

RESEARCH REPORT

# Climate Migration and Receiving Community Institutional Capacity in the US Gulf Coast

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# Executive Summary

Millions of people are expected to be displaced by climate change in the United States alone by the end of this century, yet little is known about communities' institutional capacity to effectively receive and support climate migrants or their ability to do so over time as the effects of climate change advance. To help address this knowledge gap and support climate migration policy and planning, this research investigates climate migration in the US Gulf Coast and offers recommendations for receiving communities across the country by examining the capacity of receiving community institutions to prepare for, receive, and support climate migrants.

With support from the National Academy of Sciences Gulf Research Program, the Urban Institute led five unique studies of community impacts, capacity, and responses to climate migration across five institutional domains: housing markets, financial institutions and financial health, employment and economic development, health care systems, and social, cultural, and recreational institutions.<sup>1</sup>

The studies use mixed-methods data collected from three US Gulf Coast communities that have received climate migrants following catastrophic climate change–induced hurricane events: Houston, Texas, as a receiving community for climate migrants from New Orleans after Hurricane Katrina in 2005; the Orange and Osceola Counties region near Orlando, Florida, as a receiving community for climate migrants from Puerto Rico after Hurricane Maria in 2016; and inland Terrebonne and Lafourche Parishes in Louisiana as a receiving region for climate migrants displaced by land loss, flooding, worsening storms, and hurricanes in the southern coastal region of the state.

This report introduces the five areas of study and the three case study communities; synthesizes key observations from the five studies about institutional and community capacity to welcome and support climate migrants in the US Gulf Coast; and offers recommendations for communities and regions poised to receive climate migrants to support coordination, planning, and policy.

## Findings

1. **Institutional relationships developed before climate migrants' arrival are critical to building community response capacity.** Institutional sectors with strong, existing connections across government, private sector, and civil society groups and organizations that also exhibited

relevant cultural competencies and expertise were most successful in addressing the needs of climate migrant populations. Yet even with efforts to centralize or streamline service delivery and supports during rapid-response periods following disaster events, coordination remained a challenge for some sectors, such as health care, which resulted in fragmented service delivery and worse outcomes for some migrant populations.

2. **Climate migrants can navigate years of uncertainty as institutions may struggle to meet evolving needs in emergency, transition, and long-term periods.** Despite early coordination efforts across multiple institutional networks—including government agencies, nonprofit organizations, and community groups—many response networks were challenged by the scale and scope of need exhibited by new residents and struggled to meet migrants’ evolving needs over time. Institutional supports and resources that were available were also sometimes misaligned to population needs, including job markets that did not support some populations’ professional skills or primary languages or onerous documentation requirements to access financial services, housing, or employment resources. Most institutions offered few transitional and longer-term supports to help climate migrants move from emergency to permanent housing, secure career-track employment that was aligned with their skills and interests, and access ongoing health care services.
3. **Regional receiving communities experience both “fast” and “slow” migration.** Houston and Orlando experienced acute periods of climate migration following catastrophic hurricanes. In contrast, Louisiana has seen a decadeslong, steady movement of climate migrants from far southern coastal regions to inland receiving communities as lands recede into the Gulf and flooding and storms intensify. Yet these communities also experience punctuated periods of larger-scale migration following especially severe hurricanes and coastal storms, requiring them to respond to both “fast” migration that follows acute events and ongoing “slower” migration that occurs gradually as a result of chronic environmental and climate-related hazards. Smaller numbers of new arrivals, in combination with the lower population density and rural characteristics of the region, make sustaining institutional supports a challenge, and many programs and organizations that ramp up services during rapid-response and recovery periods stop operating after the emergency phases end. Without ongoing institutional supports in slower migration contexts, climate migrants with the fewest resources—such as many of the region’s tribal and Indigenous populations—are affected the most, exacerbating existing health, economic, and social inequities.

4. **Transportation plays a key role in shaping access to housing, employment, health care, and overall quality of life.** Access to affordable, reliable transportation influenced not only climate migrants' resettlement patterns but also many aspects of their economic opportunities, housing, health care, and overall quality of life. Many newcomers lost personal vehicles in precipitating disasters or as a result of being displaced, making transportation barriers especially acute. Most were dependent on public transportation networks and related assistance to access resources and services in receiving communities, but especially in Houston, available emergency shelters and temporary rental housing were often not located near accessible transportation. In Southern Louisiana, interviewees also widely reported transportation challenges but for reasons more associated with the rurality of the region. Over time, even after emergency response periods ended and many climate migrants sought longer-term settlement in their new communities, lack of access to affordable, reliable transportation continued to constrain their choices about where to live and work.
5. **Climate migration is happening in the context of multiple, compounding, ongoing, and interrelated environmental crises.** Even as receiving communities became recovery destinations for people affected by climate change–induced disasters in other regions, three subsequent hurricanes and one catastrophic winter storm directly affected all three of the receiving communities as well as one of the original sending communities during the course of this research. These events caused widespread devastation and complicated and delayed the research methods and timeline. For many receiving communities, climate migration should not be considered an isolated, secondary effect of climate change but rather a feature of interrelated and ongoing disaster contexts. This is especially important given that displacement and disruption in both sending and receiving communities are likely to continue as the environmental consequences of climate change advance.

## Recommendations

1. **Strengthen coordination across institutions, agencies, and community populations now.** Institutions without existing, strong networks or without strong social or cultural ties to new climate migrant populations may struggle to effectively meet the scale and scope of need in emergency, transitional, and longer-term periods following disaster events. Institutions, government agencies, first responders, community organizations, and faith groups in regions poised to receive climate migrants can assess their current networks and identify opportunities

to develop and strengthen working relationships through network building, regional alliances and mutual aid agreements; memorandums of understanding; and other coordination strategies to prepare to meet needs during rapid-response and longer-term periods following climate migration events.

2. **Understand community population trends and strengthen networks between sending and receiving communities.** Institutions and municipalities can assess existing population trends and community networks between potential or previous sending communities to plan for future climate migration. Prior to Hurricane Maria, the Orlando region of Central Florida already had a strong Puerto Rican presence, making the region a preferred destination for many of those who were displaced. Identifying and strengthening these kinds of networks can improve coordination between sending and receiving communities before disaster events, ease institutional strains through expanded capacity and resource sharing, support migrants in reducing secondary trauma and stress by integrating social and cultural supports across networks, facilitate communication and information sharing after migration events, and reduce barriers to vital records access.
3. **Apply lessons from resilience and sustainability planning.** Communities and institutions can apply lessons from urban resilience and sustainability planning to prepare for climate migration so that in the face of both acute shocks and ongoing, chronic stressors, communities are able to adapt, grow, and thrive. Early planning and capacity building at organizational and systems levels is critical so that communities can effectively receive and support new residents and build and sustain capacity over time. Working regionally to strengthen the embeddedness of long-term institutions in local and regional networks is also advised for effective response and service provision in the short and long term across affected regions. Finally, building data capacity to understand population trends, assess and monitor needs and opportunities, and anticipate gaps is key to institutionalizing resilience.
4. **Plan for population gains and losses.** In regions such as the US Gulf Coast where climate impacts are expected to worsen, planning for uncertainty to meet future population needs without over- or under-projecting population losses and gains is critical. Communities poised to receive climate migrants can consider planning approaches from other population boom and bust contexts, such as those affected by energy and extractive industries. Receiving communities can monitor population gains and develop scenarios for population increases, plateaus, and declines over emergency, transition, and long-term periods. Once developed, impact projections can map anticipated demands for local services and supports; effects on



economic, housing, health care, and employment sectors; and social and cultural impacts. Local and state governments can assess projections against existing institutional capacities and resources, and mitigation strategies can address identified gaps and ramp services up or down in different scenarios of population growth or decline.

5. **Develop integrated response plans that are responsive to both “fast” and “slow” climate migration.** Receiving communities can develop integrated climate migration plans that are responsive to both fast and slow disaster circumstances and the unique institutional and systems demands that present in emergency, transition, and long-term periods. Lessons and insights from US Gulf Coast receiving communities can inform these plans:
  - a. **“Fast” planning features.** Preparing for fast climate migration includes planning for a safe, central, and accessible location from which to administer emergency services and resources upon migrants’ arrival. It also includes plans for ramping up, expanding, and diversifying transportation routes and options; developing alternate, flexible requirements for migrants to access financial, employment, and housing supports; and building a robust health system monitoring plan.
  - b. **“Slow” planning features.** Preparing for slow climate migration includes investments to strengthen institutional capacity during periods of ongoing migration and expanding resources for climate migrants displaced during these periods who may not have access to or be eligible for other supports. It also includes strengthening supports and capacity beyond emergency and rapid-response periods to provide resources to migrants during transitional and long-term periods, as well as assisting migrants in accessing career-track employment that is aligned with their expertise and interests.
  - c. **Integrated planning features.** Integrated planning includes preparing to respond to both “fast” migration that follows acute events and ongoing “slow” migration that occurs gradually as a result of chronic environmental and climate-related hazards. Community groups and stakeholders should be key partners in assessing institutional strains and opportunities; identifying opportunities to de-silo institutions, sectors, and processes; and addressing existing social and economic stressors that may be present. In planning for regional resilience, integrated climate migration planning should be embedded into existing community and regional plans, and responsible parties, timelines, and milestones should be established to assess progress and ensure accountability.

# Climate Migration and Receiving Communities' Institutional Capacity in the US Gulf Coast

In the coming decades, the US Gulf Coast is expected to experience continued sea level rise, more intense hurricanes, and rising temperatures resulting from climate change, making the region less safe for its residents and likely prompting continued migration both within and out of the region (Petkova et al. 2015). By 2100, sea level rise alone is estimated to displace more than 13 million Americans, based on projections that coastal shorelines will rise by an average of 6 feet by that time (Hauer, Evans, and Mishra 2016). But other climate change-induced disasters such as hurricanes, coastal and inland flooding, wildfires, derechos, tornados, droughts, extreme heat, and increasingly severe weather affect all areas of the country, and growing numbers of people are moving to different communities and regions to escape these hazards (Hurdle 2022). Increasingly, disaster and climate change researchers, state and federal policymakers, and community and environmental advocates have raised the urgent need for action, yet adaptation and mitigation strategies tend to focus on coastal communities that experience the most acute shocks from catastrophic weather events—even as growing numbers of households move away from coastal areas to other regions, which themselves experience both direct climate impacts and challenges related to migration. Accordingly, climate resilience in the Gulf Coast and nationwide must be assessed by communities' capacity to adapt to and mitigate the impacts of climate change, as well as the ability of both sending and receiving communities to plan for and manage climate change-induced migration.

The term “climate migrants” encompasses many types of people who move for a variety of reasons resulting from climate change. Baldwin (2013) considers a climate migrant broadly as any person who, “either forcibly or voluntarily, migrates either temporarily or permanently from their home as an immediate or indirect result of climate change or the possibility of climate change.” Scholars also distinguish internal migration—wherein people move or are displaced within their home country or region—from international migration, wherein people move or are displaced to other countries, with the former being more common. Other considerations include the nature of the hazard and whether migration is precipitated by gradual environmental changes, such as land loss from erosion over time, or more acute or catastrophic events such as property destruction resulting from hurricanes or other environmental disasters (Bilsborrow and Henry 2012).

In the United States, climate migrants can include people who move proactively to avoid future losses or displacement; displaced property owners who receive state or federal buyouts after acute disasters such as hurricanes or wildfires; property owners who receive federal “repeat loss” determinations after multiple disaster events over multiple years, such as chronic annual flooding; displaced property owners with inadequate or no hazard insurance; displaced property owners who do not qualify for or cannot access federal recovery investments; or displaced renters who are ineligible for most federal recovery investments. Many must move immediately following disaster events because of property loss or damage. Others may have more time to plan and manage their move when climate change-induced risks accumulate gradually over time but leave despite their desire to stay given the risks to their health, property, and well-being. Some climate migrants return to their originating community, while others choose to permanently settle in receiving communities or stay in receiving communities temporarily while they seek longer-term stable housing and employment elsewhere.

Because the challenges and impacts of climate change-induced migration are cross cutting for both migrant populations and receiving communities (UN Migration 2021), we focus on institutions as organizational and agency actors that can advance or impede the development of enabling environments that support both climate migrants’ and receiving community capacities across social, economic, and quality of life domains. We consider institutions as formal and informal organizations, agencies, offices, or other bodies that represent local interests, provide resources and public goods, and create opportunities (Brown and Schafft 2021).

Even though research estimates that millions of people will be displaced by climate change in the United States alone in this century (Lustgarten 2020), little is known about communities’ institutional capacity to effectively receive and support climate migrants or their ability to do so over time. To help address this knowledge gap and support climate migration policy and planning, this research investigates this new frontier of climate migration in the US Gulf Coast and offers lessons for climate migrant receiving communities across the country.

In this report, we review findings from five unique studies of community impacts, capacity, and responses to climate migration across five institutional domains: employment and economic development, financial institutions and financial health, health care systems, housing markets, and social, cultural, and recreational institutions. The studies use mixed-methods data collected from three US Gulf Coast communities that have received climate migrants following catastrophic climate change-induced hurricane events in recent years: Houston, Texas, as a receiving community for climate migrants from New Orleans following Hurricane Katrina in 2005; the Orlando, Florida, region as a receiving community for climate migrants from Puerto Rico following Hurricane Maria in 2016; and

inland Terrebonne and Lafourche Parishes in Louisiana as a receiving region for climate migrants displaced by land loss, worsening storms, and hurricanes in the far southern coastal region of the state.

In the case of Houston, Texas, many climate migrants who were temporarily sheltered in the weeks following Katrina never returned to New Orleans and continue to live in Houston today (Eyer et al. 2018). The Houston case provides the longest timeframe from which to observe change over time. In Osceola and Orange Counties, which surround Orlando, Florida, immigration from Puerto Rico had been ongoing for many years before Hurricane Maria. This region provides an opportunity to examine institutional capacity and responses in communities with well-established social, cultural, and economic ties between sending and receiving communities. Finally, Terrebonne and Lafourche Parishes in Southern Louisiana have been a receiving destination for many Louisianans—including multiple Indigenous and tribal populations—who were displaced from far southern coastal regions that have been experiencing land loss, chronic and severe flooding, and hurricanes for decades. This region provides the opportunity to examine impacts from both ongoing and acute disaster events as well as understand receiving communities' capacity over longer-term, ongoing migration processes.

## What Is Known about Climate Migration and Receiving Communities in the United States

Since 2008, 10.5 million people in the United States have been internally displaced as a result of severe storms, wildfires, flood events, and other climate change-related environmental disasters.<sup>2</sup> While storm surge and hurricane flooding are more common in the US Gulf Coast and Mid- and South-Atlantic regions, no regions are immune from effects of climate change. Higher-than-average and record temperatures are being recorded nationwide, and by 2050, wildfire risk will threaten about 79.8 million homes across the country, primarily in the intermountain and coastal West.<sup>3</sup> As impacts from climate change intensify, scholars expect significant and continued internal population movements and displacement to less-affected regions of the country (Fan, Fisher-Vanden, and Klaiber 2018).

Researchers are revisiting previous projections for environmental migration (e.g., McLemon and Hunter 2010) and forecasting substantive population shifts in the coming years as a result of worsening impacts from climate change (Dridge and Hudgins 2015; Hauer, Evans, and Mishra 2016). Across the US Gulf Coast, residents in many coastal communities experiencing chronic and acute climate impacts such as land loss and worsening hurricane events are retreating, and many inland areas are serving as receiving communities to new residents.

Migrants' decisions about final destinations can vary across populations (Lazko and Aghozam 2009; Petracou, Xepapadeas, and Yannacopoulos 2017). After Hurricane Katrina, Black Americans were less likely to return to New Orleans than were other racial and ethnic groups (Stringfield 2009; Groen and Polivka 2010), and New Orleans households that moved to Houston following Hurricane Katrina tended to be younger and unmarried with fewer financial assets (Elliott and Pais 2006; McIntosh 2008; Paxson and Rouse 2008). In contrast, other groups—such as many from New Orleans' Vietnamese community—leveraged social networks to coordinate evacuees' return and reduce permanent migration (Airress et al. 2007).

There are limited data about the characteristics of communities that are most likely to receive climate migrants and what institutional conditions are associated with greater success in receiving and supporting them. The evidence that does exist suggests that counties that are regionally close, have lower unemployment and higher average wages, and are more urban in character are more likely to become permanent resettlement locations (Wolsko and Marino 2015; Eyer, Dinterman, Miller, and Rose 2017). Climate migrants also report higher satisfaction with receiving communities if they are able to preserve existing social ties (Findlay 2011; Binder and Greer 2016). In parallel with trends seen in other forms of international migration (e.g., Roth, Ganzales, and Lesniewski 2015), social divisions and opposition toward newcomers can present when there are racial or cultural differences between new residents and residents in receiving communities (Hopkins 2012). Consequently, when majority populations in receiving communities are of different racial, ethnic, or cultural backgrounds from new residents, it is not uncommon for them to perpetrate backlash or other forms of hostility against the migrant communities, with social divisions increasing over time (Buhaug et al. 2010; Warnecke et al. 2010).

Relatedly, and mirroring other migration phenomena, some researchers have noted that the arrival of new climate migrants may lead to competition among residents for resources, services, or employment, especially when arrivals are from less-developed regions (e.g., Reuveny 2007; Gemenne and Blocher 2017). However, more consistent evidence over time finds that immigrant populations broadly contribute to economic growth, labor market flexibility, and human capital in receiving communities (OECD 2014). Other scholars also find that targeted supports to immigrant and refugee populations can elicit positive outcomes for migrant populations (Asad 2015) and in some cases support their integration into receiving communities (Landau, Wanjiku-Kihato, Misago, Obot, and Edwards 2016).

Supporting and providing resources to climate migrants requires expanding institutional capacity beyond just an increase in the number of available services or resources, as climate migrants can exhibit

qualitatively different needs from other populations of internal migrants. For example, disasters, forced relocation, and disruption to social and cultural ties can strongly affect both physical and mental health (Kessler et al. 2008; Blaze and Schwalb 2009; Mortensen, Wilson, and Ho 2009; Hori and Schafer 2009). Additionally, the impacts of disaster events vary widely across demographic and social groups. Populations experiencing higher levels of poverty and populations with higher proportions of people of color, immigrants, and people with limited English proficiency often experience disproportionately negative economic, social, psychological, health, and quality of life outcomes relative to higher-income, whiter populations with higher rates of citizenship and English proficiency (Riad and Norris 1996; Zoraster 2010).

Building community and institutional capacity to receive and support climate migrants while also addressing more local and regional climate-related challenges requires resilience planning. Much scholarly literature on the nexus between climate migration and resilience has focused on “migration as adaptation,” where migration functions as a mechanism for resilience to climate hazards (Ober 2019). This approach has come under scrutiny from many scholars for failing to consider the resilience of *places* in addition to people and for framing climate change as a problem that cannot be addressed (Methmann and Oels 2015; Bettini, Nash, and Gioli 2016).

Across the US Gulf Coast region—where extreme weather, hurricane intensity and severity, and rising sea levels are expected to worsen as climate change advances (IPCC 2022)—communities that receive climate migrants following disasters or environmental loss in other areas experience climate change–related challenges themselves. Recent research finds that community climate resilience planning requires responsiveness not only to acute shock events such as hurricanes, but also to chronic, existing stressors such as housing unaffordability, poor health care access, and inaccessible transit, which can make communities more vulnerable to negative social and economic outcomes resulting from climate hazards (McTarnaghan et al. 2022). Further, governments can integrate resilience planning with policies from neighboring jurisdictions and promote regional resilience by enhancing coordination between sending and receiving communities.<sup>4</sup>

## Research Questions

This research examined the impacts of and responses to climate migration in three study communities across five institutional domains: employment and economic development, financial institutions and financial health, health care systems, housing markets, and social, cultural, and recreational institutions.

Three overarching research questions guided the five studies. These questions derived from the central goals of understanding how institutions in climate migrant receiving communities have been affected by migrants' arrival and settlement and informing how other communities likely to receive climate migrants in the future can prepare. Unlike much existing research on climate migration, these studies focus on the capacity of receiving communities rather than the impacts on and outcomes among migrants themselves. The overarching research questions were as follows:

- What institutional conditions existed in receiving communities before climate migrants' arrival?
- How did local institutions and providers respond to climate migrants?
- To what extent have institutional conditions and capacities changed over time?

For each study, additional research questions deriving from the overarching research questions addressed study-specific topics and themes, as shown in table 1.

TABLE 1

Research Questions by Study

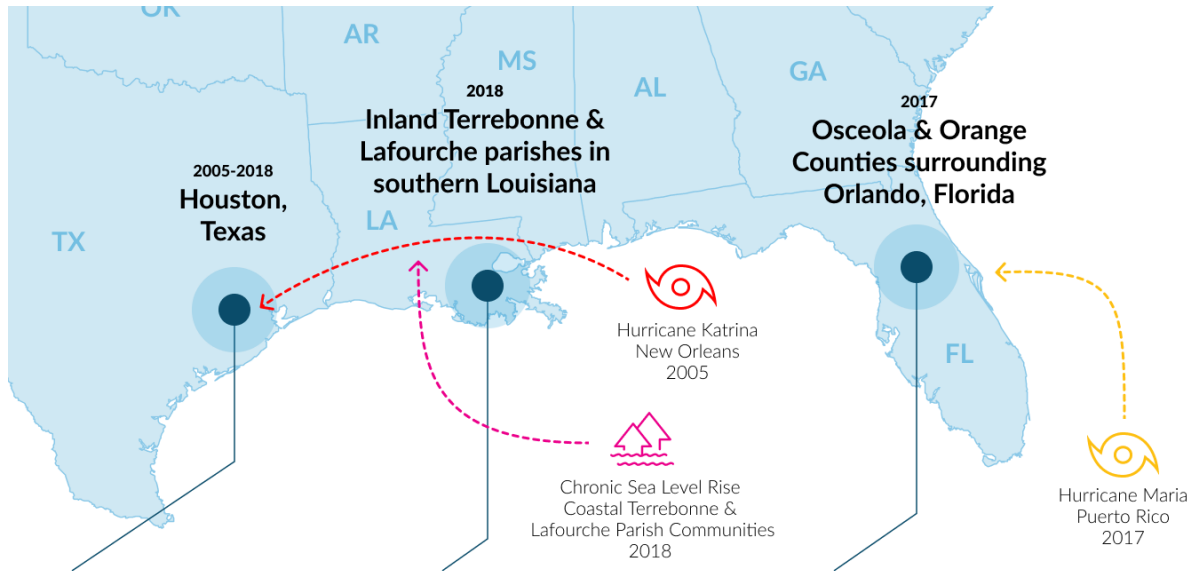
<p><b>Employment and economic development</b></p>	<ul style="list-style-type: none"> <li>▪ What employment and economic conditions existed in receiving communities before migrants' arrival?</li> <li>▪ How did local employers, workforce institutions, and providers respond to the arrival of migrants?</li> <li>▪ To what extent have employment and economic conditions and capacities changed over time across receiving communities and compared with places that did not receive migrants?</li> </ul>
<p><b>Financial institutions and financial health</b></p>	<ul style="list-style-type: none"> <li>▪ What financial health conditions existed in receiving communities before migrants' entry?</li> <li>▪ How did local financial institutions and service providers respond to migrants?</li> <li>▪ To what extent did the financial services institutional landscape change in response to the climate migration event, compared with places that did not receive migrants?</li> </ul>
<p><b>Health care systems</b></p>	<ul style="list-style-type: none"> <li>▪ What were the health care system conditions that existed in the receiving communities before the migrants' arrival?</li> <li>▪ How have local health care institutions responded to the health needs of migrants?</li> <li>▪ How have the conditions to support the health needs of climate migrants changed over time?</li> </ul>
<p><b>Housing markets</b></p>	<ul style="list-style-type: none"> <li>▪ What housing conditions existed in receiving communities before and after the arrival of climate migrants?</li> <li>▪ How did local housing institutions and providers respond to climate migrants during and after their arrival?</li> <li>▪ To what extent have housing conditions and capacities changed over time across receiving communities and compared with places that did not receive migrants?</li> <li>▪ How did climate migrants meet their immediate needs for shelter following the disaster, and how long did they remain in their initial lodging?</li> <li>▪ On what factors did climate migrants base their decision to stay in their new communities and their decision to own or rent?</li> <li>▪ Do climate migrants tend to concentrate in certain neighborhoods or housing types? If so, what accounts for this clustering, and how long does it persist?</li> <li>▪ What characteristics, if any, distinguish climate migrants from the populations of either their original or destination community?</li> <li>▪ Are some climate migrants more likely to remain for the long term, relocate from their initial post-disaster residence, or purchase housing?</li> <li>▪ Was there evidence of secondary migration by existing residents in the receiving communities in response to climate migration?</li> </ul>
<p><b>Social, cultural, and recreational institutions</b></p>	<ul style="list-style-type: none"> <li>▪ How do climate migrants identify and connect with public, cultural, charitable, and religious organizations in their new communities?</li> <li>▪ How are existing cultural, social, and recreational groups and organizations responding to the arrival and needs of climate migrants? Are new organizations forming to respond to those needs?</li> <li>▪ How do organizational networks of these institutions change when migrants arrive to receiving communities?</li> <li>▪ How do cultural, social, and recreational institutions work and communicate with climate migrants for programming and identification of their needs and interests?</li> <li>▪ Are there services or communications gaps not filled by existing providers?</li> </ul>



## Site Selection and Disaster Context

The research team identified the receiving community study sites for variation in disaster contexts and chronologies, as well as diverse migrant characteristics and conditions, to elicit rich data for inter- and cross-case comparison (Naik 2014). The research team prioritized regions where partner university research institutions had existing community relationships and were already engaged in climate migration and disaster impacts research. From these criteria, the research team identified three case study community regions: Houston, Texas; the Orlando region of Central Florida; and Terrebonne and Lafourche Parishes in Southern Louisiana.

**FIGURE 1**  
**Map of the Three Climate Migration Study Sites**



**Houston** was a receiving community for climate migrants from New Orleans following Hurricane Katrina in 2005. Many of those who were temporarily sheltered in the weeks following Hurricane Katrina never returned to New Orleans and continue to live in Houston today. Among the cases, the Houston case provides the longest timeframe from which to observe change over time.

**Inland Terrebonne and Lafourche parish communities** have been a receiving destination for many Louisianans—including multiple Indigenous and tribal populations—displaced from far southern coastal regions that have been experiencing land loss and chronic and severe flooding and hurricanes for decades. This region provides the opportunity to examine impacts from both ongoing and acute disaster events as well as understand receiving community capacity amidst longer term, ongoing migration processes.

**Central Florida** was a receiving region for climate migrants from Puerto Rico following Hurricane Maria in 2016, and immigration from Puerto Rico to this region was ongoing for many years prior to Hurricane Maria. This region provides an opportunity to examine institutional capacity and responses in communities with well-established social, cultural, and economic ties between sending and receiving communities.

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## Hurricane Katrina and Houston, Texas

On August 29, 2005, Hurricane Katrina made landfall south of New Orleans, Louisiana, causing catastrophic damage to New Orleans and hundreds of other communities across Louisiana and Mississippi. New Orleans is located in the US Gulf Coast, approximately 6.5 feet below sea level, and is situated within a complex network of levees and canals designed to protect the city from the Gulf. However, due to a combination of mechanical failures and poorly understood geological conditions, the Hurricane Protection System surrounding New Orleans fell well below its intended protection threshold (Sills et al. 2008). The intensity of the category 3 hurricane and subsequent storm surges

caused more than 50 levees across the city to breach, and by August 31, more than 80 percent of the city was underwater.<sup>5</sup> In the aftermath, more than 1.36 million people filed for Federal Emergency Management Assistance emergency assistance (Ericson et al. 2005), and at least 1,800 people were dead—most of whom were Black, older, and people with low incomes (Brunkard et al. 2008).

In the weeks and months following Hurricane Katrina, Houston became one of the primary receiving and recovery destinations for displaced New Orleanians. More than 200,000 people evacuated to Houston immediately after the storm,<sup>6</sup> and between 25,000 and 40,000<sup>7</sup> made the city their permanent home. Relative to the population of New Orleans as a whole, disproportionate numbers of evacuees were Black, had low incomes, and were without health insurance, and many had chronic health needs that were exacerbated by the stress of the disaster (Brodie et al. 2006). The Houston Astrodome and nearby buildings were set up as command centers to meet the immediate needs of evacuees and provided emergency shelter to approximately 25,000 people arriving from New Orleans and Southern Louisiana.

Among the three study cases, Houston provides the longest period since the precipitating disaster event from which to observe changes over time.

## **Hurricane Maria and Orlando, Florida**

Hurricane Maria made landfall on Puerto Rico on September 20, 2017, as a category 4 hurricane, resulting in a still unknown number of deaths—likely near 5,000<sup>8</sup>—and the forced displacement of nearly 5 percent<sup>9</sup> of the island’s population. Estimates of population movement after the storm vary widely, ranging from 160,000 to 400,000,<sup>10</sup> yet estimates converge on Florida as the preferred destination for most Puerto Rican climate migrants (Martin et al. 2020).

The hurricane’s path engulfed the entire island, causing total electricity loss and a complete breakdown of telecommunications systems. These failures severely impeded recovery efforts, and many people on the island with the means to leave sought relief off the island. For some, leaving Puerto Rico was a temporary decision; for others, the choice to leave was long term or permanent.

Local and federal authorities’ slow and inadequate response to Hurricane Maria was compounded by years of economic instability that preceded the disaster (Office of Inspector General 2022). These longer-term challenges led to austerity measures that significantly reduced critical infrastructure maintenance investments, placing communities across the island at increased risk of catastrophic infrastructure loss, property loss and damage, illness, injury, and death (Mora, Rodriguez, and Davila

2021). Moreover, economic stagnation and mounting government debt led to higher unemployment and increased out-migration, particularly to the state of Florida and the Central Florida region (Rivera 2020). Between 2010 and 2018, Puerto Rico lost more than 500,000 residents, and the state of Florida gained more than 300,000 (table 2).

**TABLE 2**

**Puerto Rico Population Loss and Florida Population Gain: 2010–2018**

Year	Population in Puerto Rico	Puerto Rican population in Florida
2010	3,722,133	864,577
2011	3,706,690	883,728
2012	3,667,084	912,595
2013	3,615,086	987,663
2014	3,548,397	1,006,542
2015	3,474,182	1,069,446
2016	3,411,307	1,067,747
2017	3,337,177	1,128,225
2018	3,195,153	1,187,437
<b>Difference 2010–2018</b>	<b>-526,980</b>	<b>+322,860</b>

Source: American Community Survey one-year estimates.

The Puerto Rican diaspora in Central Florida drew many climate migrants looking for social and economic stability following Hurricane Maria, and the region became the center of recovery for most of those displaced by the disaster to the mainland United States (Valle 2018). Among the sites, the greater Orlando region provides an opportunity to examine institutional capacity and responses in communities with well-established social, cultural, and economic ties between sending and receiving communities.

### **Land Loss, Hurricanes, and Chronic Flooding in Southern Louisiana**

Since the 1930s, Southern Louisiana has experienced land loss to the Gulf of Mexico due to human activity. Leveeing and damming of the Mississippi River to protect upstream communities from flooding has blocked natural sediment flows and stunted wetland growth along the coasts. Natural subsidence cycles, or the amount of land that sinks over time—once outpaced by sediment deposit and wetland development from nutrients carried downstream—now outpace wetland development as a result of

these activities. The construction of shipping channels has also expedited saltwater penetration deep into coastal wetlands, hastening their destruction, and the expansion of the petrochemical industry has contributed to the modification of regional hydrology and water flows, further accelerating land loss. Compounding all of this, climate change–fueled sea level rise and more intense and severe hurricanes have further damaged or destroyed already fragile coastal lands.

As a result, Louisianans across the southern Gulf Coast have been experiencing land loss and chronic and severe flooding for decades, particularly in far southern Terrebonne and Lafourche Parishes. Over time, many residents closest to the coast have been forced to leave their communities for destinations further inland, with many making their way to central and northern parish communities such as Houma, Schriever, and Thibodeaux. In the wake of catastrophic storms such as Hurricane Katrina in 2005, Hurricane Isaac in 2012, and Hurricane Ida in 2021, ongoing migration cycles become acute, with regional inland communities experiencing periodic influxes of new migrants displaced by the severe storms.

In 2016, the US Department of Housing and Urban Development awarded Louisiana \$48.3 million to facilitate the voluntary resettlement of eligible residents from the Isle de Jean Charles band of the Biloxi-Chitimacha-Choctaw Tribe, whose lands are located in the far southern Terrebonne Parish region and have been receding for decades. The resettlement is funded with Community Development Block Grant funds awarded through the National Disaster Resilience Competition and marks the first federally funded investment to relocate an entire community because of climate change. However, in implementation, the plan has been beset by challenges: tribal leaders report that narrow eligibility requirements have excluded many residents who were forced out of their homes from earlier flood and disaster events,<sup>11</sup> and elsewhere in the region, many other Indigenous and non-Indigenous populations continue to be displaced to receiving communities further inland without such federal or state supports.

Among the sites, the receiving communities in Southern Louisiana provide the opportunity to examine the impacts of both ongoing and acute disaster events, as well as understand receiving communities' capacity amid longer-term, ongoing migration processes.

## Methodology

The research team designed a rigorous, mixed-methods, multi-site study to investigate community and institutional impacts from past climate migration events and to assess preparedness for future climate migration in three US Gulf Coast receiving communities. The team designed studies to assess impacts,

capacity, and responses across five institutional domains: employment and economic development, financial institutions and financial health, health care systems, housing markets, and social, cultural, and recreational institutions.

Across the five studies, the research team used a mix of complementary qualitative and quantitative research methodologies to investigate receiving community institutional responses and capacities. We used the following three methodologies across the five studies:

- Semi-structured, qualitative interviews with institutional experts and community stakeholders
- Quantitative analysis of public and private market, institution, and population data
- Content analysis of news articles reporting on community institutional responses to regional climate migration

The research team reviewed available data types, sources, quality, and site contexts to select the most appropriate data sources and analytic approaches for the study questions at each site. Methodologies and data sources were selected to address the overarching and study-specific research questions, such that triangulation and cross-case comparison across communities, themes, and topics were possible even with variations in data sources and analyses. For more information on the study-specific data sources and methods, see appendix A; for a review of data source and related methodological limitations, see the Limitations section.

## Research Team

The research team integrated local connections and knowledge into all aspects of the research design, data collection, analyses, and recommendations by partnering with researchers and advocates at the national and regional levels who had local presence and expertise. The interdisciplinary, cross-institutional team comprised local and national research institutions and universities, social scientists, and community development professionals with experience in disaster research, climate change impacts, housing, public health, economics, and sociology.

The Urban Institute served as the primary project coordinator and led three of the five research studies: financial health, employment and economic development, and social, cultural, and recreational institutions. Two partner research institutions, Enterprise Community Partners and the RAND Corporation, led the housing markets and health care systems studies, respectively, and three public universities served as the site leads and qualitative research leads in Houston, Southern Louisiana, and Orlando.

To advance local capacity, the research team incorporated a student training component to the research design, which involved training undergraduate and graduate students at partner university institutions in qualitative data collection, interviews, coding, and analysis. Under the guidance of partner university faculty, students engaged in qualitative data collection activities in each of the study sites.

Research team roles and expertise are as follows:

- **University of Central Florida (UCF):** UCF's Puerto Rico Research Hub studies the Puerto Rican population, with a special focus on the diaspora in Florida. With Urban, UCF co-directed the overall research design and served as the Orlando site lead, and the students participated in qualitative data collection.
- **University of New Orleans (UNO):** Experts in UNO's planning and urban studies and sociology programs lead the Center for Hazard Assessment, Response and Technology, which conducts applied research focusing on community and regional sustainability and resilience in light of natural, technological, and environmental risks facing the US Gulf Coast region. UNO served as the Southern Louisiana site lead, and the students participated in qualitative data collection.
- **Texas Southern University (TSU):** TSU's Department of Urban Planning and Environmental Policy trains policy-oriented planners with a special emphasis on environmental justice. A historically Black university, TSU houses the only accredited planning program in greater Houston. TSU served as the Houston site lead, and the students participated in qualitative data collection.
- **Enterprise Community Partners (Enterprise):** Enterprise is a nonprofit housing intermediary that invests in disaster recovery. Enterprise has supported rebuilding in the US Gulf Coast region since the aftermath of Hurricane Katrina, when it established an office for the region. Enterprise led the housing markets study and the development of a policy toolkit<sup>12</sup> that organizes recommendations from across the institutional studies.
- **RAND Corporation (RAND):** RAND is a research organization whose staff include key scholars in the fields of resilience and health. The RAND Gulf States Policy Institute, founded in 2005, provides analysis to federal, state, and local leaders on health care in the US Gulf Coast region. RAND led the health care study.

## Qualitative Data Collection and Analysis

The study team employed two methodologies for the qualitative components of the study: key informant interviews with experts and stakeholders representing the five institutional domains, and a news media content analysis of articles reporting on community and institutional climate migration responses and capacities in Terrebonne and Lafourche Parishes.

### KEY INFORMANT AND STAKEHOLDER INTERVIEWS

Between April 2021 and April 2022, UNO, UCF, and TSU led semi-structured interviews with representatives and stakeholders from the five institutional study areas in their respective communities. For each of the five studies, the university site teams leveraged their local knowledge, experience, and relationships to identify relevant key informants to target for solicitation. Within each study area, the site teams sought a range of market, state, and civil society representatives. Overall, the teams conducted 124 discrete interviews across the five studies areas (table 3).

The semi-structured interview protocols were designed for 45- to 60-minute interviews. Topics addressed included community context and background; familiarity with climate migrant populations; informants' work in their respective institutional sectors before, during, and/or after climate migration events; perceptions of impacts and changes to institutional sectors over time; and recommendations to support other receiving communities in preparing for future climate migration.

With participants' consent, the research teams recorded the interviews and created interview transcription files for qualitative coding and analysis. The site teams coded interviews using a consistent schema developed from the overarching and study-specific research questions to identify key themes across each of the study areas. Interview transcription files were coded and analyzed using NVivo and Dedoose qualitative coding software packages. Faculty leads in each of the study sites led student trainings on the coding software and methodology and conducted quality assurance and inter-rater reliability checks on coding outputs. The five institutional study teams examined the outputs by site and study-specific research questions and comparatively analyzed them to identify thematic and topical areas of convergence and divergence.



TABLE 3

## Stakeholder Interview Type by Study

Study	Stakeholders by interview type	Number of interviews by site			Total
		Houston	Orange and Osceola Counties	Terrebonne and Lafourche Parishes	
Housing markets	Local housing authorities	15	15	26	56
	Landlords/developers				
	Community leaders				
	Property managers				
Financial institutions and financial health	Bank lenders	3	24	3	30
	Credit unions				
	Alternative financial service providers				
	Local government officials				
Employment markets and economic development	Business owners	2	19	19	40
	Chambers of commerce				
	Employer associations				
	Workforce boards				
Health systems	Health care connectors	2	9	5	16
	Health care providers				
Social, cultural, and recreational institutions	Cultural foundations	7	20	17	44
	Cultural nonprofits				
	Religious leaders				
	School officials				
<b>Total discrete interviews</b>		<b>40</b>	<b>56</b>	<b>28</b>	<b>124</b>

**Note:** Some stakeholder interview contacts had expertise in more than one institutional sector, so interview protocols with these stakeholders were modified to address all relevant expertise areas. Accordingly, the sum of the number of interviews by study is larger than the number of discrete interviews conducted in each site.

## NEWS MEDIA CONTENT ANALYSIS

Hurricane Ida made landfall on the Southern Louisiana coast approximately halfway through the fieldwork activities. The research team determined that continued engagement with local and regional key informants would not be possible or appropriate, as many of those identified for interview solicitation were engaged in response and recovery activities.

To continue data collection in a way that would not exert undue pressure on stakeholders amid the disaster recovery, the UNO team worked with Urban to design a companion news media content analysis study of news articles reporting on community climate migration responses and capacities

since Hurricane Katrina in 2005. Examining news media representations of phenomena can be useful to understand how developments are perceived and framed by affected individuals and stakeholders, as well as by representatives of the news media who play a key role in educating and informing the public (Ashmoore et al. 2016). News media content analysis can also be a minimally invasive research method, requiring only publicly available news articles as data sources.

The UNO team developed a modified coding framework aligned with the coding framework developed for the stakeholder interviews so that results could be compared and triangulated across methodologies. UNO faculty led a student training on content analysis methodology and identified a series of search terms for the students to use. Under the direction of UNO faculty, students identified articles published between 2005 and 2021 in local and national news sources, including the *Times-Picayune*, *The Advocate*, *Houma Today*, the *New York Times*, and the Associated Press. The digital archives used to perform the searches included Lexis-Nexis's Nexus Uni, NewsBank, and a digital subscription to *Houma Today*. In total, students coded 837 excerpts from 265 news articles using the Dedoose qualitative coding software and produced a synthetic memo of key findings organized according to the study themes.

## Quantitative Data Collection and Analysis

The housing markets, financial health, health care systems, and employment markets studies included quantitative research components that examined public and private secondary data sources using a mix of descriptive and statistical analyses (table 4). The goal of the quantitative analyses was to explain the conditions that existed in receiving communities before the climate migration event and to investigate what impacts, if any, migrants had on institutions once they arrived. The research teams assessed the impacts that migrants had on the receiving community institutions by comparing them with areas that did not receive climate migrants.

In the housing markets and financial health studies, selected comparison communities were demographically similar Public Use Microdata Areas (PUMAs) in Los Angeles, California; Atlantic City, New Jersey; and Las Vegas, Nevada. In the employment and economic development study, a synthetic control model was used to model what employment and labor market conditions in receiving communities may have looked like if not for the arrival of climate migrants. To allow for comparisons across sites in the health services study, key quantitative findings by indicator were displayed relative to the total population, and results for each receiving community region were compared with annual state averages.

TABLE 4

Quantitative Datasets and Indicators by Study

	Dataset	Indicator
Housing markets	American Community Survey (ACS)	<ul style="list-style-type: none"> <li>■ House prices/rents</li> <li>■ Affordability (price/income ratio)</li> <li>■ Vacancy rates</li> </ul>
	CoreLogic/Zillow parcel data	<ul style="list-style-type: none"> <li>■ Sales</li> <li>■ Price changes</li> </ul>
	Local government/ permitting authority	<ul style="list-style-type: none"> <li>■ Housing permits</li> <li>■ Starts data</li> </ul>
Financial institutions and financial health	American Community Survey (ACS)	<ul style="list-style-type: none"> <li>■ Median income</li> <li>■ Share of Hispanic population</li> <li>■ Share of workers employed in entertainment, food and accommodation, and construction industries</li> </ul>
	Urban Institute credit bureau data	<ul style="list-style-type: none"> <li>■ Debt in collections</li> <li>■ Mortgage delinquency</li> <li>■ Credit score</li> </ul>
Health care systems	Area Health Resources Files (AHRF)	<ul style="list-style-type: none"> <li>■ Health service utilization</li> <li>■ Access to health care professionals</li> <li>■ Health care facilities</li> <li>■ Health insurance</li> </ul>
Employment markets and economic development	American Community Survey (ACS)/Census	<ul style="list-style-type: none"> <li>■ Unemployment</li> <li>■ Labor force participation</li> </ul>
	Longitudinal Employer-Household Dynamics (LEHD)	<ul style="list-style-type: none"> <li>■ Jobs</li> <li>■ Residents with jobs</li> </ul>

## Limitations

There were multiple research constraints across the five studies related to data scale, data availability, and challenges conducting community research in regions affected by climate change.

### SCALE AND AVAILABILITY OF QUANTITATIVE DATA

Our ability to assess the impacts of climate migration on receiving communities was partially limited by challenges associated with data source and data availability at higher-order spatial scales. Quantitative data were available at numerous community and geographical levels, and we needed different analytical tools to estimate effects for the housing, financial health, and employment studies across different geographic levels. We conducted analyses using aggregated, community-level data; PUMA-level data; and other county-level data. In Houston and Central Florida, we encountered data limitations when

estimating employment and labor force participation, in part due to the unavailability of data from earlier time periods.

We also recognized dataset limitations with some quantitative analyses in Southern Louisiana due to the gradual and ongoing pace of migration and smaller scale of climate migrant movement within the same labor markets in that region. For example, no comprehensive data sources are available that capture labor market effects at this smaller scale and with adequate sensitivity to capture ongoing but less pronounced changes in market conditions. Because of variations in scale and sensitivity of available data, 1:1 cross-site comparisons of quantitative findings were limited for some studies.

Moreover, quantitative analyses limited by dataset availability at higher-order geographic scales—such as county and PUMA levels—may mask effects at smaller geographic levels such as neighborhoods or townships. This is especially challenging in very large metropolitan areas such as Houston, Texas, and Orlando, Florida, where even many thousands of new climate migrants entering these communities still represented a small fraction of the overall population, such that higher-order geographic analyses may not capture potential effects at smaller levels. In some cases, qualitative interviews and news media content analysis findings provided insights into more localized community contexts and impacts that were not possible to capture using available quantitative data alone.

#### AVAILABILITY OF QUALITATIVE DATA

Although the Houston case provides the longest timeframe from which to observe institutional change since Hurricane Katrina struck New Orleans in 2005, this longer period also presented challenges to data collection. For example, many identified contacts who were active in response activity in the aftermath of Hurricane Katrina were no longer with the same organizations, making tracking down or identifying relevant interviewee participants difficult. Further, in many cases where the research teams identified contacts, multiple interviewees reported diminished memory of organizational and institutional activities since 2005, with many additional contacts reporting that they no longer had organizational records of activities from this time period. The TSU study team also reported engagement fatigue among contacts that was exacerbated by the ongoing COVID-19 pandemic at the time of fieldwork activities, such that many identified contacts were either not interested in participating in another Zoom meeting or did not have the capacity to participate because of other commitments.

Similarly, in Terrebonne and Lafourche Parishes, potential interviewees could be difficult to connect with given the protracted timeline of migration activity and the relatively low population density and rurality of the region, such that some institutions had limited presence across the region.

Because of the ongoing nature of migration, some interviewee participants were not able to distinguish between different climate migrant populations—including multiple Indigenous and tribal populations—which precluded the study teams from deeply engaging with experiential differences with respective institutions across and between populations. Further, because Hurricane Ida struck in the middle of the data collection activities, the research team discontinued interview stakeholder engagement, as many of those identified for interview solicitation were occupied with response and recovery activities.

Given these challenges, deep saturation was not possible through interview data across all institutional contexts for the Houston and Louisiana sites, although the collected data were still valuable in supplementing, contextualizing, and triangulating other qualitative and quantitative sources.

### IMPACTS OF CLIMATE CHANGE ON THE STUDY

The focus of this research was to analyze the impacts of climate migration on the receiving community institutions following climate change-induced environmental disasters. Yet throughout the course of the study, each receiving community also experienced subsequent climate change-related environmental disasters. Houston was devastated by winter storm Uri in February 2021; Terrebonne and Lafourche Parishes were ground zero for Hurricane Ida in August 2021; and coastal and Central Florida were devastated by Hurricane Ian in September 2022. In addition to causing catastrophic loss of life and billions of dollars in damage, these disasters complicated and delayed data collection and analysis activities across each of the study sites, requiring the research team to pause and extend fieldwork timeframes, extend analysis periods, and redesign research methodologies.

Partner university staff and students were personally affected in each of the study communities, and in the Louisiana study region, the research team had to reduce the number of stakeholder interviews because of the impact of Hurricane Ida on the region. Similarly, although TSU site leads did not receive explicit feedback from the identified target interviewees who declined to participate, it is likely that the weeklong disruption caused by winter storm Uri contributed to the engagement fatigue observed across the Houston site. Although we were able to successfully collect and analyze data across all study communities, the quantity of data was in some cases reduced or modified, and there were multiple project and timeline adjustments and delays that we did not anticipate at the outset.

# Key Findings

Detailed findings by institutional study are found in their respective reports.<sup>13</sup> Table 5 summarizes key findings from each study organized by site, as well as sitewide findings that were thematically or otherwise consistent across receiving communities.

Following the summary of key study findings, we discuss five synthetic, overarching findings identified from cross-study and cross-case analyses as well as five recommendations for institutions in future climate migrant receiving communities to prepare, build capacity, and strengthen resilience.

TABLE 5

Summary of Key Study Findings

	Housing	Financial institutions and financial health	Health care systems	Employment and economic development	Social, cultural, and recreational institutions
<b>Community-wide themes</b>	<p>There is no evidence that climate migrants had a significant impact on housing in receiving communities at the PUMA level.</p> <p>The housing needs of climate migrants tend to change over time as they experience different stages of need in the immediate, mid-, and long-term periods following disasters.</p> <p>Although emergency housing supports were consistent across the study communities, local institutions provided little support to assist climate migrants in transitioning from short-, to medium-, to long-term housing.</p> <p>Challenges securing affordable housing affect climate migrants' financial health.</p>	<p>There is no evidence that climate migrants had a significant impact on financial health in receiving communities at the PUMA level.</p> <p>Community-based organizations and government institutions had limited cultural competency and language supports to help migrants access financial resources and services.</p> <p>High housing and transportation costs have significant impacts on the financial well-being of climate migrants.</p>	<p>Challenges providing emergency health services to climate migrant populations result from the large scale of climate migrants' needs, the diversity and dispersion of providers across the region, and challenges navigating unfamiliar health systems.</p> <p>Limited transportation access to health services, inadequate health insurance, and lack of services are key barriers to accessing care.</p> <p>Stress, trauma, grief, and other mental health challenges experienced by climate migrants were brought on or exacerbated by experiencing disaster events.</p>	<p>There is no evidence that the influx of climate migrants led to strain on the local economy at the ZIP code, county, or PUMA level.</p> <p>Existing institutions that specialized in job training and placement were often able to provide migrants with employment resources and other connections to employment.</p> <p>Limited transportation access is a key barrier to successful employment.</p>	<p>Because of their established partner and collaboration networks, schools and nonprofit organizations are well positioned to support climate migrants, but they are often not prepared for disaster response.</p> <p>Faith-based institutions play a major role in disaster response.</p> <p>Social, cultural, and recreational institutions worked in collaboration with local and extra-local networks to coordinate supports and services, but despite this collaboration, many were still overwhelmed by the scale of migrants' needs.</p>

<p><b>Southern Louisiana (Terrebonne and Lafourche Parishes)</b></p>	<p>Although many climate migrants have more time to relocate—given the ongoing nature of land loss and flooding in the region—their circumstances are not necessarily less dire.</p> <p>Because assistance and short-term housing support is less available in ongoing or chronic disaster contexts, many residents do not qualify for aid.</p> <p>Some migrants faced challenges securing comparable housing or mortgages in receiving communities due to inconsistent incomes or barriers to accessing credit.</p> <p>The higher cost of housing in receiving communities could negatively affect the economic well-being of climate migrants over time.</p>	<p>Climate migrants moving from low-lying areas face financial hardship from high flood insurance costs, higher housing prices, and disconnection from social and informal economic networks in their new communities. These challenges are greatest for people on fixed incomes.</p>	<p>Migrants did not have distinctly different health needs from those in the receiving communities.</p> <p>The slower nature of migration creates a “trickle of movement” that much of the health system could adjust to and accommodate over time.</p>	<p>The higher cost of living in receiving communities could negatively affect the economic well-being of climate migrants over time.</p>	<p>The smaller distance between sending and receiving communities meant that most institutions and organizations remained the same, providing continuity for climate migrants.</p> <p>Many organizations that form to meet people’s immediate needs following acute disasters tend to go dormant following emergency response periods, reducing available services for climate migrants who move as a result of ongoing environmental hazards.</p>
<p><b>Central Florida (Orange and Osceola Counties)</b></p>	<p>Many climate migrants struggle to afford the higher costs of housing in receiving communities relative to those in Puerto Rico.</p> <p>Immediately after arrival, area housing affordability decreased and rent occupancy increased; two</p>	<p>Climate migrants to the Orlando region had no significant effect on credit health outcomes or mortgage delinquency rates in receiving communities at the PUMA level.</p> <p>Most banks and financial institutions provided</p>	<p>There were not enough Spanish-speaking providers and mental health service providers to meet the language and health service needs of climate migrant populations.</p>	<p>Prior crises in Puerto Rico helped establish a preexisting network of community-based organizations that could ramp up services.</p> <p>Lack of access to personal and professional documentation and</p>	<p>Puerto Rican cultural, social, and recreational institutions were already well established, and areas with higher concentrations tended to attract more climate migrants.</p> <p>Many institutions exhibited higher cultural competency with</p>



	<p>years later, there are no observed sustained impacts on housing availability or cost.</p> <p>Immediately after arrival, climate migrants tended to cluster geographically in areas with established Puerto Rican communities, but housing institutional capacity was limited to hotels and short-term supports with little support for transitional and longer-term needs.</p>	<p>few services for low income, un- and underbanked, and Spanish-speaking climate migrants, leaving government and community-based organizations to provide key support.</p> <p>Community-based organizations and government agencies often did not have the cultural competency or language resources to help migrants access financial supports.</p>	<p>Faith-based institutions are an important community resource for providing informal mental health supports</p> <p>Service providers can help migrants navigate complex health systems by working with them to access medical records, paperwork, and other critical documentation that many climate migrants lack upon arrival.</p>	<p>certification presented barriers to employment.</p> <p>Limited English language proficiency was a barrier to employment.</p> <p>A hot labor market at the time—in service and manual labor industries—made it easier for migrants to find jobs, but available positions did not always align with their skills and expertise.</p>	<p>newcomers because of past history with Puerto Rican migrants.</p>
<b>Houston, Texas</b>	<p>Climate migrants tended to cluster geographically in areas close to jobs and transportation services.</p> <p>Initially after arrival, housing affordability decreased and rent occupancy increased; two years later, there are no observed sustained impacts on housing availability or cost.</p> <p>The higher cost of housing in receiving communities could negatively affect the economic well-being of climate migrants over time.</p>	<p>Although some organizations strengthened their capacity since the initial arrival of climate migrants, most did not modify their financial services to remain accessible over the long term.</p>	<p>Modifying and expanding health services to meet climate migrants' mental and physical health needs was difficult due to the rapid nature of their arrival.</p> <p>Faith-based institutions are an important community resource for providing informal mental health supports.</p>	<p>Needing access to personal and professional documentation or certifications presented barriers to employment.</p>	<p>Faith-based institutions played a major role in disaster response.</p>

## Summary of Cross-Study Analysis

Five cross-cutting themes emerged from the five institutional studies that illuminate lessons for other climate migrant receiving communities in future planning. These themes center on the importance of coordinating early on to build capacity, planning for how the needs of climate migrants will change over time, preparing for different paces of migration activity in different geographic and disaster contexts, understanding the key role of transportation on migrant outcomes across all institutional domains, and—especially in environmentally vulnerable regions like the US Gulf Coast—planning and preparing for climate migration in the context of multiple, compounding, and ongoing climate-induced disasters.

### INSTITUTIONAL RELATIONSHIPS DEVELOPED BEFORE CLIMATE MIGRANTS' ARRIVAL ARE CRITICAL TO BUILDING COMMUNITY RESPONSE CAPACITY

Community and institutional capacity to receive and support climate migrants is critical not only to reduce strain and trauma for people experiencing displacement, but also to activate quick, effective, and efficient responses and reduce strain on providers and institutions during the emergency response and transition periods after migrants' arrival. Over time, strengthening institutional capacity in receiving communities will improve community resilience for future climate migration and related climate change-induced disaster events and help position communities to benefit from the economic, social, and cultural assets and contributions that new residents can bring.<sup>14</sup>

Across institutional sectors, receiving communities with strong, existing connections between government, private sector, and civil society groups and organizations that exhibited relevant cultural competencies and expertise were most successful in addressing the needs of new climate migrant populations. In Central Florida, economic, social, and environmental crises in Puerto Rico had precipitated earlier migrations of Puerto Ricans to the region, which prepared many providers and community organizations to ramp up needed services to support climate migrants from Puerto Rico. For example, during the emergency response period following Hurricane Maria, interviewees in Central Florida cited the City of Orlando's Hispanic Office for Local Assistance (HOLA) as a linchpin organization in coordinating emergency response across institutions and providers. HOLA offered bilingual services to connect new residents with government, private sector, and community organizations to find jobs and access health care services, educational opportunities, and other resources. Overall, across study communities, institutions with preexisting, established connections were better able to support migrants in navigating and accessing rapid-response services across housing markets and financial service agencies.

In Orlando and Houston, schools and faith-based institutions in particular played a central role in tapping and leveraging existing relationships with area nonprofit organizations, service groups, and local and regional government agencies to coordinate services and supports. In many cases, these connections existed before the arrival of climate migrants, and schools and faith organizations had established relationships with community networks that were connected with many climate migrant populations. These institutions therefore served as trusted locations and central hubs where migrants could receive supports and services, and resources were often available and deployed in linguistically and culturally appropriate ways.

Yet even with efforts to centralize or streamline service delivery and supports during rapid-response periods, coordination remained a challenge for some institutions, which resulted in worse outcomes for migrant populations. For example, many stakeholders across receiving communities noted that a lack of centralization across health care providers and supports was a barrier to migrants' ability meet their health care needs. Because of this, many sought care in piecemeal form, often resulting in inefficient and duplicative processes and lower-quality care. Similarly, for Isle de Jean Charles migrants and other Indigenous and tribal climate migrants across southern Terrebonne and Lafourche Parishes, interviewees reported that few organizations were dedicated specifically to the health needs of these largely older populations—many of whom are living on fixed incomes with limited access to services—and that this challenge was worsened by limited provider coordination.

#### CLIMATE MIGRANTS CAN NAVIGATE YEARS OF UNCERTAINTY AS INSTITUTIONS STRUGGLE TO MEET EVOLVING NEEDS IN EMERGENCY, TRANSITION, AND LONG-TERM PERIODS

Disaster-related displacement brings considerable stress and uncertainty for those affected, and particularly for people who are left with few personal belongings. Despite evidence of early coordination across institutional and government entities, nonprofit organizations, and community groups in receiving communities, many response networks were challenged by the scale and scope of need exhibited by new residents following disaster events, especially over time. Yet despite substantial challenges, it was during the early phases of emergency response that receiving communities were more successful in meeting many migrants' immediate needs; in the transition period and long term, however, significant gaps in supports for transitional and long-term housing, employment, and financial health persisted. Compounding these challenges, some community groups, organizations, and institutional networks that emerged or expanded during rapid-response phases ceased operations or were not able to sustain support activities over the longer term.

Despite rapid coordination and some early successes in supporting many climate migrants' emergency and short-term needs, many institutions still struggled in the early response phases. In both Florida and Texas, interviewees from government and community-based organizations providing employment, housing, financial services, and health supports reported quick coordination and service delivery ramp-up to meet immediate needs but were still often overwhelmed by the extent of support needed. And in Southern Louisiana, where many populations have been migrating over longer periods, organizations did not always know what new migrants needed and were additionally overwhelmed by punctuated periods of migration following severe storm and hurricane events.

In Florida, many interviewees also noted that climate migrants were frequently unfamiliar with new banking and financial institution practices and requirements. Institutions could be inflexible to the crises many migrants faced as a result of their displacement, such as maintaining onerous ID and documentation requirements for people that had lost everything or inadequate language resources for migrants with limited English proficiency. Often, access to financial resources required capital, documentation, and proof of income, which were difficult to access for those who lost most of their belongings, and institutions were largely unsuccessful in supporting migrants to address these issues. This resulted in significant, protracted challenges for many climate migrants in settling and building long-term security in their new communities.

Despite rapid response and coordination, many institutional supports were also misaligned to population needs. For example, although job markets in Central Florida and Houston could accommodate new workers and many jobs were available at the time of the climate migrants' arrival, many positions were either not aligned with the skills or languages of the new populations or did not pay enough to support their needs. Many climate migrants also had trouble producing or obtaining needed professional licensing in receiving communities to qualify for employment opportunities that were available.

Across the study regions, climate migrants faced persistent challenges accessing and navigating institutional resources in receiving communities as their needs evolved. For example, respondents representing housing institutions noted that there were few resources and supports aimed at helping climate migrants address longer-term housing needs. Years after disaster events, climate migrants in Houston and Central Florida who stayed and tried to transition to medium- or longer-term housing exhibited limited knowledge about basic processes and requirements for applying for mortgages, including financial documentation. Other issues migrants confronted were higher rental costs and deposits requiring quick access to financial resources, which many also lacked. Additionally, climate migrants often experienced acute health challenges in the emergency and transition periods following

disaster events that were compounded by the stresses associated with displacement and resettlement. Although most immediate health concerns were addressed, climate migrants faced longer-term challenges in navigating complex health systems to access services over time, and the process of navigating and accessing resources was particularly taxing for those with preexisting conditions and longer-term health conditions.

Despite provider and institutional challenges to meeting climate migrants' needs, quantitative analyses show that the magnitude of migration was not large enough to significantly affect housing prices and availability, employment, or credit and other aspects of financial well-being in the short term. Nonetheless, in receiving communities where housing and rental markets are already tight or significantly more expensive than in sending communities—such as Orlando and northern Terrebonne and Lafourche Parishes receiving communities, as well as many regions across the country where housing costs are outpacing household purchasing and rental power—receiving communities will likely struggle to meet the immediate, transitional, and long-term housing needs of migrants in the face of intensifying climate and environmental disasters.

#### REGIONAL RECEIVING COMMUNITIES EXPERIENCE BOTH “FAST” AND “SLOW” MIGRATION

While Houston and Orlando experienced acute periods of climate migration following catastrophic hurricanes that made landfall in other regions of the country, the Southern Louisiana study communities have been experiencing ongoing climate migration from communities closer to home for many years. There has been a steady movement of climate migrants from far Southern Louisiana to receiving communities approximately 50 miles inland to Houma, Thibodaux, Schriever, and nearby regions for decades as coastal lands recede into the waters of the Gulf Coast and chronic and severe flooding intensify. At the same time, these communities also experience punctuated periods of larger-scale climate migration following especially severe hurricanes and coastal storms, requiring them to respond to both “fast” migration and ongoing “slow” migration that gradually pushes residents out over time.

In each of the study communities, institutional representatives across sectors reported that meeting migrants' needs strained their resources and capacity. Examples include higher demands for public assistance programs such as housing subsidies, food assistance, and medical services, in addition to new services needed to address the unique needs of populations experiencing social and psychological disruption from forced relocation and catastrophic loss. In Southern Louisiana, while population movements resulting from the impacts of climate change have been ongoing for longer periods relative to Orlando and Houston, institutions still struggled to meet migrants' needs. This was

due in part to the uneven cadence and smaller numbers of new arrivals in combination with the lower population density and rural characteristics of the region. Because of these factors, existing institutional services, offices, and resources were more dispersed geographically, and institutions had fewer resources to provide ongoing support over time, and especially in slower migration periods. Across the region, interviewees reported that many assistance organizations, programs, and even health clinics that ramp up services after catastrophic disasters often “go dormant” following the emergency response periods, reducing available services for climate migrants arriving during slower periods.

Without ongoing institutional supports in slower migration contexts, people with the fewest resources will be affected the most, exacerbating existing health, economic, and social inequities. With respect to Isle de Jean Charles migrants, who are participating in voluntary relocation, interviewees reported that individuals moving to the new planned community tend to have limited or no incomes and lack needed capital and credit to secure alternative private market housing, whereas those who can afford or have access to alternative housing options tend to choose them. Without ongoing financial and housing institution supports that are responsive to the needs of this population, multiple interviewees reported that most will be unable to afford the comparatively higher property taxes and homeowner’s insurance rates at their new residences. As a consequence, it is likely they may not be able to afford to stay in their homes over time. Moreover, many other Indigenous and tribal populations across the region are not eligible for voluntary relocation at all but have also been moving as a result of climate change hazards and land loss over many decades. Inconsistent or sparse institutional supports to assess and respond to the needs of these climate migrant populations during slow times makes culturally appropriate and effective institutional responses for these populations even more unlikely.

Across the study communities, meeting climate migrants’ needs was a significant challenge for institutions, even in large metro regions such as Orlando and Houston. The receiving communities in Terrebonne and Lafourche Parishes experienced not only this challenge but also those associated with continuous but smaller-scale and unevenly paced climate migration over time—compounded by their location in a rural region with lower population density and fewer institutional resources.

Escalating climate disaster events will exert ongoing pressure and drive migration from ecologically vulnerable regions such as Southern Louisiana and other communities across the US Gulf Coast, and it is likely that many of these climate migrants will choose to settle in closer, regional receiving community destinations such as those in northern Terrebonne and Lafourche Parishes. Although they are not captured in most disaster displacement data and are not eligible for most disaster relief funding through Federal Emergency Management Assistance or the US Department of Housing and Urban

Development, people who move as a result of slower but ongoing climate-related environmental hazards are still climate migrants, and receiving regions with fewer institutional resources spread over larger geographies will likely face compounded service delivery and support challenges from both fast and slow disaster events over time.

### TRANSPORTATION PLAYS A KEY ROLE IN SHAPING ACCESS TO HOUSING, EMPLOYMENT, HEALTH CARE, AND OVERALL QUALITY OF LIFE

Across the study communities, access to affordable, reliable transportation not only influenced climate migrants' resettlement patterns but also many aspects of their economic opportunities, housing, health care, and overall quality of life. In Florida and Texas in particular, most climate migrants did not have access to a personal vehicle either because they did not own one, because any vehicle they did own had been destroyed by the hurricanes, or because their mode of travel to the receiving communities—such as bus or plane—precluded them from bringing personal vehicles.

Because of this, most newcomers were heavily dependent on public transportation networks and related assistance to access resources and services. This challenge was compounded by the fact that the Houston and Orlando metro areas, respectively, are spatially much larger than New Orleans and the sending communities in Puerto Rico. This required new residents to travel much further distances than many were used to, meaning that living in locations that were easily accessible to vital resources and services, such as employment and schools, became essential.

Yet in Houston in particular, available emergency shelters and temporary rental housing were often not located near accessible transportation. Most of the available rental properties in Houston were scattered across different regions of the city, which presented significant challenges for migrants seeking access to services, employment, education, and other needs across the sprawling metro area.

In Southern Louisiana, transportation challenges were also widely reported, but for reasons associated with the rurality of the region rather than urbanity. In southern and central Terrebonne and Lafourche Parishes, many resources and services are dispersed across smaller communities that are located several miles apart, and it is not uncommon to travel long distances—sometimes in different directions—to access key services. Informants in Southern Louisiana reported that the long distances climate migrants had to travel to access employment, health care, retail, and other services were a challenge, especially for those without personal vehicles or some from coastal regions further south who were accustomed to traveling by boat or did not have regular access to a car.

Even after emergency response periods ended and many climate migrants sought longer-term settlement in their new communities, lack of access to affordable, reliable transportation continued to constrain their choices about where to live and work. For example, especially in Central Florida and Houston, the availability and affordability of transportation was a barrier for many when they sought to move from emergency and short-term housing to intermediate and longer-term housing. Similarly, as some attempted to transition from short-term employment positions they had taken out of necessity upon arrival to longer-term positions that aligned with their skills and interests, reliance on public transportation limited many migrants' housing and job options and made finding more stable employment and longer-term housing more difficult.

#### CLIMATE MIGRATION IS HAPPENING IN THE CONTEXT OF MULTIPLE COMPOUNDING, ONGOING, AND INTERRELATED ENVIRONMENTAL CRISES

Even as receiving communities emerge as recovery destinations for people affected by climate change-induced disasters in other locations, they are not immune to such disasters striking their communities as well. This study was designed to examine the impacts of climate change-induced disaster events on institutions in receiving communities, but as data collection and analyses were underway, additional climate disasters affected all three of the study communities as well as one of the original sending communities, causing widespread devastation and complicating and delaying data collection and analysis activities.

Winter storm Uri in 2021 was catastrophic for Houston and most of Texas, causing unprecedented statewide freezing, energy infrastructure failure, water system failure, and resource contamination. Total costs from the damages could reach nearly \$300 billion,<sup>15</sup> and hundreds of direct and excess deaths were attributed to the storm. Hurricane Ida struck Southern Louisiana in 2021, causing catastrophic storm surges, winds, and flooding across Terrebonne and Lafourche Parishes as well as in communities and states much further inland. And in 2022, Hurricane Ian made landfall on Central Florida. Damages are still being assessed at the time of this publication, but projections suggest it could be the costliest storm in Florida history.<sup>16</sup> Also in 2022, Hurricane Fiona made landfall on Puerto Rico nearly five years to the day after Hurricane Maria, causing mudslides and flooding, leaving millions without power, and renewing questions of climate migration for remaining island residents in the aftermath.<sup>17</sup>

These crises illustrate that the precipitating events causing climate migration are not isolated but must increasingly be considered in multiple, compounding, ongoing, and interrelated disaster contexts. And it is likely that further patterns of climate migration in both sending and receiving communities will



continue with future disasters. This is especially true in regions such as the US Gulf Coast, where the impacts of climate change are widespread and where planning for climate resilience must address secondary impacts like climate migration in addition to primary impacts such as damage from hurricanes and severe weather.

## Recommendations

Insights from this study can help support municipalities, counties, and states assess their potential to experience climate migration in the future and prepare accordingly. As the findings from this project show, and as other disaster reporting bears out, migrants often relocate to regions where prior migration from their originating community has already taken place—in other words, areas with existing economic and social ties between the sending and receiving communities. Especially in regions where environmental and climate impacts have been unfolding over time, migrants may also seek closer, regional communities with relatively lower risk of impacts. Some communities may also wish to market themselves as potential receiving communities to capture the benefits of population growth, development, and economic activity that may accompany migration.

Communities poised to receive climate migrants can take stock of their assets and capacities and identify what resources they need to effectively welcome and support climate migrants. Findings from this study point to five cross-cutting policy, planning, and coordination opportunities that such communities can act on in preparation for future climate migration.

### **Strengthen Coordination Across Institutions, Agencies, and Community Populations Now**

Disaster impact research consistently finds that strong pre-disaster collaborations between government service agencies, first responders, and community organizations result in more effective emergency responses and faster recoveries (Kapucu 2004). The needs of people displaced by disasters are often complex and interconnected, such that challenges in one domain—such as housing—can have cascading impacts on people’s ability to gain stability in other areas such as employment. Strong institutional coordination can help lower the barriers to accessing needed resources, which can in turn reduce related strains.

In the aftermath of Hurricane Maria, many government organizations and service agencies throughout Central Florida already had relationships with organizations with strong community ties,

such as the Hispanic Office for Local Assistance. Many related organizations emerged or grew in response to earlier periods of migration from Puerto Rico to Central Florida, so they had established relationships and cultural connections with people from the origin community.

Other institutions without existing networks or strong social or cultural ties to the migrant populations struggled to effectively meet the scale and scope of need in both the emergency period and throughout the transition and longer-term periods as many newcomers sought permanent settlement in their new communities. Longer-term needs—such as access to adequate health care, access to financial services and supports to build security, access to longer-term jobs that are aligned with residents’ skills and career paths, long-term housing, and transportation to support all of these needs—were all challenges experienced by many migrants even multiple years after the disaster event.

Institutions, government agencies, first responders, community organizations, and faith-based groups in regions poised to receive climate migrants should assess their current networks and identify opportunities to develop and strengthen working relationships through network building, regional alliances and mutual aid agreements, memorandums of understanding, and other coordination strategies to prepare for future climate migration events. This is especially important in planning to meet needs that emerge after the rapid-response periods end and new residents seek to establish themselves in the receiving communities in the long term.

## **Understand Community Population Trends and Strengthen Networks between Sending and Receiving Communities**

In addition to coordinating within receiving communities, institutions and municipalities can assess existing population trends and community networks to plan for future climate migrations. After Hurricane Maria, many Puerto Ricans sought recovery assistance in Central Florida, where their family members and friends already lived, and migration unfolded as a continuation of longer-term population trends. In addition to formal support networks, many climate migrants displaced by Maria also relied on informal or community-based networks that have developed over years of familial and economic integration across the two regions. Similarly, in Louisiana, many residents in far southern Terrebonne and Lafourche Parishes have been moving north to regional receiving communities for many decades and have relied on both formal and informal networks to access services and establish themselves in their new communities over time.

These migration patterns parallel those of other climate-related disasters.<sup>18</sup> Understanding these population and network trends can support both sending and receiving community institutions

establish and strengthen both formal and informal coordination prior to disaster events. Further, building or strengthening these relationships in advance of disasters can not only ease institutional strains through expanded capacity and resource sharing, but also support migrants by reducing secondary trauma and stress, integrating social and cultural supports across networks, facilitating communication and information sharing across sending and receiving communities, and easing barriers to vital records access and sharing.

## **Apply Lessons from Resilience and Sustainability Planning**

Across the study communities, most institutions were not adequately prepared to receive influxes of climate migrants, but many organizations were able to adapt to address short-term needs. For example, in the employment sector, service providers addressed unexpected issues such as language translation and skills mismatches between employment options and migrants' professional expertise. However, addressing the longer-term needs of migrants, such as securing permanent housing and career-track jobs in their fields of training, remained a challenge. Most institutions, processes, and systems showed little evidence of long-term adaptation to meet needs the needs of migrant populations over time or to institutionalize changes that were implemented in rapid-response phases.

Communities can apply lessons from urban resilience and sustainability planning in preparing for future climate migration events. The goal of urban resilience planning is for communities to not just endure, but adapt, grow, and thrive in the face of both acute shocks and ongoing, chronic stressors (McTarnaghan et al. 2022). Communities preparing to receive climate migrants can apply three keys to resilience planning to meet potential challenges and ultimately capitalize on the many benefits new residents will bring:

- **Plan early.** Advanced planning and capacity building are needed at both organizational and systems levels so communities can effectively receive and support new residents displaced by climate change. Communities should ensure that people's needs are met in the immediate period and that institutions are building capacity over time to meet their evolving needs. This is especially true given that environmental disasters will continue to drive new migration over time and receiving communities may experience multiple phases of migration at once. In the housing sector, this entails monitoring and assessing housing availability, affordability, the potential for new supply and the location of supply, and ease of access for new residents who may not have adequate documentation or related personal paperwork if they experienced catastrophic property loss. It further involves understanding the landscape of public and

private resources available to new populations to support their transition into immediate, short-term, and long-term housing.

- **Work regionally.** Strengthening coordination within and across institutions is vital, as challenges are rarely unidimensional and organizations operate better when embedded in networks (McTarnaghan et al. 2022). Strengthening the embeddedness of long-term institutions in local and regional networks is an investment that can be leveraged for effective response and service provision in the short and long term. The study on social, cultural, and recreational organizations, for example, found that schools and religious institutions were particularly well prepared and networked to coordinate resources for new migrants, and these institutions were well integrated with existing population networks. Just as local governments can establish coordination mechanisms with neighboring and regional jurisdictions to improve response during emergencies, the accumulated social capital of migrants from their sending and receiving communities can help facilitate coordination, communication, and exchange of supports and resources.
- **Build data capacity.** The ability to assess and monitor population and service delivery data is key to institutionalizing resilience (McTarnaghan et al. 2022), yet data availability and the capacity to understand population trends and anticipate service needs presented key challenges across receiving communities. For example, findings from the health care systems study underscore the importance of monitoring health needs of new populations to help providers mitigate systems strain from large population influxes of migrants who may have complex physical and mental health challenges. Similarly, the housing study found a need for more high-quality qualitative and quantitative data on climate migrants' experiences navigating the housing system. Specifically, communities and institutions need housing data related to the timing, location, and form and context of migrants' moves from short-term to intermediate and permanent housing, as well as data that can support better matching of residents to specific housing types and options that meets their needs.

## Plan for Population Gains and Losses

Population projections are a vital indicator for municipal planning, and in regions where climate impacts are ongoing and expected to worsen, planning for the ability to meet future population needs without over- or under-projecting is critical. Even though many climate migrants may choose to stay in receiving communities long term or permanently, many others will return to their originating communities or stay in receiving communities temporarily while they seek housing and employment elsewhere.

The US Gulf Coast receiving communities in this study experienced large and small population booms—ranging from many thousands of people arriving at once in Orlando and Houston, to dozens to hundreds trickling in over time in Southern Louisiana. And while institutional stakeholders reported challenges providing services and supports to populations upon their arrival and over the longer term, these challenges compound when population levels are unpredictable or fluctuate over time. In Southern Louisiana, for example, community leaders reported that after Hurricane Katrina in 2005, Terrebonne and Lafourche Parishes experienced moderate population gains that many expected would lead to long-term, permanent growth. In the near term, however, this population influx was a key driver of housing and rental shortages across the region, and in subsequent years, many were disappointed that most Katrina migrants moved away from Terrebonne and Lafourche Parishes and hopes for long-term growth did not materialize.

Communities poised to receive climate migrants can consider planning approaches from other population boom and bust contexts, such as energy communities and extractive industry planning (Jacquet 2009). In these communities, population booms and busts can be difficult to predict and vary according to community conditions and contexts prior to the arrival of new residents, as in climate migrant receiving communities.

Receiving communities can monitor population gains and institutional responses and develop scenarios for population increases, plateaus, and declines over emergency, transition, and long-term time periods after a disaster event. Once developed, impact projections can be constructed for institutional and community sectors that include demands for local services and supports; evaluate effects on economic, housing, health care, and employment sectors; and consider social and cultural impacts (Jacquet 2009). Government officials and other institutions can identify populations at higher risk or greater vulnerability, and projection scenarios should be tailored to ensure that those with the greatest need or facing the greatest barriers to accessing services and supports are prioritized. These projections can be assessed against existing institutional capacity and resources, and jurisdictions can develop mitigation strategies to identify needed resources, address gaps, and ramp services up or down in different population growth or decline scenarios.

## **Develop Integrated Response Plans for Both “Fast” and “Slow” Climate Migration**

Population and planning needs can vary widely by environmental disaster type, severity, and impact, as well as by sending and receiving community contexts and conditions. In the study communities, punctuated, acute disruptions precipitated periods of “fast” migration in the aftermath of Hurricanes

Katrina and Maria, while ongoing “slow” migration was common in response to chronic flooding and land loss that has been occurring for decades in Terrebonne and Lafourche Parishes. And yet, even in the slower Louisiana context, stakeholders reported periodic periods of fast migration following severe weather and hurricane events, such as after Hurricane Rita in 2005 and Hurricane Ike in 2008. Receiving communities can develop response frameworks for both fast and slow disaster circumstances to plan for unique institutional and systems demands that present in emergency, transition, and long-term periods.

Addressing immediate and emergency needs following climate disasters requires rapid-response capacity to ramp up services and supports quickly, as well as flexibility and coordination across institutions and providers. Short-term planning should address the immediate needs of migrants as they arrive and lay the foundation to support them as they establish themselves in their new communities. Longer-term planning can facilitate the transition from emergency response periods and not only address mid- and longer-term challenges migrants face, but also include asset-based investments to support new residents as they bring skills, experiences, and cultures that can benefit and enhance receiving communities.

Integrated planning will incorporate both fast and slow migration planning over the emergency, transition, and long-term periods. Communities can consider the following lessons from the US Gulf Coast receiving communities when planning for climate migration:

#### “FAST” PLANNING

- **Plan for an organized hub to administer emergency services.** A centralized, accessible, safe location where climate migrants can access emergency services, mental health supports, public information, language services and supports, referrals, supplies, social and cultural resources, and institutional and community representatives can improve service delivery, reduce trauma, and facilitate cross-institutional coordination.
- **Expand transportation resources and options.** Interviewees across institutions described how inadequate transportation was a critical barrier for climate migrants to access essential services and employment in both the immediate and longer-term periods following disaster events. Communities can plan for scalable, rapid transportation supports in the form of rideshare vouchers, expanded transit schedules, expanded transit routes, free and reduced-cost transit fares, and direct assistance to ensure that new residents can access resources.
- **Develop alternate, flexible requirements to access financial and housing resources.** Climate migrants need to access financial resources and reserves quickly to meet emergency needs

such as securing transportation, food, and shelter, but many lack the documentation required to access their reserves, set up a new banking account, apply for new credit, prove their identity, or secure a new job or housing after losing most or all of their belongings following a disaster. Financial and housing institutions can develop alternative requirements to streamline qualification and resource access processes for populations experiencing catastrophic personal property loss.

- **Develop a plan for monitoring health systems.** Many climate migrants will arrive in receiving communities with both chronic and acute physical and mental health needs that may be exacerbated by the physical and psychological trauma of displacement. Receiving community institutions should assess the capacity of their health systems, data sources and needs, and information technology systems to monitor potential impacts from a rapid influx of new residents with specialized needs and develop a plan to address identified gaps.

#### “SLOW” PLANNING

- **Strengthen institutional capacity for slow periods.** Especially in Southern Louisiana, many employment, health care, and housing programs and institutions that ramped up following disasters went dormant following initial emergency response periods, leaving many climate migrants who moved north due to ongoing but less catastrophic environmental hazards with far fewer supports. Institutions can invest in program support and capacity building—especially in rural regions like Southern Louisiana with fewer resources—to plan for continued service provision during the slow times so that this population of climate migrants is not left behind.
- **Expand resources and supports for climate migrants displaced by ongoing environmental hazards.** Although they are not captured in most disaster displacement data and are not eligible for most federal disaster relief funding, people who move as a result of slower but ongoing climate-related environmental hazards are still climate migrants, and receiving regions with fewer institutional resources will likely face compounded service delivery and support challenges from acute and gradual climate change events over time. Communities, municipalities, and states can assess the landscape of available resources that climate migrants displaced by slow disasters may need access to (but that are not available to them) and develop support models such as direct payments, grants, tax credits, low- or no-cost financing, and related tools designed to meet their unique needs.
- **Plan beyond short-term and emergency housing for transitional and long-term permanent housing.** Receiving communities and institutions must plan for adequate emergency and

temporary housing following disaster events as well as understand intermediate and long-term housing market trends in their region. Jurisdictions must plan for adequate affordable stock and capacity to absorb and support migrant populations over time, including those displaced by chronic, ongoing environmental hazards. This includes investing in housing and financial institution programming and staff capacity to support, educate, and provide resources to migrants on their path to securing long-term housing, as well as investing in smart development and land-use planning to ensure that housing stocks are accessible to public transportation.

- **Help climate migrants access career-track employment that is aligned with their skills and interests.** Across receiving communities, employment institutions struggled to meet the needs of climate migrants over longer-term periods following disaster events. To address immediate financial needs, many climate migrants began working in positions that were available but not necessarily well aligned with their skills, credentials, or interests. Over time, they faced challenges securing career-track employment that was aligned with their expertise. Facilitating this transition may require employment navigation assistance or supports to transfer and validate licensures in receiving communities. This may require expanding the capacity of service providers to offer one-on-one, tailored support over time.

## INTEGRATED PLANNING

- **Plan for simultaneous chronic and acute disasters.** In regional receiving communities, climate migration can occur steadily over longer periods or at a faster, larger scales following catastrophic disasters. Communities and institutions must not only prepare for both, but also prepare for the possibility that both may occur simultaneously—as has been the case in Southern Louisiana receiving communities for many decades.
- **Partner with community members in planning.** Meaningful community involvement from stakeholders and populations most affected by environmental and climate-related risks is critical for identifying and prioritizing key challenges and developing and implementing solutions to advance equity (Taylor 2000). In communities with populations that have strong social and cultural networks in other regions that have experienced climate disasters, engagement with those populations is necessary to develop planning frameworks that will be responsive to their needs in culturally and socially appropriate ways. Community partnership in planning also provides the opportunity to foster community support prior to potential future disaster events (Toor, Cox, and Wyckoff 2014).



- **Assess institutional strains and opportunities for growth.** The landscape of services that can be quickly activated to serve immediate needs as well as provide transitional and long-term support to climate migrants is unique in each community. Across US Gulf Coast receiving communities, institutional stakeholders reported significant gaps in transitional and long-term supports across all institutional areas, in addition to transportation access and service gaps that prohibited climate migrants from meeting both emergency and long-term needs. Scenario planning and contingency planning can be used to identify existing institutional programs or supports that can be scaled rapidly, expanded to address longer-term needs, and identify where resources can be re-directed to address gaps.
- **De-silo institutions and sectors.** Each of the five institutional studies found that the needs of climate migrant populations cut across all institutional sectors: housing, health care, employment, financial health, and social, cultural, and recreational institutions. Effective planning will include coordination across public and private agencies, institutions, and departments to ensure each dimension of need is addressed. Coordination will improve outcomes for climate migrant households, reduce secondary trauma, improve the flow of resources, and reduce redundancy in work.
- **Address underlying social and economic stressors.** Across the study regions, a community's ability to welcome and support climate migrants was largely dependent on the community and institutional conditions that existed prior to climate migrants' arrival. Labor and housing market conditions, the presence of established social and cultural networks and ties, transportation resources, and flexible institutional requirements to access services were all key variables influencing stability and quality of life outcomes for climate migrants in their new communities. Beyond emergency services planning alone, climate migration response frameworks should address economic, social, psychological, and physical challenges and barriers over immediate and long-term periods.
- **Embed climate migrant response planning into existing community and regional plans.** Incorporate response frameworks as dimensions of existing community and regional plans related to transportation, land use, emergency management, health systems, housing, sustainability, and community and economic development so there is alignment and consistency across strategies and implementation. Embedding climate migration planning this way can support de-siloing of institutions and sectors, improve access to resources and supports in the event of climate migration events, and strengthen community capacity for resilience thinking and planning.

- **Establish responsible parties, timelines, and milestones.** To measure success, response frameworks should include high-quality mechanisms for accountability, such as clearly identifying responsible agencies and lead organizations as well as clear timelines with benchmarks and milestones (Burnstein and Rogin 2022; Mazmanian and Kraft 1999).

## Conclusion

Displacement from climate disasters is gaining attention in news media as well as in state and federal policy as worsening storms, wildfires, flooding, and related hazards destroy properties and livelihoods and render entire neighborhoods and communities unlivable (see, for example, Cresencio Rodriguez-Delgado 2022; Lustgarten 2020; The White House 2021).

Yet across institutions represented in this study, there was limited evidence that lessons from earlier disasters were systematically incorporated into long-term planning, coordination, or related climate migration and resilience strategies for the future. Indeed, after the rapid-response and recovery phases, multiple institutional stakeholders across receiving communities reported reduced investments and resources toward transitional and long-term planning and coordination over time, much less to prepare for potential future migration events. And though institutions adapted to support climate migrants during rapid-response and recovery phases, many stakeholders reported that valuable components of learning and adaptation were likely missed, or underinvested in, because there was little systematic, evaluative assessment of what processes and practices worked well and should be institutionalized relative to those that were less effective.

Meanwhile, at the community level, midsize and large municipalities are increasingly deploying climate action plans that, to varying extents, include sector-specific strategies to achieve decarbonization and prioritize social equity, regionalism, and coordination (Kane et al. 2022). Yet there is little evidence of strategic or coordinated planning around climate migration as a component of most of these climate action plans, and at the same time, many smaller communities and rural regions are far less likely to have the resources to invest in climate planning at all. Without institutionalizing early lessons learned from receiving communities and incorporating resilience planning for both “fast” and “slow” future climate migration events, communities will be more vulnerable to chronic and acute shocks and stressors over time, less poised to leverage the many assets and benefits that new residents bring to their communities, and less climate resilient.

As importantly, without targeted investments toward the climate migrants at greatest risk—such as those with physical and psychological health conditions, older populations, very young populations,

people with disabilities, people with low incomes, people who belong to other socially vulnerable groups, and groups that face disproportionate exposure to environmental hazards, including Indigenous populations and other people of color—existing social, racial, and income inequalities will worsen with future disasters.

Yet prior research regarding institutional-level impacts and responses to climate migration has been limited, and communities have lacked a substantial evidence base to support planning and coordination. In 2021, the Biden administration passed Executive Order 14103, “Rebuilding and Enhancing Programs to Resettle Refugees and Planning for the Impact of Climate Change on Migration,” which marks the first time the federal government has officially acknowledged the link between migration and climate change.<sup>19</sup> Indeed, there is growing awareness of the need to prepare for future climate migration among the communities and regions that are most likely to experience the impacts of climate events—not only to meet the coming challenges but also to mitigate the worst impacts for the most vulnerable populations and institutionalize lessons learned to promote more climate-resilient communities over time.

The evidence-based findings and related recommendations from this research, as well as those found in the companion policy toolkit,<sup>20</sup> build on existing research and organize valuable early insights that can support institutions in current and future climate migration receiving communities in coordinating, preparing, and responding to migrants’ needs and building capacity to support thriving, climate-resilient communities over time.

# Appendix A. Descriptions of the Five Research Studies

The research team designed five studies to investigate the capacity of receiving community institutions to prepare for and support climate migrants in the US Gulf Coast region:

- Study 1: Housing markets
- Study 2: Financial institutions and financial health
- Study 3: Employment and economic development
- Study 4: Health care systems
- Study 5: Social, cultural, and recreational institutions

Additionally, the Enterprise team led the production of a companion policy toolkit, which translates individual study findings into policy actions for federal, state, and local policymakers. The toolkit highlights challenges and opportunities for receiving communities, as well as solutions for policymakers to consider before disaster events occur.

## Housing Markets Study

For this study, the research team evaluated housing market conditions—including rental and owned housing prices and vacancy rates—in receiving communities before, during, and after migrants arrived in the study community regions.

Secondary data sources included American Community Survey one-year microdata or five-year nonoverlapping samples as available, as well as the 2000 Census for Houston's baseline before Hurricane Katrina in 2005. The study team collected records of housing prices, assessed values, and sales prices through formal data sharing agreements with jurisdictions and through for-sale databases such as CoreLogic. The team also collected data from regional housing authorities on clients served, requests for assistance, and utilization rates. For overall rental market conditions, the team acquired data from CoStar, RealPage, Zillow, and local listing providers.

The team also collected primary qualitative data on housing market conditions to understand housing institutional responses and changes in communities' capacity to provide affordable housing. These data included semi-structured one-on-one and small group interviews with representatives from local housing authorities, developers, elected and appointed housing administrators and officials, and

property managers. See table 2 for a summary of interviewees by type across the study communities. For the Louisiana communities, the team also used summary data from a content analysis of news media coverage of institutional capacities and responses to climate migration.

## Financial Health Study

The financial health study employed a robust analysis of credit score data to identify major changes in debt status, including households that move, to quantify the effects and causes of migration (e.g., disasters, foreclosure, etc.). We analyzed findings for the select communities against comparison sites and aimed to track changes in financial health over time in the receiving communities. The team used proprietary data from a partnership with a major credit bureau. These annual data allowed the team to examine the financial and credit health of residents and their communities over time, including information on types and amounts of debts, delinquencies, bankruptcies, tax liens, and credit scores. The credit bureau measures were available at the ZIP code level for more than 5 million consumers and include the same people over time, allowing the research team to identify influxes of climate migrant populations as they entered the receiving communities.

Because of the relative recency and size of the population in the Central Florida site, the quantitative component of this study focused on the climate migrants who left Puerto Rico after Hurricane Maria and initially moved to this community; those who migrated to other areas of the United States were used as a control group.

The team conducted semi-structured, qualitative interviews with local service providers as well as representatives from the financial services industry, including banks, credit unions, and alternative financial service providers. For the Louisiana communities, the team also used summary data from a content analysis of news media coverage of institutional capacities and responses.

## Employment and Economic Development Study

The research team designed a mixed-methods strategy to assess employment and economic capacity in receiving communities. First, the team conducted semi-structured qualitative interviews with representatives from workforce and small-business development training centers in receiving communities about their capacity to serve climate migrants before, during, and after their arrival. The

team also aimed to understand how local institutions adapted and responded to new climate migrant populations.

The team also used American Community Survey, Decennial Census, and Longitudinal Employer-Household Dynamics Survey data to analyze labor markets before and after migration events in Houston and Central Florida receiving communities. Key baseline and outcome variables of interest included labor force size, labor force participation, and unemployment rates. We used a synthetic control method to estimate what employment and labor market conditions in receiving communities may have looked like if not for the arrival of climate migrants.

The team excluded Terrebonne and Lafourche Parishes from the quantitative analysis because of the gradual and ongoing nature of climate migration in the region, as well as the high frequency of migrants moving internally within the same parish.

## Health Care Providers Study

To assess receiving communities' health care infrastructure before, during, and after climate migration events, the research team used both quantitative and qualitative data sources. The quantitative analyses focused on four outcome measures: health service utilization, access to health care professionals, health care facilities, and health insurance coverage using data from the Area Health Resources Files (AHRF) published by the Bureau of Health Workforce. No individual health data were acquired or analyzed as part of this study; rather, the focus was solely on the health infrastructure and qualitative changes. We excluded Houston from quantitative analyses because AHRF data begin in 2010 and were therefore inaccessible for the 2005 time period coinciding with Hurricane Katrina.

The team complemented these sources with in-depth, semi-structured interviews of core providers, including representatives from state and local health departments, to contextualize quantitative data and explore qualitative changes in health provision in response to climate migration events.

## Social, Cultural, and Recreational Institutions Study

The focus of the social, cultural, and recreational institutions study was on the landscape of services and activities offered through public and community-based entities. The team conducted interviews with local entities regarding capacity, available services or programming, outreach activities, and clientele base before, during, and after receiving climate migrants. The research team used the Urban Institute's

National Center for Charitable Statistics database<sup>21</sup> for exploratory work to identify the locations of nonprofit organizations in each site, and conducted 42 interviews with stakeholders from organizations in each of the study communities, with an emphasis on specific communities or cultures, including advocacy organizations; arts organizations; foundations; government agencies, local government departments and public libraries; schools and universities; and social services nonprofits, which include faith-based organizations, charities, counseling services, and food banks.

# Notes

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- <sup>2</sup> “Global Internal Displacement Database: 2021 Internal Displacement,” Internal Displacement Monitoring Centre, December 31, 2021, <https://www.internal-displacement.org/database/displacement-data>.
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- <sup>5</sup> Verity Murphy, “Fixing New Orleans Thin Grey Line,” BBC News, October 4, 2005, <http://news.bbc.co.uk/2/hi/americas/4307972.stm>.
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- <sup>10</sup> See Hinojosa and Melendez (2018); Martin Echenique and Luis Melgar, “Mapping Puerto Rico’s Hurricane Migration With Mobile Phone Data,” CityLab, May 11, 2018, <https://www.bloomberg.com/news/articles/2018-05-11/where-puerto-rico-s-residents-migrated-since-maria>.
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- <sup>12</sup> Rachel Bogardus Drew and Ayate Temsamani, “A Policy Brief on Preparing Receiving Communities for Climate Migrations” (Washington, DC: Enterprise Community Partners, 2023), <https://enterprisecommunity.org/resources/policy-brief-preparing-receiving-communities-climate-migrations>.
- <sup>13</sup> See the full list of reports in this series at <https://www.urban.org/projects/climate-migration-and-receiving-communities-us-gulf-coast>.
- <sup>14</sup> Eric Burnstein, Rebecca Marx, Sara McTarnaghan, Oriya Cohen, and Katie Fallon, “Why Cities Need to Prepare for Climate Migration,” *Housing Matters* (blog), Urban Institute, February 28, 2022, <https://housingmatters.urban.org/feature/why-cities-need-prepare-climate-migration>.
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- <sup>20</sup> Bogardus Drew and Temsamani, “A Policy Brief on Preparing Receiving Communities for Climate Migrations.”
- <sup>21</sup> “National Center for Charitable Statistics,” Urban Institute, accessed February 13, 2023, <https://nccs.urban.org/>.

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