

Storms of 1888 - 1890

STORMS OF 1888-1890

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Introduction.

The present report describes results of the author's continuing effort of improving historical knowledge of Atlantic tropical cyclones which is planned to be used in determining their frequency variation during the second half of the nineteenth century and early this century. The present report covers the period 1888-1890. The documentation in Neumann et al. (1993) has already covered that period, but the study of individual storms corresponding to it has been undertaken in order to check the tracks for correctness in the light of information contained in other sources and to document the evolution of new storms to be added to the ones in their above mentioned publication.

Sources and methods.

Sources that were used in checking the tracks in Neumann et al. (1993) were available cyclone lists such as those published in Tannehill (1938) and Dunn and Miller (1960), books and articles about storms such as Vines (1895), Mitchell (1924), Sarasola (1928), and Martinez-Fortun (1942) and meteorological information contained in the Monthly Weather Review and in sections of marine and general news published in newspapers, primarily in The New York Times and The Times (London). Each storm in Neumann et al. (1993) for the period 1888-1890 was checked against the above information sources and appropriate modifications were proposed for the tracks which were found to be in error. The sources above also allowed the author of this study to document some new storm cases which, of course, are not shown in Neumann et al. (1993). It should be emphasized that information in the above sources was crucial for documenting the new storms.

Tracks of newly documented storms were combined with those for previously known storms after having applied to them the proposed corrections along their tracks, and the storms were finally numbered in chronological order in accordance to the day they were first detected. Tracks are displayed on maps in Figs. 1 through 3. Estimated 7 A.M. (E.S.T.) positions were denoted by black dots along the tracks, with adjacent numbers indicating the day of the month. The month was indicated only for the starting day of each track and, in addition, for the first day of the month when the track was found to continue from one month to the next. The storm number was indicated by a large size number near the beginning of the track. Tracks for tropical storms were denoted by dashed lines and tracks for hurricanes were denoted by solid lines.

Results.

The detailed study of the 1888-1890 storms is presented in the

Appendix. The appendix presents 22 storms on a one-by-one basis. These storms are listed in Table 1. Three of these 22 storms (13.6 percent) are new cases which are not included in Neumann et al. (1993); these three cases occurred in 1890. In regard to the number of known cases in Neumann et al. (1993) for which a track modification was proposed, Table 1 shows that some changes along the track were implemented for 8 out of the 19 storms displayed in Neumann et al. (1993) for the period 1888-1890. This means that, as a result of the present study, 42.1 percent of the tracks for the above mentioned 19 storms was not found to be entirely correct. The maximum number of storm tracks which were modified for an individual year was 4 in 1888 and also in 1889, and the minimum was none in 1890.

The most significant contribution of the storm study for the period 1888-1890 is probably that the number of known storms for 1890 was increased to four from just one in Neumann et al. (1993), representing an increase by 300 percent. The years of 1890 and 1914 are shown to have had only one tropical cyclone each in Neumann et al. (1993). Only the year of 1914 is left with one storm after this study.

Table 1
List of Storms
(1888-1890)

List No.	Ident. # & Date (s)	New Case	Track Modified
1	Storm 1, 1888 (Jun. 16-18)	no	no
2	Storm 2, 1888 (Jul. 4-6)	no	no
3	Storm 3, 1888 (Aug. 14-24)	no	yes
4	Storm 4, 1888 (Aug. 31- Sept. 7)	no	yes
5	Storm 5, 1888 (Sept. 6-12)	no	yes
6	Storm 6, 1888 (Sept. 23-27)	no	no
7	Storm 7, 1888 (Oct. 8-12)	no	no
8	Storm 8, 1888 (Nov. 1-8)	no	no
9	Storm 9, 1888 (Nov. 17- Dec. 2)	no	yes
10	Storm 1, 1889 (May 16-21)	no	no
11	Storm 2, 1889 (Jun. 15-20)	no	no
12	Storm 3, 1889 (Aug. 19-27)	no	no
13	Storm 4, 1889 (Sept. 1-12)	no	yes
14	Storm 5, 1889 (Sept. 2-11)	no	yes
15	Storm 6, 1889 (Sept. 12-26)	no	yes
16	Storm 7, 1889 (Sept. 12-19)	no	no
17	Storm 8, 1889 (Sept. 29-Oct. 6)	no	no
18	Storm 9, 1889 (Oct. 5-10)	no	yes
19	Storm 1, 1890 (May 27-29)	yes	---
20	Storm 2, 1890 (Aug. 18-27)	yes	---
21	Storm 3, 1890 (Aug. 26- Sept. 3)	no	no
22	Storm 4, 1890 (Oct. 31)	yes	---

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Captions

- Fig. 1 Storms of 1888. Estimated positions shown by black dots along the tracks are for 7 A.M. (E.S.T.). Tracks for tropical storms are denoted by dashed lines and tracks for hurricanes are denoted by solid lines.
- Fig. 2 Same as Fig. 1 but for 1889.
- Fig. 3 Same as Fig. 1 but for 1890.