

# Seeing Beyond Sea Level Rise: Visualizing Local Climate Change in Tampa Bay



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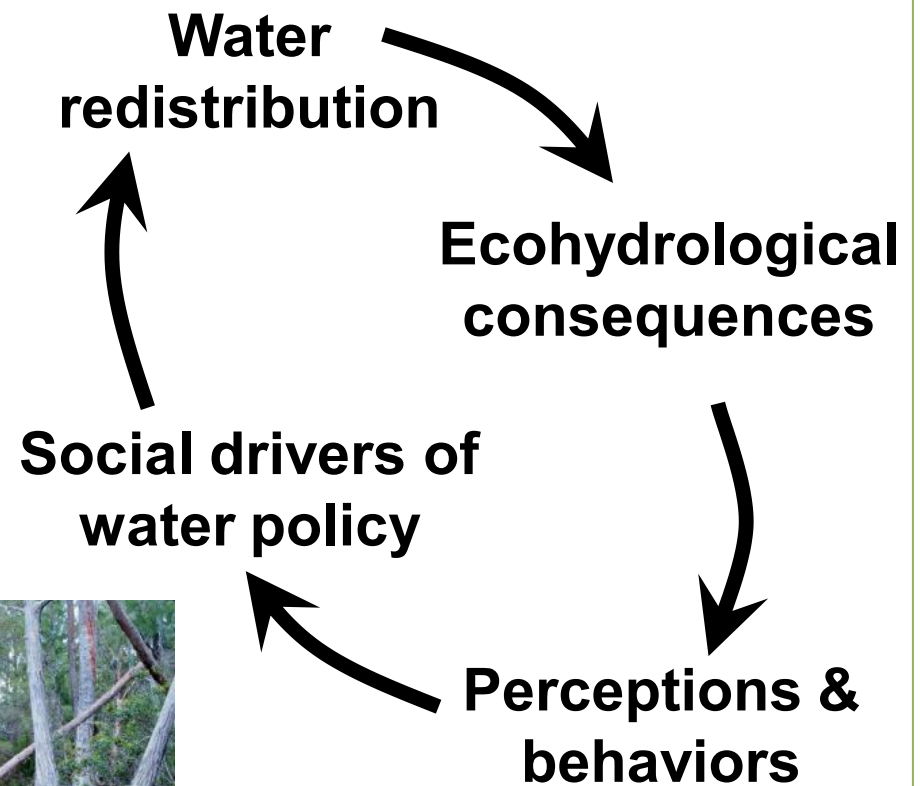




*Urban development, power relations, and water redistribution as drivers of wetland change in the Tampa Bay Region Socioecosystem*



**Conceptual model**



ULTRA Tampa Bay



# Study Overview



Title: “RAPID: Assessing Vulnerabilities from Climate Change: Impacts of Water Provision, Power Relations and Perceptions of Risk on Ecohydrology in the Tampa Bay Region Socioecosystem”

Funded by National Science Foundation and Environmental Protection Agency, Collaborative, Interdisciplinary Project  
[2012-present]

Part of 5 city study: Raleigh-Durham, Tampa Bay, L.A., Boston, Portland

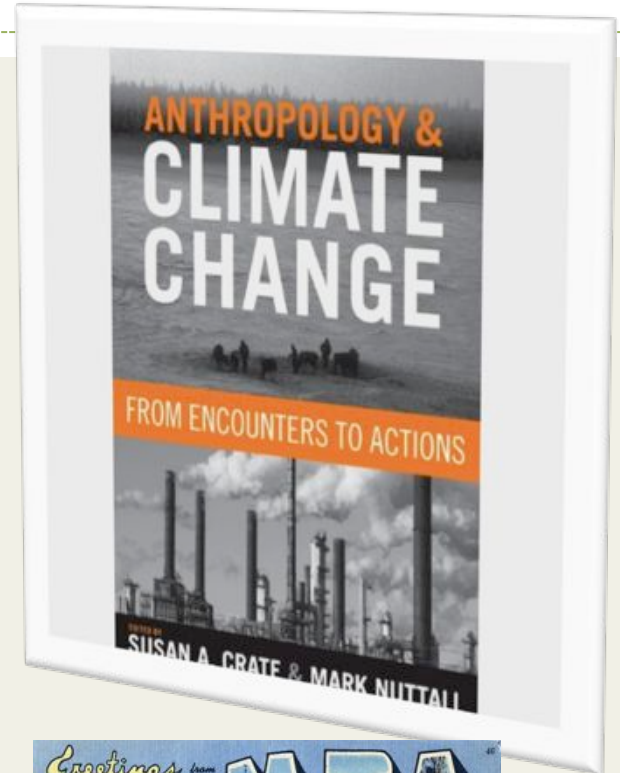


# Anthropology & Climate Change

- American Anthropological Association's Global Climate Change Task Force formed 2011
- Much less ethnographically grounded research on climate change in the urban U.S. (notable exception: ULTRA at FIU)

More recently:

- Crate (2011) calls for more “ethnographies of climate change”
- Barnes et al. (2013) call for greater attention to the production of scientific expertise and uneven impacts of a changing climate on particular social groups
- Rudiak-Gould (2011) calls for “reception” studies:
  - how non-scientists interact with climate change as a global scientific narrative and how their reception and understanding of this narrative shapes their perceptions and behavior.



# Study Overview



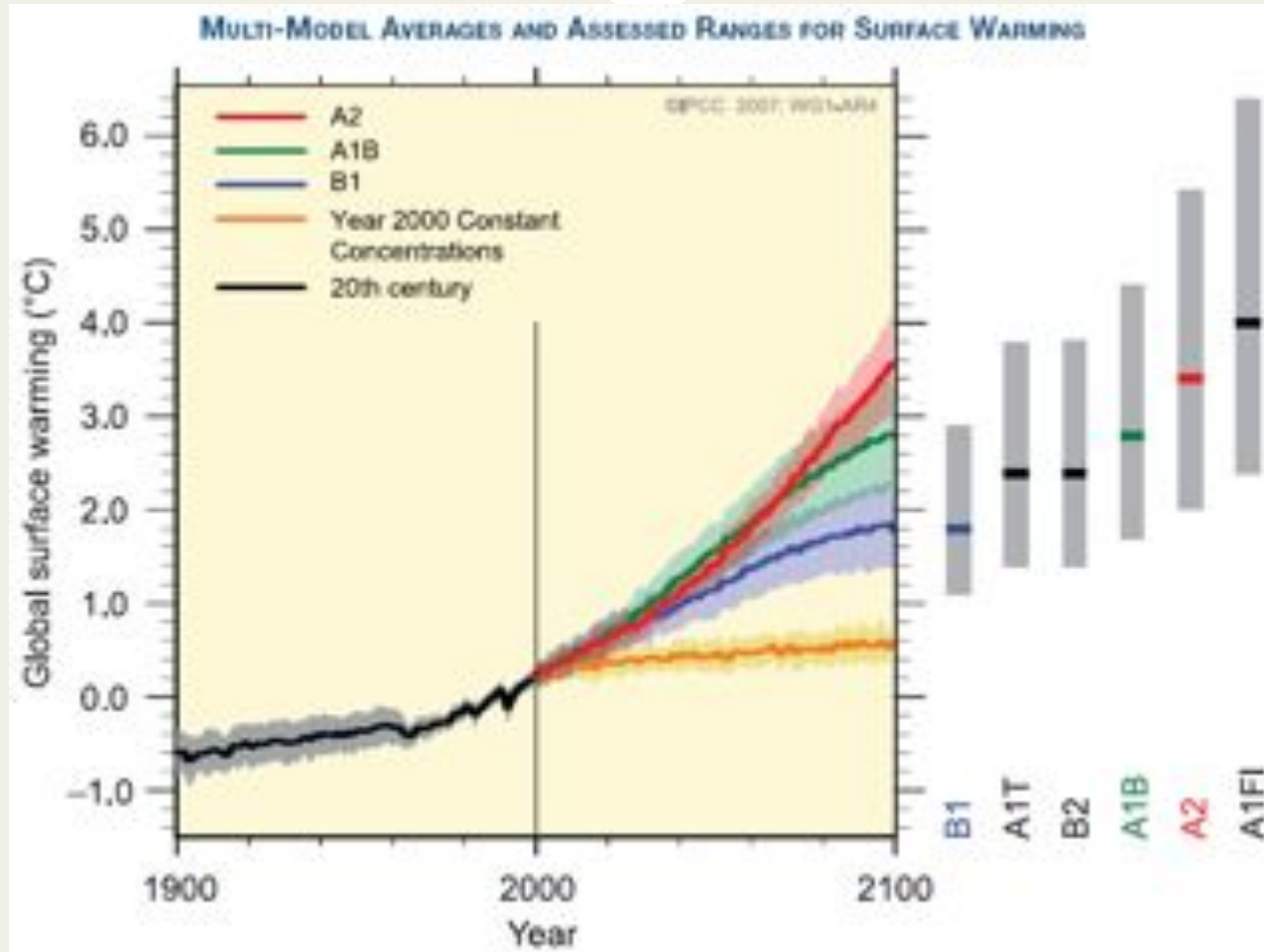
- The goal of the project: understand how a variety of key stakeholders and local residents view climate change risk and vulnerability in Tampa Bay, with a focus on impacts on water quality and quantity
- Interdisciplinary research team: anthropologists, geographers, ecohydrologists, geologists

## Data Collection Methods:

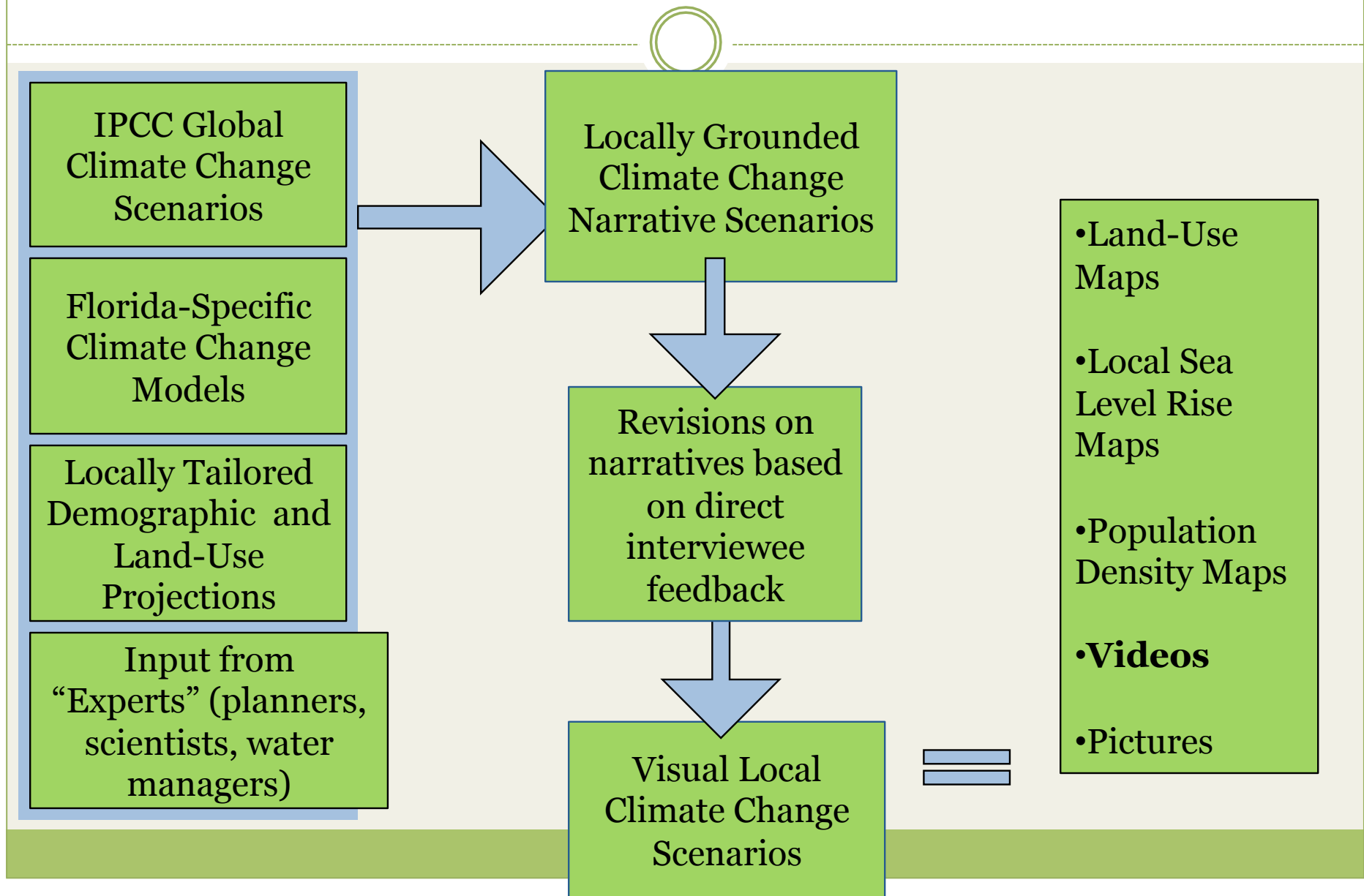
- Interviews
  - Phase 1 (key informants)
  - Phase 2 (local residents and other key stakeholders)
- Public Workshops (3 to date)
- Focus Groups (3 to date)
  - Planning organizations, environmental regulatory agencies



# IPCC Global Climate Change Scenarios



# Creation of Local Climate Change Scenarios





# Aries Scenario



# Virgo Scenario





# Pisces Scenario



# “Climate: Change the Conversation” Workshops

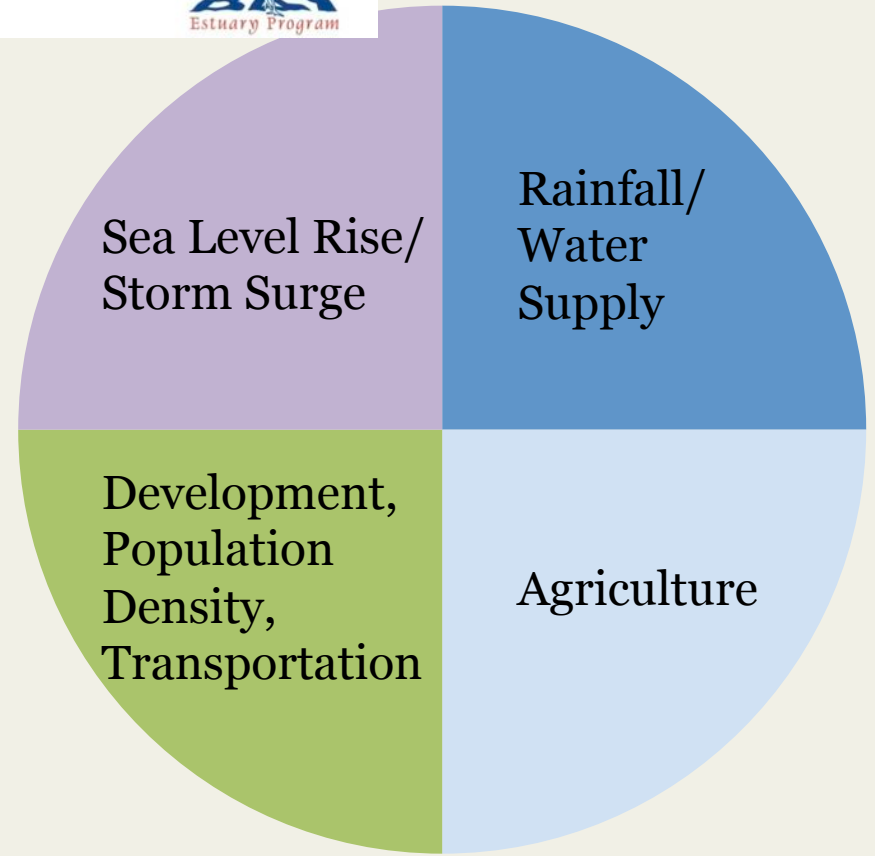
Two public events  
in partnership with:

**UF** | IFAS Extension  
UNIVERSITY of FLORIDA



## Workshop Themes

- Climate Perceptions Pre-Survey
- Visualizing Localized Scenarios: short video
- Rotating Stations (posters and activities)
- Discussion
- Climate Perceptions Post-Survey

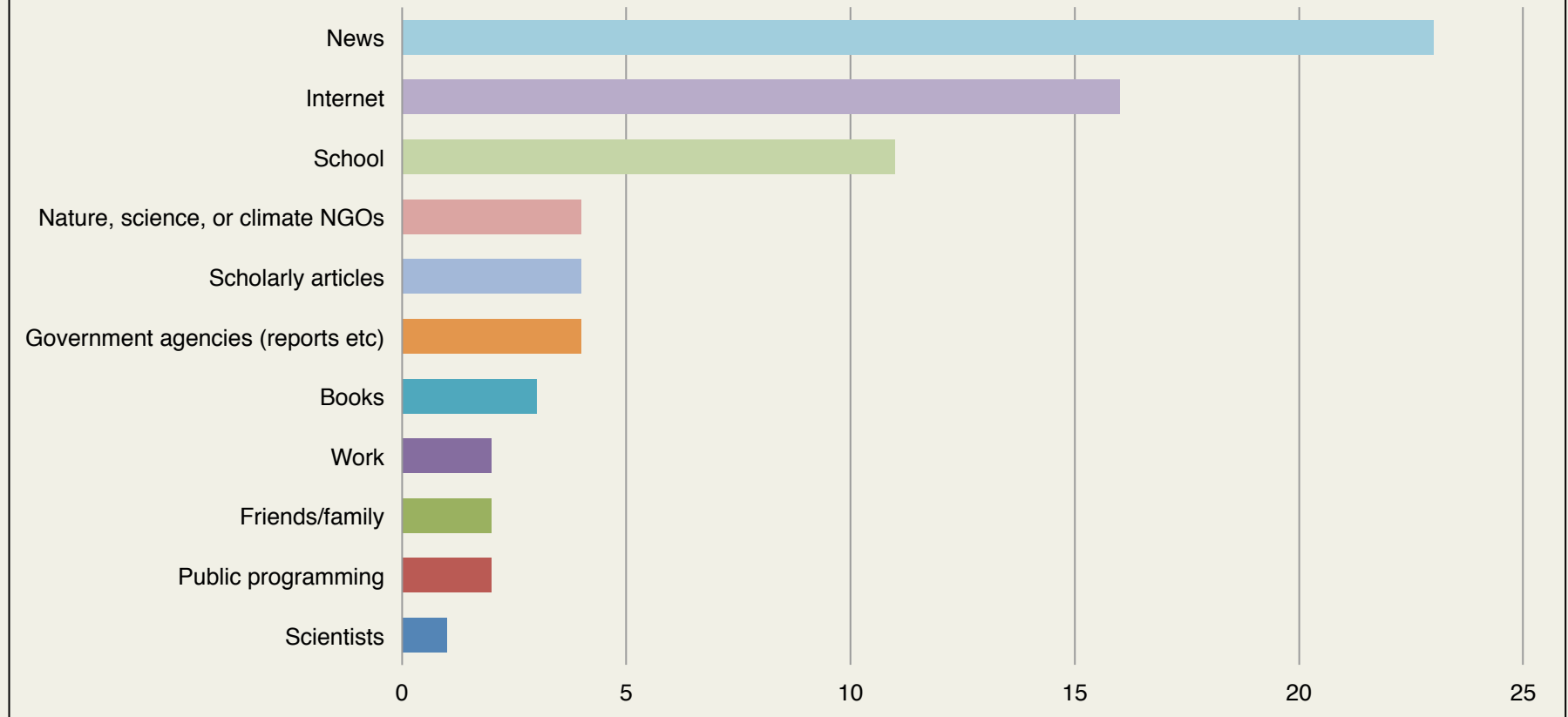




# Where did workshop participants get information on climate change?



**Figure 2**  
**Sources of information on climate change**





Elzbieta Bialkowska-Jelinska, Meg Stack and Corinne Zellner

# Sea Level Rise in Tampa Bay

## Storm Surge: Created by Wind, Waves & Pressure

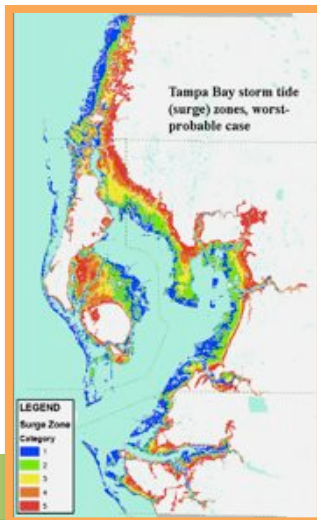
Storm surges are rises of water that can increase by feet in minutes, based on the size, speed and intensity of a hurricane, the angle of approach to the shore and coastal water depth.

Surges can move about 10-15 mph; one cubic yard of Gulf water weighs almost a ton.

A surge can begin before storm landfall, making escape difficult and driving dangerous.

The Gulf of Mexico is vulnerable to storm surges, which will potentially worsen with climate change and sea level rise. As water temperatures increase, stronger storms will too.

How can **YOU** help protect Tampa Bay and reduce effects of climate change?



## Aries Scenario

Sea level rise of 1'8"



Egmont Key Lighthouse



Fort DeSoto Park



Davis Island

**Lowest Flood Risk**

## Virgo Scenario

Sea level rise of 3'3"



Don Cesar Hotel

**Moderate Flood Risk**



Hyde Park Historic District

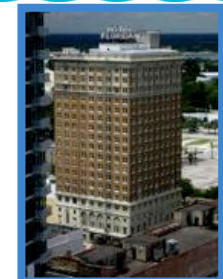


Eckerd College

## Pisces Scenario

Sea level rise of 4'11"

**High Flood Risk**



Floridan Palace Hotel



Snead Island



Sunken Gardens

**Historic Landmarks Threatened Due to Climate Change by 2100**



Pass A Grille Beach and Historic  
Neighborhood



Ft. Desoto



Shore Acres neighborhood  
after Tropical Storm Barry

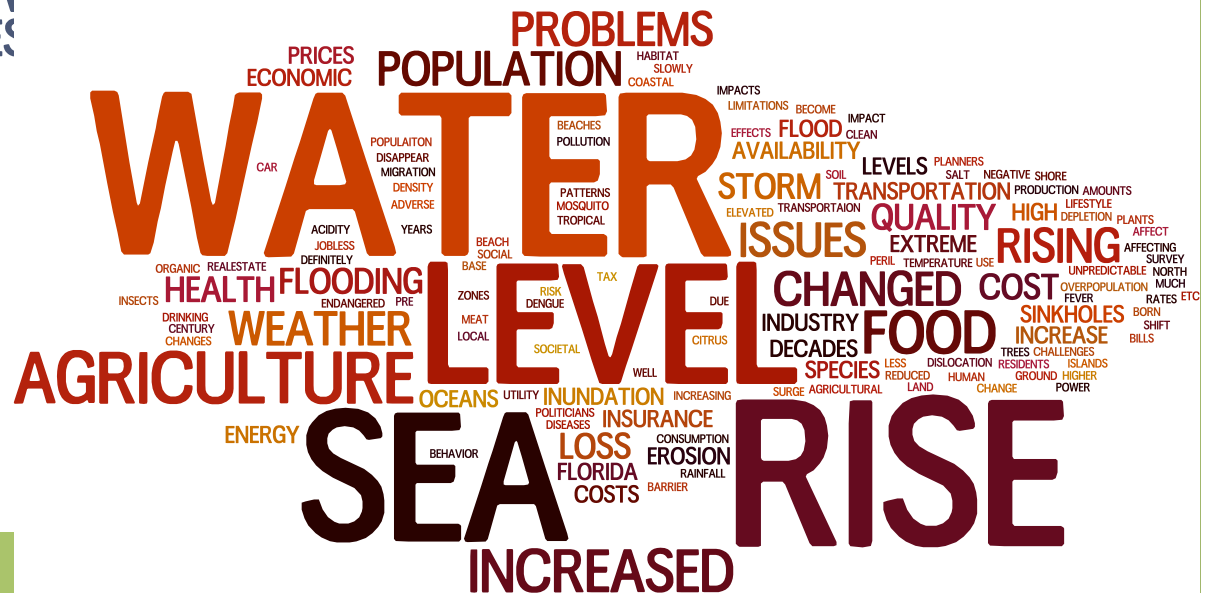
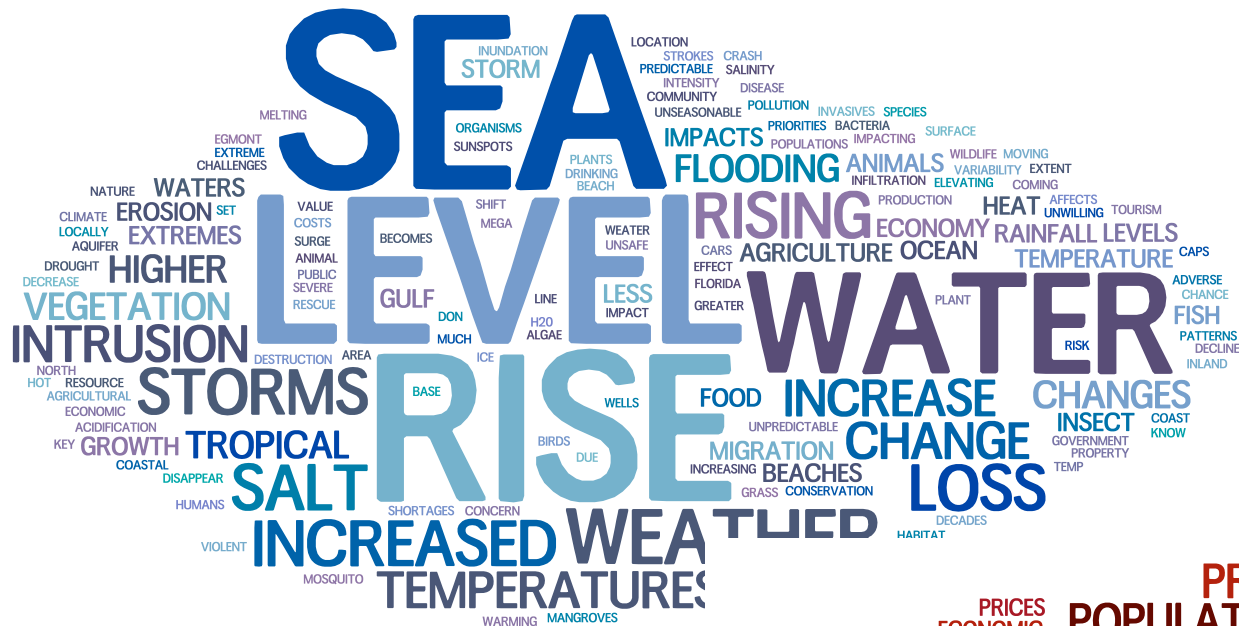


# What ranked first for concern over sea level rise?



Don Cesar





Figures by Alexis Winter, unpub. ms

# Climate scenarios video



- [http://www.youtube.com/watch?v=nsVCSRxVvEo&feature=em-upload\\_owner](http://www.youtube.com/watch?v=nsVCSRxVvEo&feature=em-upload_owner)

# Thank You!



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