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1. Motivation

- There exists broad scientific consensus that heatwaves are increasing in frequency, duration, and intensity in a warming world.
- Heatwaves are generally the most strongly linked extreme weather event to anthropogenic climate change.
- Florida's predominant maritime climate has resulted in fewer studies that have examined heatwaves in Florida.
- Florida's older-skewed population and increasingly urban land areas make it particularly susceptible to the impacts of heatwaves on human life and health in the 21st Century.



The IPCC (2013) report shows how the temperature distribution can shift under a warming climate, leading primarily to more extrema hot weather events.





U.S. Climate Extremes Index (NOAA NCEI 2016) showing trends in maximum temperatures for 1950–2015 (left), and trends in minimum temperatures (right) for 1950–2015. Minimum temperatures have generally increased at a faster rate in response to increasing concentrations of greenhouse gases.

4. Sea Surface Temperature (SST) Anomalies



Composite SST anomalies (deg C) for Tampa (KTPA, left) and Tallahassee (KTLH, right) plotted for all heatwave events between 1982–2015 using the average and minimum temperatures.

Floridian Heatwaves in a Warming World: Frequency, Intensity, Duration

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Data and Method

DATA

- Temperature data (daily MAX | AVG | obtained for seven airports in Florida via Applied Climate Information System (ACIS, <u>http://scacis.rcc-</u> acis.org/).
- Composite plots were generated NCEP/NCAR – 2 Reanalysis (Kanamitsu et al., 2002).
- Composite Sea Surface Temperature (SST) plots used data from NOAA's OI SST V2 (Reynolds et al., 2002).

METHOD

- The heatwave Events were identified separately for Summer (Jun–Aug) and Winter (Dec–Feb) months.
- Individual heatwave events were identified using the following metric – The temperature had to exceed the 95th percentile for three consecutive days with a gap of at least four consecutive days between events.
- Heatwave events were identified separately for summer and winter months by using the daily max, min, and average temperature.



<u>Airpor</u>	
KDAB	D
KJAX	Ja
KEYW	K
KMIA	Μ
KMCO	0
KTLH	Та
KTPA	Та

5. 500-hPa Height Anomalies



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