



Country Report from Bermuda for the 40th Session of the WMO Regional Association IV Hurricane Committee

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1. Review of 2017 Season

The most notable element of the 2017 hurricane season for Bermuda was the apparent lack of tropical cyclone activity in the area, so much so that Bermuda Weather Service issued 'no' tropical cyclone watches or warnings throughout the entire season. This is relatively unprecedented considering Bermuda's location in the middle of hurricane alley for latter part of the season, and is supported by the fact that this was the first time in 10 years that no tropical cyclone watches or warnings were issued by the weather service. Having said that, Bermuda had experienced four significant hurricane impacts in the previous three seasons (Hurricanes Fay & Gonzalo in 2014, Hurricane Joaquin in 2015 & Hurricane Nicole in 2016), and given that on average Bermuda has one significant hurricane impact once every 6 years, it is perhaps not wholly unexpected that Bermuda finally escaped with a quiet season for 2017.

With respect to the early seasonal forecasts issued in May 2017, near average activity was forecast by most of the major meteorological agencies, due to the expected gradual development of El-Nino conditions. However, the forecast tropical cyclone numbers ramped up significantly by the early August updates, due to weak or non-existent development of El-Nino conditions, coupled with developing warmer than average SSTs and weaker than average windshear in the MDR. As now well recorded and extensively documented due to the numerous records broken, this updated very active seasonal forecast immediately came to fruition, with no less than 10 back-to-back hurricanes (including no less than 6 major hurricanes), running almost constantly from early August through mid-October.

Bermuda Weather Service routinely participates in Hurricane Preparedness Weeks with the local EMO (Emergency Measures Organisation) just before the season start, usually in late May. As per usual, hurricane preparedness was advertised heavily to the local Bermuda community at the end of May 2017. However, in a new development driven by the EMO and the National Disaster Coordinator, the EMO and their associated partners were presented with a mid-season forecast update around the middle of August (ahead of the height of the season), in concert with the official NOAA CPC update. During this presentation update, the message of increased activity was strongly communicated. Despite Bermuda having a quiet season, this update still provided very useful information, as it made the EMO and their partners aware of the strong signal of a general uptick in forecast activity, and that assistance may need to be provided to Caribbean partners.

Despite Bermuda not being directly affected by any tropical cyclones during the 2017 season, there were impacts and general associated activities within the community. For example, with Bermuda being part of CARICOM, the West Indian Association and the British Overseas Territories as well as other regional organisations, the country had an obligation and indeed a genuine willingness to assist other nations in the region that had been devastated by the major hurricanes Irma and Maria. As such many agencies and charities, such as the Royal Bermuda Regiment, Bermuda Police Service and representatives from the Bermuda Red Cross travelled to the affected regions to provide assistance,

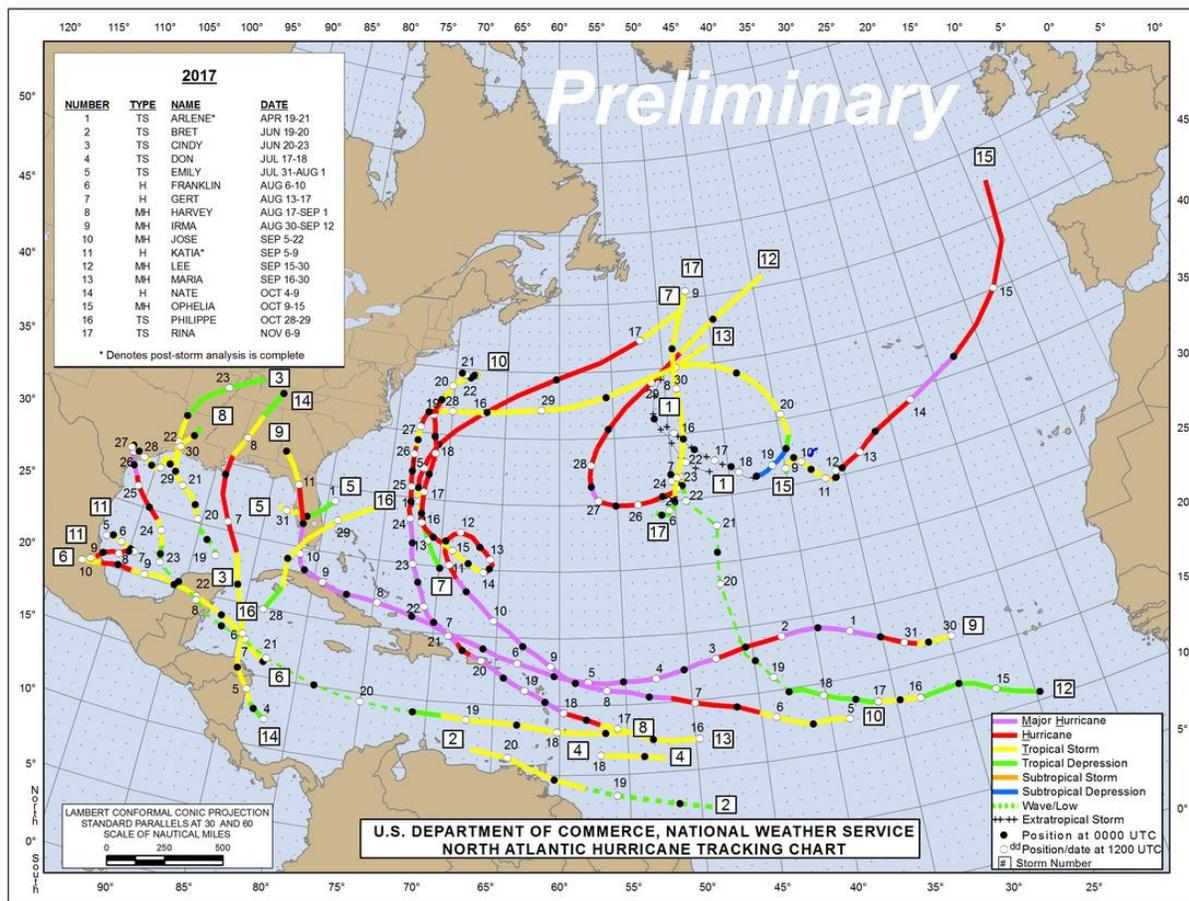


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including the delivery of various life-saving provisions. Indeed, some citizens displaced from the British Virgin Islands were temporarily relocated to Bermuda, with Bermuda's department of immigration expediting work permits to assist in a swift transition (<http://www.royalgazette.com/news/article/20170927/storm-hit-families-welcomed-to-bermuda>).

With a focus on the media and social media, perhaps one rather surprising negative impact on the Island of Bermuda was a significant dent in tourism, most notable during the month of September during the aftermath of hurricane Irma's impact on Barbuda. One of the main media broadcasters erroneously reported 'Bermuda' being impacted by hurricane Irma, rather than 'Barbuda', and this had immediate and lasting impacts on Bermuda tourism (<http://www.royalgazette.com/news/article/20171128/island-confusion-meant-3000-trips-cancelled>). With the advent of social media, the 'incorrect' message (fake news) was swiftly shared across the world with significant and immediate repercussions. Therefore, what may have been an uptick in tourism, due to the Bermuda region not being impacted, unfortunately turned out to be quite the opposite.

With regards the minimal impacts on Bermuda, a few distant tropical cyclones, namely Hurricanes Gert, Jose, Lee and Maria, did produce either small craft warning swells (>9ft) or small craft warning winds (20-33kt), or a combination of both. The main synoptic reason for no significant tropical cyclone impacts to Bermuda was quite simply a strong and resilient ridge across the region throughout much of the season. Further details of the local effects of these tropical cyclones on Bermuda can be found in the Summary Table in section 2.





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2. Summary Table – 2017 Tropical Systems that affected Bermuda

Tropical Season 2017 – Bermuda Tropical Cyclone Summary Table

| Storm Name | Month | Watch/Warning Issued for Bermuda | Maximum Wind Speed at LF Wade (10min averaging) | Maximum Wind on/near Island | Significant Surge, Swell, Rainfall &/or Flooding | CPA & other notes | Verification |
|--------------------------------------|-----------------------|---|--|--|---|--|---|
| Hurricane Gert (Cat 2) | Aug. 16 th | Potential Threat Small Craft Warning | 24G30KT | Crescent: 30G34KT Pearl: 28G31KT | SW-W Swells 5'-9' | 11UTC 16 Aug 2017 281nm NNW | Strong upper/lower ridge over Bermuda forced Gert to the west and then north, around BDA |
| Hurricane Jose (Major Cat 4) | Sept. 10-22 | 1 st : Potential Threat Small Craft Warning 2 nd : Potential Threat Small Craft Warning Thunderstorm Advisory | 1 st : 11G20KT 2 nd : 31G40KT | 1 st : Crescent: 14G16KT Pearl: 15G17KT 2 nd : Crescent: 38G45KT Pearl: 30G39KT | 1 st : S Swells 6'-10' 2 nd : NW-N Swells 7'-12' TSRA on 18th | 1 st : 21UTC 12 Sept 2017 313nm SSW 2 nd : 03UTC 18 Sept 2017 345nm W | Strong upper ridge held Jose to the south and forced it to do a looping track before it moved westerly and then passing west of Bermuda. Heavier showers and TSRA trailing behind Jose. |
| Hurricane Lee (Major Cat 3) | Sept. 26 -28 | Potential Threat Small Craft Warning | N/A | N/A | Swell present, but overrun by Maria Swells | 06 UTC 28 Sept 2017 375nm E | Strong, narrow upper and surface ridging over Bermuda, forcing Lee east |
| Hurricane Maria (Major Cat 5) | Sept. 22-29 | Potential Threat Small Craft Warning | 27G33KT | Crescent: 31G36KT Pearl: 33G40KT | Persistent Swells, SW – W – N 9'-17' | 03UTC 29 Sept 2017 290nm N | Strong, narrow upper and surface ridging over Bermuda forcing Maria to the west and then Upper Trough takes it past to the north |