

Closing the Gap: Examining Hurricane Recovery through an Equity Lens

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Background

The Coastal Hazards, Equity, Economic Prosperity & Resilience (CHEER) Hub is a new five-year, \$16.5 million project funded by the National Science Foundation (NSF) Coastlines and People (CoPe) program. The CHEER Hub is housed in the Disaster Research Center of the University of Delaware. The CHEER Hub is an interdisciplinary, multi-university partnership including researchers from 11 universities. The 2023 Summer Scholars Research Internship hosted by the CHEER Hub took place at the University of Delaware in Newark, Delaware and East Carolina University in Greenville, North Carolina.

Population

Participants included various groups living and working in Eastern North Carolina. Groups included local, state, and federal government officials, emergency managers, healthcare providers, researchers, nongovernmental entities, business owners, community leaders, and residents. The counties visited included Carteret, Craven, Dare, Edgecombe, Greene, Lenoir, Pamlico, Pitt, and Wake.

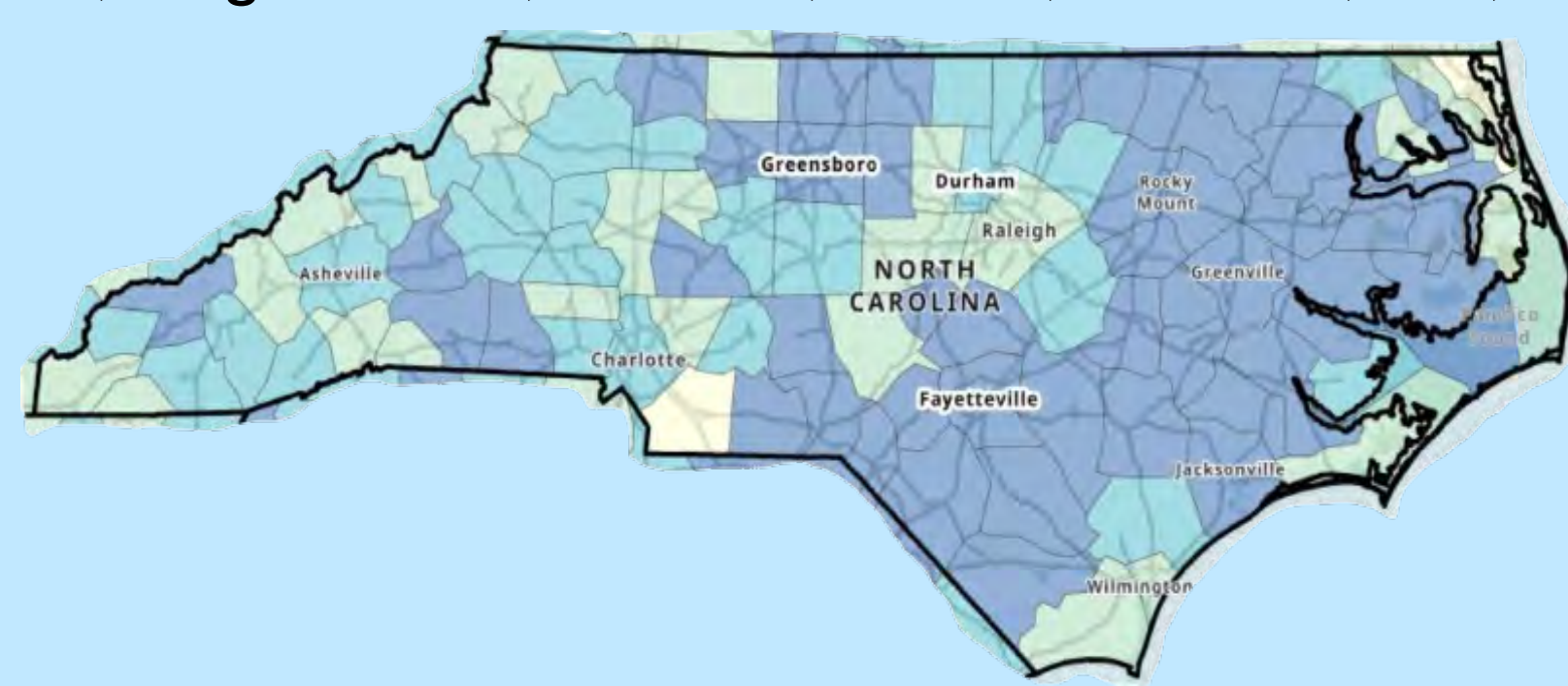


Figure 1. Centers for Disease Control and Prevention Social Vulnerability Index Map for North Carolina (counties visited marked in red)

Learning Objectives

1. Understand appropriate methods and skills (with emphasis on community engagement) needed to conduct research with coastal communities affected by hurricanes
2. Apply appropriate methods and skills to collect qualitative data about hurricane experiences
3. Analyze issues of equity evident in hurricane preparation, mitigation, experience, and recovery

Activities

University of Delaware, Skills/Learning:

Daily class-like sessions from various UD faculty introducing students to topics such as building damage, climate change, epidemiology, fieldwork ethics, photovoice, data analysis and visualization, coding, and participatory and community research.

East Carolina University, Skill Application and Data Collection:

Daily visits to various counties and cities throughout NC to collect data. Main research question: **How are issues of equity evident throughout hurricane experiences?**



Figure 2. CHEER Hub visual encompassing project main topics

Methods

1. Semi-structured, informal interviews
2. Community visits/observations
3. Literature review of existing research surrounding equity in hurricane recovery (general and specific to eastern North Carolina)
4. Document analysis of local, state, and federal disaster planning and response strategies/plans
5. Qualitative data analysis, thematic coding, and interpretation

Results

Data analysis resulted in 5 main themes based on recurring topics throughout interviews:

1. **Resources and Knowledge**—resources (and access) vary by demographics; knowledge is a crucial resource
2. **Dynamic Recovery**—pre-disaster conditions greatly affect recovery; recovery is ongoing and always changing
3. **Status Quo of Issues**—equity issues often recognized but not addressed, viewed as “just the way things are”
4. **Communication**—various methods used to education and inform communities about disasters, though methods not always meaningful to community members
5. **Community Participation and Disconnect**—mixed opinions about community needs and interests; stakeholder groups often disconnected throughout disaster experience

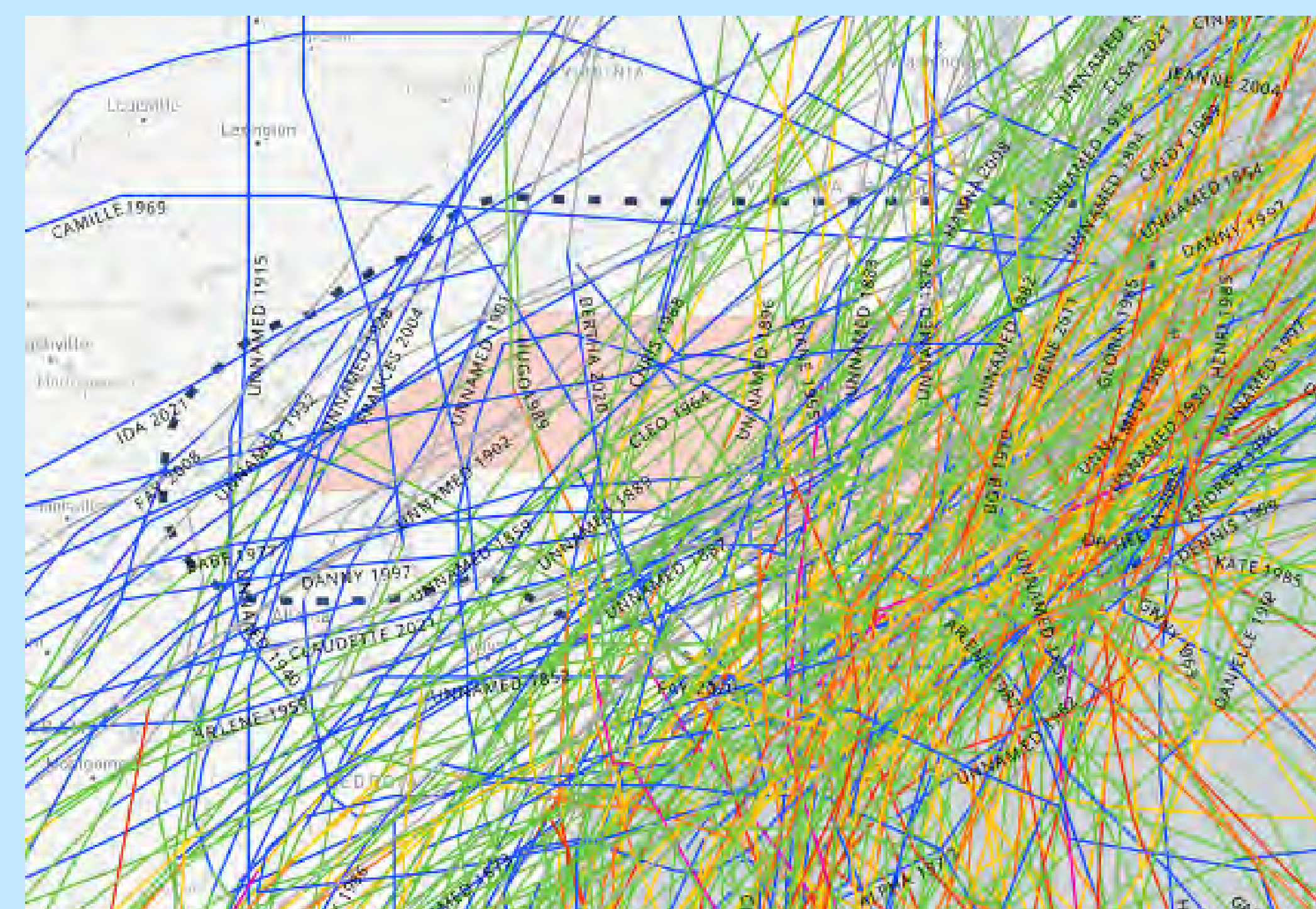


Figure 3. National Oceanic and Atmospheric Administration (NOAA) hurricane history in NC, 1851-2022 (295 storms tracked)



Figure 4. 9 ft. storm surge pole warning of water heights during storms

Deliverables

1. Oral research presentation presenting findings from qualitative data collection and offering recommendations for the CHEER Hub
2. White paper presenting overall issue of disaster recovery and equity in eastern North Carolina

Key Takeaways

1. Equity issues are extremely evident throughout eastern North Carolina, especially in disaster contexts
2. Although equity issues are recognized, they are often not meaningfully addressed, and vulnerable populations suffer from this continuous lack of action
3. Disaster planning and response should include community experience and opinion for best outcomes
4. Recovery should be thought of as a “whole person” concept, not just physical structures or damages

Public Health Implications

- Experiencing disasters can cause and exacerbate health issues, leading to increased morbidity and mortality
- More vulnerable groups usually experience more adverse health outcomes and have less chance of recovery
- Health issues last long after the disaster event is over
- Response and recovery efforts should always include health and well-being as a priority
- Healthcare access, health maintenance, and mental health are important for professionals to consider

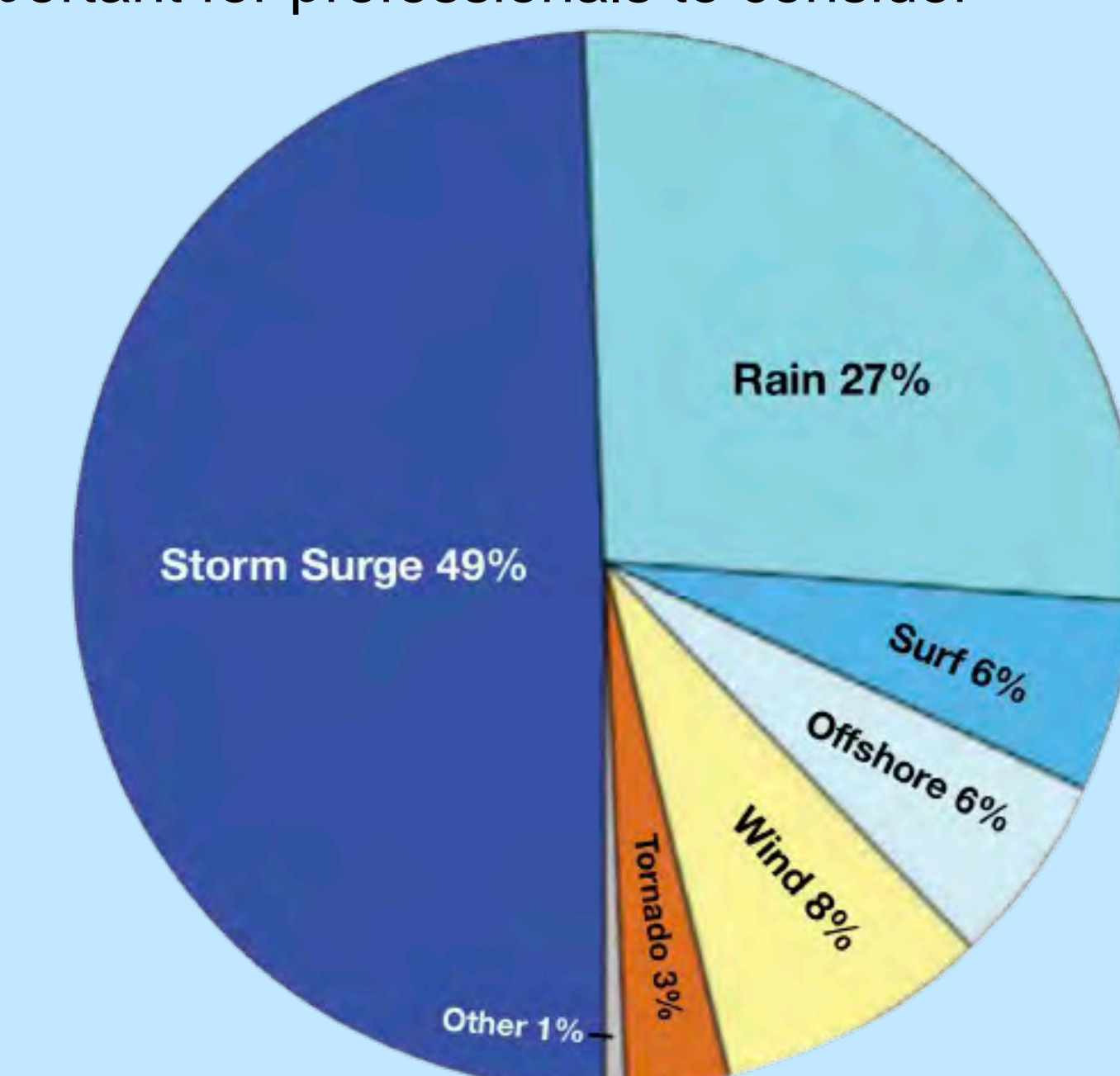


Figure 5. Cause of death in United States directly attributable to Atlantic tropical cyclones, 1963-2012 (American Meteorological Society)

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