NOAA Technical Memorandum NWS TPC 2

# TROPICAL CYCLONE INTENSITY CLIMATOLOGY OF THE NORTH ATLANTIC OCEAN, CARIBBEAN SEA, AND GULF OF MEXICO

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December 1997

UNITED STATES
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# PREFACE

This Technical Memorandum is Part 1 of a two part paper.

Part 1 takes the Atlantic Tropical Cyclone "Best-track"[1] Data File (BTDF)(1996), also known as the HURDAT (HURricane DATa file, Jarvinen et al., 1988) and uses the six-hourly data together with an extended version of the Saffir-Simpson Hurricane Scale (SSHS)(Simpson, 1974) to develop a ready reference for the maximum intensity of all tropical cyclones during the period 1886-1996.

Part 2 will make an attempt to document and correct some of the known deficiencies in the earlier (pre-1960) cases, and will contain a discussion expanding on the limitations of the wind speeds in the data set as given in Neumann et al. (1993) and Jarvinen et al. (1988).

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[1] "Best-track" refers to tropical cyclone tracks as determined by the National Oceanic and Atmospheric Administration/National Weather Service/Tropical Prediction Center in post-analysis, in contrast to operational working tracks. Data not available in real-time may result in modifications to both track location and wind estimates prior to recording in this archive.

## PART I

**INTRODUCTION.** The tropical cyclone charts for individual years as given in Neumann, et al. (1993) distinguish between tropical storm and hurricane intensity for the years 1886-1992 (and subtropical storms from 1967 on), but give no indication of the strength of the tropical storms or hurricanes. On the other hand, the Atlantic Tropical Cyclone Best-track Data File (BTDF) upon which the track charts are based, gives six-hourly positions and winds for the life of the storm. There is no ready reference which gives the intensity of each storm each year without having to consult a data printout or computer display, a resource which many people do not have.

The objective of this work is to develop a ready reference for the maximum intensity of all tropical cyclones during the period 1886-1996, not just landfalling United States hurricanes, as given in Jarrell, et al. (1992).

This has been done by using the BTDF file, updated through 1996, together with additional classifications of weak and strong tropical storms using an extended Saffir-Simpson Scale.

The result is a series of tables and figures presenting the data by years, months, regions, etc.

**DATA SET.** The BTDF is updated annually by the NOAA/NWS/Tropical Prediction Center. Many of the limitations of this data set are discussed in Jarvinen et al. (1988) and Neumann et al. (1993).

Of interest here are the wind speeds, and not the track locations. Among the limitations in wind speeds are estimates of tropical cyclone strength based upon satellite classification alone, and sparse data in the years prior to aerial reconnaissance. Other limitations are the various methods of measuring or estimating the sustained surface wind speed, such as different types of instrumentation over land, wind estimation from the state of the sea by observers aboard ships (and reconnaissance aircraft), and estimating surface winds from aerial reconnaissance data.

Part 2 of this Technical Memorandum will discuss some of these limitations in further detail when addressing specific storms or years in the record. **The data presented in the tables and figures of Part 1 have taken the data, as is, without any attempt to correct some known deficiencies. It is believed that the overall climatology will not be significantly affected by any changes proposed in Part 2, although some individual storms/hurricanes might have a significant change.**

**PROCEDURE.** The BTDF was examined for every year from 1886-1996. Each storm of each year was given a category based upon the SSHS. Table 1 shows the extended scale. For the extension, the authors have arbitrarily assigned a scale index number of minus one for a tropical storm with winds of less than 50 knots and zero for a tropical storm with winds of 50 knots or more. This was done in order to distinguish between weak (category minus one) and strong (category zero) tropical storms. Also note that 50 knots is currently used by the National Weather Service as the threshold for damaging winds.

Thus, tropical storms and hurricanes of all categories can be easily summarized as indicated earlier. For subtropical storms which never made the transition to tropical storm or hurricane, the index or category number was assigned in the same way, based upon the maximum sustained wind.

Recognizing the continuing uncertainties in the determination of the standard 33-feet (10-meters) wind above the surface, maximum sustained winds near the center of a tropical cyclone are estimated operationally in 5-kt increments. Refined after-the-fact estimates, as recorded in the BTDF, are also given in 5-kt increments. In the issuance of public advisories, however, these winds are first converted to miles-per-hour, then rounded to the nearest 5-mph. It is only in the case of 115-kt where this second rounding places the hurricane in a different category. Thus, 115 knots becomes 132.34 mph, which rounds down to 130 mph. According to Table 1, 115 kt is a category 4 hurricane, while 130 mph is a category 3 hurricane. In the present work, the BTDF wind estimates in knots are used in the assignment of category, without further rounding. Thus, a 115 kt hurricane is tabulated as a category 4 hurricane. This is noted here to aid future work, in which an apparent discrepancy might be noted with archived public advisories.

Therefore, the threshold wind speeds used in this study to assign Saffir/Simpson hurricane categories were: category 1 - 65 knots, category 2 - 85 knots, category 3 - 100 knots, category 4 - 115 knots, and category 5 - 140 knots.

Others using the BTDF and Hurricane Risk programs (Neumann, 1987), may choose to present the data in other ways. For example, Steven Wallace (1997) has classified tropical storms as a category zero and tropical depressions as a minus one in a different extended version of the SSHS, using the BTDF.

**TABULATION.** Table 2 shows the categorization of numbered storms/hurricanes in the Neumann et al. (1993) track book by the extended SSHS. This table is most useful for determining the maximum strength of any storm/hurricane in any given year.

Table 1. Extended Saffir/Simpson Hurricane Scale (winds only) used to categorize tropical cyclones in the Atlantic Best-Track Data File (BTDF).

EXTENDED SAFFIR/SIMPSON INTENSITY CATEGORIES

| CATEGORY | WIND SPEED | | | |
|---|---|---|---|---|
| | MILES PER HOUR | | KNOTS | |
| -1 | 39 | 54 | 34 | 47 |
| 0 | 55 | 73 | 48 | 63 |
| 1 | 74 | 95 | 64 | 83 |
| 2 | 96 | - 110 | 84 | 96 |
| 3 | 111 | - 130 | 97 | - 113 |
| 4 | 131 | - 155 | 114 | - 135 |
| 5 | | > 155 | | > 135 |

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Table 2. Numbered storms/hurricanes in Neumann et al. (1993) updated through 1996, categorized by the extended Saffir/Simpson scale.

| YEAR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 | -1 | 3 | 1 | 1 | 4 | 3 | -1 | 4 | 3 | 0 | -1 | 3 | 1 | | | | | | | | |
| 1995 | 1 | 0 | 0 | -1 | 1 | 4 | 0 | 2 | 2 | -1 | -1 | 4 | 3 | 1 | 4 | 0 | 3 | 0 | 1 | | |
| 1994 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | | | | | | | | | | | | | | |
| 1993 | -1 | 0 | -1 | -1 | 3 | 1 | 2 | 1 | | | | | | | | | | | | | |
| 1992 | -1 | 4 | 2 | 2 | 0 | 0 | 1 | | | | | | | | | | | | | | |
| 1991 | -1 | 3 | 4 | -1 | 0 | -1 | 2 | 1 | | | | | | | | | | | | | |
| 1990 | 0 | 1 | -1 | 2 | -1 | -1 | 3 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | | | | | | | |
| 1989 | -1 | -1 | 1 | 2 | 2 | 1 | 4 | 5 | 0 | 1 | 0 | | | | | | | | | | |
| 1988 | -1 | -1 | -1 | 1 | 0 | 0 | 1 | 5 | 4 | -1 | 4 | 0 | | | | | | | | | |
| 1987 | -1 | 1 | -1 | -1 | -1 | 3 | 1 | | | | | | | | | | | | | | |
| 1986 | -1 | 1 | 1 | 0 | 2 | 1 | | | | | | | | | | | | | | | |
| 1985 | 0 | 1 | 1 | 1 | 3 | 0 | 4 | 0 | 0 | 1 | 3 | | | | | | | | | | |
| 1984 | 0 | -1 | -1 | 0 | 4 | 0 | 0 | -1 | 1 | 0 | 2 | 1 | 1 | | | | | | | | |
| 1983 | 3 | 1 | 1 | 0 | | | | | | | | | | | | | | | | | |
| 1982 | 1 | 0 | 0 | 0 | 4 | 0 | | | | | | | | | | | | | | | |
| 1981 | 0 | 0 | 0 | 1 | 1 | 3 | 2 | 4 | 3 | -1 | 1 | 0 | | | | | | | | | |
| 1980 | 5 | 2 | 1 | 0 | 1 | 3 | 1 | 0 | 2 | 2 | 1 | | | | | | | | | | |
| 1979 | 0 | 1 | -1 | 5 | -1 | 4 | 2 | 1 | 1 | | | | | | | | | | | | |
| 1978 | -1 | -1 | -1 | 1 | 0 | 4 | 2 | 4 | 0 | -1 | -1 | 1 | | | | | | | | | |
| 1977 | 5 | 1 | 1 | 1 | 1 | 0 | | | | | | | | | | | | | | | |
| 1976 | -1 | -1 | 3 | 1 | -1 | 2 | 3 | -1 | 2 | 1 | | | | | | | | | | | |
| 1975 | 0 | 1 | 3 | 2 | 3 | 2 | 4 | -1 | 0 | | | | | | | | | | | | |
| 1974 | 0 | -1 | 0 | 0 | 3 | 4 | -1 | 0 | 2 | 1 | -1 | | | | | | | | | | |
| 1973 | 1 | -1 | 1 | 0 | 0 | 3 | 1 | 0 | | | | | | | | | | | | | |
| 1972 | 0 | 1 | 2 | 0 | 1 | 0 | -1 | | | | | | | | | | | | | | |
| 1971 | 0 | 1 | 1 | 0 | 0 | 5 | 1 | 2 | 0 | 1 | 0 | -1 | 0 | | | | | | | | |
| 1970 | 1 | 0 | 3 | 0 | 0 | 3 | 0 | -1 | 2 | 1 | | | | | | | | | | | |
| 1969 | 0 | 1 | 5 | 3 | 0 | 3 | 3 | 1 | 3 | 1 | 0 | 0 | -1 | 2 | 2 | 0 | 1 | 1 | | | |
| 1968 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | | | | | | | | | | | | | |
| 1967 | 1 | 5 | 2 | 1 | 0 | 1 | -1 | 1 | | | | | | | | | | | | | |
| 1966 | 3 | 1 | 1 | 1 | -1 | 3 | 0 | -1 | 4 | -1 | 1 | | | | | | | | | | |
| 1965 | -1 | 1 | 4 | 2 | -1 | 1 | | | | | | | | | | | | | | | |
| 1964 | 0 | -1 | 0 | -1 | 4 | 4 | 3 | -1 | 4 | 4 | 3 | -1 | | | | | | | | | |
| 1963 | 2 | 3 | 0 | 1 | 1 | 2 | 4 | 2 | -1 | | | | | | | | | | | | |
| 1962 | 2 | -1 | 0 | 2 | 3 | | | | | | | | | | | | | | | | |
| 1961 | 3 | 4 | 5 | 3 | 4 | -1 | 3 | 0 | 5 | 1 | 0 | | | | | | | | | | |
| 1960 | -1 | 2 | 0 | 1 | 5 | 5 | -1 | | | | | | | | | | | | | | |
| 1959 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 4 | 3 | 0 | 1 | | | | | | | | | | |
| 1958 | -1 | 0 | 5 | 3 | 3 | 1 | 0 | 4 | 4 | 1 | | | | | | | | | | | |
| 1957 | 0 | 4 | 0 | 4 | -1 | -1 | 1 | 0 | | | | | | | | | | | | | |
| 1956 | 0 | 1 | 3 | -1 | 0 | 0 | 1 | 4 | | | | | | | | | | | | | |
| 1955 | 0 | 4 | 3 | 2 | -1 | 2 | 1 | 3 | 3 | 5 | 0 | 3 | | | | | | | | | |
| 1954 | 1 | -1 | 2 | 2 | 3 | 1 | 0 | 2 | 4 | -1 | 1 | | | | | | | | | | |
| 1953 | 0 | 2 | 0 | 4 | 3 | 3 | 0 | 3 | 1 | -1 | 0 | 0 | -1 | -1 | | | | | | | |
| 1952 | -1 | 2 | 3 | 3 | 1 | 2 | 4 | | | | | | | | | | | | | | |
| 1951 | 3 | 0 | 4 | 3 | 5 | 3 | 0 | 2 | 1 | | | | | | | | | | | | |
| 1950 | 4 | 3 | 3 | 5 | 3 | 4 | 2 | 0 | 2 | 3 | 3 | 0 | 1 | | | | | | | | |

Table 2. Continued

1949 2 4 -1 3 -1 -1 0 2 1 4 2 0 0
1948 -1 -1 3 0 1 4 3 4 1
1947 -1 2 1 5 -1 0 -1 1 3
1946 -1 1 -1 2 4 -1
1945 3 -1 0 0 4 0 -1 0 4 2 2
1944 1 0 1 3 0 -1 4 1 2 -1 3
1943 1 0 4 3 -1 2 0 0 2 -1
1942 1 3 2 -1 -1 -1 0 -1 -1 2
1941 -1 1 1 3 3 -1
1940 0 1 1 1 2 -1 -1 -1
1939 -1 1 -1 4 1
1938 0 2 2 5 0 -1 -1 0
1937 0 0 0 2 2 -1 2 -1 -1
1936 -1 -1 1 -1 1 -1 -1 1 -1 1 2 -1 3 -1 2 -1
1935 3 5 -1 3 1 1
1934 0 1 1 -1 1 2 -1 2 0 -1 1
1933 -1 2 -1 -1 1 0 -1 3 -1 -1 3 4 3 1 2 -1 -1 4 2 0 -1
1932 -1 4 1 5 -1 -1 3 -1 -1 4 2
1931 -1 0 0 -1 3 2 -1 -1 -1
1930 2 4
1929 1 4 1
1928 2 1 0 5 0 1
1927 3 2 1 3 0 -1 -1
1926 4 3 2 4 2 4 -1 3 -1 4 -1
1925 -1 2
1924 -1 4 2 1 -1 0 3 2
1923 2 3 2 -1 -1 -1 -1
1922 -1 4 -1 2
1921 2 1 3 0 0 4
1920 2 2 1 1
1919 0 4 -1
1918 2 1 0 2 -1
1917 -1 3 3
1916 3 3 2 3 2 2 -1 -1 2 3 -1 3 3 1
1915 -1 4 3 2 4
1914 -1
1913 2 1 2 0
1912 0 -1 1 1 2 4
1911 1 2 2 -1
1910 0 3 3 3
1909 0 -1 4 0 3 -1 4 -1 3 0
1908 2 2 -1 3 0 2 1 -1
1907 0 0 -1 -1
1906 -1 2 4 4 4 0 2 4 -1 -1 -1
1905 0 0 -1 1 -1
1904 0 2 1 -1 -1
1903 2 3 2 2 0 2 2 2 2
1902 -1 1 2 2 0
1901 -1 0 2 2 3 0 -1 -1 -1 0
1900 4 2 -1 3 0 -1 -1

Table 2. Continued

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1899 | 1 | 3 | 3 | 3 | -1 | 2 | | | | | | | | | | | |
| 1898 | 1 | 2 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | | | | | | | | |
| 1897 | 2 | 2 | -1 | -1 | 0 | | | | | | | | | | | | |
| 1896 | 2 | 3 | 2 | 3 | 2 | 2 | | | | | | | | | | | |
| 1895 | 0 | 2 | 0 | 0 | 3 | -1 | | | | | | | | | | | |
| 1894 | 0 | 2 | 3 | 3 | 2 | 2 | | | | | | | | | | | |
| 1893 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 0 | 0 | | | | | |
| 1892 | -1 | 2 | 2 | 0 | 2 | 0 | 2 | 0 | -1 | | | | | | | | |
| 1891 | 2 | 2 | 2 | 2 | 2 | 2 | -1 | -1 | 2 | 2 | 0 | | | | | | |
| 1890 | 2 | | | | | | | | | | | | | | | | |
| 1889 | 2 | -1 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | | | | | | | | |
| 1888 | 2 | 0 | 2 | 2 | 0 | 0 | 2 | 0 | 2 | | | | | | | | |
| 1887 | 0 | 2 | 0 | 3 | 3 | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 0 | -1 | 2 | 2 | 0 |
| 1886 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | | | | | | | |

Table 3 shows the sums of tropical storms and hurricanes of various strength categories for each year using the extended SSHS (Table 1). A major hurricane is here defined as a category 3, 4 or 5 on this scale. This table is probably most useful for obtaining the maximum and minimum number of any category and/or the rank of any category by year from maximum to minimum or vice-versa.

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Table 3. Sums of tropical storms (T) and hurricanes (H) of various strength categories using the extended Saffir/Simpson scale.

| YEAR | -1 | 0 | 1 | 2 | 3 | 4 | 5 | ALL (T+H) | T | H | MH (MAJOR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1996 | 3 | 1 | 3 | | 4 | 2 | | 13 | 4 | 9 | 6 |
| 1995 | 3 | 5 | 4 | 2 | 2 | 3 | | 19 | 8 | 11 | 5 |
| 1994 | | 4 | 2 | 1 | | | | 7 | 4 | 3 | 0 |
| 1993 | 3 | 1 | 2 | 1 | 1 | | | 8 | 4 | 4 | 1 |
| 1992 | 1 | 2 | 1 | 2 | | 1 | | 7 | 3 | 4 | 1 |
| 1991 | 3 | 1 | 1 | 1 | 1 | 1 | | 8 | 4 | 4 | 2 |
| 1990 | 3 | 3 | 5 | 2 | 1 | | | 14 | 6 | 8 | 1 |
| 1989 | 2 | 2 | 3 | 2 | | 1 | 1 | 11 | 4 | 7 | 2 |
| 1988 | 4 | 3 | 2 | | | 2 | 1 | 12 | 7 | 5 | 3 |
| 1987 | 4 | | 2 | | 1 | | | 7 | 4 | 3 | 1 |
| 1986 | 1 | 1 | 3 | 1 | | | | 6 | 2 | 4 | 0 |
| 1985 | | 4 | 4 | | 2 | 1 | | 11 | 4 | 7 | 3 |
| 1984 | 3 | 5 | 3 | 1 | | 1 | | 13 | 8 | 5 | 1 |
| 1983 | | 1 | 2 | | 1 | | | 4 | 1 | 3 | 1 |
| 1982 | | 4 | 1 | | | 1 | | 6 | 4 | 2 | 1 |
| 1981 | 1 | 4 | 3 | 1 | 2 | 1 | | 12 | 5 | 7 | 3 |
| 1980 | | 2 | 4 | 3 | 1 | | 1 | 11 | 2 | 9 | 2 |
| 1979 | 2 | 1 | 3 | 1 | | 1 | 1 | 9 | 3 | 6 | 2 |
| 1978 | 5 | 2 | 2 | 1 | | 2 | | 12 | 7 | 5 | 2 |
| 1977 | | 1 | 4 | | | | 1 | 6 | 1 | 5 | 1 |
| 1976 | 4 | | 2 | 2 | 2 | | | 10 | 4 | 6 | 2 |
| 1975 | 1 | 2 | 1 | 2 | 2 | 1 | | 9 | 3 | 6 | 3 |
| 1974 | 3 | 4 | 1 | 1 | 1 | 1 | | 11 | 7 | 4 | 2 |
| 1973 | 1 | 3 | 3 | | 1 | | | 8 | 4 | 4 | 1 |
| 1972 | 1 | 3 | 2 | 1 | | | | 7 | 4 | 3 | 0 |
| 1971 | 1 | 6 | 4 | 1 | | | 1 | 13 | 7 | 6 | 1 |
| 1970 | 1 | 4 | 2 | 1 | 2 | | | 10 | 5 | 5 | 2 |
| 1969 | 1 | 5 | 5 | 2 | 4 | | 1 | 18 | 6 | 12 | 5 |
| 1968 | | 3 | 5 | | | | | 8 | 3 | 5 | 0 |
| 1967 | 1 | 1 | 4 | 1 | | | 1 | 8 | 2 | 6 | 1 |
| 1966 | 3 | 1 | 4 | | 2 | 1 | | 11 | 4 | 7 | 3 |
| 1965 | 2 | | 2 | 1 | | 1 | | 6 | 2 | 4 | 1 |
| 1964 | 4 | 2 | | | 2 | 4 | | 12 | 6 | 6 | 6 |
| 1963 | 1 | 1 | 2 | 3 | 1 | 1 | | 9 | 2 | 7 | 2 |
| 1962 | 1 | 1 | | 2 | 1 | | | 5 | 2 | 3 | 1 |
| 1961 | 1 | 2 | 1 | | 3 | 2 | 2 | 11 | 3 | 8 | 7 |
| 1960 | 2 | 1 | 1 | 1 | | | 2 | 7 | 3 | 4 | 2 |
| 1959 | | 4 | 5 | | 1 | 1 | | 11 | 4 | 7 | 2 |
| 1958 | 1 | 2 | 2 | | 2 | 2 | 1 | 10 | 3 | 7 | 5 |
| 1957 | 2 | 3 | 1 | | | 2 | | 8 | 5 | 3 | 2 |
| 1956 | 1 | 3 | 2 | | 1 | 1 | | 8 | 4 | 4 | 2 |
| 1955 | 1 | 2 | 1 | 2 | 4 | 1 | 1 | 12 | 3 | 9 | 6 |
| 1954 | 2 | 1 | 3 | 3 | 1 | 1 | | 11 | 3 | 8 | 2 |
| 1953 | 3 | 5 | 1 | 1 | 3 | 1 | | 14 | 8 | 6 | 4 |
| 1952 | 1 | | 1 | 2 | 2 | 1 | | 7 | 1 | 6 | 3 |
| 1951 | | 2 | 2 | 1 | 3 | 1 | 1 | 10 | 2 | 8 | 5 |
| 1950 | | 2 | 1 | 2 | 5 | 2 | 1 | 13 | 2 | 11 | 8 |

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Table 3. Continued

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1899 | 1 | | 1 | 1 | 3 | 6 | 1 | 5 | 3 |
| 1898 | | 5 | 1 | 3 | | 9 | 5 | 4 | 0 |
| 1897 | 2 | 1 | | 2 | | 5 | 3 | 2 | 0 |
| 1896 | | | | 4 | 2 | 6 | 0 | 6 | 2 |
| 1895 | 1 | 3 | | 1 | 1 | 6 | 4 | 2 | 1 |
| 1894 | | 1 | | 3 | 2 | 6 | 1 | 5 | 2 |
| 1893 | | 2 | | 7 | 3 | 12 | 2 | 10 | 3 |
| 1892 | 2 | 3 | | 4 | | 9 | 5 | 4 | 0 |
| 1891 | 2 | 1 | | 8 | | 11 | 3 | 8 | 0 |
| 1890 | | | | 1 | | 1 | 0 | 1 | 0 |
| 1889 | 1 | 3 | | 5 | | 9 | 4 | 5 | 0 |
| 1888 | | 4 | | 5 | | 9 | 4 | 5 | 0 |
| 1887 | 1 | 6 | | 8 | 2 | 17 | 7 | 10 | 2 |
| 1886 | | 2 | | 8 | | 10 | 2 | 8 | 0 |

One example of information from this table is that the year 1955 is the only year thus far to have had at least one occurrence of each category (at maximum intensity) from minus one to category five. The active year of 1955 had one weak (-1) tropical storm, two strong (0) tropical storms, one category 1 hurricane, two category 2 hurricanes, four category 3 hurricanes, one category 4 hurricane, and one category 5 hurricane. The total of twelve named storms included nine hurricanes of which six were major hurricanes.

Figure 1 gives a graphical depiction of this information for named systems, hurricanes, and major (category 3 or greater) hurricanes.

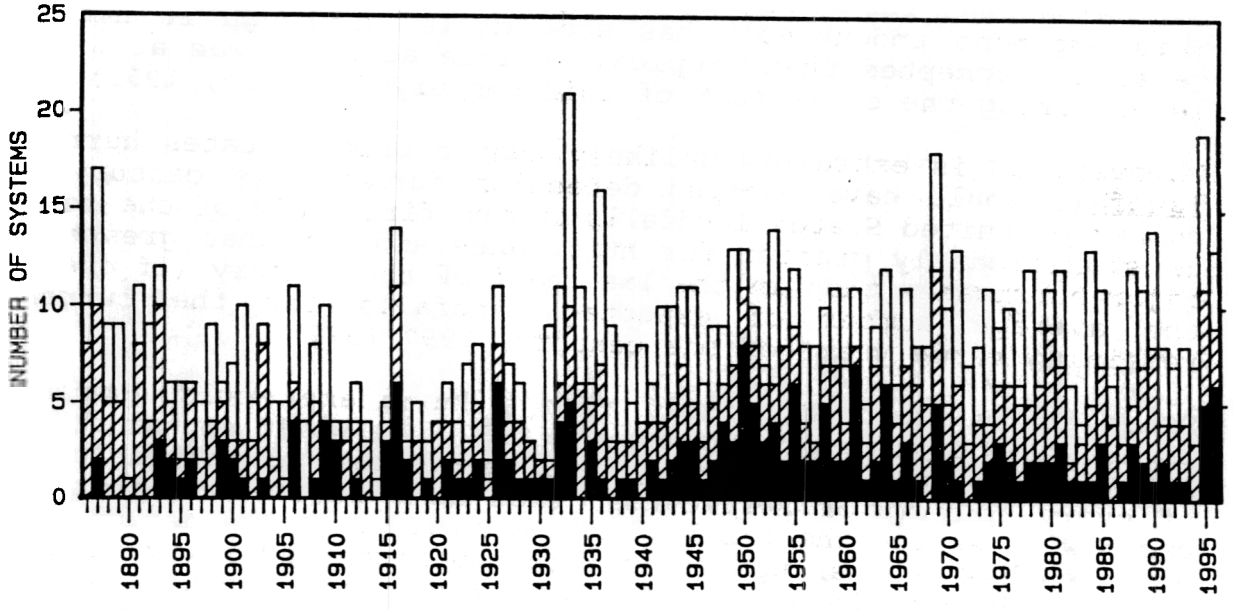


Figure 1. Bars depict number of named systems (open), hurricanes (hatched), and hurricanes category 3 or greater (solid), 1886-1996.

Also of interest are the interdecadal changes in the frequency of tropical storms and hurricanes. Table 4 gives decadal totals for each category, as well as for tropical storms, hurricanes, and major hurricanes.

It is frequently asked whether or not the total tropical cyclone activity in the North Atlantic basin has any relationship to the number of landfalls along the mainland United States coastline.

This question is addressed in Table 5, which gives a comparison of the decadal totals of hurricanes and major hurricanes for the entire North Atlantic basin, with subtotals for U.S. landfalls (landfall subtotals after Table 5, Hebert et al.,1997). It is interesting to note that the maximum number of landfalling United States hurricanes given in Table 5 (bolded) occurs in the decade of the forties, but when hurricane activity for the entire North Atlantic basin is considered, there are many more hurricanes in the decade of the fifties. The total number of major hurricanes for the entire basin is also much higher in the decade of the fifties. The number of major hurricanes making U.S. landfall also reaches a maximum during this decade.

What is particularly striking is the percentage of the total number of hurricanes and major hurricanes to strike the United States in the first fifty years of this century versus the ensuing forty-seven years. In the first fifty years (Table 5, bottom) the percent of both hurricanes and major hurricanes which formed in the North Atlantic basin and then struck the United States was slightly above 40%. In the following forty-seven years, the percent of both was 25%.

It can be argued that detection was poorer prior to 1950. Even though aerial reconnaissance was available in the forties, communications restrictions during World War II were in effect. This argument undoubtedly has some merit, although it has been generally accepted that tropical cyclone activity was at a lower level during the early part of this century (Neumann, 1993).

However, it is extremely unlikely that a United States hurricane landfall would have escaped detection during this century. The number of United States landfalls in the first half of the century is significantly greater for hurricanes and somewhat greater for major hurricanes than in the last half of the century (if one uses the average number of expected landfalls for the currently remaining three years of the century, 1997-1999).

Since it is far less likely that a hurricane would completely escape detection in the years since 1950, it would appear that: 1) An average of one out of every four hurricanes, as well as one out of every four major hurricanes, that form in the North Atlantic basin will strike the mainland United States! 2) The decade of the nineties has seen an upturn in total hurricane activity without a corresponding increase in U.S. landfalls. Depending upon activity during the remainder of the decade, this could result in the lowest number ever observed in any decade.

Table 4. Decadal totals of the number of tropical cyclones by category. Note that data for the 1880's and 1990's are not available for the full decade.

| YEARS | -1 | 0 | 1 | 2 | 3 | 4 | 5 | ALL (T+H) | T | H | MH (MAJOR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990-96 | 16 | 17 | 18 | 9 | 9 | 7 | 0 | 76 | 33 | 43 | 16 |
| 1980-89 | 15 | 26 | 27 | 8 | 7 | 7 | 3 | 93 | 41 | 52 | 17 |
| 1970-79 | 19 | 26 | 24 | 10 | 8 | 5 | 3 | 95 | 45 | 50 | 16 |
| 1960-69 | 16 | 17 | 24 | 10 | 13 | 9 | 6 | 95 | 33 | 62 | 28 |
| 1950-59 | 11 | 24 | 19 | 11 | 22 | 13 | 4 | 104 | 35 | 69 | 39 |
| 1940-49 | 27 | 16 | 16 | 13 | 11 | 9 | 1 | 93 | 43 | 50 | 21 |
| 1930-39 | 39 | 12 | 15 | 15 | 8 | 6 | 3 | 98 | 51 | 47 | 17 |
| 1920-29 | 14 | 6 | 9 | 13 | 7 | 8 | 1 | 58 | 20 | 38 | 16 |
| 1910-19 | 10 | 5 | 6 | 12 | 12 | 4 | | 49 | 15 | 34 | 16 |
| 1900-09 | 23 | 16 | 4 | 18 | 6 | 7 | | 74 | 39 | 35 | 13 |
| 1890-99 | 8 | 16 | 2 | 34 | 11 | | | 71 | 24 | 47 | 11 |
| 1886-89 | 2 | 15 | | 26 | 2 | | | 45 | 17 | 28 | 2 |

Table 5. Decadal totals of the number of hurricanes and major hurricanes in the North Atlantic basin versus those which made landfall in the United States. Note that data for the 1990's are not available for the full decade.

| | HURRICANES | | | MAJOR HURRICANES | | |
|---|---|---|---|---|---|---|
| YEARS | ATLANTIC | U.S. | % ATLC. | ATLANTIC | U.S. | % ATLC |
| 1990-96 | 43 | 7 | 16 | 16 | 4 | 25 |
| 1980-89 | 52 | 16 | 31 | 17 | 6 | 35 |
| 1970-79 | 50 | 12 | 24 | 16 | 4 | 25 |
| 1960-69 | 62 | 15 | 24 | 28 | 6 | 21 |
| 1950-59 | **69** | 18 | 26 | **39** | **9** | 23 |
| 1940-49 | 50 | **23** | 46 | 21 | 8 | 38 |
| 1930-39 | 47 | 17 | 36 | 17 | 8 | 47 |
| 1920-29 | 38 | 15 | 39 | 16 | 5 | 31 |
| 1910-19 | 34 | 19 | **56** | 16 | 8 | **50** |
| 1900-09 | 35 | 16 | 46 | 13 | 6 | 46 |
| 1900-49 | 204 | 90 | 44 | 83 | 35 | 42 |
| 1950-96 | 276 | 68 | 25 | 116 | 29 | 25 |

Table 6 depicts the same information as Table 4, but broken down for the periods 1886-1899, 1900-1949, 1950-1996, and the entire period of record, 1886-1996. Of course, the data in Tables 2 and 3 from which these totals are derived can be used to stratify or sort tropical cyclone activity any way one chooses.

Table 6. Same as Table 4, but broken down for the periods 1886-1899, 1900-1949, 1950-1996, and the entire period of record, 1886-1996.

| YEARS | -1 | 0 | 1 | 2 | 3 | 4 | 5 | ALL (T+H) | T | H | MH (MAJOR) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1886-99 | 10 | 31 | 2 | 60 | 13 | 0 | 0 | 116 | 41 | 75 | 13 |
| 1900-49 | 113 | 55 | 50 | 71 | 44 | 34 | 5 | 372 | 168 | 204 | 83 |
| 1950-96 | 77 | 110 | 112 | 48 | 59 | 41 | 16 | 463 | 187 | 276 | 116 |
| 1900 -1996 | 190 | 165 | 162 | 119 | 103 | 75 | 21 | 835 | 355 | 480 | 199 |
| 1886 -1996 | 200 | 196 | 164 | 179 | 116 | 75 | 21 | 951 | 396 | 555 | 212 |

Another question of interest is: Which are the most intense hurricane(s) of record? Table 7 ranks all major hurricanes based upon the maximum sustained wind given in the BTDF. Together with the track book and/or the BTDF, the most intense hurricanes for various parts of the North Atlantic, Caribbean Sea, and Gulf of Mexico can be found.

Based upon the BTDF, only eight hurricanes have had sustained winds of 150 knots or more, with Hurricanes Camille in 1969 and Allen in 1980 the strongest at 165 knots. Fortunately, only eight of the twenty-one category five hurricanes struck any land mass with only two of them striking the United States mainland (H. Camille, 1969, and the Labor Day Hurricane of 1935). Atlantic category 5 hurricanes are also listed chronologically and discussed in Rappapport and McAdie (1991).

ab Maj Atl hu cane egory qr
ranked by in ens ty

| year | no. | — | kts | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|
| 1969 | 3 | HU | 165 | | | CAMILLE |
| 1980 | 1 | HU | 165 | | | ALLEN |
| 1950 | 4 | HU | 160 | | | DOG |
| 1988 | 8 | HU | 160 | | | GILBERT |
| 1955 | 10 | HU | 150 | | | JANET |
| 1961 | 3 | HU | 150 | | | CARLA |
| 1977 | 1 | HU | 150 | | | ANITA |
| 1979 | 4 | HU | 150 | | | DAVID |
| 1928 | 4 | HU | 140 | | | NOT NAMED |
| 1932 | 4 | HU | 140 | | | NOT NAMED |
| 1935 | 2 | HU | 140 | | | NOT NAMED |
| 1938 | 4 | HU | 140 | | | NOT NAMED |
| 1947 | 4 | HU | 140 | | | NOT NAMED |
| 1951 | 5 | HU | 140 | | | EASY |
| 1958 | 3 | HU | 140 | | | CLEO |
| 1960 | 5 | HU | 140 | | | DONNA |
| 1960 | 6 | HU | 140 | | | ETHEL |
| 1961 | 9 | HU | 140 | | | HATTIE |
| 1967 | 2 | HU | 140 | | | BEULAH |
| 1971 | 6 | HU | 140 | | | EDITH |
| 1989 | 8 | HU | 140 | | | HUGO |
| 1957 | 4 | HU | 135 | | CARRIE | |
| 1964 | 5 | HU | 135 | | CLEO | |
| 1965 | 3 | HU | 135 | | BETSY | |
| 1992 | 2 | HU | 135 | | ANDREW | |
| 1912 | 6 | HU | 130 | | NOT NAMED | |
| 1922 | 2 | HU | 130 | | NOT NAMED | |
| 1926 | 6 | HU | 130 | | NOT NAMED | |
| 1930 | 2 | HU | 130 | | NOT NAMED | |
| 1933 | 18 | HU | 130 | | NOT NAMED | |
| 1949 | 2 | HU | 130 | | NOT NAMED | |
| 1952 | 7 | HU | 130 | | FOX | |
| 1953 | 4 | HU | 130 | | CAROL | |
| 1964 | 10 | HU | 130 | | HILDA | |
| 1966 | 9 | HU | 130 | | INEZ | |
| 1974 | 6 | HU | 130 | | CARMEN | |
| 1995 | 12 | HU | 130 | | LUIS | |
| 1995 | 15 | HU | 130 | | OPAL | |
| 1906 | 4 | HU | 125 | | NOT NAMED | |
| 1906 | 5 | HU | 125 | | NOT NAMED | |
| 1932 | 2 | HU | 125 | | NOT NAMED | |
| 1955 | 2 | HU | 125 | | CONNIE | |
| 1957 | 2 | HU | 125 | | AUDREY | |
| 1961 | 5 | HU | 125 | | ESTHER | |
| 1963 | 7 | HU | 125 | | FLORA | |
| 1964 | 9 | HU | 125 | | GLADYS | |
| 1985 | 7 | HU | 125 | | GLORIA | |
| 1988 | 9 | HU | 125 | | HELENE | |
| 1988 | 11 | HU | 125 | | JOAN | |
| 1989 | 7 | HU | 125 | | GABRIELLE | |
| 1996 | 5 | HU | 125 | | EDOUARD | |
| 1909 | 3 | HU | 120 | | NOT NAMED | |
| 1909 | 7 | HU | 120 | | NOT NAMED | |
| 1915 | 2 | HU | 120 | | NOT NAMED | |
| 1919 | 2 | HU | 120 | | NOT NAMED | |

| year | no. | — | kts | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|
| 1921 | 6 | HU | 120 | | NOT NAMED | |
| 1926 | 1 | HU | 120 | | NOT NAMED | |
| 1926 | 4 | HU | 120 | | NOT NAMED | |
| 1929 | 2 | HU | 120 | | NOT NAMED | |
| 1933 | 12 | HU | 120 | | NOT NAMED | |
| 1943 | 3 | HU | 120 | | NOT NAMED | |
| 1944 | 7 | HU | 120 | | NOT NAMED | |
| 1945 | 5 | HU | 120 | | NOT NAMED | |
| 1945 | 9 | HU | 120 | | NOT NAMED | |
| 1950 | 1 | HU | 120 | | ABLE | |
| 1950 | 6 | HU | 120 | | FOX | |
| 1954 | 9 | HU | 120 | | HAZEL | |
| 1956 | 8 | HU | 120 | | GRETA | |
| 1959 | 8 | HU | 120 | | GRACIE | |
| 1961 | 2 | HU | 120 | | BETSY | |
| 1975 | 7 | HU | 120 | | GLADYS | |
| 1978 | 6 | HU | 120 | | ELLA | |
| 1995 | 6 | HU | 120 | | FELIX | |
| 1996 | 8 | HU | 120 | | HORTENSE | |
| 1900 | 1 | HU | 115 | | NOT NAMED | |
| 1906 | 3 | HU | 115 | | NOT NAMED | |
| 1906 | 8 | HU | 115 | | NOT NAMED | |
| 1915 | 5 | HU | 115 | | NOT NAMED | |
| 1924 | 2 | HU | 115 | | NOT NAMED | |
| 1926 | 10 | HU | 115 | | NOT NAMED | |
| 1932 | 10 | HU | 115 | | NOT NAMED | |
| 1939 | 4 | HU | 115 | | NOT NAMED | |
| 1946 | 5 | HU | 115 | | NOT NAMED | |
| 1948 | 6 | HU | 115 | | NOT NAMED | |
| 1948 | 8 | HU | 115 | | NOT NAMED | |
| 1949 | 10 | HU | 115 | | NOT NAMED | |
| 1951 | 3 | HU | 115 | | CHARLIE | |
| 1958 | 8 | HU | 115 | | HELENE | |
| 1958 | 9 | HU | 115 | | ILSA | |
| 1964 | 6 | HU | 115 | | DORA | |
| 1978 | 8 | HU | 115 | | GRETA | |
| 1979 | 6 | HU | 115 | | FREDERIC | |
| 1981 | 8 | HU | 115 | | HARVEY | |
| 1982 | 5 | HU | 115 | | DEBBY | |
| 1984 | 5 | HU | 115 | | DIANA | |
| 1991 | 3 | HU | 115 | | CLAUDETTE | |
| 1916 | 4 | HU | 110 | NOT NAMED | | |
| 1931 | 5 | HU | 110 | NOT NAMED | | |
| 1933 | 11 | HU | 110 | NOT NAMED | | |
| 1949 | 4 | HU | 110 | NOT NAMED | | |
| 19 | 5 | HU | 110 | EASY | | |
| 1953 | 6 | HU | 110 | EDNA | | |
| 1953 | 8 | HU | 110 | FLORENCE | | |
| 1955 | 8 | HU | 110 | HILDA | | |
| 1958 | 4 | HU | 110 | DAISY | | |
| 1959 | 9 | HU | 110 | HANNAH | | |
| 1961 | 7 | HU | 110 | FRANCES | | |
| 1964 | 11 | HU | 110 | ISBELL | | |
| 1966 | 1 | HU | 110 | ALMA | | |
| 1966 | 6 | HU | 110 | FAITH | | |

Tab Ma Λ h ry

gr ank

| year | no. | — | kts | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|
| 1969 | 7 | HU | 110 | GERDA | | |
| 1970 | 3 | HU | 110 | CELIA | | |
| 1970 | 6 | HU | 110 | ELLA | | |
| 1975 | 5 | HU | 110 | ELOISE | | |
| 1985 | 5 | HU | 110 | ELENA | | |
| 1987 | 6 | HU | 110 | EMILY | | |
| 1887 | 4 | HU | 105 | NOT NAMED | | |
| 1887 | 5 | HU | 105 | NOT NAMED | | |
| 1893 | 3 | HU | 105 | NOT NAMED | | |
| 1893 | 6 | HU | 105 | NOT NAMED | | |
| 1893 | 9 | HU | 105 | NOT NAMED | | |
| 1894 | 3 | HU | 105 | NOT NAMED | | |
| 1894 | 4 | HU | 105 | NOT NAMED | | |
| 1895 | 5 | HU | 105 | NOT NAMED | | |
| 1896 | 2 | HU | 105 | NOT NAMED | | |
| 1896 | 4 | HU | 105 | NOT NAMED | | |
| 1899 | 2 | HU | 105 | NOT NAMED | | |
| 1899 | 3 | HU | 105 | NOT NAMED | | |
| 1899 | 4 | HU | 105 | NOT NAMED | | |
| 1900 | 4 | HU | 105 | NOT NAMED | | |
| 1901 | 5 | HU | 105 | NOT NAMED | | |
| 1903 | 2 | HU | 105 | NOT NAMED | | |
| 1908 | 4 | HU | 105 | NOT NAMED | | |
| 1909 | 5 | HU | 105 | NOT NAMED | | |
| 1909 | 9 | HU | 105 | NOT NAMED | | |
| 1910 | 2 | HU | 105 | NOT NAMED | | |
| 1910 | 3 | HU | 105 | NOT NAMED | | |
| 1910 | 4 | HU | 105 | NOT NAMED | | |
| 1915 | 3 | HU | 105 | NOT NAMED | | |
| 1916 | 1 | HU | 105 | NOT NAMED | | |
| 1916 | 2 | HU | 105 | NOT NAMED | | |
| 1916 | 10 | HU | 105 | NOT NAMED | | |
| 1916 | 12 | HU | 105 | NOT NAMED | | |
| 1916 | 13 | HU | 105 | NOT NAMED | | |
| 1917 | 2 | HU | 105 | NOT NAMED | | |
| 1917 | 3 | HU | 105 | NOT NAMED | | |
| 1921 | 3 | HU | 105 | NOT NAMED | | |
| 1923 | [illegible] | HU | 105 | NOT NAMED | | |
| 1924 | 7 | HU | 105 | NOT NAMED | | |
| 1926 | 2 | HU | 105 | NOT NAMED | | |
| 1926 | 8 | HU | 105 | NOT NAMED | | |
| 1927 | 1 | HU | 105 | NOT NAMED | | |
| 1927 | 4 | HU | 105 | NOT NAMED | | |
| 1932 | 7 | HU | 105 | NOT NAMED | | |
| 193[illegible] | 8 | HU | 105 | NOT NAMED | | |
| 1933 | 13 | HU | 105 | NOT NAMED | | |
| 1935 | 1 | HU | 105 | NOT NAMED | | |
| 1935 | 4 | HU | 105 | NOT NAMED | | |
| 1936 | 13 | HU | 105 | NOT NAMED | | |
| 1941 | 4 | HU | 105 | NOT NAMED | | |
| 1941 | 5 | HU | 105 | NOT NAMED | | |
| 1943 | 4 | HU | 105 | NOT NAMED | | |
| 1944 | 4 | HU | 105 | NOT NAMED | | |
| 1944 | 11 | HU | 105 | NOT NAMED | | |
| 1947 | 9 | HU | 105 | NOT NAMED | | |

| year | no. | — | kts | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|
| 1948 | 3 | HU | 105 | NOT NAMED | | |
| 1948 | 7 | HU | 105 | NOT NAMED | | |
| 1950 | 2 | HU | 105 | BAKER | | |
| 1950 | 10 | HU | 105 | JIG | | |
| 1950 | 11 | HU | 105 | KING | | |
| 1952 | 3 | HU | 105 | BAKER | | |
| 1952 | 4 | HU | 105 | CHARLIE | | |
| 1954 | 5 | HU | 105 | EDNA | | |
| 1955 | 3 | HU | 105 | DIANE | | |
| 1955 | 9 | HU | 105 | IONE | | |
| 1956 | 3 | HU | 105 | BETSY | | |
| 1961 | 4 | HU | 105 | DEBBIE | | |
| 1963 | 2 | HU | 105 | BEULAH | | |
| 1969 | 4 | HU | 105 | DEBBIE | | |
| 1976 | 3 | HU | 105 | BELLE | | |
| 1981 | 9 | HU | 105 | IRENE | | |
| 1985 | 11 | HU | 105 | KATE | | |
| 1990 | 7 | HU | 105 | GUSTAV | | |
| 1996 | 6 | HU | 105 | FRAN | | |
| 1942 | 2 | HU | 100 | NOT NAMED | | |
| 1945 | 1 | HU | 100 | NOT NAMED | | |
| 1950 | 3 | HU | 100 | CHARLIE | | |
| 1951 | 1 | HU | 100 | ABLE | | |
| 1951 | 4 | HU | 100 | DOG | | |
| 1951 | 6 | HU | 100 | FOX | | |
| 1953 | 5 | HU | 100 | DOLLY | | |
| 1955 | 12 | HU | 100 | KATIE | | |
| 1958 | 5 | HU | 100 | ELLA | | |
| 1961 | 1 | HU | 100 | ANNA | | |
| 1962 | 5 | HU | 100 | ELLA | | |
| 1964 | 7 | HU | 100 | ETHEL | | |
| 1969 | 6 | HU | 100 | FRANCELIA | | |
| 1969 | 9 | HU | 100 | INGA | | |
| 1973 | 6 | HU | 100 | ELLEN | | |
| 1974 | 5 | HU | 100 | BECKY | | |
| 1975 | 3 | HU | 100 | CAROLINE | | |
| 1976 | 7 | HU | 100 | FRANCES | | |
| 1980 | 6 | HU | 100 | FRANCES | | |
| 1981 | 6 | HU | 100 | FLOYD | | |
| 1983 | 1 | HU | 100 | ALICIA | | |
| 1991 | 2 | HU | 100 | BOB | | |
| 1993 | 5 | HU | 100 | EMILY | | |
| 1995 | 13 | HU | 100 | MARILYN | | |
| 1995 | 17 | HU | 100 | ROXANNE | | |
| 1996 | 2 | HU | 100 | BERTHA | | |
| 1996 | 9 | HU | 100 | ISIDORE | | |
| 1996 | 12 | HU | 100 | LILI | | |

The question of where hurricanes in the North Atlantic basin during the period 1900-1996 reached major hurricane status can be answered by examination of Figure 2. The North Atlantic basin has been divided into six sub-basins: 1) Gulf of Mexico (G), 2) Caribbean Sea (C), 3-6) Atlantic areas A-1, A-2, A-3, A-4. These latter four sub-basins were chosen based upon the prevailing origins and tracks given in the track book, as well as a recognition that atmospheric/oceanic factors which might contribute to reaching major hurricane status are different in those areas, as well as the Gulf of Mexico and Caribbean Sea.

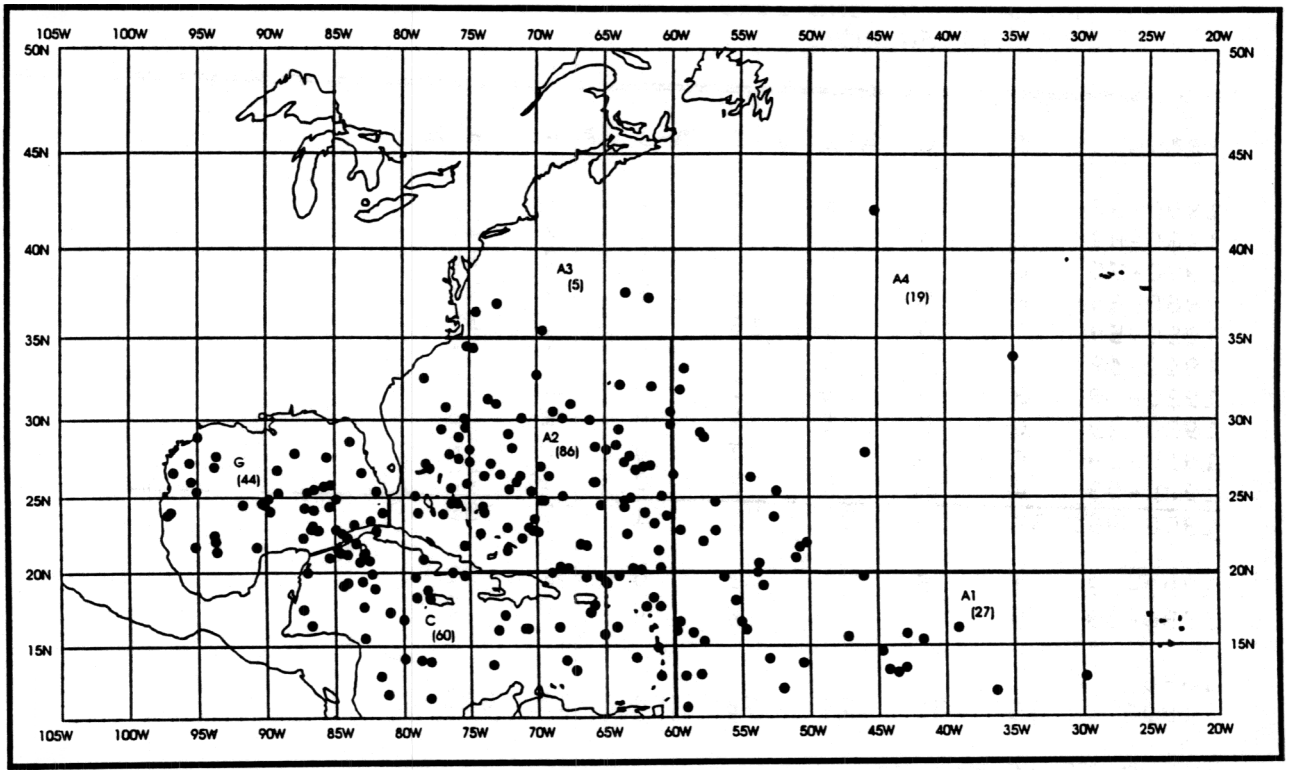


Figure 2. Solid circles indicate locations where hurricanes have attained sustained wind speeds of 100 kt, 1886-1996, as given in the Atlantic best-track file. If winds subsequently fall below, and again reach 100 kt, that position is also shown.

It is left to other studies to explore any physical relationships, but Figure 2 shows that a hurricane can reach major hurricane intensity almost anywhere in the North Atlantic basin when conditions are favorable.

The number of hurricanes reaching major hurricane intensity in each sub-basin is further stratified by decade in Table 8. Decadal variation is again evident. Note that the totals in Table 8 record only the first occurrence of 100 kt winds, or greater, and do not include subsequent re-intensification as shown in Fig. 2, thus accounting for the smaller sub-basin totals shown in the table. The noticeable lack of tropical cyclones reaching major hurricane intensity east of longitude 60 degrees West (A-1 and A-4) prior to 1950 certainly suggests an observational deficiency in those areas.

Table 8. Number of hurricanes to reach major hurricane intensity in each sub-basin shown in Figure 2, by decade. Note that data for the 1880's and 1990's are not available for the full decade.

| YEARS | G | C | A-1 | A-2 | A-3 | A-4 | ALL |
|---|---|---|---|---|---|---|---|
| 1990-96 | 1 | 2 | 3 | 7 | 1 | 2 | 16 |
| 1980-89 | 3 | 3 | 5 | 4 | 1 | 1 | 17 |
| 1970-79 | 6 | 3 | 1 | 3 | 1 | 2 | 16 |
| 1960-69 | 6 | 5 | 5 | 7 | 1 | 4 | 28 |
| 1950-59 | 3 | 10 | 6 | 15 | 0 | 5 | 39 |
| 1940-49 | 4 | 6 | 1 | 9 | 0 | 1 | 21 |
| 1930-39 | 3 | 6 | 1 | 7 | 0 | 0 | 17 |
| 1920-29 | 0 | 5 | 1 | 9 | 0 | 1 | 16 |
| 1910-19 | 4 | 5 | 0 | 7 | 0 | 0 | 16 |
| 1900-09 | 4 | 5 | 0 | 3 | 0 | 1 | 13 |
| 1890-99 | 1 | 5 | 1 | 3 | 0 | 1 | 11 |
| 1886-89 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 1886-1996 | 35 | 55 | 24 | 76 | 4 | 18 | 212 |

G = Gulf of Mexico
C = Caribbean Sea
A-1, A-2, A-3, A-4 Atlantic sub-basins

The next three tables - Tables 9, 10, and 11 - are adapted from Hebert et al. (1997), but are here expanded to include major hurricanes. Table 10 in this document, however, excludes U.S. landfalls as it did in Hebert et al. (1997).

Average number of occurrences is given in Table 9. Note that the frequently used average of two major hurricanes per year is quite valid, although the average for the past 50 years has been slightly higher, possibly because of aerial reconnaissance and satellite coverage.

Table 9. Average number of tropical cyclones which reached storm, hurricane, and major hurricane strength for various periods. Adapted from Hebert et al. (1997).

| PERIOD | Number of years | AVERAGE NUMBER Tropical Cyclones | Hurricanes | Major Hurricanes |
|---|---|---|---|---|
| 1886-1996 | 111 | 8.6 | 5.0 | 1.9 |
| 1947-1996 | 50 | 9.9 | 5.9 | 2.5 |
| 1957-1996 | 40 | 9.7 | 5.6 | 2.2 |
| 1967-1996 | 30 | 9.9 | 5.6 | 1.8 |
| 1977-1996 | 20 | 9.8 | 5.5 | 1.9 |
| 1982-1996 | 15 | 9.7 | 5.3 | 1.9 |
| 1987-1996 | 10 | 10.6 | 5.8 | 2.2 |

(Includes subtropical storms after 1967)

Monthly variation in tropical cyclone activity appears in Table 10. Note for example that over fifty percent of all major hurricanes occur during the month of September, and that one of every two hurricanes in September is a major hurricane. By contrast, about thirty percent of August and October hurricanes become major hurricanes.

Table 10. Tropical cyclones, hurricanes, and major hurricanes in the Atlantic, Caribbean, and Gulf of Mexico 1886-1996 by month of origin. Adapted from Hebert et al. (1997).

| | TROPICAL CYCLONES[1] | | HURRICANES | | MAJOR HURRICANES | |
|---|---|---|---|---|---|---|
| MONTH | Total | Average | Total | Average | Total | Average |
| JANUARY-APRIL | 4 | * | 1 | * | 0 | 0.00 |
| MAY | 14 | 0.1 | 3 | * | 1 | * |
| JUNE | 60 | 0.5 | 24 | 0.2 | 3 | * |
| JULY | 74 | 0.7 | 38 | 0.3 | 6 | 0.07 |
| AUGUST | 234 | 2.1 | 161 | 1.5 | 45 | 0.46 |
| SEPTEMBER | 318 | 2.9 | 201 | 1.8 | 109 | 1.12 |
| OCTOBER | 196 | 1.8 | 100 | 0.9 | 31 | 0.32 |
| NOVEMBER | 45 | 0.4 | 24 | 0.2 | 4 | * |
| DECEMBER | 6 | 0.1 | 3 | * | 0 | 0.00 |
| YEAR | 951 | 8.6 | 555 | 5.0 | 199 | 2.05 |

1 Includes subtropical storms after 1967. See Neumann et al. (1993) for details.
Less than 0.05

Years of maximum and minimum tropical cyclone activity appear in Table 11. Years of minimum activity are stratified to account for the effect of routine aerial reconnaissance, which began in 1944. This table shows that the greatest number of major hurricanes in one year was eight in 1950. The second most active year was 1961, with seven. Seventy percent of the years with the most hurricanes also had the most major hurricanes. Of course, there are many more years with no major hurricanes than with no hurricanes, although the preponderance of years prior to 1960 strongly suggests a detection problem because of lack of aerial reconnaissance and satellite information.

Table 11. Years of maximum and minimum tropical cyclone, hurricane, and major hurricane activity in the North Atlantic, Caribbean, and Gulf of Mexico, 1886-1996. Adapted from Hebert et al. (1997).

| MAXIMUM ACTIVITY (1886-1996) | | | | | |
|---|---|---|---|---|---|
| TROPICAL CYCLONES[1] | | HURRICANES | | MAJOR HURRICANES | |
| Number | Years | Number | Years | Number | Years |
| 21 | 1933 | 12 | 1969 | 8 | 1950 |
| 19 | 1995 | 11 | 1916,1950,1995 | 7 | 1961 |
| 18 | 1969 | 10 | 1887,1893,1933 | 6 | 1916,1926,1955, |
| 17 | 1887 | 9 | 1955,1980,1996 | | 1964,1996 |
| | | | | | 1933,1951,1958, |
| | | | | | 1969,1995 |

| MINIMUM ACTIVITY (1886-1943) | | | | | |
|---|---|---|---|---|---|
| TROPICAL CYCLONES[1] | | HURRICANES | | MAJOR HURRICANES | |
| Number | Years | Number | Years | Number | Years |
| 1 | 1890,1914 | 0 | 1907,1914 | 0 | 1886, |
| 2 | 1925,1930 | 1 | 1890,1905,1919 | | 1888-1892, |
| | | | 1925 | | 1897-1898, |
| | | 2 | 1895,1897,1904 | | 1902, |
| | | | 1917,1922,1930, | | 1904-1905, |
| | | | 1931 | | 1907,1911, |
| | | | | | 1913-1914, |
| | | | | | 1918,1920, |
| | | | | | 1925,1934, |
| | | | | | 1937,1940, |

| MINIMUM ACTIVITY (1944-1996) | | | | | |
|---|---|---|---|---|---|
| TROPICAL CYCLONES[1] | | HURRICANES | | MAJOR HURRICANES | |
| Number | Years | Number | Years | Number | Years |
| | | 2 | 1982 | 0 | 1968,1972, |
| | | | | | 1986,1994 |

Notes

Includes subtropical storms after 1967

Another frequently asked question is: Are there hurricane cycles? Figures 3 through 12 show the plotted tracks of all category 4 and 5 hurricanes by decade. The portion of the track associated with a best-track wind speed of category 4 (115 kt) or greater is shown in bold.

Close examination of these plots will reveal one of the recognized deficiencies of this data set. That is, the six-hourly data often does not adequately describe the wind at landfall. This is simply because the time of landfall does not necessarily occur at 0, 6, 12 or 18 UTC. Taking Hurricane Hugo as an example (see Fig. 11, track number 10) the bolded portion of the track does not intersect the coastline, although winds at the time of landfall are estimated to have been of category 4 intensity. In examining the BTDF for Hugo, the final position associated with winds of category 4 or greater occurs at 0 UTC (winds of 120 kt). The next position at 6 UTC is inland, with winds of 85 kt. The data file in its present 6-hourly form does not contain the time of landfall, which would allow a more accurate depiction at landfall. In pointing out problems of this nature, it should be kept in mind that the original purpose of the data set was primarily to support a broad statistical analysis of tropical cyclone characteristics over the entire basin.

Each plotted track in Figs 3-12 is keyed to a table entry, found in the upper-right of each figure. These entries give the hurricane name (after 1949), the maximum wind attained and the accompanying central pressure, if known. Multiple entries for one hurricane indicate (as do the bold portion of the tracks) that the hurricane achieved category 4 intensity, or greater, then fell below the 115-kt threshold, and subsequently regained category 4 intensity. In cases where the duration of the maximum wind spreads over more than 6 hours, and is accompanied by two or more different pressures in the BTDF, the lowest pressure is listed in the table. Also note that dates are consistent with UTC, so that a day begins at 0 UTC (7 PM EST in the United States), rather than local midnight.

While the clustering of the tracks and the portions of the tracks associated with winds of category 4 or higher (Figs 3-12) is not as compelling as the depiction of landfalling major hurricanes by decades in Hebert et al. (Figs 1-10) (1997), there is here a sense of an ebb and flow of the category 4 and 5 hurricanes in relation to the the number of major hurricanes which were making landfall in the Gulf of Mexico versus the Florida peninsula and the Atlantic coast.

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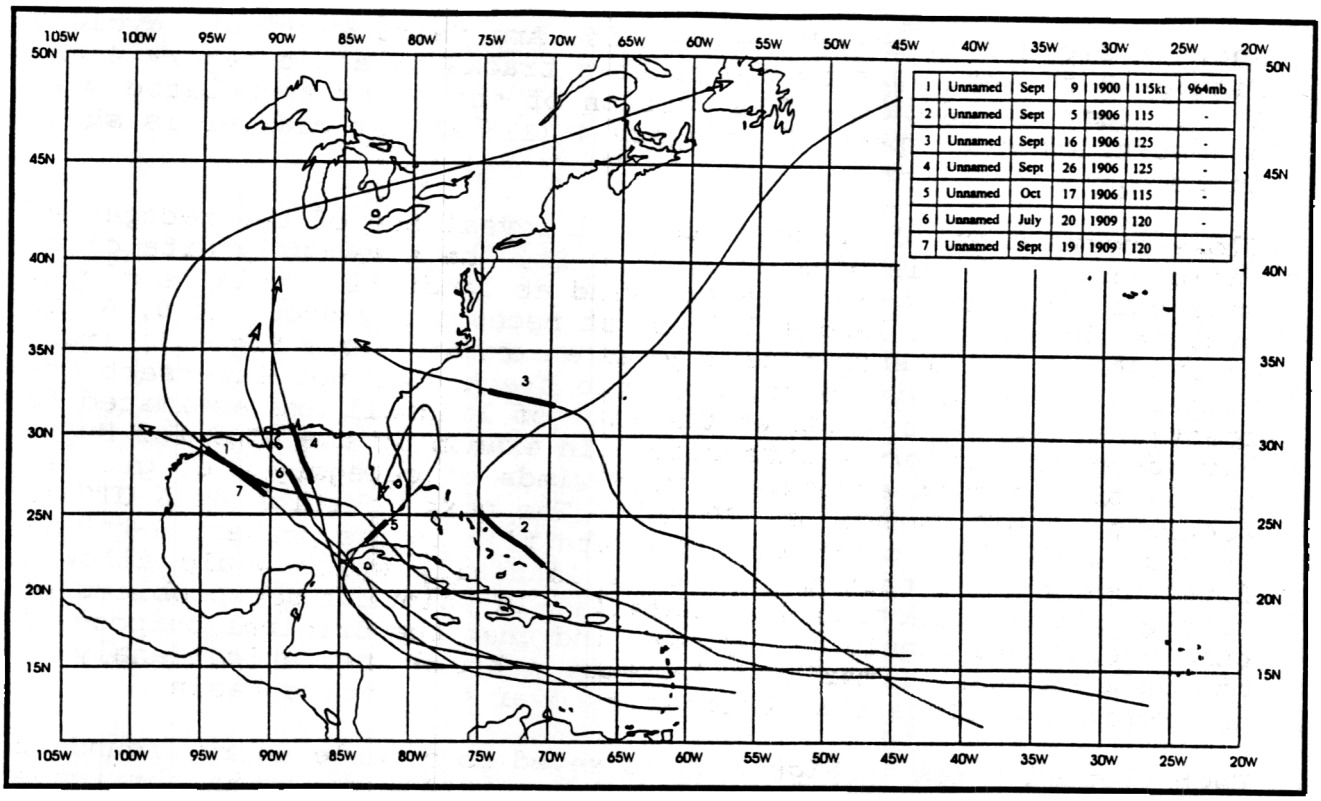



Figure 3. Hurricanes reaching at least category 4 intensity, 1900-1909. Bolded track segments indicate best-track wind speeds equal to or exceeding 115 kt.

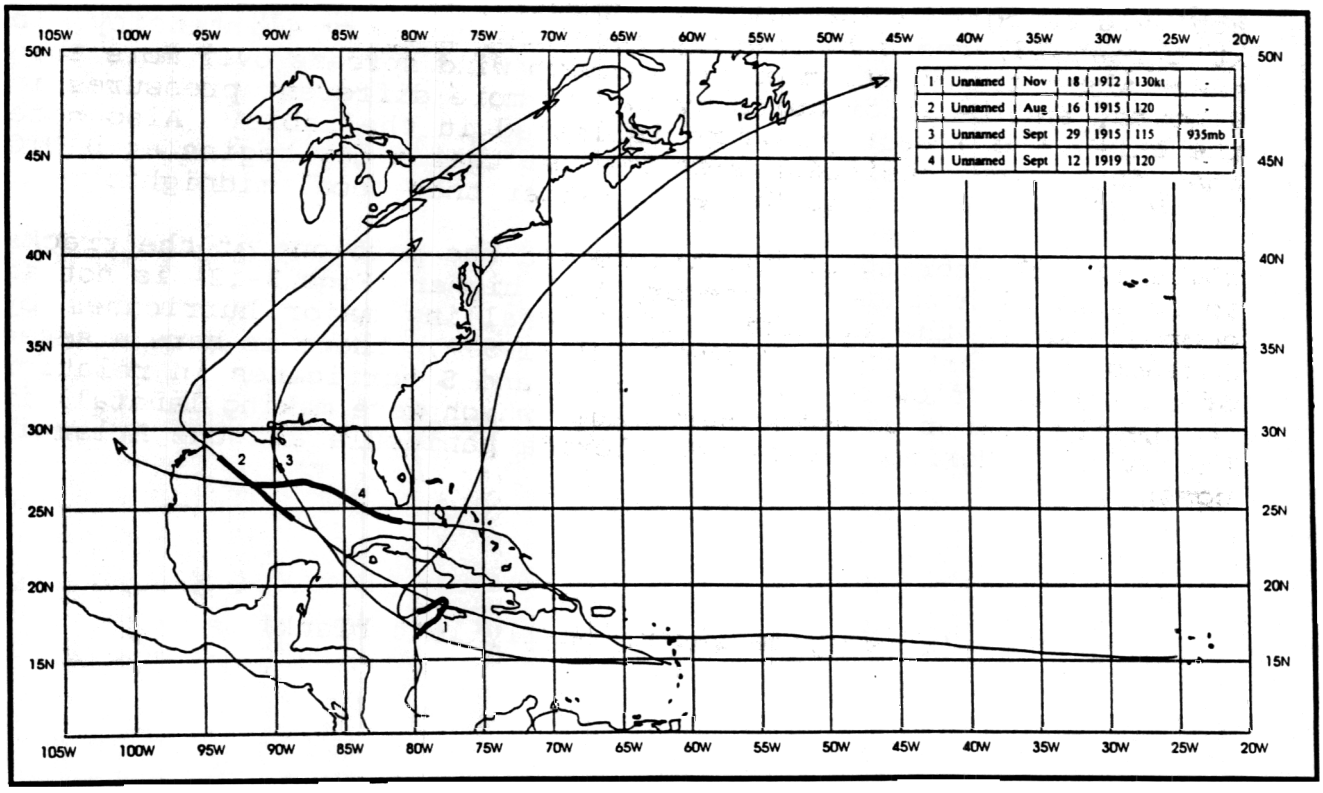



Figure 4. As in Fig. 3, but for the period 1910-1919.

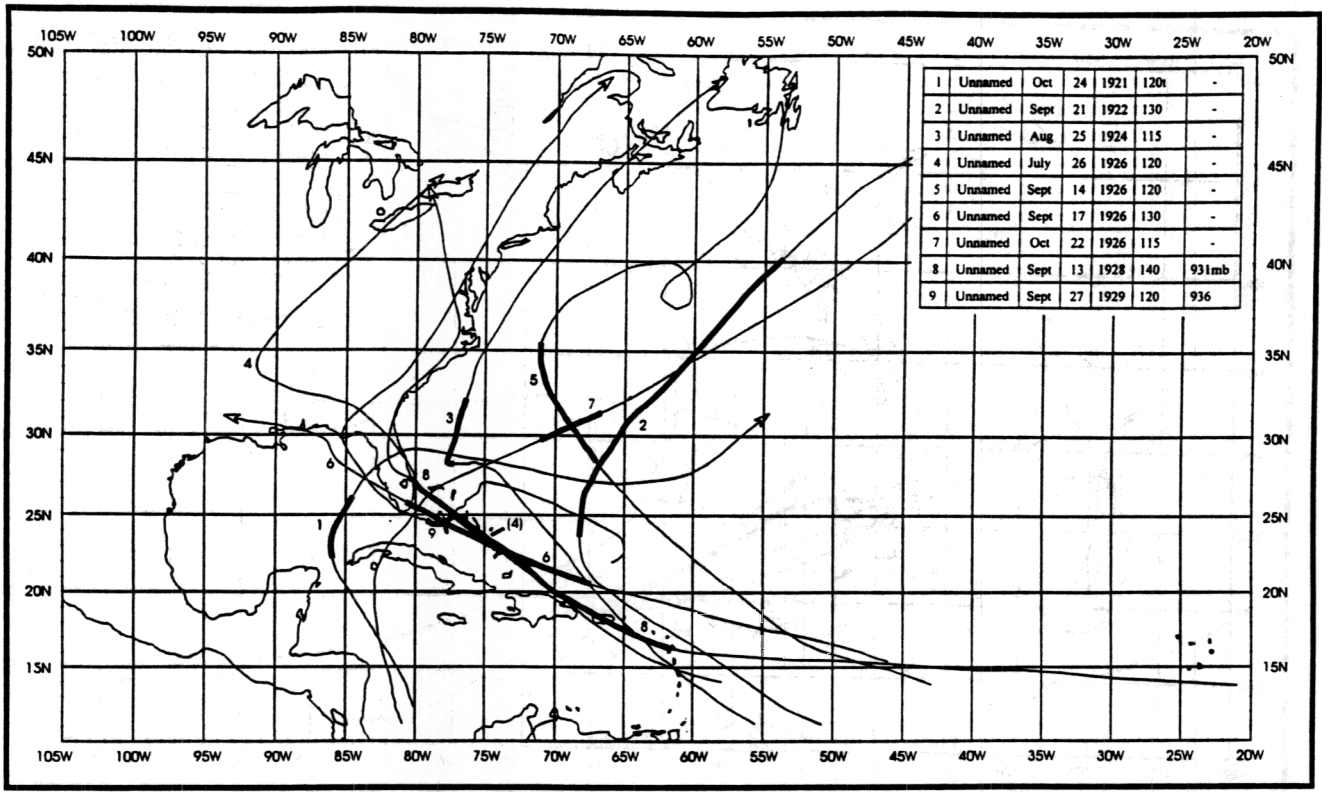



Figure 5. As in Fig. 3, but for the period 1920-1929. Note that bolded track of 1928 hurricane (labeled 8) obscures track of first hurricane of 1926 (labeled 4).

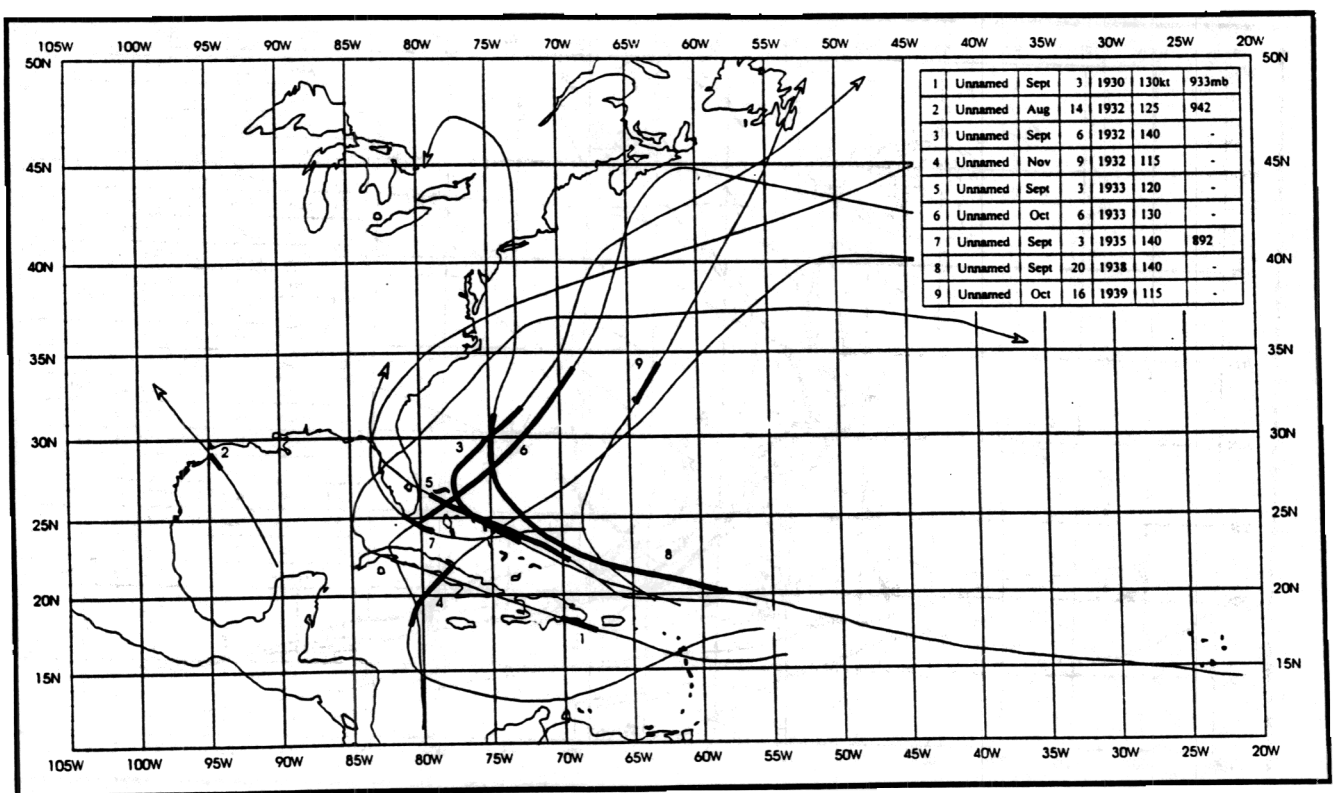
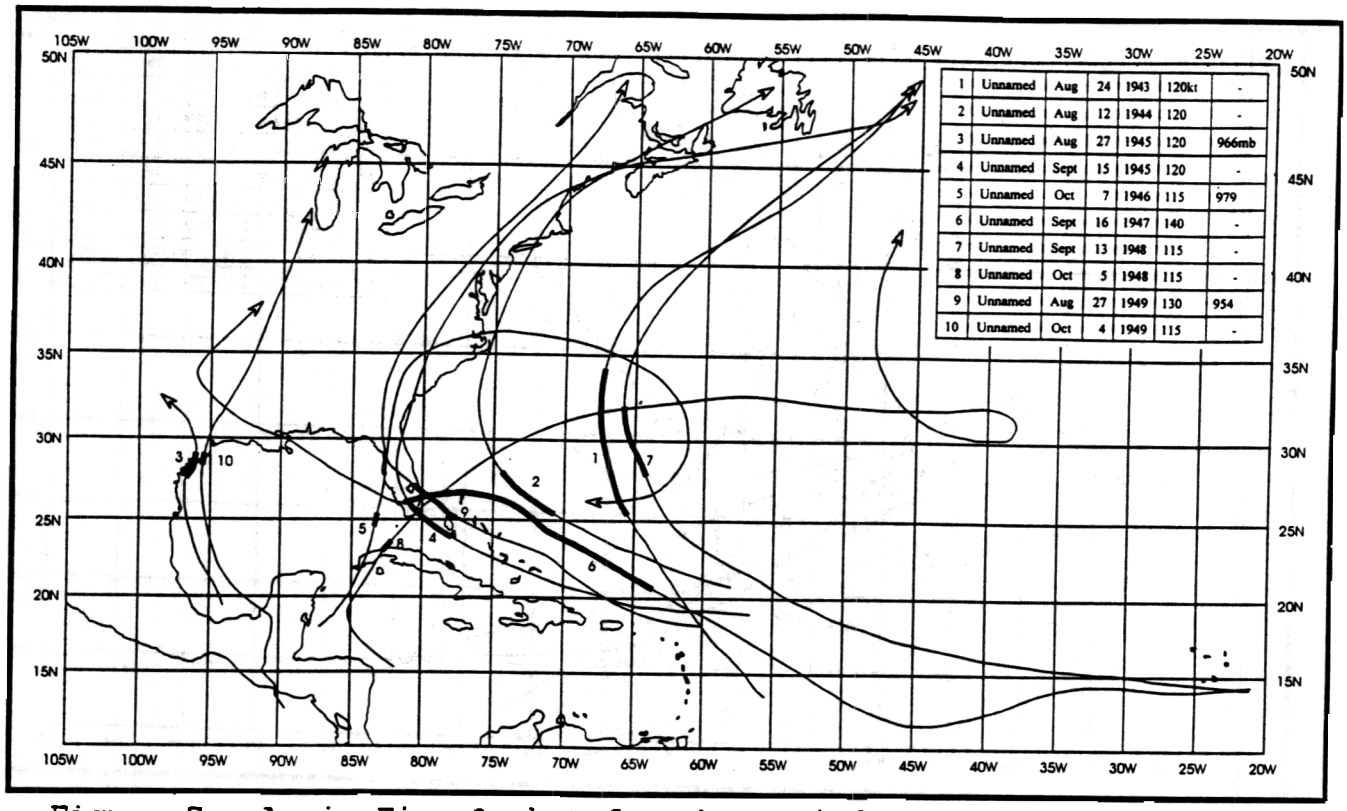
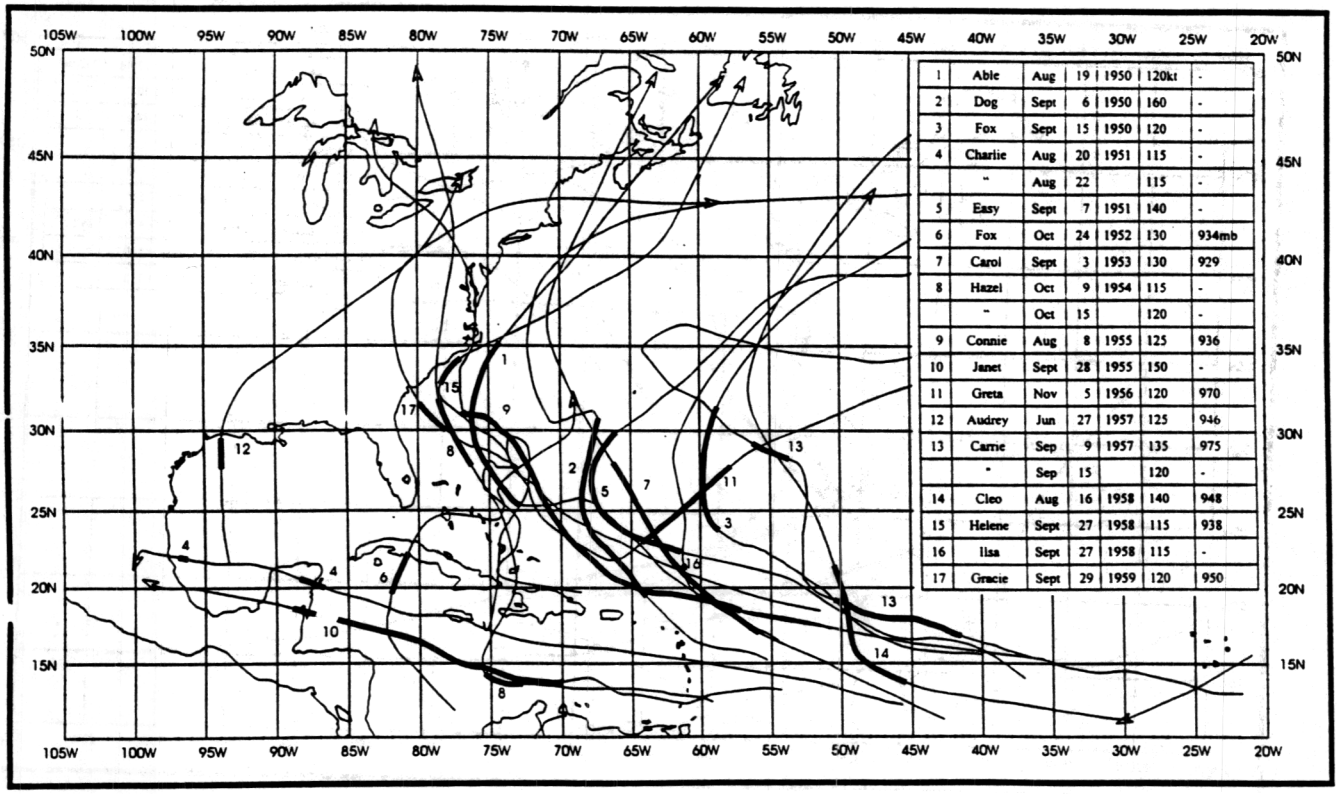



Figure 6. As in Fig. 3, but for the period 1930-1939



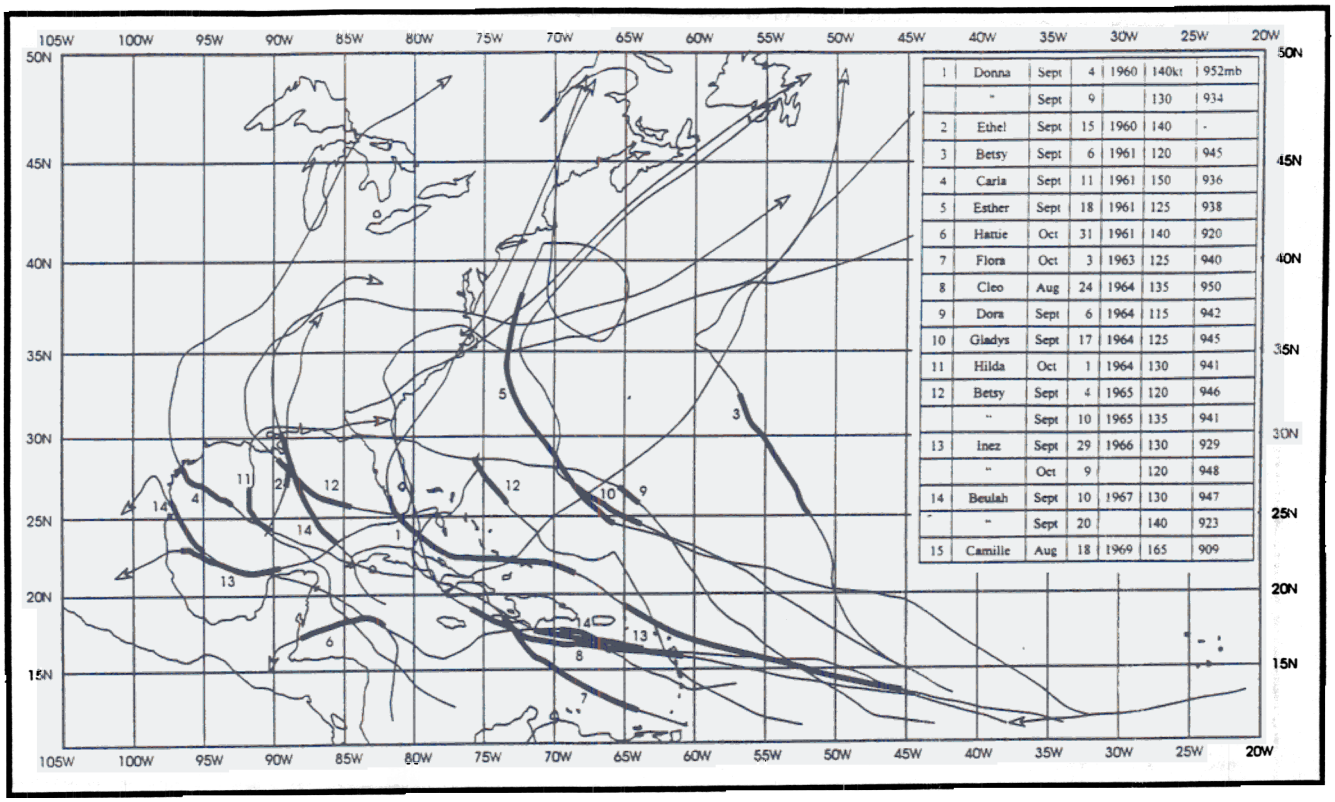

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Unnamed | Aug | 24 | 1943 | 120kt | - |
| 2 | Unnamed | Aug | 12 | 1944 | 120 | - |
| 3 | Unnamed | Aug | 27 | 1945 | 120 | 966mb |
| 4 | Unnamed | Sept | 15 | 1945 | 120 | - |
| 5 | Unnamed | Oct | 7 | 1946 | 115 | 979 |
| 6 | Unnamed | Sept | 16 | 1947 | 140 | - |
| 7 | Unnamed | Sept | 13 | 1948 | 115 | - |
| 8 | Unnamed | Oct | 5 | 1948 | 115 | - |
| 9 | Unnamed | Aug | 27 | 1949 | 130 | 954 |
| 10 | Unnamed | Oct | 4 | 1949 | 115 | - |

Figure 7. As in Fig. 3, but for the period 1940-1949



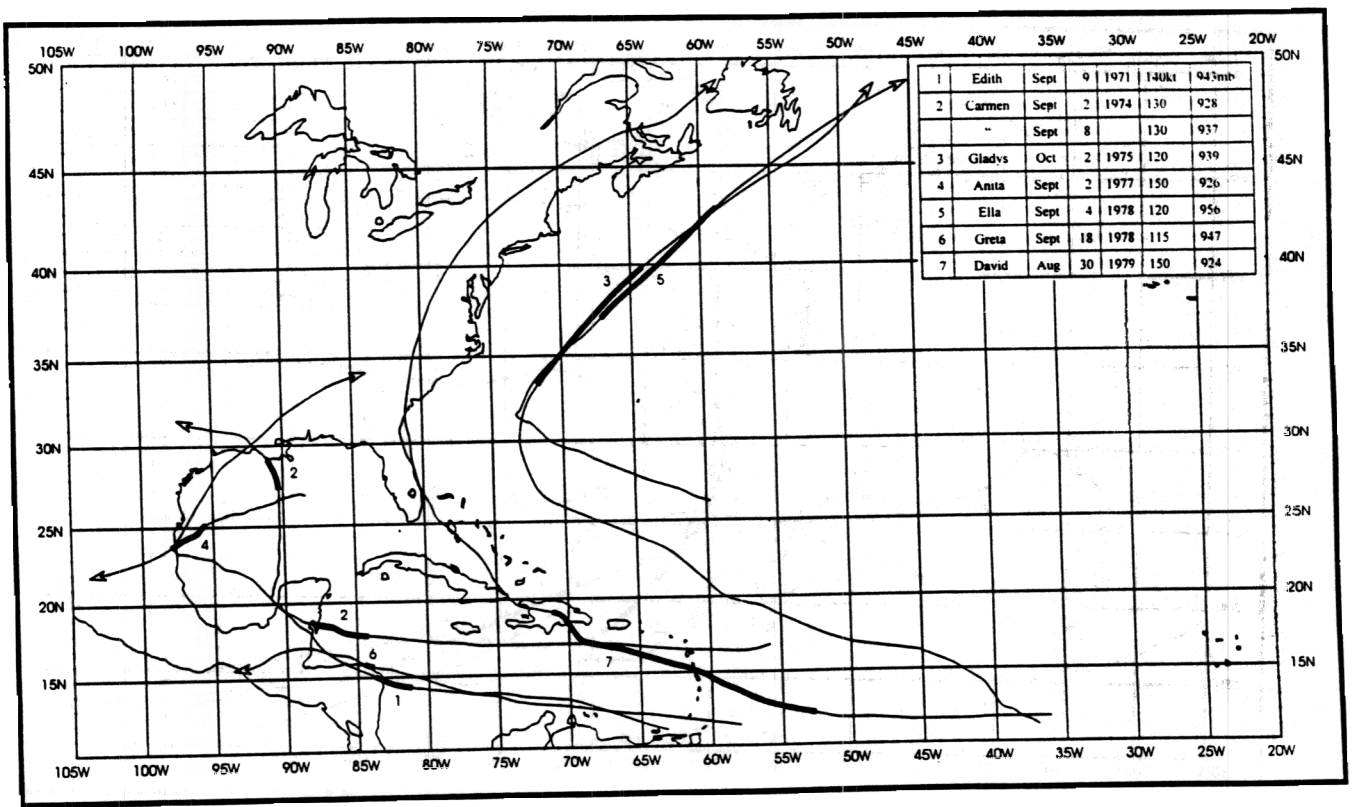

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Able | Aug | 19 | 1950 | 120kt | - |
| 2 | Dog | Sept | 6 | 1950 | 160 | - |
| 3 | Fox | Sept | 15 | 1950 | 120 | - |
| 4 | Charlie | Aug | 20 | 1951 | 115 | - |
| | " | Aug | 22 | | 115 | - |
| 5 | Easy | Sept | 7 | 1951 | 140 | - |
| 6 | Fox | Oct | 24 | 1952 | 130 | 934mb |
| 7 | Carol | Sept | 3 | 1953 | 130 | 929 |
| 8 | Hazel | Oct | 9 | 1954 | 115 | - |
| | " | Oct | 15 | | 120 | - |
| 9 | Connie | Aug | 8 | 1955 | 125 | 936 |
| 10 | Janet | Sept | 28 | 1955 | 150 | - |
| 11 | Greta | Nov | 5 | 1956 | 120 | 970 |
| 12 | Audrey | Jun | 27 | 1957 | 125 | 946 |
| 13 | Carrie | Sep | 9 | 1957 | 135 | 975 |
| | " | Sep | 15 | | 120 | - |
| 14 | Cleo | Aug | 16 | 1958 | 140 | 948 |
| 15 | Helene | Sept | 27 | 1958 | 115 | 938 |
| 16 | Ilsa | Sept | 27 | 1958 | 115 | - |
| 17 | Gracie | Sept | 29 | 1959 | 120 | 950 |

Figure 8. As in Fig 3, but for the period 1950-1959




| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Donna | Sept | 4 | 1960 | 140kt | 952mb |
| | " | Sept | 9 | | 130 | 934 |
| 2 | Ethel | Sept | 15 | 1960 | 140 | - |
| 3 | Betsy | Sept | 6 | 1961 | 120 | 945 |
| 4 | Carla | Sept | 11 | 1961 | 150 | 936 |
| 5 | Esther | Sept | 18 | 1961 | 125 | 938 |
| 6 | Hattie | Oct | 31 | 1961 | 140 | 920 |
| 7 | Flora | Oct | 3 | 1963 | 125 | 940 |
| 8 | Cleo | Aug | 24 | 1964 | 135 | 950 |
| 9 | Dora | Sept | 6 | 1964 | 115 | 942 |
| 10 | Gladys | Sept | 17 | 1964 | 125 | 945 |
| 11 | Hilda | Oct | 1 | 1964 | 130 | 941 |
| 12 | Betsy | Sept | 4 | 1965 | 120 | 946 |
| | " | Sept | 10 | 1965 | 135 | 941 |
| 13 | Inez | Sept | 29 | 1966 | 130 | 929 |
| | " | Oct | 9 | | 120 | 948 |
| 14 | Beulah | Sept | 10 | 1967 | 130 | 947 |
| | " | Sept | 20 | | 140 | 923 |
| 15 | Camille | Aug | 18 | 1969 | 165 | 909 |

Figure As Fig but for the period 1960 1969




| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | Edith | Sept | 9 | 1971 | 140kt | 943mb |
| 2 | Carmen | Sept | 2 | 1974 | 130 | 928 |
| | " | Sept | 8 | | 130 | 937 |
| 3 | Gladys | Oct | 2 | 1975 | 120 | 939 |
| 4 | Anita | Sept | 2 | 1977 | 150 | 926 |
| 5 | Ella | Sept | 4 | 1978 | 120 | 956 |
| 6 | Greta | Sept | 18 | 1978 | 115 | 947 |
| 7 | David | Aug | 30 | 1979 | 150 | 924 |

Figure Fig but for the period 1970

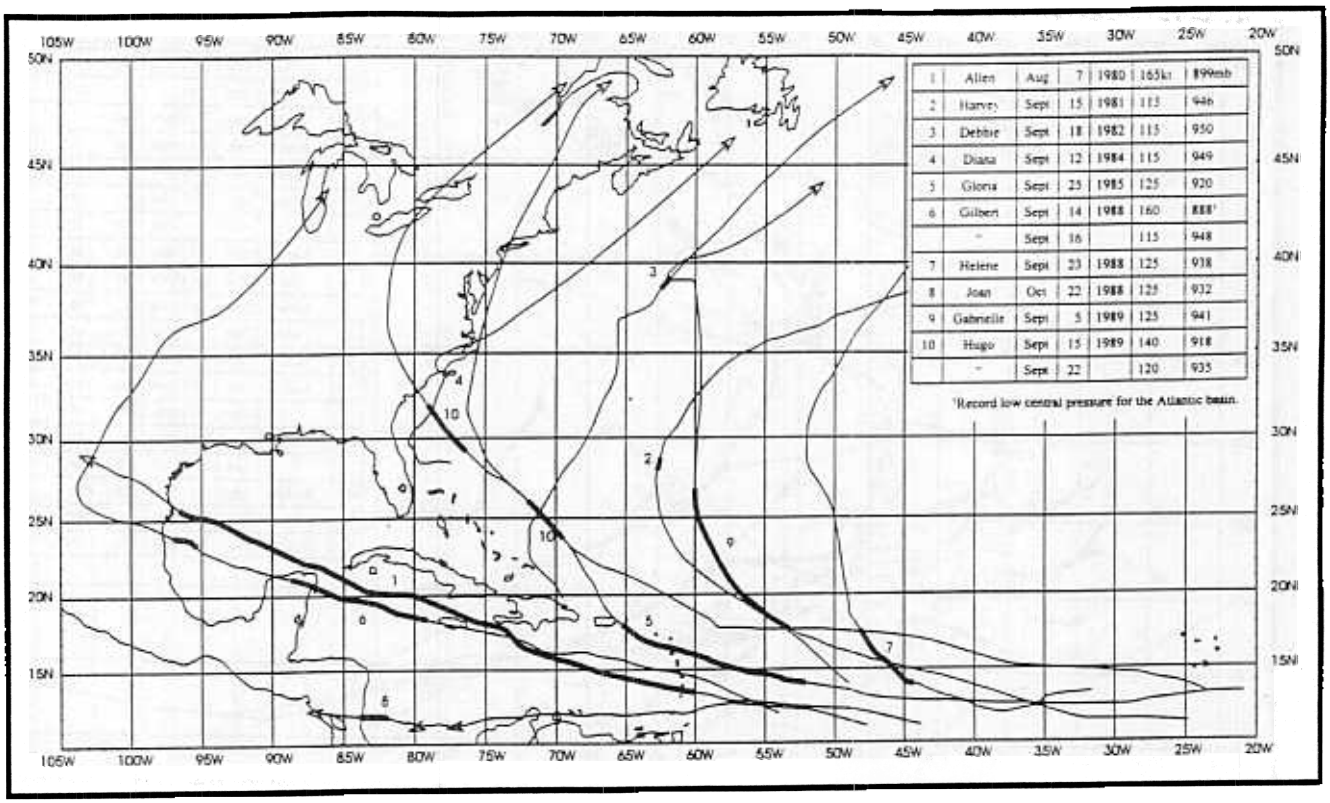



Figure 11. As in Fig. 3, but for the period 1980-1989

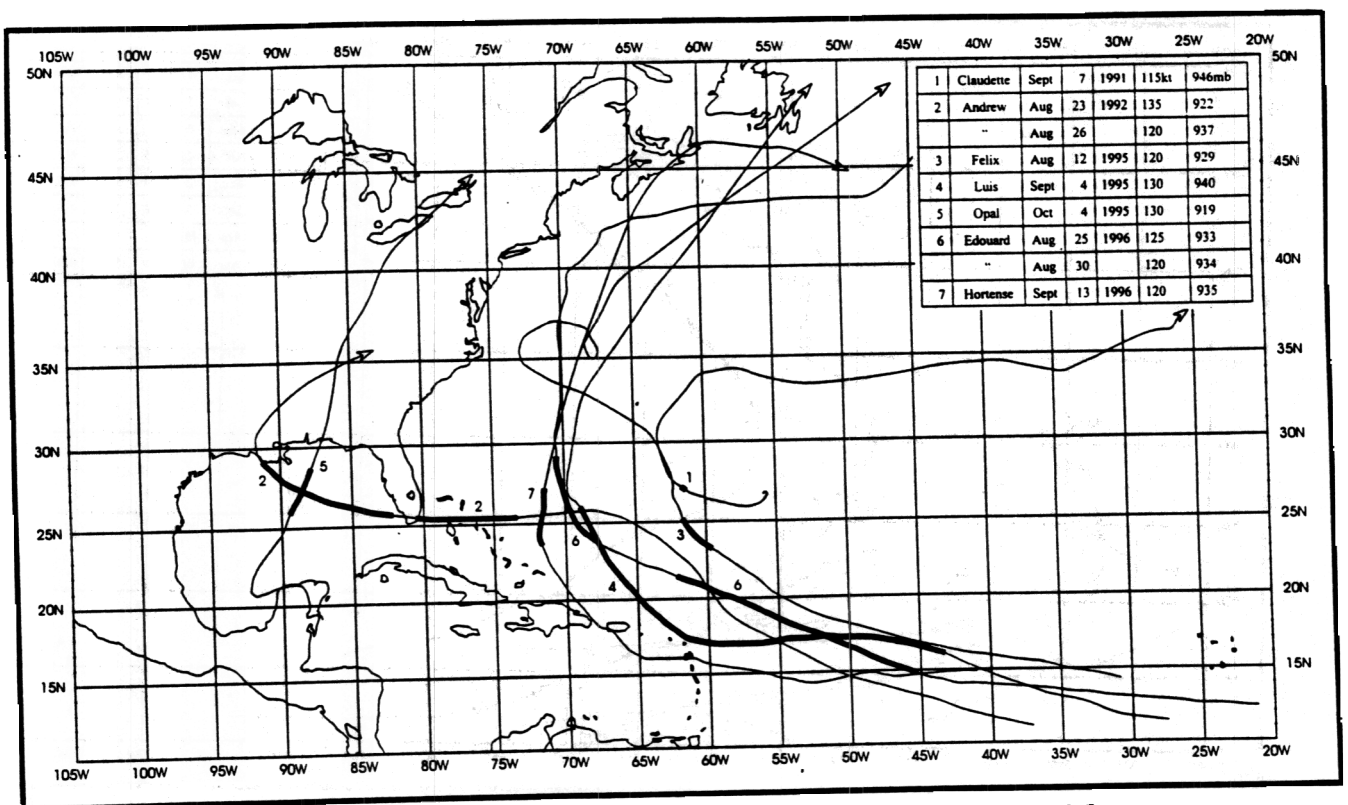



Figure 12. As in Fig. 3, but for the period 1990-1996.

Table 12 provides a further stratification by year of occurrence, and is analogous to Table 14 in Hebert et al. (1997). Major hurricanes and hurricanes of all categories are shown by individual years in each decade.

Table 12. Major hurricanes and all hurricanes by individual years Adapted from Hebert et al. (1997).

Major Hurricanes

| Decade | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1900-09 | 2 | 1 | | 1 | | | 4 | | | 4 | 13 |
| 1910-19 | 3 | | 1 | | | 3 | 6 | 2 | 1 | 1 | 16 |
| 1920-29 | | 2 | 1 | 1 | 2 | | 6 | 2 | 1 | 1 | 16 |
| 1930-39 | 1 | 1 | 4 | 5 | | 3 | 1 | | 1 | 1 | 17 |
| 1940-49 | | 2 | 1 | 2 | 3 | 3 | 1 | 2 | 4 | 3 | 21 |
| 1950-59 | 8 | 5 | 3 | 4 | 2 | 6 | 2 | 2 | 5 | 2 | 39 |
| 1960-69 | 2 | 7 | 1 | 2 | 6 | 1 | 3 | 1 | | 5 | 28 |
| 1970-79 | 2 | 1 | | 1 | 2 | 3 | 2 | 1 | 2 | 2 | 16 |
| 1980-89 | 2 | 3 | 1 | 1 | 1 | 3 | | 1 | 3 | 2 | 17 |
| TOTAL | 20 | 22 | 12 | 17 | 16 | 22 | 25 | 11 | 17 | 21 | 183 |

All Hurricanes

| Decade | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3 | 8 | 2 | 1 | 6 | | | | |
| | | | 4 | 3 | | 4 | 11 | 2 | | | |
| | | | 2 | 3 | 5 | 1 | 8 | 4 | | | |
| | | | 6 | 10 | 6 | 5 | 7 | 3 | | | |
| | | | 4 | 5 | 7 | 5 | 3 | 5 | | | |
| | | | 6 | 6 | 8 | 9 | 4 | 3 | | | |
| | | | 3 | 7 | 6 | 4 | 7 | 6 | | | |
| | | | 3 | 4 | 4 | 6 | 6 | 5 | | | |
| | | | 2 | 3 | 5 | 7 | 4 | 3 | | | |
| TOTAL | 45 | 45 | 33 | 49 | 43 | 42 | 56 | 31 | 43 | 50 | 437 |

Figures 3 through 12 certainly suggest the existence of a cyclical migration of hurricane and major hurricane activity, and during preferred periods. Table 12 is also suggestive of preferred periods. The authors do not propose a physical mechanism for these spatial and temporal shifts, but merely point them out.

It should be stressed that even during relatively quiet years, devastating hurricanes can and do occur. A general lack of activity should never be taken as an excuse for failure to prepare.

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## Appendix A

Appendix A is provided as a condensed chronological reference for North Atlantic tropical cyclones, by category. Wind speed in knots is the maximum given in the BTDF.

Taking the first year of record (1886) as an example, of the 10 tropical cyclones occurring during 1886, the first system of that year reached tropical storm intensity (TS) with maximum winds of 50 knots (category 0).

Atlantic tropical cyclones were not named until 1950. The phonetic alphabet was used for the first three years, 1950-52. In 1953, the practice of using female names was adopted, as had been done in the Western Pacific during World War II (Neumann, et al., 1993). This was modified to include both male and female names, on an alternating basis, in 1979.

As noted earlier, identification of subtropical systems began in 1967. Note that for 1972 and 1973 only, the phonetic alphabet was again used to name subtropical systems. All other years use 'subtrop1', 'subtrop2', etc. For years in which the count of subtropical systems appears to be discontinuous (e.g. 1976) it is because the intervening system (subtrop2) became tropical and was named.

For category 4 or 5 hurricanes (rightmost columns), refer to Figs. 3 through 12 for track plot.

Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1886 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1886 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 4 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 5 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 7 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 8 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 9 | HU | 85 | | | | NOT NAMED | | | |
| 1886 | 10 | TS | 50 | | NOT NAMED | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1887 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1887 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 3 | TS | 50 | | NOT NAMED | | | | | |
| 1887 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1887 | 5 | HU | 105 | | | | | NOT NAMED | | |
| 1887 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 7 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 8 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 9 | TS | 50 | | NOT NAMED | | | | | |
| 1887 | 10 | TS | 50 | | NOT NAMED | | | | | |
| 1887 | 11 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 12 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 13 | TS | 50 | | NOT NAMED | | | | | |
| 1887 | 14 | TS | 40 | NOT NAMED | | | | | | |
| 1887 | 15 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 16 | HU | 85 | | | | NOT NAMED | | | |
| 1887 | 17 | TS | 50 | | NOT NAMED | | | | | |
| | | — | | | — | — | — | — | — | — |
| | | | | | | | NOT NAMED | | | |
| 1888 | 6 | | | | | | | | | |
| 1888 | 7 | | | | | | | | | |
| 1888 | | | | | | | | | | |
| 1888 | 9 | | | | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1889 | 1 | HU | 85 | | | | NOT NAMED | | | |
| | 2 | | | | | | | | | |
| | 3 | | | | | | | | | |
| | 5 | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 1889 | 8 | | | | | | | | | |
| 1889 | 9 | | | | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1890 | 1 | HU | 85 | | | | NOT NAMED | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1891 | 1 | HU | 85 | | | | NOT NAMED | | | |
| 1891 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1891 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1891 | 4 | HU | 85 | | | | NOT NAMED | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1891 | 5 | HU | 85 | | | | NOT NAMED | | | |
| 1891 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1891 | 7 | TS | 45 | NOT NAMED | | | | | | |
| 1891 | 8 | TS | 45 | NOT NAMED | | | | | | |
| 1891 | 9 | HU | 85 | | | | NOT NAMED | | | |
| 1891 | 10 | HU | 85 | | | | NOT NAMED | | | |
| | | | 50 | | NOT NAMED | | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1892 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1892 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1892 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1892 | 4 | TS | 50 | | NOT NAMED | | | | | |
| 1892 | 5 | HU | 85 | | | | NOT NAMED | | | |
| 1892 | 6 | TS | 50 | | NOT NAMED | | | | | |
| 1892 | 7 | HU | 85 | | | | NOT NAMED | | | |
| 1892 | 8 | TS | 50 | | NOT NAMED | | | | | |
| | | | 45 | NOT NAMED | | | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1893 | 1 | HU | 85 | | | | NOT NAMED | | | |
| 1893 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1893 | 3 | HU | 105 | | | | | NOT NAMED | | |
| 1893 | 4 | HU | 85 | | | | NOT NAMED | | | |
| 1893 | 5 | HU | 85 | | | | NOT NAMED | | | |
| 1893 | 6 | HU | 105 | | | | | NOT NAMED | | |
| 1893 | 7 | HU | 85 | | | | NOT NAMED | | | |
| 1893 | 8 | HU | 85 | | | | NOT NAMED | | | |
| 1893 | 9 | HU | 105 | | | | | NOT NAMED | | |
| 1893 | 10 | HU | 85 | | | | NOT NAMED | | | |
| 1893 | 11 | TS | 50 | | NOT NAMED | | | | | |
| 1893 | 12 | TS | 50 | | NOT NAMED | | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1894 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1894 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1894 | 3 | HU | 105 | | | | | NOT NAMED | | |
| 1894 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1894 | 5 | HU | 85 | | | | NOT NAMED | | | |
| 1894 | 6 | HU | 85 | | | | NOT NAMED | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1895 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1895 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1895 | 3 | TS | 50 | | NOT NAMED | | | | | |
| 1895 | 4 | TS | 50 | | NOT NAMED | | | | | |
| 1895 | 5 | HU | 105 | | | | | NOT NAMED | | |
| 1895 | 6 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1896 | 1 | HU | 85 | | | | NOT NAMED | | | |
| 1896 | 2 | HU | 105 | | | | | NOT NAMED | | |
| 1896 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1896 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1896 | 5 | HU | 85 | | | | NOT NAMED | | | |
| 1896 | 6 | HU | 85 | | | | NOT NAMED | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1897 | 1 | HU | 85 | | | | NOT NAMED | | | |
| 1897 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1897 | 3 | TS | 40 | NOT NAMED | | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1897 | 4 | TS | 40 | NOT NAMED | | | | | | |
| 1897 | 5 | TS | 55 | | NOT NAMED | | | | | |
| 1898 | 1 | HU | 70 | | | NOT NAMED | | | | |
| 1898 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1898 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1898 | 4 | TS | 50 | | NOT NAMED | | | | | |
| 1898 | 5 | TS | 50 | | NOT NAMED | | | | | |
| 1898 | 6 | TS | 50 | | NOT NAMED | | | | | |
| 1898 | 7 | HU | 95 | | | | NOT NAMED | | | |
| 1898 | 8 | TS | 50 | | NOT NAMED | | | | | |
| | | | | | NOT NAMED | | | | | |
| 1899 | 1 | HU | 70 | | | NOT NAMED | | | | |
| 1899 | 2 | HU | 105 | | | | | NOT NAMED | | |
| 1899 | 3 | HU | 105 | | | | | NOT NAMED | | |
| 1899 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1899 | 5 | TS | 40 | NOT NAMED | | | | | | |
| 1899 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1900 | 1 | HU | 115 | | | | | | NOT NAMED | |
| 1900 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1900 | 3 | TS | 45 | NOT NAMED | | | | | | |
| 1900 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1900 | 5 | TS | 60 | | NOT NAMED | | | | | |
| 1900 | 6 | TS | 40 | NOT NAMED | | | | | | |
| 1900 | 7 | TS | 45 | NOT NAMED | | | | | | |
| 1901 | 1 | TS | | NOT NAMED | | | | | | |
| | | | | | NOT NAMED | | | | | |
| | | | | | | | NOT NAMED | | | |
| | | | | | | | NOT NAMED | | | |
| 1901 | 5 | HU | | | | | | NOT NAMED | | |
| 1901 | 6 | TS | 50 | | NOT NAMED | | | | | |
| 1901 | 7 | TS | 40 | NOT NAMED | | | | | | |
| 1901 | 8 | TS | 45 | NOT NAMED | | | | | | |
| 1901 | 9 | TS | 45 | NOT NAMED | | | | | | |
| 1901 | 10 | TS | 50 | | NOT NAMED | | | | | |
| 1902 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1902 | 2 | HU | 80 | | | NOT NAMED | | | | |
| 1902 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1902 | 4 | HU | 85 | | | | NOT NAMED | | | |
| 1902 | 5 | TS | 50 | | NOT NAMED | | | | | |
| 1903 | 1 | HU | 90 | | | | NOT NAMED | | | |
| 1903 | 2 | HU | 105 | | | | | NOT NAMED | | |
| 1903 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1903 | 4 | HU | 85 | | | | NOT NAMED | | | |
| 1903 | 5 | TS | 50 | | NOT NAMED | | | | | |
| 1903 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1903 | 7 | HU | 85 | | | | NOT NAMED | | | |
| 1903 | 8 | HU | 85 | | | | NOT NAMED | | | |
| 1903 | 9 | HU | 85 | | | | NOT NAMED | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1904 | 1 | TS | 60 | | NOT NAMED | | | | | |
| 1904 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1904 | 3 | HU | 65 | | | NOT NAMED | | | | |
| 1904 | 4 | TS | 45 | NOT NAMED | | | | | | |
| 1904 | 5 | TS | 45 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1905 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1905 | 2 | TS | 50 | | NOT NAMED | | | | | |
| 1905 | 3 | TS | 45 | NOT NAMED | | | | | | |
| 1905 | 4 | HU | 70 | | | NOT NAMED | | | | |
| 1905 | 5 | TS | 45 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1906 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1906 | 2 | HU | 90 | | | | NOT NAMED | | | |
| 1906 | 3 | HU | 115 | | | | | | NOT NAMED | |
| 1906 | 4 | HU | 125 | | | | | | NOT NAMED | |
| 1906 | 5 | HU | 125 | | | | | | NOT NAMED | |
| 1906 | 6 | TS | 60 | | NOT NAMED | | | | | |
| 1906 | 7 | HU | 85 | | | | NOT NAMED | | | |
| 1906 | 8 | HU | 115 | | | | | | NOT NAMED | |
| 1906 | 9 | TS | 35 | NOT NAMED | | | | | | |
| 1906 | 10 | TS | 45 | NOT NAMED | | | | | | |
| 1906 | 11 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1907 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1907 | 2 | TS | 50 | | NOT NAMED | | | | | |
| 1907 | 3 | TS | 45 | NOT NAMED | | | | | | |
| 1907 | 4 | TS | 45 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1908 | 1 | HU | 85 | | | | NOT NAMED | | | |
| 1908 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1908 | 3 | TS | 45 | NOT NAMED | | | | | | |
| 1908 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1908 | 5 | TS | 60 | | NOT NAMED | | | | | |
| 1908 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1908 | 7 | HU | 70 | | | NOT NAMED | | | | |
| 1908 | 8 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | | — | | | | | |
| 1909 | 1 | TS | 50 | | | | | | | |
| 1909 | 2 | TS | 45 | NOT NAMED | | | | | | |
| 1909 | 3 | HU | 120 | | | | | | NOT NAMED | |
| 1909 | 4 | TS | 50 | | NOT NAMED | | | | | |
| 1909 | 5 | HU | 105 | | | | | NOT NAMED | | |
| 1909 | 6 | TS | 45 | NOT NAMED | | | | | | |
| 1909 | 7 | HU | 120 | | | | | | NOT NAMED | |
| 1909 | 8 | TS | 45 | NOT NAMED | | | | | | |
| 1909 | 9 | HU | 105 | | | | | NOT NAMED | | |
| 1909 | 10 | TS | 50 | | NOT NAMED | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1910 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1910 | 2 | HU | 105 | | | | | NOT NAMED | | |
| 1910 | 3 | HU | 105 | | | | | NOT NAMED | | |
| 1910 | 4 | HU | 105 | | | | | NOT NAMED | | |
| — | — | — | — | | | — | | | | |
| 1911 | 1 | HU | 70 | | | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1920 | 3 | HU | 70 | | | NOT NAMED | | | | |
| 1920 | 4 | HU | 70 | | | NOT NAMED | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1921 | 1 | HU | 85 | | | | NOT NAMED | | | |
| 1921 | 2 | HU | 70 | | | NOT NAMED | | | | |
| 1921 | 3 | HU | 105 | | | | | NOT NAMED | | |
| 1921 | 4 | TS | 60 | | NOT NAMED | | | | | |
| 1921 | 5 | TS | 50 | | NOT NAMED | | | | | |
| 1921 | 6 | HU | 120 | | | | | | NOT NAMED | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1922 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1922 | 2 | HU | 130 | | | | | | NOT NAMED | |
| 1922 | 3 | TS | 45 | NOT NAMED | | | | | | |
| 1922 | 4 | HU | 85 | | | | NOT NAMED | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1923 | 1 | HU | 90 | | | | NOT NAMED | | | |
| 1923 | 2 | HU | 105 | | | | | NOT NAMED | | |
| | | HU | 85 | | | | NOT NAMED | | | |
| 1923 | 4 | TS | 40 | NOT NAMED | | | | | | |
| 1923 | 5 | TS | 45 | NOT NAMED | | | | | | |
| 1923 | 6 | TS | 45 | NOT NAMED | | | | | | |
| 1923 | 7 | TS | 45 | NOT NAMED | | | | | | |
| — | — | — | — | | — | — | — | — | — | — |
| 1924 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1924 | 2 | HU | 115 | | | | | | NOT NAMED | |
| 1924 | 3 | HU | 90 | | | | NOT NAMED | | | |
| 1924 | 4 | HU | 70 | | | NOT NAMED | | | | |
| 1924 | 5 | TS | 45 | NOT NAMED | | | | | | |
| 1924 | 6 | TS | 50 | | NOT NAMED | | | | | |
| | 7 | HU | 105 | | | | | NOT NAMED | | |
| 1924 | 8 | HU | 85 | | | | NOT NAMED | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1925 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1925 | 2 | HU | 85 | | | | NOT NAMED | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1926 | 1 | HU | 120 | | | | | | NOT NAMED | |
| 1926 | 2 | HU | 105 | | | | | NOT NAMED | | |
| 1926 | 3 | HU | 90 | | | | NOT NAMED | | | |
| 1926 | 4 | HU | 120 | | | | | | NOT NAMED | |
| 1926 | 5 | HU | 90 | | | | NOT NAMED | | | |
| 1926 | 6 | HU | 130 | | | | | | NOT NAMED | |
| 1926 | 7 | TS | 40 | NOT NAMED | | | | | | |
| 1926 | 8 | HU | 105 | | | | | NOT NAMED | | |
| 1926 | 9 | TS | 35 | NOT NAMED | | | | | | |
| 1926 | 10 | HU | 115 | | | | | | NOT NAMED | |
| 1926 | 11 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | | | | | — | — | — |
| 1927 | 1 | HU | 105 | | | | | NOT NAMED | | |
| 1927 | 2 | HU | 90 | | | | NOT NAMED | | | |
| 1927 | 3 | HU | 70 | | | NOT NAMED | | | | |
| 1927 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1927 | 5 | TS | 50 | | NOT NAMED | | | | | |
| 1927 | 6 | TS | 40 | NOT NAMED | | | | | | |
| 1927 | 7 | TS | 40 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |

Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | --- | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1928 | 1 | HU | 85 | | | | NOT NAMED | | | |
| 1928 | 2 | HU | 70 | | | NOT NAMED | | | | |
| 1928 | 3 | TS | 50 | | NOT NAMED | | | | | |
| 1928 | 4 | HU | 140 | | | | | | | NOT NAMED |
| 1928 | 5 | TS | 50 | | NOT NAMED | | | | | |
| 1928 | 6 | HU | 70 | | | NOT NAMED | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1929 | 1 | HU | 75 | | | NOT NAMED | | | | |
| 1929 | 2 | HU | 120 | | | | | | NOT NAMED | |
| 1929 | 3 | HU | 80 | | | NOT NAMED | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1930 | 1 | HU | 95 | | | | NOT NAMED | | | |
| 1930 | 2 | HU | 130 | | | | | | NOT NAMED | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1931 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1931 | 2 | TS | 50 | | NOT NAMED | | | | | |
| 1931 | 3 | TS | 50 | | NOT NAMED | | | | | |
| 1931 | 4 | TS | 35 | NOT NAMED | | | | | | |
| 1931 | 5 | HU | 110 | | | | | NOT NAMED | | |
| 1931 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1931 | 7 | TS | 35 | NOT NAMED | | | | | | |
| 1931 | 8 | TS | 40 | NOT NAMED | | | | | | |
| 1931 | 9 | TS | 40 | NOT NAMED | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1932 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1932 | 2 | HU | 125 | | | | | | NOT NAMED | |
| 1932 | 3 | HU | 70 | | | NOT NAMED | | | | |
| 1932 | 4 | HU | 140 | | | | | | | NOT NAMED |
| 1932 | 5 | TS | 45 | NOT NAMED | | | | | | |
| 1932 | 6 | TS | 35 | NOT NAMED | | | | | | |
| 1932 | 7 | HU | 105 | | | | | NOT NAMED | | |
| 1932 | 8 | TS | 45 | NOT NAMED | | | | | | |
| 1932 | 9 | TS | 45 | NOT NAMED | | | | | | |
| 1932 | 10 | HU | 115 | | | | | | NOT NAMED | |
| 1932 | 11 | HU | 85 | | | | NOT NAMED | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1933 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1933 | 2 | HU | 90 | | | | NOT NAMED | | | |
| 1933 | 3 | TS | 45 | NOT NAMED | | | | | | |
| 1933 | 4 | TS | 40 | NOT NAMED | | | | | | |
| 1933 | 5 | HU | 80 | | | NOT NAMED | | | | |
| 1933 | 6 | TS | 50 | | NOT NAMED | | | | | |
| 1933 | 7 | TS | 35 | | | | | | | |
| 1933 | 8 | HU | 105 | | | | | NOT NAMED | | |
| 1933 | 9 | TS | 45 | NOT NAMED | | | | | | |
| 1933 | 10 | TS | 35 | NOT NAMED | | | | | | |
| 1933 | 11 | HU | 110 | | | | | NOT NAMED | | |
| 1933 | 12 | HU | 120 | | | | | | NOT NAMED | |
| 1933 | 13 | HU | 105 | | | | | NOT NAMED | | |
| 1933 | 14 | HU | 75 | | | NOT NAMED | | | | |
| 1933 | 15 | HU | 95 | | | | NOT NAMED | | | |
| 1933 | 16 | TS | 40 | NOT NAMED | | | | | | |
| 1933 | 17 | TS | 35 | NOT NAMED | | | | | | |
| 1933 | 18 | HU | 130 | | | | | | NOT NAMED | |
| 1933 | 19 | HU | 85 | | | | NOT NAMED | | | |

Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1933 | 20 | TS | 60 | | NOT NAMED | | | | | |
| 1933 | 21 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1934 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1934 | 2 | HU | 70 | | | NOT NAMED | | | | |
| 1934 | 3 | HU | 65 | | | NOT NAMED | | | | |
| | | TS | 35 | NOT NAMED | | | | | | |
| | | | 70 | | | NOT NAMED | | | | |
| 1934 | 6 | HU | 85 | | | | NOT NAMED | | | |
| 1934 | 7 | TS | 40 | NOT NAMED | | | | | | |
| 1934 | 8 | HU | 85 | | | | NOT NAMED | | | |
| 1934 | 9 | TS | 50 | | NOT NAMED | | | | | |
| 1934 | 10 | TS | 40 | NOT NAMED | | | | | | |
| 1934 | 11 | HU | 75 | | | NOT NAMED | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1935 | 1 | HU | 105 | | | | | NOT NAMED | | |
| 1935 | 2 | HU | 140 | | | | | | | NOT NAMED |
| 1935 | 3 | TS | 40 | NOT NAMED | | | | | | |
| 1935 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1935 | 5 | HU | 75 | | | NOT NAMED | | | | |
| 1935 | 6 | HU | 70 | | | NOT NAMED | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1936 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1936 | 2 | TS | 35 | NOT NAMED | | | | | | |
| 1936 | 3 | HU | 70 | | | NOT NAMED | | | | |
| 1936 | 4 | TS | 40 | NOT NAMED | | | | | | |
| 1936 | 5 | HU | 80 | | | NOT NAMED | | | | |
| 1936 | 6 | TS | 40 | NOT NAMED | | | | | | |
| 1936 | 7 | TS | 35 | NOT NAMED | | | | | | |
| 1936 | 8 | HU | 70 | | | NOT NAMED | | | | |
| 1936 | 9 | TS | 45 | NOT NAMED | | | | | | |
| 1936 | 10 | HU | 70 | | | NOT NAMED | | | | |
| 1936 | 11 | HU | 95 | | | | NOT NAMED | | | |
| 1936 | 12 | TS | 35 | NOT NAMED | | | | | | |
| 1936 | 13 | HU | 105 | | | | | NOT NAMED | | |
| 1936 | 14 | TS | 40 | NOT NAMED | | | | | | |
| 1936 | 15 | HU | 95 | | | | NOT NAMED | | | |
| 1936 | 16 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1937 | 1 | TS | 60 | | NOT NAMED | | | | | |
| 1937 | 2 | TS | 50 | | NOT NAMED | | | | | |
| 1937 | 3 | TS | 50 | | NOT NAMED | | | | | |
| 1937 | 4 | HU | 85 | | | | NOT NAMED | | | |
| 1937 | 5 | HU | 95 | | | | NOT NAMED | | | |
| 1937 | 6 | TS | 40 | NOT NAMED | | | | | | |
| 1937 | 7 | HU | 85 | | | | NOT NAMED | | | |
| 1937 | 8 | TS | 40 | NOT NAMED | | | | | | |
| 1937 | 9 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | — | | — | — | — | — | — |
| 1938 | 1 | TS | 60 | | NOT NAMED | | | | | |
| 1938 | 2 | HU | 85 | | | | NOT NAMED | | | |
| 1938 | 3 | HU | 85 | | | | NOT NAMED | | | |
| 1938 | 4 | HU | 140 | | | | | | | NOT NAMED |
| 1938 | 5 | TS | 50 | | NOT NAMED | | | | | |
| 1938 | 6 | TS | 40 | NOT NAMED | | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1938 | 7 | TS | 40 | NOT NAMED | | | | | | |
| 1938 | 8 | TS | 60 | | NOT NAMED | | | | | |
| 1939 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1939 | 2 | HU | 70 | | | NOT NAMED | | | | |
| 1939 | 3 | TS | 40 | NOT NAMED | | | | | | |
| 1939 | 4 | HU | 115 | | | | | | NOT NAMED | |
| 1939 | 5 | HU | 80 | | | NOT NAMED | | | | |
| **1940** | **1** | **TS** | **50** | | **NOT NAMED** | | | | | |
| **1940** | **2** | **HU** | **70** | | | **NOT NAMED** | | | | |
| 1940 | 3 | HU | 80 | | | NOT NAMED | | | | |
| 1940 | 4 | HU | 70 | | | NOT NAMED | | | | |
| 1940 | 5 | HU | 85 | | | | NOT NAMED | | | |
| 1940 | 6 | TS | 40 | NOT NAMED | | | | | | |
| 1940 | 7 | TS | 45 | NOT NAMED | | | | | | |
| 1940 | 8 | TS | 40 | NOT NAMED | | | | | | |
| 1941 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1941 | 2 | HU | 80 | | | NOT NAMED | | | | |
| 1941 | 3 | HU | 70 | | | NOT NAMED | | | | |
| 1941 | 4 | HU | 105 | | | | | NOT NAMED | | |
| 1941 | 5 | HU | 105 | | | | | NOT NAMED | | |
| 1941 | 6 | TS | 45 | NOT NAMED | | | | | | |
| 1942 | 1 | HU | 70 | | | NOT NAMED | | | | |
| 1942 | 2 | HU | 100 | | | | | NOT NAMED | | |
| 1942 | 3 | HU | 95 | | | | NOT NAMED | | | |
| **1942** | **4** | **TS** | **45** | **NOT NAMED** | | | | | | |
| **1942** | **5** | **TS** | **45** | **NOT NAMED** | | | | | | |
| **1942** | **6** | **TS** | **45** | **NOT NAMED** | | | | | | |
| **1942** | **7** | **TS** | **50** | | **NOT NAMED** | | | | | |
| **1942** | **8** | **TS** | **35** | **NOT NAMED** | | | | | | |
| **1942** | **9** | **TS** | **45** | **NOT NAMED** | | | | | | |
| **1942** | **10** | **HU** | **85** | | | | **NOT NAMED** | | | |
| **1943** | **1** | **HU** | **75** | | | **NOT NAMED** | | | | |
| **1943** | **2** | **TS** | **50** | | **NOT NAMED** | | | | | |
| **1943** | **3** | **HU** | **120** | | | | | | **NOT NAMED** | |
| **1943** | **4** | **HU** | **105** | | | | | **NOT NAMED** | | |
| **1943** | **5** | **TS** | **45** | NOT NAMED | | | | | | |
| **1943** | **6** | **HU** | **85** | | | | **NOT NAMED** | | | |
| **1943** | **7** | **TS** | **50** | | **NOT NAMED** | | | | | |
| **1943** | **8** | **TS** | **60** | | **NOT NAMED** | | | | | |
| **1943** | **9** | **HU** | **95** | | | | **NOT NAMED** | | | |
| **1943** | **10** | **TS** | **40** | NOT NAMED | | | | | | |
| 1944 | 1 | HU | 80 | | | **NOT NAMED** | | | | |
| | | | | | **NOT NAMED** | | | | | |
| **1944** | **3** | **HU** | **80** | | | **NOT NAMED** | | | | |
| **1944** | **4** | **HU** | **105** | | | | | **NOT NAMED** | | |
| **1944** | **5** | **TS** | **50** | | **NOT NAMED** | | | | | |
| 1944 | 6 | **TS** | **45** | **NOT NAMED** | | | | | | |
| 1944 | 7 | **HU** | **120** | | | | | | **NOT NAMED** | |
| | 8 | **HU** | **70** | | | **NOT NAMED** | | | | |

Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | --- | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1944 | 9 | HU | 85 | | | | NOT NAMED | | | |
| 1944 | 10 | TS | 40 | NOT NAMED | | | | | | |
| 1944 | 11 | HU | 105 | | | | | NOT NAMED | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1945 | 1 | HU | 100 | | | | | NOT NAMED | | |
| | 2 | TS | 45 | NOT NAMED | | | | | | |
| | | TS | 50 | | NOT NAMED | | | | | |
| 1945 | 4 | TS | 60 | | NOT NAMED | | | | | |
| 1945 | 5 | HU | 120 | | | | | | NOT NAMED | |
| 1945 | 6 | TS | 50 | | NOT NAMED | | | | | |
| 1945 | 7 | TS | 35 | NOT NAMED | | | | | | |
| 1945 | 8 | TS | 50 | | NOT NAMED | | | | | |
| | 9 | HU | 120 | | | | | | NOT NAMED | |
| | 10 | HU | 85 | | | | NOT NAMED | | | |
| | | | 85 | | | | NOT NAMED | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1946 | 1 | TS | 35 | NOT NAMED | | | | | | |
| 1946 | 2 | HU | 70 | | | NOT NAMED | | | | |
| 1946 | 3 | TS | 35 | NOT NAMED | | | | | | |
| 1946 | 4 | HU | 85 | | | | NOT NAMED | | | |
| 1946 | 5 | HU | 115 | | | | | | NOT NAMED | |
| 1946 | 6 | TS | 40 | NOT NAMED | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1947 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1947 | 2 | HU | 95 | | | | NOT NAMED | | | |
| 1947 | 3 | HU | 70 | | | NOT NAMED | | | | |
| 1947 | 4 | HU | 140 | | | | | | | NOT NAMED |
| 1947 | 5 | TS | 40 | NOT NAMED | | | | | | |
| 1947 | 6 | TS | 50 | | NOT NAMED | | | | | |
| 1947 | 7 | TS | 45 | NOT NAMED | | | | | | |
| 1947 | 8 | HU | 75 | | | NOT NAMED | | | | |
| 1947 | 9 | HU | 105 | | | | | NOT NAMED | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1948 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1948 | 2 | TS | 35 | NOT NAMED | | | | | | |
| 1948 | 3 | HU | 105 | | | | | NOT NAMED | | |
| 1948 | 4 | TS | 50 | | NOT NAMED | | | | | |
| 1948 | 5 | HU | 70 | | | NOT NAMED | | | | |
| 1948 | 6 | HU | 115 | | | | | | NOT NAMED | |
| 1948 | 7 | HU | 105 | | | | | NOT NAMED | | |
| 1948 | 8 | HU | 115 | | | | | | NOT NAMED | |
| 1948 | 9 | HU | 70 | | | NOT NAMED | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1949 | 1 | HU | 95 | | | | NOT NAMED | | | |
| 1949 | 2 | HU | 130 | | | | | | NOT NAMED | |
| 1949 | 3 | TS | 45 | NOT NAMED | | | | | | |
| 1949 | 4 | HU | 110 | | | | | NOT NAMED | | |
| 1949 | 5 | TS | 40 | NOT NAMED | | | | | | |
| 1949 | 6 | TS | 40 | NOT NAMED | | | | | | |
| 1949 | 7 | TS | 50 | | NOT NAMED | | | | | |
| 1949 | 8 | HU | 85 | | | | NOT NAMED | | | |
| 1949 | 9 | HU | 70 | | | NOT NAMED | | | | |
| 1949 | 10 | HU | 115 | | | | | | NOT NAMED | |
| 1949 | 11 | HU | 90 | | | | NOT NAMED | | | |
| 1949 | 12 | TS | 50 | | NOT NAMED | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1949 | 13 | TS | 50 | | NOT NAMED | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1950 | 1 | HU | 120 | | | | | | ABLE | |
| 1950 | 2 | HU | 105 | | | | | BAKER | | |
| 1950 | 3 | HU | 100 | | | | | CHARLIE | | |
| 1950 | 4 | HU | 160 | | | | | | | DOG |
| 1950 | 5 | HU | 110 | | | | | EASY | | |
| 1950 | 6 | HU | 120 | | | | | | FOX | |
| 1950 | 7 | HU | 95 | | | | GEORGE | | | |
| 1950 | 8 | TS | 50 | | HOW | | | | | |
| 1950 | 9 | HU | 95 | | | | ITEM | | | |
| 1950 | 10 | HU | 105 | | | | | JIG | | |
| 1950 | 11 | HU | 105 | | | | | KING | | |
| 1950 | 12 | TS | 60 | | NOT NAMED | | | | | |
| 1950 | 13 | HU | 80 | | | LOVE | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1951 | 1 | HU | 100 | | | | | ABLE | | |
| 1951 | 2 | TS | 50 | | BAKER | | | | | |
| 1951 | 3 | HU | 115 | | | | | | CHARLIE | |
| 1951 | 4 | HU | 100 | | | | | DOG | | |
| 1951 | 5 | HU | 140 | | | | | | | EASY |
| 1951 | 6 | HU | 100 | | | | | FOX | | |
| 1951 | 7 | TS | 50 | | GEORGE | | | | | |
| 1951 | 8 | HU | 95 | | | | HOW | | | |
| 1951 | 9 | HU | 70 | | | ITEM | | | | |
| 1951 | 10 | HU | 70 | | | JIG | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1952 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1952 | 2 | HU | 90 | | | | ABLE | | | |
| 1952 | 3 | HU | 105 | | | | | BAKER | | |
| 1952 | 4 | HU | 105 | | | | | CHARLIE | | |
| 1952 | 5 | HU | 75 | | | DOG | | | | |
| 1952 | 6 | HU | 95 | | | | EASY | | | |
| 1952 | 7 | HU | 130 | | | | | | FOX | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1953 | 1 | TS | 60 | | ALICE | | | | | |
| 1953 | 2 | HU | 95 | | | | BARBARA | | | |
| 1953 | 3 | TS | 50 | | NOT NAMED | | | | | |
| 1953 | 4 | HU | 130 | | | | | | CAROL | |
| 1953 | 5 | HU | 100 | | | | | DOLLY | | |
| 1953 | 6 | HU | 110 | | | | | EDNA | | |
| 1953 | 7 | TS | 60 | | NOT NAMED | | | | | |
| 1953 | 8 | HU | 110 | | | | | FLORENCE | | |
| 1953 | 9 | HU | 70 | | | GAIL | | | | |
| 1953 | 10 | TS | 40 | NOT NAMED | | | | | | |
| 1953 | 11 | TS | 60 | | NOT NAMED | | | | | |
| 1953 | 12 | TS | 60 | | HAZEL | | | | | |
| 1953 | 13 | TS | 45 | NOT NAMED | | | | | | |
| 1953 | 14 | TS | 35 | NOT NAMED | | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1954 | 1 | HU | 70 | | | ALICE | | | | |
| 1954 | 2 | TS | 40 | BARBARA | | | | | | |
| 1954 | 3 | HU | 85 | | | | CAROL | | | |
| 1954 | 4 | HU | 85 | | | | DOLLY | | | |
| 1954 | 5 | HU | 105 | | | | | EDNA | | |

Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1954 | 6 | HU | 65 | | | FLORENCE | | | | |
| 1954 | 7 | TS | 60 | | GILDA | | | | | |
| 1954 | 8 | HU | 85 | | | | NOT NAMED | | | |
| 1954 | 9 | HU | 120 | | | | | | HAZEL | |
| 1954 | 10 | TS | 45 | NOT NAMED | | | | | | |
| 1954 | 11 | HU | 70 | | | ALICE | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1955 | 1 | TS | 60 | | BRENDA | | | | | |
| 1955 | 2 | HU | 125 | | | | | | CONNIE | |
| 1955 | 3 | HU | 105 | | | | | DIANE | | |
| | | HU | 85 | | | | EDITH | | | |
| 1955 | 5 | TS | 40 | NOT NAMED | | | | | | |
| 1955 | 6 | HU | 90 | | | | FLORA | | | |
| 1955 | 7 | HU | 80 | | | GLADYS | | | | |
| 1955 | 8 | HU | 110 | | | | | HILDA | | |
| 1955 | 9 | HU | 105 | | | | | IONE | | |
| 1955 | 10 | HU | 150 | | | | | | | JANET |
| 1955 | 11 | TS | 55 | | NOT NAMED | | | | | |
| 1955 | 12 | HU | 100 | | | | | KATIE | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1956 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1956 | 2 | HU | 70 | | | ANNA | | | | |
| 1956 | 3 | HU | 105 | | | | | BETSY | | |
| 1956 | 4 | TS | 45 | CARLA | | | | | | |
| 1956 | 5 | TS | 60 | | DORA | | | | | |
| 1956 | 6 | TS | 60 | | | | | | | |
| 1956 | 7 | HU | 80 | | | FLOSSY | | | | |
| 1956 | 8 | HU | 120 | | | | | | GRETA | |
| — | — | — | — | — | — | | | | | |
| 1957 | 1 | TS | 55 | | NOT NAMED | | | | | |
| 1957 | 2 | HU | 125 | | | | | | AUDREY | |
| 1957 | 3 | TS | 60 | | BERTHA | | | | | |
| 1957 | 4 | HU | 135 | | | | | | CARRIE | |
| 1957 | 5 | TS | 35 | DEBBIE | | | | | | |
| 1957 | 6 | TS | 45 | ESTHER | | | | | | |
| 1957 | 7 | HU | 70 | | | FRIEDA | | | | |
| 1957 | 8 | TS | 50 | | NOT NAMED | | | | | |
| — | | | — | | | | | | | |
| 1958 | 1 | TS | 45 | ALMA | | | | | | |
| 1958 | 2 | TS | 50 | | BECKY | | | | | |
| 1958 | 3 | HU | 140 | | | | | | | CLEO |
| 1958 | 4 | HU | 110 | | | | | DAISY | | |
| 1958 | 5 | HU | 100 | | | | | ELLA | | |
| 1958 | 6 | HU | 80 | | | FIFI | | | | |
| 1958 | 7 | TS | 60 | | GERDA | | | | | |
| 1958 | 8 | HU | 115 | | | | | | HELENE | |
| 1958 | 9 | HU | 115 | | | | | | ILSA | |
| 1958 | 10 | HU | 80 | | | JANICE | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | --- | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1959 | 7 | HU | 65 | | | FLORA | | | | |
| 1959 | 8 | HU | 120 | | | | | | GRACIE | |
| 1959 | 9 | HU | 110 | | | | | HANNAH | | |
| 1959 | 10 | TS | 50 | | IRENE | | | | | |
| 1959 | 11 | HU | 70 | | | JUDITH | | | | |
| 1960 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1960 | 2 | HU | 85 | | | | ABBY | | | |
| 1960 | 3 | TS | 50 | | BRENDA | | | | | |
| 1960 | 4 | HU | 80 | | | CLEO | | | | |
| 1960 | 5 | HU | 140 | | | | | | | DONNA |
| 1960 | 6 | HU | 140 | | | | | | | ETHEL |
| 1960 | 7 | TS | 40 | FLORENCE | | | | | | |
| 1961 | 1 | HU | 100 | | | | | ANNA | | |
| 1961 | 2 | HU | 120 | | | | | | BETSY | |
| 1961 | 3 | HU | 150 | | | | | | | CARLA |
| 1961 | 4 | HU | 105 | | | | | DEBBIE | | |
| 1961 | 5 | HU | 125 | | | | | | ESTHER | |
| 1961 | 6 | TS | 35 | NOT NAMED | | | | | | |
| 1961 | 7 | HU | 110 | | | | | FRANCES | | |
| 1961 | 8 | TS | 60 | | GERDA | | | | | |
| 1961 | 9 | HU | 140 | | | | | | | HATTIE |
| 1961 | 10 | HU | 70 | | | JENNY | | | | |
| 1961 | 11 | TS | 60 | | INGA | | | | | |
| 1962 | 1 | HU | 85 | | | | ALMA | | | |
| 1962 | 2 | TS | 35 | BECKY | | | | | | |
| 1962 | 3 | TS | 60 | | CELIA | | | | | |
| 1962 | 4 | HU | 95 | | | | DAISY | | | |
| 1962 | 5 | HU | 100 | | | | | ELLA | | |
| 1963 | 1 | HU | 90 | | | | ARLENE | | | |
| 1963 | 2 | HU | 105 | | | | | BEULAH | | |
| 1963 | 3 | TS | 50 | | NOT NAMED | | | | | |
| 1963 | 4 | HU | 70 | | | CINDY | | | | |
| 1963 | 5 | HU | 65 | | | DEBRA | | | | |
| 1963 | 6 | HU | 85 | | | | EDITH | | | |
| 1963 | 7 | HU | 125 | | | | | | FLORA | |
| 1963 | 8 | HU | 95 | | | | GINNY | | | |
| 1963 | 9 | TS | 45 | HELENA | | | | | | |
| 1964 | 1 | TS | 50 | | NOT NAMED | | | | | |
| 1964 | 2 | TS | 45 | NOT NAMED | | | | | | |
| 1964 | 3 | TS | 55 | | ABBY | | | | | |
| 1964 | 4 | TS | 45 | BRENDA | | | | | | |
| 1964 | 5 | HU | 135 | | | | | | CLEO | |
| 1964 | 6 | HU | 115 | | | | | | DORA | |
| 1964 | 7 | HU | 100 | | | | | ETHEL | | |
| 1964 | 8 | TS | 40 | FLORENCE | | | | | | |
| 1964 | 9 | HU | 125 | | | | | | GLADYS | |
| 1964 | 10 | HU | 130 | | | | | | HILDA | |
| 1964 | 11 | HU | 110 | | | | | ISBELL | | |
| 1964 | 12 | TS | 35 | NOT NAMED | | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1965 | 1 | TS | 45 | NOT NAMED | | | | | | |
| 1965 | 2 | HU | 80 | | | ANNA | | | | |
| 1965 | 3 | HU | 135 | | | | | | BETSY | |
| 1965 | 4 | HU | 85 | | | | CAROL | | | |
| 1965 | 5 | TS | 45 | DEBBIE | | | | | | |
| 1965 | 6 | HU | 70 | | | ELENA | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1966 | 1 | HU | 110 | | | | | ALMA | | |
| 1966 | 2 | HU | 65 | | | | | | | |
| 1966 | 3 | HU | 70 | | | CELIA | | | | |
| | | | | | | DOROTHY | | | | |
| 1966 | 5 | TS | 45 | ELLA | | | | | | |
| 1966 | 6 | HU | 110 | | | | | FAITH | | |
| 1966 | 7 | TS | 50 | | GRETA | | | | | |
| 1966 | 8 | TS | 45 | HALLIE | | | | | | |
| 1966 | 9 | HU | 130 | | | | | | INEZ | |
| 1966 | 10 | TS | 45 | JUDITH | | | | | | |
| 1966 | 11 | HU | 70 | | | LOIS | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1967 | 1 | HU | 75 | | | ARLENE | | | | |
| 1967 | 2 | HU | 140 | | | | | | | BEULAH |
| 1967 | 3 | HU | 95 | | | | CHLOE | | | |
| 1967 | 4 | HU | 75 | | | DORIA | | | | |
| 1967 | 5 | TS | 50 | | EDITH | | | | | |
| 1967 | 6 | HU | 75 | | | FERN | | | | |
| 1967 | 7 | TS | 45 | GINGER | | | | | | |
| 1967 | 8 | HU | 80 | | | HEIDI | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1968 | | HU | 65 | | | ABBY | | | | |
| 1968 | 2 | HU | 65 | | | BRENDA | | | | |
| 1968 | 3 | TS | 60 | | CANDY | | | | | |
| 1968 | 4 | HU | 70 | | | DOLLY | | | | |
| 1968 | 5 | TS | 55 | | EDNA | | | | | |
| 1968 | 6 | HU | 70 | | | SUBTROP 1 | | | | |
| 1968 | 7 | TS | 50 | | FRANCES | | | | | |
| 1968 | 8 | HU | 75 | | | GLADYS | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1969 | 1 | TS | 60 | | ANNA | | | | | |
| 1969 | 2 | HU | 75 | | | BLANCHE | | | | |
| 1969 | 3 | HU | 165 | | | | | | | CAMILLE |
| 1969 | 4 | HU | 105 | | | | | DEBBIE | | |
| 1969 | 5 | TS | 50 | | EVE | | | | | |
| 1969 | 6 | HU | 100 | | | | | FRANCELIA | | |
| 1969 | 7 | HU | 110 | | | | | GERDA | | |
| 1969 | 8 | HU | 75 | | | HOLLY | | | | |
| 1969 | 9 | HU | 100 | | | | | INGA | | |
| 1969 | 10 | HU | 65 | | | NOT NAMED | | | | |
| 1969 | 11 | TS | 60 | | NOT NAMED | | | | | |
| 1969 | 12 | TS | 50 | | SUBTROP 1 | | | | | |
| 1969 | 13 | TS | 40 | JENNY | | | | | | |
| 1969 | 14 | HU | 90 | | | | KARA | | | |
| 1969 | 15 | HU | 90 | | | | LAURIE | | | |
| 1969 | 16 | TS | 60 | | NOT NAMED | | | | | |
| 1969 | 17 | HU | 65 | | | NOT NAMED | | | | |
| 1969 | 18 | HU | 80 | | | MARTHA | | | | |

Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1970 | 1 | HU | 70 | | | ALMA | | | | |
| 1970 | 2 | TS | 55 | | BECKY | | | | | |
| 1970 | 3 | HU | 110 | | | | | CELIA | | |
| 1970 | 4 | TS | 60 | | NOT NAMED | | | | | |
| 1970 | 5 | TS | 60 | | DOROTHY | | | | | |
| 1970 | 6 | HU | 110 | | | | | ELLA | | |
| 1970 | 7 | TS | 60 | | FELICE | | | | | |
| 1970 | 8 | TS | 45 | GRETA | | | | | | |
| 1970 | 9 | HU | 90 | | | | NOT NAMED | | | |
| 1970 | 10 | HU | 65 | | | NOT NAMED | | | | |
| 1971 | 1 | TS | 55 | | ARLENE | | | | | |
| 1971 | 2 | HU | 75 | | | NOT NAMED | | | | |
| 1971 | 3 | HU | 75 | | | BETH | | | | |
| 1971 | 4 | TS | 55 | | CHLOE | | | | | |
| 1971 | 5 | TS | 55 | | DORIA | | | | | |
| 1971 | 6 | HU | 140 | | | | | | | EDITH |
| 1971 | 7 | HU | 80 | | | FERN | | | | |
| 1971 | 8 | HU | 95 | | | | GINGER | | | |
| 1971 | 9 | TS | 55 | | HEIDI | | | | | |
| 1971 | 10 | HU | 70 | | | IRENE | | | | |
| 1971 | 11 | TS | 55 | | JANICE | | | | | |
| 1971 | 12 | TS | 45 | KRISTY | | | | | | |
| 1971 | 13 | TS | 60 | | LAURA | | | | | |
| 1972 | 1 | TS | 60 | | ALPHA | | | | | |
| 1972 | 2 | HU | 75 | | | AGNES | | | | |
| 1972 | 3 | HU | 90 | | | | BETTY | | | |
| 1972 | 4 | TS | 60 | | CARRIE | | | | | |
| 1972 | 5 | HU | 70 | | | DAWN | | | | |
| 1972 | 6 | TS | 55 | | CHARLIE | | | | | |
| 1972 | 7 | TS | 40 | DELTA | | | | | | |
| 1973 | 1 | HU | 80 | | | ALICE | | | | |
| 1973 | 2 | TS | 40 | ALFA | | | | | | |
| 1973 | 3 | HU | 80 | | | BRENDA | | | | |
| 1973 | 4 | TS | 60 | | CHRISTINE | | | | | |
| 1973 | 5 | TS | 60 | | DELIA | | | | | |
| 1973 | 6 | HU | 100 | | | | | ELLEN | | |
| 1973 | 7 | HU | 70 | | | FRAN | | | | |
| 1973 | 8 | TS | 60 | | GILDA | | | | | |
| 1974 | 1 | TS | 55 | | SUBTROP 1 | | | | | |
| 1974 | 2 | TS | 45 | SUBTROP 2 | | | | | | |
| 1974 | 3 | TS | 50 | | SUBTROP 3 | | | | | |
| 1974 | 4 | TS | 55 | | ALMA | | | | | |
| 1974 | 5 | HU | 100 | | | | | BECKY | | |
| 1974 | 6 | HU | 130 | | | | | | CARMEN | |
| 1974 | 7 | TS | 45 | DOLLY | | | | | | |
| 1974 | 8 | TS | 60 | | ELAINE | | | | | |
| 1974 | 9 | HU | 95 | | | | FIFI | | | |
| 1974 | 10 | HU | 65 | | | GERTRUDE | | | | |
| 1974 | 11 | TS | 45 | SUBTROP 4 | | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | --- | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1975 | 1 | TS | 60 | | AMY | | | | | |
| **1975** | **2** | **HU** | **75** | | | BLANCHE | | | | |
| 1975 | 3 | HU | 100 | | | | | CAROLINE | | |
| 1975 | 4 | HU | 95 | | | | DORIS | | | |
| 1975 | 5 | HU | 110 | | | | | ELOISE | | |
| 1975 | 6 | HU | 90 | | | | FAYE | | | |
| 1975 | 7 | HU | 120 | | | | | | GLADYS | |
| | | | | HALLIE | | | | | | |
| | | | | | SUBTROP 2 | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1976 | 1 | TS | 45 | SUBTROP 1 | | | | | | |
| 1976 | 2 | TS | 40 | ANNA | | | | | | |
| 1976 | 3 | HU | 105 | | | | | BELLE | | |
| 1976 | 4 | HU | 80 | | | CANDICE | | | | |
| **1976** | **5** | **TS** | **45** | DOTTIE | | | | | | |
| **1976** | **6** | **HU** | **90** | | | | EMMY | | | |
| 1976 | 7 | HU | 100 | | | | | FRANCES | | |
| 1976 | 8 | TS | 40 | SUBTROP 3 | | | | | | |
| 1976 | 9 | HU | 90 | | | | GLORIA | | | |
| 1976 | 10 | HU | 65 | | | HOLLY | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1977 | 1 | HU | 150 | | | | | | | ANITA |
| 1977 | 2 | HU | 65 | | | BABE | | | | |
| 1977 | 3 | HU | 65 | | | CLARA | | | | |
| 1977 | 4 | HU | 75 | | | DOROTHY | | | | |
| 1977 | 5 | HU | 70 | | | EVELYN | | | | |
| 1977 | 6 | TS | 50 | | FRIEDA | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1978 | 1 | TS | 40 | SUBTROP 1 | | | | | | |
| **1978** | **2** | **TS** | **45** | AMELIA | | | | | | |
| 1978 | 3 | TS | 45 | BESS | | | | | | |
| 1978 | 4 | HU | 80 | | | CORA | | | | |
| 1978 | 5 | TS | 50 | | DEBRA | | | | | |
| 1978 | 6 | HU | 120 | | | | | | ELLA | |
| 1978 | 7 | HU | 85 | | | | FLOSSIE | | | |
| 1978 | 8 | HU | 115 | | | | | | GRETA | |
| 1978 | 9 | TS | 55 | | HOPE | | | | | |
| 1978 | 10 | TS | 45 | IRMA | | | | | | |
| 1978 | 11 | TS | 45 | JULIET | | | | | | |
| **1978** | **12** | **HU** | **70** | | | KENDRA | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1979 | 1 | TS | 50 | | ANA | | | | | |
| 1979 | 2 | HU | 65 | | | BOB | | | | |
| 1979 | 3 | TS | 45 | CLAUDETTE | | | | | | |
| 1979 | 4 | HU | 150 | | | | | | | DAVID |
| 1979 | 5 | TS | 35 | ELENA | | | | | | |
| 1979 | 6 | HU | 115 | | | | | | FREDERIC | |
| 1979 | 7 | HU | 85 | | | | GLORIA | | | |
| 1979 | 8 | HU | 75 | | | HENRI | | | | |
| 1979 | 9 | HU | 65 | | | SUBTROP 1 | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1980 | 1 | HU | 165 | | | | | | | ALLEN |
| 1980 | 2 | HU | 85 | | | | BONNIE | | | |
| 1980 | 3 | HU | 70 | | | CHARLEY | | | | |
| **1980** | **4** | **TS** | **50** | | **DANIELLE** | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1980 | 5 | HU | 65 | | | EARL | | | | |
| 1980 | 6 | HU | 100 | | | | | FRANCES | | |
| 1980 | 7 | HU | 70 | | | GEORGES | | | | |
| 1980 | 8 | TS | 60 | | HERMINE | | | | | |
| 1980 | 9 | HU | 90 | | | | IVAN | | | |
| 1980 | 10 | HU | 85 | | | | JEANNE | | | |
| 1980 | 11 | HU | 75 | | | KARL | | | | |
| ---- | --- | -- | --- | ------- | ------- | ------- | ------- | ------- | ------- | ------- |
| 1981 | 1 | TS | 50 | | ARLENE | | | | | |
| 1981 | 2 | TS | 60 | | BRET | | | | | |
| 1981 | 3 | TS | 50 | | CINDY | | | | | |
| 1981 | 4 | HU | 70 | | | DENNIS | | | | |
| 1981 | 5 | HU | 80 | | | EMILY | | | | |
| 1981 | 6 | HU | 100 | | | | | FLOYD | | |
| 1981 | 7 | HU | 90 | | | | GERT | | | |
| 1981 | 8 | HU | 115 | | | | | | HARVEY | |
| 1981 | 9 | HU | 105 | | | | | IRENE | | |
| 1981 | 10 | TS | 45 | JOSE | | | | | | |
| 1981 | 11 | HU | 75 | | | KATRINA | | | | |
| 1981 | 12 | TS | 60 | | SUBTROP 3 | | | | | |
| ---- | --- | -- | --- | ------- | ------- | ------- | ------- | ------- | ------- | ------- |
| 1982 | 1 | HU | 75 | | | ALBERTO | | | | |
| 1982 | 2 | TS | 60 | | SUBTROP 1 | | | | | |
| 1982 | 3 | TS | 63 | | BERYL | | | | | |
| 1982 | 4 | TS | 55 | | CHRIS | | | | | |
| 1982 | 5 | HU | 115 | | | | | | DEBBY | |
| 1982 | 6 | TS | 60 | | ERNESTO | | | | | |
| ---- | --- | -- | --- | ------- | ------- | ------- | ------- | ------- | ------- | ------- |
| 1983 | 1 | HU | 100 | | | | | ALICIA | | |
| 1983 | 2 | HU | 70 | | | BARRY | | | | |
| 1983 | 3 | HU | 65 | | | CHANTAL | | | | |
| 1983 | 4 | TS | 55 | | DEAN | | | | | |
| ---- | --- | -- | --- | ------- | ------- | ------- | ------- | ------- | ------- | ------- |
| 1984 | 1 | TS | 50 | | SUBTROP 1 | | | | | |
| 1984 | 2 | TS | 45 | ARTHUR | | | | | | |
| 1984 | 3 | TS | 35 | BERTHA | | | | | | |
| 1984 | 4 | TS | 50 | | CESAR | | | | | |
| 1984 | 5 | HU | 115 | | | | | | DIANA | |
| 1984 | 6 | TS | 55 | | EDOUARD | | | | | |
| 1984 | 7 | TS | 55 | | FRAN | | | | | |
| 1984 | 8 | TS | 45 | GUSTAV | | | | | | |
| 1984 | 9 | HU | 65 | | | HORTENSE | | | | |
| 1984 | 10 | TS | 50 | | ISIDORE | | | | | |
| 1984 | 11 | HU | 90 | | | | JOSEPHINE | | | |
| 1984 | 12 | HU | 80 | | | KLAUS | | | | |
| 1984 | 13 | HU | 70 | | | LILI | | | | |
| ---- | --- | -- | --- | ------- | ------- | ------- | ------- | ------- | ------- | ------- |
| 1985 | 1 | TS | 60 | | ANA | | | | | |
| 1985 | 2 | HU | 65 | | | BOB | | | | |
| 1985 | 3 | HU | 75 | | | CLAUDETTE | | | | |
| 1985 | 4 | HU | 80 | | | DANNY | | | | |
| 1985 | 5 | HU | 110 | | | | | ELENA | | |
| 1985 | 6 | TS | 55 | | FABIAN | | | | | |
| 1985 | 7 | HU | 125 | | | | | | GLORIA | |
| 1985 | 8 | TS | 50 | | HENRI | | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1985 | 9 | TS | 60 | | ISABEL | | | | | |
| 1985 | 10 | HU | 75 | | | JUAN | | | | |
| 1985 | 11 | HU | 105 | | | | | KATE | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1986 | 1 | TS | 45 | ANDREW | | | | | | |
| 1986 | 2 | HU | 75 | | | BONNIE | | | | |
| 1986 | 3 | HU | 70 | | | CHARLEY | | | | |
| 1986 | 4 | TS | 50 | | DANIELLE | | | | | |
| 1986 | 5 | HU | 90 | | | | EARL | | | |
| 1986 | 6 | HU | 75 | | | FRANCES | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1987 | 1 | TS | 40 | NOT NAMED | | | | | | |
| 1987 | 2 | HU | 65 | | | ARLENE | | | | |
| 1987 | 3 | TS | 45 | BRET | | | | | | |
| 1987 | 4 | TS | 45 | CINDY | | | | | | |
| 1987 | 5 | TS | 45 | DENNIS | | | | | | |
| 1987 | 6 | HU | 110 | | | | | EMILY | | |
| 1987 | 7 | HU | 65 | | | FLOYD | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1988 | 1 | TS | 35 | ALBERTO | | | | | | |
| 1988 | 2 | TS | 45 | BERYL | | | | | | |
| 1988 | 3 | TS | 45 | CHRIS | | | | | | |
| 1988 | 4 | HU | 65 | | | DEBBY | | | | |
| 1988 | 5 | TS | 55 | | ERNESTO | | | | | |
| 1988 | 6 | TS | 50 | | NOT NAMED | | | | | |
| 1988 | 7 | HU | 70 | | | FLORENCE | | | | |
| 1988 | 8 | HU | 160 | | | | | | | GILBERT |
| 1988 | 9 | HU | 125 | | | | | | HELENE | |
| 1988 | 10 | TS | 40 | ISAAC | | | | | | |
| 1988 | 11 | HU | 125 | | | | | | JOAN | |
| 1988 | 12 | TS | 60 | | KEITH | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1989 | 1 | TS | 45 | ALLISON | | | | | | |
| 1989 | 2 | TS | 45 | BARRY | | | | | | |
| 1989 | 3 | HU | 70 | | | CHANTAL | | | | |
| 1989 | 4 | HU | 90 | | | | DEAN | | | |
| 1989 | 5 | HU | 90 | | | | ERIN | | | |
| 1989 | 6 | HU | 75 | | | FELIX | | | | |
| 1989 | 7 | HU | 125 | | | | | | GABRIELLE | |
| 1989 | 8 | HU | 140 | | | | | | | HUGO |
| 1989 | 9 | TS | 60 | | IRIS | | | | | |
| 1989 | 10 | HU | 75 | | | JERRY | | | | |
| 1989 | 11 | TS | 50 | | KAREN | | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1990 | 1 | TS | 60 | | ARTHUR | | | | | |
| 1990 | 2 | HU | 70 | | | BERTHA | | | | |
| 1990 | 3 | TS | 45 | CESAR | | | | | | |
| 1990 | 4 | HU | 85 | | | | DIANA | | | |
| 1990 | 5 | TS | 40 | EDOUARD | | | | | | |
| 1990 | 6 | TS | 35 | FRAN | | | | | | |
| 1990 | 7 | HU | 105 | | | | | GUSTAV | | |
| 1990 | 8 | TS | 55 | | HORTENSE | | | | | |
| 1990 | 9 | HU | 85 | | | | ISIDORE | | | |
| 1990 | 10 | HU | 75 | | | JOSEPHINE | | | | |
| 1990 | 11 | HU | 70 | | | KLAUS | | | | |

# Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1990 | 12 | HU | 65 | | | LILI | | | | |
| 1990 | 13 | TS | 55 | | MARCO | | | | | |
| 1990 | 14 | HU | 75 | | | NANA | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1991 | 1 | TS | 45 | ANA | | | | | | |
| 1991 | 2 | HU | 100 | | | | | BOB | | |
| 1991 | 3 | HU | 115 | | | | | | CLAUDETTE | |
| 1991 | 4 | TS | 45 | DANNY | | | | | | |
| 1991 | 5 | TS | 50 | | ERIKA | | | | | |
| | 3 | TS | 40 | FABIAN | | | | | | |
| | | HU | 85 | | | | GRACE | | | |
| 1991 | 8 | HU | 65 | | | UNNAMED | | | | |
| — | — | — | — | — | — | — | — | | | |
| 1992 | 1 | TS | | SUBTROP | | | | | | |
| 1992 | | | | | | | | | ANDREW | |
| | | | | | | | BONNIE | | | |
| | | HU | 95 | | | | CHARLEY | | | |
| 1992 | 5 | TS | 55 | | DANIELLE | | | | | |
| 1992 | 6 | TS | 55 | | EARL | | | | | |
| 1992 | 7 | HU | 75 | | | FRANCES | | | | |
| — | — | — | — | | | | | | | |
| 1993 | 1 | TS | 35 | ARLENE | | | | | | |
| 1993 | 2 | TS | 50 | | BRET | | | | | |
| 1993 | 3 | TS | 40 | CINDY | | | | | | |
| 1993 | 4 | TS | 45 | DENNIS | | | | | | |
| 1993 | 5 | HU | 100 | | | | | EMILY | | |
| 1993 | 6 | HU | 65 | | | FLOYD | | | | |
| 1993 | 7 | HU | 85 | | | | GERT | | | |
| 1993 | 8 | HU | 65 | | | HARVEY | | | | |
| — | — | — | — | — | — | — | — | — | — | |
| 1994 | 1 | TS | 55 | | | | | | | |
| 1994 | 2 | TS | 50 | | | | | | | |
| 1994 | 3 | HU | 70 | | | CHRIS | | | | |
| 1994 | 4 | TS | 60 | | DEBBY | | | | | |
| 1994 | 5 | TS | 50 | | ERNESTO | | | | | |
| 1994 | 6 | HU | 95 | | | | FLORENCE | | | |
| 1994 | 7 | HU | 75 | | | GORDON | | | | |
| — | — | — | — | — | — | — | — | — | — | — |
| 1995 | 1 | HU | 65 | | | | | | | |
| 1995 | 2 | TS | 60 | | BARRY | | | | | |
| 1995 | 3 | TS | 60 | | CHANTAL | | | | | |
| 1995 | 4 | TS | 40 | DEAN | | | | | | |
| 1995 | 5 | HU | 80 | | | ERIN | | | | |
| 1995 | 6 | HU | 120 | | | | | | FELIX | |
| 1995 | 7 | TS | 60 | | GABRIELLE | | | | | |
| 1995 | 8 | HU | 95 | | | | HUMBERTO | | | |
| 1995 | 9 | HU | 95 | | | | IRIS | | | |
| 1995 | 10 | TS | 35 | JERRY | | | | | | |
| 1995 | 11 | TS | 45 | KAREN | | | | | | |
| 1995 | 12 | HU | 130 | | | | | | LUIS | |
| 1995 | 13 | HU | 100 | | | | | MARILYN | | |
| 1995 | 14 | HU | 65 | | | NOEL | | | | |
| 1995 | 15 | HU | 130 | | | | | | OPAL | |
| 1995 | 16 | TS | 50 | | PABLO | | | | | |
| 1995 | 17 | HU | 100 | | | | | ROXANNE | | |

Atlantic Tropical Cyclones by Category, 1886-1996

| year | no. | — | kts | category -1 | category 0 | category 1 | category 2 | category 3 | category 4 | category 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1995 | 18 | TS | 55 | | SEBASTIEN | | | | | |
| 1995 | 19 | HU | 75 | | | TANYA | | | | |
| — | — | — | — | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 1996 | 1 | TS | 40 | ARTHUR | | | | | | |
| 1996 | 2 | HU | 100 | | | | | BERTHA | | |
| 1996 | 3 | HU | 70 | | | CESAR | | | | |
| 1996 | 4 | HU | 70 | | | DOLLY | | | | |
| 1996 | 5 | HU | 125 | | | | | | EDOUARD | |
| 1996 | 6 | HU | 105 | | | | | FRAN | | |
| 1996 | 7 | TS | 40 | GUSTAV | | | | | | |
| 1996 | 8 | HU | 120 | | | | | | HORTENSE | |
| 1996 | 9 | HU | 100 | | | | | ISIDORE | | |
| 1996 | 10 | TS | 60 | | JOSEPHINE | | | | | |
| 1996 | 11 | TS | 45 | KYLE | | | | | | |
| 1996 | 12 | HU | 100 | | | | | LILI | | |
| 1996 | 13 | HU | 65 | | | MARCO | | | | |