesy NHC).

## Relative to Antigua and Barbuda

Relative to Antigua and Barbuda, the rest of the northeast Caribbean (Leeward Islands and the British Virgin Islands), four (4) tropical cyclones entered or formed in the defined monitored area (10N 40W – 10N 55W – 15N 70W – 20N 70W – 20N 55W – 15N 40W – 10N 40W): Danny, Erika, Grace and Ida. All four cyclones had generally minor impact on the northeast Caribbean. None of the received sustained tropical storm strength winds (at least 34 knots). The centre of Erika passed within 35 miles South of Antigua and over Montserrat. However, due to the disorganized nature of the system, only minor impacts were observed. On average, Antigua is affected ([directly hit, hit or brushed](#)) by a named storm every other year, a hurricane every 3 years and a major hurricane every 7-8 years.

## Detail and Perspective

In terms of number, the season had near the normal of 12 named storms, near the normal of 6 hurricanes and also near the normal of 3 major hurricanes. It was the third fewest number of named storms since 1998.

Further, the season was below normal with respect to the Accumulated Cyclone Energy (ACE) index, which was 63. The ACE index, measures the collective strength and duration of named storms and hurricanes. The index was 68% of the median and 60% of average (1981 – 2010). This is the 4<sup>th</sup> lowest since 1995. Compared to last year, 2015 had three more storms but 8 fewer ACE. Joaquin alone accounted for [almost half of the ACE](#) with 28.3.

Overall, tropical cyclone activity caused over US\$640 million dollars in damage and 90 deaths. For Antigua and Barbuda, the damage was minimal and there was no loss of life.

The below average hurricane season was due primarily to El Nino and secondarily due to the dry dusty Saharan air. Both contribute significantly to unfavourable atmospheric conditions such as record strong vertical wind shear, dry mid-level air and prevalent sinking motion across the Atlantic Basin. Sea surface temperatures across the tropical North Atlantic were also initially cooler than normal but warmed fairly rapidly during the latter half of the season, lending to very favourable tropical cyclone sea surface conditions.

Our [ensemble forecast for the season](#) was quite good. It called for 9 named storms, 4 hurricanes and 1 major hurricane. Further, the forecast ACE was 52. An average season has 12 named storms and six (6) hurricanes, including 3 major hurricanes and an average ACE of 105.6 (1981 – 2010).

**Radar GUADELOUPE (FWI) 27/08/2015 07H30 UTC (Loc+4H)**

WMO: 78891 - Latitude: 16.316 N - Longitude: 61.346 W - range 200KM - Resolution 1KM

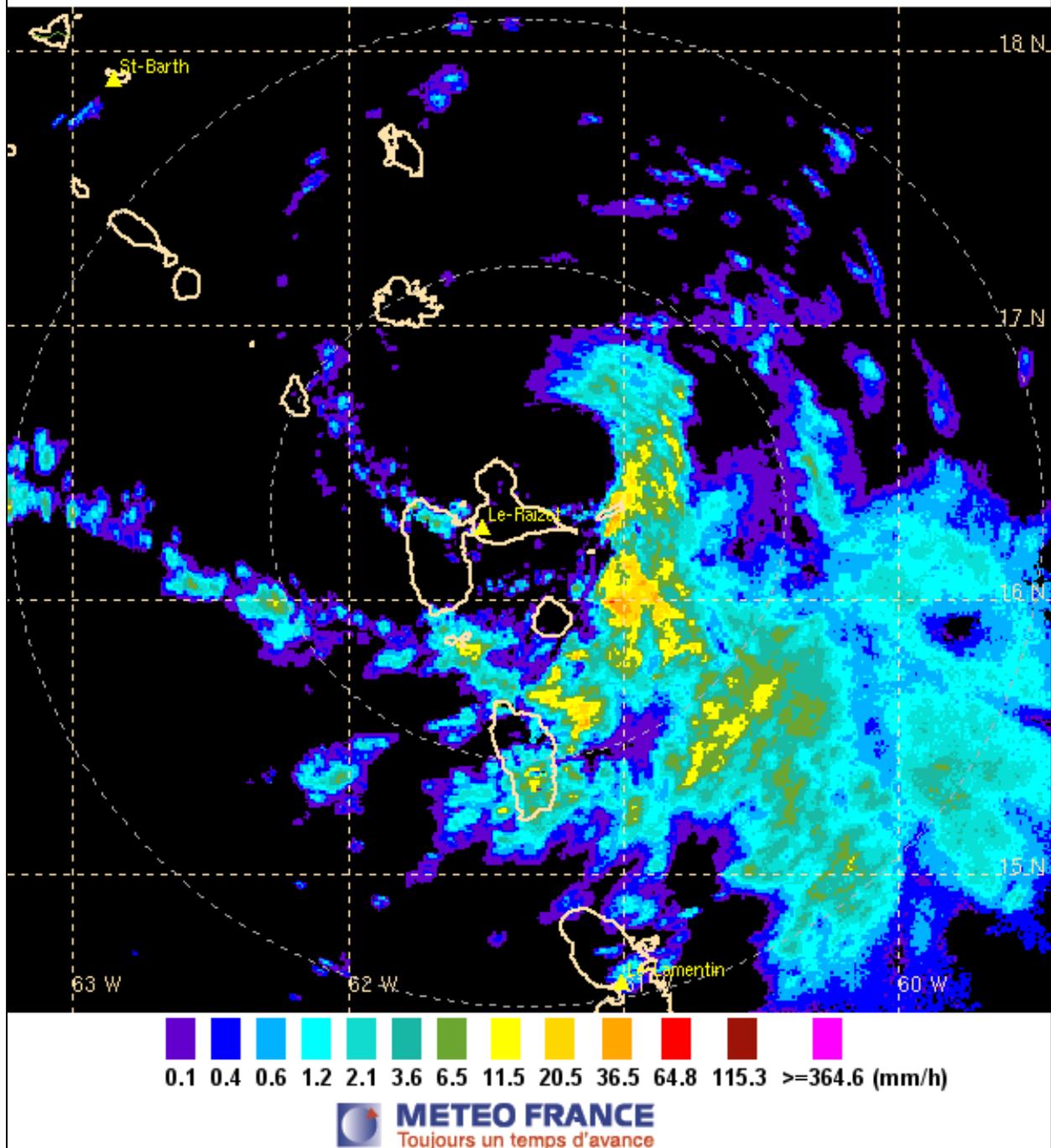


Figure 1: Radar image showing Tropical Erika approx. centred about 53 miles southeast of Antigua Aug 27, 3:30 am Eastern Caribbean Time (Image courtesy Meteo France).

## **Tropical Cyclone in the Monitored Area**

### Hurricane Danny

[By definition](#), Danny brushed Antigua as a storm on August 24. At its closest point, the centre passed about 79 miles south of Antigua at around 8 am. At the V. C. Bird International Airport (VCBIA) in Antigua, the maximum 1-minute sustained wind from Danny was around 23 mph with maximum gusts around 32 mph. Total rainfall from the system, measured at the airport, was about 10.2 mm (0.40 in) over the period August 21-24.

Danny developed from a tropical wave to a tropical depression near the Cape Verde Islands on August 18 and further intensified into Tropical Storm Danny later the same day. The entrainment of the [Saharan Air Layer](#) early on August 19 weakened the storm. Shower and thunderstorm activity congealed into a small central dense overcast, and a small eye became evident, supporting an upgrade to hurricane intensity at 11 am on August 20. Moving west-northwestward, Danny intensified further into the first major hurricane with peak winds of 115 mph. Following peak intensity, a combination of stronger wind shear and drier air caused Danny to rapidly weaken to a minimal tropical storm by the afternoon of August 23. On August 24, Danny dissipated 45 miles west-southwest of Guadeloupe.

### Hurricane Erika

Erika made a hit on Antigua on August 27. The centre passed about 35 miles South of Antigua at around 5 am. The maximum 1-minute, sustained wind speed measured at the VCBIA was 31 mph at 11:47 am. The maximum gust was 39 mph, recorded at 12:09 pm. At the NOAA station in Barbuda, the maximum 1-minute, sustained wind speed measured was 45 mph at 2:54 pm and the maximum gust was 53 mph at the same time.

While the centre of Erika passed partially over Guadeloupe, Dominica took the brunt of its impact. Some parts of Dominica got over 320 mm (12 in) of rainfall in less than 12 hours. According to Wikipedia.org, a total of 890 homes were destroyed or left uninhabitable while around 14,300 people were left homeless. Erika killed at least 31 persons in Dominica, the deadliest disaster in Dominica since [David](#) in 1979. Dollar-wise, the system caused around half a billion dollars in damage, setting the country's development back by about 20 years.

Erika also caused flooding rainfall and mudslides across Guadeloupe, which forced roads to temporarily close. In Puerto Rico, the storm knocked out power and caused over \$20 million damage to agriculture. In the Dominican Republic, at least one weather station measured 616 mm (24.26 in) of rain, including 220 mm (8.8 in) in a one hour. Meanwhile, about 800 homes were damage and 7,300 people were displaced. In [Haiti](#), the system killed five people.

Erika developed from a tropical wave about 1000 miles east of the Caribbean. Contrary to prediction and favourable conditions, the system failed to intensify significantly. Instead, it fluctuated in organization before encountering stronger wind shear. Further unfavourable conditions over the Caribbean Sea stopped Erika from strengthening beyond 50 mph. On August 28, after making landfall on the Dominican Republic and Cuba, it dissipated.

### Tropical Storm Grace

Tropical Storm Grace dissipated about 1000 miles east of the Caribbean. However, its remnants caused heavy thundershowers across Antigua and Barbuda September 10 to 12. Rainfall amounted to 33.6 mm (1.32 in) at the VCBA with 27 mm (1.06 in) falling on September 10.

Grace developed from a tropical wave to a depression on September 5 near the Cape Verde Islands. Initially favourable conditions resulted in the system strengthening to peak winds of 60 mph on September 6. Over the next couple of days, Grace encountered hostile conditions which cause it to dissipate on September 9.

### Tropical Storm Ida

Tropical Storm Ida just barely entered the monitored area. The system passed around 1000 miles east-northeast of Antigua and Barbuda and had no effect on the islands.

Ida developed from a tropical wave to a depression on September 18 about 750 miles south of the Cape Verde Islands. Ida was upgraded to a tropical storm on September 19. Unfavourable conditions relaxed briefly and allowed for Ida to gain peak winds of 50 mph. Thereafter, it was all downhill as hostile conditions weakened the system until it was no more on September 27.

<b>THE ATLANTIC HURRICANE SEASON SUMMARY - 2015</b>				
<b>Name</b>	<b>Date</b>	<b>Max Wind (mph)</b>	<b>Deaths</b>	<b>Antigua/Barbuda Damage - US\$Million</b>
1. <a href="#"><u>TS ANA</u></a>	May 8-11	60	2	0
2. <a href="#"><u>TS BILL</u></a>	Jun 16-18	60	9	0
3. <a href="#"><u>TS CLAUDETTE</u></a>	Jul 13-14	50	0	0
4. <a href="#"><u>MH DANNY</u></a>	Aug 18-24	115	0	Minimal
5. <a href="#"><u>TS ERIKA</u></a>	Aug 25-29	50	36	Minimal
6. <a href="#"><u>H FRED</u></a>	Aug 30-Sep 6	85	9	0
7. <a href="#"><u>TS GRACE</u></a>	Sep 5-9	60	0	0
8. <a href="#"><u>TS HENRI</u></a>	Sep 8-11	50	0	0
9. <a href="#"><u>TS IDA</u></a>	Sep 18-27	50	0	0
10. <a href="#"><u>MH JOAQUIN</u></a>	Sep 28-Oct 7	155	34	0
11. <a href="#"><u>H KATE</u></a>	Nov 9-12	75	0	0

Table 1: The Atlantic Hurricane Season Summary - 2015. Totals: 11 Named Storms, 4 Hurricanes and 2 Major Hurricanes. The season caused about 90 deaths and at least US\$640 million dollars in damage. (Sources – NOAA, Wikipedia.com, ABMS Climate Section).