

Hurricane Harvey Event Analysis

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Background and Scope

The data file contains the Weather Events of Hurricane harvey happened during 2017 in the states of US. The event took place is categorized in terms of Type,property cost, states and counties. There is also information about

- Two states most impacted by Hurricane Harvey
- Event type and number of occurrences
- Location of hurricane harvey events
- Counties with events
- Counties with property cost
- Recommendations to insurances companies after the massive weather event

Import the Data

StormEvents2017

StormEvents2017 = 23x22 table

...

	State	Month	Event_Type	CZ_Name	Begin_Date_Time	Timezone
1	TEXAS	August	Hurricane	NUECES	2017-08-25 1...	-6
2	FLORIDA	September	Hurricane	PINELLAS	2017-09-10 1...	-5
3	TEXAS	August	Hurricane	REFUGIO	2017-08-25 2...	-6
4	TEXAS	August	Hurricane	SAN PAT...	2017-08-25 1...	-6
5	FLORIDA	September	Hurricane	HIGHLANDS	2017-09-10 0...	-5
6	TEXAS	August	Hurricane	CALHOUN	2017-08-25 1...	-6
7	FLORIDA	September	Hurricane	INLAND ...	2017-09-10 0...	-5
8	FLORIDA	September	Hurricane	COASTAL...	2017-09-10 0...	-5
9	FLORIDA	September	Hurricane	POLK	2017-09-10 0...	-5
10	TEXAS	August	Hurricane	VICTORIA	2017-08-26 0...	-6
11	FLORIDA	September	Hurricane	HARDEE	2017-09-10 0...	-5
12	FLORIDA	September	Hurricane	INLAND ...	2017-09-10 1...	-5
13	FLORIDA	September	Hurricane	INLAND ...	2017-09-10 0...	-5
14	FLORIDA	September	Hurricane	COASTAL...	2017-09-10 0...	-5

	State	Month	Event_Type	CZ_Name	Begin_Date_Time	Timezone
15	FLORIDA	September	Hurricane	INLAND ...	2017-09-10 0...	-5
16	FLORIDA	September	Hurricane	COASTAL...	2017-09-10 0...	-5
17	FLORIDA	September	Hurricane	INLAND ...	2017-09-10 0...	-5
18	FLORIDA	September	Hurricane	COASTAL...	2017-09-08 2...	-5
19	FLORIDA	September	Hurricane	COASTAL...	2017-09-10 1...	-5
20	FLORIDA	September	Hurricane	COASTAL...	2017-09-10 0...	-5
21	TEXAS	August	Hurricane	DE WITT	2017-08-26 0...	-6
22	TEXAS	August	Hurricane	BEE	2017-08-26 0...	-6
23	FLORIDA	September	Hurricane	INLAND ...	2017-09-09 1...	-5

```
StormEvents2017 = StormEvents2017(StormEvents2017.Event_Type == 'Hurricane',:)
```

```
StormEvents2017 = 23x22 table
```

...

	State	Month	Event_Type	CZ_Name	Begin_Date_Time	Timezone
1	TEXAS	August	Hurricane	NUECES	2017-08-25 1...	-6
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18	FLORIDA	September	Hurricane	COASTAL...	2017-09-08 2...	-5
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20	FLORIDA	September	Hurricane	COASTAL...	2017-09-10 0...	-5
21	TEXAS	August	Hurricane	DE WITT	2017-08-26 0...	-6

	State	Month	Event_Type	CZ_Name	Begin_Date_Time	Timezone
22	TEXAS	August	Hurricane	BEE	2017-08-26 0...	-6
23	FLORIDA	September	Hurricane	INLAND ...	2017-09-09 1...	-5

StormEvents2017.Total_Cost = StormEvents2017.Crop_Cost + StormEvents2017.Property_Cost

StormEvents2017 = 23x22 table

...

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1	TEXAS	August	Hurricane	NUECES	2017-08-25 1...	-6
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Two States Most Impacted by Harvey

Clearly state the two states in order

- Texas
- Louisiana

Table of Events for Two Most Impacted States

Create and display a few rows of events that include only the two most affected states

```
StormEvents2017_1 = StormEvents2017(ismember(StormEvents2017.State,{'LOUISIANA','TEXAS'}),:)
```

```
StormEvents2017_1 = 7x22 table
```

...

	State	Month	Event_Type	CZ_Name	Begin_Date_Time	Timezone
1	TEXAS	August	Hurricane	NUECES	2017-08-25 1...	-6
2	TEXAS	August	Hurricane	REFUGIO	2017-08-25 2...	-6
3	TEXAS	August	Hurricane	SAN PAT...	2017-08-25 1...	-6
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6	TEXAS	August	Hurricane	DE WITT	2017-08-26 0...	-6
7	TEXAS	August	Hurricane	BEE	2017-08-26 0...	-6

Visualizations

Figure of Event Types

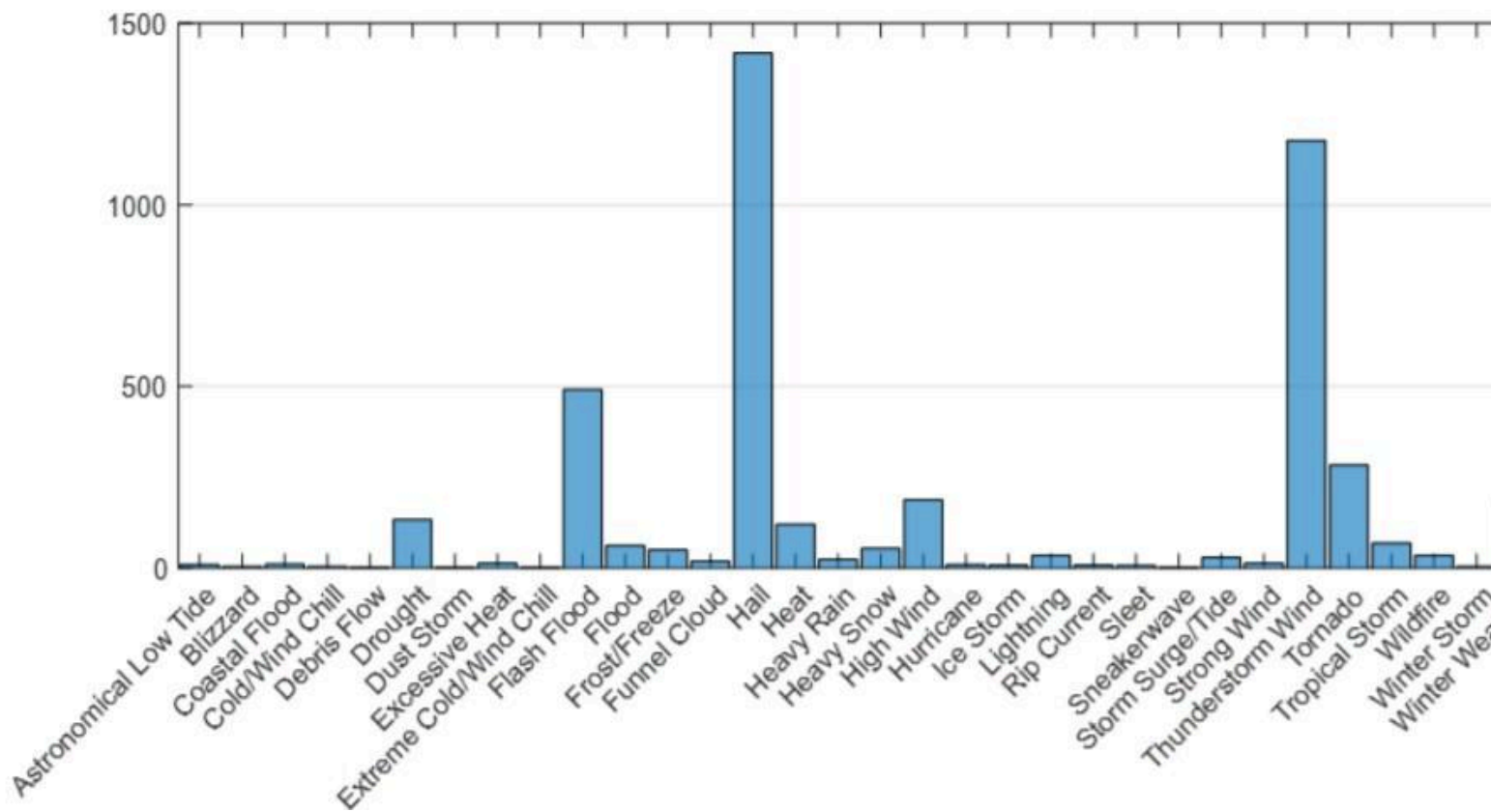
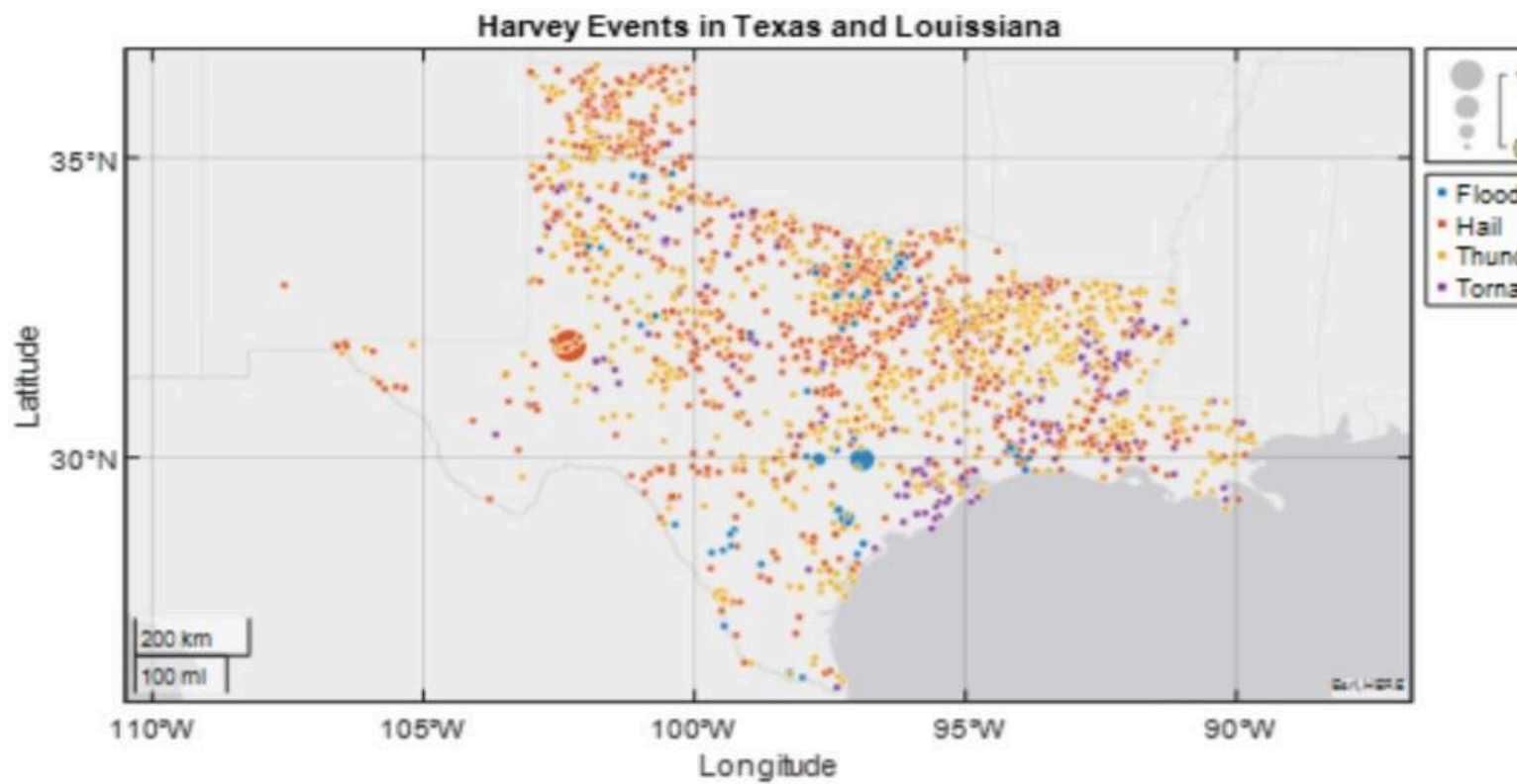
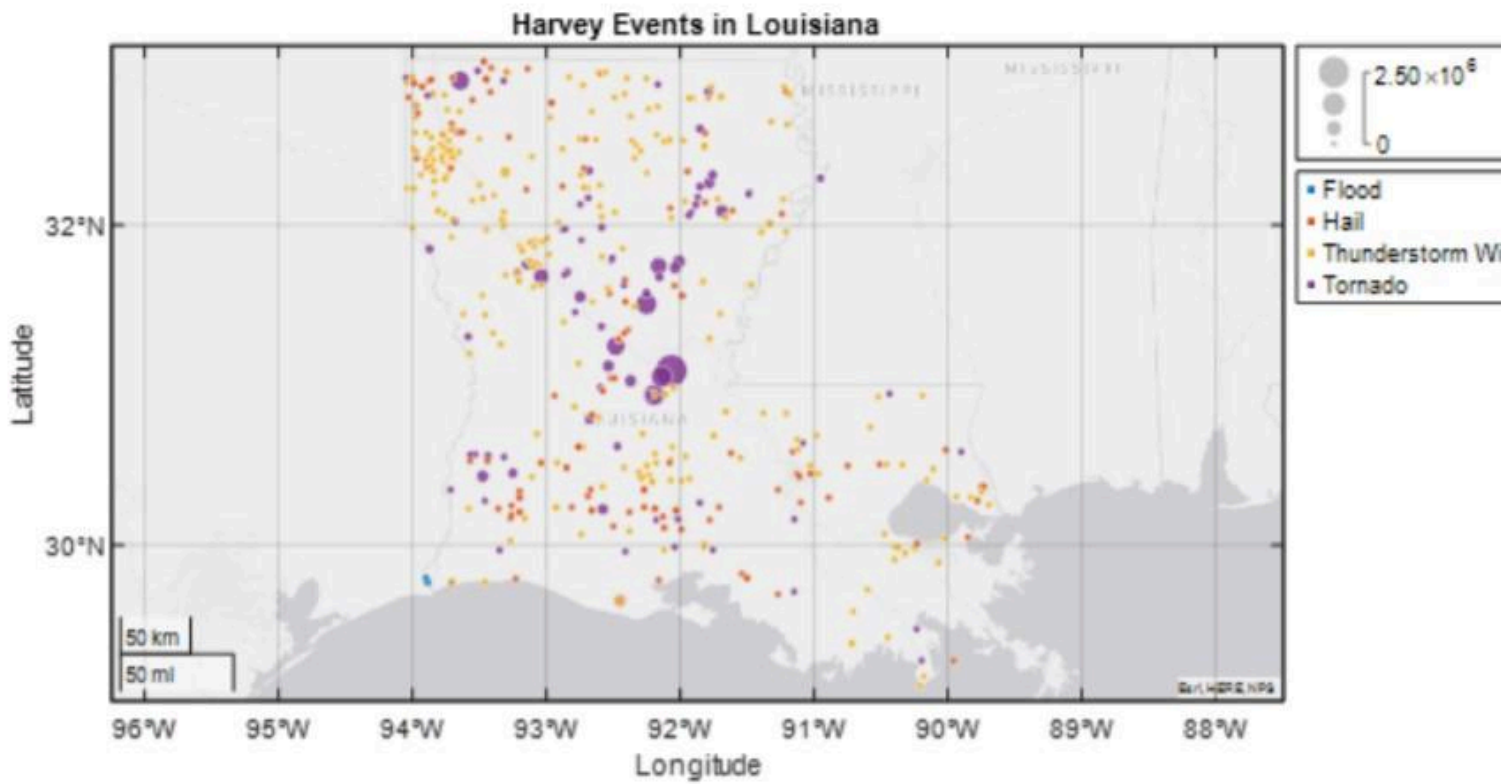
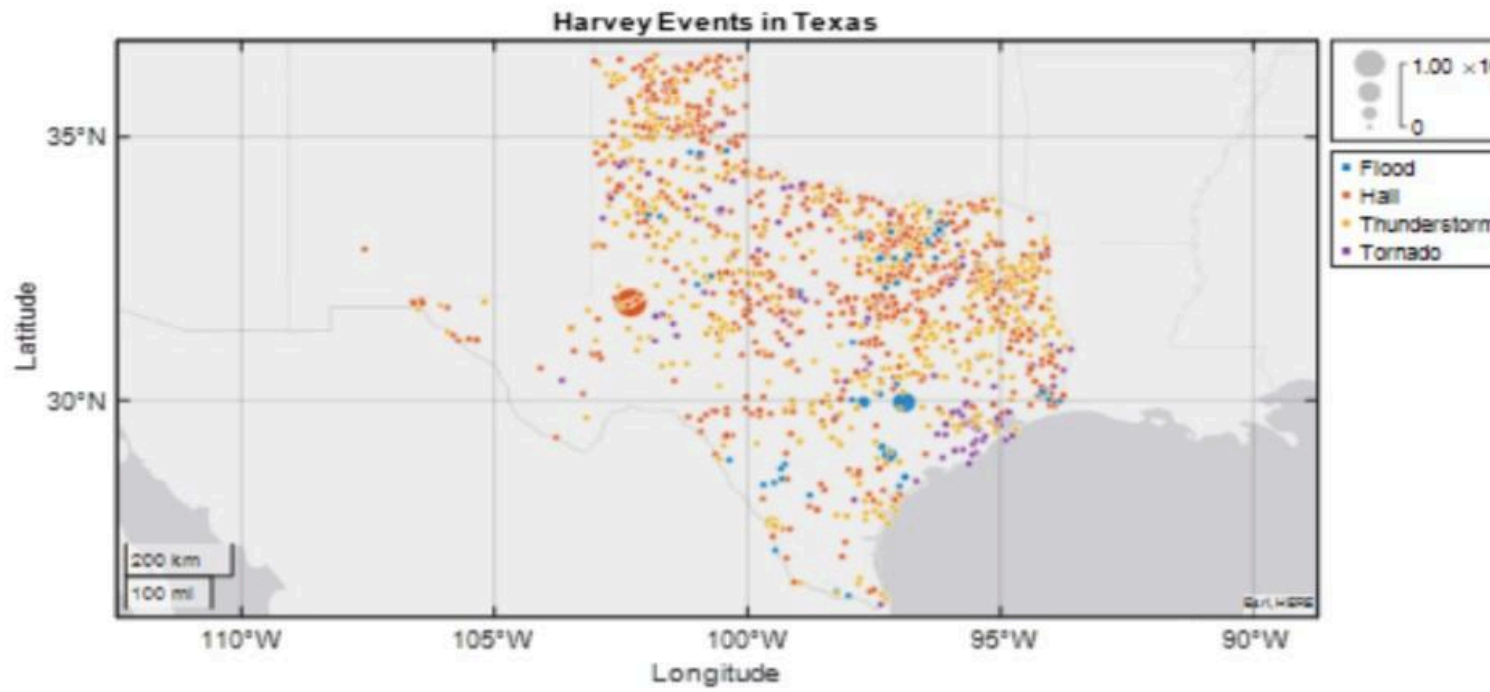


Figure of Event Locations





Analysis

Three Counties with Most Events in State 1

<u>S.No.</u>	<u>CZ Name</u>	<u>No.of Events</u>
1.	COLLIN	64
2.	HARRIS	64
3.	TARRANT	63

Three Counties with Most Events in State 2

<u>S.No.</u>	<u>CZ Name</u>	<u>No.of Events</u>
1.	CADDO	65
2.	NATCHITOCHES	52
3.	SABINE	26

Three Counties with Highest Property Cost in State 1

<u>S.No.</u>	<u>CZ Name</u>	<u>Maximum Property Cost</u>
1.	GALVESTON	2e10
2.	FORT BEND	1.6e10
3.	MONTGOMERY	1.4e10

Three Counties with Highest Property Cost in State 2

S.No.	CZ Name	Maximum Property Cost (in dollars)
1.	CALCASIEU	61268000
2.	BEAUREGARD	15261000
3.	AVOYELLES	7150000

Conclusions and Recommendations

The most impacted weather event is hail and thunderstorm in both the states. There are several billion dollars of property cost loss aftermath of these events. So, I would recommend the insurance company to prioritize the settlement for the counties in Texas as per given table for their speedy recovery.

	CZ_Name	GroupCount	sum_Property_Cost
	'GALVESTON'	34	2.0000e+10
	'FORT BEND'	31	1.6006e+10
	'MONTGOM...	12	1.4000e+10
	'HARRIS'	64	1.0002e+10
	'JEFFERSON'	29	3.0000e+09
	'BRAZORIA'	25	2.0015e+09
	'ARANSAS'	13	1.9504e+09
	'ORANGE'	9	1.5000e+09
	'NUECES'	32	1.3016e+09
	'WALKER'	12	1.2000e+09
	'LIBERTY'	10	1.0000e+09
	'SAN JACINTO'	6	700000000
	'POLK'	7	600050000
	'HARDIN'	8	600002000
	'SAN PATRI...	11	502505000
	'MATAGORDA'	8	501400000
	'JACKSON'	4	500203000
	'REFUGIO'	6	500030000
	'WALLER'	7	350705000
	'CALHOUN'	7	281010000
	'ECTOR'	46	208149500
	'WHARTON'	10	200360000
	'VICTORIA'	6	160035000
	'WASHINGTON...	4	150000000