

February 17, 2022

Dear Members of the Natural Resources Committee, US House of Representatives,

We are the Vice President of Research at the University of Minnesota and the University Director of the Midwest Climate Adaptation Science Center (MW CASC), based at the University of Minnesota, and we write to indicate our strong support for the CASC Act.

The MW CASC engages the Department of Interior, States, Tribal governments, and other natural and cultural resource managers to ensure information and tools can be applied directly to adaptation decisions in Minnesota, Wisconsin, Michigan, Missouri, Iowa, Illinois, Indiana, and Ohio. The center is a combined effort of the USGS and a consortium of non-governmental partners responsible for conducting research and the building capacity for adaptation practice through education and outreach programming. There are eight members of the MW Consortium, reaching all eight states in the Midwest region and five large public research universities. The Consortium members are:

- The Great Lakes Indian Fisheries and Wildlife Commission
- The College of Menominee Nation
- The Nature Conservancy (and their chapter offices in each state)
- Indiana University
- Michigan State University
- The University of Illinois
- The University of Wisconsin
- The University of Minnesota (Consortium host)

Each of these organizations hold seats on a Consortium Leadership Team that works collaboratively to build synthesis research, train the next generation of adaptation professionals, and enhance the awareness and understanding of emerging adaptation research among regional stakeholders and managers. Funds from the USGS to the Consortium (as described in the CASC Act) support these activities, but the organization listed above leveraged more than \$2.5M in *additional* funds to form the MW CASC.

Attached is a one-page synopsis of major activities planned for the MW CASC Consortium during 2021-2026. In addition to the items described there, individual research projects based at our Consortium institutions are funded by the USGS through an annual, competitive call for proposals.

The MW CASC is the newest of the regional CASCs, formed in 2021. Previously, the Midwest was part of a very large region spanning from the Great Lakes to the Atlantic coast. The newly-formed region now provides science on issues *specific* to the Midwest region including, among others:

- increases in heavy precipitation events, flooding and drought that affects the condition, structure, services, and management of Midwest streams, lakes, and rivers;
- loss of winter with altered snow patterns, seasonal hydrological flows, and increased variability that affect fish and wildlife populations, habitat management, and nature-based recreation;

- novel terrestrial landscapes resulting from shifts in vegetation and human responses to climate change that shifts the suitability of the Midwestern landscape for priority and at-risk wildlife populations; and
- barriers to and opportunities for adaptation specific to characteristics of the Midwestern landscape.

The responsibility to meet adaptation science needs in this region is large. Fortunately, the reach and capacity of our CASC Consortium is large as well.

The CASC Act is critical to ensuring the durability of this broad network of collaborating institutions, so that we can reliably develop our shared programming and research capacity in service to the Midwest region. Further, the CASC Act allows this Consortium to demonstrate its achievements at the end of a five year period for potential renewal, and the Act gives the Consortium flexibility to update its membership as needed to meet regional needs.

There are a number of organizations and research capacity on climate change emerging in the Federal government. This is appropriate given the unique challenge of operating in a changing climate. Each agency has a distinct mission and role to play in the lives of everyday Americans, and all of the agencies' functions and capacities will need to be updated with best-in-class science and professionalization.

Our niche – the niche of the CASC – is specific to natural and cultural resources, critical assets to all Americans and Midwesterners. Without the capacity for action that the CASC is pursuing, each state, city, Tribe, or land owner is left on their own to create new management techniques, test the efficacy of those techniques, and update implementation as conditions change. This is a daunting task. Fortunately, the CASC shares its findings with a wide range of stakeholders and promotes shared discovery about adaptation practices to forestall declines in species, wildlife, recreation, and critical ecosystem services that would otherwise occur across the region.

We are honored to conduct this work from the University of Minnesota, a land grant university dedicated to serving the citizens of our great state and reaching beyond our state borders to foster collaboration, innovation, and sustainable economic development. Our responsibility for leading the MW CASC aligns with our university's current strategic plan (MPACT 2025), a plan that specifically identifies a sustainable future – including adaptation science – as a major emphasis for research, education and outreach. Thus, the University President, senior leadership, and members of the Board of Regents are enthusiastic and committed supporters of the MW CASC and the activities planned within it.

Sincerely,



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## MW CASC CONSORTIUM APPROACH AND ACTIVITIES

The vision of the MW CASC Consortium is to advance climate adaptation science and practice across all components (Diagnose, Plan, Act) of the climate adaptation cycle, by pursuing region-specific, collaborative, synthesis projects that build on past work, provide new resources and tools, and catalyze adaptation capacity across the Midwest. This vision recognizes that: 1) adaptation work is on-going in the Midwest, and due to our deep involvement with past work, our team can provide important insights on successes and failures; 2) mature adaptation science extends well beyond vulnerability assessments to include climate, ecological and social science to support the full adaptation cycle; 3) the Midwest can provide critical leadership on emerging topics that will have national-scale benefits; and 4) stakeholder-engaged research is essential for adaptation success.

To fulfil this vision, the consortium will conduct collaborative, synthetic research through five synthesis research projects. These projects engage collaborative groups of consortium members and external partners via communities of practice. Each consortium university will lead one synthesis project and each will engage a postdoctoral fellow. Synthesis projects address the USGS science priorities across the full adaptation cycle by addressing the following cross-cutting questions, such as: What *indicators and metrics* should be used to gauge the status of key resources and assess the progress and effectiveness of climate adaptation actions? How do we build the capacity and decision support services that are necessary to contextualize, customize, and implement *science into adaptation actions* that are locally-specific and context-dependent? What *data products and visualization, tools, models, and scenarios* are needed to support decision-making for different stakeholders and levels of government? How can *Traditional Ecological Knowledge* be incorporated into adaptation planning? How do we maximize benefits from adaptation actions, and avoid adaptation “solutions” that have negative *side effects* on natural resources or other values?

The capacity-building activities of our MW CASC consortium will emphasize the full adaptation cycle and the importance of cultural and social values, including cultural sensitivity, knowledge co-production, and environmental justice. These activities involve two audiences: 1) stakeholders needing to develop, test, monitor, and update broad strategies and specific tactics for addressing climate risks, and 2) academic leaders and students developing their skills and engagement in adaptation science. A key goal is to train the next generation of adaptation professionals in a way that incorporates co-development principles, such as relationship building and effective communication.

The MW CASC consortium will support 10 graduate fellowships. Trainees will be nominated by each consortium member using a selection process similar to that of postdocs. Traineeships will range from one semester (plus a summer) to three years. Trainees will participate in synthesis research led by their host university and/or USGS-funded research projects occurring there. Recognizing that Tribes have a unique and specific need to develop adaptation professionals, the MW CASC also will expose undergraduate students to Tribal adaptation practice and research through a cohort-based undergraduate research experience.

The MW CASC will emphasize Tribal engagement and capacity building and enhance the capacity of non- Tribal organizations, researchers, and students to effectively interact and collaborate with Tribal entities and understand Tribal rights and concerns. All consortium universities are committed to diversity and equity, and their public missions require them to direct research and outreach to communities disproportionately impacted by climate change, including communities of color and lower-income communities with limited resources. Finally, an annual consortium gathering will provide an opportunity for researchers, partners and stakeholders to help set priorities for the region, exchange information, access training, and build relationships within and across the consortium. Each university will have an opportunity to host the gathering and feature the work of their researchers and students.