2025 BILL ANDERSON FUND LIGHTNING TALKS

WHERE DISASTER RESEARCH IDEAS COME TO LIFE

Session Moderator: Hans Louis Charles, PhD (C)

Associate Professor at the L. Douglas Wilder School of Government and Public Affairs at Virginia Commonwealth University (VCU).

Bill Anderson Fund (BAF) Founding Fellow

Previous Presenters

2016

Nnenia Campbell
Benika Dixon
Heather Kirkland
Jose Torres

2017

Kayode Atoba
Michelle Dovil
Asia Dowtin
Henry Smart

2018

Lorita Daniels
Natasha Malmin
Cristina Muñoz
Cynthia Rivas
Danielle Sharpe

2019

Olumide Abioye
Donta Council
Oronde Drakes
Antoine Richards
Darien Williams

2020

Felicia Henry
Natasha Malmin
Farah Nibbs
Valerie Washington
Alex White

2021

Saige Hill
Melissa Villareal
Tihara Richardson
Alexa Riobueno-Naylor
Amy Takebe

2022

Jennifer Blanks
Orande Drakes
Ciara Horne
Cassandra Jean
Taylor Lightner
Carlo Chunga Pizarro
Valerie Washington

2023

Maggie Leon-Corwin
Joshua McDuffie
Yajaira Ayala
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Our 2025 BAF Lightning Talks Speakers!

Amidu Kalokoh

Virginia Commonwealth University

Public Administration

Ruby Hernandez

Texas A&M University

Environmental Health

Tykeara Mims

Texas A&M University

Epidemiology

Michelle Ruiz

University of Florida

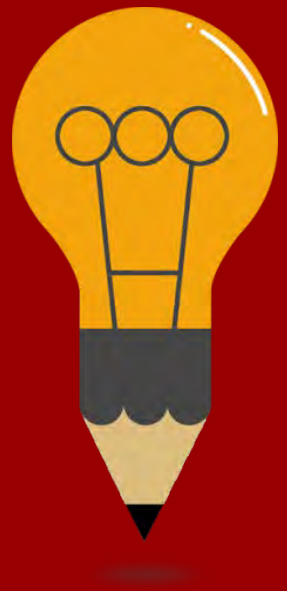
Geography

Jacquita Johnson

Texas A&M University

Public Health

BAF Lightning Talks	
Presentation Time	7 minutes
Time spent on each slide	Presenters can advance the slides at their own pace
Number of slides	Maximum 20 slides
Visual aids	Maps, photos, illustrations, etc. & some written texts



Natural Hazard Preparedness for Correctional Facilities in Virginia

Amidu Kalokoh

Public Policy and Administration (ABD)

Virginia Commonwealth University

BAF Lightning Talks

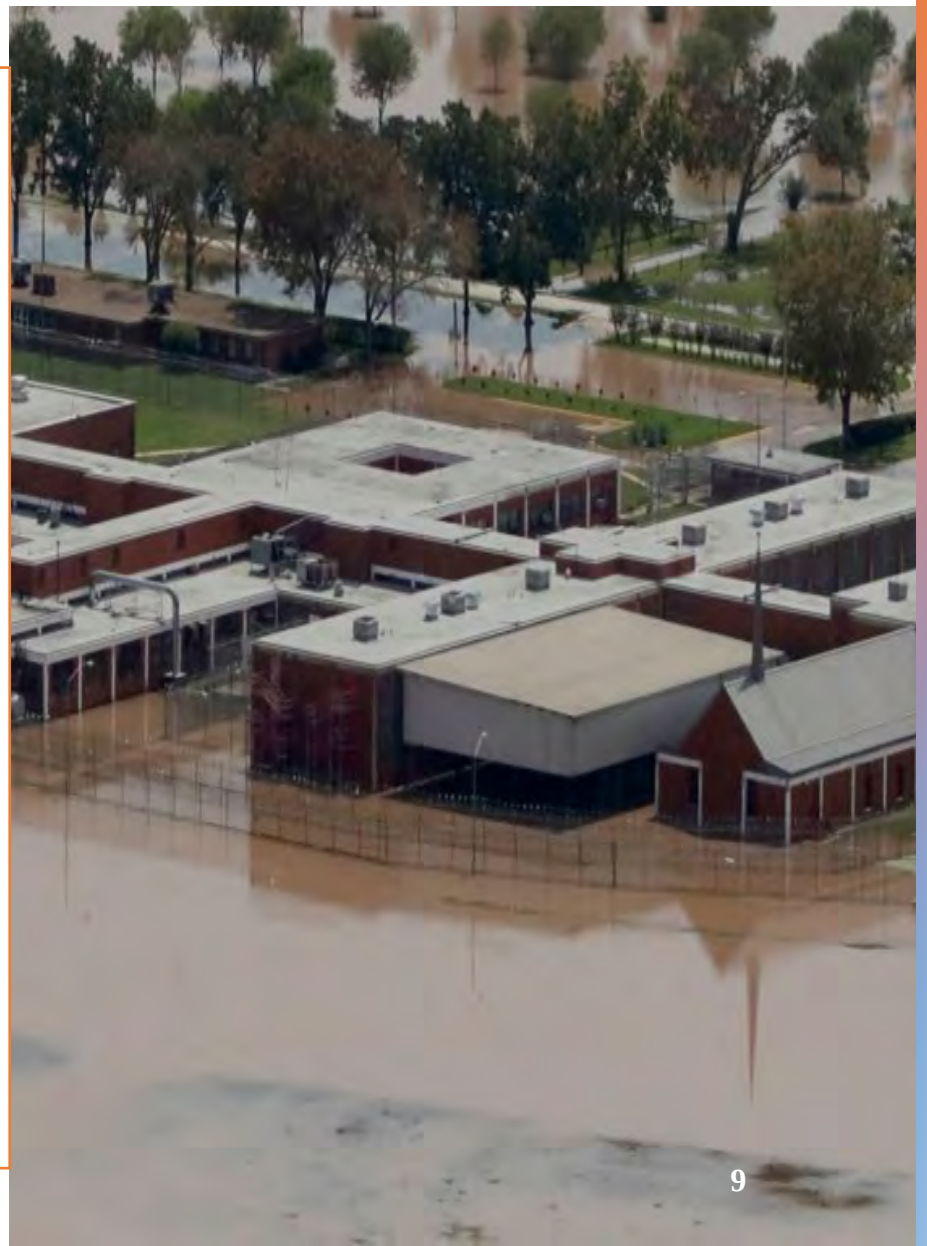
Natural Hazards Research and Applications Workshop 2025

Broomfield, Colorado

Statement of the Problem

- The Ohio State Penitentiary fire in 1930 – 320 deaths *(Worley & Worley, 2021).*
- 8,000 Orleans Parish Prison - Katrina *(Clarke, 2018; Robbins, 2008)*
- About 1,000 inmates in Galveston County Jail *(Texas Civil Rights Project, 2009).*
- Evacuation?

(Dement, 2023; Pauly, 2018; Savilonis, 2014)



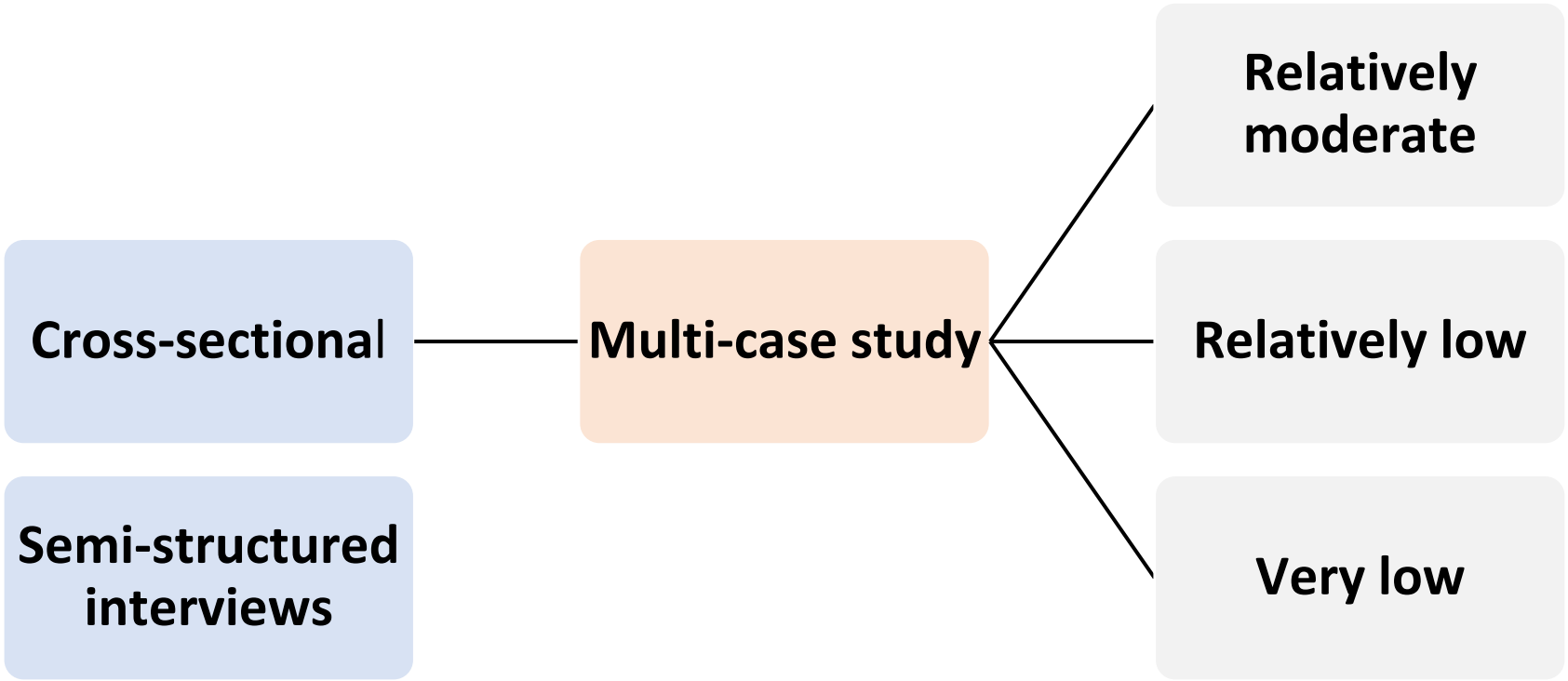
Research Question

Are correctional facilities (state and local) and local emergency management agencies prepared to meet the needs of inmates and correctional staff in Virginia during natural hazard disaster events?

Preparedness Cycle

(Center of Excellence for Homeland Security, 2020)

Research Design and Methodology



Findings: *Preparedness*

Planning

- ***Communication***

  "… unless they're affected, we do not really communicate with them on a daily basis."

  Emergency Management Official

- ***Funding***

  "… we respond to four Sheriffs when it comes time for like recovery and grant funding…, we cannot specifically reach out for those types of programs. We have to go through one of the sheriff's offices and to get their support tends to be difficult."

  Correctional Official

Findings

Organizing/Equipping

"… the PPE situation was so bad. We are maintaining a local staff file of Personal Protective Equipment within the emergency management program itself."

Findings

Exercise

"… and the juvenile detention facility here at their request, as well as developing and facilitating exercises for both county facilities."

Emergency Management official

"They should be a regular, recurring partner in the planning training exercise process."

Emergency Management Official

Take home

- There is awareness that preparedness is significant…
- Preparedness for correctional facilities is different across localities and facilities
- Inadequate resources – human and logistics
- Regional and larger facilities struggle with inadequate resources
- Facilities in very low-risk areas are less prepared…
- Evaluation is a crucial piece that correctional facilities need to improve on.

(Mutual Aid Disaster Relief, 2018)

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THANK YOU!

QUESTIONS AND COMMENTS

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Voices on the Edge

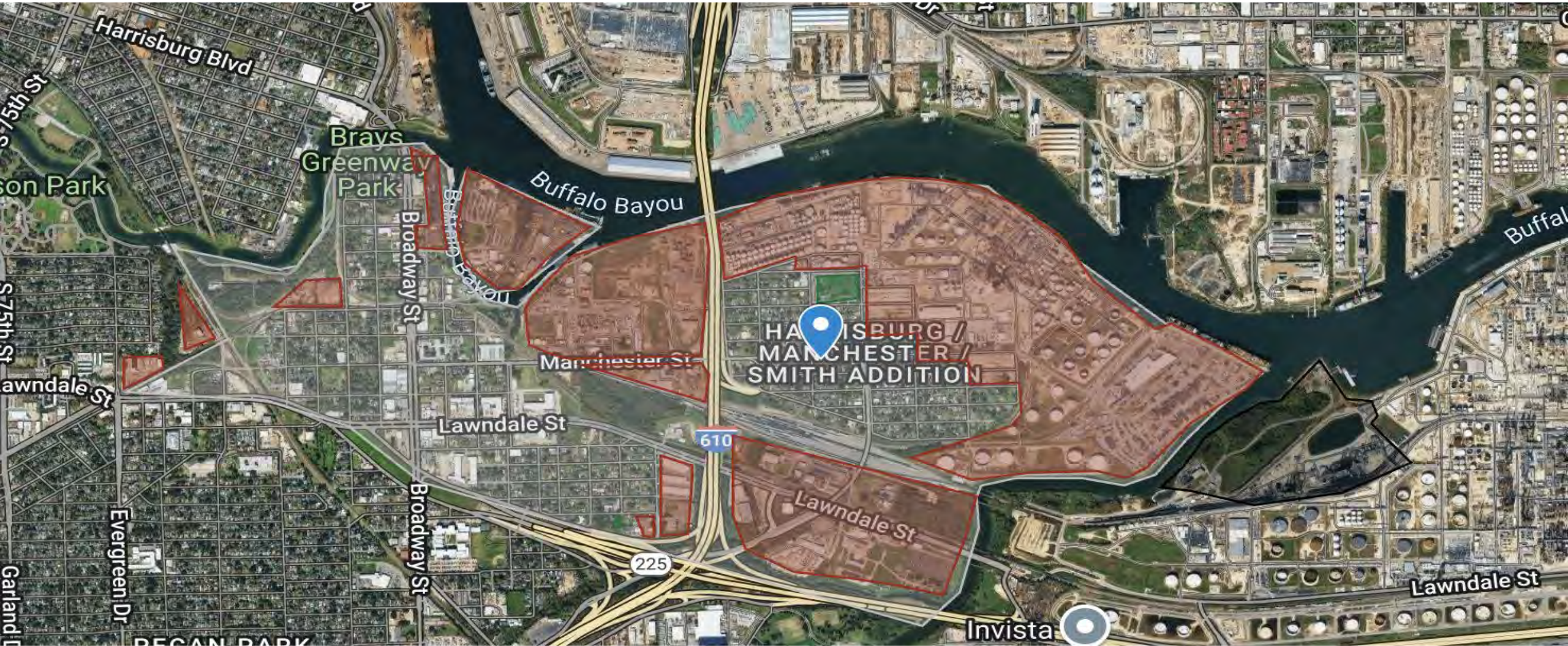
Ruby Hernandez , MPH

Texas A&M University, School of Public Health

Texas A&M Superfund Research Center

Bill Anderson Fund Fellowship

Manchester/ Harrisburg/ Smith Addition



Southeast Houston, TX

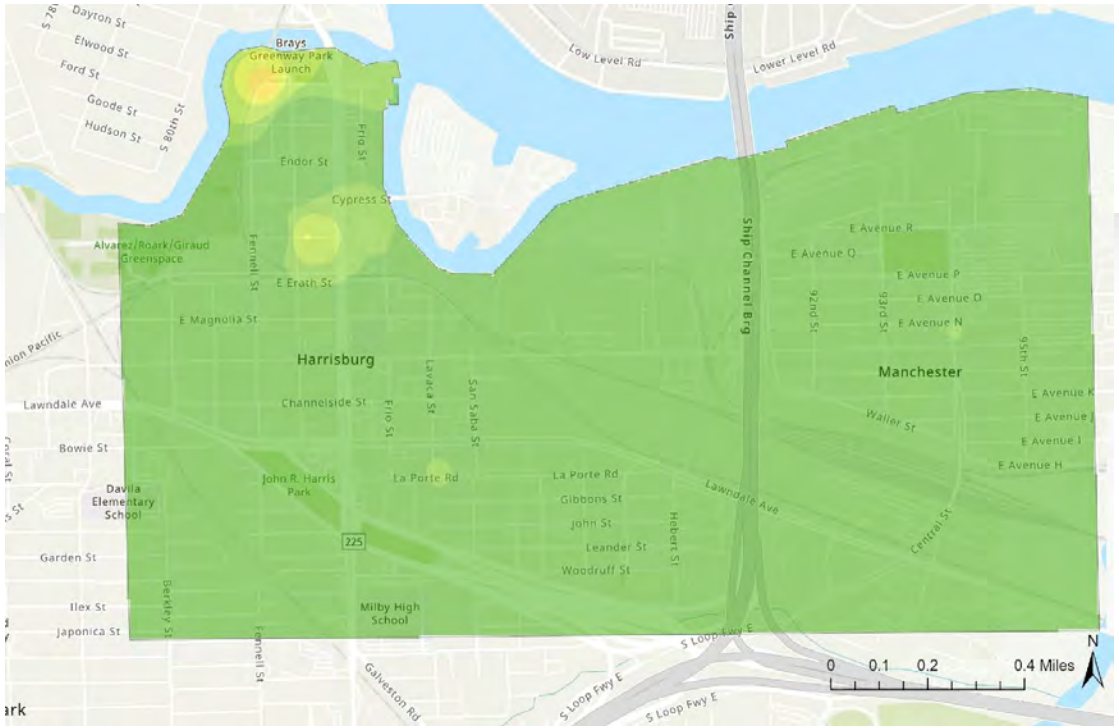
1947- Texas City Disaster	1979- Phillips Petroleum Explosion	1987- Pasadena Fireworks Explosion	1989- Phillips 66 Explosion	1989- Exxon Valdez Oil Spill Impact
2002- Houston Ship Channel Oil Spill	2004- Deer Park Shell Chemical Fire	2005- Hurricane Katrina (indirect impact)	2014- Houston Ship Channel Methyl Mercaptan Release	2017- Hurricane Harvey
2018- San Jacinto Waste Pits Cleanup Plan Approval	2019- ITC Deer Park Fire	2020- LyondellBasell Chemical Leak	2020- Deer Park Oil Spill	2021- Winter Storm

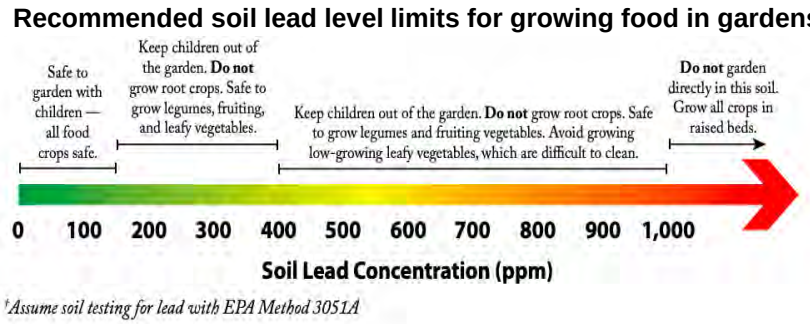
The Manchester Project

Objective: To investigate the potential environmental impacts the community of Manchester, in Houston, Tx. has due to its proximity to multiple industrial sites (petroleum and chemical). Specifically, the study aims to find the environmental and health impacts of Polycyclic Aromatic Hydrocarbons (PAHs) and heavy metals.

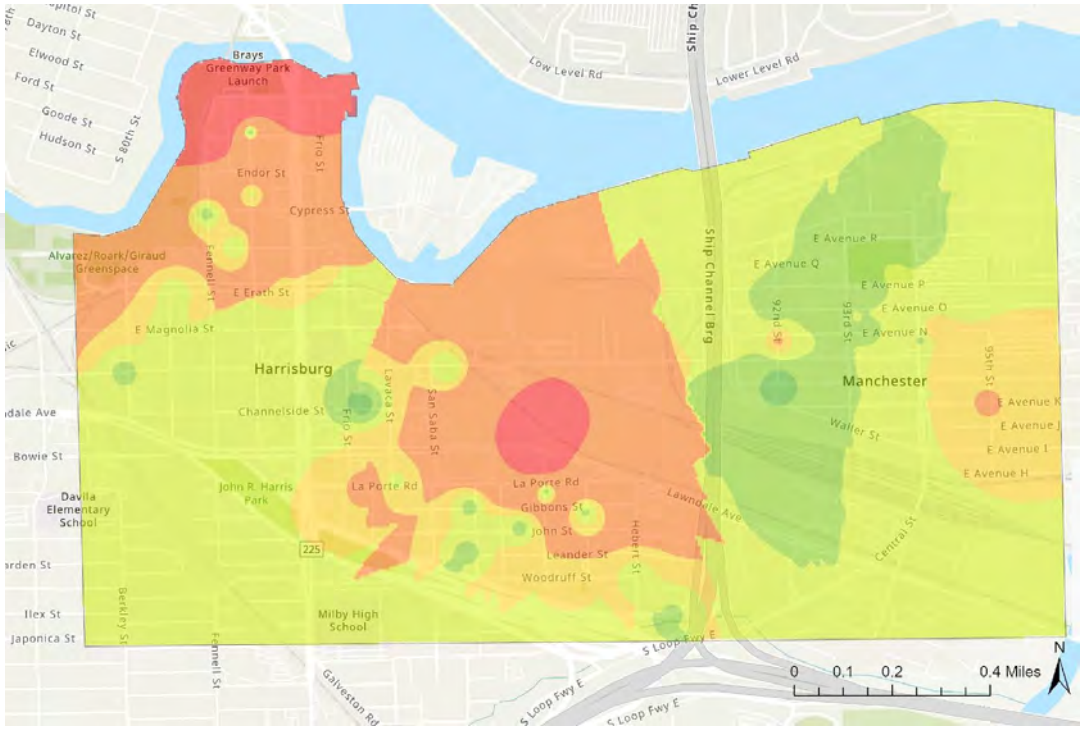
- What are the vulnerabilities and hazard risks of the community of Manchester/Harrisburg to natural hazards?
  - Hurricanes

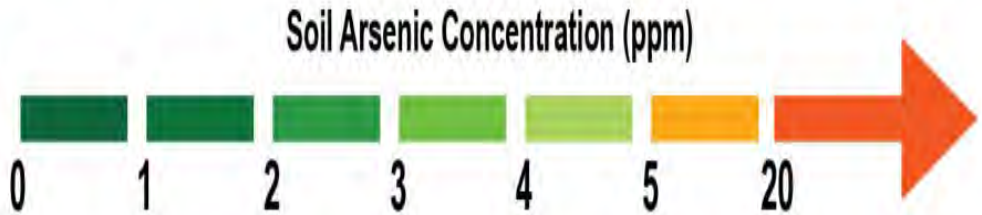
Lead





Arsenic





Moving Forward

- Community engagement
- Collaboration with non-profit organizations
- Community Scientist Project
  - Recruitment of high school students
  - Health advocates on Public Health- Environmental Health
- Provide Green Space Solutions
- Complete Community Health Assessment

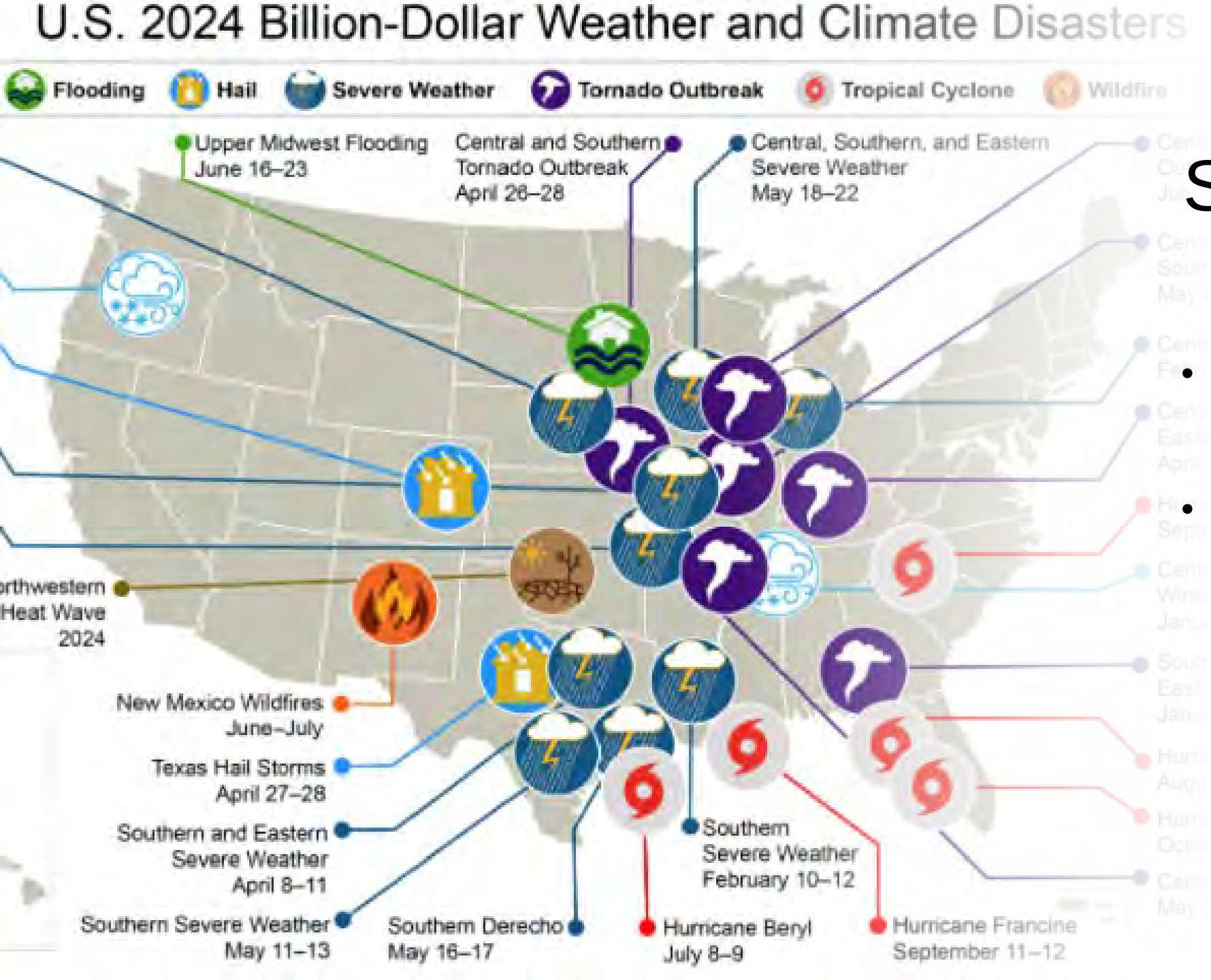
Thank You

Email: rhdz@tamu.edu

Sociodemographic Drivers of Hazard Response: Evidence from Hays County

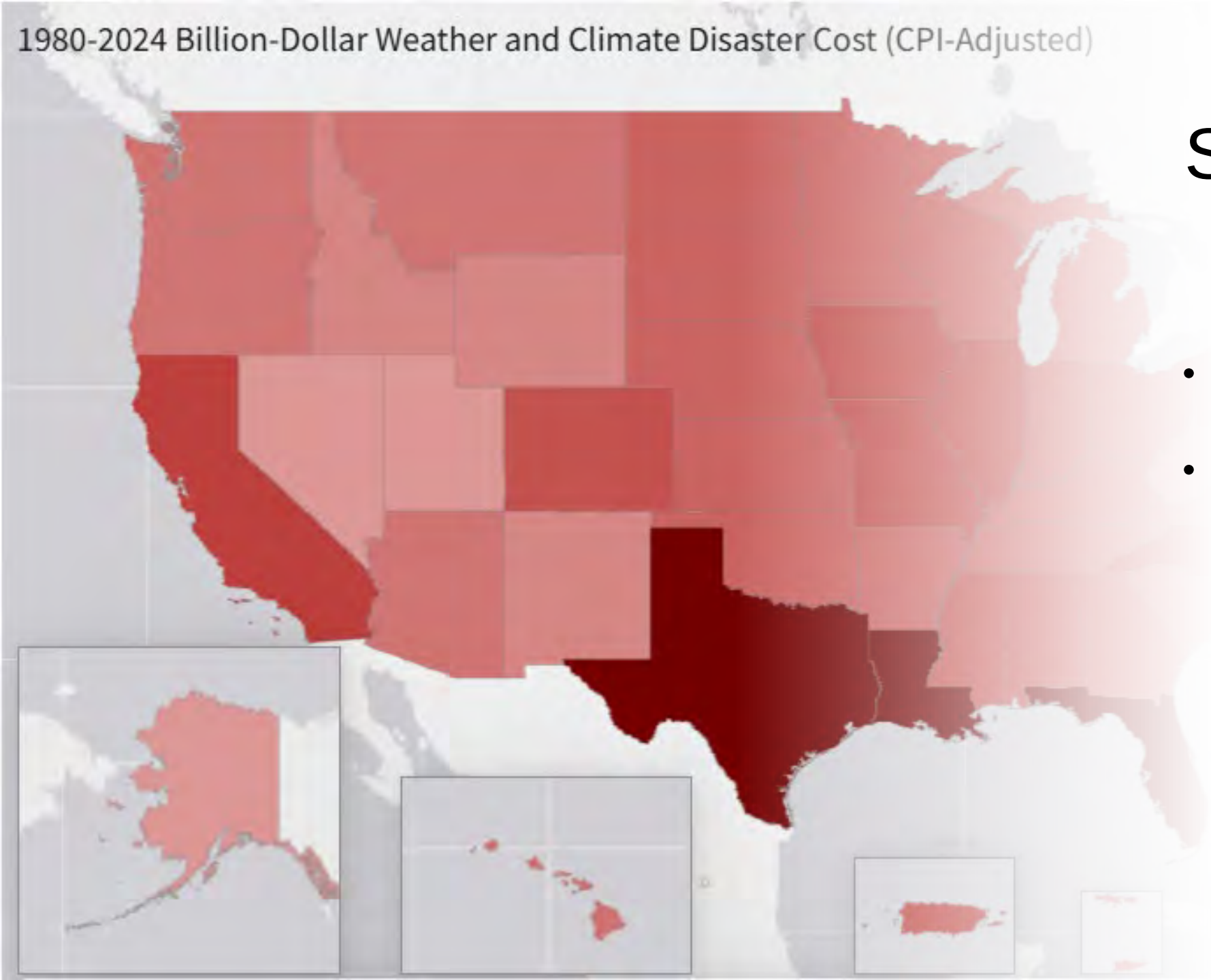
TyKeara Mims

My Path to Public Health



Severe Weather

- Severe weather events pose a significant threat to public health and safety
- Future climate scenarios show likely increases in the frequency, timing, intensity, and duration of these events



Severe Weather in Texas

- Texas is the most disaster-prone state in the country
- Texas is the second-leading state in cumulative disaster costs

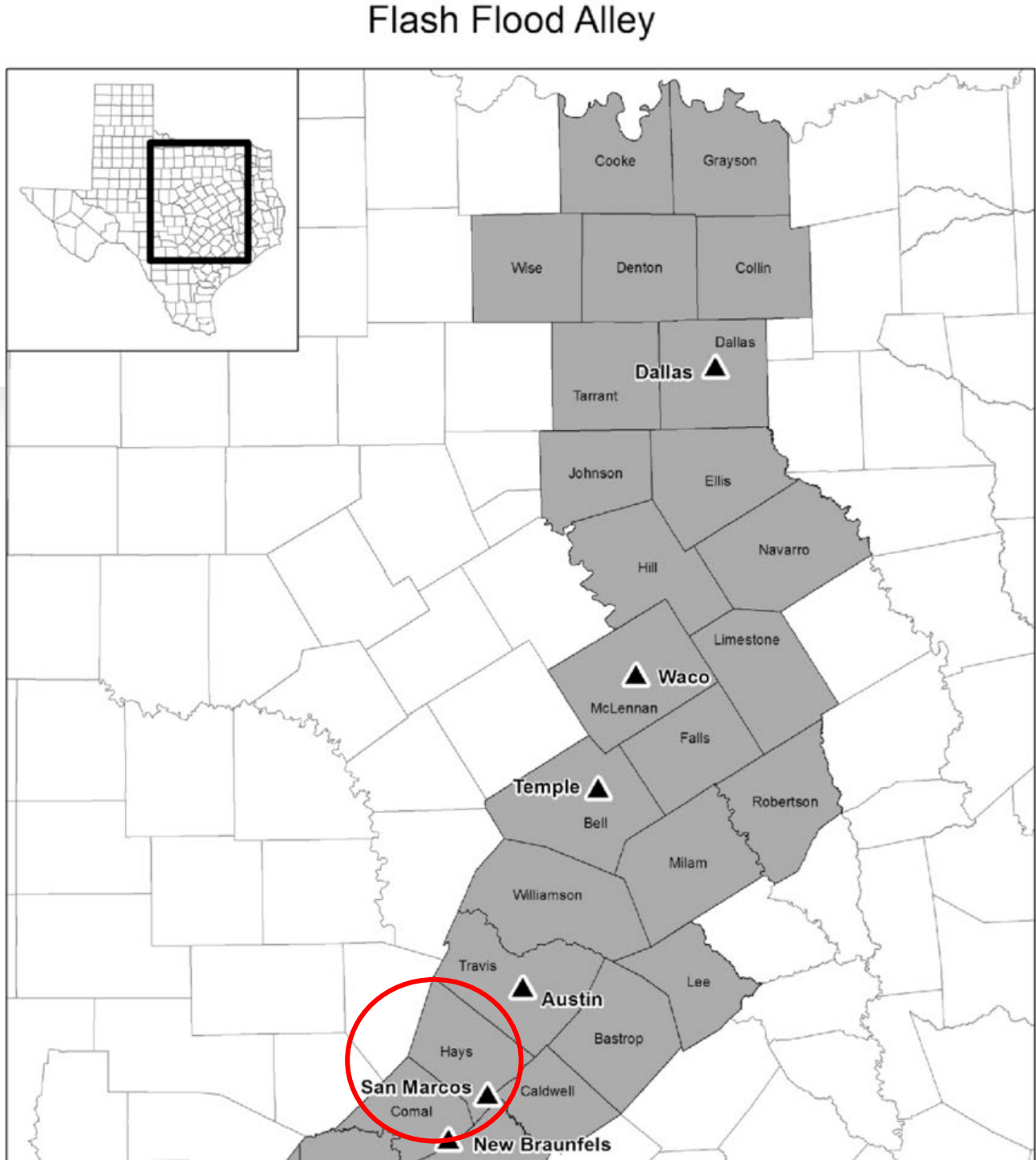
Research Aims

This study aims to investigate the factors influencing individuals' willingness to follow protective action recommendations and changes to preparedness or mitigation practices following a severe weather event.

- Association between prior hazard experience and protective action adherence
- Changes to hazard preparedness or mitigation practices following a hazard event

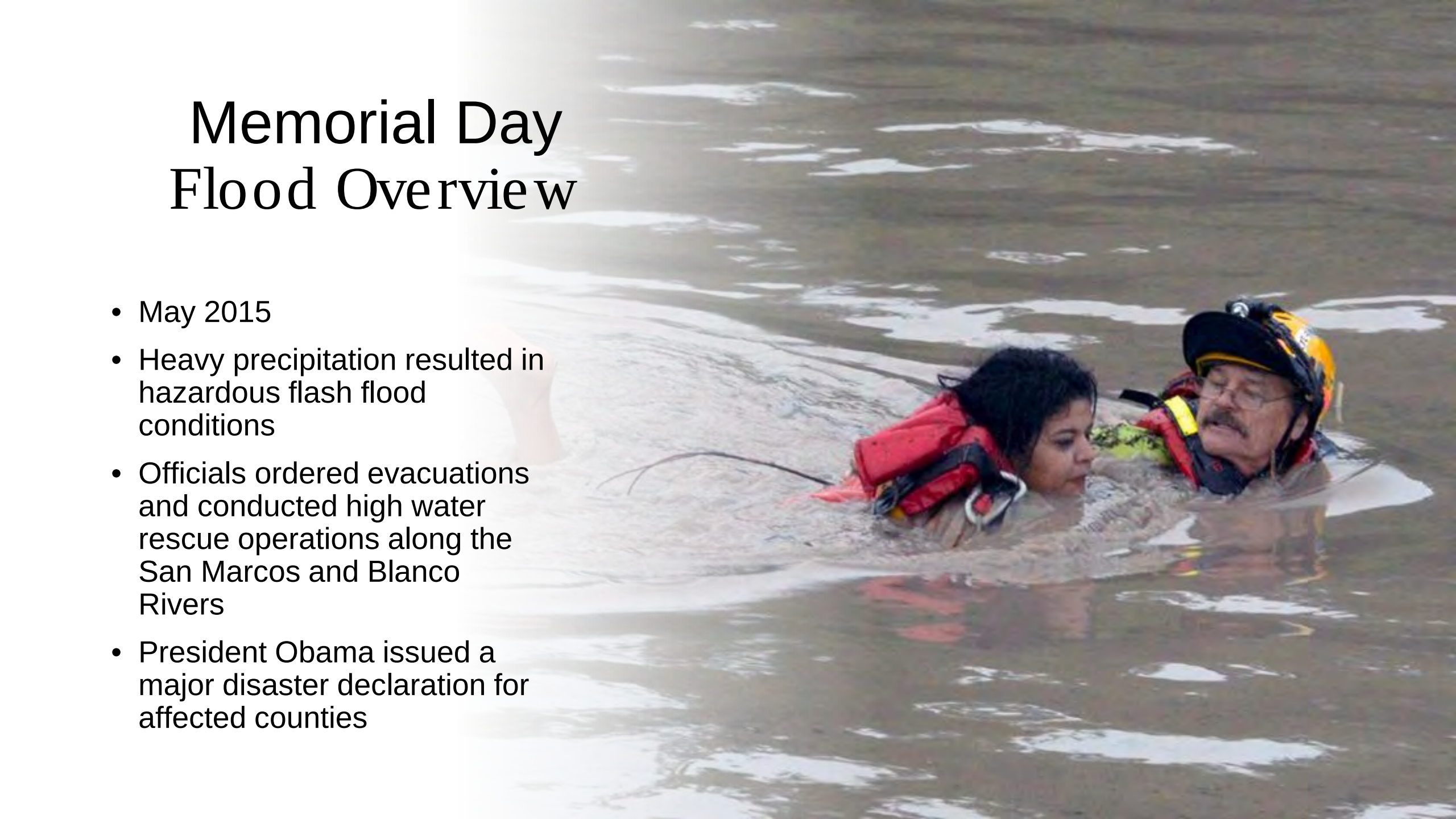
Hays County

- Hays County is one of the fastest-growing counties in the United States
- Located within Central Texas's "Flash Flood Alley"
- Hays County has experienced multiple severe flood events, most notably the 2015 Memorial Day Flood



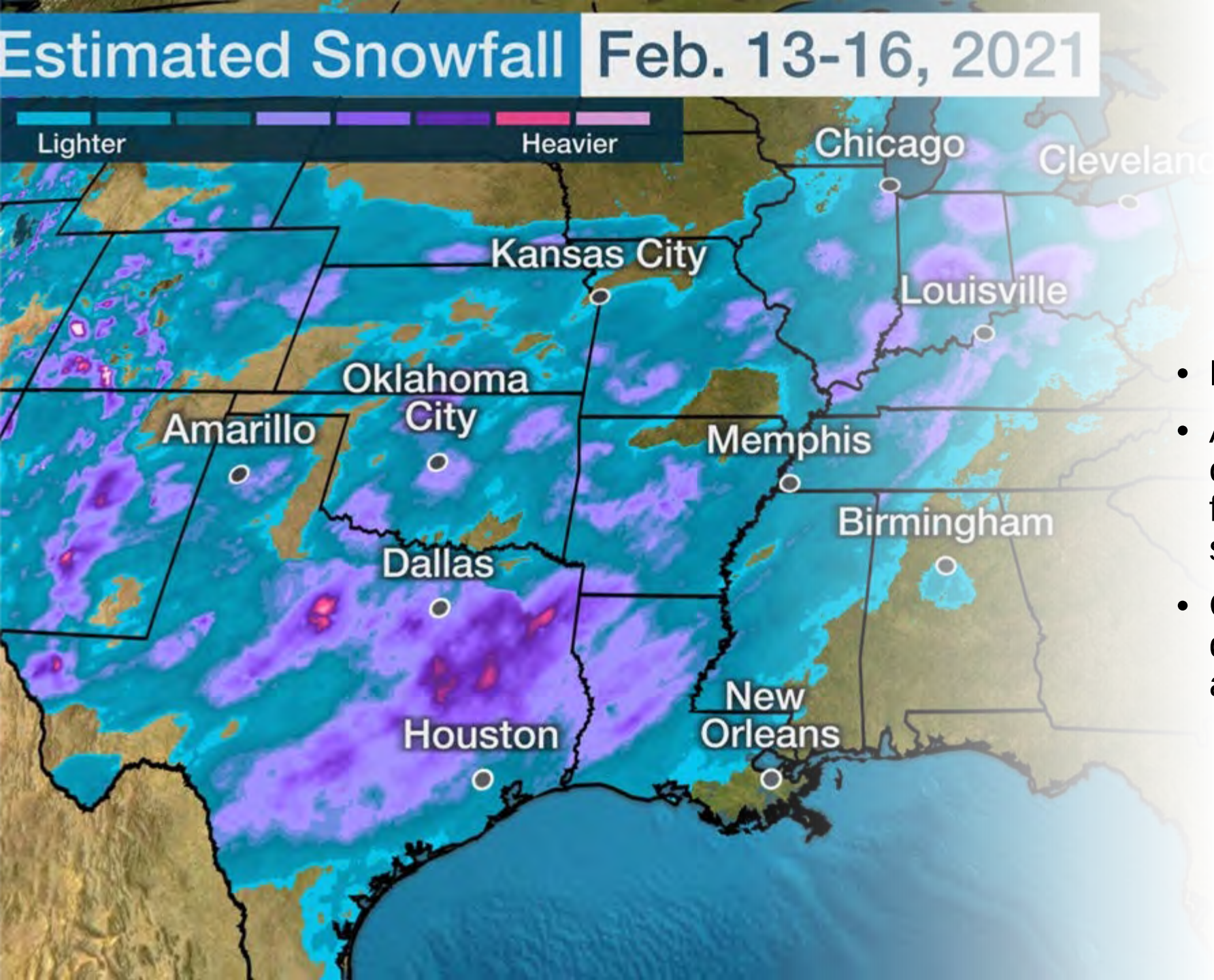
Memorial Day Flood Overview

- May 2015
- Heavy precipitation resulted in hazardous flash flood conditions
- Officials ordered evacuations and conducted high water rescue operations along the San Marcos and Blanco Rivers
- President Obama issued a major disaster declaration for affected counties



Memorial Day Flood Impact

- 14 reported fatalities
- 400 homes destroyed
- $12 million in estimated county damages



Winter Storm Uri Overview

- February 2021
- A series of winter storms characterized by prolonged freezing temperatures, heavy snow, sleet, and freezing rain
- Governor Greg Abbott declared a state of disaster in all 254 counties

Winter Storm Uri Impact

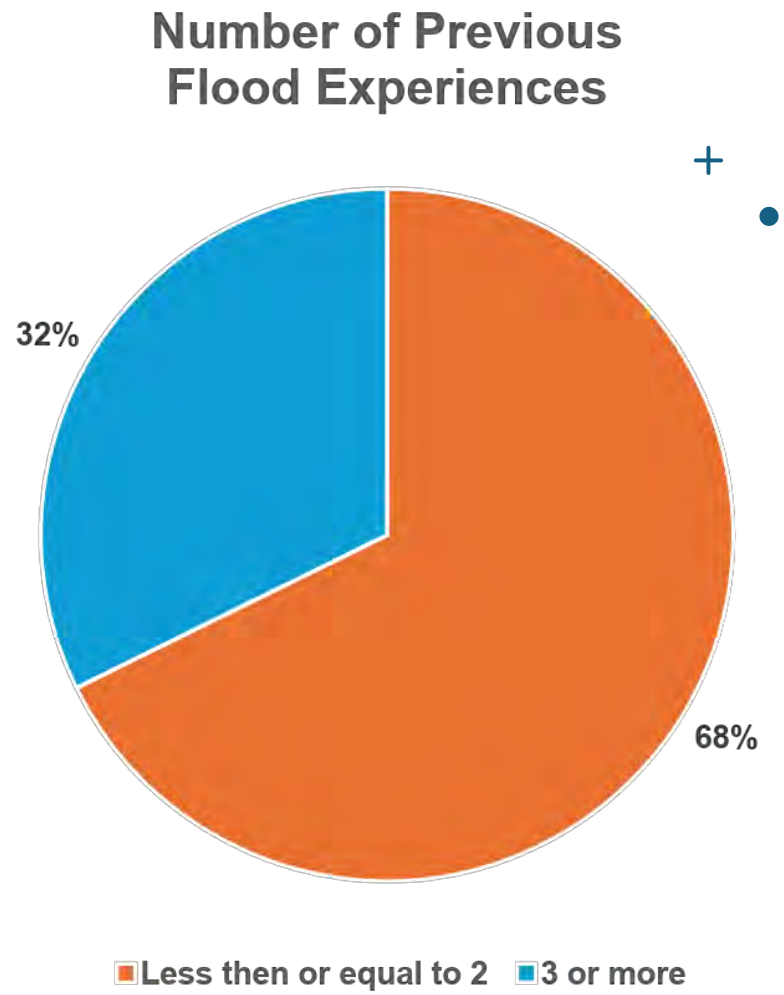
- More than 200 storm-related fatalities
- At the peak of the outage, nearly 10 million people were without power
- 49% of Texans experienced disruptions in water service
- Estimates suggest financial losses between $80-130 billion

Methods

- A Community Assessment for Public Health Emergency Response (CASPER) method was used to collect survey data
- Collected 128 completed surveys

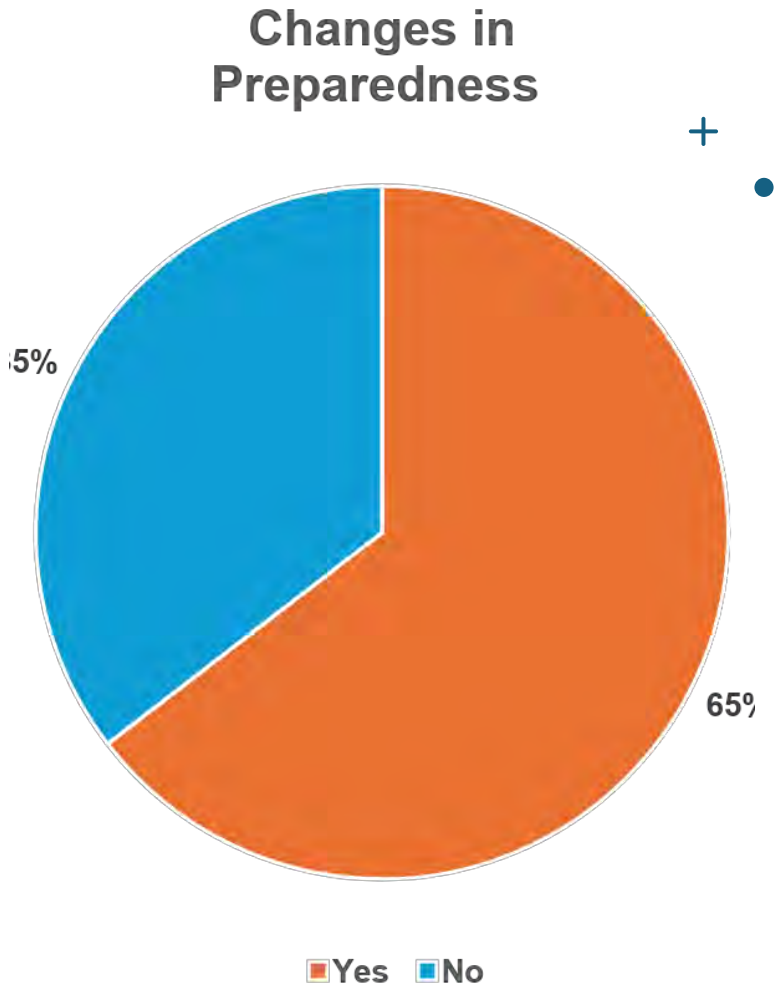
Results: Previous Hazard Experience

- No statistically significant relationship was found between previous flood experience and
  - Willingness to follow protective action recommendations
  - Changes in preparedness
  - Changes in mitigation



Results:
Changes in Preparedness

•Changes in preparedness were influenced by:
- Tenure in the home
- The presence of a family plan
- Experiencing long-term impacts from Winter Storm Uri



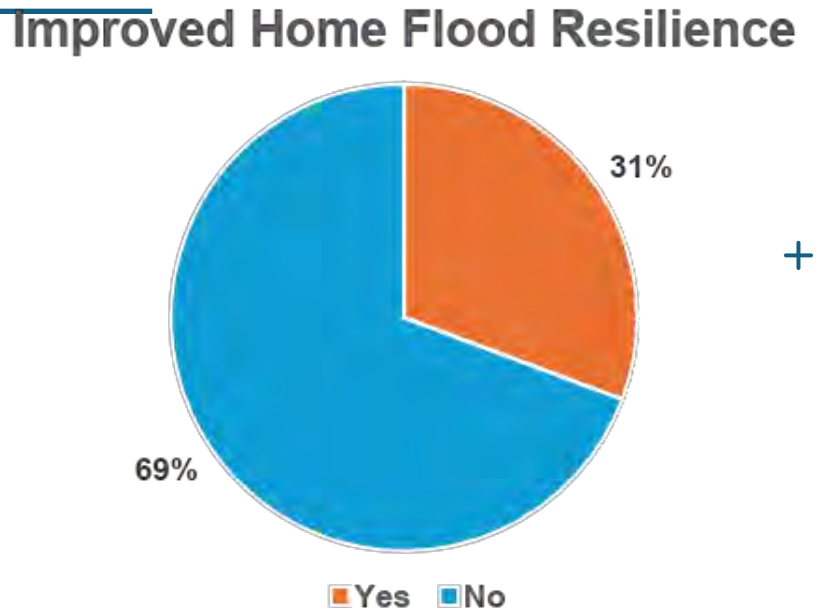
Results: Mitigation

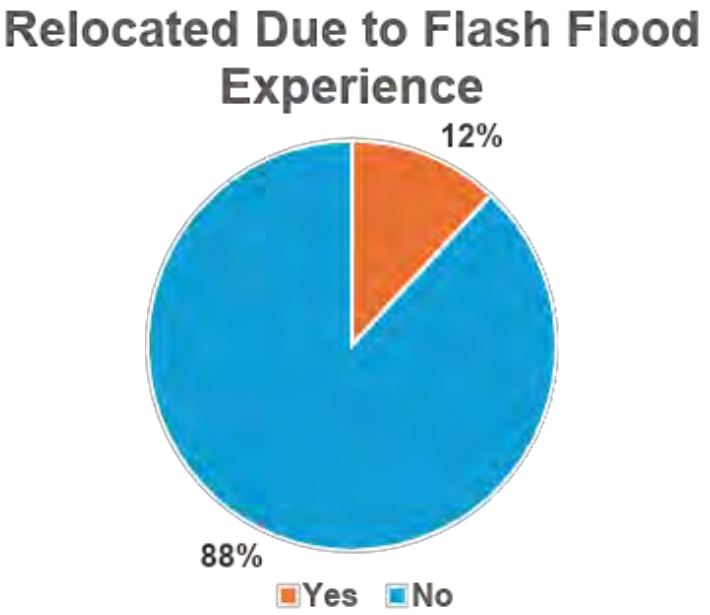
Improved Flood Resilience

- Participants of color were 66% less likely than white participants to make upgrades aimed at enhancing flood resilience.
- Those who experienced home flooding during Winter Storm Uri were 5 times more likely to make changes to their home to improve flood resilience.

Relocation Due to Flood Experience

- Relocation was associated with tenure in the home and the presence of a family plan.
- Those who experienced long-term impacts of the Memorial Day Flood were 5 times more likely to move.





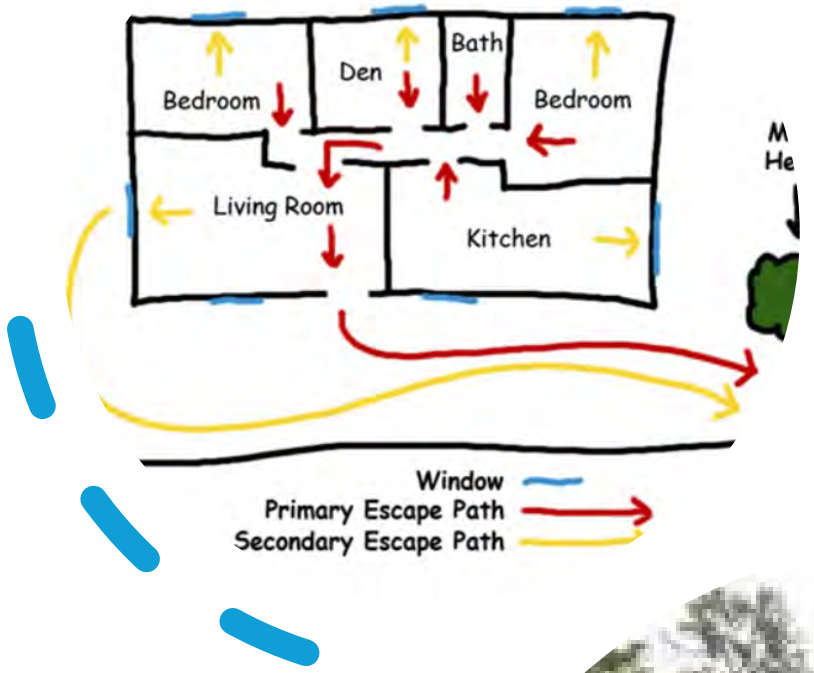
Discussion

- Findings related to preparedness being linked to tenure and family emergency planning and racial disparities regarding mitigation practices are consistent with hazard and environmental justice literature.
- While unexpected, the finding that direct experience alone does not lead to protective behaviors aligns with previous research indicating that this relationship is not always linear or significant.

In Conclusion

Study findings underscore the need for:

- Targeted preparedness outreach
- Embedding equity into hazard mitigation programs
- Going beyond experience-based assumptions



Thank you!

Rapidly Intensifying Hurricanes and Spanish-Speaking Communities: Examining Risk Perception and Communication Challenges

Michelle Ruiz
PhD Candidate
University of Florida
Geography Department
Bill Anderson Fund Fellow

THE William Averette Anderson FUND

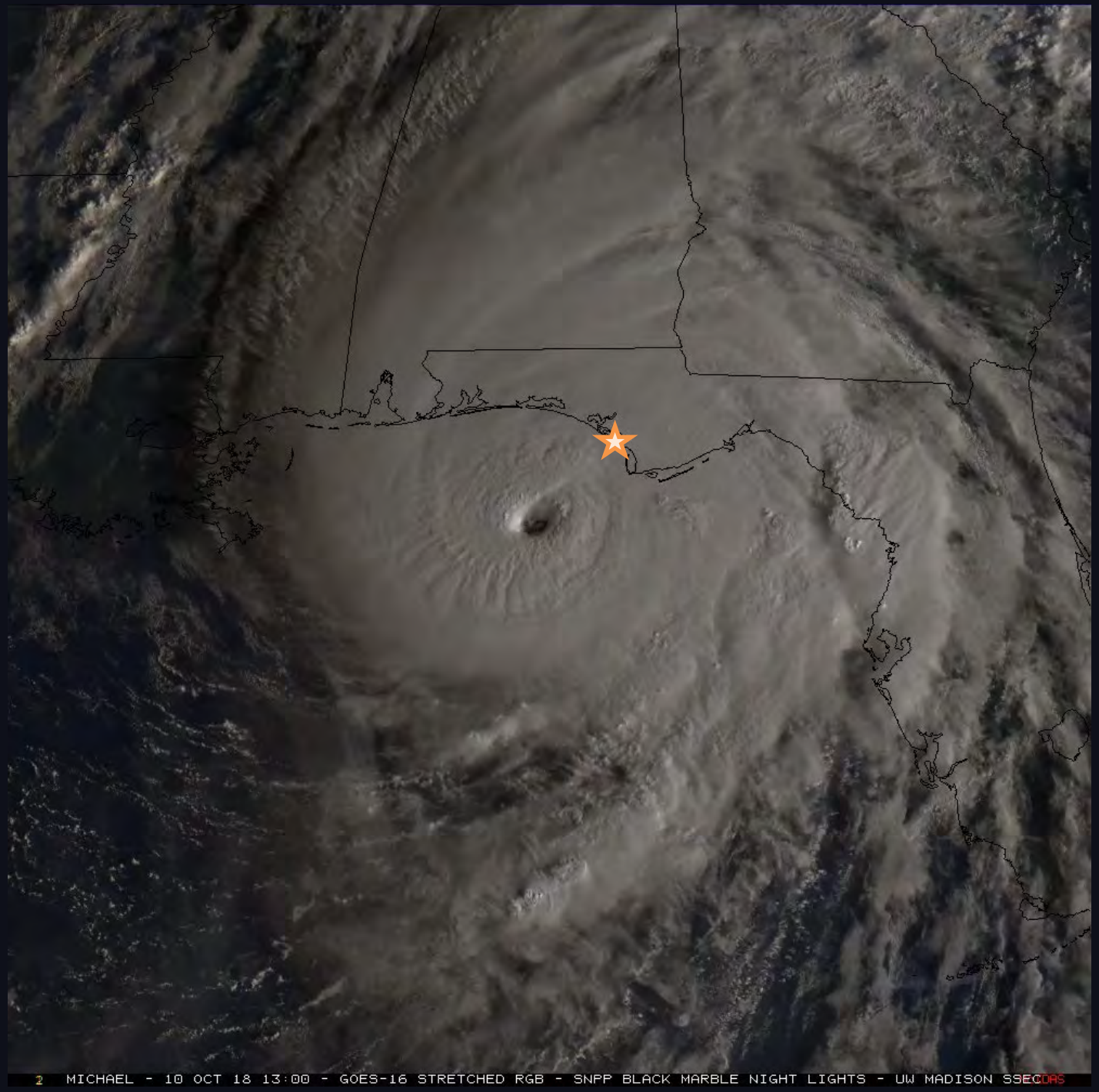
Hurricane Michael

October 10, 2018

Landfall near Mexico Beach, FL

Category 5

160 miles per hour



$25 Billion

Damage in the U.S.

16

Direct fatalities due to storm surge and wind in the U.S.

14

Feet of estimated storm surge near Mexico Beach, FL

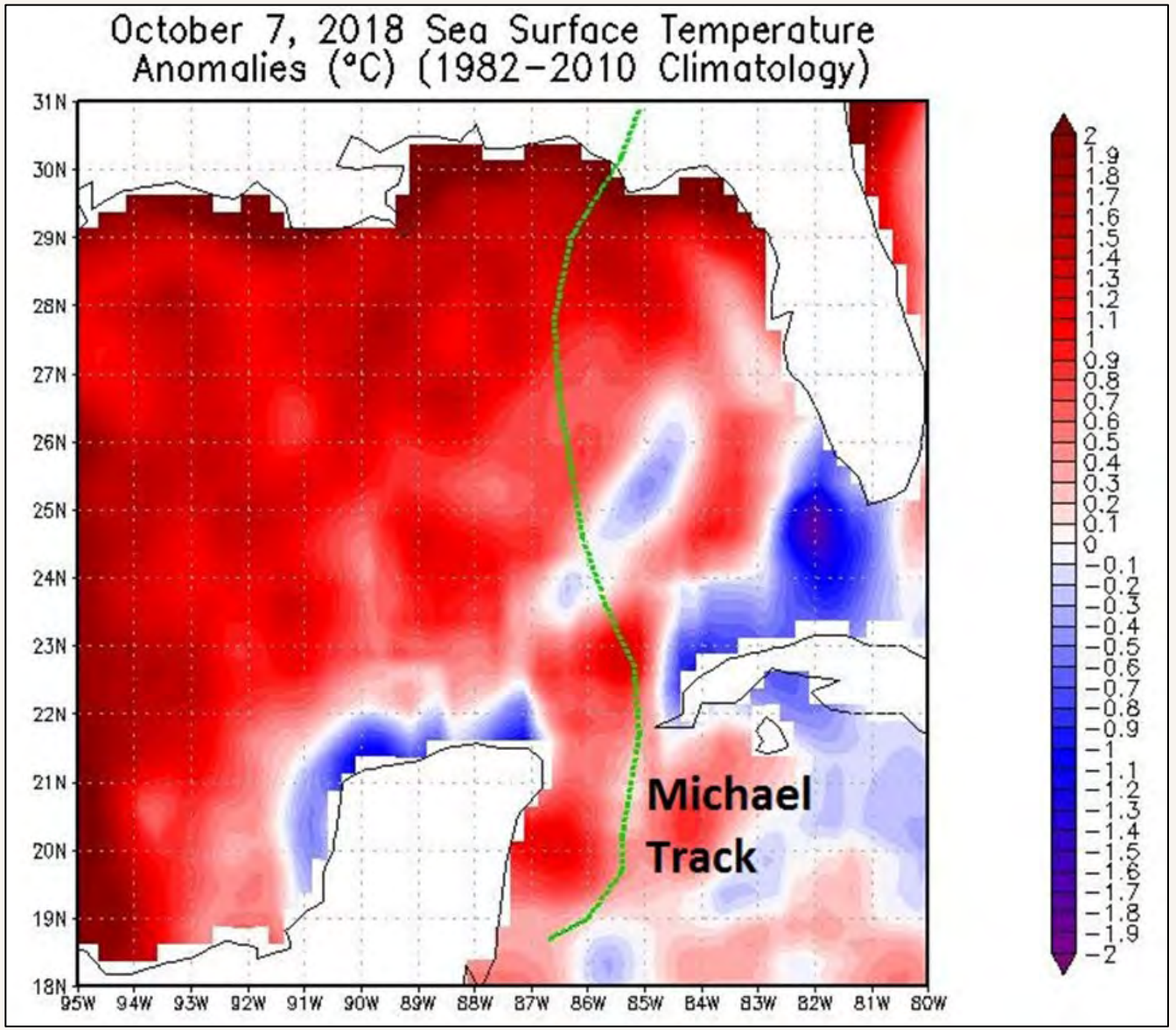

Hurricane Michael Timeline
Tropical Depression
Tropical Storm
Category 1
Category 2
Category 3
Category 4
Category 5
Hurricane Michael Path
Oct. 10 - Cat. 5
161 mph | 140 kts
Oct. 10 - Cat. 3
127 mph | 110 kts
Oct. 9 - Cat. 2
98 mph | 85 kts
Oct. 8 - Cat. 1
75 mph | 65 kts
Oct. 7 - TS
52 mph | 45 kts
Mississippi
Montgomery
Jackson
Louisiana
Tallahassee
Jacksonville
Baton
New Orleans
Houston
Orlando
Tampa
Florida
Miami
Nassau
THE BAHAMAS
Straits of Florida
CUBA
Yucatan Channel
Cancún
Mérida
George Town
Yucatan
JAMAICA
Kings
N
0 2 4 8 12 16
Miles

Rapid Intensification

Defined by the National Hurricane Center (NHC) as *"an increase in the maximum sustained winds of a tropical cyclone of at least 30 kt (35 mph) in [24 hours]."*

Expected to become **more frequent** due to warmer sea surface temperatures (SSTs)

(Senkbeil et al., 2020, Bhatia et al. 2022, Li et al. 2023).



Social Vulnerability

Age

Disability Status

Race and Ethnicity

English Language Proficiency

Gender

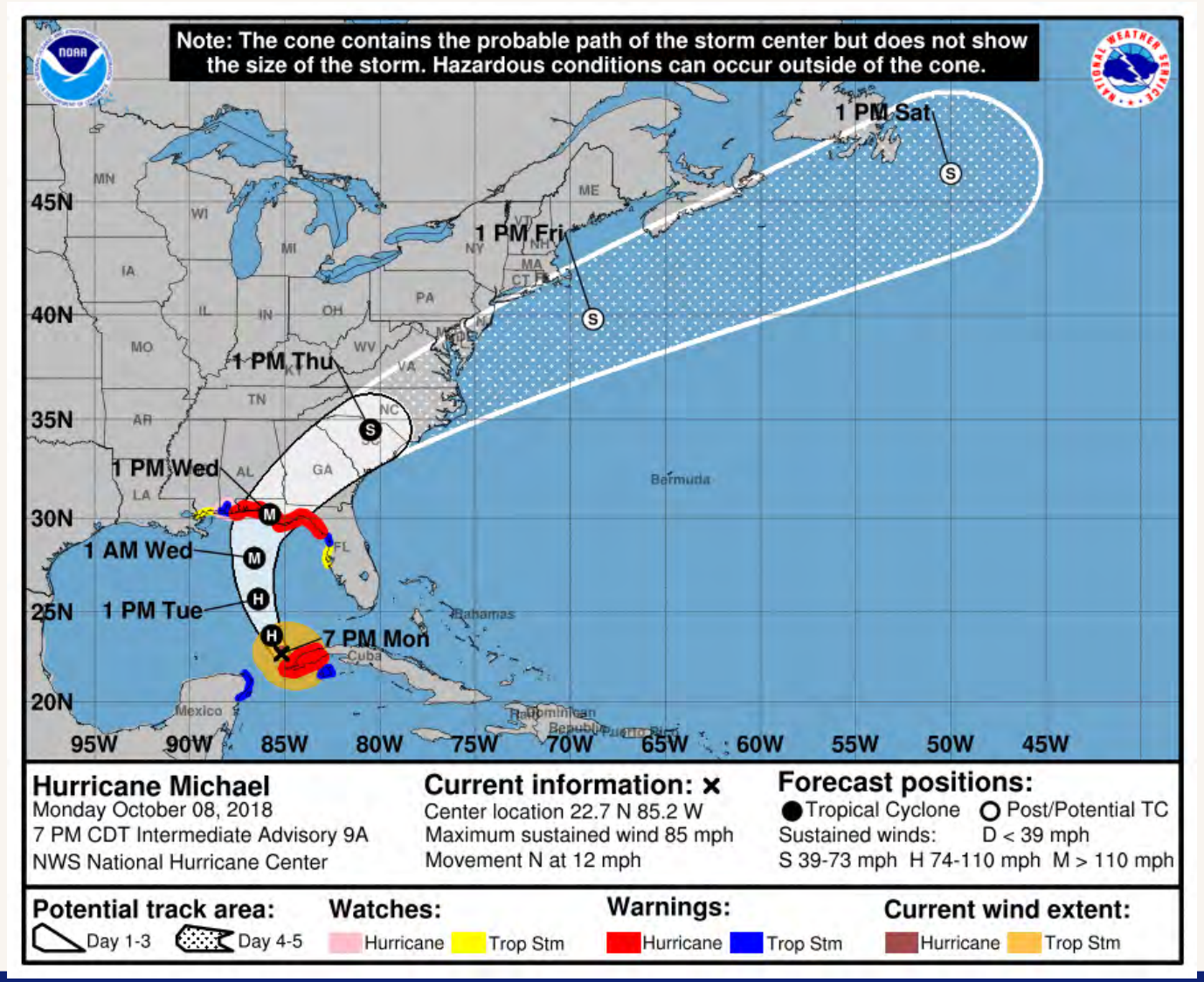
Household Type/Crowding

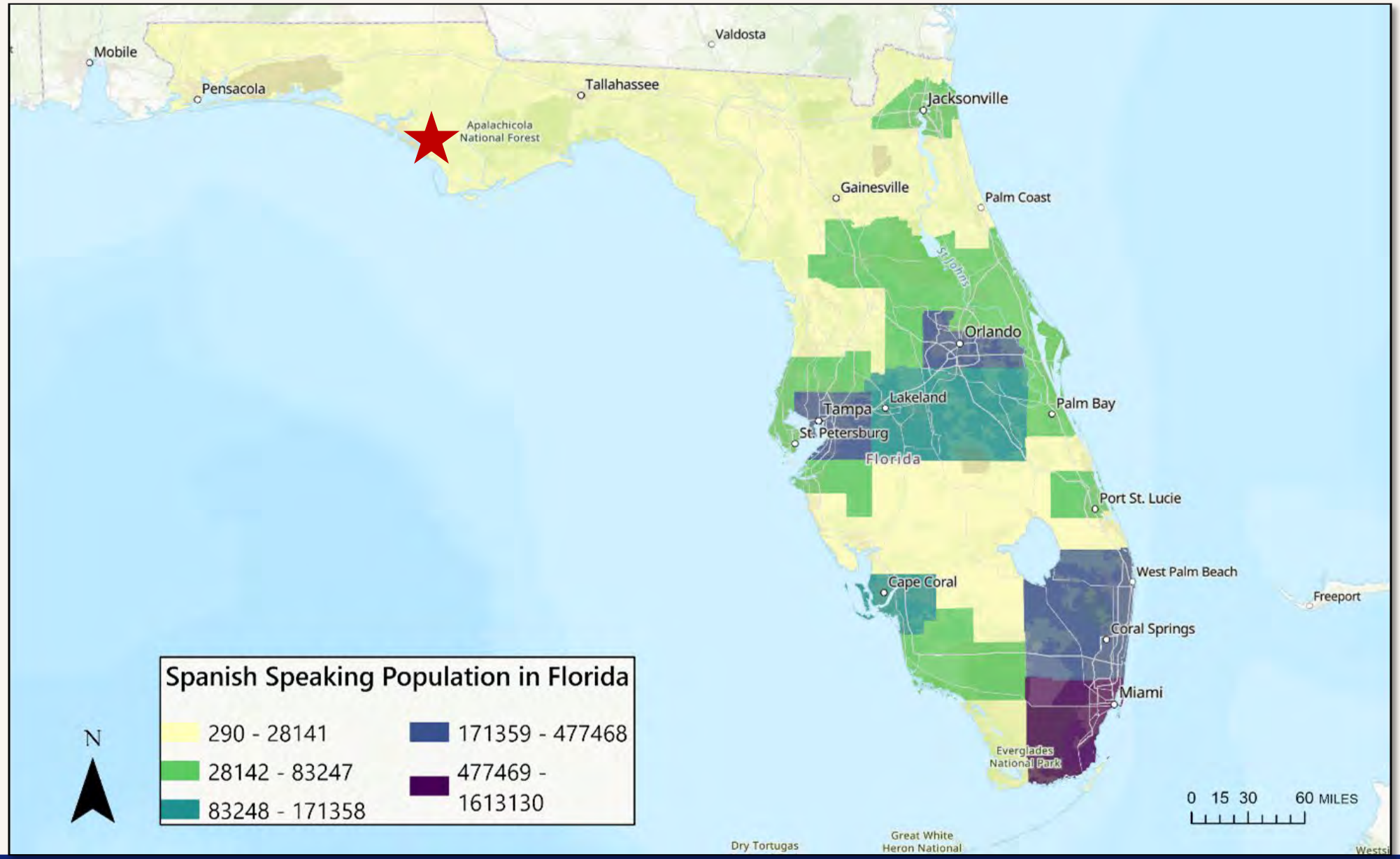
"there are no really generalized opportunities and risks in nature, but instead there are sets of ***unequal access to opportunities and unequal exposures to risks*** which are a consequence of the socio-economic system ..." (Morrow 1999).

Disaster vulnerability is ***socially constructed*** (Morrow 1999, Cutter et al. 2003, Wisner 2016).

Risk Perception

Risk Communication




Mobile
Pensacola
Tallahassee
Valdosta
Jacksonville
Apalachicola
National Forest
Gainesville
Palm Coast
St Johns
Orlando
Lakeland
Tampa
St. Petersburg
Florida
Palm Bay
Port St. Lucie
Cape Coral
West Palm Beach
Freeport
Coral Springs
Miami
Everglades
National Park
Dry Tortugas
Great White
Heron National
Spanish Speaking Population in Florida
290 - 28141
28142 - 83247
83248 - 171358
171359 - 477468
477469 - 1613130
N
0 15 30 60 MILES

Research Questions

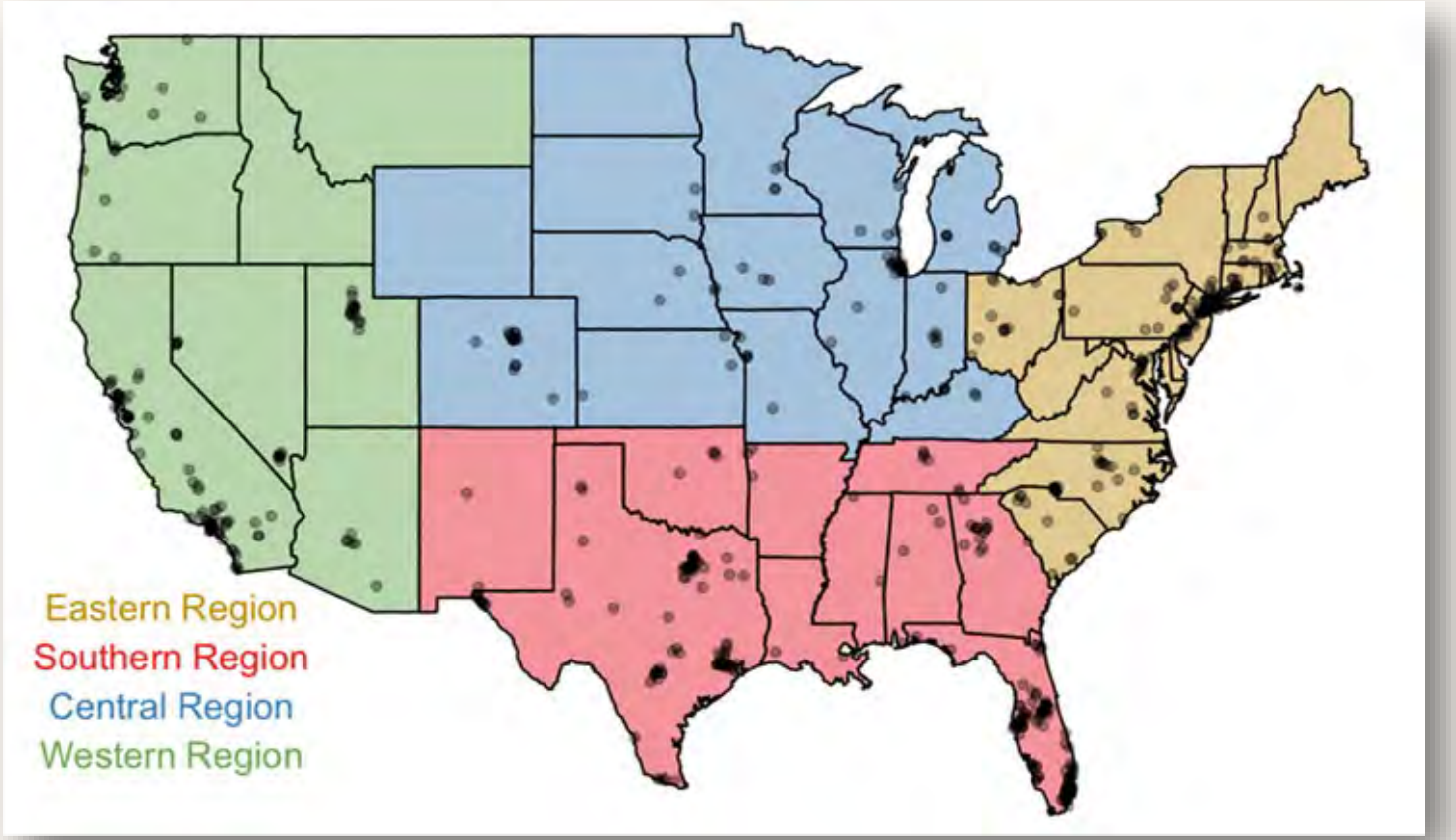
1. How could rapidly intensifying tropical cyclones influence **protective action decision-making** for Spanish-speaking communities?

2. How does **past experience** with rapidly intensifying tropical cyclones affect **future protective action decision-making** for Spanish-speaking communities?

3. How does the concept of rapid intensification influence **hurricane risk perception** for Spanish-speaking communities?

Data

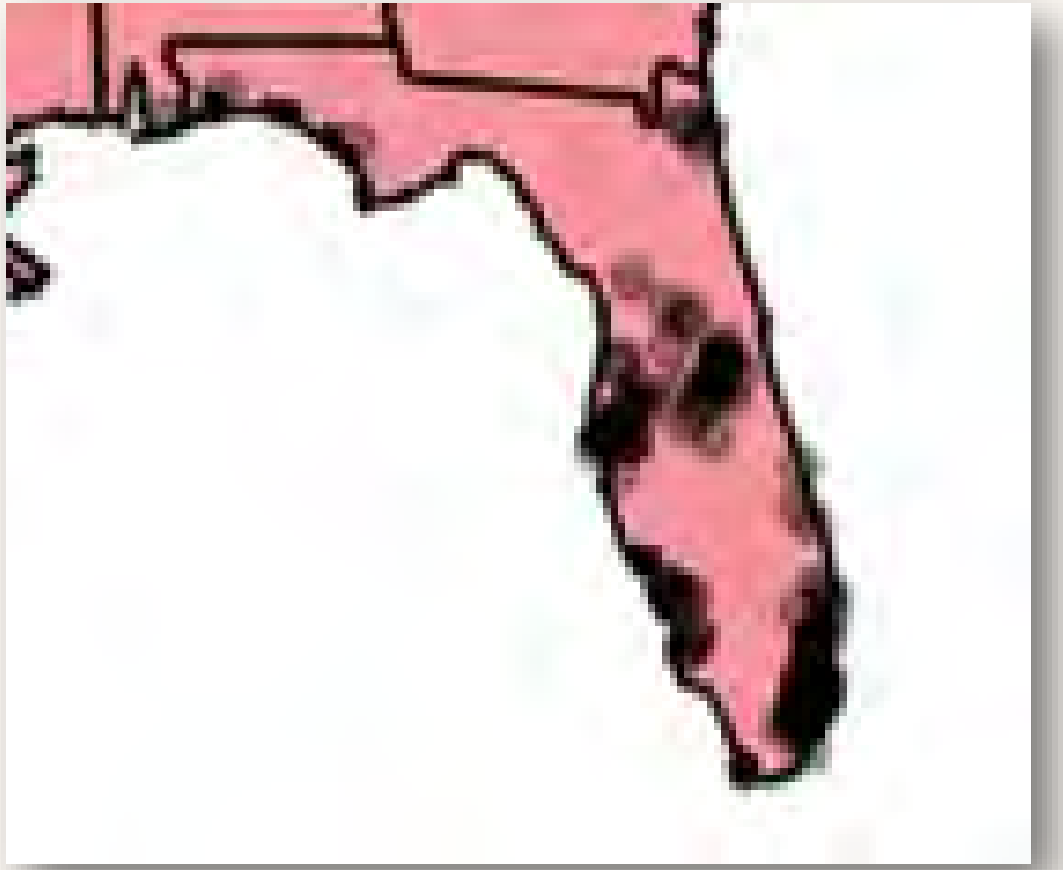
National Oceanic and Atmospheric Administration (NOAA) Extended 2024 Tropical Cyclone Spanish Survey (Extended TCS24)



Geographic location of Extended TCS24 Respondents by zip code centroid

Data

National Oceanic and Atmospheric Administration (NOAA) Extended 2024 Tropical Cyclone Spanish Survey (Extended TCS24)



Geographic location of Extended TCS24 Respondents by zip code centroid

Methods

RQ 1

Statistical Method: McNemar's Test

Purpose: To compare differences in protective action decisions across two hypothetical scenarios (RI vs. non RI)

RQ 2

Statistical Method: McNemar's Test

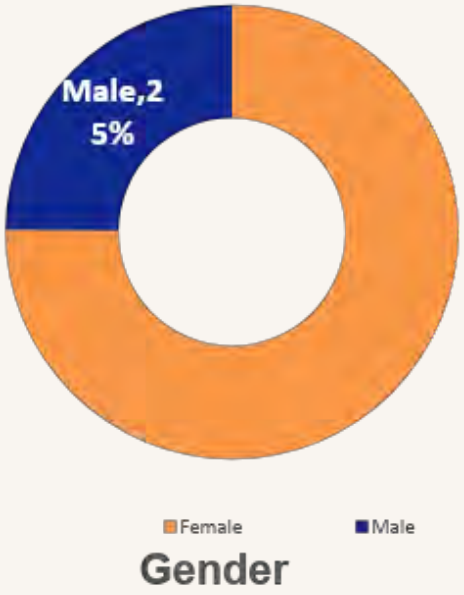
Purpose: To assess changes in behavior based on past experience (past vs. future)

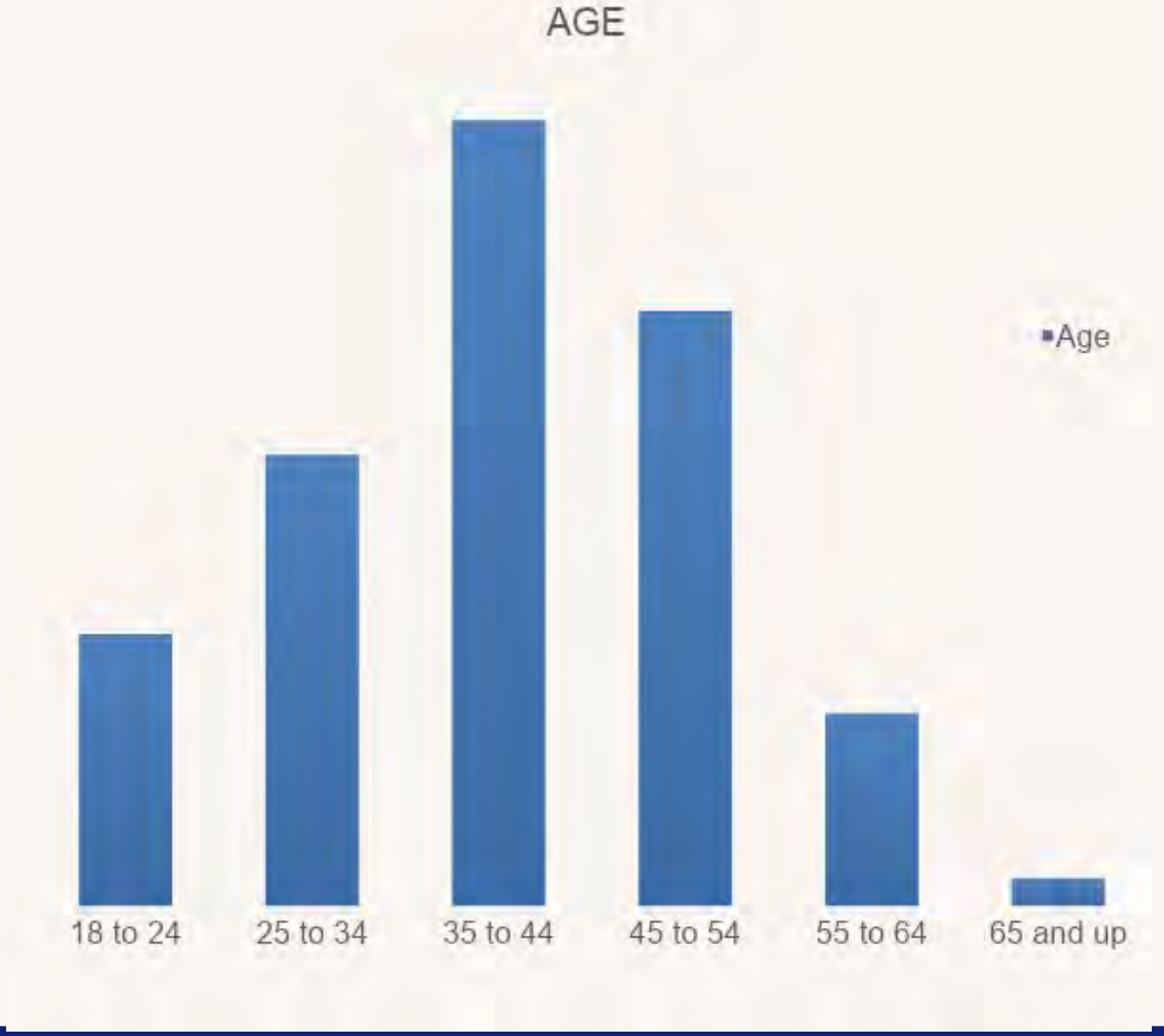
RQ 3

Statistical Method: Wilcoxon Signed-Ranks Test

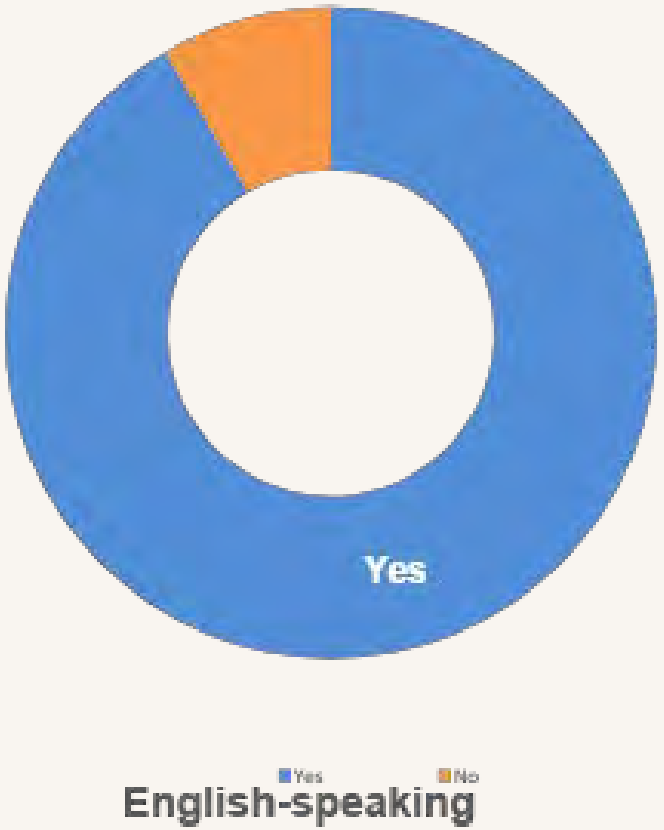
Purpose: To assess differences in perceived likelihood of impacts based on storm forecast (RI vs. non RI)

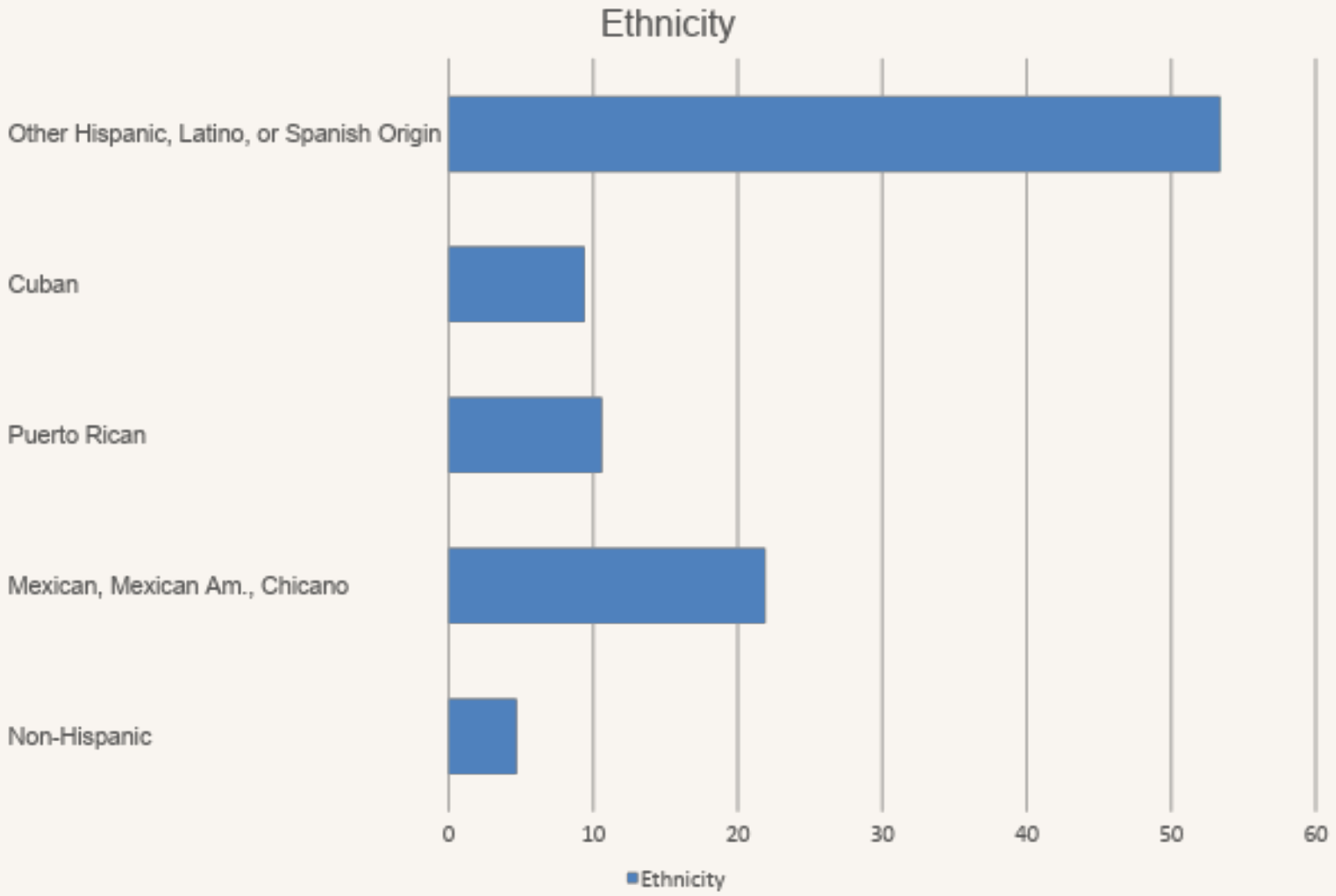
Respondent Demographics





Respondent Demographics





Expected Findings

Hurricane risk communication challenges and responses for Spanish-speakers may vary geographically across Florida.

Understanding these variations is essential for tailoring communication strategies to meet community-specific needs.

The goal is to develop more effective, inclusive, and geographically relevant communication strategies that enhance preparedness and response during hurricanes.

Conclusion

Rapid intensification can leave communities inadequately prepared for the impacts of a landfalling storm.

A *"one-size-fits-all"* messaging approach overlooks the intricacies of the Spanish language (Maldonado et al., 2016, Trujillo-Falcón et al., 2024).

Findings will highlight the needs of diverse Spanish-speaking communities across Florida and support changemakers in communicating the risk of rapid intensification to help communities make the most informed decisions.

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Thank you!

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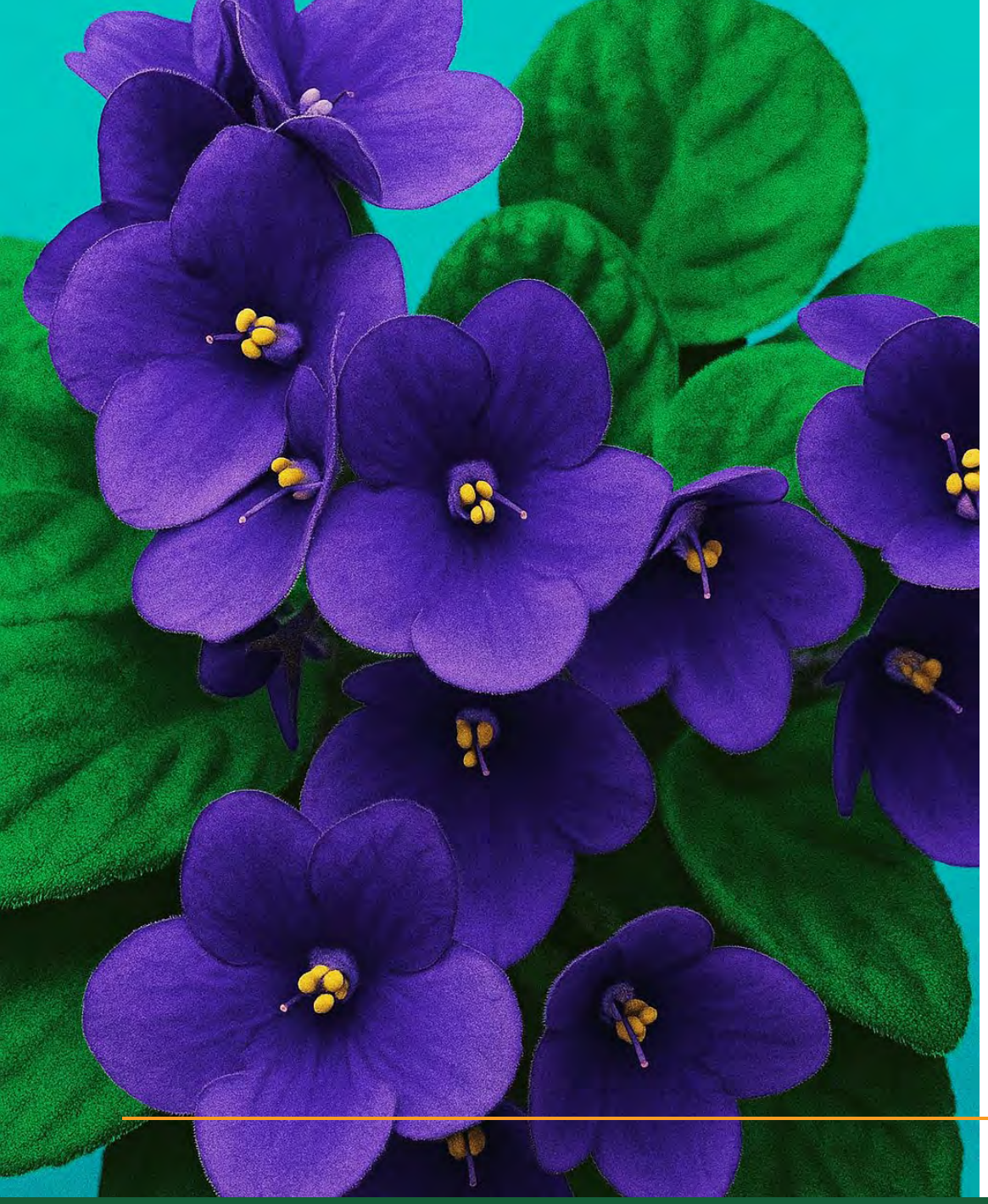


A Black Feminist Understanding of Black Women's Lived Experience In An Environmental Justice Community

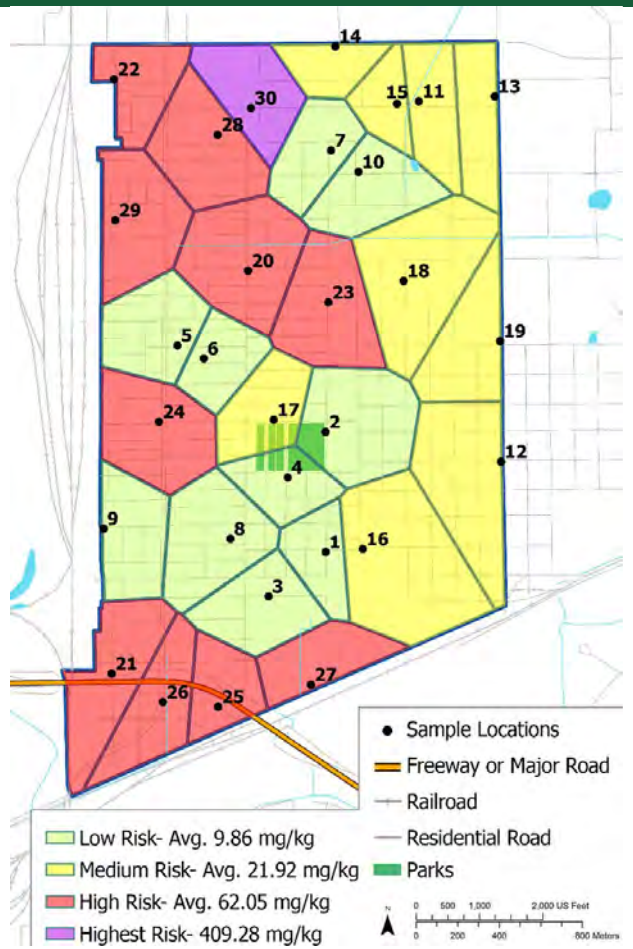
Jacquita N. Johnson, DrPH, MPH

Framing the Project

“We don't get access to the care and the protection that they getting over there [Memorial area] and that is basically because we are black you know. The less prominent areas… the more impoverished areas, we don't get the same treatment.”

-Candy, 64 Year Community Member

Settegast, Houston, TX



Kourtney Revels, Co-Lead Northeast Coalition for Advancement and Transformation (NCAT)

Kyle Maronie, Co-Lead Northeast Coalition for Advancement and Transformation (NCAT)

Theoretical & Methodological Framework

- Black Feminist Thought (BFT): Specialized knowledge created by African American women which clarifies a standpoint of and for Black women[1]
  - Affirm Black women's knowledge claims through lived experience
  - the centrality of dialogue,
  - and ethics of personal accountability and care

[1](Hill Collins, 1990)

Community Conversation Results

Theme 1: Environmental Experiences
Subtheme: Within Neighborhood Locations

- **Within the neighborhood,** proximity to point sources of pollution could affect their environmental experiences and subsequent health outcomes.

"We had a horrible time with infertility… my doctor really thought it was because of what I was breathing in the area… because I've always been Healthy… And we had to wait, like two years… And what happened was we ended up moving and we were closer to the dump, right… so we ended up moving up [further] this way." -Candy, 64 Year Community Member

Community Conversation Results

Theme 3: Environmental Effects
Subtheme: Affective

- Evident from our conversations was how environmental injustices have an affective, or an embodied and felt experience, to them.
  - Ex. Disregarded by those in power positions
  - Worried about themselves, their family and community's environment & health
  - Un/Knowingness about their environmental challenges and inequities

"I try not to let it affect me…of course, when you see terrible things in your neighborhood, it's gonna affect you to a certain level… our environment is a big part of who we are… you say let's go ground in nature, But then nature is over… You know, it's not well taken care of and it's just really sad to know that, you know, there's a lot of places in Houston that we know are in an affluent or other ethnic background and they just, they get better care and quality of life for air, you know?" -Marie, 8 Year Community Member

Community Conversation Results

Theme 3: Environmental Effects
Subtheme: Intergenerational Effects

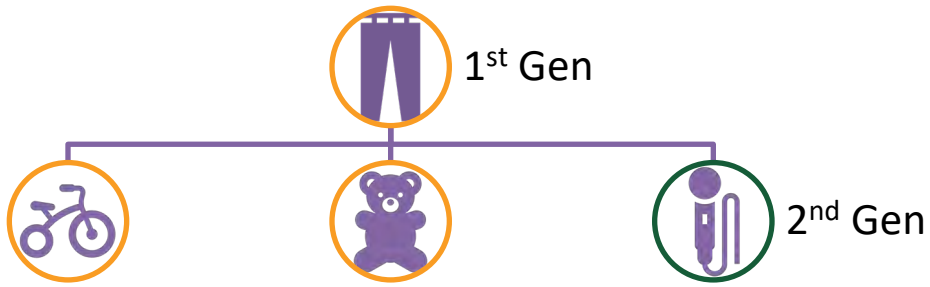
- Community members also detailed the intergenerational effects experienced in their families. Many shared how their families, some as many as three generations, have experienced adverse health outcomes of which they attribute to the neighborhood's environmental conditions. Most talked about was how they've loss family members from cancer, various health conditions, some unknown or folks just passed away.

"All my father people are gone. Most of them lived in Settegast. My mother, she's gone. All my family's gone. But I say that because my mother had 2 kids before me that I never got to see. They passed away when they were little. Like a girl was born. I think the girl lives a month long. She's a month old, the little boy he lived 3 days old. I don't know, What was their diagnosis?" -Denece, 59 Year Community Member

Community Conversation Results

Theme 3: Environmental Effects
Subtheme: Intergenerational Effects

Denece



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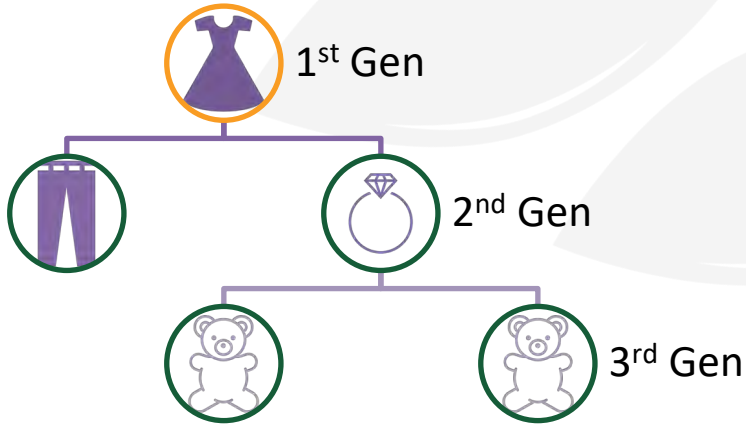

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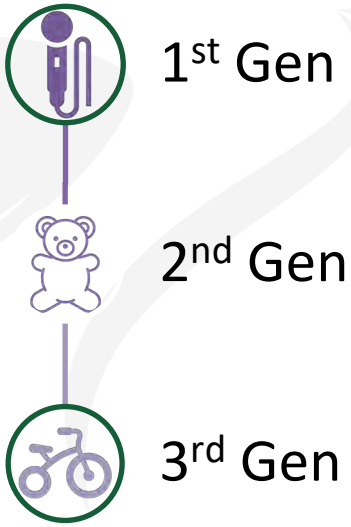
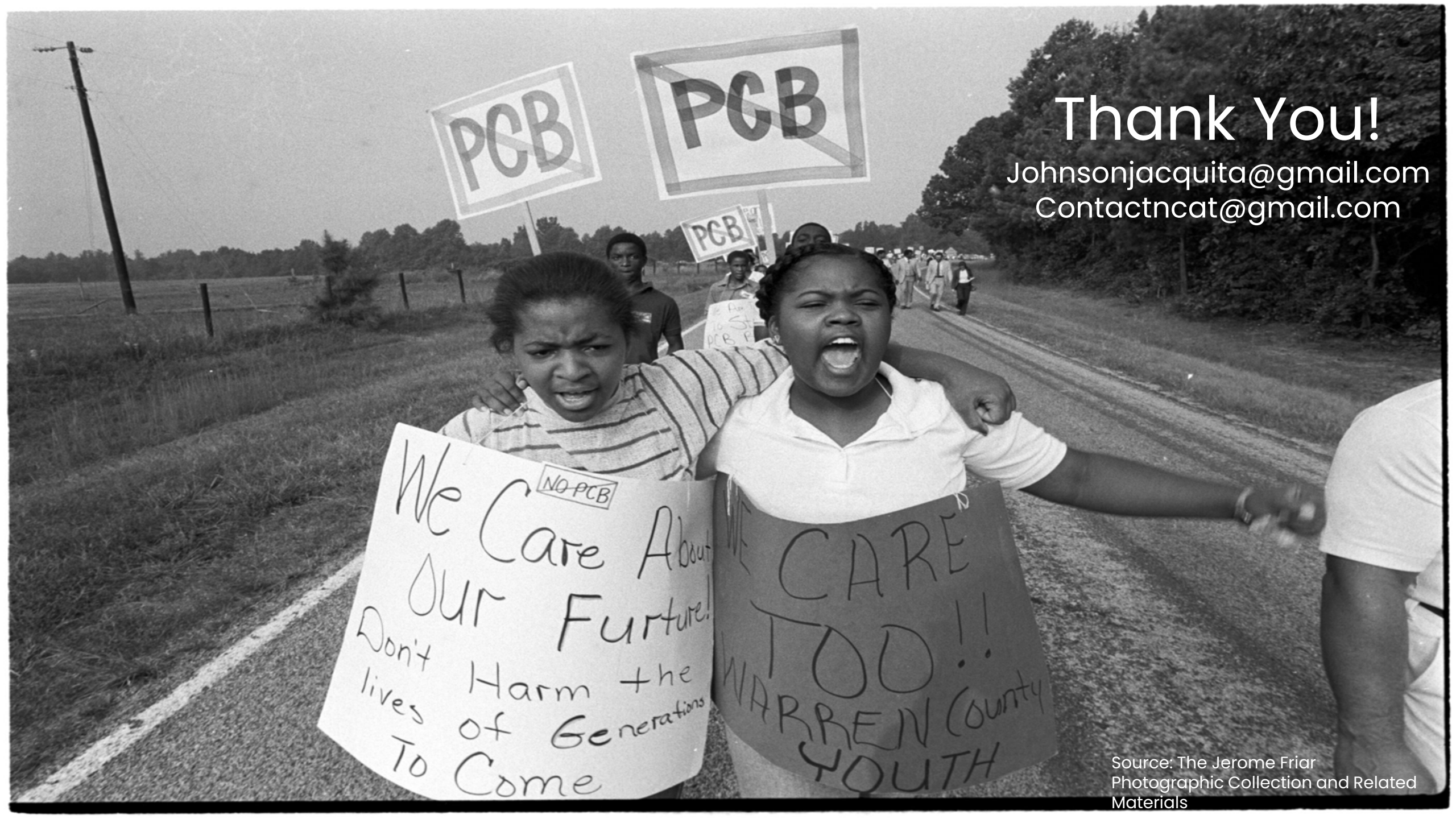


Passed
Chronic Health Condition

In Conclusion

- Utilizing Black feminist thought as both theoretical and methodological frameworks necessitates the centralization of Black women and their expert lived experience.
- The results of our community considerations expands our conceptualization and understanding of environmental injustices and reparative actions, including:
  - Integrating within-group and neighborhood perspectives
  - Reframing the intergenerational effects of communities with legacy pollution and considering the affective



Thank You!

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Source: The Jerome Friar Photographic Collection and Related Materials

Q & A for Lightning Talk Presenters