

Analysis of 2020 United States Hurricane Hazards

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Florida Water & Climate Alliance Webinar
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HWind

2020 Atlantic Hurricane Season By The Numbers

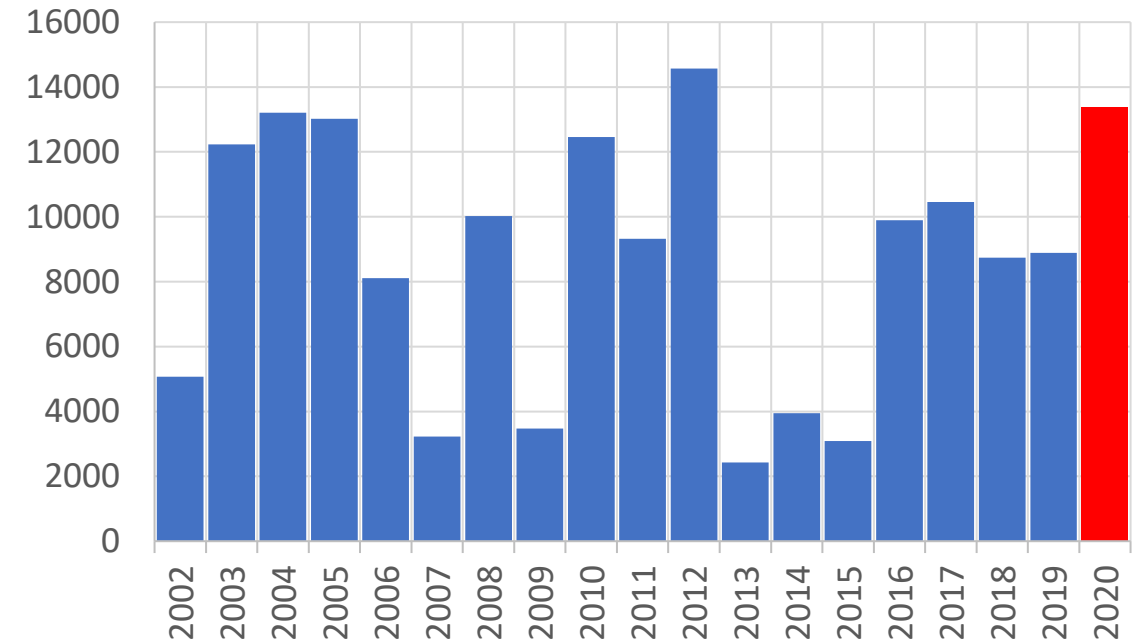


Named Storms: 30

Storm Days: 117

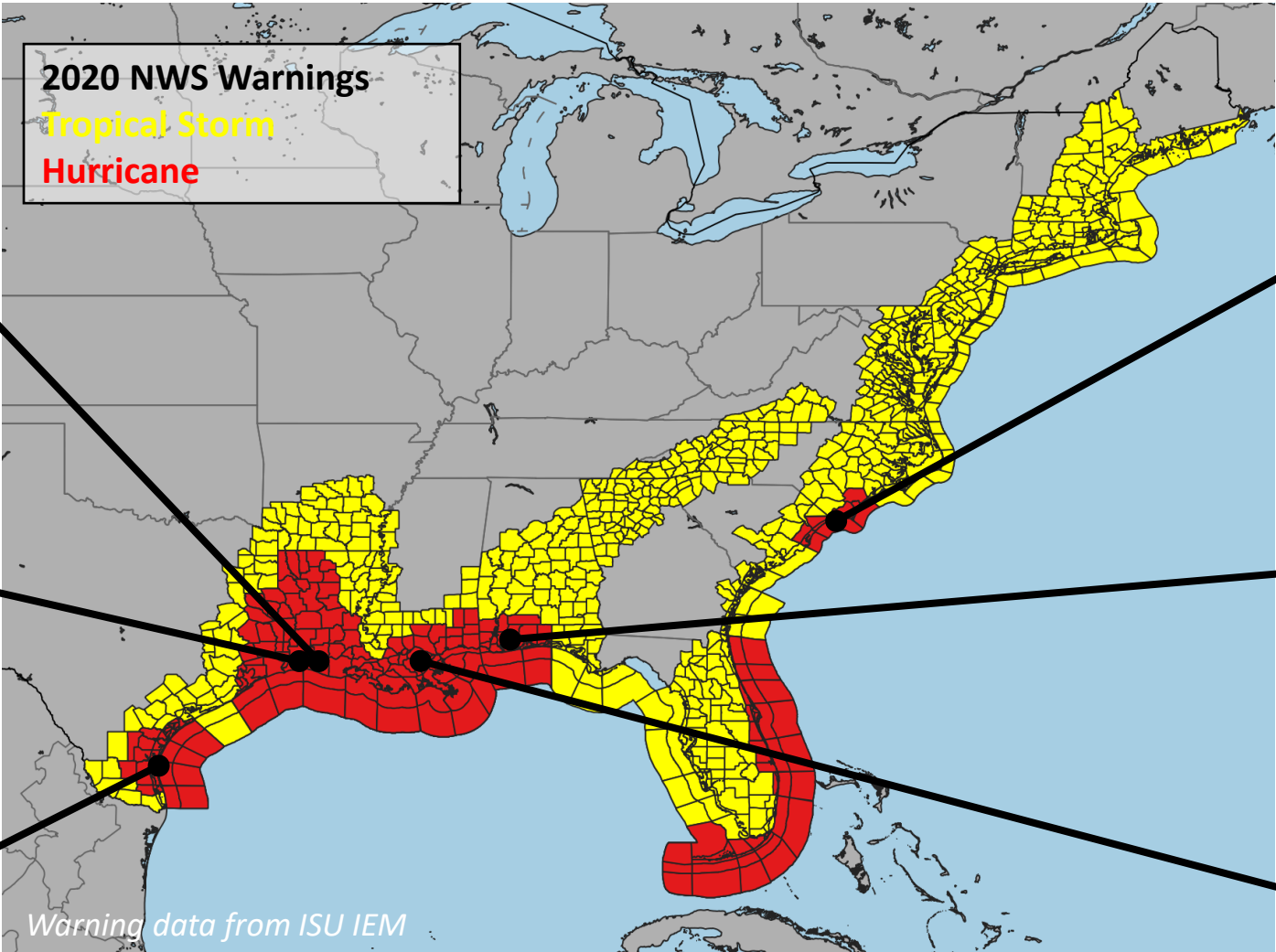
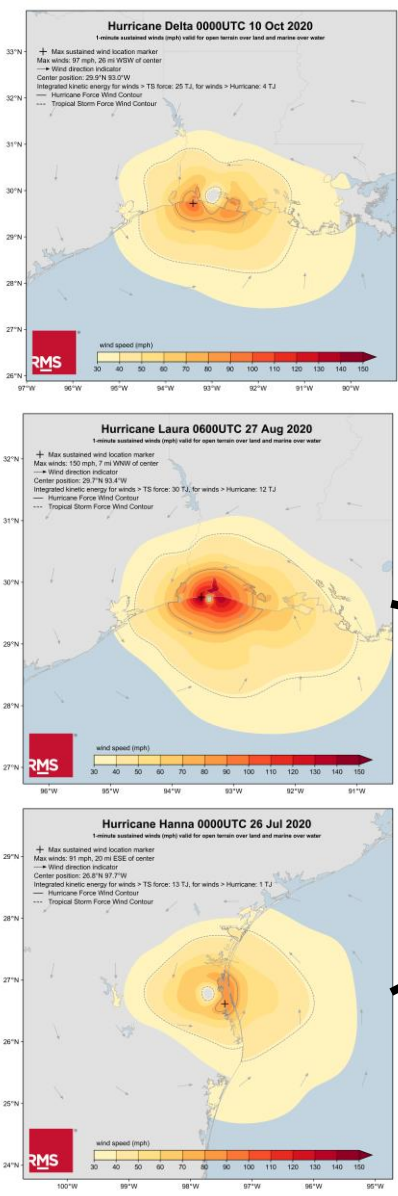
Accumulated Cyclone Energy: 179

Track Integrated Kinetic Energy: 13,384 TJ



$$ACE = \sum \frac{v_{max}^2}{10^4} \quad TIKE = \sum \int \frac{1}{2} \rho U^2 dV$$

United States Hurricane Landfalls

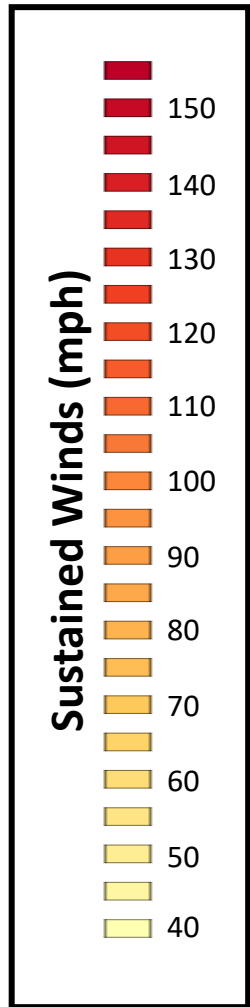
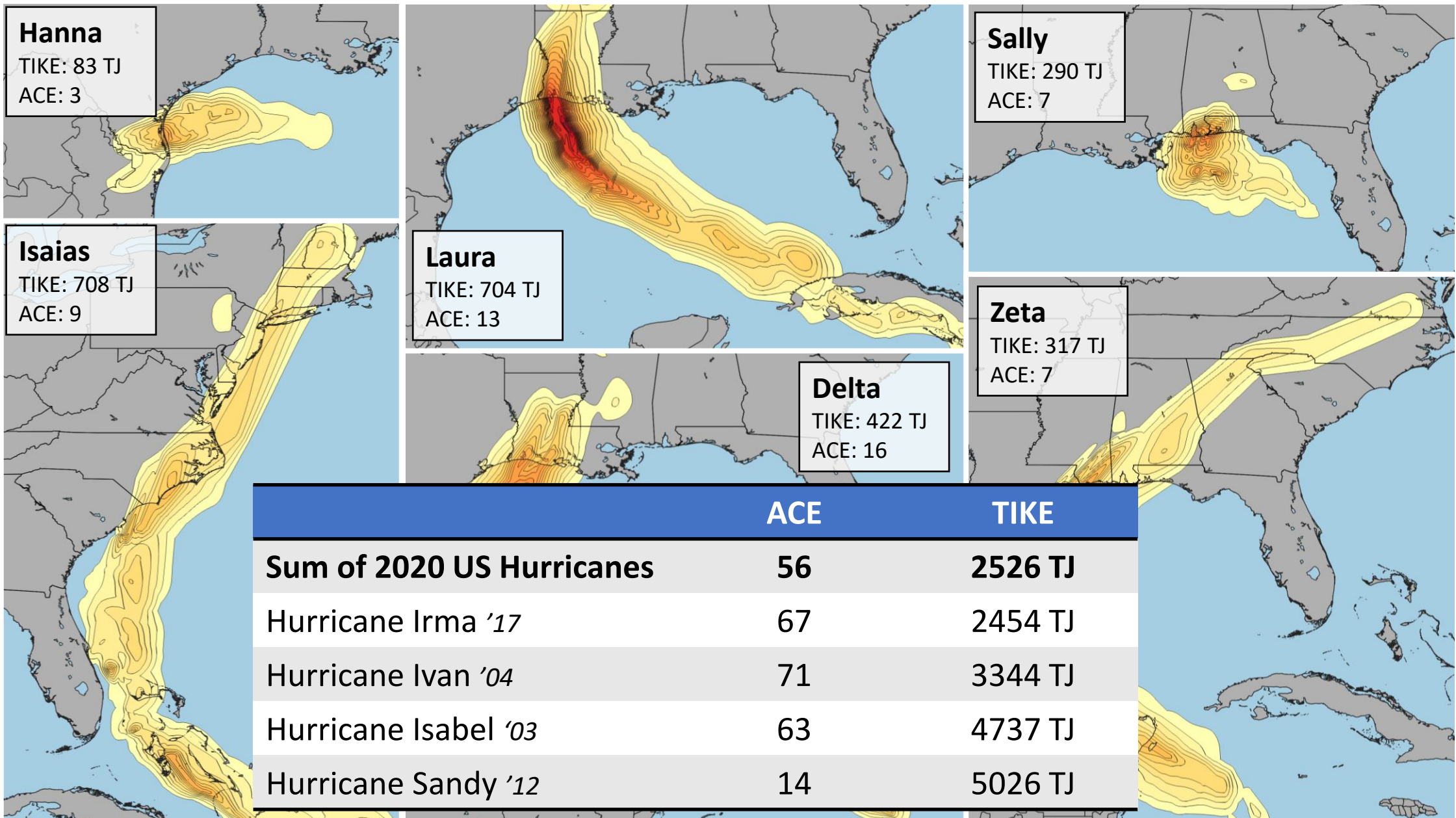


2020 NWS Warnings
Tropical Storm
Hurricane

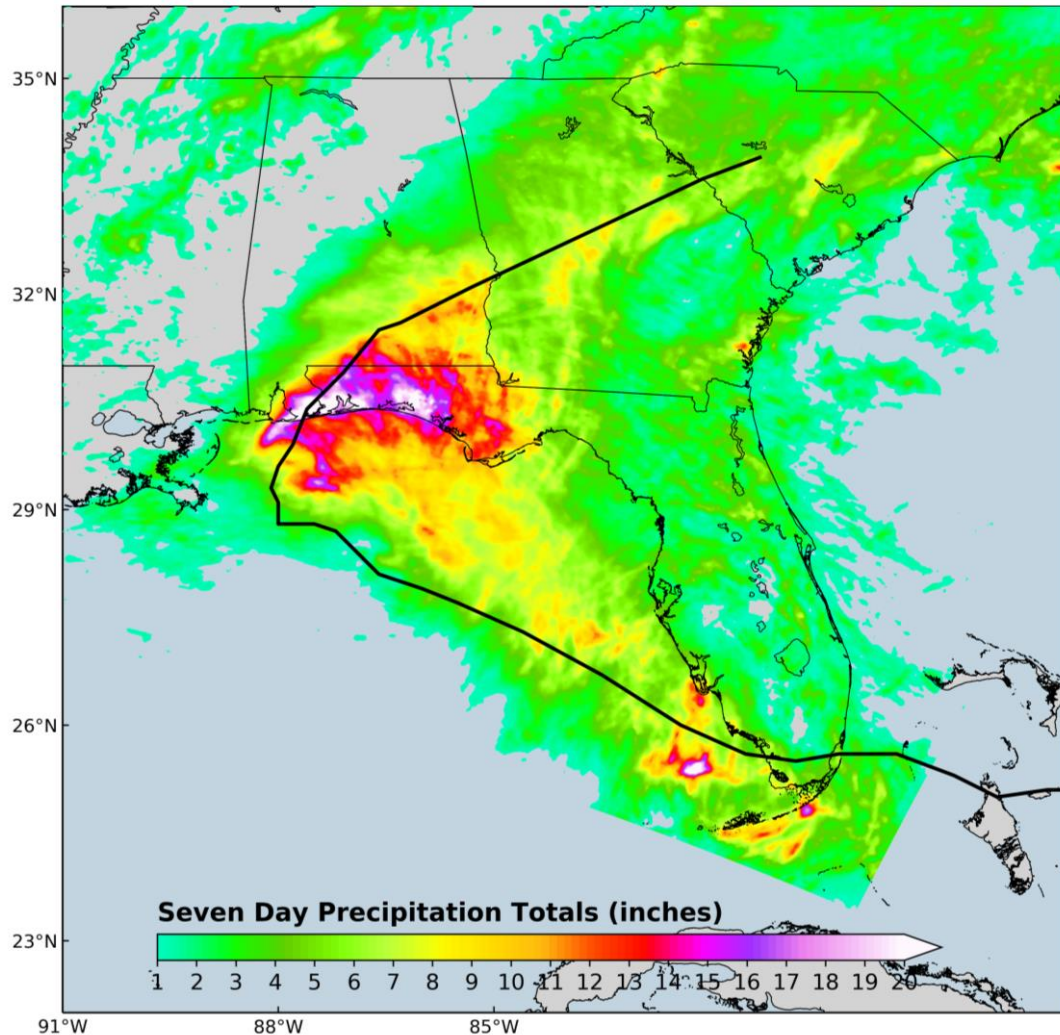
Warning data from ISU IEM

Tropical Storms Bertha, Cristobal, Fay, Marco, Beta, and Eta also made landfall in the US

Hurricane Wind Footprints



Tropical Cyclone Rainfall



Data Sources

Map: NWS Multisensor Precipitation Estimates

Observations: NWS Weather Prediction Center

Climatology: NWS Mobile WFO

Hurricane Sally

September, 2020

Rainfall Observations:

Orange Beach, AL	29.99"
Pensacola, FL	24.80"
Gasque, AL	18.68"
Pollard, AL	18.48"
Santa Rosa Beach, FL	17.65"
Freeport, FL	17.24"



Nearly 40% of Pensacola's average annual rainfall total fell in less than a week



Pensacola FL - 2020

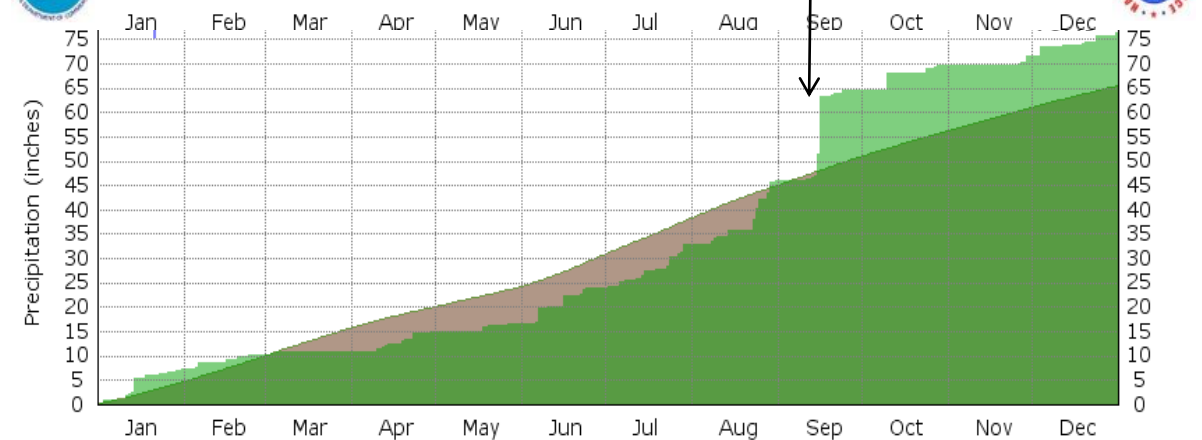
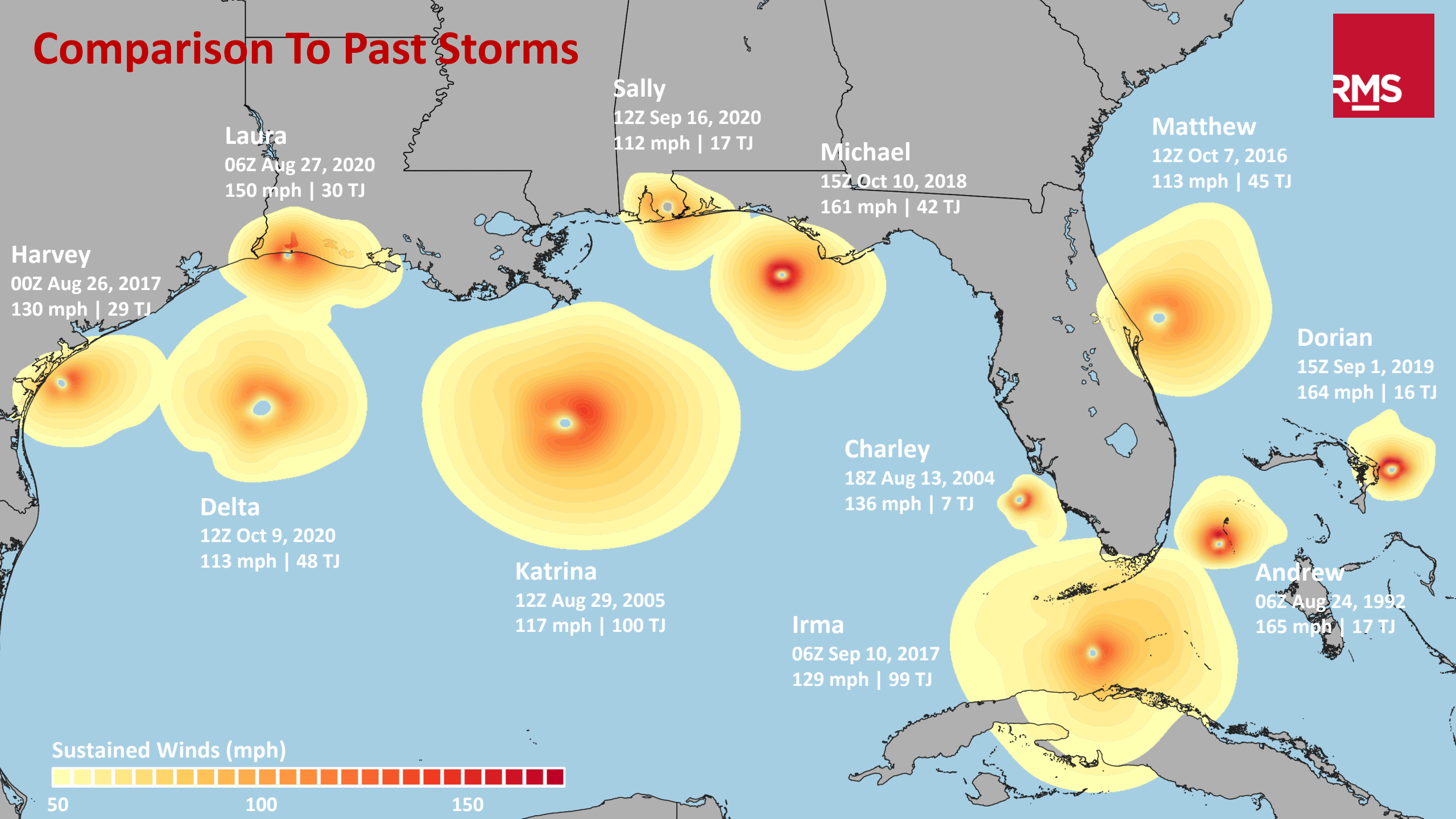


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Comparison To Past Storms



Laura
06Z Aug 27, 2020
150 mph | 30 TJ

Sally
12Z Sep 16, 2020
112 mph | 17 TJ

Michael
15Z Oct 10, 2018
161 mph | 42 TJ

Matthew
12Z Oct 7, 2016
113 mph | 45 TJ

Harvey
00Z Aug 26, 2017
130 mph | 29 TJ

Dorian
15Z Sep 1, 2019
164 mph | 16 TJ

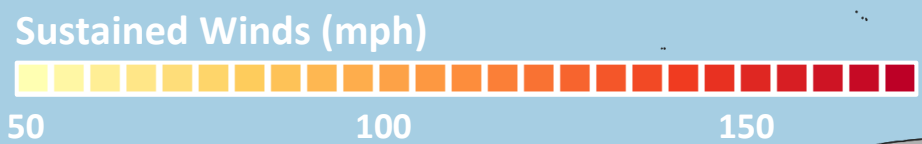
Delta
12Z Oct 9, 2020
113 mph | 48 TJ

Charley
18Z Aug 13, 2004
136 mph | 7 TJ

Katrina
12Z Aug 29, 2005
117 mph | 100 TJ

Andrew
06Z Aug 24, 1992
165 mph | 17 TJ

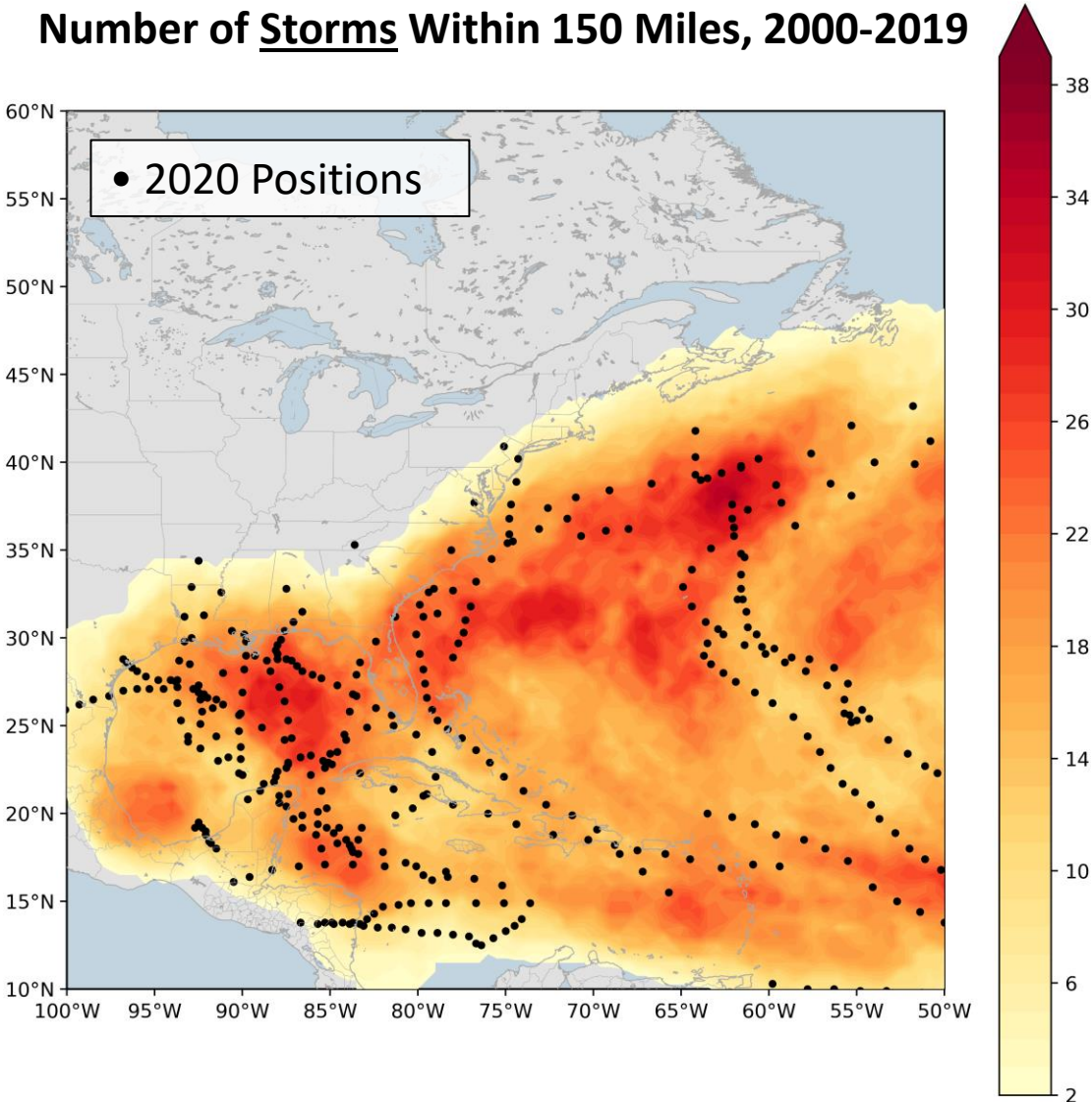
Irma
06Z Sep 10, 2017
129 mph | 99 TJ



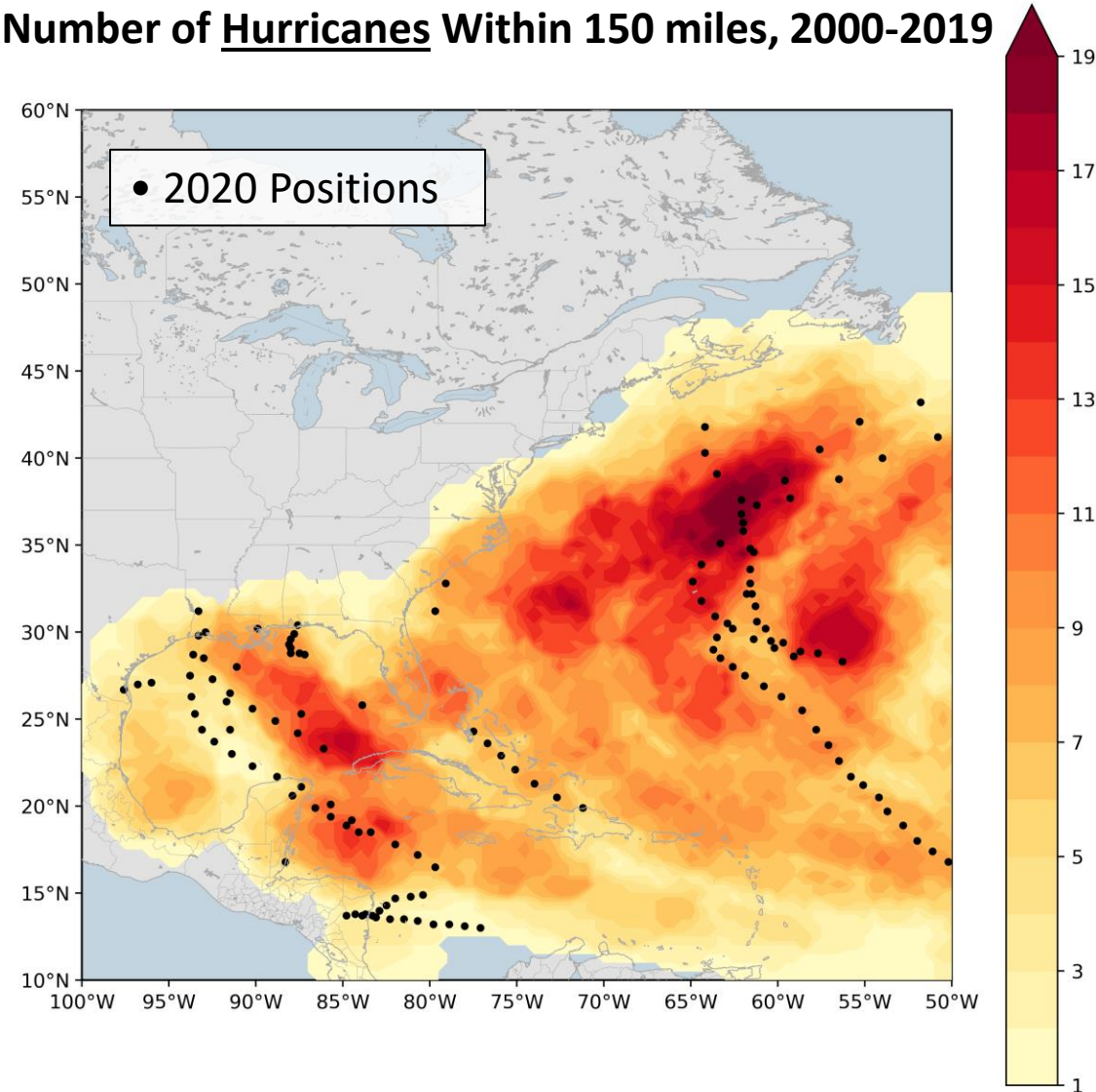
Comparison To Past Seasons



Number of Storms Within 150 Miles, 2000-2019



Number of Hurricanes Within 150 miles, 2000-2019



Summary

- By all metrics, the 2020 Atlantic Hurricane Season was an extremely active season
- There were several impactful landfalls in the United States. Nearly every coastal state from Texas to Maine was affected by at least one tropical cyclone last year.
- Unlike other recent years, Florida avoided some of the worst impacts in 2020.

Looking ahead to 2021: The Atlantic remains anomalously warm, but ENSO is returning to a more neutral state

