Using Simple Graphics to Communicate Storm Surge Risk

SCIPP
A NOAA RISA TEAM

Hal Needham

January 14, 2015

Louisiana = Food

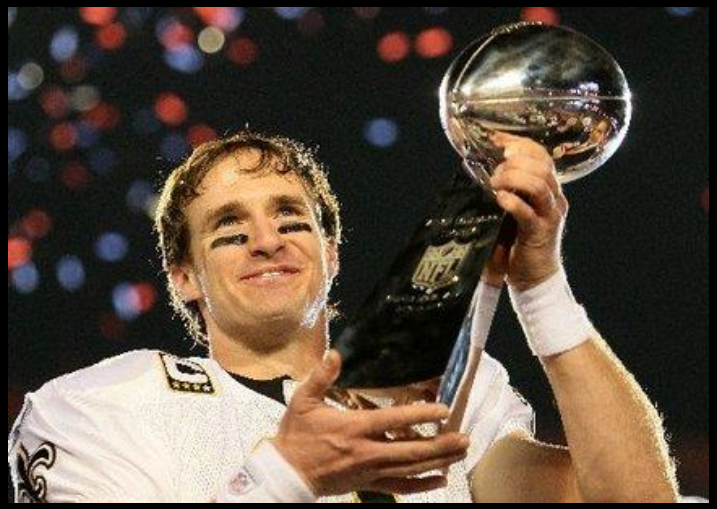
Louisiana = Football

Texas = Food

Texas = Football

Connecting Climate and Sports

Extreme Events
(Climate)

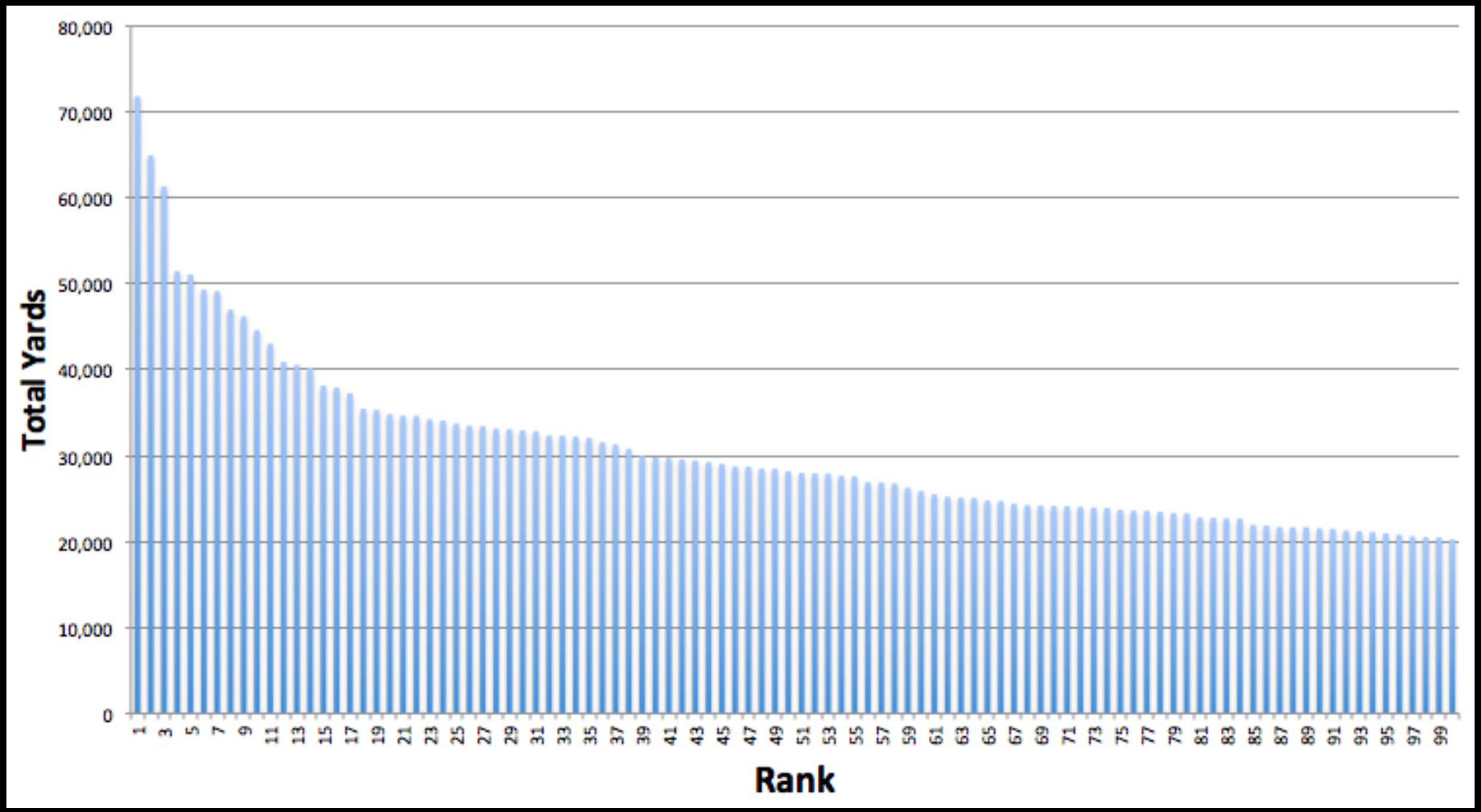


All-Time Records
(Sports)

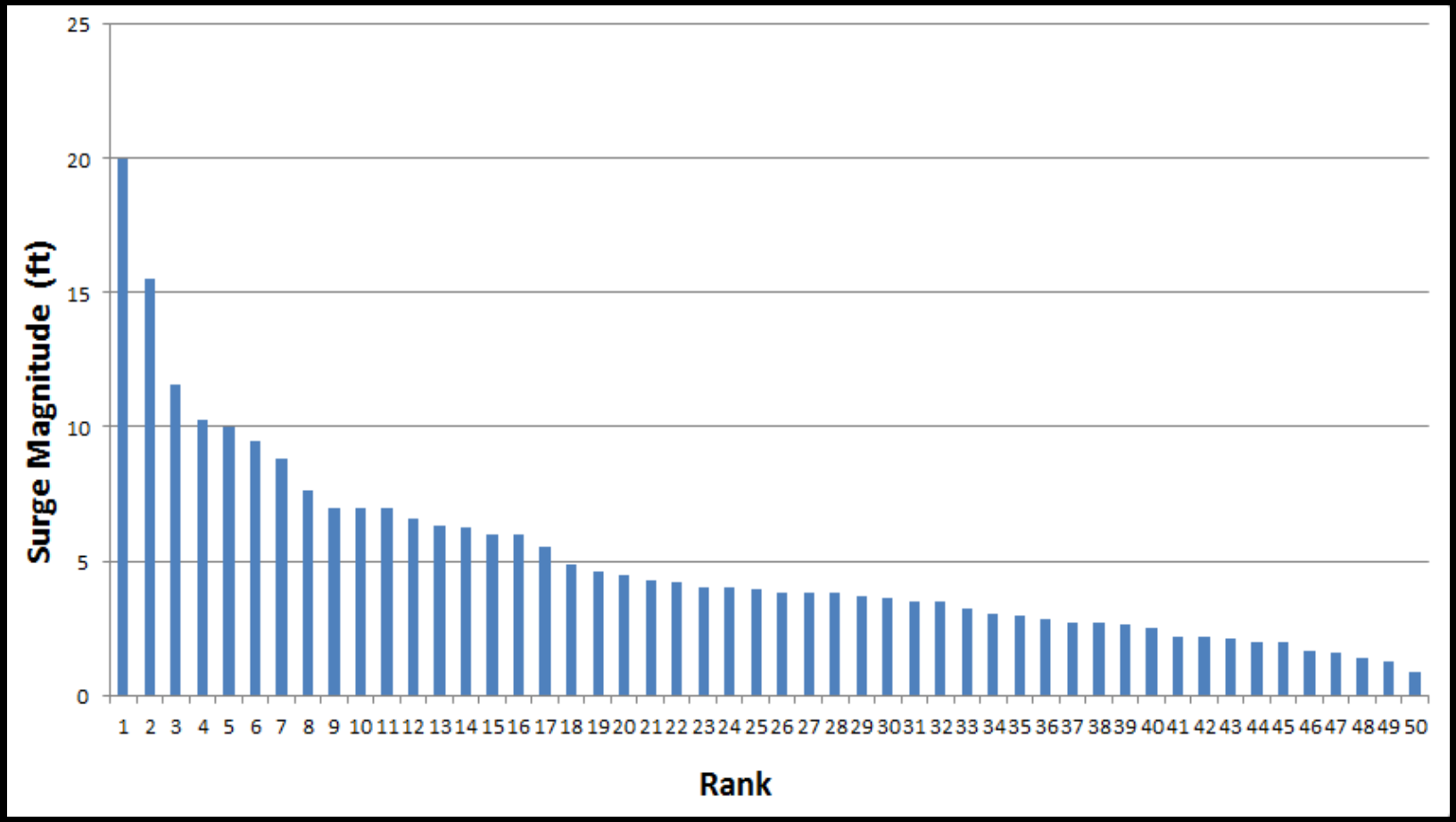
Climate Communication Tools

1. Histogram

All-Time NFL Passing Leaders



Storm Surge Histogram for Galveston, TX



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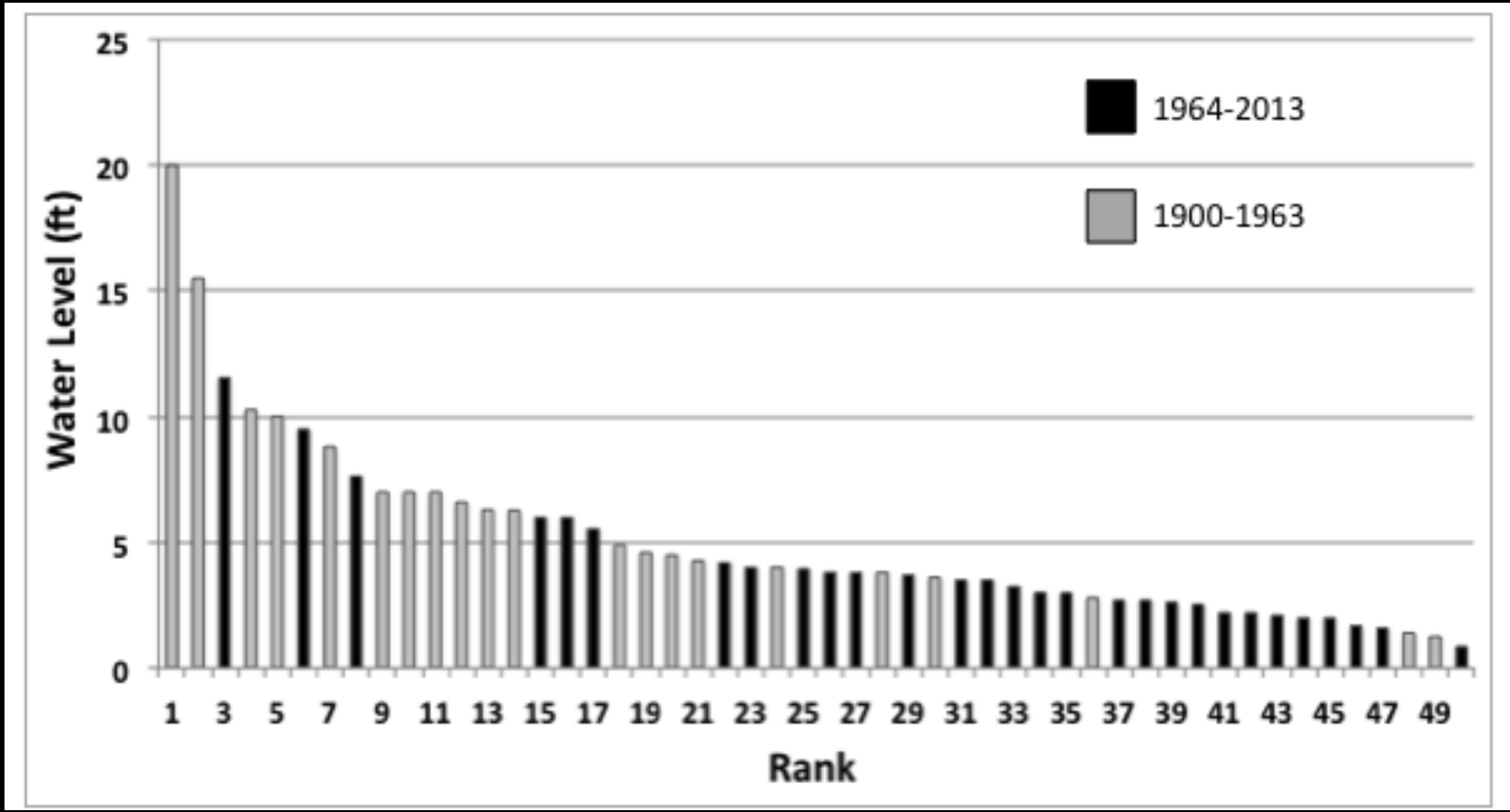


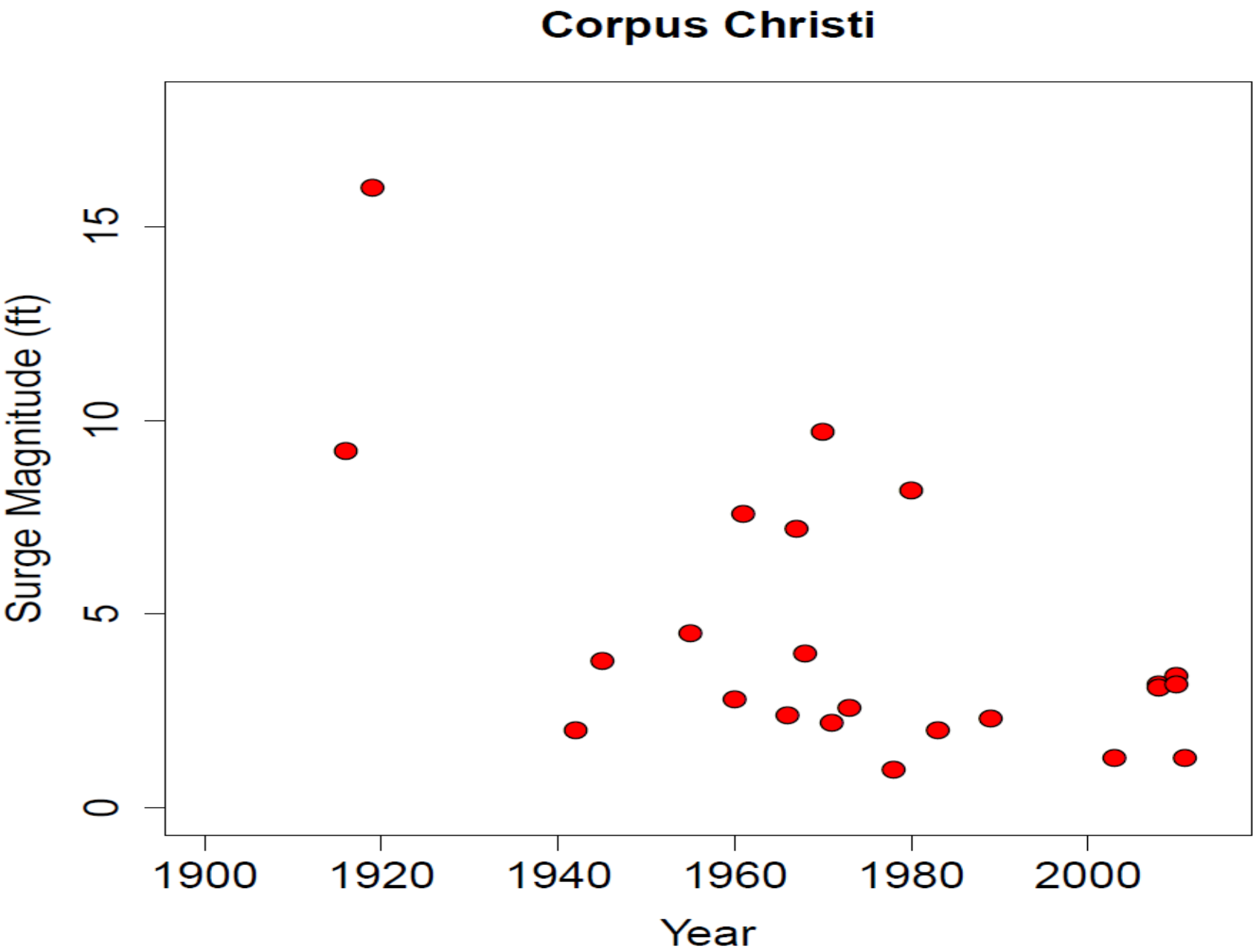
Houston Ship Channel Project

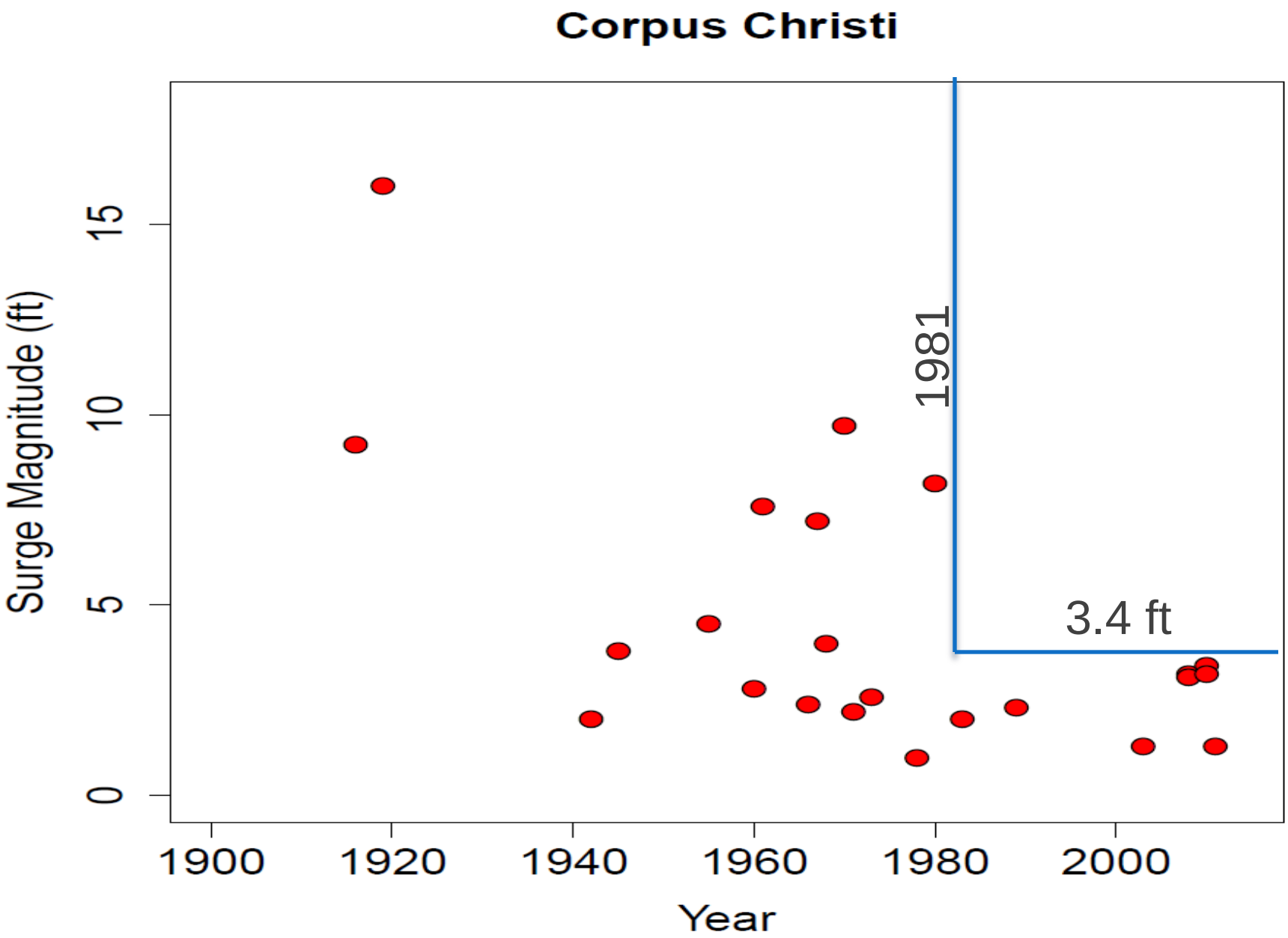
- One of the largest petrochemical complexes in the world
- Estimated cost of storm surge gate: $1.5 billion
- Estimated losses from major storm surge: $45 billion

Climate Communication Tools

1. Histogram

2. Time Series

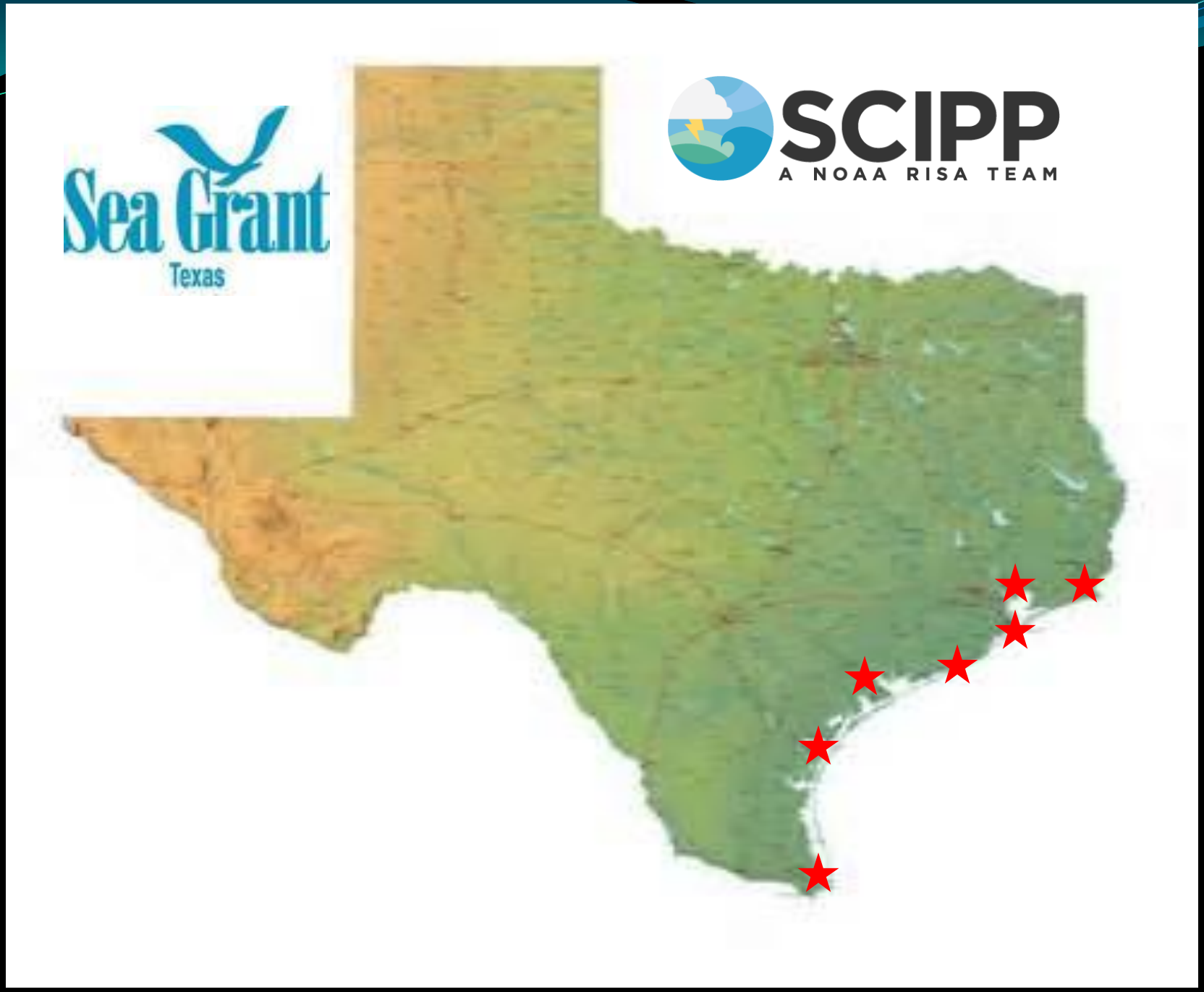

Corpus Christi
Surge Magnitude (ft)
0
5
10
15
1900
1920
1940
1960
1980
2000
Year


Corpus Christi
Surge Magnitude (ft)
0
5
10
15
1900
1920
1940
1960
1980
2000
Year
1981
3.4 ft

Corpus Christi Population

Year	Population	Pop Change	% Pop Change
1980	232,000		
2013	316,000	+ 84,000	+ 36%

FREEPORT FIRE/EMS
PROTECTING
OUR
COMMUNITY


Sea Grant
Texas
SCIPP
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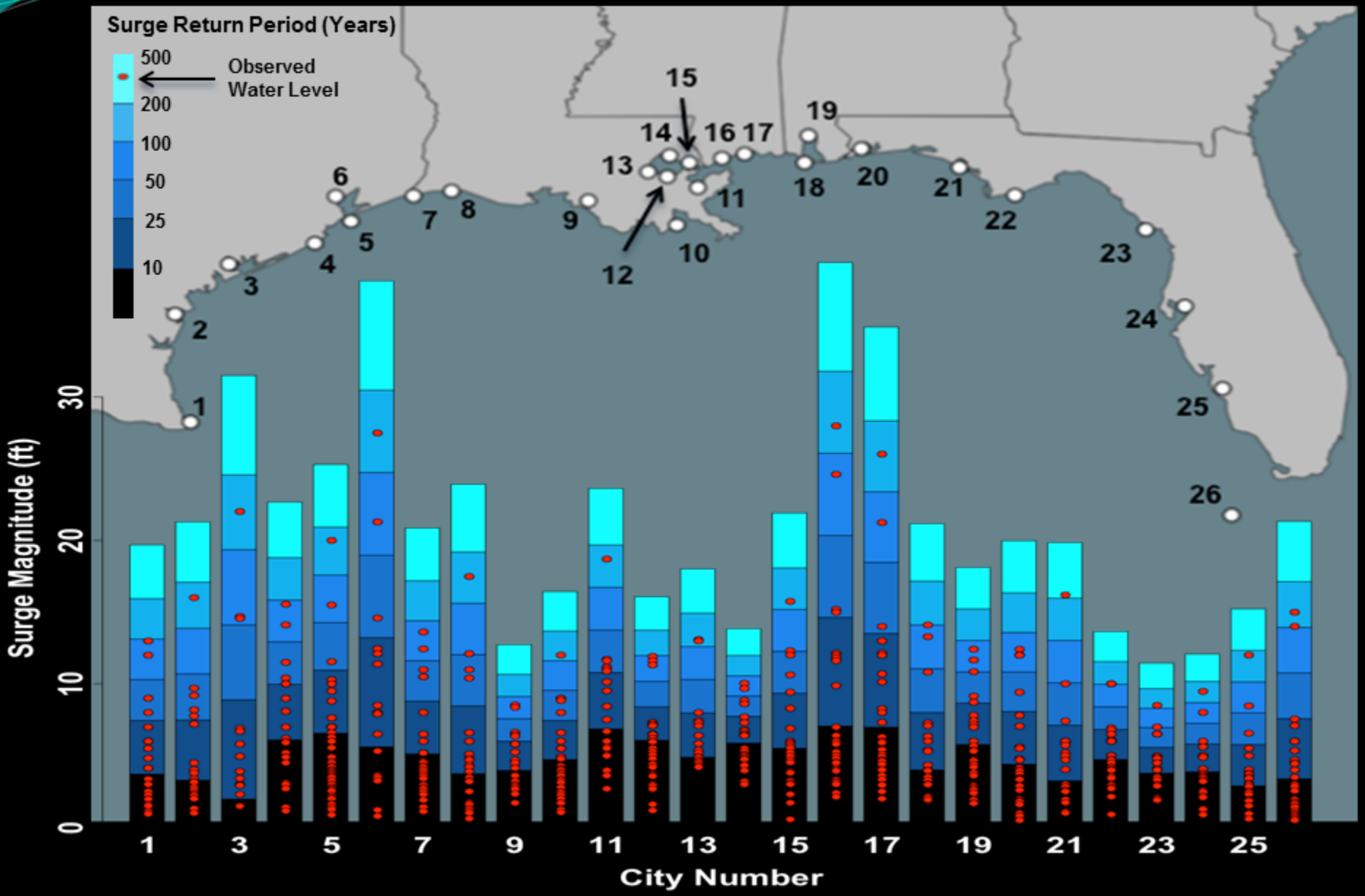
Climate Communication Tools

1. Histogram

2. Time Series

3. Return Level Bar Charts

Storm Surge Return Levels and Observed Storm Surges for the U.S. Gulf Coast



Advantages of These Tools

1. Simple/ Easy to Understand

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3. Urgent Message

Questions for Discussion

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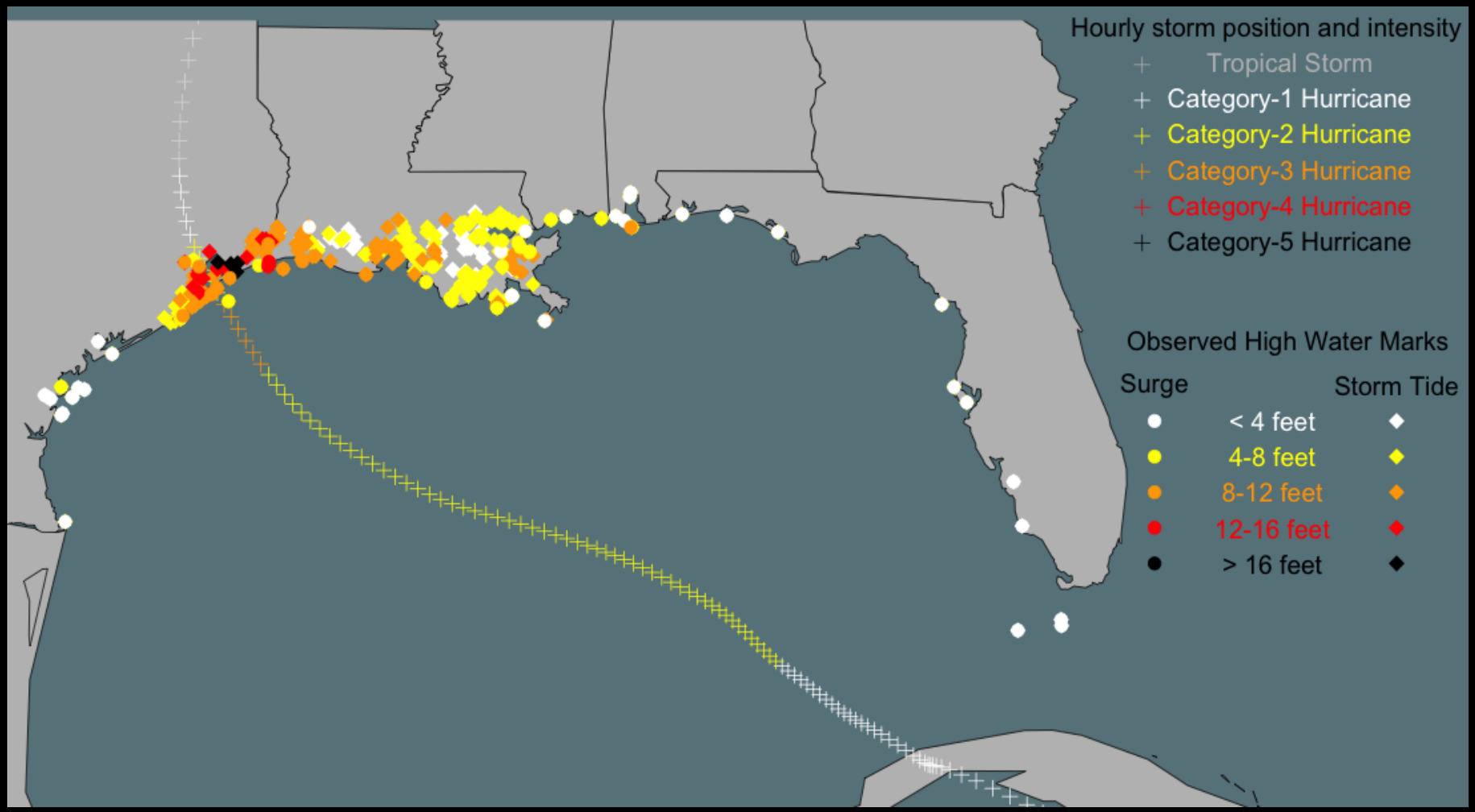
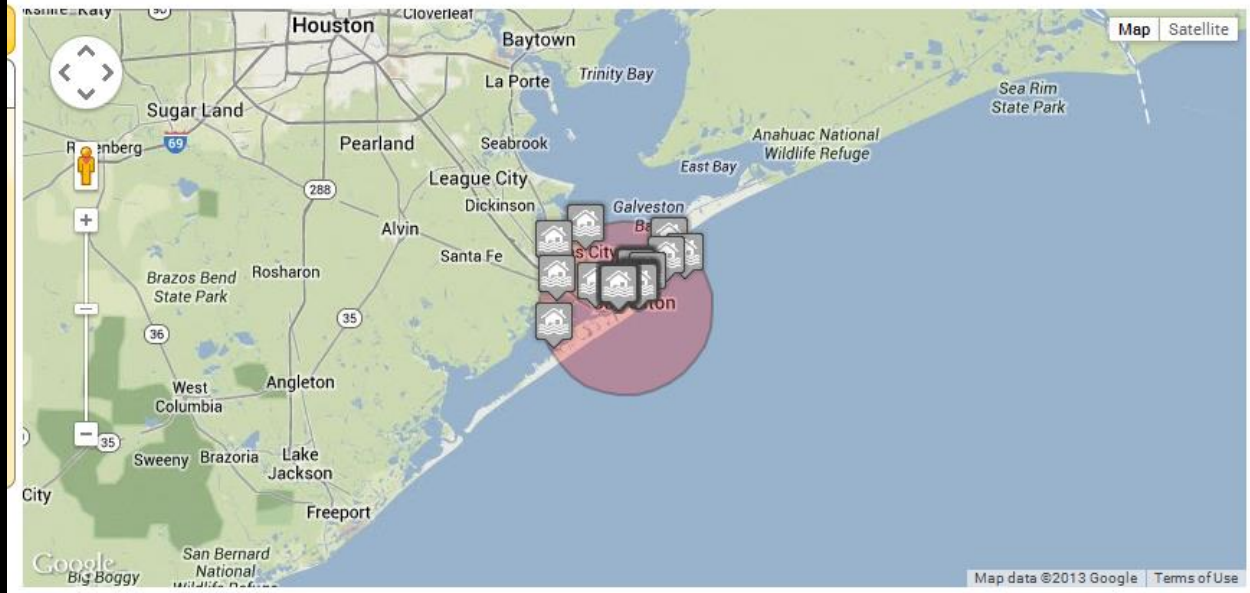
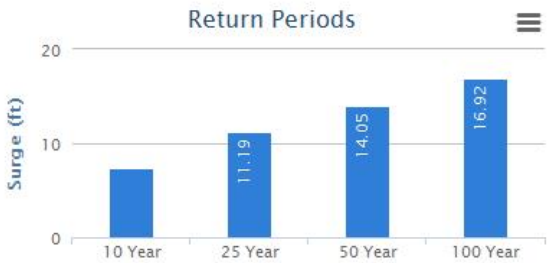
3. How to follow this info to the decision making/ policy level?

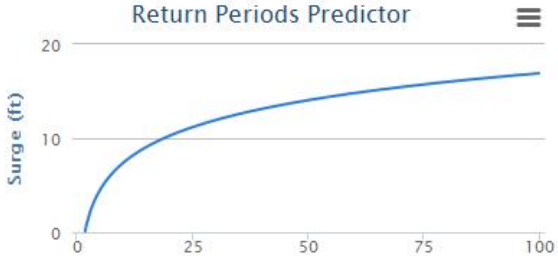
SURGEDAT
Hurricane Ike (2008) Storm Surge Map



SURGEDAT Location-Based Web Tool







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Storm Name	Year	Longitude	Latitude	Storm Tide(ft)	Storm Tide(m)	Surge(ft)	Surge(m)	Location	Basin	State
Frances	1998	-94.7883	29.285	7.10				Galveston Pleasure Pier	U.S. Gulf Coast	TX
Galveston	1915	-94.7894	29.2889	15.50	4.72			GLS Seawall	U.S. Gulf Coast	TX
Cindy	1963	-94.7933	29.31	4.60				Pier 21 - Galveston Channel	U.S. Gulf Coast	TX

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