

Barriers and Enablers to Climate and Health Adaptation Planning in Rural Areas and Small Communities in the Great Lakes Region

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Introduction

- The Great Lakes' climate is changing (GLISA, 2019) and adaptation is necessary (USGCRP, 2018).
- What prevents and promotes climate adaptation?

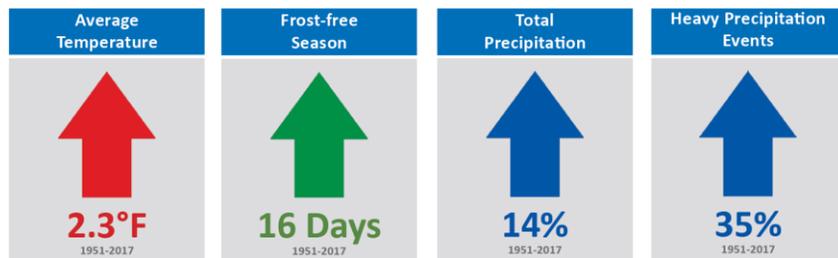


Figure 1: Climate changes in Great Lakes Climate (1951-2017) (GLISA, 2019)

Why Rural?

- Lack of adaptation research for non-agricultural rural areas
- Rural areas will be some of the hardest hit due to:
 - Limited adaptive capacity
 - High rates of vulnerable populations



Figure 2: Marquette County, MI

Credit: Shutterstock

Study Area:
Marquette County, MI



Study Design

- Exploratory, mixed methods; surveys and interviews (2019)
- Part of larger 3+ year Marquette Area Climate and Health Adaptation Project (MACHAP) – CDC funding through the Michigan Department of Health and Human Services



Figure 3: Marquette area leaders discuss the health impacts of a changing climate during MACHAP.

Findings

Barriers	Enablers
Top Overall <ul style="list-style-type: none"> • Funding • Staffing capacity/time • Communication 	Top Overall <ul style="list-style-type: none"> • Leadership • Strong networks and collaboration • Community interest
Unique to Rural Areas <ul style="list-style-type: none"> • Weak opportunities for grant funding • Large geographical distances • Communication—Aging and remote populations, and technology • Out-migration of education residents 	Unique to Rural Areas <ul style="list-style-type: none"> • Strong networks and collaboration across jurisdictions • Strong connection with the land • Easy access to and trust in local experts • Fewer with whom to collaborate

Conclusions & Recommendations

- Marquette County is in an advanced state of adaptation planning. Communities just starting may face greater/different barriers.

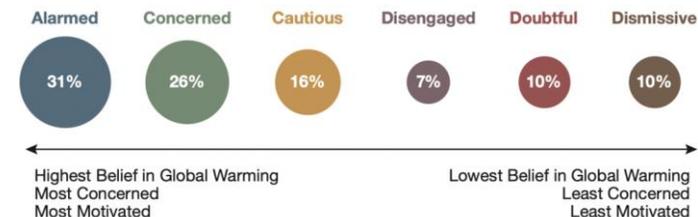


Figure 4: Global Warming's Six Americas (YPCCC, 2019)

- Findings support experts' call for rural adaptation research (USGCRP), and highlight the need for creative adaptation planning support in rural areas:
 - Assist rural leaders with grant applications
 - Include climate and health in Hazard Mitigation Planning
 - Support existing networks
 - Capitalize on local expertise
 - Expand storytelling to reach broader audiences

Contacts, Information, and References

- Wayne Beyea, beyea@msu.edu
- [Marquette Area Climate and Health Adaptation Guidebook](#)
- Master's Thesis: [Barriers and Enablers to Climate and Health Adaptation Planning in Rural, Coastal Counties in MI](#)
- Thesis committee members: Dr. Peilei Fan and Dr. Suk-Young Kim
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