

Origin of Hurricanes Reaching the Texas and U.S. Gulf Coast

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Abstract: In order to better understand the trend in the hurricanes arriving in Texas and U.S Gulf Coast, Data from the National Oceanic and Atmospheric Administration for a period of 1851 to 2010 was analyzed. About 50% of the hurricane reaching Texas was from the Gulf of Mexico with almost equal amounts from Caribbean Sea and Atlantic Ocean. About 40% of the hurricanes arriving in the U.S Gulf Coast originated from the Caribbean Sea, which was the highest followed by Atlantic basin and Gulf of Mexico.

1.Introduction

Hurricanes have become an important social and economic concern in the United States in recent years. Strong winds and storm surge accompanying hurricanes kill people and destroy property. Their potential for destruction and loss of life rivals the potential for damage and casualties from earthquakes (Elsner et al., 2004). Hurricane IKE, originating from the Atlantic ocean, striking the Texas coast had in excess of \$30 billion in losses. 112 people were killed, and 23 are still missing. Due to its immense size, Ike caused devastation from the Louisiana coastline all the way to the Kennedy County, Texas region near Corpus Christi, Texas.

2.Objectives

The objective of this study was to quantify the origin of hurricane reaching Texas and U.S Gulf Coast.

3.Origin of Hurricane Analyses

As summarized in Table 1, the origin of hurricanes reaching Texas was very different from U.S Gulf Coast. About 50% of the hurricanes arriving in Texas originated from Gulf of Mexico. The hurricanes which were from Atlantic and Caribbean Sea are almost same. Of the 26 hurricanes reaching Texas from the Gulf of Mexico, 20 were category 1&2, representing about 80% of the hurricanes. Gulf of Mexico also produced category 3, 4 &5 hurricanes representing 20% of the hurricanes reaching Texas. Out of 52 hurricanes reaching Texas only one was from Pacific. There have been over 200 hurricanes along the U.S Gulf Coast over the past 160 years based on the data collected from NOAA and summarized in Table 2. About 40% of the hurricanes reaching the U.S Gulf Coast originated from the Caribbean Sea, 33% from Atlantic and 26% from Gulf of Mexico. Of 83 hurricanes reaching U.S Gulf Coast from Caribbean Sea, 44 were Category 3, 4 &5, representing about 50% of hurricanes. In Table 3, in the past decade (2000-2010), 17 hurricanes reached the U.S Gulf Coast, 53% from Caribbean Sea, 41% from Atlantic and 6% from Gulf of Mexico. Just in the past decade, four hurricanes reached Texas, 25% from Gulf of Mexico, 50% from Atlantic Ocean, and 25% from Caribbean Sea.

Table 1. Texas Hurricanes Originated from Gulf of Mexico, Atlantic, Caribbean Sea, Pacific (1851-2010)

Hurricane Category	Origin of Hurricanes				
	Gulf of Mexico	Atlantic	Caribbean sea	Pacific	Total
H1	15	4	2	0	21
H2	5	1	5	0	11
H3	1	2	2	0	5
H4	4	4	1	1	10
H5	1	2	2	0	5
Total	26	13	12	1	52
Percent	50%	25%	23%	2%	100%

Table 2. The U.S Gulf Coast Hurricanes Originated from Gulf of Mexico, Atlantic, Caribbean Sea and Pacific (1851-2010)

Hurricane Category	Origin of Hurricanes				
	Gulf of Mexico	Atlantic	Caribbean Sea	Pacific	Total
H1	32	17	15	1	65
H2	12	5	24	0	41
H3	4	14	24	0	42
H4	6	15	13	1	35
H5	1	17	7	0	25
Total	55	68	83	2	208
Percent	26%	33%	40%	1%	100%

Table 3. U.S Gulf Coast Hurricanes Originated from Gulf of Mexico, Atlantic, Caribbean Sea, Pacific (2001-2010)

Hurricane Category	Origin of Hurricanes				
	Gulf of Mexico	Atlantic	Caribbean sea	Pacific	Total
H1	1	1	1	0	3
H2	0	0	1	0	1
H3	0	0	1	0	1
H4	0	3	3	0	6
H5	0	3	3	0	6
Total	1	7	9	0	17
Percent	6%	41%	53%	0%	100%

4.Conclusion

U.S Gulf Coast was struck more often by hurricanes originating from the Caribbean Sea, and half of these hurricanes were category 3 or higher. But half of hurricane which reached Texas came from Gulf of Mexico and most of these hurricanes were category 1 or 2.

5.Acknowledge

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6.Reference

Elsner, J. B., Bossak, B. H., (2004,) ‘Bayesian Analysis of U.S. Hurricane Climate’