

Temperature and Hurricane Evaluation for Houston, Texas

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Abstract: Relationship between, monthly and annual atmospheric temperatures and hurricanes for Texas was investigated for 35 years from 1975-2010. Based on the analyses it has been found that 86% of the years has temperature above the maximum mean highest temperatures of the hurricane years for the month of August and 89% for the month of July.

1 Introduction

Analyses of global surface air temperature and sea surface temperature has been studied by many researchers (Hansen et al., 1999 and Smith and Reynolds, 2004). Wang et al., (2008) studied the effects of Global warming and hurricanes in the United States. Atlantic hurricane activity has been largely increased in frequency and intensity since 1995. The 2005 hurricane season was the most active year on record, with 28 named tropical storms in the Atlantic basin and 15 of them reaching hurricane intensity including Hurricane Katrina and Rita. For the year 2008 there were 16 named storms with 8 of them reaching hurricane intensity including the Hurricane IKE which had a landfall in Galveston, Texas. The recent increase in the Atlantic hurricane activity has fueled a debate on the role of global warming in the increase (Goldenberg et al., 2001). In this paper the surface temperature analysis of Houston has been carried out from 1975.

2 Objectives

The objective of this study was to investigate the relationship between air temperature and hurricanes data for Houston, Texas.

3 Temperature Analyses

The temperature data of the Houston-IAH was collected from the National Climatic and Data Center (www.ncdc.noaa.gov) and analyzed to determine the correlation between hurricanes and temperatures.

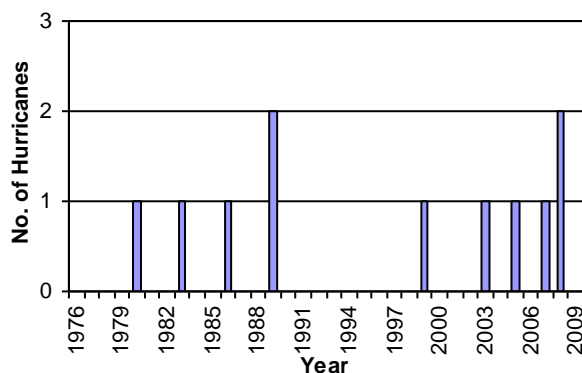


Fig. 1 Texas Hurricane History (1975-2010)

Table 1 Texas Hurricane History (1975-2010)

Year	Hurricane	Category	Landfall
1980	Allen	3	Port Mansfield
1983	Alicia	3	Galveston
1986	Bonnie	1	Beaumont
1989	Chantel	1	High Island
1989	Jerry	1	Galveston
1999	Bret	3	Padre Island
2003	Claudette	1	Port O' Conner
2005	Rita	3	Sabine Pass
2007	Humberto	1	High Island
2008	Dolly	1	Brownsville
2008	Ike	2	Galveston

Figure 1 and Table 1 shows the No. of hurricanes made landfall in Texas from 1975. 26% of the 35 years had hurricanes. Figure 2 shows the yearly average, maximum and minimum temperatures. It also shows the average, maximum and minimum temperature measured in the hurricane years. 40% of the years had average temperature more than the average temperature of the hurricane years. Figure 3 and 4 shows the average temperatures measured for the month of July and August. 86% of the years had temperature above the maximum mean highest temperatures of the hurricane years for the month of August and 89% for the month of July.

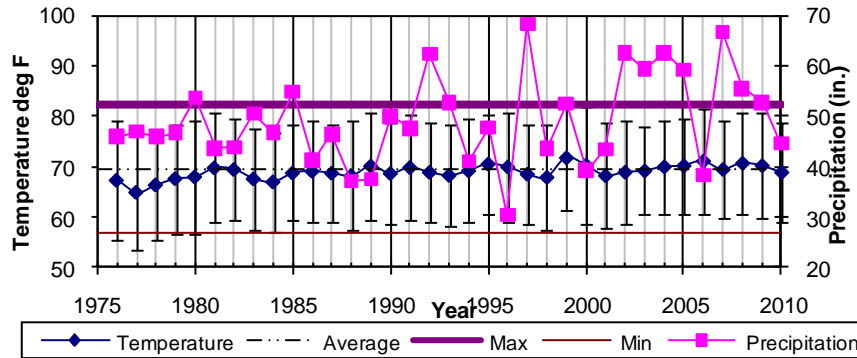


Fig. 2 Average Annual Temperature

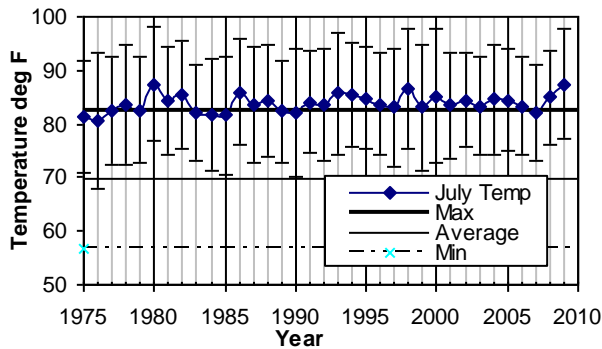


Fig. 3 Monthly Average Temperature - July

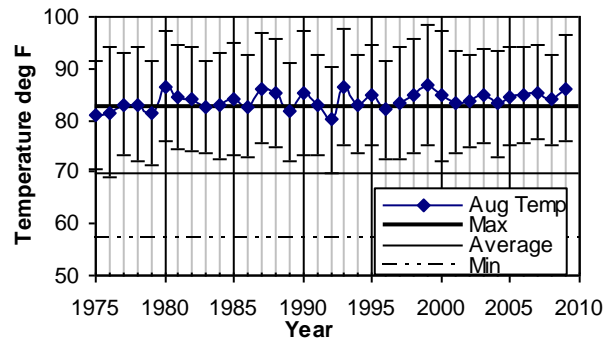


Fig. 4 Monthly Average Temperature – August

4 Conclusion

Maximum, minimum and average surface temperature does not correlate with the hurricanes. Based on the analysis it has been found that 86% of the years has temperature above the maximum mean highest temperatures of the hurricane years for the month of August and 89% for the month of July.

5 Acknowledgement

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6 References

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