

THE UPDATED ATLANTIC HURRICANE SEASON FORECAST - 2011

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Overview

The general consensus among tropical cyclone experts continues to be for an above to well above normal Atlantic Hurricane Season for 2011. The consensus calls for 12 to 22 named storms, 6 to 10 hurricanes and 3 to 6 major hurricanes. A normal season averages 11 named storms, 6 hurricanes and 3 major hurricanes (See table 1). Thus far, the season is progressing well ahead of the average season. The science behind the outlook is rooted in the analysis and prediction of current and future global climate patterns as compared to previous seasons with similar conditions. For this season, the experts are citing a warm Atlantic Ocean and the possibility of La Nina developing (which are associated reduced trade winds, surface pressure and upper level westerlies) as the main factors behind the predicted above normal season.

Forecast Source	Forecast Date	Named Storm	Hurricane	Major Hurricane
NOAA	Aug 4, 2011	14 – 19	7 – 10	3 - 5
NOAA	May 19, 2011	12 – 18	6 – 10	3 – 6
EUROSIP	Aug 1, 2011	22	-	-
	May 1, 2011	16	-	-
CSU	Aug 3, 2011	16	9	5
	Jun 1, 2011	16	9	5
	Apr 6, 2011	16	9	5
	Dec 8, 2010	17	9	5
TSR	Aug 4, 2011	16	9	4
	May 24, 2011	14	8	4
	Apr 4, 2011	14	8	4
	Dec 6, 2010	16	8	4
UK Met	May 26, 2011	10 – 17	-	-
NCSU	Apr 14, 2011	13 – 16	7 – 9	3 – 5
Consensus	Aug 31, 2011	12 – 22	6 – 10	3 – 6
Consensus	May 30, 2011	12 – 18	6 – 10	3 – 6
The 2011 Season to Date	Sep 5, 2011	12	2	2
61-yr Antigua Climatology ¹	1950 - 2010	0.7	0.4	0.2
61-yr Atlantic Climatology	1950 - 2010	10.9	6.2	2.7
30-yr Atlantic Climatology	1981 - 2010	12.1	6.4	2.7

Table 1: The Atlantic Hurricane Season Forecast - 2011. Season average (1950 – 2010): 10.9 named storms, including 6.2 hurricanes of which 2.7 intense hurricanes. ¹Storms passing within 105 nautical miles of Antigua. NOAA – National Oceanic Atmospheric Administration. EUROSIP – European Seasonal to Inter-annual Prediction. CSU - Colorado State University. TSR - Tropical Storm Risk. NCSU – North Carolina State University. Consensus – The average of all the forecasts by the Met Service. UK Met – United Kingdom Met Office

The 2011 Season up to Aug 31

The 2011 Atlantic Hurricane Season has produced, thus far, twelve (12) named storms. Of the twelve (12) storms, two (2) became hurricanes (Irene and Katia); both further strengthened to achieve major hurricane status (category three (3) on the Saffir-Simpson Hurricane Wind Scale). By the national definition, Irene hit Antigua and Barbuda. Emily brought unsettled weather to the area; however, it barely brushed Antigua. Damage from both systems was minor. The season is progressing well ahead of the average season with 12 named storms to date as compared to five (5) for an average season. Further, the season is on track to eclipse the 1933 season which produced 21 named storms. The current active season has been due mainly to lower than normal low level winds across the Atlantic, due to a weak Atlantic High Pressure System (negative NAO), which has aided in a warmer than normal Atlantic Ocean. These are all conditions conducive for tropical cyclone development.

The 2010 Season

The 2010 Atlantic Hurricane Season produced nineteen (19) named storms. Of the nineteen (19) storms, twelve (12) became hurricanes and five (5) strengthened to achieve major hurricane status (category three (3) or higher on the Saffir-Simpson Hurricane Wind Scale). By the national definition, Hurricane Earl hit Antigua and Barbuda, and Fiona hit Barbuda and brushed Antigua. Earl cost Antigua and Barbuda a little over EC\$34 million dollars in damage and loss of revenue. The season was well above normal (extremely active) with respect to named storms and hurricanes, and above normal with respect to major hurricanes and Accumulated Cyclone Energy (ACE) index. This season tied with the 1969 seasons for the second most hurricanes and with the 1995 and 1887 seasons for the third most named storms. Also, 2010 was the most active season since 2005. The above normal season was attributed to La Nina and record high sea surface temperature in Tropical North Atlantic Ocean.

What does this mean for Antigua and Barbuda?

Although there have been great advancements in the science of tropical cyclone (depression, tropical storm and hurricane), the science has not yet reached the stage where accurate predictions can be made of how many cyclones will form in a given year. Also the science cannot accurately predict when and where these systems will move or make landfall months in advance. The details of the large-scale weather patterns that direct the path of these cyclones cannot be predicted more than a few days into the future.

There is no clear correlation between the number of tropical cyclone in the Atlantic yearly and the number that affects Antigua and Barbuda. As well, there is no detected trend in the percentages of Atlantic Tropical Cyclones that reach our islands. However, for an above normal season, the climatology (1950 – 2010) suggests the following for Antigua and Barbuda (the 95% confidence interval in bracket):

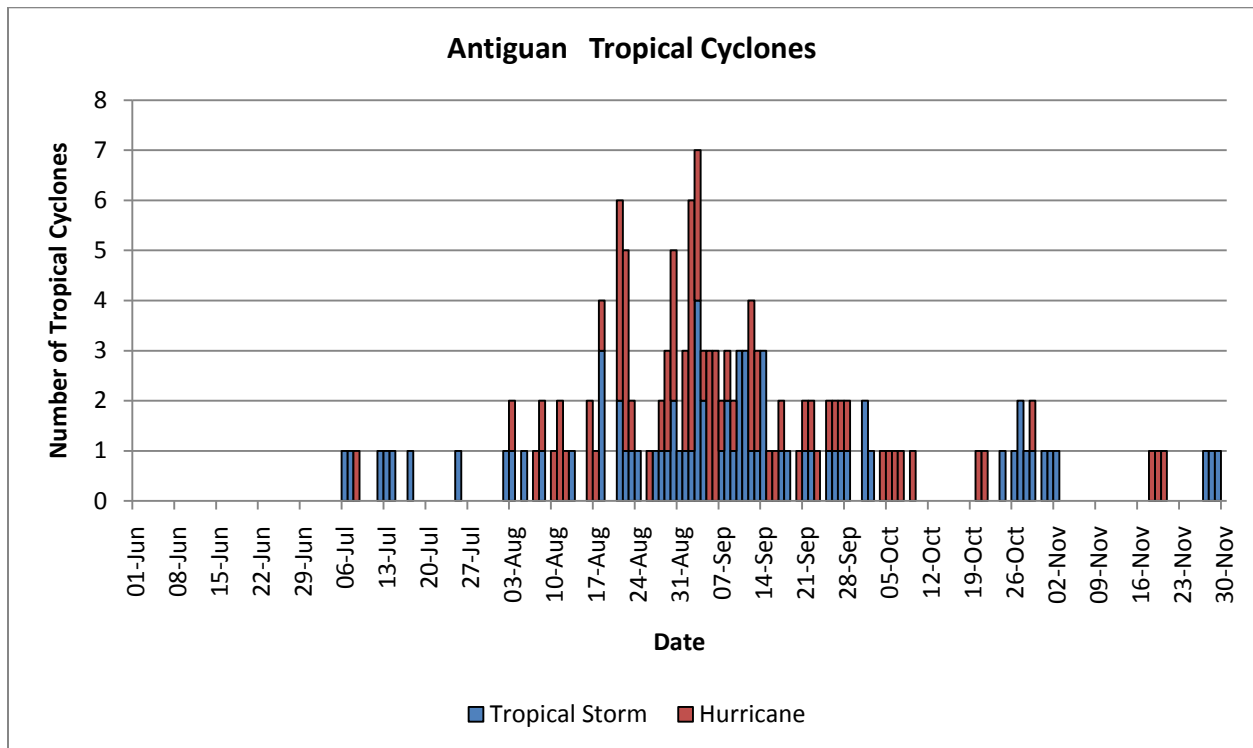
- 53% probability or (28 to 77%) probability of at least one named storm
- 41% probability or (18 to 67%) probability of at least one hurricane
- 29% probability or (10 to 56%) probability of more than one named storm
- 12% probability or (2 to 36%) probability of more than one hurricane
- 0 – 3 named storms, including:
- 0 – 2 hurricanes

Over all, there is a 46% (33 to 59%) probability of at least one named storm per season, 28% (17 to 41%) probability of at least one hurricane, 16% (8 to 28%) probability of more than one named storm and an 8% (3 to 18%) probability of more than one hurricane. The most likely months for tropical cyclones to affect Antigua and Barbuda are August and September. Of all cyclones to impact Antigua, 79% (63 to 90%) occurs over the period August – September. For an above normal season, this number increases to 86% (57 to 98%) with the average impact date of August 31 (\pm 11 days). By climatology, at least one

named storm impacts Antigua and Barbuda every two to three years on average and one at least one hurricane every two to six years. See graph 1 below for a distribution of Antiguan Tropical Cyclones for the period 1851 to 2010.

Regardless of the numbers, we should always approach the hurricane season in the same manner each year: be aware and be prepared. The prevention of the loss of life and property from tropical cyclones is a responsibility that should be shared by all. As a reminder, recall our lesson from Hurricane George of 1998: it only takes one hurricane to make it a bad season.

Accordingly, the Meteorological Service will play its usual role in alerting the public of any tropical cyclone that may form and threaten Antigua and Barbuda, the Leeward Islands and the British Virgin Islands. Although the hurricane season officially runs from June 1 through November 30 each year, tropical cyclones can and have occurred outside the season.



Graph 1: Antiguan Tropical Cyclones – distribution of tropical cyclones within 120 statute miles of Antigua (1851 – 2010)

For more information see the links below or email me at dale_destin@yahoo.com. For interactive weather and climate updates including information on storms and hurricanes follow us on twitter at www.twitter.com/anumetservice

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