ABSTRACT

VILÁ, OLIVIA FRANCES. Environmental Justice in Disaster Recovery and Hazard Mitigation: The Role of Recognition and Leaders (Under the direction of Dr. Bethany Cutts).

Environmental injustices related to people's exposure to natural hazards, experience of disasters, and ability to recover from those disasters have been widely documented. Currently however, there is limited knowledge about ways to promote just hazard mitigation and disaster recovery outcomes across diverse communities. This dissertation focuses on the concept of *recognition*, which may be a useful frame for exploring factors that can contribute to justice in this context. Recognition regards the acknowledgement, respect, and legitimization of difference across groups, and is a key component of environmental justice philosophy. This dissertation focuses on the role of recognition by local- and state-level leaders who have power to influence environmental justice through policy and program implementation. Using the results generated from three research studies, this dissertation will contribute to scholarship at the intersection of environmental justice, leadership, and disaster studies by exploring how leaders working at different scales understand and differentiate the needs of disadvantaged communities, and how leaders' awareness is associated with the opportunities those communities have to mitigate hazards and recover from disasters. These three studies include (1) a national survey of State Hazard Mitigation Officers exploring the state's role in helping disadvantaged communities implement FEMA Hazard Mitigation Assistance grants (2) semi-structured interviews with nonprofit organizations describing their awareness of and engagement with the Latinx community in Wilmington, NC after Hurricane Florence (2018) and (3) a collaborative autoethnography highlighting how community-based researchers enhance the recognition capacity of transdisciplinary research teams. Collectively, these three studies support the

theoretical importance of recognition for promoting environmental justice and yield practical insights for the implementation of environmental justice initiatives at different scales and by diverse stakeholders.

Environmental Justice in Disaster Recovery and Hazard Mitigation: The Role of Recognition and Leaders

by
Olivia Frances Vilá

A dissertation submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

Parks, Recreation, and Tourism Management

Raleigh, North Carolina
2022

APPROVED BY:

_____	_____
Bethany Cutts Committee Chair	Laura Bray
_____	_____
Whitney Knollenberg	Louie Rivers
_____	
Gavin Smith	

DEDICATION

I dedicate this dissertation to

My mother, Rhonda Karen Hanner.

Although I never got to know you, I've felt your love all my life.

My Abuelita, Lydia Esther Rosario.

My commitment to education stems from you.

I know you're always watching over me, and I hope I've made you proud.

My Granny, Josephine Stuckey Hanner.

You're pragmatic and candid,

and the fact that you believe in my crazy dreams means more than you know.

My baby brother, Adrian, and my cousin, Amelia.

Enjoy your childhoods and know that I will always be there for you,

to support your health, dreams, and ambitions as you grow up.

My little family, Darren, Brownie, and Rosie.

I have found love, joy, and meaning through you three. You are my home.

BIOGRAPHY

Olivia Frances Vilá grew up with her brother, Rafael Alexander, in Camuy, Puerto Rico. They were raised by their grandmother Lydia, grandfather Rafael Ángel, aunt Vicky, and uncle Maiki. As teenagers, Olivia and her brother lived with their dad, Rafael, who served in the United States Air Force. As military kids, they lived in Virginia, Germany, and Arizona. Olivia graduated from Colorado State University (Fort Collins, Colorado) in 2014 with a Bachelor of Science Honor's degree in Psychology. During her time in Colorado, she got a new baby brother, Adrian, and adopted her soul-pup Brownie, an 8-year-old toy poodle at the time. In 2016, Olivia moved to St. John's, Canada to complete her Master of Science degree in Geography from Memorial University of Newfoundland. During her time in St. John's, she met her future husband, Darren. After completing her master's degree in 2018, she moved to Raleigh, North Carolina to complete her Doctor of Philosophy degree in Parks, Recreation, and Tourism Management. During this time, she married Darren, adopted a second pup, a senior toy poodle, Rosie, and completed her degree. Olivia studies the social dimensions of disaster recovery and hazard mitigation through the lens of environmental justice.

ACKNOWLEDGMENTS

This dissertation is the result of the immeasurable energy of the many who have supported me over the course of my program. These individuals include:

My chair, Dr. Bethany Cutts. She has an incredible talent to mentor in a way that supports each student's individual needs, values, and goals. For me, Bethany created a supportive environment that encouraged creativity and nurtured my independence, while providing me with necessary structure at critical junctures in my doctoral education. The countless hours she spent guiding, informing, and revising my work and work processes are the reason I am proud of everything I have produced as part of this doctoral program.

My committee members: Dr. Laura Bray, Dr. Whitney Knollenberg, Dr. Louie Rivers, and Dr. Gavin Smith. Their support, encouragement, and feedback promoted my intellectual growth and guided this dissertation in such a way that emphasized high quality arguments and rigorous methods. I have had the pleasure of working individually with each of my committee members, on projects or coursework, and I deeply value the mentorship they have provided outside the scope of the typical committee member responsibilities.

My peers who have partnered with me on research tasks including Tira Beckham, Samiksha Bhattarai, Chitali Biswass, Sara Brune, Samata Gyawali, Claire Henkel, Byron Ifediora, Shannon McGovern, Joshua Randall, and Brian Vaughn. Working with these individuals have helped me practice my ability to give and receive feedback and have allowed me to witness the benefits of collaborative work.

My colleagues at AECOM and the Federal Emergency Management Agency (FEMA). The professional experience I had as part of my 2019 summer internship unlocked skills and interests I never knew I had and transformed my ambitions.

My Sounding Board sisters, Margaret Keener, Devon McGhee, Ashton Rohmer, and Lea Sabbag. They have been a source of compassion and motivation during the hardest phases of my doctoral work.

The many family members who have supported me in unique ways throughout my educational journey. Darren, for being the best "house-husband" who encouraged my professional growth in the most caring ways. Brownie, for being my little shadow and best friend. Rosie, my sweet girl, for reminding me to slow down, cuddle, and cherish the little things. Losing you has been my greatest heartbreak; I miss you every day. Rafi, for our ever-evolving sibling rivalry that pushes me forward. Dad, Irma, and Adrian, for the coziest home and tastiest food l could ask for, and more importantly, the constant grounding advice and golf tips. Tití Vicky, Amelia, and Rodney, for the best adventures that have been some of the most joyful of my life. Madeline, for welcoming me into your family and making me feel like I've always been a part of it.

I would also like to acknowledge the support of the Dissertation Completion Grant at North Carolina State University. Because of the financial support from The Graduate School, and the writing and emotional support from the facilitators and Fall 2021 student cohort, I experienced six months of motivated writing complemented with encouragement and care. Finally, I would like to acknowledge the Southern Regional Education Board, North Carolina Sea Grant, and the Water Resources Research Institute, for their financial and resource support that have allowed me to conduct meaningful research and grow as a scholar.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1. INTRODUCTION

While natural hazards do not discriminate, the effects from the natural hazards are not experienced equally among people. Extensive literature documents that individuals categorized as poor, children, elderly, disabled, or who are an ethnic or racial minority are more vulnerable to the impacts of natural hazards (Bolin & Kurtz, 2018; Cutter, Boruff, & Shirley, 2012; Flanagan et al., 2011). Further, entire communities, such as mobile home parks or low-income neighborhoods face greater risk to the impacts of disasters, for example, because of the building quality of their homes or their proximity to hazardous areas (e.g., flood zones) (Chaney & Weaver, 2010; Peacock, Zandt, Zhang, & Highfield, 2015).

Just as the impacts from disasters are not equally distributed, neither are the opportunities for individuals or communities to mitigate against future hazards or recover from disasters. Communities vary in their mitigation and recovery needs depending on type the of natural hazard they are exposed to and the social-economic-environmental context of that community. Regardless of the specific recovery and mitigation needs, to be able to effectively recover or mitigate means that communities have access to knowledge, skills, and resources necessary to recover or mitigate. Effective recovery and mitigation also mean that laws, policies, institutional arrangements, programs, and information that guide and facilitate recovery and mitigation actions are consistent with unique community needs. Inconsistencies between needs and what is provided by those leading response, recovery, and mitigation is not uncommon – for example, when public authorities failed to provide emergency mass transit after Hurricane Katrina (2005), leaving many low-income individuals stranded (Flanagan, Gregory, Hallisey, Heitgerd, & Lewis, 2011), or when rebuilding projects prioritized the values of implementing agencies versus those

in living in the low-income, predominantly African American Holy Cross neighborhood recovering from Hurricane Katrina (Allen, 2013).

Environmental justice provides an effective framework for understanding inequities in the disaster context. While environmental justice is a multifaceted term that has "always resisted straightforward definition" (Holifield, Chakraborty, & Walker, 2018, p. 3), activists, decision-makers, and scholars often use the concept of environmental justice to highlight that marginalized communities (e.g., racial minorities, ethnic minorities, low-income populations) receive fewer environmental goods (e.g., coastal wetland protection) and face greater environmental risks (e.g., exposure to flooding) and corresponding health impacts (e.g., exposure to biological or chemical contaminants through floodwater) than their privileged counterparts (Holifield et al., 2018; Schlosberg, 2007). This aspect of environmental justice is related specifically to distributional justice. Since Hurricane Katrina, the concept of distributional justice has been increasingly used to explore the disproportionate exposure to natural hazards and impact of disasters on socially vulnerable populations (e.g., Bolin & Kurtz, 2018; Breen, 2021; Chakraborty, Collins, & Grineski, 2019; Dash & Gladwin, 2007; Gourevitch et al., 2020; Rodriguez-Díaz & Lewellen-Williams, 2020; Tate, Rahman, Emrich, & Sampson, 2021), as well as their limited access to hazard protections (e.g., Adams, 2017; Elliott, Brown, & Loughran, 2020; Heck, 2021; Hendricks & Van Zandt, 2021; Herreros-Cantis & McPhearson, 2021; Liao, Chan, & Huang, 2019; Mach et al., 2019; Maldonado, Collins, & Grineski, 2016; Roberts, Anderson, Skerratt, & Farrington, 2017; A. Ross & Clay, 2018; Straub, Gray, Ritchie, & Gill, 2020; Zhang, 2010).

Although distributional justice has been the primary focus of environmental justice scholarship, there are other dimensions to environmental justice that have been theorized

(Holifield et al., 2018) that can contribute to the discussion of disaster recovery and hazard mitigation. For example, procedural justice, which refers to fairness in decision-making processes and the ability to influence decisions which impact one's life (Gould, 1996; Schlosberg, 2003; Young, 1990). There is also recognition, which is the focus of this dissertation. Recognition regards the acknowledgement, respect, and legitimization of group difference by decision-makers and influencers (Fraser, 2000; Schlosberg, 2003; Young, 1990). That is, environmental injustice can't be tackled until those who have power to employ remediation are aware that injustice exists, who they exist for, why they exist, and what justice means to the disadvantaged group(s). Recognition in other words, is a critical baseline for environmental justice.

Because of inequities that have been documented in disaster recovery and hazard mitigation contexts, it's necessary to understand the pathways through which injustices are created and perpetuated so that they can be addressed. In this dissertation, I focus on the role of recognition. Recognition has been identified as one of the least explored dimensions of environmental justice (Blue et al. 2021). Recent scholarship has explored recognition in some contexts, such as resource extraction conflicts (Urkidi & Walter, 2011), fuel poverty (Waitt & Harada, 2019; Walker & Day, 2012), conservation (Guibrunet et al., 2021; Martin et al., 2016), environmentalism (Gibson-Wood & Wakefield, 2013), coastal management (Lau, Gurney, & Cinner, 2021), geoengineering (Hourdequin, 2019), and indigenous struggles (Barnhill-Dilling, Rivers, & Delborne, 2020; Schlosberg & Carruthers, 2010). These studies support the influential role of recognition for advancing environmental justice. However there has been limited research that explicitly examines the role of recognition in disaster recovery and hazard mitigation, although the core ideas associated recognition and its importance for promoting just recovery

and mitigation outcomes, are present in existing work. For example, Katherine Browne's (2015) book *Standing in the Need,* which emphasizes the importance of tailoring disaster recovery to the culture and values of impacted communities and recent research on climate adaptation planning that underscores the need to acknowledge root causes of vulnerability in planning processes (Zoll, 2022). Given recognition's crucial role in environmental justice, it is a research gap that requires attention.

While most theoretical discussions have centered on the struggle for recognition by disadvantaged groups, recognition is also a process which requires an entity to be receptive to difference (Kompridis, 2014). As such, attention on *who is recognizing* disadvantaged groups is important. This dissertation explores recognition through the role of assigned leaders, those who occupy a formal hierarchical position within an organization (Northouse, 2021). Assigned leaders are important actors who warrant attention, as they most often have (varying degrees) of power to influence or institutionalize environmental justice through policy and program implementation. There is limited literature on the role that assigned leaders play in recognizing group difference to promote environmental justice, particularly in disaster scholarship. More broadly, scholarship on the role of assigned leaders in promoting (or failing to promote) environmental justice within their institutions is also scarce, though some exceptions exist (Harrison, 2015, 2016; Pulido, Kohl, & Cotton, 2016). Some work highlights the role of activists and informal community leaders in promoting environmental justice (Baptista, Jesudason, Greenberg, & Perovich, 2022; Bullard & Johnson, 2009; London & Harrison, 2021; Norman, 2017; Pyles, 2017), although these leaders would be better characterized as emergent leaders (i.e., leaders who emerge organically and aren't assigned formally to their position) (Northouse, 2021).

The overarching objective of this dissertation is to document and better understand the role that recognition of disadvantaged groups by assigned leaders plays in tackling environmental injustices related to disaster recovery and hazard mitigation. To achieve this objective, I explore the role that recognition by state-level leaders plays in hazard mitigation, recognition by nonprofit organization leaders plays in disaster recovery, and recognition by post-disaster researchers plays in recovery and resilience.

Dissertation Structure

This dissertation comprises three research chapters (Chapters 2-4). Each is based on a different research study with its own scholarly focus and corresponding methods. While each study is distinct, all three address environmental justice issues related to the role of recognition and leaders in disaster recovery or hazard mitigation. Each of the chapters present conclusions that can inform and empower environmental justice efforts for disadvantaged communities across the United States, while providing evidence for and strengthening the theoretical link between the dimensions of environmental justice.

The first research chapter (Chapter 2) explores how state-level leaders, State Hazard Mitigation Officers (SHMOs) recognize underserved communities in their jurisdictions and how that influences their engagement with those communities around federal hazard mitigation grants. The second research chapter (Chapter 3) investigates the way that leaders of nonprofit organizations recognize Latinx populations, and in turn, how that recognition influences their ability to serve those populations in the aftermath of a disaster. The final research chapter (Chapter 4), is a collaborative autoethnography highlighting how community-based researchers enhance the recognition capacity of transdisciplinary research teams, creating a greater opportunity to implement ethical research practices that promote environmental justice. The

concluding chapter, (Chapter 5) summarizes the research findings and discusses the intellectual contributions and practical implications of this dissertation. Overviews of each research chapter are provided in the subsequent sections of this introduction.

Chapter 2 Overview

Recent research has documented inequities in the distribution of federal aid for disaster recovery and hazard mitigation (Brennan & Flint, 2007; Consoer & Milman, 2018; Dundon & Camp, 2021; Frazier, Walker, Kumari, & Thompson, 2013; Gourevitch et al., 2020; Loughran & Elliott, 2021; Mach et al., 2019; Marino, 2018; Nelson & Molloy, 2021; Seong, Losey, & Gu, 2021). States play a critical intermediary role between local governments and the federal government as it relates to FEMA Hazard Mitigation Assistance (HMA) programs, one of the primary funding mechanisms through which states fund hazard mitigation projects. State Hazards Mitigation Officers (SHMOs) are the formal positions tasked with facilitating the local-federal relationship, as their responsibilities include ensuring local compliance with grant rules, developing prioritization strategies for the distribution of grant funds, developing state or territory hazard mitigation plans, and building the capacity of local governments to apply for and implement the grant programs. Chapter 2 assesses the extent to which these state-level assigned leaders recognize local jurisdictions that they perceived as least able to apply for and implement FEMA HMA grants, using a survey distributed to SHMOs. This chapter will also explore whether there is evidence that recognition promotes equitable procedural and distributional practices associated with FEMA HMA programs.

Chapter 3 Overview

Research underscores that Latinx communities are disproportionately impacted by disasters (Lieberknecht, Zoll, Jiao, & Castles, 2021; Méndez, Flores-Haro, & Zucker, 2020;

Messager, Ettinger, Murphy-Williams, & Levin, 2021; Spialek, Houston, Shin, Okker-Edging, & Suzuki, 2021) and face various unique social, physical, and legal barriers to disaster recovery (Denney, Onge, & Dennis, 2018; Fussell, Delp, Riley, Chávez, & Jr, 2018; Iceland, Weinberg, & Steinmetz, 2002; Lewis, Rappe, Tierney, & Albury, 2019; Maldonado et al., 2016; Peguero, 2006; Strully, Yang, & Liu, 2021). How nonprofit organizations, which are important sources of aid in the aftermath of disasters, address these barriers to better serve Latinx communities is currently unknown. Assigned leaders of nonprofit organizations have the power to allocate institutional resources, define organizational policies, and direct disaster recovery programs. Because of their role in shaping who receives aid, and how, nonprofit leaders are the focus of this chapter. Using data generated through semi-structured interviews conducted after Hurricane Florence in Wilmington, North Carolina, Chapter 3 assesses how leaders in nonprofit organizations recognized the Latinx community in their jurisdiction, and how that recognition translates into progress towards procedural and distributional justice.

Chapter 4 Overview

Current scholarly discussions about ethics in post-disaster research highlights the ways researchers and research practices can negatively influence communities being studied (e.g., Louis-Charles et al., 2020; Browne & Peek, 2014; Van Brown, 2020). In Chapter 4, we extend these discussions to highlight the way that post-disaster research processes and corresponding data can influence environmental justice struggles of the communities being studied. We then argue that to counter the possibility of researchers contributing to injustice, researchers, who are positioned as leaders with influence on the communities they study, should nurture recognition in their work. To support our argument, Chapter 4 describes our work with Project Building Resilience and Innovation through Diverse Group Engagement (BRIDGE). We highlight how

paid community-based research team members (what we term *Community Specialists*) help the research team navigate social and ecological complexities of communities negotiating recovery from positions of disadvantage through their ability to promote recognition.

Summary details associated with each research chapter, including the research objectives or questions and research methods, are summarized in Table 1.1.

Table 1.1. Research objectives or questions and methods by chapter

Chapter	Research Objectives or Questions	Research Methods
Chapter 2. Equity in FEMA Hazard Mitigation Assistance programs: The role of state hazard mitigation officers	(1) How do SHMOs recognize low-capacity communities in their jurisdiction? and (2) How does SHMO recognition of low-capacity communities in their jurisdiction relate to their engagement of those communities and the community's ability to leverage mitigation-related resources?	National survey (including open- and close-ended questions) of SHMOs.
Chapter 3. Environmental Justice in Disaster Recovery: The Role of Nonprofit Leaders in Fostering Recognition of the Latinx Community	*(*1) To what degree do local nonprofit leaders involved in disaster recovery recognize the Latinx community? (2) How does the process of recognition of the Latinx community manifest among local nonprofit leaders involved in disaster recovery? (3) How is recognition of the Latinx community by local nonprofit leaders related to procedural and distributional justice?	Semi-structured interviews with leaders of nonprofit organizations involved in disaster recovery in Wilmington, NC after Hurricane Florence (2018).
Chapter 4. Recognition and Ethical Research Practices: The Role of Community Specialists	To (1) provide a blueprint of the Community Specialist role (2) highlight the ways that Community Specialists can enhance the recognition capacity of the research process and (3) broaden the discussion of post-disaster research ethics to include long-term community impacts as a point for consideration.	Collaborative autoethnography of our team's engagement in Project BRIDGE in Robeson County, NC, presented through five vignettes.

A Note on Collaboration

To conclude this introduction chapter, I want to highlight that the work reflected throughout this dissertation is the result of years of collaborative work between myself, my peers and colleagues at North Carolina State University, and the participants across North Carolina and the United States who contributed to my doctoral research. As such, each research chapter includes a footnote crediting those who provided significant intellectual contributions to that chapter, as well as an acknowledgement section that describes other meaningful contributions to the work that made the chapter possible.

CHAPTER 2. EQUITY IN FEMA HAZARD MITIGATION ASSISTANCE PROGRAMS: THE ROLE OF STATE HAZARD MITIGATION OFFICERS[1]

Abstract

FEMA provides hundreds of millions of dollars for hazard mitigation annually through their Hazard Mitigation Assistance (HMA) grant programs. HMA funding is most accessible to resource-rich communities leaving communities that are more vulnerable to disasters the least able to leverage federal mitigation funding. This research highlights the results of a national survey conducted with 43 State Hazard Mitigation Officers (SHMOs), assigned state-level leaders who can have great influence on mitigation equity within their state. The survey explored the role of states and territories in facilitating mitigation equity in FEMA HMA programs using a three-pillar environmental justice framework (recognition, procedural justice, and distributional justice). The results indicate state-level shortcomings, including limited understanding of underserved communities, poor procedures for identifying and engaging with underserved communities, and limited local engagement in state- or territory-sponsored conferences, trainings, meetings, and policy discussions. The results yield insight into some of the underlying processes through which inequities in federal support for mitigation emerge and provide guidance to address shortcomings. These findings have important implications for federal- and state-level policy aiming to promote equity in hazard mitigation. Specifically, they point to the need for assessments of the needs, values, and priorities of low-capacity communities, identification and outreach strategies tailored to those communities, and increased financial and technical assistance for equity-focused actions.

[1]Author contributions for this chapter include Dr. Gavin Smith, Dr. Bethany Cutts, Samata Gyawali, and Samiksha Bhattarai. Author affiliations and contribution details are included in the acknowledgements section of this chapter.

This study underscores the value of environmental justice research in decision-making associated with multi-million- (or billion-) dollar federal grant programs.

Keywords: hazard mitigation; state hazard mitigation officers; FEMA; environmental justice; equity; recognition; funding; grants management

Introduction

Widespread frustration erupted across much of the professional mitigation and resilience community in the United States (U.S.) in 2021 when the Federal Emergency Management Agency (FEMA) announced the recipients of the first year of their new Building Resilience Infrastructure and Communities (BRIC) grant program (e.g., Center for Biological Diversity, 2021; Environmental Defense Fund, 2021; Healthy Gulf, 2021; Insurance Institute for Business & Home Safety, 2021; Maryland Emergency Management Agency, 2021; National Audubon Society, 2021; National Wildlife Federation, 2021; Resilience Force, 2021; Wisconsin Emergency Management, 2021). After comprehensive stakeholder outreach efforts by FEMA in 2019, intended to inform the BRIC program, revealed a demand for equity and greater attention to low-capacity community needs (FEMA, 2020); many were disillusioned when coastal, metropolitan, "high capacity" communities were the ones who thrived with FEMAs new grant program, whereas rural, small, and impoverished communities struggled to develop applications or chose not to participate (e.g., American Flood Coalition 2021; CANVAS 2021; State of Alaska Division of Homeland Security and Emergency Management 2021). Five of the wealthiest states in the country received 70% of the total funding and only 5% of the available funding was secured by Mountain, Midwest, and Gulf states, an outcome many aptly identified as inequitable (Frank, 2021a; Smith, 2021). The largest single competitive grant - $50 million out of the anticipated $500 million available through BRIC - was acquired by Menlo Park, a wealthy city in California (median household income of $160,784) home to Facebook's corporate headquarters and has previously been awarded several millions for mitigation from FEMA (Frank, 2021a).

The reasons for this inequitable funding distribution are many. This chapter focuses on one of these reasons – local jurisdictional capacity to apply for and implement FEMA Hazard Mitigation Assistance (HMA) grants and the role of the state in enhancing that capacity. We use data collected from State Hazard Mitigation Officers (SHMOs) during the open application of the BRIC program in 2020 to inform explanations for how inequities may have emerged in this grant program as well as other federal programs that fund mitigation efforts. SHMOs are the state level assigned leadership positions responsible for matters related to FEMA HMA programs. Using an environmental justice framework, this chapter focuses on the following research questions: (1) *How do SHMOs recognize low-capacity communities in their jurisdiction?* and (2) *How does SHMO recognition of low-capacity communities in their jurisdiction relate to their engagement of those communities and the community's ability to leverage mitigation-related resources?* This research can inform issues of mitigation inequity at a critical juncture when FEMA and other federal agencies are seeking to implement programs to maximize benefits to disadvantaged communities (EOP OMB, 2021).

Inequitable Distribution of Federal Hazard Mitigation Aid

Across the U.S., communities face a range of natural hazards which can lead to devastating disasters with long-term and permanent impacts. While communities should mitigate based on their risk, this does not mean that all communities should mitigate in the same way or using the same strategies. Mitigation actions should be tailored to the people and places they are intended to protect, addressing local risks and vulnerabilities, integrating local values and priorities, and leveraging existing community strengths and assets. However, hazard mitigation actions are costly, complex, and time-intensive, and often not feasible for many communities without

external assistance (Cigler, 2017; Consoer & Milman, 2018; Deely et al., 2020; Penman et al., 2017; Sadiq et al., 2020; Tilt & Ries, 2021).

The federal government, through pre- and post-disaster grant programs, provides funding to states and local governments for hazard mitigation. These programs include FEMAs HMA grant programs which currently encompass the Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance (FMA) grant program, and the Building Resilient Infrastructure and Communities (BRIC) grant program which recently replaced the Pre-Disaster Mitigation (PDM) grant program. The Department of Housing and Urban Development also funds mitigation activities through their Community Development Block Grant Disaster Recovery (CDBG-DR) and their Community Development Block Grant Mitigation (CDBG-MIT). However, despite the combined billions of dollars available through these programs, they are insufficient to cover the need, which means communities are competing for limited funding. Applications for these federal mitigation grant programs are notoriously complex and resource intensive, suggesting those with greater grant application and implementation capacity are more likely to be successful in attaining federal funding, and thus, more likely to be successful in protecting, and in some cases saving, their communities (Consoer & Milman, 2018; Smith & Vilá, 2020; Sullivan, Goidel, Brown, Kellstedt, & Horney, 2021).

Research confirms trends of inequity in federal funding for mitigation and post-disaster assistance. With respect to federal mitigation grants and support, rural communities are often found to be underserved or at a disadvantage (Brennan & Flint, 2007; Consoer & Milman, 2018; Frazier et al., 2013; Gourevitch et al., 2020; Seong et al., 2021). Federally funded housing acquisitions or “buyouts”, one type of hazard mitigation project, occupy the bulk of the literature centered on mitigation inequity. Research has identified inequities for people of color (Loughran

& Elliott, 2021; Nelson & Molloy, 2021), renters (Dundon & Camp, 2021), low-income counties (Mach et al., 2019), tribal communities (Marino, 2018), and small and rural communities (Mach et al., 2019). Additionally, recent work underscores inequities associated with federal hazard mitigation funding can arise at multiple phases of the grant process, including after mitigation project actions have been completed (Elliott, Loughran, & Brown, 2021; Kraan, Hino, Niemann, Siders, & Mach, 2021; Nelson & Molloy, 2021). While the literature exploring inequity associated with other HMA funded mitigation projects is sparse, research has highlighted inequities associated with FEMAs Public Assistance (PA) program, a non-HMA grant program that supports certain mitigation actions (Bento & Elliott, 2021; S. Domingue & Emrich, 2019). Additionally, through its own internal studies, FEMA has found that policyholders for the National Flood Insurance Program – a federally subsidized mitigation resource for individuals – tend to live in areas of low social vulnerability (FEMA, 2021b; Frank, 2021b) and have a median income significantly higher ($82,000) than those without flood coverage ($55,000) (FEMA, 2018a).

Given the findings of inequity in FEMA programs, it's unsurprising that stakeholders identified distributional inequities in the first year of the new BRIC program. As with any program however, issues must be assessed to enable informed improvements. For BRIC, President Biden announced a $1 billion investment for the second year of the program. For HMGP, the administration announced $3.46 billion in available mitigation funds for Fiscal Year 2021, a 23% increase in funding since the program began (FEMA, 2021a). Additionally, states across the country are beginning to develop and implement their own state-funded buyout program programs (e.g., New Jersey's Blue Acres Buyout Program and North Carolina's ReBuild Strategic Buyout Program). Given these significant investments it is critical to parse the

ways equity can be better integrated. The need is further underscored by President Biden's Justice40 Initiative, which establishes the goal of delivering 40% of Federal climate investments to disadvantaged communities (The White House, 2021).

Environmental Justice to Frame and Counter Inequities in Mitigation

Environmental justice provides an effective lens for understanding inequities in the hazard mitigation context. Inequities in hazard mitigation discussed previously can be characterized as distributional injustices. Distributional justice refers to the equitable distribution of environmental 'goods' and 'bads', and distributional justice research highlights how marginalized communities receive fewer environmental benefits and face greater environmental harms and corresponding health impacts than their more privileged counterparts (Schlosberg, 2003). In the context of hazard mitigation, studies highlight how marginalized communities have less access to hazard protections and face greater hazard risk than non-marginalized groups (Bolin & Kurtz, 2018; Chakraborty et al., 2019).

While distributional justice is often the focus of environmental justice work, there are two other components of environmental justice that have been conceptualized as part of a "three-pillar framework" and both are relevant to hazard mitigation equity. Procedural justice, which refers to fairness in decision-making processes and the ability to influence decisions which impact one's life (Gould, 1996; Schlosberg, 2003; Young, 1990). Central to this chapter, is recognition. We define recognition as the acknowledgement, respect, and legitimization of group difference by decision-makers and influencers (Fraser, 2000; Schlosberg, 2003; Young, 1990). This includes acknowledgement and respect of the different conceptions of what groups may consider just and unjust (Schlosberg, 2012; Schlosberg & Carruthers, 2010). An example of this

is whether individuals consider buyout options an environmental harm or an environmental benefit (Kraan et al., 2021; Loughran & Elliott, 2021).

Recognition has been cited as a pre-condition for distributional justice and a necessary component for addressing existing injustices (Fraser, 2000). While recognition has been explored in a variety of contexts, such as resource extraction conflicts (Urkidi & Walter, 2011), fuel poverty (Waitt & Harada, 2019; Walker & Day, 2012), conservation (Guibrunet et al., 2021; Martin et al., 2016), environmentalism (Gibson-Wood & Wakefield, 2013), coastal management (Lau et al., 2021), geoengineering (Hourdequin, 2019), and indigenous struggles (Barnhill-Dilling et al., 2020; Schlosberg & Carruthers, 2010) Limited research explicitly examines the role of recognition in promoting equitable disaster recovery and hazard mitigation (Kraan et al., 2021).

Ultimately the concept of recognition is straightforward, if one doesn't recognize groups accurately, procedures cannot be designed in ways that give fair opportunities for those groups to influence decision-making and resources cannot be distributed equitably. Likewise, without equity in distribution – individuals may not have opportunities to be fully recognized through formal procedural or other means.

As previously noted, there is a substantial body of literature highlighting distributional injustices related to hazard mitigation. Procedural justice has also been explored in the context of hazard mitigation, although comparatively less, and is typically centered on delivering the message that bottom-up, participatory planning processes (such as those related to local or state hazard mitigation planning) can prompt equitable hazard mitigation outcomes (Burby, 2003; Sarzynski & Cavaliere, 2018; Webler & Tuler, 2021). Recognition however has been virtually unexplored in the context of hazard mitigation (Kraan et al., 2021), indicating a critical

opportunity to enhance our understanding of environmental injustice as it relates to hazard mitigation and catalyze informed efforts for realizing equity in hazard mitigation.

Assigned Leaders and their Role in Recognition

In this chapter, we focus on the role of the state in recognizing communities within their jurisdiction, and how that relates to the local capacity to apply for and implement FEMA HMA grant programs. While every state has its own unique approach to mitigation, all states and U.S. territories share one common assigned leadership position specifically catered to hazard mitigation, the SHMO. This assigned leadership position, meaning it is formally assigned within the organization (Northouse, 2021), is required for states to be eligible to apply for and receive FEMA HMA funding. SHMO responsibilities consistent across all states and territories include developing prioritization strategies for HMA funds in their jurisdiction, developing state or territory hazard mitigation plans, building capacity of local governments to apply for and implement FEMA HMA grants through training, education, and the provision of data, and applying for FEMA HMA funding on behalf of local governments (who apply to the state as "sub-applicants") (Smith, Lyles, & Berke, 2013).

SHMOs can impact whether a community receives FEMA HMA funding. For instance, they can work directly with communities to submit a strong grant application to FEMA that meets all the requirements and aligns with federal and state priorities. SHMOs can also determine which communities get state-allocated funding from FEMA for mitigation. Ultimately, they have great influence on hazard mitigation equity within their state. Because of the role of recognition on equity, it is imperative that we document how SHMOs recognize diverse communities across their state. Currently, we understand very little about the roles and influence of SHMOs, and research exploring SHMOs role in mitigation equity is nonexistent.

Materials and Methods

To explore the role of SHMOs in promoting mitigation equity as it relates to FEMA HMA funding, we used a closed survey instrument distributed to SHMOs during the summer of 2020. The study was approved by the IRB at North Carolina State University protocol #20302.

Survey Design

The online survey was designed in *Qualtrics* and builds on previous work that aimed to explore the role states played in hazard mitigation (Smith, Lyles, & Berke, 2013). The survey instrument was designed in consultation with a former SHMO and leadership and technical contractors working at FEMAs HMA Division. Together, these subject-matter experts contributed to the validity of the survey (Fink, 2015) and ensured its relevance to state and federal stakeholders. Further contributing to the instrument's validity, a former SHMO who had not been involved in the development of the survey instrument pilot tested the survey.

The survey comprised up to 80 questions and covered a range of topics relevant to the roles and responsibilities of SHMOs (Smith, Vilá, & Caverly, 2019). The survey used conditional branching, meaning specific questions varied based on responses to prior questions. This chapter is centered on a subsection of the survey (Appendix A), which aimed to answer the study's research questions. Together, these questions begin to connect ideas of recognition, procedural, and distributional justice as it relates to the state-local relationship around FEMA HMA programs and hazard mitigation more broadly.

The survey subsection begins by asking respondents to qualitatively characterize communities they consider having the lowest capacity to apply for and implement FEMA HMA programs in their jurisdiction on their own without state-level assistance (henceforth "low-capacity communities"). Subsequent questions about low-capacity communities asked

respondents to refer to the communities which they previously characterized when answering those questions.

Research Population and Recruitment

SHMOs were the population of interest for this study. There are a total of 56 SHMOs, one for each U.S. state, the District of Columbia, and one for each of the following U.S. territories: Puerto Rico, U.S. Virgin Islands, American Samoa, Guam, and Northern Mariana Islands. We aimed to recruit all 56 SHMOs for this survey.

Participation was requested by contacting the SHMOs via their publicly available work email. If SHMOs indicated interest in participating, they were emailed the survey link. Prior to the beginning the survey, the respondents were presented with the informed consent form (Appendix B). Recruitment began on June 3rd, 2020 and concluded on July 31st, 2020.

Contributing to the credibility of the survey, we employed tactics to ensure honesty in informants (Shenton, 2004). This included guaranteeing anonymity in project outputs, so respondents could contribute openly without fear of losing credibility with their organization or with partner organizations (Shenton, 2004). Additionally, the recruitment efforts made the voluntary nature of the study explicit as well as respondent's right to skip any questions or stop survey participation at any time – this enhances our confidence that questions answered were those respondents freely wanted to answer.

Survey Analysis

The analysis approach involved quantitative and qualitative analysis steps (Feng & Behar-Horenstein, 2019; Folz, 1996; Popping, 2015). First, to inductively analyze the open-ended survey responses, a word frequency analysis for each question was used to get a general sense of the data and provide a baseline from which to develop coding structures for each question. Then,

a coding structure was developed in NVivo for each open-ended question to enable organizing and summarizing the body of qualitative responses. Cases were compared against each other for common and contrasting themes. Frequency distributions were used to analyze the quantifiable portions of the survey. Several steps suggested by Shenton (2004) were taken to ensure the credibility of the analysis, including (1) familiarity with the culture of participating organization, (2) frequent debriefing sessions about survey findings with research team, (3) participant and peer scrutiny of the research project through reports and conference presentations, and (4) exploration of the degree to which our findings were congruent with past studies.

Results

In total, 43 respondents replied to recruitment email and participated in the survey, resulting in a response rate of 77%. This is consistent with, and slight improvement from, other survey work conducted with SHMOs (Gonick & Errett, 2018). An additional 5 respondents replied to the recruitment email, however, did not complete the survey after the survey link was sent. Of the 43 respondents who participated, 6 reported they were not the SHMO, but rather an individual designated by the SHMO to answer the survey in their place. One respondent did not complete the full survey. All ten FEMA regions were represented in the final sample, with regions 1, 6, and 7 having the highest participation (100%), and regions 4 and 9 having the lowest participation, 62.5% and 42.8% respectively. Notably, only one U.S. territory responded to the request for participation. While these recruitment efforts were relatively successful, nonresponse may have resulted from limited capacity or competing priorities. Therefore, it's possible our sample excludes some of the lowest capacity or most overwhelmed states or territories with respect to hazard mitigation and FEMA HMA. Multiple respondents chose to skip questions, thus total responses for each question are reported.

Characterizing and Legitimizing Needs of Low-Capacity Communities

We used four questions to assess how SHMOs distinguish low-capacity communities in their jurisdiction. These four questions are intended to explore how SHMOs recognize low-capacity communities they serve. The questions centered on the respondent's qualitative characterization of low-capacity communities in their jurisdiction and the specific strategies they used to identify and engage those communities. Overwhelmingly, respondents characterized low-capacity communities in their jurisdiction as those which were small, rural, and low-income. Additionally, respondents frequently characterized low-capacity communities in terms of their administrative capacity, pointing primarily to limited dedicated staff for meeting grant-related activities. Eight respondents indicated those staff which would be responsible for mitigation-related activities are often not individuals committed to mitigation, but rather "jack of all trades" for their respective communities. One representative response explains:

> People who work at the local jurisdictional level within these communities are normally paid low wages and wear multiple "hats", which leaves very little time to manage programs and projects like those awarded through the FEMA HMA program. — *State 1, FEMA region 8*

Respondents also discussed limited experience with grants, limited funding for grant activities including project scoping, grant application tasks, and meeting the local cost-match requirement, and limited political or leadership commitment within their low-capacity communities. In some cases, respondents highlighted that low-capacity communities in their jurisdiction lacked access to the communication infrastructure important for completing FEMA HMA grant applications, such as access to internet and phone service. In most cases, this limited administrative, political, and communication capacity and was linked to being a small, rural, or impoverished community. Based on responses, these factors influence communities' ability to

apply for and implement FEMA HMA programs. One respondent described the dynamics between low-capacity and high-capacity communities in their jurisdiction:

> Our entire state is made up of small, rural, low-income communities. Many have a single person working as the Emergency Manager, Code Enforcement, Floodplain Manager, and so on… sometimes even as the County Manager as well. We have a few larger, higher capacity areas. One of these sub-grantees has sucked up as much funding as possible. — *State 2, FEMA region 6*

Although most respondents characterized their low-capacity communities as being small, few gave a specific number describing the size of their low-capacity communities. Most left the number ambiguous. Only one respondent indicated that an urban community was low-capacity:

> In some of our urban communities they have low capacity in that they have budgetary struggles as well as limited staff relative to workload. They have more staff than rural communities but more competing priorities. — *State 3, FEMA region 5*

To compliment respondents' characterization of low-capacity communities, they were also asked about the specific barriers those communities faced that hindered their ability to successfully apply for and implement FEMA HMA programs. Responses to these questions echoed the administrative constraints respondents pointed to in their characterization of the communities (limited staff and funding). However, responses were more specific to the requirements of the FEMA HMA application and implementation process. For example, many respondents highlighted the inability of low-capacity communities to meet the Benefit-Cost Analysis (BCA) or cost-match requirements. One respondent indicated FEMA expectations across the full grant process are unrealistic for low-capacity communities in their jurisdiction:

> The main barriers encountered by a low-capacity community is [sic] time, money, and resources. Every portion of the process – which includes applying for, implementing, and closing out

> mitigation plans and projects – can be taxing on small and rural communities.
>
> — *State 1, FEMA region 8*

One respondent described how FEMA HMA policies directly hindered the eligibility of rural communities in their jurisdiction, highlighting how the BCA requirements were "not built for small rural communities". Similarly, another respondent discussed how the rigidity of FEMA HMA policy hinders low-capacity communities from applying for these grants:

> There is a lack of flexibility in HMA funding to creatively address bigger strategies needed by low-capacity communities. In our state, low-capacity communities are often hit with multiple flood events and struggle to keep population or identify land to relocate their residents to… we could really use a state-funded mitigation program with more options available besides acquisition/demolition to return to open space to meet some unique needs.
>
> — *State 4, FEMA region 5*

The above quote also highlights the potential role of the state in perpetuating barriers to FEMA HMA access, which is limited (flexible) state funding available to address the unique needs of low-capacity communities. Multiple other respondents pointed to the role of the state in perpetuating reduced FEMA HMA access for low-capacity communities:

> The largest barrier to success is our own Administrative Services Bureau's inability to provide consistent and knowledgeable technical assistance. [Our office] is aware of the needs of our locals. We do as much as we can to help (with only 60% staffing) but for months at a time, ASB's ability to communicate and provide TA will disappear entirely. Our own capacity is so significantly limited we can be of no help to others. — *State 2, FEMA region 6*

Contrasting with this emphasis on state-level responsibility, is an emphasis on the limited engagement or perceived unwillingness of low-capacity communities to engage in hazard

mitigation activities, a sentiment expressed by multiple respondents. For example, one respondent noted:

> [Low-capacity communities] don't contact the state to let us know what other issues they have.
>
> *— State 5, FEMA region 4*

In addition to these open-ended questions, respondents were asked whether they had strategies in place for identifying and reaching out to low-capacity communities in their jurisdiction (see Table 2.1). These data further reflect SHMO recognition and how they legitimize that difference through their roles.

Table 2.1. Identifying and reaching out to low-capacity communities

Question	Percent (n)
Does the jurisdiction you represent have specific policies, practices, or strategies in place for identifying low-capacity communities in your state or territory? (n=41)	
Yes	34.1 (14)
No	65.9 (27)
Does the jurisdiction you represent have specific policies, practices, or strategies in place for reaching out to low-capacity communities in your state or territory? (n=42)	
Yes	42.9 (18)
No	57.1 (24)

Across the sample, most did not have specific strategies (66%), and those who did were asked to elaborate. Results indicate SHMOs primarily rely on economic indicators (such as income levels, government budgets). While less common, education, population, and hazard risk indicators were also used. Three respondents indicated they used administrative indicators to identify low-capacity communities:

> Low-capacity communities would likely receive a medium- or high-risk assessment during our Risk Assessment process. Medium- and high-risk applicants are communities who have received many requests for information (RFIs), submit late quarterly reports, are not responsive to

> correspondence, have single audit findings that would affect grant management, etc. — *State 6, FEMA region 1*

Finally, one respondent wrote that their specific strategy for identifying low-capacity communities involved noting those communities that reach out to the state for help on FEMA HMA grant application or implementation activities.

With respect to reaching out to low-capacity communities, most (57%) indicated not having specific strategies. Those who did, described using emails, calls, webinars, online and in-person meetings, trainings, and presentations. Three respondents described formalized policies for reaching out to and working with low-capacity communities, including completing inter-agency reviews, staffing field personnel, and attending required meetings with communities falling within a medium- or high-risk category (risk determined partially by administrative capacity). On the other hand, several respondents pointed to blanket strategies that touched all the jurisdictions in their state or territory as opposed to specifically low-capacity communities. For example:

> Send out routine statewide emails that include said entities. Answer calls and emails in a timely manner for said entities. — *State 7, FEMA region 10*

Finally, while many indicated the nature of their engagement was directly related to advancing hazard mitigation project applications or implementation activities, one respondent described using face-to-face meetings to "build good will" with the local stakeholders.

Engagement of Low-Capacity Communities in Hazard Mitigation Activities

To assess the engagement of low-capacity communities in hazard mitigation-related activities, which we are using as an indicator of procedural justice, respondents were asked three close-ended questions. The questions explore the extent respondents perceived representatives

from low-capacity communities in their jurisdiction engage in processes associated mitigation policy and other activities and that could benefit local mitigation efforts (see Table 2.2).

Table 2.2. Perceptions of low-capacity community engagement

Question	*% Strongly agree*	*% Somewhat agree*	*% Neither agree nor disagree*	*% Somewhat disagree*	*% Strongly disagree*
Low-capacity communities in the jurisdiction I represent (n=41)					
Attend hazard mitigation-related conferences, meetings, or trainings	17.1	36.6	26.8	17.1	2.4
Contribute to state- or territory-level discussions about hazard mitigation policy	17.1	22.0	31.7	29.3	0
Directly assist in the writing/revision of hazard mitigation policy at the state- or territory- level	17.1	17.1	29.3	24.4	12.2

The results point to limited engagement of low-capacity communities. When respondents were asked about the degree to which representatives from low-capacity communities contribute to discussions about state- or territory-level hazard mitigation policy, less than half agreed. Engagement was even lower when it involved written contributions to policy.

Respondents were also asked about the degree to which representatives from low-capacity communities participate in hazard mitigation-related conferences, meetings, or trainings. While participation was higher than that associated with policy discussions or development, with just over half (54%) of respondents pointing to participation, results still illuminated gaps in engagement.

Low-Capacity Community Access to and Use of Resources

To assess low-capacity community access to state-level assistance, which we are using as an indicator for distributional justice, respondents were asked a series of questions about their existing capabilities to address needs of low-capacity communities (i.e., planning, regulatory, administrative, financial, and education and outreach needs) (see Table 2.3). The results highlight SHMOs feel best equipped to address the planning needs of low-capacity communities. Respondents also felt relatively confident about being able to address education and outreach needs. While somewhat less confident in their capabilities to address the regulatory and planning needs of low-capacity communities, most felt relatively well-suited to these tasks. Respondents felt least confident about having the capabilities necessary for addressing the financial needs of low-capacity communities.

Table 2.3. Capabilities of the state to help low-capacity communities

Question	*% Strongly agree*	*% Somewhat agree*	*% Neither agree nor disagree*	*% Somewhat disagree*	*% Strongly disagree*
Capabilities of the state or territory to help low-capacity communities with particular hazard mitigation needs (n=42)					
Planning needs	52.2	32.5	2.5	12.5	0
Regulatory needs	20.0	45.5	22.5	7.5	5.0
Administrative needs	22.5	40.0	25.0	7.5	5.0
Financial needs	10.0	30.0	20.0	27.5	12.5
Education and outreach needs	35.0	40.0	17.5	5.0	2.5

Additional questions were asked to assess the extent low-capacity communities leverage available hazard mitigation resources (see Table 2.4). Results suggest a large portion of communities are missing out on state- and federal-level resources that could benefit them.

Table 2.4. Perception that low-capacity communities leverage resources

Question	*% Strongly agree*	*% Somewhat agree*	*% Neither agree nor disagree*	*% Somewhat disagree*	*% Strongly disagree*
Low-capacity communities in the jurisdiction I represent (n=41)					
Leverage the knowledge, skills, and resources available at the state- or territory-level to enhance their mitigation capacity	22.0	29.3	24.4	19.5	4.9
Successfully apply for FEMA HMA grants	17.1	34.1	36.6	12.2	0

Discussion and Conclusions

The purpose of this research was to explore the roles that SHMOs play in the inequitable distribution of FEMAs HMA funding and opportunities for improvement. To do this, we applied an environmental justice framework to interpret how SHMOs, assigned state-level leaders, may be influencing inequity associated with FEMA HMA grant programs. The environmental justice framework used in this research considers the interacting components of recognition and procedural and distributional justice. In this chapter, we center our discussion on state-level recognition and point to the ways recognition may be influencing the other justice elements (procedural and distributional justice).

This research revealed that overall, SHMO's recognition of low-capacity communities in their jurisdiction is relatively limited and the process for recognizing is often informal or not tailored to the qualities of those communities. Additionally, this research documents evidence of procedural and distributional mitigation injustices, as indicated by SHMO's perceptions of limited low-capacity community involvement in state-level hazard mitigation policy actions and limited use of state-level mitigation resources. The recognition, procedural, and distributional

justice shortcomings documented in this research are intertwined. From this research, we point to recognition as a critical element for further research to improve our understanding of mitigation inequity.

In the context of this study, we define recognition as the degree to which SHMOs acknowledge and legitimize group difference. To assess recognition in this study, we explored how SHMOs characterized low-capacity communities and how they described the barriers to participation in FEMA HMA grant programs (acknowledging group difference), as well as the strategies they had for identifying and reaching out to low-capacity communities within their corresponding jurisdictions (legitimizing group difference). Most respondent's characterizations of low-capacity communities included basic descriptions of the communities as small, rural, or impoverished, often without explicit details of what this meant, indicating rudimentary recognition of these communities. Additionally, no respondent mentioned characteristics related to race or homeownership, and only one mentioned urban communities, pointing to recognition gaps when considering existing scholarship highlighting inequities associated with these population groups (Dundon & Camp, 2021; Loughran & Elliott, 2021; Nelson & Molloy, 2021).

This interpretation of limited recognition is further supported by two other findings. First, 66% of respondents did not have strategies for identifying low-capacity communities, and among the 34% who indicated having specific strategies, those strategies were not tailored to the described characteristics of those communities. Second was the finding that 57% of respondents did not have strategies for reaching out to low-capacity communities. Of those who did have strategies, their strategies were not tailored to the described circumstances and needs of those communities – multiple respondents indicated "blanket strategies" for reaching out to all communities within their jurisdiction. The failure to have any particular strategies for identifying

or reaching out to low-capacity communities or the use of standardized practices, consistent across all communities regardless of difference (e.g., difference in access to communication infrastructure), points to a failure to legitimize difference.

Some respondents did provide evidence of a more nuanced understanding of low-capacity community values and priorities, as indicated by their descriptions of limited administrative capacity and complimentary strategies to identify and engage those communities. In one case (State 2), the respondent provided a detailed description of low-capacity communities in their state, complementary identification and engagement strategies, and a description of how the state and federal policies contribute to communities' low-capacity status. This response was interpreted as a higher recognition response, which contrasted the more common low recognition responses within the survey sample. We emphasize this respondent's case to underscore variation in the sample, with some states better positioned to share strategies for improving how SHMOs approach community recognition within their jurisdictions. However, the overwhelming trend is that SHMOs are not exhibiting recognition, ultimately influencing their capacity to promote mitigation equity. Acknowledging the interrelated nature of recognition, procedural, and distributional justice, these findings identify an opportunity to build capacity for equity in FEMA HMA programs – specifically, the need for state-level recognition of low-capacity communities.

Results from this survey highlight that many of these assigned state-level leaders do not feel sufficiently equipped to address the varying hazard mitigation needs of low-capacity communities (i.e., planning, regulatory, administrative, financial, and education and outreach needs). Additionally, multiple respondents indicated through their open-ended responses, the capacity at the state level is insufficient to address the full range of hazard mitigation need across

their state, which is consistent with previous research that has explored state-level mitigation capacity from the perspective of SHMOs (Gonick & Errett, 2018; Smith et al., 2013; Smith & Vilá, 2020). This limited state-level capacity paired with the limited state-level recognition documented in this study suggests low-capacity communities are "left behind". They are least well positioned to leverage the resources and capabilities available at the state level, resulting in distributional inequities dictated by local capacity. This is supported by existing research highlighting inequity in distribution of federal mitigation aid and the results of this study showing a large portion of SHMOs perceive that low-capacity communities do not take advantage of state level knowledge, skills, and resources and do not successfully apply for FEMA HMA grants. Potentially further exacerbating these distributional inequities is the limited engagement of representatives from low-capacity communities in policy discussion actions and state-sponsored hazard mitigation conferences, trainings, and meetings. If low-capacity communities are not represented in formal and informal discussions influencing hazard mitigation policies and practices at the state, territory, and federal levels – it presents a source of procedural inequity which can further compound the inequities associated with recognition and distribution. The relevance of this is highlighted by SHMO responses to the survey that point to federal policy guidelines that are "not built" for low-capacity communities (e.g., the Benefit Cost Analysis requirement, allowable project types and expenses). If low-capacity communities are not recognized, their needs and voices cannot be integrated into policy, and policy continues to underserve those same communities that are disadvantaged by the policy in the first place.

Ultimately, this survey was an effective tool for gaining a broad (national) understanding of recognition in specific state-level leadership positions, yet it yields an incomplete picture of the complex governance processes associated with mitigation. Future research exploring the role

of recognition in these processes would benefit from in-depth case studies that explore the unique governance processes within states. Aligned with this case study approach, future research would benefit from exploring the perspectives of low-capacity communities – for example, how do these communities define themselves, and then, how does this compare to how regional- or state-level leadership recognize those communities?

While the topic of inequities in the distribution of federal mitigation aid is increasingly a point of focus in both academic and policy discussions (recent examples include, Emrich, Tate, Larson, & Zhou, 2020; House Select Committee on the Climate Crisis, 2021; Siders, 2019), this study is one of the first to explore *why* these distributional inequities emerge, specifically by exploring the role of SHMOs in that process. By understanding underlying processes through which mitigation emerge, such as through recognition failures, we are better positioned develop strategies intended to increase equitable mitigation outcomes. For federal agencies, such as FEMA, seeking to implement the Justice40 initiative or promote equitable program outcomes, the results suggest that agencies should incentivize and provide financial and technical resources for recognition-based activities at the state level. Examples of these activities include assessments of community needs, values, and priorities and the development of community-specific identification and outreach strategies. If recognition is not considered in approaches to equity, agencies risk distributing federal resources to underserved communities in ways that are not meaningful to them – ultimately perpetuating environmental injustice despite equitable distribution of resources.

This research draws on ongoing theoretical discussions in the field of environmental justice, which describe the way environmental injustices manifest through the interacting effect of recognition, procedural, and distributional injustice. Existing scholarship on inequities in

hazard mitigation have focused predominantly on distributional inequities (e.g., Adams, 2017; Elliott, Brown, & Loughran, 2020a; Jacobs, 2019; Mach et al., 2019; Maldonado, Collins, & Grineski, 2016; Roberts, Anderson, Skerratt, & Farrington, 2017; Ross & Clay, 2018; Straub, Gray, Ritchie, & Gill, 2020; Zhang, 2010) and to a lesser degree procedural inequity (Allen, 2013; Liski et al., 2019; Voogt, Bisschops, & Munaretto, 2019; Wells et al., 2013; Yeo, 2020). However, this research initiates a line of inquiry on the role of recognition in hazard mitigation equity, signaling a significant advancement in our baseline understanding of the process through which inequities occur. Previous scholarship has highlighted the role of recognition in environmental injustice in other contexts and this research corroborates past research, strengthening the theoretical link between recognition, procedural, and distributional justice.

Chapter 2 Acknowledgments

This work associated with this chapter was a collaborative effort. Author contributions include the following: Olivia Vilá (North Carolina State University, Department of Parks, Recreation, and Tourism Management): Conceptualization; methodology; formal analysis; investigation; data curation; writing – original draft; writing – review and editing; supervision; project administration. Dr. Gavin Smith (North Carolina State University, Department of Landscape Architecture): funding acquisition; conceptualization; methodology; resources; supervision; project administration; writing – review and editing. Dr. Bethany Cutts (North Carolina State University, Department of Parks, Recreation, and Tourism Management): conceptualization; resources, supervision, writing – review and editing. Samata Gyawali (North Carolina State University, Department of Landscape Architecture): Investigation, data curation. Samiksha Bhattarai (North Carolina State University, Department of Landscape Architecture): Investigation, data curation.

We also acknowledge contributions from: Dr. Whitney Knollenberg: Writing – review and editing. Dr. Laura Bray: Writing – review and editing. Dr. Louie Rivers: Writing – review and editing. Gretchen Caverly: Methodology. Jane Allen: Investigation. Finally, we also want to acknowledge and thank each of the SHMOs who volunteered their time to complete the survey associated with this research.

Chapter 2 Funding Sources

This chapter is based upon work supported by the U.S. Department of Homeland Security under Grant Award Number 2015-ST-061-ND0001-01. The views and conclusions contained herein are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Department of Homeland Security.

CHAPTER 3. ENVIRONMENTAL JUSTICE IN DISASTER RECOVERY: RECOGNITION OF THE LATINX COMMUNITY BY NONPROFIT LEADERS[2]

Abstract

Nonprofit organizations are important sources of aid and assistance in the aftermath of disasters, directly contributing to disaster recovery efforts in communities and in some cases broader environmental justice objectives. However, there is a need to better align nonprofit organization processes and programs to address the needs of disadvantaged communities. This study examines how leaders of nonprofit organizations navigate and address the needs and experiences of Latinx persons in their community. We draw from 18 semi-structured interviews with leaders of nonprofit organizations involved in disaster recovery in Wilmington, North Carolina after Hurricane Florence in 2018. Interviews focused on the degree that nonprofit leaders involved in disaster recovery recognize the Latinx community, how the process of recognition manifests among these leaders, and how recognition by these leaders is related to procedural and distributional justice. Findings suggest that leaders adopt more sophisticated recognition of disaster recovery needs of the Latinx community when they have direct experience working with Latinx persons, collaborate with individuals who understand the Latinx community, partner with other organizations, or leverage geospatial or other data on disaster impacts and demographics. Data generated in this study underscores the role that recognition can play in promoting progress towards procedural and distributional justice in the disaster recovery context. These findings suggest that assigned leaders of nonprofits can and do function to exacerbate inequities through their disaster recovery services. However, the findings also showcase nonprofit leaders are

[2]Additional author contributions for this chapter include Dr. Bethany Cutts, Dr. Whitney Knollenberg, and Dr. Louie Rivers. Author affiliations and contribution details are included in the acknowledgements section of this chapter.

interested in promoting just outcomes, and one possible route is through greater emphasis on the role of recognition. This work can inform approaches to resilience planning and help leaders of nonprofit organizations understand the needs and
experiences of disadvantaged communities, so they can restructure organization policies and programs to address the needs of those who are most vulnerable to environmental hazards.

Keywords: Latinx, nonprofit organizations, disaster recovery, environmental justice, leaders

Introduction

Environmental justice can be useful frame for exploring inequities in the disaster recovery context. The concept of environmental justice is often used to describe the unequal experience of environmental harms and benefits for certain communities, typically racial minorities and low-income populations (Maung & Pellow, 2021; Schlosberg, 2003). Since Hurricane Katrina, the environmental justice frame has been increasingly used to highlight the disproportionate vulnerability to and impact of disasters on disadvantaged populations. For example, research underscores that disadvantaged populations are more exposed to natural hazards, more likely experience greater damage as a result of those hazards, and more likely to take longer to recover than non-disadvantaged populations (Bolin & Kurtz, 2018; Chakraborty et al., 2019; Hino & Nance, 2021).

Environmental justice can be conceptualized through three components. One of these components is *distributional justice*, equitable (fair and balanced) distribution of environmental benefits and harms (Schlosberg, 2003). Another component is *procedural justice,* fairness in the policy- and decision-making processes (Gould, 1996; Schlosberg, 2003; Young, 1990). *Recognition*, the focus of this chapter, is the acknowledgement, respect, and legitimization of group difference (Fraser, 2000; Schlosberg, 2003; Young, 1990). Existing work notes progress towards justice in any one of these dimensions can promote progress towards justice in the other dimensions (Hourdequin, 2019; Schlosberg, 2003; Schlosberg & Carruthers, 2010). Recognition specifically has been cited as a pre-condition for distributional justice and a necessary component of addressing existing injustices (Fraser, 2000; Schlosberg, 2003; Young, 1990). That is, environmental inequities can't be remedied until those who have power to employ remediation are aware that inequities exist, who they exist for, and why they exist. Despite its

apparent importance, recognition is the least understood dimension among the three justice dimensions (Blue, Bronson, & Lajoie-O'Malley, 2021). And while research has explored recognition in some contexts, all which confirm its influential role in environmental justice (Barnhill-Dilling et al., 2020; Gibson-Wood & Wakefield, 2013; Guibrunet et al., 2021; Hourdequin, 2019; Martin et al., 2016; Schlosberg & Carruthers, 2010; Urkidi & Walter, 2011; Waitt & Harada, 2019; Walker & Day, 2012), there is currently limited research on the role of recognition in disaster-related environmental justice issues, although it has been advocated for (Allen, 2013).

Recognition is a process which requires an entity express difference and another to be receptive to difference (Honneth, 1992; Kompridis, 2014). Existing theoretical work on recognition has typically focused on the struggle for recognition (Kompridis, 2014), however an emphasis on *who is recognizing* disadvantaged groups is important. We argue more specifically that the role of assigned leaders, those with formal and hierarchical positions (Northouse, 2021), in recognizing disadvantaged groups demands attention. Assigned leaders are in positions to directly in institutionalize environmental justice through policy and program implementation, but their capacity to do that hinges on, to some degree, recognition. Despite the potential role of assigned leaders influencing environmental justice, most research to date has focused on emergent leaders in environmental justice efforts, typically the roles of activists and community organizers (e.g., Baptista et al., 2022; Bullard & Johnson, 2009; Krauss & Storch, 2012; London & Harrison, 2021; Pyles, 2017).

In the United States (U.S.), assigned leaders across sectors and at all levels are increasingly encouraged to integrate environmental justice into their policies and procedures to promote just disaster recovery outcomes and more equitably distribute hazard risk (see for

example, The White House, 2021). Leaders of nonprofit organizations are one category of assigned leaders that warrant further consideration. Nonprofit leaders have access to institutional resources that can directly contribute to disaster recovery, are less restricted by bureaucratic procedures than government entities, and are in positions of authority to define organizational policies and direct disaster recovery programs (Jenkins, Lambeth, Mosby, & Brown, 2015; LeRoux & Sneed, 2006; Lu, 2015; Nicholson-Crotty, 2011).

As organizations, nonprofits are important sources of aid in the aftermath of disasters (Demiroz & Hu, 2014). These organizations contribute to a resilient environment, serving diverse roles for impacted communities including food, shelter, health services, spiritual care, case management, home rebuilding and repair, debris removal and cleanup, and direct charitable assistance (Chandra & Acosta, 2009; Eller, Gerber, & Robinson, 2018; Sledge & Thomas, 2019). Increasingly, they hold long-term roles in recovery processes focused on preparedness, mitigation, and resilience (Eller et al., 2018). Through these roles, nonprofit organizations are positioned to advance environmental justice objectives in communities where disasters occur (Rigolon & Gibson, 2021). To advance environmental justice, nonprofit leaders are important actors in the disaster recovery landscape who can recognize disadvantaged groups and use that recognition as a baseline to make decisions that promote procedural and distributional justice.

In the U.S., nonprofit organizations involved in disaster recovery vary in size and capacity (Chandrasekhar, García, & Khajehei, 2021), and while there is no single estimate that valuates nonprofit contributions nationally, large nonprofits (such as the federally chartered American Red Cross) often provide several millions in direct assistance per disaster. Nonprofit organizations are consistently credited by affected communities, government officials, and researchers as instrumental players that directly provide or supplement public sector services

which help communities get back on their feet after devastating disaster events (Curnin & O'Hara, 2019; Eller et al., 2018; FEMA, 2018b). Despite the national reliance on nonprofit organizations for providing necessary disaster aid, some research points to possible procedural and distributional inequities by nonprofit organizations (Domingue, 2021), signaling unhealthy environments for those who are underserved by the organizations. For example, research has documented circumstances where post-disaster aid favors persons who are homeowners, White, nonpoor, easily accessible, and who do not have disabilities (Chopel, Fernos-Sagebien, & Gorbea, 2021; Griego, Flores, Collins, & Grineski, 2020; Medwinter, 2021; Sledge & Thomas, 2019). While this work documents distributional injustices, there are few empirical studies that describe why these injustices materialize in the aftermath of disasters. We believe that exploring how nonprofit leaders recognize (or fail to recognize) disadvantaged groups they serve can provide insight.

Inequities in the nonprofit sector compound distributional inequities observed in federal government aid, which have been widely documented (Bolin & Kurtz, 2018; S. Domingue & Emrich, 2019; Emrich et al., 2020; Muñoz & Tate, 2016; Rivera, Jenkins, & Randolph, 2021; Willison, Singer, Creary, & Greer, 2019), as well as compound inequities resulting from structural racism and institutional failures that have and continue to impact disadvantaged communities' vulnerability to environmental harms (Brown et al., 2018; S. J. Domingue, 2021; Lee, 2021; Richter, 2018). As such, it's important to better understand why injustice manifests in the nonprofit context to unravel systems of oppression and nurture healthy environments that help individuals recover from disasters and limits their exposure to future hazards.

Of particular interest in this study are inequities faced by U.S. Hispanic and Latino populations, defined as "a person of Cuban, Mexican, Puerto Rican, South or Central American,

or other Spanish culture or origin regardless of race" (U.S. Census Bureau, 2021). Here, we adopt the gender-inclusive pan-ethnic term *Latinx* in place of Hispanic and Latino throughout this chapter to communicate acknowledgement and respect of difference (Scharrón-del Río & Aja, 2020) while also acknowledging ongoing public deliberations about the use of the term Latinx (PEW Research Center, 2020b). The U.S. Latinx population is the second largest ethnic minority group in the U.S. (estimated 65 million) (U.S. Census Bureau, 2021). The foreign-born Latinx population in the U.S. is estimated to be 19.8 million, one of the fastest growing population groups in the U.S. (PEW Research Center, 2020a).

While research documenting inequities in the distribution of aid to Latinx communities is sparse, recent work points to its occurrence (García, 2021; Méndez et al., 2020; Sotolongo, Kuhl, & Baker, 2021). Additionally, in post-disaster settings Latinx populations face various unique social, physical, and legal barriers to recovery that directly and indirectly limit their access to aid (Fussell et al., 2018). For example, language barriers may prevent Latinx communities from accessing important information about safety or available resources (Lewis et al., 2019; Peguero, 2006). Poor housing quality, segregation, and concentrated poverty (Denney et al., 2018; Iceland et al., 2002; Strully et al., 2021) also create direct barriers to recovery as these communities suffer more extensive damages, are less physically accessible to those providing recovery resources, and have less resources to support themselves and their neighbors in the aftermath of disasters. Legal status barriers, such as those faced by undocumented immigrants, directly block undocumented immigrants who are disaster survivors from accessing potentially lifesaving government-funded resources. Those same legal barriers can also influence undocumented immigrants with respect to their accessibility of non-government funded resources. This is because the stigma and fear of being an undocumented immigrant can prevent those individuals

from asking or reaching out for those resources (Spialek et al., 2021). Even among documented immigrants in the U.S., anti-immigrant rhetoric against those from Latin America (Pulido, 2007) may influence the willingness of Latinx persons to ask for help (Lee, 2020). For Latinx persons living in the U.S. territory of Puerto Rico similar barriers exist, yet they manifest differently and at different scales given the distinct social-political context (Brown et al., 2018; Lloréns & Stanchich, 2019; Sotolongo et al., 2021). These barriers facing Latinx populations restrict procedural and distributional justice for this community, hindering their ability to recover from disasters and furthering their vulnerability to natural hazards and other environmental risks. Based on the environmental justice framework, to promote environmental justice for the Latinx community, these barriers would need to be, as a baseline, recognized by those involved in directing disaster recovery efforts.

Despite inequities and barriers facing the Latinx community, little is known about how nonprofit organizations can tackle these issues to optimize the procedural and distributional justice outcomes for Latinx communities impacted by disasters. Based on insights from the environmental justice framework, we focus on the role of recognition, described as essential for promoting distributional justice and addressing existing inequities (Fraser, 2000; Schlosberg, 2003; Young, 1990). The objective of this chapter is to explore how leaders of nonprofit organizations, who are in positions of power to directly influence policy and processes of their organizations, recognize Latinx communities they're responsible for serving, and the influence this recognition (or lack of recognition) has on the other dimensions of environmental justice. To do this, we explore the following research questions:

1. *To what degree do local nonprofit leaders involved in disaster recovery recognize the Latinx community?*

2. *How does the process of recognition of the Latinx community manifest among local nonprofit leaders involved in disaster recovery?*
3. *How is recognition of the Latinx community by local nonprofit leaders related to procedural and distributional justice?*

Material and methods

To explore the role of recognition in disaster recovery, this study uses a qualitative approach to generate a rich dataset to answer this project's research questions. The author of this dissertation carried out data collection associated with this chapter. The Institutional Review Board at North Carolina State University in Raleigh, North Carolina (NC) approved this project (Protocol #16613).

Study Site

Wilmington, NC, U.S. served at the study location. Wilmington is an economically diverse port-city in the southeast region of NC within New Hanover County. The population is predominantly White (73.5%) has a diverse and growing Latinx population (6%) and a significant Black population (20%). While there is no data available detailing the diversity within the Latinx population in Wilmington, NC, the city's Latinx population consists of individuals from significantly different ethnic, racial, class, and social backgrounds. Wilmington has a diverse network of nonprofit organizations that aim to support the local Latinx community (e.g., Latino Alliance, Latinos Unidos, Latinos en Wilmington, El Centro Latino, Latin American Business Council) and local events intended to foster community across the Latinx community, such as the yearly *El Festival Latino*. Some of the Latinx population in Wilmington are undocumented immigrants. While there is no city-specific data on the undocumented immigrant population, statewide data for NC from Migration Policy Institute (2018) estimate that there are nearly

300,000 undocumented people in North Carolina, predominantly from Mexico (58%), Honduras (8%), El Salvador (7%), and Guatemala (5%). The data also show that 43% of undocumented people do not speak English well or at all, and 69% are uninsured, heightening the vulnerability to natural hazards of this subset of the population. Additionally, legacies of racism, stemming from the 1898 Wilmington Massacre, a violent coup by white supremacists, remain prominent in Wilmington and undoubtedly influence the vulnerability of racial minorities in the city (Cecelski & Tyson, 2000).

The city of Wilmington experienced severe impacts following the record-breaking rainfall and flooding associated with Hurricane Florence in 2018 (National Weather Service, 2018). Wilmington has diverse nonprofit organizations, government organizations, and local businesses that serve the community and that were involved in disaster recovery. The city also has a network local leaders and champions that are involved in Latinx community advocacy. These circumstances create a valuable opportunity to explore the role nonprofit leaders play in promoting recognition of the Latinx community, and how this contributes to just disaster recovery for that community.

Semi-Structured Interviews

The semi-structured interview guide used in this study was informed by early engagement with members of the Wilmington Latinx community, the Latino Alliance, and El Centro Hispano at the University of North Carolina in Wilmington (UNC-W). The semi-structured interview was designed to understand the disaster recovery issues facing the Latinx community from the perspective of nonprofit leaders involved in recovery and the extent to which those organizations served the Latinx community. The finalized semi-structured interview guide (Appendix C) contained ten open-ended questions which provided information about the (1) involvement of the

organization in disaster recovery (2) extent to which the organization worked with Latinx populations (3) challenges facing the Wilmington Latinx population with respect to disaster recovery (4) capabilities, assets, and resources in the Latinx community that could be leveraged for recovery.

Purposive sampling was used to gain a diverse representation of community organizations involved in recovery activities in Wilmington. The sampling aim was to interview leaders from nonprofit organizations that varied in services provided and the degree to which they worked with the Latinx community. Organizations were identified using a publicly available list of New Hanover Disaster Coalition partners on their website. When deciding to reach out to specific organizations from the list of partners, the researcher considered (1) whether contact information was publicly accessible (2) whether the services provided by the organization, determined by exploring that organization's website, had been represented in the study.

To request participation in the study, organization representatives in assigned leader positions were emailed. The email contained the project description and request for an in-person or telephone interview. If respondents agreed to be interviewed, a date, time, format and (if applicable) place was mutually agreed upon. On the day of the interview, the researcher met or called respondents. As part of the informed consent process, the consent form was reviewed, respondents were asked if they agreed to be interviewed and audio recorded (Appendix D).

In some cases, respondents provided supplemental documents for the researcher to reference and contextualize interview discussion points. When this occurred, documents were scanned and stored with respondent materials.

Data Analysis

All interview recordings were transcribed verbatim and uploaded to project file on Nvivo Qualitative Data Analysis Software (Nvivo). Data were analyzed using both "pen and paper" techniques and Nvivo. To begin the thematic analysis process, the author of this dissertation developed a preliminary codebook using open coding strategies to identify themes that emerged organically in the interviews (Corbin & Strauss, 2015; Williams & Moser, 2019). This process was completed with pen and paper, adding line-by-line codes in the margins of each interview transcript. It was also at this stage that the researcher determined when data saturation was reached and respondent recruitment could conclude (Fusch & Ness, 2015). Specifically, saturation occurred once the emergence of new meaningful codes per each additional interview diminished.

Axial coding was then implemented to organize themes within the preliminary codebook based on emergent themes and the environmental justice framework. Research colleagues reviewed the codebook which was revised further based on feedback. All interviews were coded based on the final codebook (Appendix E), and additional community materials, and documents provided by respondents, supplemented the interpretation of coded content. Following the coding of the full dataset, the researcher shifted her perspective to interpret the data as whole "meaningful undivided units" (Chenail, 2012), exploring connections and differences among the data. The meaningful units that guided the interpretation approach are directly aligned with the research questions in this chapter. Throughout the analysis process, emerging findings were discussed with supervisors and through academic presentations. This process provided an opportunity to discuss coder bias, challenge interpretations, and provide alternative explanations.

Positionality and Qualifications Statement

My demographics and prior experience directly informed the research topic and chosen methods of this study. These same factors also undoubtedly influenced the data generated between the research respondents and me. I identify as White Latinx educated woman who grew up in a nontraditional family setting in a rural town in Puerto Rico. I personally experienced severe hurricanes during my youth and witnessed what I retroactively interpret as community resilience. I also have an appreciation for Latinx culture that was part of my upbringing. My experiences and values, which have led to a desire to work with communities like mine, have been a guiding force in my research. I have also been educated in the social sciences for eleven years at the time of writing this chapter. During those eleven years, I have been trained to use diverse social science research methods. I prefer qualitative methods for their ability to generate rich and nuanced data and elucidate the complexity of social phenomena. Finally, I adopt the perspective that disasters, prompted by natural hazards, are man-made. As such, my inquiry broadly focuses on the ways that human decisions influence human vulnerability to natural hazards and the negative impacts that result. In the context of this work, I focus on the role nonprofit leaders play in the Latinx experience of disasters.

Establishing Trustworthiness

Several actions were taken throughout the research process to ensure the trustworthiness of the data (Guba, 1981; Nowell, Norris, White, & Moules, 2017; Shenton, 2004). These actions are summarized in Table 3.1.

Table 3.1. Actions taken to establish trustworthiness of data throughout research process

Quality criterion	Phase of research process	Reported on page #	Means of establishing trustworthiness
Credibility	Research design	45	Use of well-recognized research methods (semi-structured interviews)
	Data collection	45	Development of familiarity of research community through engagements in community events and meetings related to the Latinx community and disaster recovery
	Data collection	46	Triangulation via different types of respondents
	Data analysis	47	Recurring meetings with superiors centered on concept development and data interpretation
	Data analysis	47	Peer scrutiny via the presentation of preliminary interpretations at academic and professional meetings
	Reporting	48	Description of researcher background and qualifications
	Reporting	49-65	Thick descriptions of phenomena under study via power quotes, proof quotes, and contextual details relevant to those quotes
Transferability	Reporting	50	Boundaries of study conveyed by reporting contextual details about respondents
Dependability	Reporting	44-48	Detailed description of research methods provided (to facilitate study replication)
Confirmability	Reporting	48	Admission of researcher's beliefs and assumptions
	Reporting	Appendix E	Full codebook reported providing audit trail of theme abstraction
	Reporting	44-48	Detailed description of research methods provided (to facilitate scrutiny of results)

Results

To be included in this study, respondents had to represent a nonprofit organization that was involved in disaster recovery efforts in the city of Wilmington after Hurricane Florence. In total, 18 interviews were conducted with 19 leaders representing 17 local nonprofit organizations involved in disaster recovery in some capacity. All interviews were conducted primarily in English. Interviews lasted between 48 minutes and 93 minutes, with an average interview time of 62 minutes.

The organizations represented in the dataset varied in size and scope of services provided. To contextualize the results, summary information about the organizations the respondents represent are provided in Table 3.2. Specific details of size and nature of the organization are concealed to protect the anonymity of respondents.

Table 3.2. Respondent organization summary information

Respondent #	**Organization mission includes focus on Latinx community (Y/N)**	**Organization mission includes focus on justice (Y/N)**	**Organization mission includes focus on disaster recovery or resilience (Y/N)**	**Organization is a local branch of national or international organization? (Y/N)**
Respondent 1	N	N	N	Y
Respondent 2	N	N	Y	N
Respondent 3	N	N	N	N
Respondent 4	N	N	N	Y
Respondent 5	Y	N	N	N
Respondent 6	N	N	Y	Y
Respondent 7	N	Y	N	Y
Respondent 8	N	N	N	Y
Respondent 9	N	N	N	N
Respondent 10	N	N	Y	N
Respondent 11	N	N	Y	Y
Respondent 12	N	N	Y	Y
Respondent 13	N	N	Y	N
Respondent 14	N	Y	Y	N
Respondent 15	N	N	Y	N
Respondent 16	N	N	Y	N
Respondent 17	Y	Y	N	N
Respondent 18	N	N	Y	N

Thematic analysis of data revealed the degrees to which leaders involved in disaster recovery recognize the Latinx community in Wilmington, NC (henceforth Latinx community), how those individuals come to realize that recognition, and the influence of that recognition on procedural and distributional justice. Together, these findings begin to render a picture of how nonprofit leaders can advance environmental justice in the disaster recovery context.

Recognition of the Latinx community

To answer the first research question, which explores the degree that nonprofit leaders involved in disaster recovery recognize the Latinx community, recognition was coded when respondents expressed awareness of group difference associated with the Latinx community. In the data, recognition emerged in the following categories: awareness of needs and preferences, geography, experiences, culture and values, and capacities associated with the Latinx community (Table 3.3). Within and between these categories, recognition was exhibited along a spectrum, some individuals displaying baseline levels of recognition, others more nuanced.

All respondents recognized that a need of the Latinx community was access to information in Spanish to address language barriers. We are considering the acknowledgment of need for Spanish translations a baseline level of recognition. That is, if the only thing individuals recognize about the Latinx community is the need to provide information translated in Spanish, they would be considered "low-recognition".

Within the interviews, we observed variation in the degree to which information access needs were recognized among respondents. For example, 11 respondents discussed the need for translated communications. Specifically, some respondents noted a need for Spanish-speaking personnel who could communicate with Latinx clients seeking the organization's services. Also noted was a need for using communication outlets that were preferred by the Latinx community, such as a specific radio station or church.

Notably, one respondent discussed diversity *within* the Latinx community regarding language needs. They highlighted that some individuals who identify as Latinx are primarily English speakers, some are primarily Spanish speakers, and others may have different language

roots. This level of recognition, centered on language, was more nuanced than other respondents, and suggests a need to consider translations beyond Spanish:

> A lot of them, they come from regions in Mexico for example, where Spanish is their second language. So they come from regions that are predominantly indigenous areas.
>
> *— Respondent 5, recognition of needs and preferences and culture and values*

As illustrated by the quote, the respondent also recognized ethnic variation of the Latinx community in Wilmington. This recognition was complemented by an understanding of how these differences may also influence group ideologies within the Latinx community:

> A lot of us, we come from countries, unfortunately, where governments that identify as socialist destroy our countries. So when we are here, a lot of us have these instinctive reactions against everything that could be related with socialism. So that's happening with Cubans, with Venezuela, with people from Central America. With people from Mexico and El Salvador right now it's very interesting. Because if you talk to them, a lot of them, they agree with their presidents and they are openly socialist. So it's a mix of situations. You can't make generalizations about the Latinx community because we come from different backgrounds with different experiences. *— Respondent 5, recognition of culture and values and experiences*

This quote illustrates acknowledgment of difference *within* the Latinx community, once again a more nuanced manifestation of recognition. This degree of recognition did not arise beyond this respondent, who also identifies as Latinx. Additionally, the respondent noted a tendency for others to generalize the Latinx community, "*almost everyone refers to people who are undocumented*" (Respondent 5). This emphasis on undocumented persons was evident in the data generated as part of this study.

Although no other respondent recognized difference in the ethnic and geographical backgrounds of the Latinx community, some indicated recognition of the current geographical

circumstances of the Latinx community. Specifically, they discussed specific mobile home communities in or near Wilmington that were occupied primarily by the Latinx community. One respondent, who worked closely with Latinx community members living mobile homes, expressed frustration when an organization responsible for communicating safety information failed to acknowledge the physical location of this disadvantaged community:

> [They told us] "we have this flyer we're trying to get out to low lying areas with the fire departments and we need interpreters to go out with them." And I said, "send me the addresses." Well, not a single one of them was a mobile home community. It was the wealthier areas. I was just like, "you don't need interpreters there…" And they were like, "well, where are these people living?" I had to literally, on a map, mark and send it back to the [them] because they had no idea where their residents live. — *Respondent 17, recognition of geography*

Respondents also recognized trust and fear issues among the undocumented Latinx community. Most respondents specified that the lack of trust was directed towards government entities. This indicates recognition as it shows the respondents' awareness of undocumented Latinx experiences in the community, specifically their interactions with government officials.

> But then you've also got that barrier, of legal and illegal. We think we're doing so good having FEMA come. Well FEMA has uniforms and badges and coats that say F-E-M-A on them. [The undocumented community] doesn't know if they're going to turn them into ICE or if they're going to arrest them. Are they going to deport them? You know, are they going to take their children? — *Respondent 2, recognition of experiences*

Some respondents also recognized that this distrust towards or fear of government entities impacts how the undocumented Latinx community perceive and interact with other disaster recovery organizations or services regardless of government affiliation:

> A lot of disaster relief work is government based or perceived to be government based. So people are not going to be so willing to access resources. — *Respondent 11, recognition of needs*

In some cases, respondents also recognized the unique capacities of the Latinx community, discussing features of the community that make them resilient and admirable community members:

> I find that the [Latinx] students I work with… they're more aware in so many ways, whether that be like how to treat land, or how to treat people, but they're also very willing to listen. And that is not something that I find in the general population of college students today, to just sit and listen and learn. — *Respondent 13, recognition of capacities*

Overall study findings reveal that most nonprofit leaders recognize the Latinx community beyond the defined baseline (Spanish-language needs only). For example, respondents indicated recognition of specific recovery needs and preferences (language, communication, trust) and geographies of the Latinx community. However, the depth of that recognition varied among leaders. Some individuals exhibited more nuanced recognition of the Latinx community. These "higher recognition" respondents, for example, discussed detailed experiences of Latinx community members, culture and values of the Latinx community, and unique capacities of the Latinx community.

Table 3.3. Categories of recognition of the Latinx community

Recognition of Latinx community	**Proof quote**
Needs and preferences	As North Americans, we think we have the answer to everything. We don't even know the questions. But the people we're trying to help do. And what they need more than anything is a voice. They need to be heard and they'll have the ideas of what they need within their community. — *Respondent 4*

Table 3.3 (continued).

Geography	It's also perceived to be that there aren't as many Latinx folks in the Wilmington area. But part of that is because the neighborhoods aren't as concentrated. There are smaller pockets, you know, like mobile home neighborhoods where lower income Latinx folks are predominant, but they're very much off the beaten path. They're not located on major thoroughfares through downtown. So they're not as visibly located. But the other thing is that the majority of the Latinx population in the region live in neighboring or rural counties. — *Respondent 16*
Experiences	[Latinx persons] are victimized time and time again by greedy landlords. So even if they have damage, maybe it wasn't enough damage that really should have made them have to leave their home. But then they leave their home. — *Respondent 2*
Culture and values	Just knowing the differences, different cultures and the religion and the family dynamics and just being more aware of them. Not in a sense of like, they're so different. It's just being respectful of it. Like understanding, there's probably going to be two or three generations in a household. And that's a positive thing. That's not a 'oh my gosh, you still live with your mother.' It's we're here because we're unified… Like it's just that's the family dynamic and being understanding of that. — *Respondent 18*
Capacities	They're very self-reliant. And I know family is a big component within that community, family, and that sense of community. — *Respondent 12*

Factors Contributing to Leader Recognition

To answer the second research question, centered on the how nonprofit leaders come to recognize the Latinx community, analysis focused on actions leaders took that contributed to their recognition. Data reveals four pathways through which leaders came to recognize (to varying degrees) the Latinx community, including professional and service interactions, collaboration with high-recognition individuals, partnerships with other organizations, and using technology and data (Table 3.4).

One way that recognition manifested among respondents was through *professional and service interactions* with the Latinx community. Specifically, through respondents' formal roles in their organizations or through volunteer roles, they interacted with Latinx community and learned about the community through that process. For example:

> But my personal interaction with the Latinx community goes back to 15 years when we moved here, and I volunteered with the literacy council and other groups teaching English and doing other things so that I could meet people. And most of the people that I met through those opportunities were members of the Latinx community and just kind of stayed in touch and that has just grown. — *Respondent 17, recognition through professional and service interactions*

Professional and service interactions were the most common way through which the respondents came to recognize the Latinx community. Complementing this finding, some respondents who indicated not knowing as much as they would like about the Latinx community, also noted that they did not have sufficient professional or service interactions with that community. Validating the interpretation of limited engagement, a respondent, who identifies as Latinx, discussed observing poor quality interactions between nonprofit organizations and the Latinx community:

> I have been working with people who are helping my [Latinx community], nonprofit organizations. And one thing that I find really interesting is that these organizations, they want to help but they don't talk too much with people. When we go to communities to deliver, for example, boxes with food… They just choose a community and they just go there and they deliver the boxes. That's what we are doing. [Nonprofit organizations] don't talk a lot with people in the in those communities. And it's interesting because what you can find in that type of communities is really diverse realities.
>
> — *Respondent 5, recognition through professional and service interaction (negative case)*

Some leaders who acknowledged their limited awareness of the Latinx community, manifested recognition by *collaborating with high-recognition individuals*. In these cases, the

objective of collaboration was specifically about learning about the Latinx community (i.e., needs and preferences, geography, experiences, culture and values, capacities):

> I have friends who are interpreters and who don't just interpret, but they also go out and work within the Latinx community, mobile home parks and such. And they may tell me, "Well, we need this. Do you know about that?"
>
> *— Respondent 7, recognition through collaboration with high-recognition individuals*

In a separate example, a respondent highlights how not having connections to high-recognition individuals hindered their organization's ability to understand the needs of the Latinx community.

> As far as [our organization] was concerned and why this was so illuminating, was we get our information for the most part from the emergency managers in each of the municipalities. So if the emergency manager doesn't know that there's a community that has needs, then we don't know there's a community that has needs. And so part of what we've been trying to do since then is build inroads into those communities. *— Respondent 7, recognition through collaboration with high-recognition individuals (negative case)*

Leaders also enhanced their recognition of the Latinx community by *partnering with other organizations* involved in disaster recovery. Leaders sometimes reached out to other organizations with the specific purpose of increasing their awareness of the Latinx community in some way, but this was not always the case. For example, in one case, the opportunity to partner with an organization, and increase their recognition of the Latinx community as a result, was not initiated by the leader being interviewed. But because that leader was receptive to the opportunity to partner, they manifested greater recognition of the Latinx community as a result:

> [Partnering organization] sent me an email saying "Hey, this is what we're doing. This is what we're seeing. Can we partner with you guys for [resources]? Because we're seeing the [Latinx] families are really just struggling to adequately provide [resources] for their family.
>
> *– Respondent 8, recognition through partnerships with other organizations*

The last way recognition of disadvantaged groups manifested among respondents was by *using technology and data*. Technologies discussed were primarily mapping software. One specific software discussed by a respondent was *MissionInsite (ASC Technologies, 2022)*, a software program that helps churches understand the location and demographic characteristics of their community:

> We also do demographics. And [MissionInsite] shows the number of people by ethnic group and by language that they speak. And it'll show whether the language is the only language they speak, or it'll let me know how they're assimilated in any way.
>
> *— Respondent 4, recognition by using technology and data*

Other data that promoted recognition included information collected as part of intake forms, registries, and surveys. With respect to data, it's important to note that depending on the strategies used to collect data, the respective data may be susceptible to biases. For example, the quality of data could be impacted by available organizational resources, which one respondent noted (Respondent 3). The quality of the data is also dependent on the openness of disadvantaged groups to provide their personal information.

Table 3.4. Process through which recognition manifested among leaders

Process through which recognition manifested among leaders	**Proof quote**
Professional and service interactions	We also have a few ethnic specific churches that primarily exist to help the first-generation immigrants who have a culture in a mother language and something other than English. — *Respondent 4*

Table 3.4 (continued).

Collaboration with high-recognition individuals	You find the community leader, right…So identifying them, not being afraid of just like going out and talking to them, because we're all people. — *Respondent 18*
Partnerships with other organizations	I'm actually having [partnering organization leader] come speak with our staff very soon about the different [immigration] statuses — *Respondent 6*
Using data and technology	We've added four health related questions to our intake form… And when we first added that, I was like, man, nobody's going to want to tell us that. But very surprisingly, people really jumped at the opportunity to have, have a nurse call them back that could maybe help them navigate a little bit about what their concerns are, or questions they might have. — *Respondent 14*

The Role of Recognition on Procedural and Distributional Justice

To answer the third research question, exploring how nonprofit leader recognition of the Latinx community related to procedural and distributional justice, we coded instances when respondents discussed procedures and distribution practices that integrated awareness of the Latinx community. Evidence shows that recognition by nonprofit leaders can advance procedural and distributional justice in the disaster recovery context. The data revealed explicit instances when leader recognition influenced procedural justice, when recognition influenced distributional justice, and when recognition influenced both procedural and distributional justice (Table 3.5).

A simple example of the link between leader recognition and progress towards procedural and distributional justice include respondents who recognized language needs among the Latinx population made efforts to ensure that information and communications were translated to Spanish (i.e., procedural justice). Some organizations also hired Spanish-speaking employees to ensure that there would be an organizational representative available to assist Spanish-speaking clients (i.e., procedural justice). Both examples are an example of the way recognition (of language needs) influenced procedural justice, as Spanish-speaking clients now had a greater

opportunity to have their needs heard by those making decisions about the distribution of resources and services.

Additionally, the following quote highlights how some who recognized trust and fear issues among a subset of the Latinx community, were able to implement strategies to better access that community. Specifically, they implemented more culturally appropriate practices for this community to voice their needs, advancing procedural justice.

> I know through the coalition, there was an effort specifically to reach into some of the pockets of the Latinx community in our area, because of that fear of talking to FEMA… And so [organizations] were making an intentional effort to go into those communities to identify the need without requiring FEMA documentation and all that sort of stuff.
>
> *— Respondent 10, recognition influence on procedural justice*

Also pointing to the influence of recognition on procedural justice, several respondents indicated that their organizational policies were changed or reinterpreted, or new products were developed or offered, to account for acknowledged group need (i.e., recognition).

Respondents also provided evidence of the link between recognition and distributional justice. For example, a respondent who recognized the needs and geography of a subset of the Latinx community, directed resources to that community through a neighborhood adoption program (distributional justice):

> We formed bilingual teams of people that would go out and adopt neighborhoods and go see them every evening with food supplies, supplies and food.
>
> *— Respondent 17, recognition influence on distributional justice*

Further, underscoring the interacting link between recognition, procedural, and distributional justice, the following quote highlights how by recognizing Latinx community needs and geography, a community organization was able to develop culturally sensitive methods through

which to reach out to the Latinx community (procedural justice) and ultimately distribute resources to that community (distributional justice):

> I think Florence was a big wakeup call in that regard that there were a lot of people that had the same level of devastation. But in the current political climate, they were afraid to come forward and ask for help. And so part of what we started doing was partnering with Latino churches d and ones that served the Latinx community to see if we can meet with some of those families who had the same level of devastation. And then we issued them the same level of financial assistance.
>
> *— Respondent 12, recognition influence on procedural and distributional justice*

Most cases that illustrated progress towards distributional justice exhibited the interacting link between recognition, procedural justice, and distributional justice.

Understanding the physical locations of disadvantaged groups emerged as an important category of recognition for being able to promote distributional justice. If leaders didn't know where communities were physically located, resources couldn't reach those communities, resulting in distributional injustice. However, while respondents indicated that geospatial data was an important recognition baseline to access and provide resources to the disadvantaged community, more was necessary to promote distributional justice. For example, respondents discussed using appropriate channels through which to engage with the disadvantaged group, a culturally appropriate product, or updated policies that addressed the circumstances of disadvantaged groups as important to build progress towards distributional justice. These examples all require more nuanced recognition beyond geography.

Finally, we'd like to highlight that despite leader recognition, there are some barriers noted in the data that impeded the recognition, procedural justice, and recognition justice link. One barrier was limited financial flexibility. Some organizations were constrained by funding regulations, requiring for example, that beneficiaries of resources provide proof of citizenship.

Limited access to resources also influenced an organization's ability to promote distributional justice. For example, one high-recognition respondent initially struggled to provide resources to the Latinx community through their organization because they lacked the resources in the first place:

> I think having a connection to [organization] would have been more helpful because we were kind of spinning our wheels every day looking for donations of things…. and [our efforts] would have been much improved if we had just had support from the [organization]. Now that we do have that connection, I think it would be much better in the future when another hurricane or something happens. — *Respondent 17, recognition link failure*

While several respondents discussed broader organizational constraints, some indicated that other organizations could sometimes help fill gaps their organization couldn't address, restoring the link between recognition, procedural justice, and recognition justice.

Table 3.5. Recognition influence on other dimensions of justice

Recognition influence on other dimensions of justice	**Details of recognition exhibited by leader**	**Summary of influence on justice dimension(s)**	**Proof quote**
Recognition influence on procedural justice	Leader recognized needs of family to achieve in a safe and healthy living environment	Organization expanded the eligibility of their home building program through their willingness to develop a new housing plan that accommodated a large family's needs	I always make sure that there's no more than two people and usually everybody has their own bedroom unless they're the same gender and they're very close in age, and they're not anywhere near being adult… But we actually have someone who is probably going to be applying and they've got… 13 people in their family. And… we've never built anything more than a five bedroom. So we're willing to do what they want in us. — *Respondent 6*

Table 3.5 (continued).

Recognition influence on distributional justice	Leader recognized needs of Latinx community through partnership with another organization	Organization formally established partnership to provide resources to the Latinx community	[Partnering organization] sent me an email saying "Hey, this is what we're doing. This is what we're seeing. Can we partner with you guys for [resources]? Because we're seeing the [Latinx] families are really just struggling to adequately provide [resources] for their family. — *Respondent 8*
Recognition influence on procedural and distributional justice	Leader recognized language accessibility needs which in turn helped them recognize resource needs	Organization implemented more appropriate practices to reach out to community (Spanish, informal, anonymous request for resources), and distributed resources they learned were needed	Some of it was going to those mobile home communities, for example, that are predominantly Latinx families, and just going door by door, and either knocking, trying knocking if nobody would come to the door, putting a sign on the door in Spanish and English that said… "if you have any needs, write it on this paper, we'll be back this afternoon to pick it up, and we'll bring those supplies for you tomorrow. — *Respondent 12*
Recognition link failure	Leader recognized policy barriers hindering access to resources	This organization has policy requirements because of their federal funding that impeded the recognition link with other dimensions of justice	And so [organizations] were making an intentional effort to go into those communities to identify the need without requiring, you know, FEMA documentation and all that sort of stuff. And so, while we have not necessarily been as successful doing work in that community, I know that through the coalition there have been [successes]. — *Respondent 10*

Discussion

This study explored how assigned nonprofit leaders recognize the Latinx community and how that ultimately influenced the capacity of organizations to address the needs of that community in ways that promoted environmental justice. This study is situated a community with access to diverse disaster recovery resources, providing a valuable context through which to explore this

phenomenon. This study yielded three key findings, directly linked with the research questions, that can inform organizational approaches to promote environmental justice in a disaster recovery context. Key findings can help practitioners develop strategies to build awareness of environmental risks and experiences disadvantaged communities face, and appropriate approaches for addressing risks and corresponding impacts.

Key finding #1: Recognition of the Latinx community varies among nonprofit leaders. We found that nonprofit leaders exhibited varying degrees of recognition related to the needs and preferences, geography, experiences, culture and values, and capacities associated with the Latinx community. On one end of the spectrum, there was a baseline recognition of the need for Spanish language communication, an awareness that all respondents shared. On the other end of the spectrum, was a recognition of diversity *within* the Latinx community across different categories of recognition. Most respondents were situated between these two extremes. For respondents who had more nuanced recognition of the Latinx community, they illuminated ways that baseline recognition of needs, such as Spanish language communications, would be an insufficient way through which to counter barriers to recovery.

*Key Finding #2: There are diverse pathways through which nonprofit leaders come to recognize the Latinx community***.** We identified that leaders adopt more sophisticated recognition of the Latinx community through engagements with the community or trusted community sources, technology and data, and direct communications and partnerships with other assigned leaders who regularly work with Latinx populations. Professional or service interactions with the Latinx community (whether as volunteers, paid staff, or clients) was a dominant pathway through which leaders enhanced their recognition of the Latinx community. Despite this, some respondents indicated limited representation of the Latinx community in their organization,

pointing to clear opportunities through which to widen opportunities for leader recognition in the study community. Existing research has highlighted the importance of engaging impacted communities in organizations to align organizational practices and priorities to the needs of impacted communities (Krings & Copic, 2021). In this study, we refine this idea by suggesting that the engagement of disadvantaged groups within an organization promotes leader recognition, which in turn, can have an impact on organizational policies and the way programs are structured and implemented.

Key finding #3: There is a link between leader recognition, procedural justice, and distributional justice. Data showed evidence that when nonprofit leaders recognized the Latinx community, they were able to foster alignment in organizational policies and practices to reflect that difference, promoting access to decision-making procedures (procedural justice) and recovery resources and services (distributional justice). This was exhibited through: changes to engagement strategies (e.g., Spanish flyers on doors), clarifying and changing residency status requirements to receive resources, offering Spanish-language communications delivered by trusted sources, and referring survivors to resources that best suited their needs and circumstances. When procedures for engaging the Latinx community were based in recognition, individuals from that community were better positioned to participate in recovery efforts. This key finding echoes scholarship that underscores the importance of acknowledging and legitimizing difference across and within Latinx communities to empower their meaningful participation in addressing environmental issues that have been historically dominated by White values, priorities, and concerns (Anguiano, Milstein, Larkin, Chen, & Sandoval, 2012; Fingal, 2019; Gibson-Wood & Wakefield, 2013; Naiman, Schusler, & Schuldt, 2019; Pulido, 1996). Further, this key finding also supports scholarship that points to a mutually supportive role of the

three environmental justice dimensions (Hourdequin, 2019; Schlosberg, 2003; Schlosberg & Carruthers, 2010). Results also yielded evidence that recognition was relatively rudimentary among many leaders, impacting the organizations capacity for procedural and distributional justice, and hindering just recovery outcomes for the Latinx community.

Conclusion

This study examined how nonprofit leaders navigate and address of the disaster recovery needs of Latinx residents. The results revealed that nonprofit leaders have varying degrees of recognition of the Latinx community, and that recognition is often influenced by a leader's engagements with the Latinx community, collaborations and partnerships with others who recognize the Latinx community, and use of technology and data. An observed link between recognition, procedural justice, and distributional justice indicates that nonprofit leaders can and do function to exacerbate inequities in a disaster recovery context. However nonprofit leaders, through a variety of actions, can work to counter this. Throughout the data, we found that many respondents were seeking to promote just outcomes, and one possible route to build progress towards that aim is through a greater emphasis on the role of recognition.

Chapter 3 Acknowledgements

This work associated with this chapter was a collaborative effort. Author contributions include the following: Olivia Vilá (North Carolina State University, Department of Parks, Recreation, and Tourism Management): conceptualization; funding acquisition; methodology; investigation; formal analysis; writing – original draft; writing – review and editing. Dr. Bethany Cutts (North Carolina State University, Department of Parks, Recreation, and Tourism Management): conceptualization; funding acquisition; resources; supervision; writing – review and editing. Dr. Whitney Knollenberg (North Carolina State University, Department of Parks, Recreation, and Tourism Management): conceptualization; writing – review and editing. Dr. Louie Rivers (North Carolina State University, Department of Forestry and Environmental Resources): conceptualization; writing – review and editing.

I also acknowledge contributions from: Dr. Laura Bray: Writing – review and editing. Dr. Gavin Smith: Writing – review and editing. Finally, I acknowledge and thank each of the nonprofit organization leaders who volunteered their time to participate in the research study, and those individuals in Wilmington who helped me learn about the community I was conducting research in.

Chapter 3 Funding Sources

This work was supported by NC Sea Grant's and the Water Resources Research Institute's Joint Graduate Student Research Funding Opportunity, funded by the National Oceanic and Atmospheric Administration (agreement number: NA18OAR4170069).

CHAPTER 4. RECOGNITION AND ETHICAL RESEARCH PRACTICES: THE ROLE OF COMMUNITY SPECIALISTS[3]

Abstract

Researchers engaged in long-term disaster recovery research, especially those exploring issues of equity, are uniquely positioned to influence environmental injustices in the communities they study. For this reason, it's crucial for researchers to be critical of their methodological choices and make informed decisions about the methods they use to generate and communicate data. In this chapter, we build on ongoing disaster research ethics discussions, focusing on the role that research processes and corresponding data can play in influencing environmental justice struggles in disaster impacted communities being studied, what we term the "EJ ethical dilemma." We then highlight how making ethical decisions about research processes to address this dilemma requires an emphasis on *recognition*, the acknowledgement and respect of difference, a key pillar of environmental justice. We share an experience implementing a long-term recovery research protocol that includes the deliberate involvement of community members in the research process as *Community Specialists* and discuss how their engagement contributed to recognition and more ethical research practices. Throughout the chapter, we provide a blueprint for other post-disaster researchers seeking to integrate Community Specialists into their own work and discussing potential implementation barriers and recommendations to overcome challenges.

Keywords: research methods, environmental justice, ethics, action research

[3]Author contributions for this chapter include Dr. Bethany Cutts, Dr. Laura Bray, and Margaret Crites. Author affiliations and contribution details are included in the acknowledgements section of this chapter

Introduction

Research introduces social relations and knowledge creation processes into post-disaster communities (Wordsworth, Hall, Prayag, & Malinen, 2021). As a result, their projects have the potential to shape long-term disaster recovery trajectories (e.g., Naylor, Fall, & Fox, 2020). To reduce the burden of research participation on communities, recovery studies scholars have developed transdisciplinary ethical frameworks (Browne & Peek, 2014; Louis-Charles, Howard, Remy, Nibbs, & Turner, 2020). Such frameworks aim to promote non-extractive data collection. This paper assesses whether such frameworks are sufficiently attuned to the social and ecological complexities of communities negotiating recovery from a position of disadvantage which we call the "environmental justice" ethical dilemma. A brief review of existing ethical approaches demonstrates that current disciplinary discussions about ethics in disaster research practices (e.g., Browne & Peek, 2014; Louis-Charles et al., 2020; Van Brown, 2020) provide an effective starting point from which to assess how post-disaster research processes can influence environmental justice struggles in disaster impacted communities. However, existing ethical frameworks designed to guide recovery studies do not fully attend to *recognition* – defined as the acknowledgement and respect of community values, experiences, identities, priorities, and histories. Recognition is a key component of environmental justice philosophy (Fraser, 2000; Schlosberg, 2003; Young, 1990).

To understand whether attention to recognition changes the ethics of research procedures, we use collaborative authoethnography to identify tensions and opportunities to enhance recognition as part of our implementation of the action research methodology known as Community Voice Method (CMV). Our project team worked with local leaders in Robeson County, North Carolina (NC), a racially diverse, impoverished, rural county following

unprecedented hurricane-induced flooding 2016 to identify research needs, which meant we were appropriately situated prior to a second flood disaster in 2018 and the COVID-19 pandemic. Since CVM, and action research in general, is intended to be practically useful and engender deep reflexivity (Brydon-Miller, Greenwood, & Maguire, 2003), it provides an unique opportunity to understand and adjust the ethical frameworks of recovery studies. Our collaborative autoethnography highlights the key role *Community Specialists* played in identifying and resolving ethical dilemmas related to environmental injustice that would have otherwise gone unaddressed in the project. Community Specialists are defined as paid research team members who live and work in the disaster-affected community. We discuss the implications of our findings for ethical frameworks guiding other recovery studies, including those that are not using an action research approach.

Contextualizing Environmental Justice

Environmental justice is a framework for understanding disparities in access to environmental benefits and exposure to environmental harms for people and communities (Holifield et al., 2018). The framework has emerged out of a long history of the systematic study of environmental burdens and formal emergence of the environmental justice movement in the early 1980s, which called for end to environmental racism, the right for all people to be free from ecological destruction, public policy be based on mutual respect and justice for all peoples, and the right to participate as equal partners at every level of decision-making (FNPOC EJS, 1991; Taylor, 2011; Taylor, 2000). Over the last fifty years, environmental justice scholarship has focused on distributional equity, fairness in the distribution of environmental benefits and harms, as the defining feature of environmental justice (Bell & Carrick, 2018). However, expanded conceptualizations of environmental justice now consider interacting components beyond

distribution (Holifield Chakraborty, & Walker 2018). In support of a more comprehensive environmental justice framework, scholars have supported the integration of procedural justice and recognition alongside distributional justice (Schlosberg, 2003). Procedural justice refers to fairness and inclusion of those affected in the policy- and decision-making processes (Gould, 1996; Schlosberg, 2003; Young, 1990), and recognition refers to the acknowledgement, respect, and legitimization of difference (Fraser, 2000; Schlosberg, 2003; Young, 1990). These three "pillars" of environmental justice (i.e., distributional justice, procedural justice, and recognition) are mutually dependent and together help better explain the prevalence of inequity, the ways that inequities are produced and reproduced, and how injustice is experienced by people and communities (Schlosberg, 2003) (Figure 1).

While the many ways that environmental injustice can manifest during the long process of disaster recovery continue to be extensively documented (Bullard & Wright, 2009; Cutter, 2012), little attention has been paid to the role that scientists can play in the production, reproduction, or mitigation of environmental injustice – particularly for research that aims to generate "broader impacts" from research results. However, now more than ever, disaster scholars often emphasize equity in their study of phenomena such as post-disaster structural risks and impacts (Chakraborty et al., 2019), health risks and impacts (Raker et al., 2020), reconstruction and rebuilding (Gyawali, Tiwari, Bajracharya, & Skotte, 2020; Mehta, Brennan, & Steil, 2020), recovery planning (Gibson, Hendricks, & Wells, 2020; Hamideh, 2020; Rivera et al., 2021), and resource distribution for recovery and mitigation (Emrich et al., 2020; Griego et al., 2020; Wong, Broader, & Shaheen, 2020). Despite good intentions to inform more equitable practices, researchers must be critical of research practices, the resulting data, and their potential influence on environmental justice struggles of disaster impacted communities, to ensure that

their work does not inadvertently perpetuate environmental injustices. Below, we highlight how ongoing discussions about ethical post-disaster research practices can serve as a starting point for considering how researchers and research play into local environmental justice struggles.

Linking Disaster Research Ethics with Environmental Justice Struggles

The importance and ethical responsibility of executing research that has social value or "broader impact" is not new. Since the 1970s, most scholars who have conducted research with human subjects have been prompted to consider how the risks posed by the research project are justified by the "good" outcomes of their research (Browne & Peek, 2014). The importance placed on the social value of research is manifested on other fronts as well. For example, to be a competitive applicant for research funding through various agencies, such as those funded through the National Science Foundation (NSF), one must have a convincing case for the practical impacts of one's research. Additionally, scholars are encouraging universities to expand their service missions in ways that draw lessons from land-grant institutions and their extension offices in order to better address modern environmental challenges (e.g., climate change) (Kopp, 2021).

However, to the degree that long-term recovery researchers are considering benefits of research and imagining the practical utility of their intended project outputs, they must also consider the long-term harms and broader injustices that could manifest through their work. While Institutional Review Boards (IRB) prompt researchers to consider immediate harms that research participants may face through their engagement in the research process, a consideration of broader community-wide implications of the proposed work is notably missing. These broader implications are especially important to consider in post-disaster research because the work occurs at a point that exposes existing inequities and vulnerabilities (Bolin & Kurtz, 2018; Cutter, 2012) and opens "policy windows" (Birkland & DeYoung, 2012). In this context,

researchers are uniquely positioned as technical experts and providers of data who can influence decisions that impact the futures of communities recovering from disasters. Even social science research that does not have an explicit applied component still has on-the-ground impacts for the communities and local issues being studied (O'Brien, 1993; Scott, Richards, & Martin, 1990). In all cases, researchers must be critical of the processes through which they generate data to reduce the likelihood that it produces or reproduces environmental injustices as communities rebuild and recover. However, formal institutional ethical review practices do not emphasize the potential for long-term negative impacts from research engagement (Browne & Peek, 2014).

Existing research points to ways that disaster research often fails to prioritize justice and inadvertently cause harm for impacts communities. Using a justice lens, Louis-Charles et al. (2020) discuss ethical research practices in post-disaster fieldwork in the Caribbean. The authors highlight how particular post-disaster fieldwork practices cause harm and argue that when researchers make decisions about fieldwork, they must prioritize just procedures and outcomes that promote survivor agency, equitable treatment without the requirement of justification of survivors, the harnessing of local capacities, and adherence to local expectations. The authors discuss several common practices that fail to prioritize just procedures and outcomes for disaster survivors and impacted communities including: 1) research that fails to consider social structure and historical contexts; 2) parachute, helicopter, or "vulture" projects conducted by outsiders that exclude the input of local communities; 3) projects that fail to leverage local capacities (e.g., such as local leadership or technical experts); and 4) unfair compensation for and exploitation of research participants. Relevant to this chapter's discussion of environmental injustice, the authors highlight that these unethical practices result in research that is not valuable to impacted communities and creates fractured relationships between institutions of knowledge production

and disadvantaged communities (Louis-Charles et al., 2020). We build upon this focus on the social value and long-term impact of research in this chapter.

This potential for long-term negative impacts aligns with what Browne and Peek (2014) characterize as *ethical dilemmas* in one of the first comprehensive considerations of ethics in long-term disaster research. Specifically, they define ethical dilemmas as "situations that raise moral or ethical concerns where there is no obvious, clear-cut resolution" (Browne & Peek 2014:84). While their article primarily focuses on the ethical dilemmas associated with the interpersonal relationships between the researcher and the research participants in long-term recovery research, we believe the framework can be used more broadly to help researchers critically consider how they influence the communities they study, aligning with Louis-Charles et al.'s (2020) emphasis on just procedures and outcomes. Here, we discuss a broader category of ethical dilemma – **the researcher's potential to influence environmental justice struggles in the disaster impacted community they are studying**. Examples of specific environmental struggles could be those related to exposure to hazards (e.g., Collins et al., 2019; Grineski et al., 2017) or access to environmental protections from hazards (e.g., Loughran & Elliott 2021; Nelson & Molloy 2021). In the interest of brevity, we will refer to this key dilemma as the "EJ ethical dilemma" throughout this paper.

Browne and Peek (2014) provide a flexible "ethical toolkit" consisting of seven co-existing moral considerations (Ross, 1930) (listed and defined in Table 4.1) to help navigate the uncharted ethical dilemmas that researchers may confront across the disaster lifecycle. They are intended to help guide human decisions about right and wrong actions, acknowledging the complexity of human relations (Browne & Peek, 2013).

Table 4.1. Definitions of the moral considerations in Browne and Peek's (2014) ethical toolkit

Moral consideration (D. Ross, 1930)	**Definition** (Meyers 2011)
Fidelity	"Keep promises, whether explicit, or when any reasonable person would interpret one's actions and circumstances as implying such a vow" (p.327)
Reparation	"Effect repair for harms caused to others, whether directly or indirectly" (p.327)
Gratitude	"Show appreciation for others' actions that benefit you" (p.327)
Justice	"Distribute social goods in a manner that both protects liberty and provides the greatest benefit to the least advantaged" (p.327)
Non-maleficence	"Avoid causing harm to others, including physical, reputational, psychological, emotional, and economic harm" (p.327)
Beneficence	"Do what you reasonably can to improve the situation of others" (p.327)
Self-improvement	"Strive to improve oneself, morally, intellectually, and physically. In other words, we have a duty to develop our character in a manner that would facilitate moral discernment and steadfastness, while striving for healthy, well-functioning bodies" (p.328)

We highlight however that to effectively navigate the EJ ethical dilemma using Browne and Peek's ethical toolkit (2014), researchers may need to prioritize recognition. To give a concrete illustration of the role that recognition can play in just long-term recovery processes and outcomes, we highlight the case of the Holy Cross neighborhood, a predominantly African American and low-income community in New Orleans, recovering after Hurricane Katrina. As part of recovery efforts, technical experts involved in disaster recovery planning and project implementation in the Holy Cross neighborhood focused their efforts on their organizational priorities as opposed to those of the impacted community (Allen, 2013). The result was "forward-thinking" home and neighborhood upgrades that did not take into consideration the economic status of the community, compounded distributional inequities, and reduced the capacity to address community priorities such as those associated with transportation, education, public health, and economic prosperity (Allen, 2013). Reflecting on the process, Allen (2013) notes "from the beginning of the neighborhood planning process, the main tenets of cultural and representative justice were ignored" (p.236).

In the case of the Holy Cross neighborhood, if the technical experts had reflected on their actions and outcomes using Browne and Peek's ethical toolkit, they may have interpreted their involvement with the community as ethical, *depending on the degree to which they recognized the Holy Cross community*. That is, to what degree did the technical experts recognize what "greatest benefit" meant to the least advantaged (justice) in the Holy Cross neighborhood? What it meant to "do good" (beneficence) or "do no harm" (non-maleficence) to those living in the Holy Cross community? If the technical experts misrecognized or failed to recognize the Holy Cross community, as Allen (2013) notes occurred, they may have incorrectly characterized their processes and outputs as ethical.

The approach of the technical consultants in Holy Cross shares similarities with the process and objectives of many long-term disaster recovery research projects that have an "action" component. Ultimately the example showcases what can happen when technical experts (such as academics) make process-related decisions (like research methods) that fail to recognize and integrate local needs, values, and priorities of impacted communities, and more broadly fail to consider the environmental justice implications of their work. In the case of Holy Cross, technical experts misrecognized the community and transformed it in a way that was inconsistent with how the community viewed themselves and their future, perpetuating environmental injustices (Allen, 2013).

In the long-term recovery research setting, there are multiple recognition challenges that may emerge and should be addressed to promote ethical practices. First, is the issue of receptivity. In order to address issues of recognition, one must consider the bi-directional nature of the phenomena (Honneth, 1992; Kompridis, 2014). Misrecognition and failure to recognize both involve a struggle for recognition by those who are not recognized or misrecognized as well

as failures of receptivity by those in power (Honneth, 1992; Kompridis, 2014). In the context of long-term recovery research methods, struggles for recognition could be in part addressed with greater (non-coercive) opportunities for collaboration and participation in the research process by the impacted community. However, if acknowledging the bi-directional nature of recognition, researchers cannot consider their ethical responsibility met once individuals and communities have expressed themselves – they would also have to assess whether they have *listened*. This shifts the attention to the potential failure of the researcher and research process to acknowledge, respect, and legitimize difference.

A second challenge to recognition is that difference is in flux in post-disaster settings, requiring ongoing efforts to recognize (and re-recognize). Issues of misrecognition or failure to recognize in long-term recovery research are especially pronounced in the post-disaster context, as survivors are navigating intense social disruptions and transitions. Additionally, because identities are often constructed *in place* (Knez, 2005), disasters that destroy or severely alter physical surroundings create a uniquely sensitive circumstance as it relates to concepts and experiences of self. In these contexts, misrecognition may become more likely without ongoing maintenance.

A final challenge to recognition in the aftermath of disasters is the tendency to only recognize deficiencies. It is not uncommon for researchers to explore disaster scenarios with the frame of "*what went wrong?*". This frame can risk critiquing and devaluing personally and culturally meaningful places and services in ways that are intrusive or insensitive to locals who are making decisions about how to rebuild. Further, research projects that adopt action research approaches that are committed to providing applied and broader impacts, may be intent on helping resolve documented wrongs with data or policy suggestions or helping the community

recover through planning research projects. While noble, if this is done without the input of those impacted, as in the Holy Cross neighborhood case, researchers may risk further threatening the identities and integrity of those impacted by the disaster.

Partnerships with Communities to Address the EJ Ethical Dilemma in Long-Term Recovery Research

One way to reduce the likelihood of making poor decisions as it relates to the EJ ethical dilemma is by using research methods that protect researchers from those occurrences (Van Brown, 2020). This intentional decision-making has been proposed by scholars seeking to address problematic research practices documented in the post-disaster context. Louis-Charles et al. (2020) advocates for a justice approach to post-disaster fieldwork in the Caribbean to promote fair outcomes for disaster survivors being studied. While some of their recommendations are tailored to individual experiences and potential injustices (for example, those associated with compensation, traumatization, and coercion), they also highlight the importance of engaging local partners, scholars, and institutions to enhance the practical value and accessibility of research led by outsiders (Louis-Charles et al., 2020). Specifically, they argue that local researchers who serve as team members can leverage their community and cultural knowledge to improve research participation and enhance the likelihood of having representative data (Louis-Charles et al., 2020). Others also point to the benefits of including researchers who have been affected by a disaster in research associated with that disaster. They emphasize the value these researchers bring in terms of their ability to contribute to diverse knowledge pathways grounded in the experiences, feelings, and emotions of someone impacted by the disaster being studied (Marlowe et al., 2015; Barber & Haney 2016).

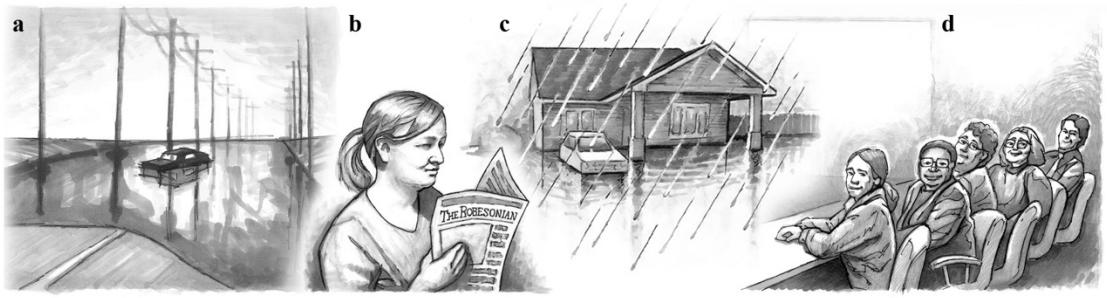
These studies suggest that the inclusion of those who understand the local context can enhance recognition capacity of the research process, which has implications for the procedural and distributional outcomes of the research. Additionally, by funding and supporting local researchers and community members as partners in the research process, "outside" researchers embed opportunities for accountability as it relates to recognition.

Despite the growing calls for more engagement of local researchers and community partners in post-disaster research (Barber & Haney, 2016; Gaillard & Peek, 2019; Gaillard, 2019; Louis-Charles et al., 2020; Peek, Champeau, Austin, Mathews, & Wu, 2020), there is often limited guidance regarding what these partnerships can look like and how they can be implemented practically. Moreover, limited work to date evaluates the degree to which these partnerships with local researchers influence the ethical and environmental justice outcomes of long-term recovery research. In this chapter, we share our team's experience implementing a long-term recovery research protocol that includes the deliberate involvement of community members in the research process as *Community Specialists*. We discuss how their engagement helped our team recognize the research community, and thus enhanced our team's capacity to implement ethical research practices that effectively tackled the EJ ethical dilemma. Through this work, we aim to accomplish three goals: (1) provide a blueprint of the Community Specialist role (2) highlight the ways that Community Specialists can enhance the recognition capacity of the research process and (3) broaden the discussion of post-disaster research ethics to include long-term community impacts as a point for consideration (such as the EJ ethical dilemma).

A Collaborative Autoethnography to Make Meaning out of Project BRIDGE and the Role of Community Specialists in Ethical Decision-making

Community Specialists were hired to contribute to Project BRIDGE in Robeson County, NC after Hurricane Matthew (2016). The Project BRIDGE priorities were drafted in consultation with a community advisory board and supplemented with observations from other community engagements, The guiding structure for Project BRIDGE was the Community Voice Method (CVM), a participatory documentary-filmmaking research process intended to precede and complement community planning meetings to promote greater representation of diverse stakeholder perspectives in deliberations about community decisions (Bray et al., 2020; Cumming & Norwood, 2012). The CVM aims to facilitate more inclusive practices and nuanced understandings of local issues and perspectives in contrast to traditional forms of community participation (Cumming & Norwood, 2012). We expanded the project scope to address the needs and interests of the community. Most notably, after Hurricane Florence (2018), a participatory soil sampling protocol that explored indicators of fecal and heavy metal contamination in residential soils was integrated into our team's CVM protocol, in response to early discussions with the project's community advisory board and preliminary community engagement. While the documentary interviews and soil sampling components are two different elements of Project BRIDGE, they were implemented simultaneously and often informed one another as part of the CVM. Figure 4.1 is a process illustration that summarizes the workflow of the various activities involved in Project BRIDGE. All of the materials relevant to the Community Specialists' engagement in Project BRIDGE are available on DesignSafe, a cyber infrastructure for sharing research data and tools to understand the impacts of natural hazards (Cutts, Bray, & Vilá, forthcoming).

Figure 4.1. Process illustration depicting the components of Project BRIDGE

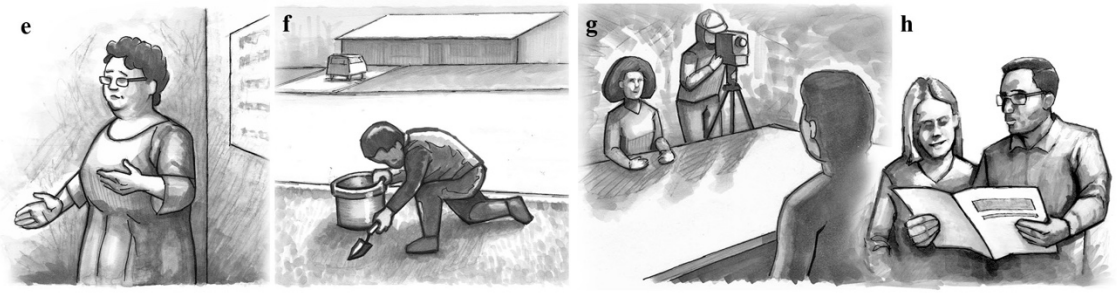


a. Hurricane Matthew hit Robeson County NC on October 4th 2016

b. University researchers and a community advisory board drafted research priorities supplemented with discourse analysis of community resources (e.g., newspapers), preliminary interviewing, and observing community recovery meetings

c. Hurricane Florence hit Robeson County on September 14th 2018

d. The university research team recruited and hired five Community Specialists for the Project BRIDGE team between December 2018 and March 2019



e. The full project team designed and led a three-day Project BRIDGE cross-training in March 2019

f. The research team tested residential soils for E. coli and heavy metals between January 2019 and October 2019 dates to respond to community concerns about soil contamination after flooding

g. The research team conducted 88 video recorded interviews with community members and local decision makers to explore resilience goals for the community between March 2019 and January 2020

h. The research team delivered project reports (in person when possible) to community members who participated in the soil sampling and interview components on an ongoing basis throughout the data collection process

i. The research team implemented a workshop in February 2020 and weekly remote work sessions between March and July 2020 to develop a community documentary based on the results from the interviews

j. The research team conducted three virtual focus groups (January, July, October 2021) with community members to share and promote discussion on the topic covered in the community documentary

k. The research team and other stakeholders shared the documentary across several community platforms and community feedback and action items were collected to prompt further discussion and local action

To explore the role of recognition in addressing the EJ ethical dilemma using Browne and Peek's (2013) ethical toolkit, we turn our attention to the role of Community Specialists throughout the lifespan of Project BRIDGE. To do this, the authors have employed a collaborative autoethnography, a qualitative research method where researchers collectively analyze and interpret their autobiographical data (Chang, Ngunjiri, & Hernandez, 2016). The collaborative autoethnography is presented through five vignettes. Each vignette is based on a review of Project BRIDGE materials (Cutts, Bray, & Vilá, forthcoming), formal and informal discussions documented in project notes, personal recollections, and collaborative recollections. To support the trustworthiness (Shenton, 2004) of the collaborative autoethnography, three of the university researchers and one of the community specialists engaged in Project BRIDGE were involved in the collaborative autoethnography process. Together, they collaborated to write this paper, confirming experiences, and providing additional details or context where necessary. This methodology aligns with recent calls from disaster scholars to leverage experience stories to advance interdisciplinary disaster research (Moezzi & Peek, 2019).

In the following section we outline the five vignettes, each providing an overview of a research engagement component that Community Specialists were involved in *(in italics)*. Following each overview, collaborative reflections that highlight how partnerships with Community Specialists created opportunities for recognition. Throughout the reflections, we note recognition when the research team acknowledges and legitimizes different experiences, needs, values, priorities, identities, and other forms of difference that emerged as important in the research context.

Project BRIDGE: Blueprint for Incorporating Community Specialists into Disaster Research

Vignette I: Employing Community Specialists

Five Community Specialists were hired between December 2018 and March 2019 and worked on Project BRIDGE on an ongoing basis through 2021. The community specialists were hired as part-time employees (paid $18 - $20/hour) of North Carolina State University and were funded from three separate grants over the course of four years. The number of hours per week Community Specialists worked varied throughout the project (0-25 hours/week) and depended on the phase of the project and the availability of the Community Specialist. At no point was the Community Specialist position able to serve as a regular or full-time source of income. This was communicated to the applicants to make expectations about income and available hours clear. Additionally, throughout the lifespan of Project BRIDGE, Community Specialists were informed of funding constraints, moments when funding was expected to end, and efforts that the university research team was making to acquire additional funding to support their roles. We believe these were important clarifications throughout the research process to maintain a culture of transparency and honesty and to manage expectations of Community Specialists. To support the employment of Community Specialists, the project managers accommodated other personal (e.g., family, activism), educational (e.g., school, training), and professional (e.g., other jobs) commitments of the Community Specialists. This indicated commitment to the Community Specialists while allowing for synergies and the negotiation of any potential conflicts of interest.

One of the baseline ingredients to nurture recognition in the research design was the decision to create the Community Specialist role. In the context of Project BRIDGE, Community Specialists were hired as members of the research team who were able to contribute to all

components of project design and implementation while drawing on their position as community members with local knowledge. This position was ongoing and lasted multiple years in contrast to more short-term or one-off engagements (e.g., advisory boards), creating consistent ongoing opportunities for Community Specialists to contribute to recognition. This consistency enabled Community Specialists to contribute at critical decision-making junctures in the project as well as during routine project tasks. An important foundation to this role was nurturing a work environment that aimed to value Community Specialists' experience and expertise as equally as university researchers' experience and expertise. All hourly team members (Community Specialists and graduate student research assistants) received the same pay rate and the same opportunities and freedom to determine their contribution to Project BRIDGE. Additionally, the team valued and encouraged perspective pluralism to promote creative tension that can yield diverse project benefits (London et al., 2018). Together, these factors helped reduce implicit organizational hierarchies and create an environment in which Community Specialists felt comfortable to contribute freely and openly. Additionally, throughout the employment with the research team, Community Specialists were encouraged to communicate how the university team could support their personal growth and wellbeing. For example, two Community Specialists made the decision to pursue postgraduate programs while working on Project BRIDGE. They were supported in various ways such as by providing encouragement, creating flexible work arrangements that enabled their continued participation, and attending their academic presentations. While their educational pursuits meant they engaged less frequently with Project BRIDGE, supporting Community Specialists in these ways enhanced their capacity to serve the mission of Project BRIDGE which centered on resilience in Robeson County.

Vignette II: Cross-Training

Prior to engaging in field research, Community Specialists participated in a Project BRIDGE three-day cross-training, for which they were compensated. The full training workbook, including the cross-training agenda is available in (citation masked). The cross-training had several objectives including: (1) introducing the team to Project BRIDGE and its broader research objectives; (2) introducing the full team to one another; (3) providing a platform for project team members to share their knowledge, expertise, and interest; and (4) practicing the interviewing and the soil sampling protocol.

The first day if the cross-training was geared towards establishing rapport and communicating project goals, "big picture" ideas associated with Project BRIDGE, and the main research questions included in the original research proposal funded through North Carolina Sea Grant. Additionally, several relevant key terms and concepts associated with the project were defined and discussed among the research team. These key terms included "hazards," "disaster," "social vulnerability," "resilience," and "resilient community." This step in the training was important for the research team, who all had different backgrounds and experience, to begin their partnership with common understanding of relevant concepts from the proposed research objectives. These discussions created an opportunity for these goals, big picture ideas, research questions, and concepts to be deliberated and refined based on the community context. Also on the first day, three Community Specialists led sessions about topics they were knowledgeable about. One Community Specialists used her 25 years of experience at the community's rape counseling center to lead a session on practices for talking to trauma survivors. Two others co-led a session focusing on the community and historical context of

Robeson County, drawing on their knowledge as community insiders and experiences with oral histories.

The second day centered on learning about the skills necessary for implementing the various research tasks (i.e., qualitative interviewing and soil sampling). Most sessions were led by the university research team, however, a session on Establishing Rapport was led by a Community Specialist who expressed interest in leading it, drawing on his skills in customer service. The final activity for the second day involved a "field trip" to practice the soil sampling protocol (Cutts, Bray, & Vilá, forthcoming). Community Specialists who had participated in pilot testing sessions of the soil sampling protocol shared experiences at this point in the training.

On the third day of the cross-training, the group was noticeably more comfortable with one another. This level of comfort helped facilitate the final sessions of the cross-training, which were centered on practicing the skills learned over the previous two days. For one of the sessions, the Community Specialists interviewed one another using a draft of the interview questionnaire. Because Community Specialists were also community members who had lived through both Hurricane Matthew (2016) and Florence (2018), this session not only gave Community Specialists an opportunity to practice conducting interviews, but it also gave them an opportunity to share their stories, experiences, and visions for the community. With the consent and permission of the Community Specialists, their interviews were included as project data. The final session for the three-day Project BRIDGE training involved conducting pilot interviews with research participants. Following the pilot interviews, the research team reconvened to reflect, provide feedback, and amend the interview protocol where necessary.

The cross-training was an important foundation to develop a collaborative and inclusive partnership with Community Specialists that made recognition possible. If Community

Specialists did not feel comfortable openly discussing what they knew about their community or if they felt they would not be listened to when they engaged in discussions about their community, recognition may not have happened throughout the course of the project. The cross-training was a critical initiation of a long-term partnership between the university researchers and the Community Specialists. By engaging Community Specialist at the beginning of Project BRIDGE, they could play a role in what the project developed into. During this cross-training, Community Specialists observed that their perspectives were valued and that the university researchers would be receptive to those perspectives. This was done through engaged listening of Community Specialist cross-training sessions, validating Community Specialist concerns by integrating their feedback into project design and process, and incorporating Community Specialist experiences (documented through their practice interviews) as project data.

Beyond nurturing an environment for recognition to happen, the cross-training also enabled recognition. Most directly, this was done through presentations and discussions led by Community Specialists. Additionally, through formal sessions and informal interactions during the three-day training, the university researchers learned from Community Specialists about the community context and history, local relations, and post-disaster experiences and concerns. It was through the cross-training that recognition began to manifest into the project and project design.

Vignette III: Engaging in Recruitment

Community Specialists were the primary team members responsible for recruitment of Project BRIDGE. They relied on their personal and professional networks to identify community members who would be interested in participating. Once identified, the Project BRIDGE team, through weekly team meetings, would discuss who was best suited to reach out to the identified

community member, often based on who had the closest personal connection or pre-established rapport with that individual. Diverse methods were used to reach out to community members, typically dependent on how the Community Specialist believed they would be most successful at communicating and reaching out to the potential participant. For example, if the Community Specialist lived nearby a potential participant or worked with that person, they might have used an in-person strategy to initiate the recruitment process. Alternatively, they may have reached out via social media or email if they had less direct contact with that individual. If the potential participant was known to be less active or accessible through web-based platforms, the Community Specialist might have reached out with a phone call.

Recruitment efforts were documented using an online spreadsheet that was accessible to the full Project BRIDGE team. Here, Community Specialists would list their ideas for people who may be interested in participating in Project BRIDGE and the Community Specialist responsible for recruitment. Recruitment status and other pertinent information related to the participation of the community member was also documented on the spreadsheet. This was important for ensuring that community members weren't overburdened with research requests and that their questions were being addressed. At various points throughout the recruitment process, the spreadsheets were referenced during team meetings to assess the representativeness of the sample. Specifically, the university research team relied on the Community Specialists to highlight what groups may be underrepresented in the sample and how the team could better reach those populations.

Across all recruitment efforts, the five Community Specialists, as a team, were best positioned to assess how well the emerging sample represented diverse experiences and perspectives in Robeson Count – because of their pre-existing long-term engagement in the

community. In other words, Community Specialists were able to help us understand whether through our recruitment practices, we were recognizing difference within the community. Through weekly phone calls, the diversity of the emerging samples for project components was often a point of discussion. Community Specialists drew on summarized demographic data and their knowledge as researchers who were co-generating data with research participants to evaluate ongoing efforts and brainstorm paths forward towards a more inclusive sample.

When assessing the sample for the soil sampling component of Project BRIDGE for example, Community Specialists drew on their local knowledge of flooding impacts to identify specific neighborhoods that experienced flooding that were not being recognized in the project sample at that time. Once these communities were identified, the Community Specialists identified individuals who could be recruited from those neighborhoods and how recruitment could be respectfully implemented.

Another way recognition from Community Specialists influenced recruitment protocols involved how individuals were recruited. While there were recruitment scripts for each component of Project BRIDGE, the strategy was flexible, determined based on the Community Specialists recognition of the community members' circumstances and needs. This allowed Community Specialists to cater the request in a way that minimized the burden on community members and potential research participants. Additionally, because of Community Specialists pre-established connections to certain populations, we were able to recruit individuals who may have been less accessible to the university researchers on their own. For example, one Community Specialist facilitated access to individuals from the Latinx community in the county. Because of explicit requests by community members to work with that Community Specialist,

we know that without her engagement, the participation of Latinx community have been limited, and thus our recognition limited.

Vignette IV: Engaging in Data Collection

Community Specialists were engaged in all data collection components of Project BRIDGE to varying degrees. For the soil sampling component, one Community Specialist would typically be paired with a university researcher to visit the residential properties of research participants. The soil sampling component involved short-form interviews about risk perception and a participatory soil sampling protocol (Cutts, Bray, & Vilá, forthcoming). Depending on how the Community Specialist knew the participant, they would take the lead on data collection or play a supporting role to the university researcher. The decision centered on what would be more comfortable for the participant. The data collection process was highly social and interactive.

For the interviewing component, two Community Specialists were responsible for data collection for each interview session. Depending on the preferences of the Community Specialists, typically determined by comfort with technology and pre-established rapport with the interviewee, one Community Specialist would be responsible for the audio and video recording of the interviews and the other would take the lead on interviewing the research participant. While each Community Specialist had an assigned role in each session, there was flexibility in the process.

The Community Specialists' role during the focus group component was unique in that they had the opportunity to simultaneously participate as community members as well as research team members during the data collection process. For the focus groups, all Community Specialists were invited to attend if their schedule allowed. While the university researchers moderated the discussion revolving around the completed community documentary (Cutts, Bray,

& Vilá, forthcoming), Community Specialists were able to contribute to the discussion from the perspective of research team members and respond to focus group prompts.

For most of the data collection interactions with community members, at least one Community Specialist was present, meaning the data collection interaction was initiated with some degree of common ground. In many cases, the Community Specialist who participated in the data collection activities knew the research participant in some capacity, which meant that the data collection process began with pre-established rapport. Community Specialists were also able to build rapport through shared experiences and connections in a way that likely helped respondents feel more comfortable and facilitate more nuanced and candid discussions. For example, Community Specialists would often engage with research participants in informal discussion about their lives and community-related issues. As a result, interviews (during the soil and interview components) frequently generated rich experiential descriptions through the back-and-forth discussions between the Community Specialist and the research participant. Through this, we learned more about community experiences, and thus our team recognized the community more fully.

This was not always the case however, and there were several data collection interactions where the project team had no previous connection with the research participant. While not necessarily problematic, there were issues that arose that influenced participation rates and data quality. In these cases, the Community Specialists helped our team understand why some pairings of project personnel were poorly received. Specifically, Community Specialists highlighted why community violence discourse made some community members reluctant to engage with certain project team members during the soil sampling component. Specifically, two male team members, one presenting as White and one as Black. Community Specialists' insight

helped the project team recognize local context, which helped the team contextualize data collection shortcomings and adjust the project protocol.

Community Specialists' local knowledge also helped guide research-related discussions in nuanced directions that addressed local experiences. For example, during the soil sampling component of Project BRIDGE, research participants would discuss their environmental health concerns. Because Community Specialists were living and working in this same environment, they were often able to engage with participants in more meaningful ways that prompted more detail from those discussions. For the interview component of Project BRIDGE which always involved two Community Specialists (i.e., one who led the interviewing and one who was responsible for the technology), the Community Specialist responsible for the technology component of the interviews was encouraged to follow-up with questions. This was beneficial because it provided an "on-the-spot" alternative perspective to the interviewer who could enhance the depth and perspective of the interview process. For the focus group component, Community Specialists responded to focus group prompts and participant discussions, often reflecting on their knowledge of project data gained through the soil sampling and interviewing components of the project. Here, Community Specialists functioned to integrate local perspectives and experiences into conversations associated with community planning while also contributing as individuals who live in the community.

Finally, through the Community Specialists, the project team came to recognize community experiences related to past research activities in which researchers came and left without any personal or community communication or benefit. This signaled to the research team that the community, especially those who are most disadvantaged, may be skeptical of researchers or unwilling to engage in research.

Vignette V: Analyzing and Reporting Data

Community Specialists were involved in the data analysis for the soil sampling and interview components of Project BRIDGE. The soil sampling component of Project BRIDGE yielded soil and interview data that needed to be analyzed. For the soil data, the university researchers involved in the lab analysis described the soil analysis process to Community Specialists in an accessible way that didn't require technical background so that the Community Specialists could communicate the process with community members and participants as the need arose – however they were not involved in the lab analysis process. For the interview data, university researchers conducted a qualitative analysis and drafted a manuscript to be submitted for peer review based on soil and interview findings. The manuscript draft was provided to the Community Specialists, who were included as co-authors, for feedback. To facilitate this process, a document was provided that contained prompts to help Community Specialists reflect on their local expertise as well as their perspective as research team members who were involved in data collection (Cutts, Bray, & Vilá, forthcoming). After providing their feedback, their comments were addressed and a revision letter was submitted to the Community Specialists describing how their comments were addressed or in some cases, why their comments were not integrated.

The analysis of the interview component involved organizing the qualitative data and transforming the data into a community documentary that represented the findings. To begin this process, a university researcher organized the data that emerged from 79 interviews with 88 community members into broad themes. Community Specialists were then integrated into the analysis through a collaborative process to design and develop the community documentary. This was done through a planning workshop and weekly remote working sessions (Figure 1i). Community Specialists led the selection of the documentary focus based on the needs and

priorities of the community, which they had a clear sense of from conducting the interviews and being community members. After this was defined, the full research team identified and selected relevant clips to include in the documentary, ensuring they were reflective of diverse community perspectives. Detailed notes of Community Specialist feedback were maintained to ensure that all comments were addressed as the documentary was being developed.

Even if data representing diverse perspectives is collected, it does not necessarily guarantee that those perspectives are integrated into the analysis and project outputs. A critical role of Community Specialists throughout Project BRIDGE was assessing the range of perspectives that were integrated into the analysis. Community Specialists identified gaps in represented perspectives in research outputs associated with both the soil sampling and interview components. Notably, through a manuscript review process associated with the soil sampling component, Community Specialists challenged the interpretations present in a manuscript draft based on their personal experience and their experiences in the field. This feedback was integrated into the next iteration of the manuscript.

With respect to the interview component of Project BRIDGE, Community Specialists helped narrow the focus of the documentary based on their local knowledge and experience interviewing. Here, the process of recognition helped the research team focus their efforts on what would be practically useful to the community, which in this case was an emphasis on the community's relationship with water, climate change, and land-use change. Once the documentary was assembled through a series of team work sessions, Community Specialists identified perspectives that were over- and under-represented in the documentary which prompted the research team to be more inclusive about who was featured in the documentary as well as which perspectives were being discussed.

Another way that recognition manifested in the data analysis and reporting process through Community Specialists was through their ability to communicate how research analyses and corresponding outputs would be interpreted by diverse community stakeholders. This perspective was instrumental in ensuring that our analyses, while remaining truthful, did not perpetuate further harm to the community because of *how* ideas were communicated. In the soil sampling component, for example, the project team identified that simply communicating levels of *E. coli* and heavy metals in soil through community reports without broader context could serve to stigmatize the community. Working through this struggle, the project team decided to add "comparison data" to illustrate to community members that the presence of *E. coli* or heavy metal in soil was not something that was specifically characteristic to their community but rather something that manifests in diverse locations for various reasons. In an example from the interview component of Project BRIDGE, the research team identified a clip in the documentary draft that caused conflict and tension among community stakeholders because of the individual who was communicating the idea (as opposed to the idea itself). In this case, recognition prompted the team to identify alternative clip that communicated a similar idea but prevented possible tension for future community audiences.

Community Specialists also kept the research team informed of the cultural context of what we were proposing for community reporting and engagement. For example, for a proposed community event to share findings in which we were going to provide coffee, pastries, and bagels, Community Specialists prompted the team to change the wording on the event flyer from "food provided" to "snack provided", so that people didn't expect a meal. In this case, the insight helped prevent the team from being dishonest and possibly hindering the community's relationship with our research team or other researchers engaging in research in the community.

Finally, because of Community Specialists' understanding of the community and community resources, they were able to leverage this knowledge to provide "on the spot" project outputs for the research participants. For example, during an interview interaction, a research participant, a single mother who lived in public housing and who lost part of her family support system after Hurricane Florence, shared information her son's health care needs and her struggle to meet those needs because of a lack of transportation access. At the time, one of the Community Specialists provided information about Medicaid supported transportation available in the community and how to access it.

Discussion

Here we summarize two key findings from our collaborative autoethnography of how partnerships with Community Specialists in Project BRIDGE facilitated recognition and promoted ethical decision-making. We focus specifically on the implications for the EJ ethical dilemma, centered on the researcher's potential to influence environmental justice struggles in the disaster impacted community they are studying, and link the discussion with the moral considerations outlined in Browne and Peek's (2014) ethical toolkit. We also offer recommendations to overcome barriers that others may face when trying to implement the Community Specialist role in their own work.

Key Finding #1: Community Specialists Mediate Ethical Relationships Between Researchers and Community Across the Research Process

While Browne and Peek's (2013) ethical toolkit is an essential resource to guide ethical interactions in long-term recovery fieldwork, there is a fundamental consideration missing if we hope to engage in ethical research practices in communities negotiating recovery from a position of disadvantage. That piece is recognition – the acknowledgement, respect, and legitimization of

group difference. Recognition in the aftermath of disasters faces unique challenges, including the potential for failures of receptivity, shifting difference, and recognizing only deficiencies. If our research team had worked in isolation, without Community Specialists, our ability to use the ethical toolkit would have limited, which could have risked further disadvantaging communities. Through this collaborative autoethnography, we argue that ethical decision-making in disadvantaged communities is not a solitary process, but one done collaboratively with that community. Specifically in Project BRIDGE, Community Specialists helped us counter recognition challenges and ultimately, better recognize the research community and address the EJ ethical dilemma in different ways. Table 4.2 applies Browne and Peek's ethical toolkit to examples from Project BRIDGE and provides illustrative examples of how Community Specialists contributed to recognition.

Table 4.2. Application of Browne and Peek's (2014) ethical toolkit

Moral consideration	**EJ ethical dilemma example from Project BRIDGE**	**How the Community Specialists helped address the EJ ethical dilemma**
Fidelity	Unclear community expectations about how soil sampling data would contribute to community concerns about environmental contamination.	They helped team recognize what community stakeholders expected from Project BRIDGE. As a result, were able to either meet expectations or better communicate the boundaries of our study. For example, while we couldn't offer ways to remediate E. coli or heavy metal contamination, we could offer strategies for community members to protect themselves.
Reparation	History of vulture research practices in Robeson County that hindered the relationship between the community and institutions of knowledge production.	They helped team recognize the past experiences of the community, prompting us to design our project in such a way that avoided similar tendencies and work to repair strained community relations with institutions of knowledge production by providing participants with information about other research studies done in the community.

Table 4.2 (continued).

Gratitude	Lack of understanding about what resources the team could realistically provide that would be a meaningful show of gratitude that would contribute to participant's recovery.	Community Specialists listened to the participants and community members to understand what their needs were and communicated that to the research team. Together, the team identified resources they could share with the participants and the community, and how we could structure project outputs to be useful to community.
Justice	Difficulty identifying or accessing groups that were "hidden" in the community. Failure to incorporate their perspectives in Project BRIDGE could risk perpetuate existing injustices.	They identified these groups because of their local knowledge (e.g., what places flooded) and pre-existing relationships within the community (e.g., with the Latinx community).
Non-maleficence	Lack of awareness about existing community tensions that, that if ignored, could possibly hinder recovery and resilience progress.	They identified a problematic clip in a community documentary draft that could perpetuate community tensions. Rationales for its removal were deliberated and a clip that delivered a similar message, but prevented tension escalation, was substitute.
Beneficence	Lack of familiarity with community stakeholders who could benefit from research findings centered on flood risk and resilience.	They helped the team identify decision makers and local organizations whose values aligned with the goals of Project BRIDGE. As a result, we could extend our project outputs (e.g., community documentary) to those stakeholders.
Self-improvement	Our project team needed to be attentive to the wellbeing and personal growth of Community Specialists, even if it meant reduced engagement in Project BRIDGE. Ultimately, their ability to thrive meant the team could better serve the research community in meaningful ways to counter environmental injustices related to disaster recovery.	Two Community Specialists pursued postgraduate education midway through Project BRIDGE. Both were supported in multiple ways. Their continued education meant they were better equipped to help their community.

Our research team would not have been able to interact with the community to the degree that we did without Community Specialists. Because of their pre-existing connections, deep community knowledge, and direct experiential knowledge (i.e., Community Specialists experienced both hurricanes and as such could relate to the participants), Community Specialists enhanced the capacity for the community and research team to communicate with, understand, and engage with one another across the research process. This dynamic outcome had multiple implications for the EJ ethical dilemma in the community. First, because Community Specialists leveraged their local knowledge to influence recruitment efforts, the team was able to expand the benefits of research to impacted groups that may be otherwise masked (justice) and to try to directly help those who are impacted (beneficence). Similarly, Community Specialists' sensitivity to individual needs and circumstances helped reduce the potential that research practices would harm individuals suffering from environmental or other injustices (non-maleficence) and thus increase the likelihood that their experiences are represented in the data and final research outputs (justice).

As a result of greater recognition catalyzed by Community Specialists, the research team was able to curate recruitment and data collection approaches that accounted for individual, and group needs and circumstances (non-maleficence). Additionally, the process helped the research team understand and address the local context of vulture research practices (reparation). Because of effective engagement recruitment and data collection approaches that accounted for local context, our data and outputs were able to represent community experiences (justice) more fully.

Finally, the development of project outputs (e.g., soil reports, documentary) were developed in such a way that accounted for community experiences, needs, and tensions. As such, the data was effectively translated into actionable knowledge that had practical utility for

the community (beneficence), prevented unnecessary conflict or tension in the community (non-maleficence) and remained transparent about the outputs of our study (fidelity). Additionally, Community Specialists helped the team identify unique ways we could support the community that were not directly linked to the team's research objective but leveraged the team's technical skills as trained academic researchers and local knowledge as Community Specialists (gratitude).

Potential Barriers and Recommendations to Overcome Challenges. The overarching barrier to using Community Specialists relates to potential gaps in representation in this role. While the five Community Specialists on our team represented unique perspectives and had access to diverse networks, they and their networks do not capture the full diversity of the community. We acknowledge shortcomings that may emerge when recruiting from primarily personal networks and relying on personal experience to assess diversity and representation. Specifically, this has the potential to introduce bias into the research process and systematically exclude perspectives, limiting recognition. In Project BRIDGE, we attempted to overcome these shortcomings by recruiting from community-wide events and by being explicitly reflexive about representation in our sample and in our analysis. For those seeking to implement the Community Specialist role, we recommend an assessment of perspectives that may be missing and intentionally seeking those out. External community stakeholders not directly involved in the project may be able to assist with the evaluation of recruiting and analysis processes.

It is also important to keep in mind the tensions that may emerge with Community Specialists and community members who share conflicting viewpoints on local issues. While distancing oneself from the research (i.e., value neutrality) is advocated for by some (see Harding, 1977), we argue that this is both unrealistic and undesirable for Community Specialists. Instead, we advocate for openness and honesty to navigate conflicts that may impact project data

and community relationships. The Community Specialist should feel comfortable to share, and other team members should be attentive to, potential conflicts and tension they observe in other research team members. Being aware and open about these tensions can help prevent them from escalating (non-maleficence), continue to encourage diverse community voices to be represented in the project data (justice), and extend benefits of research (beneficence).

Key Finding #2: Establishing Trust and Nurturing Long-Term Relationships with Community Specialists is Critical for a Successful Partnership

Significant effort was invested across the span of Project BRIDGE to nurture the relationships with Community Specialists. This was done in more structured ways through fair wages, the Project BRIDGE cross-training, weekly team meetings, and the integration of feedback into project processes and outputs. Additionally, the university research team always maintained a culture of transparency with respect to the status of the research project and grant funding, which promoted trust between the Community Specialists and the university researchers. The relationships were also nurtured in less formal ways through impromptu lunches, attendance at community events, holiday gatherings, the celebration of personal accomplishments, and support during difficult interactions or personal events. These authentic relationships with Community Specialists are a fundamental baseline necessary to address the EJ ethical dilemma. Without the community specialists' long-term and honest support, the recognition processes highlighted in this project would not have occurred, and as such, the capacity for the team to positively address the EJ ethical dilemma would have been greatly reduced. Here, we would like to underscore the importance of the *self-improvement* moral consideration of Browne and Peek's (2014) ethical toolkit. For the team to address the EJ ethical dilemma in a constructive and positive way, emphasis needed to be placed on the personal wellbeing of Community Specialists and the

individual-level interactions and relationships between the Community Specialists and the university research team.

Potential Barriers and Recommendations to Overcome Challenges. There are several barriers that may manifest that could hinder researchers' ability to nurture wellbeing and successful long-term relationships with Community Specialists. First, the lack of full-time work and unpredictable funding cycles directly restricted our ability to provide financial security and professional stability to Community Specialists. Alongside influencing the research partnership, this also limits who can contribute as Community Specialists, which has implications for recognition as discussed in Conclusion #1. As researchers consider implementing a Community Specialist role, they should ensure that the positions are properly funded to support team member needs. Funders seeking to support community-based work or work that has implications for environmental justice struggles should encourage extended research timeframes and significant funding allocations for community-based personnel.

Another barrier to successful long-term partnerships with Community Specialists is turnover. Turnover will likely be frustrating to the research team, after all, they are losing a valuable team member potentially in the middle of the research project. However, it is imperative to support the growth and needs of Community Specialists as they move on to other opportunities or focus on other priorities. In the case of Project BRIDGE, one Community Specialist moved out of state to start law school. For us, we were supportive, excited, and continued to offer the individual remote opportunities to engage to the extent that they felt comfortable. This approach helped the team maintain an important perspective while supporting the personal growth of the Community Specialist.

Conclusion

Our work shows that partnerships with Community Specialists result in greater opportunities to design and implement ethical long-term recovery disaster research that helps navigate the social and ecological complexities of communities negotiating recovery from a position of disadvantage. Community Specialists can bridge recognition gaps through their engagement in the full research process, including ideation, implementation, and dissemination of the project results. Additionally, our work shows that by integrating recognition in research design and implementation decisions, the resulting data reflects that recognition which creates greater opportunities to positively address the EJ ethical dilemma. Specifically, the results highlight that Community Specialists, through their role as active recognition agents, promote ethical practices by reducing the potential for harm and increasing the potential for benefits from research. We also underscore that for Community Specialists to support a productive approach to the EJ ethical dilemma, research ethics considerations previously identified by other disaster scholars (e.g., fair compensation, power dynamics) need to be properly addressed. In other words, we show that to effectively approach broader community-wide ethical dilemmas associated with post-disaster research, it is critical for researchers to consider the ethics of the individual-level interactions within the community-based research team. Without a foundation of community support, fair compensation, decision-making power, and mutual respect, the Community Specialists could not have participated in a meaningful way that addressed broader ethical dilemmas associated with long-term post-disaster research.

The Community Specialist role in Project BRIDGE we illustrate how investments made in the community have the potential to promote environmental justice related to hazard risk. Researchers must be deliberate in their methodological choices to, at a minimum, reduce the

likelihood that our work compounds existing injustices and at best, help reduce injustices as defined by the community being researched. Investing in authentic community-based partnerships to aid in research design, such as that exhibited by the Community Specialist, is one way to begin to do this.

Chapter 4 Acknowledgements

This work associated with this chapter was a collaborative effort. Author contributions include the following: Olivia Vilá (North Carolina State University, Department of Parks, Recreation, and Tourism Management): conceptualization; methodology; investigation; formal analysis; writing – original draft; writing – review and editing. Dr. Bethany Cutts (North Carolina State University, Department of Parks, Recreation, and Tourism Management): funding acquisition; conceptualization; methodology; resources; supervision; investigation; formal analysis; project administration; writing – review and editing. Dr. Laura Bray (University of Oklahoma, Center for Applied Social Research): conceptualization; methodology; formal analysis; investigation; data curation; supervision; project administration; writing – review and editing. Margaret Crites (North Carolina State University, Department of Parks, Recreation, and Tourism Management): conceptualization; methodology; investigation; formal analysis; writing – review and editing.

We also sincerely thank the Community Specialists involved in Project BRIDGE, Angela Allen, Margaret Crites, Hannah Goins, Sallie McLean, and Nathan McMenamin. We also extend a special thanks to all the Robeson County residents and community advisors who welcomed us into their community and homes to share their knowledge, expertise, and experiences. Further, we acknowledge the thoughtful guidance of Dr. Whitney Knollenberg, Dr. Louie Rivers, and Dr. Gavin Smith, who provided intellectual support and feedback related to the development of this chapter. Lastly, we would like to thank Darren Whalen for donating his time and resources to create the individual illustrations used for the process illustration figure in this chapter.

Chapter 4 Funding Sources

This work was made possible by North Carolina Sea Grant-funded (Project No. R/18-RCE-3) and the U.S. Department of Agriculture's McIntire Stennis program (Project No. NCZ04203).

Additionally, the first author received support from Southern Regional Education Board's Doctoral Scholars Program and The Graduate School at North Carolina State University's Dissertation Completion Grant, both which enabled her work on this project.

CHAPTER 5. CONCLUSION

Despite the growing emphasis on environmental justice in policy and programs across diverse institutions in the United States (U.S.), there remains a need for concrete guidance for the implementation of environmental justice initiatives at all scales. While some high visibility tools exist, such as the Climate and Economic Justice Screening Tool (CEQ, 2022) and EJScreen (EPA, 2022), they are insufficient on their own as they're intended to serve only as preliminary identification tools for communities that experience a range of environmental injustices. As such, we must continue to explore pathways through which to advance environmental justice in practice. The findings of this dissertation contribute to our intellectual and strategic toolkit for advancing and institutionalizing environmental justice through policies and programs centered on hazard mitigation and disaster recovery. Specifically, all three studies discussed in this dissertation provide evidence that a greater emphasis on the recognition of disadvantaged communities by assigned leaders may yield one pathway through which to advance environmental justice in the hazard mitigation and disaster recovery context. Assigned leaders, who occupy a formal hierarchical position within an organization (Northouse, 2021), were the focus of this dissertation because of their power to influence environmental justice through policy and program implementation. The major findings of each research chapter are summarized in the next section.

Summary of Major Findings and Lessons Across Chapters

The overarching objective of this dissertation was to document and better understand the role that recognition by assigned leaders played in tackling environmental injustices related disaster recovery and hazard mitigation. Below we first summarize the major findings of each chapter and then highlight how the chapters can inform one another.

Chapter 2 examined the degree to which State Hazard Mitigation Officers (SHMOs) recognize the disadvantaged communities in their jurisdiction, and how that recognition was related to the capacity for those communities to engage in diverse mitigation activities, including applying for and implementing Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance projects. This chapter revealed that SHMOs recognition of disadvantaged communities in their jurisdiction was relatively limited and the processes in place for learning about disadvantaged communities (i.e., identification and outreach strategies) are often informal or not tailored to the qualities of those communities. Aligning with limited recognition, this chapter documented evidence of procedural and distributional injustices for disadvantaged communities as it related to federal- and state-funded hazard mitigation activities, pointing to the interacting nature of recognition, procedural justice, and distributional justice.

Chapter 3 explored how nonprofit leaders navigate and address the disaster recovery needs of the Latinx community in Wilmington, North Carolina, and how that understanding was related to the capacity of the organization to serve the Latinx community. The results of this chapter revealed that nonprofit leaders have varying degrees of recognition of the Latinx community that was dependent on the leader's engagements with the Latinx community, collaborations and partnerships with others who recognize the Latinx community, and use of technology and data Chapter 3 also documented how leader recognition of the Latinx community was linked to organizational practices for engaging with and distributing recovery resources to the Latinx community. Because recognition was relatively limited among leaders interviewed, it suggests that nonprofit organizations do hinder the potential for just recovery outcomes of the Latinx community.

Chapter 4 documented how Community Specialists, defined as paid research team members who live and work in the community, helped a transdisciplinary research team recognize the research community in the aftermath of two disasters. Additionally, this chapter highlights how the recognition that was nurtured by Community Specialists translated into ethical research design and implementation decisions that reduced the potential for the research team to perpetuate environmental injustices that were prevalent in the research community, and in some small ways, helped the community make progress towards justice.

Together, Chapters 2 through 4 explore the role that an assigned leader (i.e., SHMO, nonprofit leader, researcher) plays in recognizing a disadvantaged group (i.e., low-capacity communities, Latinx community, underserved research community). While they all share this common feature, they each contribute unique lessons because of the scale of influence each leader type possessed. Chapter 2 for example focused on a state or territory-level leader that, depending on the state or territory, can be responsible for serving tens of millions of residents and distributing millions of dollars in mitigation resources yearly. The results highlighted in Chapter 2 indicate that recognition by these state- and territory-level leaders is lacking and capacity for recognition at the state- or territory-level may be limited. This limited capacity suggests a greater need for partnerships that can enhance the capacity for recognition at the state- or territory-level, specifically local-level leaders that work directly with communities.

Chapter 3, focused on one such type of local-level leaders, specifically leaders of local nonprofit organizations serving the disaster recovery needs of Wilmington, NC in the aftermath of Hurricane Florence (2018). Most of these leaders serve at the city- or county-level, with some serving at the regional-level. In contrast to the leaders at the state- and territory-level, these local nonprofit leaders had more nuanced acknowledgment of underserved communities they served

and were able to translate their recognition into organizational efforts that promoted justice. The recognition observed by these leaders was often a result of direct and sustained professional and service interactions the nonprofit leaders had with the underserved communities. In the case of state- or territory-level leaders (such as SHMOs), this type of engagement is less likely for several reasons (e.g., competing demands of the position, organizational resources, career incentives to "move up and out" versus stay in a position and make lasting connections, physical proximity to underserved communities). However, the results of Chapter 3 underscore that there are viable local-level partners who may be able to supplement recognition gaps at the state- or territory-level. Additionally, for state- or territory-level leaders seeking to enhance their recognition capacity, Chapter 3 suggests four potential pathways through which leaders can manifest recognition, although more research is needed to explore the applicability of these pathways at different scales (e.g., state, territory, federal) and different contexts.

Not all local nonprofit leaders interviewed in Chapter 3 exhibited nuanced acknowledgement underserved groups (in this case the Latinx community) though, and this was often in part a result of limited direct and sustained professional or service engagement with the underserved group. Chapter 4, which focuses on leaders with the smallest scale of influence (serving a bounded research community), described practical strategies that organizations, such as local nonprofit organizations, can use to intentionally build their recognition of underserved groups. Specifically, Chapter 4 focuses on working directly with community members to ensure recognition of underserved groups and make deliberate programmatic decisions that reflect that recognition.

Intellectual Contributions

Environmental justice is a paradigm that has been evolving for the last several decades (Taylor, 2000). Those studying environmental justice have increasingly acknowledged that what constitutes justice is more than fair distribution of environmental harms and benefits (distributional justice), justice also comprises fair procedures for influencing decisions that impact one's life (procedural justice) (Gould, 1996; Schlosberg, 2003; Young, 1990) and the acknowledgment, respect, and legitimization of difference (recognition) (Fraser, 2000; Schlosberg, 2003; Young, 1990). Despite the evolving theoretical discussions, there is limited applied work that explores the role of recognition (Blue et al., 2021). Recognition regards the acknowledgement, respect, and legitimization of group difference by decision-makers and influencers and is often conceived of as a necessary pre-condition for procedural and distributional justice (Fraser, 2000; Schlosberg, 2003; Young, 1990), yet there have been only a few attempts (outside of disaster scholarship) to assess recognition and the extent that recognition results in procedural or distributional changes that benefit justice.

This dissertation reports the results of three studies that applied a three-pillar environmental justice theoretical framework (recognition, procedural justice, and recognition justice) and explored the manifestation of recognition in three different contexts. Together, this dissertation yields evidence that recognition plays an important role in tackling environmental justice struggles related to hazard mitigation and disaster recovery. Specifically, all three studies document the link between distributional justice, procedural justice, and recognition. This supports theoretical studies on the role of recognition (Fraser, 2000; Schlosberg, 2003; Young, 1990) and corroborates empirical work that has observed the role of recognition in other contexts (Barnhill-Dilling et al., 2020; Gibson-Wood & Wakefield, 2013; Guibrunet et al., 2021;

Hourdequin, 2019; Lau et al., 2021; Martin et al., 2016; Schlosberg & Carruthers, 2010; Urkidi & Walter, 2011; Waitt & Harada, 2019; Walker & Day, 2012). Future research focused on the link between distributional justice, procedural justice, and recognition in applied contexts should explore factors that prevent the translation of recognition into progress towards distributional and procedural justice.

This dissertation also offers novel contributions to the study of recognition because of its focus on receptivity. As previously noted, recognition has been one of the least studied dimensions of environmental justice (Blue et al., 2021). Based on theory building methods, which typically prescribe several phases of theory development including conceptual development, operationalization, application or testing, and refinement (Lynham, 2002; Swanson & Chermack, 2013), the difficulties facing researchers attempting to empirically research recognition may in part be a result of the limited operationalization of the concept. This is a critical gap, with implications for policy and programs that seek to integrate environmental justice, because it is through the operationalization of a theory that concepts become actionable (Lynham, 2002).

In this dissertation we operationalize recognition as a two-part process which requires (1) the expression of difference and (2) the receptivity to that difference (Honneth, 1992; Kompridis, 2014). When operationalized in this way, it becomes apparent that the applied study of recognition has been relatively contained, typically focused on the struggle for recognition (expression) (Kompridis, 2014) resulting in a knowledge gap around the second half of the process (receptivity). This dissertation addressed this gap by focusing on receptivity, specifically, by exploring how assigned leaders recognize disadvantaged groups. Through this operationalization we have gained greater conceptual clarity which has prompted us to ask and

answer new questions that can be useful for translating theory into practice (Lynham, 2002). For example, the focus on receptivity in this dissertation led us to consider the pathways through which leaders come to recognize disadvantaged groups, whether leaders' acknowledgement of disadvantaged communities is legitimized within organizations, and how we as researchers can manifest recognition within our own research practices.

All three studies contribute to a growing body of literature that empirically undergird the three-pillar environmental justice framework, indicating that recognition influences procedural and distributional outcomes for disadvantaged communities. Additionally, through the expanded operationalization of recognition, all three studies underscore that *receptivity* is a critical object of study to understand the manifestation of environmental injustice and how to advance environmental justice initiatives within diverse organizations. In concert with the findings of this dissertation, this expanded operationalization can help clarify conceptual entanglements (such as those noted by Guibrunet et al., 2021) and inspire new lines of inquiry that help us better understand and implement the process of recognition. Future research should continue to explore how assigned leaders recognize disadvantage communities they serve and the influence of that recognition on environmental justice outcomes. Additionally, scholars who use environmental justice frameworks to guide their work should build on the operationalization of recognition as (at least) a two-step process. For example, in the context of hazard mitigation and disaster recovery future research could consider exploring struggles for recognition in relevant policy arenas (e.g., mitigation grant program development and implementation), how diverse leaders at different scales (e.g., local, state, and federal) are receptive to those struggles, and barriers (e.g., individual, organizational, institutional) preventing the successful link between struggle for recognition and receptivity. Additionally, future research may also consider whether receptivity

includes the legitimization of difference or if legitimization is a separate, perhaps third step in the process of recognition.

Practical Implications

This dissertation yields insights for the implementation of environmental justice initiatives at different scales and by diverse stakeholders. Broadly, all chapters point to the need to integrate recognition in policy and program implementation – whether it's related to federally funded grant programs, nonprofit disaster recovery efforts, post-disaster research processes, or other contexts. Additionally, all chapters emphasize that assigned leaders are important actors that can help translate recognition into progress towards procedural and distributional justice through their influence on organizational policies and procedures. On a practical level, we recommend from these findings that leaders should be evaluated, by those who represent impacted communities, on the degree to which they recognize the disadvantaged communities they serve and influence (i.e., evaluating leader receptivity). Additionally, we recommend investments by government, nonprofit, and academic funders who support hazard mitigation and disaster recovery to help leaders at different scales 1) build awareness of those communities (i.e., enhance leader receptivity) and 2) translate that awareness into policy and programmatic changes that benefit those communities (i.e., act on receptivity). These recommendations should be implemented in direct consultation with disadvantaged communities who are impacted by decisions.

Leaders across the country who influence the distribution of environmental harms and benefits through policy or program implementation, are increasingly acknowledging that environmental justice is not only a moral imperative, but also a necessary priority to advance resilience and sustainability goals in an era of climate change (Newell, Srivastava, Naess,

Contreras, & Price, 2021; Schlosberg & Collins, 2014). As natural hazards continue to disproportionately impact socially vulnerable communities, including communities of color and low-income communities (Bolin & Kurtz, 2018; Cutter, Boruff, & Shirley, 2012; Flanagan et al., 2011), and climate change threatens to further compound existing injustices related to natural hazards (Lavell et al., 2012), we must think critically about the ways our policies and programs can counter these trajectories. This dissertation emphasizes that recognition of disadvantaged groups by assigned leaders is one avenue through which we can make necessary progress towards environmental justice.

REFERENCES

Adams, H. K. (2017). Sovereignty, safety, and security: Tribal governments under the Stafford and homeland security acts. *American Indian Law Journal*, *1*(1), 5.

Allen, B. L. (2013). Justice as Measure of Nongovernmental Organization Success in Postdisaster Community Assistance. *Science, Technology, & Human Values*, *38*(2), 224–249. https://doi.org/10.1177/0162243912470726

American Flood Coalition. (2021, July 21). Comment Submitted by American Flood Coalition. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0260

Anguiano, C., Milstein, T., Larkin, I. D., Chen, Y.-W., & Sandoval, J. (2012). Connecting community voices: Using a Latino/a critical race theory lens on environmental justice advocacy. *Journal of International and Intercultural Communication*, *5*(2), 124–143. https://doi.org/10.1080/17513057.2012.661445

ASC Technologies. (2022). MissionInsite by ASC Technologies. Retrieved from https://www.acstechnologies.com/missioninsite/

Baptista, A. I., Jesudason, S., Greenberg, M., & Perovich, A. (2022). Landscape Assessment of the US Environmental Justice Movement: Transformative Strategies for Climate Justice. *Environmental Justice*. https://doi.org/10.1089/env.2021.0075

Barber, K., & Haney, T. J. (2016). The experiential gap in disaster research: Feminist epistemology and the contribution of local affected researchers. *Sociological Spectrum*, *36*(2), 57–74. https://doi.org/10.1080/02732173.2015.1086287

Barnhill-Dilling, S. K., Rivers, L., & Delborne, J. A. (2020). Rooted in recognition: Indigenous environmental justice and the genetically engineered American Chestnut Tree. *Society & Natural Resources*, *33*(1), 83–100. https://doi.org/10.1080/08941920.2019.1685145

Bell, D., & Carrick, J. (2018). *Procedural environmental justice*. In *The Routledge Handbook of Environmental Justice* (1st ed., pp. 101–112). Routledge. https://doi.org/10.4324/9781315678986-9

Bento, A., & Elliott, J. R. (2021). The Racially Unequal Impacts of Disasters and Federal Recovery Assistance on Local Self-Employment Rates. *Social Currents*, 23294965211028840. https://doi.org/10.1177/23294965211028841

Birkland, T. A., & DeYoung, S. E. (2012). *Focusing events and policy windows*. In *Routledge Handbook of Public Policy* (pp. 193–206). Routledge.

Blue, G., Bronson, K., & Lajoie-O'Malley, A. (2021). Beyond distribution and participation: A scoping review to advance a comprehensive environmental justice framework for impact assessment. *Environmental Impact Assessment Review*, *90*, 106607. https://doi.org/10.1016/j.eiar.2021.106607

Bolin, B., & Kurtz, L. (2018). *Race, Class, Ethnicity, and Disaster Vulnerability*. In *Handbook of Disaster Research*. https://doi.org/10.1007/978-3-319-63254-4_10

Bray, L. A., Vilá, O., Cutts, B. B., Lowry, D. S., Crites, M., Goins, H., … Harris, A. (2020). Promoting Environmental Justice through Participatory Disaster Research: Hurricane Recovery in Robeson County, North Carolina. *Carolina Planning Journal*, *45*, 45–57.

Breen, K. (2021). Disaster racism: Using Black sociology, critical race theory and history to understand racial disparity to disaster in the United States. *Disaster Prevention and Management: An International Journal*. https://doi.org/10.1108/DPM-02-2021-0059

Brennan, M. A., & Flint, C. G. (2007). Uncovering the hidden dimensions of rural disaster mitigation: Capacity building through community emergency response teams. *Journal of Rural Social Sciences*, *22*(2), 7.

Brown, P., Vega, C. M. V., Murphy, C. B., Welton, M., Torres, H., Rosario, Z., … Meeker, J. D. (2018). Hurricanes and the environmental justice island: Irma and Maria in Puerto Rico. *Environmental Justice*, *11*(4), 148–153. https://doi.org/10.1089/env.2018.0003

Browne, K. E. (2015). *Standing in the need: Culture, comfort, and coming home after Katrina*. University of Texas Press.

Browne, K. E., & Peek, L. (2014). Beyond the IRB: An ethical toolkit for long-term disaster research. *International Journal of Mass Emergencies and Disasters*, *32*(1), 82–120.

Brydon-Miller, M., Greenwood, D., & Maguire, P. (2003). Why action research? *Action Research*, *1*(1), 9–28.

Bullard, R. D., & Johnson, G. S. (2009). Environmental justice grassroots activism and its impact. *Environmental Sociology: From Analysis to Action*, *63*.

Bullard, R. D., & Wright, B. (2009). *Race, place, and environmental justice after Hurricane Katrina: Struggles to reclaim, rebuild, and revitalize New Orleans and the Gulf Coast*. Westview Press.

Burby, R. J. (2003). Making Plans that Matter: Citizen Involvement and Government Action. *Journal of the American Planning Association*, *69*(1), 33–49. https://doi.org/10.1080/01944360308976292

CANVAS. (2021, July 21). Comment Submitted by CANVAS for Recovery and Resilience. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0156

Cecelski, D. S., & Tyson, T. B. (2000). *Democracy Betrayed: The Wilmington Race Riot of 1898 and Its Legacy*. UNC Press Books.

Center for Biological Diversity. (2021, July 21). Comment Submitted by Center for Biological Diversity. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0265

CEQ. (2022). Climate and Econimic Justice Screening Tool (BETA). Retrieved March 5, 2022, from Council on Environmental Quality website: https://screeningtool.geoplatform.gov/en/

Chakraborty, J., Collins, T. W., & Grineski, S. E. (2019). Exploring the Environmental Justice Implications of Hurricane Harvey Flooding in Greater Houston, Texas. *American Journal of Public Health*, *109*(2), 244–250. https://doi.org/10.2105/AJPH.2018.304846

Chandra, A., & Acosta, J. (2009). *The Role of Nongovernmental Organizations in Long-Term Human Recovery After Disaster: Reflections from Louisiana Four Years After Hurricane Katrina*. RAND Corporation. https://doi.org/10.7249/op277rc.8

Chandrasekhar, D., García, I., & Khajehei, S. (2021). Recovery Capacity of Small Nonprofits in Post-2017 Hurricane Puerto Rico. *Journal of the American Planning Association*, 1–14. https://doi.org/10.1080/01944363.2021.1938637

Chaney, P., & Weaver, G. (2010). The Vulnerability of Mobile Home Residents in Tornado Disasters. *Weather, Climate, and Society*, *2*(3), 190–199. https://doi.org/10.1175/2010WCAS1042.1

Chang, H., Ngunjiri, F., & Hernandez, K.-A. C. (2016). *Collaborative autoethnography*. Routledge.

Chenail, R. J. (2012). Conducting Qualitative Data Analysis: Reading Line-by-Line, but Analyzing by Meaningful Qualitative Units. *Qualitative Report*, *17*(1), 266–269.

Chopel, A., Fernos-Sagebien, A. J., & Gorbea, L. (2021). Relationships Between Distribution of Disaster Aid, Poverty, and Health in Puerto Rico. *Poverty, and Health in Puerto Rico*. http://dx.doi.org/10.2139/ssrn.3984551

Cigler, B. A. (2017). US floods: The necessity of mitigation. *State and Local Government Review*, *49*(2), 127–139. https://doi.org/10.1177/0160323X17731890

Collins, T. W., Grineski, S. E., Chakraborty, J., & Flores, A. B. (2019). Environmental injustice and Hurricane Harvey: A household-level study of socially disparate flood exposures in Greater Houston, Texas, USA. *Environmental Research*, *179*, 108772. https://doi.org/10.1016/j.envres.2019.108772

Consoer, M., & Milman, A. (2018). Opportunities, constraints, and choices for flood mitigation in rural areas: Perspectives of municipalities in Massachusetts. *Journal of Flood Risk Management*, *11*(2), 141–151. https://doi.org/10.1111/jfr3.12302

Corbin, J., & Strauss, A. (2015). *Basics of Qualitative Research*. Thousand Oaks, CA: Sage.

Cumming, G., & Norwood, C. (2012). The Community Voice Method: Using participatory research and filmmaking to foster dialog about changing landscapes. *Landscape and Urban Planning*, *105*(4), 434–444. https://doi.org/10.1016/j.landurbplan.2012.01.018

Curnin, S., & O'Hara, D. (2019). Nonprofit and public sector interorganizational collaboration in disaster recovery: Lessons from the field. *Nonprofit Management and Leadership*, *30*(2), 277–297. https://doi.org/10.1002/nml.21389

Cutter, S. L. (2012). *Hazards vulnerability and environmental justice*. Routledge.

Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2012). *Social vulnerability to environmental hazards*. Routledge.

Dash, N., & Gladwin, H. (2007). Evacuation decision making and behavioral responses: Individual and household. *Natural Hazards Review*, *8*(3), 69–77. https://doi.org/10.1061/(ASCE)1527-6988(2007)8:3(69)

Deely, J., Hynes, S., José, B., Burgess, D., Finney, G., Silió, A., … Ballé-Béganton. (2020). Barrier identification framework for the implementation of blue and green infrastructures. *Land Use Policy*, *99*, 105108. https://doi.org/10.1016/j.landusepol.2020.105108

Demiroz, F., & Hu, Q. (2014). *The role of nonprofits and civil society in post-disaster recovery and development*. In *Disaster and Development* (pp. 317–330). Springer.

Denney, J. T., Onge, J. M. S., & Dennis, J. A. (2018). Neighborhood concentrated disadvantage and adult mortality: Insights for racial and ethnic differences. *Population Research and Policy Review*, *37*(2), 301–321. https://doi.org/10.1007/s11113-018-9461-9

Domingue, S., & Emrich, C. T. (2019). Social Vulnerability and Procedural Equity: Exploring the Distribution of Disaster Aid Across Counties in the United States. *The American Review of Public Administration*, *49*(8), 897–913. https://doi.org/10.1177/0275074019856122

Domingue, S. J. (2021). The (In) Dispensability of Environmental Justice Communities: A Case Study of Climate Adaptation Injustices in Coastal Louisiana and Narratives of Resistance. *Environmental Justice*. https://doi.org/10.1089/env.2021.0098

Dundon, L. A., & Camp, J. S. (2021). Climate justice and home-buyout programs: Renters as a forgotten population in managed retreat actions. *Journal of Environmental Studies and Sciences*, 1–14. https://doi.org/10.1007/s13412-021-00691-4

Eller, W. S., Gerber, B. J., & Robinson, S. E. (2018). Nonprofit organizations and community disaster recovery: Assessing the value and impact of intersector collaboration. *Natural Hazards Review*, *19*(1), 05017007. https://doi.org/10.1061/(ASCE)NH.1527-6996.0000269

Elliott, J., Loughran, K., & Brown, P. L. (2021). Divergent residential pathways from flood-prone areas: How neighborhood inequalities are shaping urban climate adaptation. *Social Problems*. https://doi.org/10.1093/socpro/spab059

Elliott, J. R., Brown, P. L., & Loughran, K. (2020). Racial inequities in the federal buyout of flood-prone homes: A nationwide assessment of environmental adaptation. *Socius*, *6*, 2378023120905439. https://doi.org/10.1177/2378023120905439

Emrich, C. T., Tate, E., Larson, S. E., & Zhou, Y. (2020). Measuring social equity in flood recovery funding. *Environmental Hazards*, *19*(3), 228–250. https://doi.org/10.1080/17477891.2019.1675578

Environmental Defense Fund. (2021, July 21). Comment Submitted by Environmental Defense Fund. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0284

EOP OMB. (2021). *Memorandum for the Heads of Departments and Agencies: Interim Implementation Guidance for the Justice40 Initiative*. Executive Office of the President Office of Management and Budget. Retrieved from https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf

EPA. (2022, February 23). EJScreen: Environmental Justice Screening and Mapping Tool. Retrieved March 5, 2022, from https://www.epa.gov/ejscreen

FEMA. (2018a). *An Affordability Framework for the National Flood Insurance Program*. Federal Emergency Management Agency. Retrieved from Federal Emergency Management Agency website: https://www.fema.gov/sites/default/files/2020-05/Affordability_april_2018.pdf

FEMA. (2018b). *Engaging Faith-based and Community Organizations Planning Considerations for Emergency Managers*. Retrieved from https://www.fema.gov/sites/default/files/2020-07/engaging-faith-based-and-community-organizations.pdf

FEMA. (2020). *Summary of Stakeholder Feedback Building Resilient Infrastrucure and Communities*. Federal Emergency Management Agency. Retrieved from https://www.fema.gov/sites/default/files/2020-06/fema_bric-summary-of-stakeholder-feedback-report.pdf

FEMA. (2021a, August 5). Biden Administration Commits Historic $3.46 Billion in Hazard Mitigation Funds to Reduce Effects of Climate Change. Retrieved September 9, 2021, from Fema.gov website: https://www.fema.gov/press-release/20210805/biden-administration-commits-historic-346-billion-hazard-mitigation-funds

FEMA. (2021b, August). *Where Equity Fits into the BRIC/FMA Program Design and Community Resilience*. Webinar. Retrieved from https://www.fema.gov/event/where-equity-fits-bricfma-program-design-and-community-resilience

Feng, X., & Behar-Horenstein, L. (2019). Maximizing NVivo utilities to analyze open-ended responses. *The Qualitative Report*, *24*(3), 563–571.

Fingal, S. C. (2019). *Latinx environmentalism*. In *Oxford Research Encyclopedia of American History*. https://doi.org/10.1093/acrefore/9780199329175.013.421

Fink, A. (2015). *How to conduct surveys: A step-by-step guide*. Sage Publications.

Flanagan, B. E., Gregory, E. W., Hallisey, E. J., Heitgerd, J. L., & Lewis, B. (2011). A Social Vulnerability Index for Disaster Management. *Journal of Homeland Security and Emergency Management*, *8*(1). https://doi.org/10.2202/1547-7355.1792

FNPOC EJS. (1991). *The Principles of Environmental Justice*. Retrieved from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjYxraUzZH2AhU8lGoFHbcECIkQFnoECAYQAQ&url=https%3A%2F%2Fwww.ejnet.org%2Fej%2Fprinciples.pdf&usg=AOvVaw1rp4NgNcZFXhLhdiaTeq8v

Folz, D. H. (1996). *Survey research for public administration*. Sage Publications.

Frank, T. (2021a, August 12). FEMA revises rules to address inequity in climate grants. Retrieved September 9, 2021, from Environment & Energy Publishing website: https://subscriber.politicopro.com/article/eenews/2021/08/12/fema-revises-rules-to-address-inequity-in-climate-grants-279527

Frank, T. (2021b, August 19). Flood insurance covers the rich, FEMA finds. Retrieved September 9, 2021, from Environment & Energy Publishing website: https://subscriber.politicopro.com/article/eenews/2021/08/19/flood-insurance-covers-the-rich-fema-finds-279750

Fraser, N. (2000). Rethinking Recognition. *New Left Review*, (3), 107–120.

Frazier, T. G., Walker, M. H., Kumari, A., & Thompson, C. M. (2013). Opportunities and constraints to hazard mitigation planning. *Applied Geography*, *40*, 52–60. https://doi.org/10.1016/j.apgeog.2013.01.008

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, *20*(9), 1408.

Fussell, E., Delp, L., Riley, K., Chávez, S., & Jr, A. V. (2018). Implications of social and legal status on immigrants' health in disaster zones. *American Journal of Public Health*, *108*(12), 1617–1620. https://doi.org/10.2105/AJPH.2018. 304554)

Gaillard, J. C., & Peek, L. (2019). Disaster-zone research needs a code of conduct. *Nature*, *575*.

Gaillard, Jean Christophe. (2019). Disaster studies inside out. *Disasters*, *43*, S7–S17. https://doi.org/10.1111/disa.12323

García, I. (2021). Deemed ineligible: Reasons homeowners in Puerto Rico were denied aid after Hurricane María. *Housing Policy Debate*, 1–21. https://doi.org/10.1080/10511482.2021.1890633

Gibson, J., Hendricks, M. D., & Wells, J. C. (2020). *Defining partnership: Incorporating equitable participatory methodologies in heritage disaster recovery planning for socially vulnerable groups*. In *Learning from Arnstein's Ladder* (pp. 50–66). Routledge.

Gibson-Wood, H., & Wakefield, S. (2013). "Participation", white privilege and environmental justice: Understanding environmentalism among hispanics in Toronto. *Antipode*, *45*(3), 641–662. https://doi.org/10.1111/j.1467-8330.2012.01019.x

Gonick, S. A., & Errett, N. A. (2018). Integrating climate change into hazard mitigation planning: A survey of state Hazard mitigation officers. *Sustainability*, *10*(11), 4150. https://doi.org/10.3390/su10114150

Gould, C. (1996). Diversity and democracy: Representing differences. *Democracy and Difference: Contesting the Boundaries of the Political*, 171–186.

Gourevitch, J. D., Singh, N. K., Minot, J., Raub, K. B., Rizzo, D. M., Wemple, B. C., & Ricketts, T. H. (2020). Spatial targeting of floodplain restoration to equitably mitigate flood risk.

Global Environmental Change, *61*, 102050. https://doi.org/10.1016/j.gloenvcha.2020.102050

Griego, A. L., Flores, A. B., Collins, T. W., & Grineski, S. E. (2020). Social vulnerability, disaster assistance, and recovery: A population-based study of Hurricane Harvey in Greater Houston, Texas. *International Journal of Disaster Risk Reduction*, *51*, 101766. https://doi.org/10.1016/j.ijdrr.2020.101766

Grineski, S. E., Collins, T. W., Chakraborty, J., & Montgomery, M. (2017). Hazard characteristics and patterns of environmental injustice: Household-level determinants of environmental risk in Miami, Florida. *Risk Analysis*, *37*(7), 1419–1434. https://doi.org/10.1111/risa.12706

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Ectj*, *29*(2), 75–91.

Guibrunet, L., Gerritsen, P. R. W., Sierra-Huelsz, J. A., Flores-Díaz, A. C., García-Frapolli, E., García-Serrano, E., … Balvanera, P. (2021). Beyond participation: How to achieve the recognition of local communities' value-systems in conservation? Some insights from Mexico. *People and Nature*, *3*(3), 528–541. https://doi.org/10.1002/pan3.10203

Gyawali, S., Tiwari, S. R., Bajracharya, S. B., & Skotte, H. N. (2020). Promoting sustainable livelihoods: An approach to postdisaster reconstruction. *Sustainable Development*, *28*(4), 626–633. https://doi.org/10.1002/sd.2013

Hamideh, S. (2020). Opportunities and Challenges of Public Participation in Post-Disaster Recovery Planning: Lessons from Galveston, TX. *Natural Hazards Review*, *21*(4), 05020009. https://doi.org/10.1061/(ASCE)NH.1527-6996.0000399

Harding, S. (1977). Does objectivity in social science require value-neutrality? *Soundings*, *60*(4), 351–366.

Harrison, J. L. (2015). Coopted environmental justice? Activists' roles in shaping EJ policy implementation. *Environmental Sociology*, *1*(4), 241–255. https://doi.org/10.1080/23251042.2015.1084682

Harrison, J. L. (2016). Bureaucrats' tacit understandings and social movement policy implementation: Unpacking the deviation of agency environmental justice programs from EJ movement priorities. *Social Problems*, *63*(4), 534–553. https://doi.org/10.1093/socpro/spw024

Healthy Gulf. (2021, July 21). Comment Submitted by Healthy Gulf. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0274

Heck, S. (2021). Greening the color line: Historicizing water infrastructure redevelopment and environmental justice in the St. Louis metropolitan region. *Journal of Environmental Policy & Planning*, *23*(5), 565–580. https://doi.org/10.1080/1523908X.2021.1888702

Hendricks, M. D., & Van Zandt, S. (2021). Unequal protection revisited: Planning for environmental justice, hazard vulnerability, and critical infrastructure in communities of color. *Environmental Justice*, *14*(2), 87–97. https://doi.org/10.1089/env.2020.0054

Herreros-Cantis, P., & McPhearson, T. (2021). Mapping supply of and demand for ecosystem services to assess environmental justice in New York City. *Ecological Applications*, *31*(6). https://doi/org/10.1002/eap.2390

Hino, M., & Nance, E. (2021). Five ways to ensure flood-risk research helps the most vulnerable. *Nature*, *595*, 27–29. https://doi.org/10.1038/d41586-021-01750-0

Holifield, R., Chakraborty, J., & Walker, G. (2018). *The Routledge handbook of environmental justice*. Routledge, Taylor & Francis Group London, UK:

Honneth, A. (1992). Principles of a Conception of Morality Based on the Theory of Recognition. *Political Theory*, *20*(2), 187–201.

Hourdequin, M. (2019). Geoengineering justice: The role of recognition. *Science, Technology, & Human Values*, *4*(3), 448–477. https://doi.org/10.1177/0162243918802893

House Select Committee on the Climate Crisi. *Advancing Environmental Justice Through Climate Action*. , § House Select Committee on the Climate Crisis (2021).

Iceland, J., Weinberg, D. H., & Steinmetz, E. (2002). *Racial and ethnic residential segregation in the United States 1980-2000* (Vol. 8). Bureau of Census.

Insurance Institute for Business & Home Safety. (2021, July 18). Comment Submitted by Insurance Institute for Business & Home Safety. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0204

Jacobs, F. (2019). Black feminism and radical planning: New directions for disaster planning research. *Planning Theory*, *18*(1), 24–39. https://doi.org/10.1177/1473095218763221

Jenkins, P., Lambeth, T., Mosby, K., & Brown, B. V. (2015). Local nonprofit organizations in a post-Katrina landscape: Help in a context of recovery. *American Behavioral Scientist*, *59*(10), 1263–1277. https://doi.org/10.1177/0002764215591183

Knez, I. (2005). Attachment and identity as related to a place and its perceived climate. *Ournal of Environmental Psychology*, *25*(2), 207–218. https://doi.org/10.1016/j.jenvp.2005.03.003

Kompridis, N. (2014). *The aesthetic turn in political thought*. Bloomsbury Publishing USA.

Kopp, R. E. (2021). Land-grant lessons for Anthropocene universities. *Climatic Change*, *165*(1), 1–12. https://doi.org/10.1007/s10584-021-03029-9

Kraan, C. M., Hino, M., Niemann, J., Siders, A. R., & Mach, K. J. (2021). Promoting equity in retreat through voluntary property buyout programs. *Journal of Environmental Studies and Sciences*, 1–12. https://doi.org/10.1007/s13412-021-00688-z

Krauss, W., & Storch, H. von. (2012). Post-Normal Practices Between Regional Climate Services and Local Knowledge. *Nature and Culture*, *7*(2), 213–230. https://doi.org/10.3167/nc.2012.070206

Krings, A., & Copic, C. (2021). Environmental justice organizing in a gentrifying community: Navigating dilemmas of representation, issue selection, and recruitment. *Families in Society*, *102*(2), 154–166. https://doi.org/1d0o.i1.o1r7g/71/01.10147473/180944238094522029452 7

Lau, J. D., Gurney, G. G., & Cinner, J. (2021). Environmental justice in coastal systems: Perspectives from communities confronting change. *Global Environmental Change*, *66*, 102208. https://doi.org/10.1016/j.gloenvcha.2020.102208

Lavell, A., Oppenheimer, M., Diop, C., Hess, J., Lempert, R., Li, J., … Takeuchi, K. (2012). Climate change: New dimensions in disaster risk, exposure, vulnerability, and resilience. In *Managing the risks of extreme events and disasters to advance climate change adaptation: Special report of the intergovernmental panel on climate change* (pp. 25–64). Cambridge University Press.

Lee, C. (2020). A game changer in the making? Lessons from states advancing environmental justice through mapping and cumulative impact strategies. *Envtl.L.Rep.*, *50*, 10203.

Lee, C. (2021). Evaluating Environmental Protection Agency's Definition of Environmental Justice. *Environmental Justice*, *14*(5), 332–337. https://doi.org/10.1089/env.2021.0007

LeRoux, K. M., & Sneed, B. G. (2006). The convergence of public and nonprofit values: A research agenda for the intersectoral study of representative bureaucracy. *International Journal of Organization Theory & Behavior*.

Lewis, M. L., Rappe, P. T., Tierney, L. K., & Albury, J. D. (2019). Stay or go! Challenges for Hispanic families preceding hurricanes: Lessons learned. *Journal of Family Strengths*, *19*(1), 3.

Liao, K.-H., Chan, J. K. H., & Huang, Y.-L. (2019). Environmental justice and flood prevention: The moral cost of floodwater redistribution. *Landscape and Urban Planning*, *189*, 36–45. https://doi.org/10.1016/j.landurbplan.2019.04.012

Lieberknecht, K., Zoll, D., Jiao, J., & Castles, K. (2021). Hurricane Harvey: Equal opportunity storm or disparate disaster? *Local Environment*, *26*(2), 216–238. https://doi.org/10.1080/13549839.2021.1886063

Liski, A. H., Ambros, P., Metzger, M. J., Nicholas, K. A., Wilson, A. M. W., & Krause, T. (2019). Governance and stakeholder perspectives of managed re-alignment: Adapting to sea level rise in the Inner Forth estuary, Scotland. *Regional Environmental Change*, *19*(8), 2231–2243. https://doi.org/10.1007/s10113-019-01505-8

Lloréns, H., & Stanchich, M. (2019). Water is life, but the colony is a necropolis: Environmental terrains of struggle in Puerto Rico. *Cultural Dynamics*, *31*(1–2), 81–101. https://doi.org/10.1177/0921374019826200

London, J. K., & Harrison, J. L. (2021). From Environmental Justice Activist to Agency Staff: Implications for Agencies, Movement Organizations, and These Insider Allies. *Environmental Justice*, *14*(5), 338–344. https://doi.org/10.1089/env.2021.0011

London, J. K., Schwarz, K., Cadenasso, M. L., Cutts, B. B., Jr, C. M., Lim, J., … Smith, H. (2018). Weaving community-university research and action partnerships for environmental justice. *Action Research*, *16*(2), 173–189. https://doi.org/10.1177/1476750316678915

Loughran, K., & Elliott, J. R. (2021). Unequal Retreats: How Racial Segregation Shapes Climate Adaptation. *Housing Policy Debate*, 1–19. https://doi.org/10.1080/10511482.2021.1931928

Louis-Charles, H. M., Howard, R., Remy, L., Nibbs, F., & Turner, G. (2020). Ethical considerations for postdisaster fieldwork and data collection in the Caribbean. *American Behavioral Scientist*, *64*(8), 1129–1144. https://doi.org/10.1177/0002764220938113

Lu, J. (2015). Which nonprofit gets more government funding? Nonprofits' organizational attributes and their receipts of government funding. *Nonprofit Management and Leadership*, *25*(3), 297–312. https://doi.org/10.1002/nml.21124

Lynham, S. A. (2002). The general method of theory-building research in applied disciplines. *Advances in Developing Human Resources*, *4*(3), 221–241.

Mach, K. J., Kraan, C. M., Hino, M., Siders, A. R., Johnston, E. M., & Field, C. B. (2019). Managed retreat through voluntary buyouts of flood-prone properties. *Science Advances*, *5*(10), eaax8995. https://doi.org/ 10.1126/sciadv.aax8995

Maldonado, A., Collins, T. W., & Grineski, S. E. (2016). Hispanic Immigrants' Vulnerabilities to Flood and Hurricane Hazards in Two United States Metropolitan Areas. *Geographical Review*, *106*(1), 109–135. https://doi.org/10.1111/j.1931-0846.2015.12103.x

Marino, E. (2018). Adaptation privilege and voluntary buyouts: Perspectives on ethnocentrism in sea level rise relocation and retreat policies in the US. *Global Environmental Change*, *49*, 10–13. https://doi.org/10.1016/j.gloenvcha.2018.01.002

Martin, A., Coolsaet, B., Corbera, E., Dawson, N. M., Fraser, J. A., Lehmann, I., & Rodriguez, I. (2016). Justice and conservation: The need to incorporate recognition. *Biological Conservation*, *197*, 254–261. https://doi.org/10.1016/j.biocon.2016.03.021

Maryland Emergency Management Agency. (2021, June 8). Comment Submitted by Maryland Emergency Management Agency. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/document/FEMA-2021-0011-0001/comment?filter=Maryland%20Emergency%20Management%20Agency

Maung, R., & Pellow, D. N. (2021). *Environmental Justice*. In *Handbook of Environmental Sociology* (pp. 35–52). Springer.

Medwinter, S. D. (2021). Reproducing poverty and inequality in disaster: Race, class, social capital, NGOs, and urban space in New York City after Superstorm Sandy. *Environmental Sociology*, *7*(1), 1–11. https://doi.org/10.1080/23251042.2020.1809054

Mehta, A., Brennan, M., & Steil, J. (2020). Affordable housing, disasters, and social equity: LIHTC as a tool for preparedness and recovery. *Journal of the American Planning Association*, *86*(1), 75–88. https://doi.org/10.1080/01944363.2019.1667261

Méndez, M., Flores-Haro, G., & Zucker, L. (2020). The (in) visible victims of disaster: Understanding the vulnerability of undocumented Latino/a and indigenous immigrants. *Geoforum*, *116*, 50–62. https://doi.org/10.1016/j.geoforum.2020.07.007

Messager, M. L., Ettinger, A. K., Murphy-Williams, M., & Levin, P. S. (2021). Fine-scale assessment of inequities in inland flood vulnerability. *Applied Geography*, *133*, 102492. https://doi.org/10.1016/j.apgeog.2021.102492

Meyers, C. (2011). Re appreciating WD Ross: Naturalizing prima facie duties and a proposed method. *Journal of Mass Media Ethics*, *26*(4), 316–331. https://doi.org/10.1080/08900523.2011.606009

Moezzi, M., & Peek, L. (2019). Stories for Interdisciplinary Disaster Research Collaboration. *Risk Analysis*. https://doi.org/10.1111/risa.13424

Muñoz, C. E., & Tate, E. (2016). Unequal recovery? Federal resource distribution after a Midwest flood disaster. *International Journal of Environmental Research and Public Health*, *13*(5), 507. https://doi.org/10.3390/ijerph13050507

Naiman, S. M., Schusler, T. M., & Schuldt, J. P. (2019). Environmental engagement among Latinos: An exploratory study of environmentalists in the greater Chicago area. *Journal of Environmental Studies and Sciences*, *9*(1), 109–121. https://doi.org/10.1007/s13412-018-0511-8

National Audubon Society. (2021, July 21). Comment Submitted by National Audubon Society. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0294

National Weather Service. (2018). *Hurricane Florence: September 14, 2018*. Retrieved from Retrieved from https://www.weather.gov/ilm/HurricaneFlorence

National Wildlife Federation. (2021, July 21). Comment Submitted by National Wildlife Federation. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0266

Naylor, L., Fall, V., & Fox, A. (2020). The power of place in disaster recovery: Heritage-based practice in the post-Matthew landscape of Princeville, North Carolina. *Parks Stewardship Forum*, *36*. https://doi.org/10.5070/P536146398

Nelson, K. S., & Molloy, M. (2021). Differential disadvantages in the distribution of federal aid across three decades of voluntary buyouts in the United States. *Global Environmental Change*, *68*, 102278. https://doi.org/10.1016/j.gloenvcha.2021.102278

Newell, P., Srivastava, S., Naess, L. O., Contreras, G. A. T., & Price, R. (2021). Toward transformative climate justice: An emerging research agenda. *Wiley Interdisciplinary Reviews: Climate Change*, *12*(6), e733. https://doi.org/10.1002/wcc.733

Nicholson-Crotty, J. (2011). Nonprofit organizations, bureaucratic agencies, and policy: Exploring the determinants of administrative advocacy. *The American Review of Public Administration*, *41*(1), 61–74. https://doi.org/10.1177/0275074009359681

Norman, E. S. (2017). Standing up for inherent rights: The role of Indigenous-led activism in protecting sacred waters and ways of life. *Society & Natural Resources*, *30*(4), 537–553. https://doi.org/10.1080/08941920.2016.1274459

Northouse, P. G. (2021). *Leadership: Theory and practice*. Sage publications.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1), 1609406917733847. https://doi.org/10.1177/1609406917733847

O'Brien, M. H. (1993). Being a Scientist Means Taking Sides. *Bioscience*, *43*(10), 706–708. https://doi.org/10.2307/1312342

Peacock, W. G., Zandt, S. V., Zhang, Y., & Highfield, W. E. (2015). Inequities in Long-Term Housing Recovery After Disasters. *Journal of the American Planning Association*, *80*(4), 356–371. https://doi.org/10.1080/01944363.2014.980440

Peek, L., Champeau, H., Austin, J., Mathews, M., & Wu, H. (2020). What methods do social scientists use to study disasters? An analysis of the Social Science Extreme Events Research Network. *American Behavioral Scientist*, *64*(8), 1066–1094. https://doi.org/10.1177/0002764220938105

Peguero, A. A. (2006). Latino disaster vulnerability: The dissemination of hurricane mitigation information among Florida's homeowners. *Hispanic Journal of Behavioral Sciences*, *28*(1), 5–22.

Penman, T. D., Eriksen, C., Horsey, B., Green, A., Lemcke, D., Cooper, P., & Bradstock, R. A. (2017). Retrofitting for wildfire resilience: What is the cost? *International Journal of Disaster Risk Reduction*, *21*, 1–10. https://doi.org/10.1016/j.ijdrr.2016.10.020

PEW Research Center. (2020a). *U.S. Hispanic population surpassed 60 million in 2019, but growth has slowed*. Retrieved from https://www.pewresearch.org/fact-tank/2020/07/07/u-s-hispanic-population-surpassed-60-million-in-2019-but-growth-has-slowed/

PEW Research Center. (2020b, August 11). About one-in-four U.S. Hispanics have heard of Latinx, but just 3% use it. Retrieved from https://www.pewresearch.org/hispanic/2020/08/11/about-one-in-four-u-s-hispanics-have-heard-of-latinx-but-just-3-use-it/

Popping, R. (2015). Analyzing open-ended questions by means of text analysis procedures. *Bulletin of Sociological Methodology/Bulletin de Méthodologie Sociologique*, *128*(1), 23–39. https://doi.org/10.1177/0759106315597389

Pulido, L. (1996). *Environmentalism and economic justice: Two Chicano struggles in the Southwest*. University of Arizona Press.

Pulido, L. (2007). A day without immigrants: The racial and class politics of immigrant exclusion. *Antipode*, *39*(1), 1–7.

Pulido, L., Kohl, E., & Cotton, N.-M. (2016). State Regulation and Environmental Justice: The Need for Strategy Reassessment. *Capitalism, Nature, Socialism*, *27*(2), 12–31. https://doi.org/10.1080/10455752.2016.1146782

Pyles, L. (2017). Decolonising disaster social work: Environmental justice and community participation. *British Journal of Social Work*, *47*(3), 630–647. https://doi.org/10.1093/bjsw/bcw028

Raker, E. J., Arcaya, M. C., Lowe, S. R., Zacher, M., Rhodes, J., & Waters, M. C. (2020). Mitigating Health Disparities After Natural Disasters: Lessons From The RISK Project: Study examines mitigating health disparities after natural disasters. *Health Affairs*, *39*(12), 2128–2135. https://doi/org/10.1377/hlthaff.2020.01161

Resilience Force. (2021, July 21). Comment Submitted by Resilience Force. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0269

Richter, L. (2018). Constructing insignificance: Critical race perspectives on institutional failure in environmental justice communities. *Environmental Sociology*, *4*(1), 107–121. https://doi.org/10.1080/23251042.2017.1410988

Rigolon, A., & Gibson, S. (2021). The role of non-governmental organizations in achieving environmental justice for green and blue spaces. *Landscape and Urban Planning*, *205*, 103970. https://doi.org/10.1016/j.landurbplan.2020.103970

Rivera, D. Z., Jenkins, B., & Randolph, R. (2021). Procedural Vulnerability and Its Effects on Equitable Post-Disaster Recovery in Low-Income Communities. *Journal of the American Planning Association*, 1–12. https://doi.org/10.1080/01944363.2021.1929417

Roberts, E., Anderson, B. A., Skerratt, S., & Farrington, J. (2017). A review of the rural-digital policy agenda from a community resilience perspective. *Journal of Rural Studies*, *54*, 372–385. https://doi.org/10.1016/j.jrurstud.2016.03.001

Rodriguez-Díaz, C. E., & Lewellen-Williams, C. (2020). Race and racism as structural determinants for emergency and recovery response in the aftermath of hurricanes Irma and Maria in Puerto Rico. *Health Equity*, *4*(1), 232–238. https://doi.org/10.1089/heq.2019.0103

Ross, A., & Clay, L. A. (2018). Capital Assets and Rural Resilience: An Analysis of Texas Communities Impacted by Hurricane Harvey. *Journal of Natural Resources Policy Research*, *8*(1–2), 154–186. https://doi.org/10.5325/naturesopolirese.8.1-2.0154

Ross, D. (1930). *The right and the good*. Oxford University Press.

Sadiq, A.-A., Tyler, J., Noonan, D. S., Norton, R. K., Cunniff, S. E., & Czajkowski, J. (2020). Review of the federal emergency management agency's community rating system program. *Natural Hazards Review*, *21*(1), 03119001. https://doi.org/10.1061/(ASCE)NH.1527-6996.0000320

Sarzynski, A., & Cavaliere, P. (2018). *Public participation in planning for community management of natural hazards*. In *Oxford Research Encyclopedia of Natural Hazard Science*.

Scharrón-del Río, M. R., & Aja, A. A. (2020). Latinx: Inclusive language as liberation praxis. *Journal of Latinx Psychology*, *8*(1), 7. https://doi.org/10.1037/lat0000140

Schlosberg, D. (2003). The justice of environmental justice: Reconciling equity, recognition, and participation in a political movement. *Moral and Political Reasoning in Environmental Practice*, *77*, 106.

Schlosberg, D. (2007). *Defining environmental justice: Theories, movements, and nature*. OUP Oxford.

Schlosberg, D. (2012). Climate justice and capabilities: A framework for adaptation policy. *Ethics & International Affairs*, *26*(4), 445–461. https://doi.org/10.1017/S0892679412000615

Schlosberg, D., & Carruthers, D. (2010). Indigenous struggles, environmental justice, and community capabilities. *Global Environmental Politics*, *10*(4), 12–35.

Schlosberg, D., & Collins, L. B. (2014). From environmental to climate justice: Climate change and the discourse of environmental justice. *Wiley Interdisciplinary Reviews: Climate Change*, *5*(3), 359–374. https://doi.org/10.1002/wcc.275

Scott, P., Richards, E., & Martin, B. (1990). Captives of Controversy: The Myth of the Neutral Social Researcher in Contemporary Scientific Controversies. *Science, Technology, & Human Values*, *15*(4), 474.

Seong, K., Losey, C., & Gu, D. (2021). Naturally Resilient to Natural Hazards? Urban–Rural Disparities in Hazard Mitigation Grant Program Assistance. *Housing Policy Debate*, 1–21. https://doi.org/10.1080/10511482.2021.1938172

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, *22*(2), 63–75. https://doi.org/10.3233/EFI-2004-22201

Siders, A. R. (2019). Social justice implications of US managed retreat buyout programs. *Climatic Change*, *152*(2), 239–257. https://doi.org/10.1007/s10584-018-2272-5

Sledge, D., & Thomas, H. F. (2019). From disaster response to community recovery: Nongovernmental entities, government, and public health. *American Journal of Public Health*, *109*(3), 437–444. https://doi.org/10.2105/AJPH.2018.304895

Smith, G., Lyles, W., & Berke, P. (2013). The Role of the State in Building Local Capacity and Commitment for Hazard Mitigation Planning. *International Journal of Mass Emergencies & Disasters*, *31*(2).

Smith, G., & Vilá, O. (2020). A national evaluation of state and territory roles in hazard mitigation: Building local capacity to implement fema hazard mitigation assistance grants. *Sustainability*, *12*(23), 10013. https://doi.org/10.3390/su122310013.

Smith, K. (2021, July 1). Mountain, Midwest, and Gulf States Fail to Secure FEMA Resilience Funding. Retrieved September 9, 2021, from Headwaters Economics website: https://headwaterseconomics.org/natural-hazards/bric-funding/?fbclid=IwAR3GD5lun3Y7cSL6heU78INwIw4b_rDcje8K25qP3BYTfZj8dO26xzU5y0k

Sotolongo, M., Kuhl, L., & Baker, S. H. (2021). Using environmental justice to inform disaster recovery: Vulnerability and electricity restoration in Puerto Rico. *Environmental Science & Policy*, *122*, 59–71. https://doi.org/10.1016/j.envsci.2021.04.004

Spialek, M. L., Houston, J. B., Shin, H., Okker-Edging, K., & Suzuki, V. P. (2021). Individual disaster communication in the Latinx community after Hurricane Harvey: The role of disaster exposure, perceived discrimination stress, and social trust. *Communication Monographs*, *88*(3), 330–349. https://doi.org/10.1080/03637751.2020.1851038

State of Alaska Division of Homeland Security and Emergency Management. (2021, July 21). State of Alaska Division of Homeland Security and Emergency Management. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/comment/FEMA-2021-0011-0156

Straub, A., Gray, B., Ritchie, L., & Gill, D. (2020). Cultivating disaster resilience in rural Oklahoma: Community disenfranchisement and relational aspects of social capital. *Journal of Rural Studies*, *73*, 105–113. https://doi.org/10.1016/j.jrurstud.2019.12.010

Strully, K., Yang, T.-C., & Liu, H. (2021). Regional variation in COVID-19 disparities: Connections with immigrant and Latinx communities in US counties. *Annals of Epidemiology*, *53*, 56-62. e2. https://doi.org/10.1016/j.annepidem.2020.08.016

Sullivan, E., Goidel, K., Brown, S. E., Kellstedt, P., & Horney, J. A. (2021). Do hazard mitigation plans represent the resilience priorities of residents in vulnerable Texas coastal counties? *Natural Hazards*, 1–16. https://doi.org/10.1007/s11069-021-04545-8

Swanson, R. A., & Chermack, T. J. (2013). *Theory building in applied disciplines*. Berrett-Koehler Publishers.

Tate, E., Rahman, M. A., Emrich, C. T., & Sampson, C. C. (2021). Flood exposure and social vulnerability in the United States. *Natural Hazards*, *106*(1), 435–457. https://doi.org/10.1007/s11069-020-04470-2

Taylor, D. (2011). The Evolution of Environmental Justice Activism. *Environmental Practice*, *13*(4), 280–300.

Taylor, D. E. (2000). The rise of the environmental justice paradigm: Injustice framing and the social construction of environmental discourses. *American Behavioral Scientist*, *43*(4), 508–580.

The White House. (2021, January 7). Executive Order on Tackling the Climate Crisis at Home and Abroad. Retrieved from Whitehouse.gov website: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/

Tilt, J. H., & Ries, P. D. (2021). Constraints and catalysts influencing green infrastructure projects: A study of small communities in Oregon (USA). *Urban Forestry & Urban Greening*, *63*, 127138. https://doi.org/10.1016/j.ufug.2021.127138

Urkidi, L., & Walter, M. (2011). Dimensions of environmental justice in anti-gold mining movements in Latin America. *Geoforum*, *42*(6), 683–695. https://doi.org/10.1016/j.geoforum.2011.06.003

US Census Bureau. (2021). About the Hispanic population and its origin. Retrieved from https://www.census.gov/topics/population/hispanic-origin/about.html

Van Brown, B. L. (2020). Disaster research "methics": Ethical and methodological considerations of researching disaster-affected populations. *American Behavioral Scientist*, *64*(8), 1050–1065. https://doi.org/10.1177/0002764220938115

Voogt, D. L. de, Bisschops, S., & Munaretto, S. (2019). Participatory social capacity building: Conceptualisation and experiences from pilots for flood risk mitigation in the Netherlands. *Environmnetal Science and Policy*, *99*, 89–96. https://doi.org/10.1016/j.envsci.2019.05.019

Waitt, G., & Harada, T. (2019). Space of energy well-being: Social housing tenants' everyday experiences of fuel poverty. *Transactions of the Institute of British Geographers*, *44*(4), 794–807. https://doi.org/10.1111/tran.12320

Walker, G., & Day, R. (2012). Fuel poverty as injustice: Integrating distribution, recognition and procedure in the struggle for affordable warmth. *Energy Policy*, *49*, 69–75. https://doi.org/10.1016/j.enpol.2012.01.044

Webler, T., & Tuler, S. (2021). Four decades of public participation in risk decision making. *Risk Analysis*, *41*(3), 503–518. https://doi.org/10.1111/risa.13250

Wells, K. B., Tang, J., Lizaola, E., Jones, F., Brown, A., Stayton, A., … Plough, A. (2013). Applying Community Engagement to Disaster Planning: Developing the Vision and Design for the Los Angeles County Community Disaster Resilience Initiative. *American Journal of Public Health (1971)*, *103*(7), 1172–1180. https://doi.org/10.2105/ajph.2013.301407

Williams, M., & Moser, T. (2019). The art of coding and thematic exploration in qualitative research. *International Management Review*, *15*(1), 45–55.

Willison, C. E., Singer, P. M., Creary, M. S., & Greer, S. L. (2019). Quantifying inequities in US federal response to hurricane disaster in Texas and Florida compared with Puerto Rico. *BMJ Global Health*, *4*(1), e001191. https://doi.org/10.1136/bmjgh-2018-001191

Wisconsin Emergency Management. (2021, July 21). Comment Submitted by Wisconsin Emergency Management. Retrieved September 24, 2021, from Regulations.gov website: https://www.regulations.gov/document/FEMA-2021-0011-0001/comment?filter=Wisconsin%20Emergency%20Management%20

Wong, S. D., Broader, J. C., & Shaheen, S. A. (2020). Can sharing economy platforms increase social equity for vulnerable populations in disaster response and relief? A case study of the 2017 and 2018 California wildfires. *Transportation Research Interdisciplinary Perspectives*, *5*, 100131. https://doi.org/10.1016/j.trip.2020.100131

Wordsworth, R., Hall, C. M., Prayag, G., & Malinen, S. (2021). *Critical perspectives on disaster and crisis research: Revealing and responding to vulnerability*. In *Research in Times of Crisis*. Emerald Publishing Limited.

Yeo, J. (2020). Collective Action and Vulnerable Populations: Interorganizational Collaboration for Undocumented Immigrants' Disaster Safety Following Hurricane Irma 2017. *Natural Hazards Review*, *21*(1), 5019003. https://doi.org/10.1061/(ASCE)NH.1527-6996.0000344

Young, I. (1990). *Justice and the Politics of Difference*. Princeton, N.J.: Princeton University Press.

Zhang, Y. (2010). Residential Housing Choice in a Multihazard Environment: Implications for Natural Hazards Mitigation and Community Environmental Justice. *Journal of Planning Education and Research*, *30*(2), 117–131. https://doi.org/10.1177/0739456X10381386

Zoll, D. (2022). We Can't Address What We Don't Acknowledge: Confronting Racism in Adaptation Plans. In *Strategies for Sustainability*. *Justice in Climate Action Planning* (pp. 3–23). Springer.

APPENDICES

Appendix A: SHMO Survey Low-Capacity Community Subsection

The next questions focus on the capabilities of the jurisdiction you represent to help *low-capacity communities* apply for and administer FEMA Hazard Mitigation Assistance (HMA) grants. *Remember, your responses should specifically reflect your jurisdictional responsibility (i.e., your own agency or organization) unless you are specifically asked to think about these issues from a local perspective*.

Q1. Please describe characteristics of "low-capacity communities" in your state, territory, or tribe. Provide as much detail as possible. By "low-capacity community", we mean those communities in your state, territory, or tribe which, on their own, are *least able* to successfully apply for and implement HMA grants.

_____

Q2. Does the jurisdiction you represent have specific policies, practices, or strategies in place for identifying low-capacity communities in your state, territory, or tribe?
By "low-capacity community", we mean those communities in your state, territory, or tribe which, on their own, are *least able* to successfully apply for and implement HMA grants.

- ○ Yes
- ○ No

Display This Question: If Does the jurisdiction you represent have specific policies, practices, or strategies in place for... = Yes

Q3. Please describe the specific policies, practices, or strategies used by the jurisdiction you represent to identify low-capacity communities in your state, territory, or tribe.
By "low-capacity community", we mean those communities in your state, territory, or tribe which, on their own, are *least able* to successfully apply for and implement HMA grants.

_____

Q4. Does the jurisdiction you represent have specific policies, practices, or strategies in place for reaching out to low-capacity communities in your state, territory, or tribe in relation to hazard mitigation?
By "low-capacity community", we mean those communities in your state, territory, or tribe which, on their own, are *least able* to successfully apply for and implement HMA grants.

- ○ Yes
- ○ No

Display This Question: If Does the jurisdiction you represent have specific policies, practices, or strategies in place for… = Yes

Q5. Please describe the specific policies, practices, or strategies used by the jurisdiction you represent to reach out to low-capacity communities in your state, territory, or tribe in relation to hazard mitigation.
By "low-capacity community", we mean those communities in your state, territory, or tribe which, on their own, are *least able* to successfully apply for and implement HMA grants.

Q6. Please describe your level of *agreement with the following statements* regarding low-capacity communities in the jurisdiction you represent.
By "low-capacity community", we mean those communities in your state, territory, or tribe which, on their own, are *least able* to successfully apply for and implement HMA grants.

Question	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
The jurisdiction I represent has a clear understanding of where the low-capacity communities are in my state, territory, or tribe					
The jurisdiction I represent has a clear understanding of the knowledge, skills, and resources needed in low-capacity communities in my state, territory, or tribe to help address their hazard mitigation needs					
The jurisdiction I represent has access to the knowledge, skills, and resources needed to help low-capacity communities in my state, territory, or tribe with their hazard mitigation needs					
Low-capacity communities in the jurisdiction I represent leverage the knowledge, skills, and resources available at the state- territory- or tribal-level to enhance their hazard mitigation capacity					
Representatives from low-capacity communities in the jurisdiction I represent attend hazard mitigation-related conferences, meetings, or trainings					
Representatives from low-capacity communities in the jurisdiction I represent contribute to state-, territory-, or tribal-level discussions about hazard mitigation					

Representatives from low-capacity communities in the jurisdiction I represent directly assist in the writing/revision of hazard mitigation related policy at the state-, territory-, or tribal-level
Low-capacity communities in the jurisdiction I represent successfully apply for FEMA hazard mitigation assistance grants
Low-capacity communities in the jurisdiction I represent successfully implement FEMA hazard mitigation assistance grants

Q7. In the space below, please describe barriers you perceive, if any, encountered by low-capacity communities in the jurisdiction you represent that prevent them from leveraging hazard mitigation-related resources provided by the state, territory, or tribe.
By "low-capacity community", we mean those communities in your state, territory, or tribe which, on their own, are *least able* to successfully apply for and implement HMA grants.

Appendix B: SHMO Survey Consent Form

North Carolina State University is conducting a study that is focused on the role that states, territories, and tribes play in implementing FEMA Hazard Mitigation Assistance (HMA) programs. Emphasis will be placed on understanding the ability of states, territories, and tribes to assist local governments in building the capacity to write and implement Hazard Mitigation Assistance (HMA) grants.

Survey participants are limited to State Hazard Mitigation Officers or those officials in your state, territory, or tribe responsible for the administration of FEMA-funded hazard mitigation grants. As a key official involved in hazard mitigation, your expertise is highly valued. In the following survey, you will find the questions we would like you to answer to the best of your ability. This survey is intended to build upon FEMA's stakeholder engagement efforts and further inform the implementation of Hazard Mitigation Assistance programs. It is also intended to help researchers better understand the role of states, territories, and tribes in implementing FEMA-funded hazard mitigation grants in general as well as the degree to which states invest in hazard mitigation activities beyond the funding provided by FEMA.

Your participation in this survey is entirely voluntary and your responses will be kept confidential. You can choose not to answer any of the questions, or you can stop your participation at any time. Your answers will not be associated with any personally identifiable information in any reports. We will make every effort to report information in such a way that no one outside of our team will know you participated.

This project is funded by the Department of Homeland Security, Science and Technology Directorate, Office of University Programs through the Department of Homeland Security's Coastal Resilience Center of Excellence.

This study has been reviewed and approved by the North Carolina State University Institutional Review Board, and if you have any questions about your rights in this study, you may contact them by phone at (919) 515-8754.

If you have questions about the survey or research study, please feel free to contact us:

Phone: 919-606-5578, ask for Gavin Smith
Email: gavin_smith@ncsu.edu

Q1. Do you consent to participate in this study?

- ○ Yes, I consent to participate in this study
- ○ No, I do not consent to participate in this study

Skip To: End of Survey If Do you consent to participate in this study = No, I do not consent to participate in this tidy

Appendix C: Semi-Structured Interview Guide

1. **Tell me about yourself and what it is you do.**

2. **Tell me about your professional (or formal volunteer) involvement associated with the recovery from Hurricane Florence.**

3. **Describe the extent to which you work with Latinx populations.**

4. **From your experience, what are some of the unique challenges facing the Latinx community in the context of disaster recovery?**

5. **What services, resources, capabilities does your organization provide that help address some of the recovery needs of the Latinx population in Wilmington?**
    a. Follow-up: Is there anything that could help you/your organization better address the recovery needs of the Latinx population in Wilmington?

6. **How well do you believe that Latinx community needs have been addressed post-disaster here in Wilmington?**
    a. Follow-up: What do you perceive to be some current unmet needs for the Latinx population in Wilmington in the context of disaster recovery (if any).

7. **From your experience, what are some unique capabilities, assets, or resources that exist within the Latinx community (generally)?**
    a. Follow-up: In what ways do you think these capabilities, assets, or resources could be leveraged to promote recovery?

8. **Please describe any hazard mitigation projects happening in Wilmington or New Hanover County.**

9. **If resources weren't a barrier, what do you believe would be good idea for projects that Wilmington could undertake that would lessen or prevent disaster impacts specifically to the Latinx community?**
    a. Follow-up: What are current barriers to achieving this?

10. **That's all I have! Is there anything else you would like to add?**

Appendix D: Consent Form for Semi-Structured Interview

North Carolina State University
INFORMED CONSENT FORM for RESEARCH

What are some general things you should know about research studies?
You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate and to stop participating at any time without penalty. You are being asked to take part in a research study focused on Hurricane Florence related experiences and community resilience.

You are not guaranteed any personal benefits from being in this study. Research studies also may pose risks to those who participate. You may want to participate in this research because you may find participation fun and the process of discussing recovery therapeutic. You may not want to participate in this research because it may be stressful to think about a past disaster event. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form, it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above or the NC State IRB office (contact information is noted below).

What is the purpose of this study?
The purpose of this research study is to gain a better understanding of disaster experiences and community disaster recovery and mitigation priorities from the perspective of residents living in Wilmington, NC.

Am I eligible to be a participant in this study?
There will be approximately 20 participants in this portion of the study. In order to be a participant in this study you must be at least 18 years old and live in Wilmington, NC.

What will happen if you take part in the study?
If you choose to participate, you will be asked to complete an interview that lasts approximately an hour. In the interview, you will be asked to describe your perception of community experiences after Hurricane Florence and the community recovery after Hurricane Florence. If you would like to review the interview questions in advance, please let the researcher know.

With your permission, we would like your consent to audio record your interview in order to incorporate better record the information for analysis. This is not a requirement to participate in the interview.

____ I consent to be audio recorded
____ I do not consent to be audio recorded

Risks and benefits
There are minimal risks associated with participation in this research. However, thinking back to a traumatic experience, such as Hurricane Florence, can be emotional. In order to minimize these

risks, we will be focusing on the strengths of your community during interview questions. Also, the student researcher has been trained to guide the conversation in ways that are responsive and sensitive to your reactions. There are no direct benefits to your participation in the research, although we hope you find it interesting to think about the different assets your community has to offer and how they relate to disaster recovery. The indirect benefits of participation include an opportunity to improve alignment between disaster recovery and hazard mitigation efforts and the priorities of local residents.

Right to withdraw your participation
You can stop participating in this study at any time. In order to stop participating, let the researcher know that you would like to end the interview.

Confidentiality
The information in the study records will be kept confidential to the full extent allowed by law. Data will be stored securely on a password protected server. Paper copies of any interview notes will be stored in a locked office. No reference will be made in oral or written scholarly reports that could link you to the study unless you consent to be identified by name.

Compensation
You will not be compensated for this study.

What if you have questions about this study?
If you have questions at any time about the study itself or the procedures implemented in this study, you may contact the Principal Investigator, Dr. Bethany Cutts, bbcutts@ncsu.edu or the student researcher, Olivia Vila, ofvila@ncsu.edu

What if you have questions about your rights as a research participant?
If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the NC State IRB (institutional Review Board) Office via email at irb-director@ncsu.edu or via phone at 1.919.515.8754. You can also find out more information about research, why you would or would not want to be a research participant, questions to ask as a research participant, and more information about your rights by going to this website: http://go.ncsu.edu/research-participant

Consent To Participate
"I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled."

Participant's printed name _____

Participant's signature _____ **Date** _____

Investigator's signature _____ **Date** _____

Appendix E: Codebook Used to Analyze Semi-Structured Interview Data

1_Leader Recognition of Latinx Community	**Respondent statements that indicate recognition of the Latinx community**
Justice	Respondent indicates awareness of what the Latinx community considers just outcomes for their population
Experiences	Respondent describes Latinx community experiences
Identities	Respondent indicates intersectional understanding of the Latinx community identity
Needs preferences	Respondent makes a statement about Latinx individuals' needs and preferences as it relates to disaster recovery and resilience.
Root causes	Respondent makes statement about root causes (initiating, earliest, "deepest" cause) of vulnerability for the Latinx community
Culture values	Respondent is aware of Latinx culture or what is desirable and acceptable to individuals who identify as Latinx
Capacities	Respondent notes capacities unique to the Latinx community
Geography	Respondent is aware of physical location of Latinx community
2_Factors Contributing to Leader Recognition	**Any factors that in part explain how the individual being interviewed came to recognize (to whatever degree) the Latinx community in Wilmington**
Limited understanding	Respondent acknowledges they know little about the Latinx community
Interactions	Respondent indicates direct interactions with Latinx community
Personal	*Interactions based on personal relationships*
Professional	*Interactions based on professional engagements*
Service	*Interactions based on volunteer service engagements*
Collaboration	Respondent mentions collaboration with individuals who are part of the Latinx community or have trust with the Latinx community
Builds partnerships	Respondent partners with organizations and that partnership helps build awareness of the Latinx community
Technology data	Respondent indicates that they learned about the Latinx community by using technology or data
3_EJ Outcomes	**Indication of the role of recognition in promoting procedural or distributional justice**
Procedural justice	Respondent references organizational change that influences the ability for the Latinx community to participate in decision making or have their voices heard in matters that influence their recovery
Distributional justice	Respondent references organizational change that influences the distribution of resources or services to the Latinx community and that influence the community's recovery
Link failure	Respondent references a failure to translate recognition into procedural or distributional changes through their organization