

Typologies of Perspectives, Needs and Challenges of Climate In- Migration to the Great Lakes Region



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Introduction

Anthropogenic climate change presents challenges for humanity and the environment, now and into the future. In the United States, climate projections show that residents are at risk of climate impacts like sea level rise, increased temperatures, and water shortages (ASAP, 2021). A resulting implication of these impacts are the potential displacements that could arise. In ASAP's (2021) literature review documents, an estimated 13.1 million people could be displaced from sea level rise in coastal areas of the United States within the next century (Fleming et al. 2019).

To cope with these events, people must find ways to adapt. Migration is one of such ways that people adopt to cope with climatic events (Black et al, 2013). The climate migration discourse has gained traction in research, among policy makers, other stakeholders, and even communities on the frontlines of climate change. Among these conversations is a recognition of the Great Lakes region as a possible climate migrant receiving region. The Great Lakes region is regarded as a potentially climate migrant receiving region because of its relatively milder climate and cooler temperatures, compared to other parts of the country that are projected to experience extreme climate impacts (ASAP, 2021). Given this likelihood, some cities have expressed hope in becoming "climate refuge cities" by attracting climate (ASAP, 2021). ASAP's literature review reveals that while there are some aspects of climate migration, especially in the Great Lakes region, that are known, there still are elements that need further research. Thus, the purpose of this report is to present results of ASAP's work on developing typologies of needs and perspectives of stakeholders and indigenous rightsholders on climate migration in the Great Lakes region.

Findings from this project suggest that opportunities from climate migration to the Great Lakes region are in the aspects of labor and infrastructure investments. At the same time, certain challenges are of concern to stakeholders. They are, equity and justice issues, challenges of social integration, limited infrastructure, and impacts on the natural environment. Furthermore, stakeholders highlighted needs that should be addressed to prepare for climate in-migration to the Great Lakes region. These include access to data and proactive planning, social service provision for in-migrants and increased collaboration across stakeholders and institutions. Considering these findings, ASAP hopes that this work will bridge gaps in knowledge and identify areas of further research to promote climate-informed methodologies and practices that center affected communities in their development.

Background

One important finding from ASAP's literature review is the essential role of climate informed demography for climate migration planning. Climate informed demography has majorly utilized historical data. However, findings from the literature review suggest that incorporating future data is necessary for these demographic projections, since they account for contemporary effects on migration patterns (ASAP, 2021). Lack of data is another key gap in climate informed demography. One approach to bridging this gap is more multidisciplinary research geared towards methodology development on climate migration. To contribute towards bridging this gap, ASAP has supported two teams focused on

the development of these methodologies. These are co-creative spaces where researchers across disciplines - demographers, climatologists, housing policy have worked together to develop methodologies for predicting climate in-migration to the Great Lakes region and within New York State.

Through this approach, ASAP has also identified the need to center affected communities in the development of these methodologies. To do this, ASAP has supported a parallel research project on developing typologies of perspectives and needs on climate in-migration, among stakeholders and indigenous rightsholders in the Great Lakes Region. One of the topics of inquiry are data needs and perspectives among these stakeholders and indigenous rightsholders. This is discussed further in the results section. Furthermore, ASAP's literature review highlights areas of further inquiry to enable and strengthen research and planning around preparing communities in the Great Lakes for climate in-migration.

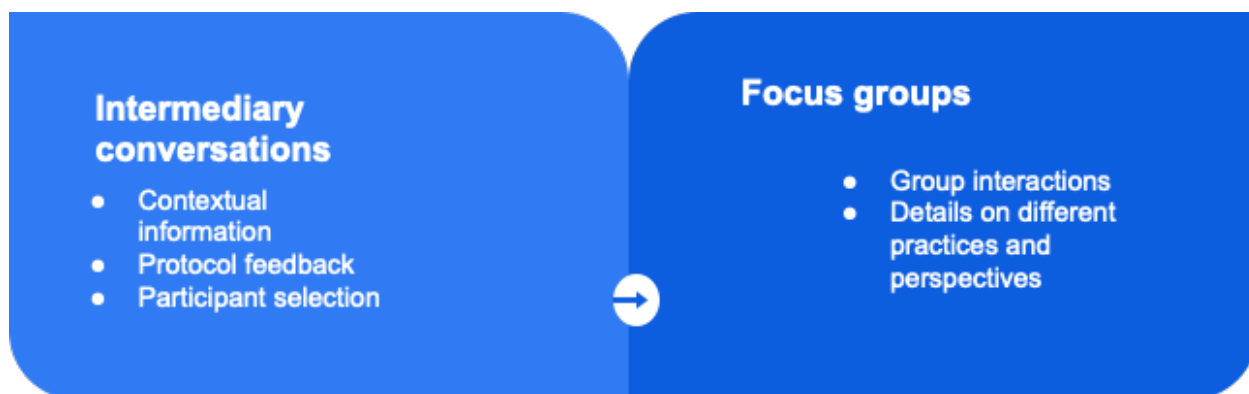
Several gaps and challenges were identified in the areas of research, justice and equity, economy on climate migration to the Great Lakes region, in ASAP's literature review. There is an imperative need to incorporate equity dimensions within the development of climate informed demographics which is missing in current approaches. Furthermore, methodologies to predict events such as sea level rise need to incorporate the various social, political, and economic co-drivers of migration. Also identified is the minimal focus on rural geographies in the climate and demographic change scholarship. Therefore, understanding the challenges and benefits of climate migration to rural areas is required.

The Great Lakes presents several economic advantages as a potential receiving region, such as abundance of natural resources, existing bi-national trade agreements with neighboring Canada, and existing pro-migration policies in certain states like Minnesota (ASAP, 2021). However, ASAP's literature review identified gaps in economy, trade and industry that may stifle present challenges for the Great Lakes as a receiving region. Some identified challenges include - minimal capital investment, economic and environmental injustices, aging infrastructure, and population decline. This paper presents results from focus group conversations with stakeholders in the Great Lakes region on these issues, and the opportunities that climate migration might offer the region.

Research Design

This project utilized qualitative methods for data collection. Two stages were involved in the process (as seen in figure 1).

- Stage 1: Intermediary conversations
- Stage 2: Focus groups conversations



Stage 1, involved intermediary conversations where contextual information was gathered from ASAP contacts who have relationships and knowledge on stakeholder needs and perspectives on climate migration. Meetings with intermediaries were set up to identify potential focus group informants. Intermediaries were also consulted, to provide input on the focus group protocol. Intermediary conversations started in November 2020 and continued through 2021. Follow up conversations with intermediaries were also conducted as needed. Due to a generous donation, with guidance for use; ASAP offered compensation to intermediaries who are, or who represent BIPOC interests.

In stage 2 of the process, identified stakeholders and rightholders were invited to participate in focus group conversations, within groups that they represent. Stakeholders were identified through prior conversations with Intermediaries. Overall, businesses, natural systems managers, local government, state government, community & environmental justice organizations (CBO/EJ) and tribal governments were invited. ASAP successfully held focus group conversations with all but tribal rightholders¹.

Stakeholders	Number of participants
Community based & Environmental Justice Organizations	3
Natural systems managers	7
Local government	5
State government	3
Businesses	2

Focus group sessions were conducted through zoom, at an agreed upon time. Sessions were scheduled for 90 minutes. Focus group sessions were recorded after receiving consent from participants. Prior to

¹ ASAP was invited to a tribal resource manager meeting to share about the migration work. With more time on the project, a focus group conversation with indigenous rightholders may have been possible

the session, an informational resource with background information on climate migration in the Great Lakes region was shared with participants. This was done to familiarize participants with the broad context of the topic, since some participants may have limited information, or might not be familiar with the concept. The focus group agenda, ground rules and guidance were communicated at the start of the session. Participants' consent to be recorded was also established at the start of the session. The focus group discussion was facilitated by an ASAP staff member. Participants were asked 10 questions from the focus group protocol. The questions covered perceptions and attitudes about climate change and climate migration, as well as data and information needs and applications.

Notes were taken by ASAP staff and reconciled with recordings after the focus group session. Data was further analyzed thematically, drawing out themes that emerged from each focus group conversation. These are discussed in the subsequent section.

Results and Discussion

Upon analysis of data from the focus group discussions, several themes emerged which have been categorized into the following - opportunities, risks, and needs from climate in-migration to the Great Lakes region. These are discussed in detail below.

Opportunities of Climate In-Migration to the Great Lakes

1. Labor

Like the literature review findings, focus group conversations highlighted labor as a relevant opportunity that climate in-migration to the region might bring. Population decline in parts of the Great Lakes region have contributed to labor shortages in certain industries (Campbell et al 2015 in ASAP Literature Review). Out-migration of educated populations outweighs those that move in (ASAP, 2021; Austin and Hitch, 2020). In the focus group conversation with businesses, challenges of labor shortages in the food and agricultural industries were highlighted by a participant. Marty, a participant, stated that, *"as a coalition we are actively recruiting people and encouraging them to be trained in the food industry because we are in a severe labor shortage" whereas the "food and agriculture [industry] is a viable force"* (Business Focus Group Conversation, October 20, 2021). Therefore, climate migration offers an opportunity to tap into skills that incoming migrants bring.

Likewise for states like Illinois, climate in-migration will be a positive outcome for the labor market since the recent census shows population decline in the state. However, as receiving cities anticipate the labor benefits associated with climate in-migration, it is necessary that support is given to workers to encourage retention, and to uphold workers' rights. Conversations with natural systems managers highlighted existing challenges with recruitment and retention of talent. Perspectives from state focus group discussions show that in Illinois for example, *"people of color make up a significant portion of the labor force. [We] need to help them stay, to advance their economic standing to be an effective receiving state for climate migrants we know are*

coming.” (Elena, Focus Group Conversation, August 25, 2021). Elena’s statement highlights co-benefits from climate in-migration in the labor force. This suggests that workers’ retention can be achieved when workers are provided with economic opportunity. This is especially key for BIPOC communities with long standing histories of economic marginalization. Findings also show that beyond economic opportunity, is the need to ensure social services, educational opportunities, training, and access to health care for incoming “climate migrants”.

Furthermore, new labor realities, brought on by the COVID pandemic can offer insights on future trends. In particular, natural systems and local government representatives shared this perspective. The COVID pandemic has resulted in increased mobilities and remote work. Climate change, which is another shock, may see similar mobility patterns. A recent project by Gendler & Pattel (2021) explore connections between COVID induced migration and potential migration to New York State. In the report, Gendler & Pattel (2021) assess the livability of parts of NYState based on metrics of climate risk factors, haven factors, walkability/transit scores.

Finally, regarding labor opportunities, a mobility rights/justice perspective must be maintained. This perspective recognizes and respects the agency and humanity of migrants beyond their labor contributions (Baldwin & Fornalé, 2017).

2. Infrastructural Investments

The focus group conversations also highlighted infrastructure investments as a potential opportunity from climate in-migration to the Great Lakes region. For the energy sector in particular, Climate in-migration presents an opportunity for investments in sustainable energy systems for the energy sector. Similarly, aging wastewater and stormwater systems necessitate investment in water infrastructure; coupled with retirement of water infrastructure workforce in the near future (Feedback from Kelly, Local Government Focus Group, March 4, 2022).

Several cities in the rust belt areas of the US are prime examples of places built to accommodate large scale infrastructure (ASAP 2021; Malo, 2019), population growth in the region offers an opportunity for infrastructure upgrades, in line with the sustainability needs of these cities. Infrastructural upgrades are dependent on funding availability, the right incentives, and partnerships. ASAP’s literature review shows that climate migration may present opportunities for funds through tax revenue contributions to otherwise shrinking cities, in places like the Rust Belt areas (Phillips, 2020). Proactive planning for climate in-migration may also yield partnerships and incentives that can spur investments in infrastructure for the region.

Risks from Climate In-Migration

Despite the identified opportunities from climate in-migration to the Great Lakes region, several potential risks have been identified. These risk factors are important to highlight because it stimulates

thinking and planning for successful climate in-migration. This is to avert situations where migration becomes a maladaptive strategy, posing negative impacts to both migrants and receiving communities.

1. Equity and Justice Issues

Equity and justice issues were highlighted in the focus group discussions by various stakeholders. These reinforce similar findings in ASAP's exploratory literature review. The literature review emphasized the importance of addressing structural inequities that climate migrants may face as they settle into new territories. While this is a key aspect to consider in the climate migration discourse, a separate area of consideration is how climate migration may affect communities in receiving communities. These potential impacts on receiving communities were highlighted in the focus group conversations, especially by community-based and environmental justice organizations. One major question raised in this focus group was about who gets to move. This is based on the idea that those with economic power are more likely to migrate than those without. This has the potential to transform existing neighborhoods due to housing developments and expansions to accommodate wealthier residents, pushing out low-income communities from these spaces as property values increase. This concept is known as gentrification, and in the case of its relationship to climate change, referred to as "climate gentrification" (Pierre-Loius 2019; Brady 2019; ASAP, 2021). Donna, a community-based organization representative at the focus group conversation said:

"People with power are more likely to move from other places in the U.S., bringing their power with them. So, you'll see all the negative impacts of gentrification - historic erasure, political displacements, other displacements".

(Community based/EJ Organizations' Focus Group, August 26, 2021)

Donna's statement above reveals how economic and/or social power of incoming climate migrants may affect existing marginalized communities. In cities like Detroit, current migration trends reveal areas of concern with climate in-migration. Billie, a CBO/EJ participant, stated:

"Detroit is the largest predominantly Black city in the country. It's already reeling from a long history of people with power and money coming in and taking over things, [behaving] as if there was no one here in the first place, it's a blank slate to write on."

(Community based/EJ Organizations' Focus Group, August 26, 2021)

These risks can be averted by investments in affordable housing, infrastructure, healthcare, and social services that will support marginalized communities as they grapple with climate in-migration (Dagenais, 2019).

On the other hand, in the natural systems managers' focus group, it was highlighted that high income migrants are more likely to own second homes. This has implications for low-income communities in receiving cities. In addition, similar risks to rural communities can be anticipated. ASAP's (2021) literature

review finds that perspectives on the impacts of climate and demographic change on rural geographies are limited (ASAP, 2021). The focus group conversation with natural systems managers raised a key point on how rural communities may be impacted by climate in-migration. Fred, a natural systems manager stated,

“It probably will magnify inequities in rural communities where people who grew up and lived there are priced out of the area - this is a trend that is already common in many parts of the country. Big potential for winners and losers and will be troublesome without good policy to try and mitigate that”.

(Fred, Natural Systems Managers Focus Group Discussion, March 19, 2021).

This perspective shows that climate gentrification is not just a concern for cities but rural areas as well. Furthermore, vulnerabilities of certain demographic groups put them at heightened risk of being displaced if housing prices increase with population growth. In the CBO/EJ focus group discussion, the vulnerability of aged populations was discussed. Reliance on fixed incomes means that aged populations are less likely to recover from shocks to the housing market.

The risk of settler colonialism, xenophobia and racism were also raised in our conversations with intermediaries and stakeholders. Conversations with tribal intermediaries highlighted the negative consequence of settler colonialism on tribal communities that may be further exacerbated by population growth due to climate change. Historically, these potentially receiving areas were populated through settler colonialism, which is persistent today and will likely be exacerbated by climate in-migration, without adequate planning. This problem is amplified as more people move to rural areas bordering tribal lands. There have been evident cases during the COVID pandemic. In the state government focus group conversation, attention was drawn to the risks of xenophobia and racism that incoming migrants may face. Some states in the Great Lakes region have historically welcomed immigrants and are likely to continue to be welcoming cities for people who may be displaced due to climate change. However, these incoming migrants may be faced with racism as they try to integrate within receiving communities.

Histories of racism and racial segregation result in various forms of structural inequities among communities of color in many parts of the Great Lakes region (ASAP, 2021). In the state government focus group, emphasis on health inequities emerged. Housing conditions and economic status of low-income groups, and communities of color can predispose people to health issues from climate change impacts e.g. from heat stress and flooding. Health issues like anxiety from flood experiences were raised in the state government focus group. Overall, these health concerns apply to existing receiving communities and those that will migrate into these communities. Furthermore, climate change is likely to increase flood vulnerabilities in certain receiving communities especially along the coast and in urban areas (Feedback from Kelly, Local Government Focus Group, March 4, 2022). These are reminders that people in the region may experience climate impacts even though the region is relatively climate safe.

2. Social Integration

Incoming migrants may face challenges with cultural integration at their places of destination. This risk was highlighted in the state government and CBO/EJ focus group conversations. For example, in Detroit, there have been cases of hesitancy among communities to receive incoming migrants from “*the middle east or the southern border*” (Donna, CBO/EJ focus group, August 26, 2021). ASAP’s literature review highlights this potential issue, presenting a case of Chico, CA, a city that received residents displaced by wildfires. As the review shows, inadequate planning led to forms of resistance from the receiving community (Wilson, 2019).

3. Infrastructural capacity

One basis for designating the Great Lakes region as a receiving region for climate migrants is that certain cities, particularly in the rust belt areas, have large-scale infrastructure to accommodate population growth (ASAP, 2021; Malo, 2019). However, as ASAP’s literature review shows, the quality of existing infrastructure determines how beneficial infrastructure will be, to accommodate population growth. Key questions to consider are: what is the quality of housing stock in a potential receiving city? and how accessible is the transportation network? (Rihl, 2019; Gilbert, 2020). These concerns were raised by local government, business, and CBO/EJ participants in the focus group discussions. A local government participant spoke on the Great Lakes’ infrastructural capacity for population growth. Kelly said:

“We have growing challenges with water infrastructure in terms of replacements and rehabs on top of the continuing emerging challenges like lead service lines and PFAS. Climate models show increasing trends in rainfall and extreme events continue to overwhelm these systems. One element of the funding solution is to strengthen infrastructure coordination across public and private sectors.”

(Kelly, Local Government Focus Group, March 29, 2021)

The challenge of funding for infrastructure in parts of the region is influenced by limited tax dollars (ASAP, 2021; Phillips, 2020). Hence, population growth from climate in-migration may see more revenue come to such places (ASAP, 2021). However, attracting climate migrants in the first place may be complicated since the availability of good infrastructure is a pull factor (ASAP, 2021). Allocation of funds for infrastructure investments was raised in the CBO/EJ focus group conversation. This relates to questions of what gets funded and who benefits. Concerns were expressed, where funding is allocated towards large scale developers by city administrators instead of serving the most vulnerable, especially when the impacts of climate change are considered. From a local government perspective, in states like Michigan, drinking water and wastewater are prioritized for funding under stormwater projects, while flooding lacks direct funding sources. This is an issue for flood management by local agencies (Feedback from Kelly, Local Government Focus Group, March 4, 2022).

Furthermore, with inadequate planning, urban areas in the Great Lakes region may be overwhelmed by the influx of people to the area, stressing existing infrastructure. In places like Detroit, communities already experience power outages after flooding events. Hence, population growth without infrastructure upgrades could further exacerbate these issues (CBO/EJ focus group, August 26, 2021).

4. Impacts on the Natural Environment

For natural systems managers, accommodating population growth in the Great Lakes region could see an increase in urban development, posing impacts on the natural environment. A natural systems manager stated that: *“transition of the forested landscape to a more urban setting leads to an outright land conversion. Means less habitats, more fragmentation (roads, power cords, etc.) because people have to access those places, both native and invasive species are impacted”*. Thus, as urban development expands to accommodate population growth, simultaneous planning to protect the environment should be prioritized.

Water quality and quantity issues are likely to exist when urban expansions occur. Population growth necessitates water provisioning for old and new residents. Water is needed not just for households but also businesses and industries. Water provisioning for the agricultural sector e.g., fisheries was raised in the natural systems focus group. Although one of the attractions to the Great Lakes region is the abundance of fresh water, with climate change, there are concerns about the variability of this resource in terms of water levels (GLISA, 2021). As for water quality, cases like the Flint water crisis show evidence of the injustices that low-income and BIPOC communities face. With climate in-migration, and increased demand for water, these communities may continue to face issues with water quality.

Needs:

This section highlights results on stakeholders’ perspectives on the needs for the Great Lakes Region in anticipation for its potential as a climate receiving region. These emerged from the focus group conversations with stakeholders.

1. Data and Planning for Climate In-Migration

There was consensus across participants from various focus groups on the need for data to adequately plan for climate in-migration. Demographic data has different uses for various stakeholders. These stakeholder perspectives are presented below.

Natural Systems Managers

For natural systems managers, current use and availability of demographic data is limited. However, they expressed interest in demographic data for climate migration planning. Specifically, natural systems managers are interested in data that shows how the population might change, when to expect population influx due to climate change and where people may choose to move to. Furthermore, scenarios were communicated as useful information, to enable them to plan for climate in-migration. Data on possible international migration to the region was also of interest. Furthermore, beyond migration to states within the Great Lakes region, data on migration within state boundaries are also essential.

CBO/EJ

For CBO/EJ focus group participants, one organization currently uses demographic data while the other does not. The lack of use of demographic data can be attributed to the organization's size. Several data needs were highlighted as important for CBO/EJ organizations to plan for climate in-migration. These data needs include information on communities already present in receiving regions, and on migrants who will be moving into these communities. Data on existing communities in receiving regions include demographics on age, race, and employment. Also relevant is information that aids in the provision of support to residents who are vulnerable to climate change. Such as, information on who is likely to experience black outs, people who lack air conditioning systems, and access to transportation (i.e. cars). This information will enable climate change planning not only for climate migrants, but also existing vulnerable populations. For example, older populations are especially vulnerable to the impacts of climate change. For this population, exposure to climate impacts like flooding and heat, exacerbates existing health vulnerabilities.

About data on incoming climate migrants, the focus group conversations revealed that knowledge on who is likely to move is critical for proper planning. Specifically, there was pessimism about migration from other parts of the US compared to incoming migrants from outside the country. This was attributed to the likelihood of having more affluent people move from within the US than might be anticipated with international migrants. However, having actual demographic data on who is moving in will be key for better informed decision making.

State Government

For the state government focus group discussion, their role as representatives of the communities they serve means that they need data on who they serve. State governments also require data on expected climate migrants. This is the responsibility of state demographers, as highlighted by a participant. Megan, a focus group participant stated:

"If there are large waves of people coming into the state and we don't understand who they are, we won't be able to represent them"

(State Government Focus Group, August 25, 2021).

Likewise, another participant, Brenda communicated the relevance of data to further conversations and policies that may otherwise be shadowed by rhetoric, especially for issues like imm(igration) (State Government Focus Group, August 25, 2021).

Businesses

In the business focus groups, it was highlighted that demographic data on climate migrants would be useful for planning. In particular, data on *"where people are coming from and what their interests are... so we can cultivate and support needs for industry"* (Marty, Business Focus Group,) According to Marty, this will help businesses assess incoming skills as well as plan for training opportunities for labor needs. Furthermore, it was expressed that data on incoming climate migrants would be helpful for the provision

of necessary services and to meet the needs of migrants. This includes housing, schools, and infrastructure.

Local governments

For cities like Buffalo, while prior attempts have been made to inquire about demographic change, especially through a study on foreign born residents, this has experienced its own fair share of limitations (Kelley, Local government Focus Group, March 29, 2021). Kelley states that census data is more accessible although it is limited in terms of capturing more current occurrences that may be useful for climate migration planning. In cities like Buffalo, these types of information have been revealed from direct interactions with new residents e.g., residents who moved from Puerto Rico after Hurricane Maria. Like concerns raised by CBO/EJ focus group participants, local government stakeholders communicated that cities need data to understand who is moving in order to avoid gentrification of communities.

Overall, in terms of planning, all stakeholder groups agree that proactive planning is necessary for the Great Lakes as a receiving region. One limitation to planning is lack of funding. Climate change, considered to be a future concern, also leads to lack of funding priority. In the local government focus group, it was highlighted that limited funding often results in reliance on funding from sources outside of government (municipal, state, and federal).

2. Social Services, Health Care, Education for Incoming Migrants

Focus group conversations highlighted key needs for in-coming climate migrants to the Great Lakes region. Examples were drawn from the resettlement of Somali refugee communities in parts of the region. Existing networks exist to provide resettlement support to refugee communities, offering lessons for climate in-migration to the region. Other social services include training for employment opportunities. In the local government focus group discussion, addressing potential housing issues was highlighted as a need for incoming migrants. Challenges may include,

“Slumlords and absentee landlord-ism” but also overcrowding, and moving families into apartments that may only have three or four bedrooms because that’s all they can afford.”

(Kelley, Local Government Focus Group, March 29, 2021).

On the other hand, a labor perspective suggests that incoming migrants may benefit from job training especially if they are transitioning to a new industry. Furthermore, data may provide insights necessary to meet the labor needs of migrants. For Marty, a business focus group participant, key information needed to meet incoming migrants’ needs would be, *“Age, diversity, skillset, where they want to live and why? How [migrants would] like to use the community? Assets and resources they would like available to them. Housing, schools, etc.”* (Business Focus Group, October 20, 2021).

This information will aid in proactive planning for the critical needs and services that climate migrants may have.

3. Collaboration across stakeholders

ASAP's literature review revealed the importance of collaborations in preparation for the Great lakes region to receive climate migrants. ASAP's literature review findings show that the diverse needs of migrants to support relocation in the Great Lakes necessitate a cross-sectoral approach. Similarly, focus group conversations with business and state government representatives highlighted the need for partnerships across stakeholders. Participants echo that these partnerships are not happening enough across the Great Lakes. Overall, collaborations may include conversations that enable knowledge sharing among stakeholders. These conversations may involve academic institutions to garner technical expertise that aid with understanding and planning for climate migration to the region. Partnerships across stakeholders also provide outreach opportunities for engagement with communities, as expressed in the state government focus group discussion. Among local government representatives, collaborations may include learning opportunities among cities on best practices for climate in-migration planning. It would also include partnerships with organizations working on climate migration in the Great Lakes region, for example ASAP.

From the perspective of natural systems intermediaries, collaborations may involve connecting local governing councils with local foresters and conservation workers to prepare for the potential challenges associated with climate migration to the Great Lakes. These challenges may include environmental degradation, urban expansions, land parcels and purchasing, like concerns raised in the natural system's focus group conversation. Furthermore, partnerships with incoming migrants is another outcome to aspire for. Whereby climate migrants can collaborate towards land conservation and management efforts, bringing in new knowledge and experiences or through demonstrated interest in preserving the resources of the Great Lakes region.

Input from Tribal Intermediaries

In this section we present a summary of conversations with tribal intermediaries to offer some insight to the challenges that indigenous rightholders may face due to climate in-migration. We recognize that this may not directly represent indigenous rightholders perspectives and should be considered by readers of this report.

Indigenous peoples are vulnerable to the impacts of climate change. From conversations with intermediaries, an area of concern is species shift e.g., migration of moose and cold-water fish northward means that tribes may not access these species from "allocated lands". This reflects contemporary effects of settler colonialism. Secondly, with population growth, especially new residents near tribal communities, there may be issues of interfering with tribes exercising their rights to the land. Current examples of this were highlighted in the discussion. Particularly, the harvesting of sugar maple or wild rice, reducing the availability of the resource to tribal communities.

Conclusion

The goal of this project was to explore the perspectives and needs of stakeholders and indigenous rightholders on climate migration to the Great Lakes region. Findings from focus group conversations

with stakeholders highlighted some of the initial points raised in ASAP's literature review. Contributions to labor and infrastructural development remained key opportunities that could emerge from population growth to the Great Lakes region. At the same time, justice and equity dimensions remain a significant concern.

The focus group conversations highlighted the diversity of perspectives and areas of concern across groups. However, there were overlaps in perspectives shared. For example, considerations of the demographic characteristics of in-coming migrants shape optimism or pessimism on climate migration to the Great Lakes region. CBOs/EJ due to direct engagement with issues of power relations, tended to conceptualize migration from within the US as the movement of people with high incomes and power, which may further exacerbate existing vulnerabilities of communities receiving climate migrants. However as the conversations expanded, CBO/EJ participants highlighted the need to distinguish between migrants for better planning. On the other hand, state government representatives tended to focus on migration from outside the US in the discussion which we deduce is tied to their current experiences as refugee receiving communities e.g., states like Minnesota. These perspectives emphasize the need for demographic data to identify characteristics of climate migrants to the region to enable adequate planning.

In terms of challenges, there is a recognition of existing social, environmental, and economic vulnerabilities within the region that may be exacerbated by climate migration across stakeholder groups. These include historical injustices and structural racism experienced by BIPOC communities in the Great Lakes region. For climate in-migration to be successful, efforts are required to address these equity and justice issues in receiving communities and for climate migrants themselves. These include targeted housing policies that address housing insecurity and avoid gentrification of communities, access to health care, energy justice, education, and overall community resilience. It also involves avoiding the perpetuation of settler colonialism on indigenous lands, respecting, and protecting the rights of indigenous rightholders. Furthermore, focus group conversations highlighted social integration efforts to combat potential racism and xenophobia targeted towards incoming migrants.

Communities in the Great Lakes region experience climate vulnerabilities themselves, although considered to be milder compared to other parts of the US (ASAP, 2021). Efforts must be made to ensure the implementation of climate mitigation and adaptation strategies, whereby climate change is addressed as an imminent threat, rather than an issue that is given less priority. This point emerged across various stakeholder conversations.

Finally, results showed that the current availability and use of data to plan for climate migration is limited. However, participants highlighted the value of access to demographic data on in-coming migrants. This is to enable adequate planning to resettle climate migrants while anticipating and avoiding potential effects on existing communities. Census data remains the most used data source.

Limitations

This project was intended to be exploratory in nature. This meant that we had to be flexible with initial plans to address constraints. For example, the initial focus group strategy was to have at least 7 participants per group. Although outreach efforts were made, not all groups had the expected number of participants. Thus, results from this study should be interpreted and generalized with caution. Secondly, indigenous rightsholders perspectives were not sufficiently captured in this project because focus groups were not held with tribal communities. Although, intermediary conversations with tribal resource managers offered insights to some needs or challenges that tribes might have with climate change and population growth to the Great Lakes region.

Recommendations for Further Research/ Next Steps

Based on findings from this project, we propose some next steps for action. Firstly, further focus group conversations with stakeholders on solutions that can address the potential challenges raised will be useful. We also propose the enablement of avenues for engagement between potential sending and receiving communities, as well as other key stakeholders. Furthermore, access to data is critical to plan proactively for climate in-migration, hence there should be greater coordination between researchers, planners, and other end users. Community engagement is critical for the implementation of climate in-migration programs. Hence, planners should ensure that communities, representing diverse populations and interests, are involved in all stages of planning and implementation of climate migration policies and programs. We recommend the creation of further opportunities for stakeholder and indigenous rightsholder engagement on their perspectives and needs on climate in-migration.

Finally, justice and equity dimensions must be centered in climate in-migration planning and implementation to address existing inequities, and to ensure that vulnerabilities of communities are not further exacerbated.

Acknowledgements

We would like to thank our research participants, intermediaries, supporters, and collaborators for engaging in this research project. They have provided valuable input towards the outcome of this report.

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Appendices

Appendix A: ASAP Preparing Communities for Climate Migrants (Background Information on Climate Migration in the Great Lakes region)

Objective(s)

Background on the issue, with cited sources to emphasize the enormous potential for displacement on a national level, uncertainty around how the Great Lakes region will be impacted, and factors that give us reason to think that it will.

1. ASAP [has published an explorative literature review](#) on this topic that touches on a lot of ground.
2. Under high carbon emission scenarios (RCP8.5), at least 4 million United States residents could be living on the fringe of extreme environmental degradation by 2070, where climate change has increased sea levels, temperatures, and water scarcity to inhabitable levels. By that time under the same scenario, most U.S. residents would most likely experience some climate-related local environmental degradation.
 - a. Source: [ProPublic/NYT piece by Abrahm Lustgarten](#)
3. In response, millions of U.S. residents may engage in climate migration as an act of climate resilience in response to climate hazards like sea-level rise, wildfires, and extreme weather.
 - a. Source: a private report from the Brendle Group
 - b. Source: [Hauer et al 2020 \(Sea level rise and human migration\)](#)
4. Sea level rise alone could displace 13.1 million Americans from coastal areas by 2100—a total including those fleeing the direct effects on inundation and those leaving unstable living and economic conditions resulting from indirect effects.
 - a. Source: ["The 2100 project: an atlas for the Green New Deal." McHarg Center, U-Penn.](#)
 - b. Source: [Matt Hauer's \(Florida State University\) work.](#)
5. We do not yet know what consequences to expect in the Great Lakes region, but we are already seeing some changes and have reason to think there will be more. We're already seeing more land purchases and speculation across the region, especially in the north. Some cities, like Buffalo, New York and Duluth, Minnesota have even started programs and campaigns tailored to climate migrants. We do know that the region's climate and geography present attractive natural amenities and relatively mild climate change impacts. It also has towns and cities that have low cost of living and are actively interested in growing their population. And, as severe climate impacts harm environments and economies continue to take heavy tolls elsewhere around the country, we could transfer wealth (as well as people) into more stable regions. It's complex interactions of push/pull factors and feedback systems that the science of climate informed demography could be untangling for quite some time.
 - a. Source (amenities, climate migration, Rust Belt recovery): [Article by Lauren Phillips in Sea Grant Law and Policy Journal](#)
 - b. Source (Duluth, climate migration, Rust Belt): [Article by Travis Dagenais for Harvard Graduate School of Design.](#)
 - c. Source (climate change economic damage): [Article by Hsiand et al. in Science.](#)

Appendix B: ASAP Preparing Communities for Climate Migrants, Stakeholder Interview Protocol

Duration: 90 minutes

Focus group participants: 5-6

Focus group administrators: 1 facilitator, 1 notetaker

Space set-up

- Zoom meeting room
- All participants' faces visible
- Recording audio and video

Facilitation guidance

- Lay concise ground rules
- Ensure the group discusses each question
- Minimal intervention other than to refocus topic, enforce ground rules, manage the pace, and encourage everyone to speak up

Ground rules and guidance

- Respectful tones and engagement across difference
- It is ok to abstain from discussion on uncomfortable topics
- All responses are valid
- Try to stay on topic
- If a topic does not seem relevant to your individual business, consider its implications for your industry as a whole, and vice versa
- Do not discuss details outside the group

Agenda

- Introductions
- Overview of ASAP Preparing Communities to Receive Climate Migrants program
- Description of typology project objectives and the role of the focus groups in that project
- Establish ground rules

Discussion questions

PART I: Perceptions and Attitudes

"To start off, we'd like to hear about the overall opportunities and challenges climate change poses for your business or your industry. We're interested in how you're thinking about and experiencing those challenges and opportunities now, and even more so interested in how you expect to experience them in the future. Let's start with opportunities:"

1. How might climate change present opportunities for your business or your industry?
2. How might climate change present barriers for your business or your industry?

If they don't mention population change in their discussion of opportunities or challenges, prompt with:
"It's possible we'll see increased migration to the Great Lakes region as climate impacts worsen. How might that impact your business or industry?"

3. When considering climate-related changes to the population and the economy, what makes you hopeful or optimistic about the position of your industry?
4. When considering climate-related changes to the population and the economy, what makes you worried or pessimistic about the position of your industry?
5. How might changing climate conditions and changing demographic conditions intersect to affect your business or industry?

If they don't mention much about how they're changing their activities to respond or prepare for future conditions, prompt with: "How is your business evolving its activities in the Great Lakes region in anticipation of changing climate conditions? How do you see other businesses in your industry doing this?"

PART II: Data and Information Needs and Applications

"We've heard a lot of insights on opportunities and barriers related to climate change, and in particular population change in the region in response to climate change. Now we're going to shift gears and talk about what data and information would help your business or industry best respond to and prepare for those changes."

6. How does your business or industry understand, and plan for, demographic changes in a given region of operation?
 - a. *If there's a slow start or they seem confused, prompt with:*
 - i. From where does your business, or businesses in your industry, get that data and information?
 - ii. What kinds of processes or models are used to integrate this data and information into business planning?
7. At what scale does your business or industry use and apply data or information about future demographic conditions?
8. What data or information would help your organization prepare for the intersection of changing climate conditions and changing demographic conditions in the Great Lakes region?
 - a. *Be prepared to call back to concerns or uncertainties shared in the previous section and follow up with specific questions about what data or information could help alleviate those problems. Focus the discussion on the intersection between changing climate conditions and changing demographic conditions rather than just changing climate conditions.*
9. Tell us about how your business or your industry would apply that data and information to make decisions about planning for the future. For example, you could share the types of processes that data and information might feed into or the types of decisions it might inform.

CLOSING

10. "Before we come to a close, we will take time now to share out anything that has not come up yet. Tell us about anything on your mind that you haven't shared yet or what you're thinking about now at the close of the session."