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Perspectives on Climate Preparedness

A Study in the Lower St. Louis River Basin, Minnesota, USA*

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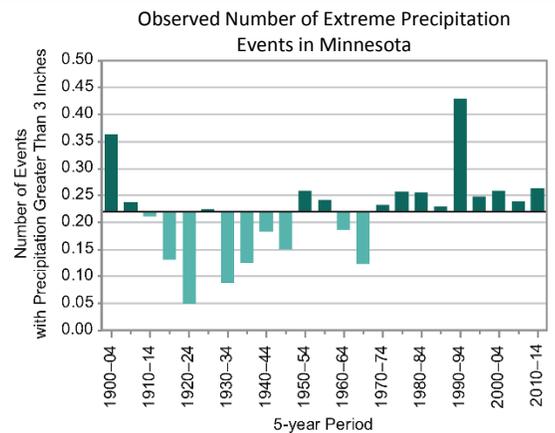
In partnership with the Natural Resources Research Institute (NRRI), researchers from the Center for Changing Landscapes, University of Minnesota, interviewed 27 local government officials, natural resource professionals, and other community leaders active in the Miller Creek and Mission Creek watersheds of the Lower St. Louis River Basin in Minnesota to examine community climate preparedness. Leaders from the watershed communities, including Duluth, Hermantown, and Fond Du Lac Reservation, were invited to reflect on extreme weather events, impacts to water and other community assets, and climate preparedness. Interview data were analyzed for convergent and divergent themes.

WHAT IS CLIMATE PREPAREDNESS AND WHY IS IT IMPORTANT?

Climate preparedness enables communities to anticipate, plan for, and effectively respond to climate change impacts. Climate change in Minnesota has meant an increase in extreme precipitation events and higher seasonal temperatures (MN State Climatology Office, 2016). Extreme rain events already have had ecological, economic, and social impacts in the northeastern part of the state.



For example, increased stormwater runoff in the Duluth area contributes to sediment pollution in the St. Louis River estuary, and in June 2012, a catastrophic flood caused more than \$55 million in damages. To be prepared for climate change, communities must understand both their vulnerability to climate change and their capacity to anticipate and adapt to a changing environment.



Credit: NOAA National Centers for Environmental Information

WHAT DID PARTICIPANTS SAY ABOUT CLIMATE CHANGE?

"I've been living here 25 years, and I do feel like the climate has changed since I've been here. I feel like the moisture patterns, the way we get snow, the way it comes our way, the temperatures—I feel like that's a very natural assumption to make: that that's partly impacted by climate change."

Study participants largely believed climate change was real and were concerned about impacts to the region. Participants expressed concern about ecosystem integrity, financial costs, infrastructure damage, and effects on vulnerable populations. Few participants expressed skepticism or apathy about climate change or its impacts.

WHAT DRIVES CLIMATE PREPAREDNESS IN THE WATERSHEDS?

The **2012 flood** was considered a "wakeup call," both in terms of how intense extreme rain events can be and how unprepared the community was for extreme weather. The flood triggered emergency response and hazard mitigation planning for future events. The flood also catalyzed collaboration and partnerships among organizations, agencies, and departments both within and across public and private sectors, leading to resource mobilization and knowledge sharing.

A **water ethic** emerged as integral to preparedness. Interviews revealed powerful physical and emotional connections to water and strong water values among participants. Participants characterized water as being "everything," "our life force," and "lifeflood" to their communities. Participants also described communities as highly motivated to protect water and engaged in water protection actions

"I think that people were just so taken by surprise that that could even happen here. So it was really a big wakeup call. A ton of attention has come in and a ton of funding and trying to plan for future events like that. But before that, we just had no preparedness built in. I think that's one thing that's really been a lesson learned: that this type of thing can happen in this area."

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such as green infrastructure development, regional cross-sector stormwater planning, and St. Louis River corridor restoration projects.

Awareness and leadership in the communities is an asset. Participants were attentive to climate change, current and projected impacts to the region, and the need for increasing readiness in communities. Participants also acknowledged that several local decision makers have shown strong leadership in climate change preparation—agencies have adapted the tree species sold and planted, the City of Duluth applied for a national disaster resilience grant, and local communities are incorporating emergency response and sustainability into comprehensive planning.

WHAT CONSTRAINS CLIMATE PREPAREDNESS?

“If you don’t know what you are planning for, how do you plan for it?”

Climate impacts are inherently challenging, including unpredictability, conflicting timescales of planning (shorter term) and climate impacts (longer term), perceived distance of climate change (i.e., it will happen far into the future and far from us), and invisibility of many climate impacts (i.e., impacts are often incremental, difficult to notice, and don’t affect daily life).

Low levels of perceived efficacy appear to constrain action. Participants questioned their own ability to respond to climate change and were skeptical about the feasibility and efficacy of possible solutions.

“People are starting to hear and see things about changes in plants, changes in biological community distributions, but they don’t necessarily have an idea of how to help or what to do.”

Lack of prioritization and coordination were viewed as

barriers to preparedness. Some participants acknowledged that climate preparedness is a low priority among decision makers and the broader public. Participants noted examples in which climate change is not integrated into planning,

“Agency folks, I think they’re aware of [climate change], but at this point I haven’t seen where it’s a primary concern or a primary consideration in planning.”

climate response actions are inconsistent across jurisdictions, other environmental issues (e.g., illegal dumping, pollution) or community issues take precedence, and community leaders appear to overlook the toll of the 2012 flood. Additionally, participants acknowledged being uninformed of what other departments, agencies, or sectors were doing for climate preparedness.

Limited discourse and understanding has sweeping effects on climate actions and preparedness efforts.

Participants observed that communication about climate change among decision makers, between decision makers and the public, and within the broader public was uncommon. Participants also perceived that the general public was not thinking about climate change on any regular basis.

Insufficient resources and requirements emerged as constraints to preparedness efforts. Participants identified inadequate funding, limited staffing, and a dearth of technical expertise as hindering climate preparedness. Preparing for climate impacts is not required at the federal, state, or local level, and participants remarked that funding programs generally target disaster response (e.g., infrastructure repair) versus increasing community readiness and resilience.

“The biggest barriers [are] that communities see changes happening, they want to do something, but they lack a capacity, or a link to funding, technical support, tools, and resources . . . to really address the issues.”

HOW CAN COMMUNITIES BUILD CLIMATE PREPAREDNESS?

“[Water] is the foundation of us being here, right? We wouldn’t be here without water. So, it’s our life force. Like I said, if we didn’t have it, we wouldn’t be here. So it needs to be protected.”

Leverage the strong water ethic in the region. Climate preparedness activities framed as a way to protect water and its myriad benefits will resonate because water is integral to community identity and member values.

Create a climate preparedness task force. A cross-sector, interagency, and cross-cultural climate preparedness task force can serve as a hub for synergy, resource mobilization, scientific and traditional knowledge sharing, and action coordination.

Disseminate actionable information and success stories. Create a safe space for climate discourse that acknowledges cultural and ecological impacts and opportunities and stories of success.

Make climate preparedness a part of all planning processes. Encourage or require some form of climate-scenario planning in all levels of government through ordinances, resolutions, or joint powers agreements.