

Overview

- **Purpose:** To develop a climate change resilience plan for the Lac du Flambeau Tribe of Lake Superior Chippewa Indians in northern Wisconsin.
- **Partners:** Adaptation International; Lac du Flambeau Tribe of Lake Superior Chippewa Indians; ICLEI Local Governments for Sustainability; George Haddow, Bullock & Haddow LLC
- **People:** Lac du Flambeau Tribal Council and Tribal Climate Resilience Planning Committee
- **Impact:** Created the Lac du Flambeau Climate Change Resilience Plan, whose findings were integrated into the Tribe's Integrated Resources Management, Emergency Management, FEMA Hazard Mitigation, and Strategic Energy plans.

Members of the Lac du Flambeau Band of Lake Superior Chippewa have been experiencing changes in the climate and seasons for a number of years. Recently, community members had observed less ice in the winter and higher summer temperatures. They were concerned that changes in climate were affecting the phenological cycle of plants, which in turn disrupted traditional signals for the start of hunting and fishing seasons. The Great Lakes Integrated Sciences and Assessments (GLISA) previously worked with Adaptation International in 2016 on the [Climate Change Vulnerability Assessment and Adaptation Plan](#) for the 1854 Ceded Territory in Minnesota. Following this successful collaboration, Adaptation International reached out to GLISA again to partner on a new project to develop a climate change resilience plan for the Lac du Flambeau Tribe of Lake Superior Chippewa Indians in northern Wisconsin.

GLISA led the climate change analysis portion of the assessment. The Tribal Climate Resilience Planning (TCRP) Committee identified watersheds within 50 miles of the Tribe's reservation as the primary area of interest and analysis for the project. The area covered current primary hunting and fishing territories. Ensuring that the analysis boundaries matched a meaningful geospatial area was important to making the climate information useful.

Additional partners, such as Bullock and Haddow and International Council for Local Environmental Initiatives – Local Governments for Sustainability (ICLEI), assisted with the Lac du Flambeau Hazard Mitigation Plan and related initiatives through developing strategies for hazards associated with community safety and security; extreme weather events, wildfire, and infrastructure; public and community health; and natural and cultural resources. Preliminary findings and updated weather trends were presented to the Tribal Council and the TCRP Committee, prompting additional tasks, including identifying climate thresholds for NatureServe's Climate Change Vulnerability Index (CCVI) for culturally-significant species and providing relevant literature on groundwater, ice cover, and pollen. A GLISA Climatologist met with the TCRP twice at site visits in 2017 and 2018 and presented the climate data to the Tribal Council and TCRP. They



Photos from the Tribal Emergency Planning Committee focused on identifying key hazards of concern to the community.
Photo credit: Sascha Petersen

reflected that the process of discussing priorities and questions with the TCRP was important because it helped GLISA understand how climate change fit into community concerns and how GLISA could present the data most effectively. Eric Chapman, Lac du Flambeau’s Emergency Management Coordinator, as well as a Tribal council member, explained that the planning process and opportunities to interact with the GLISA Climatologist helped him better understand and trust the climate data being used in the plan.

The TCRP Committee created the Lac Du Flambeau Climate Change Resilience Plan, integrating its goals and findings into the Tribe’s Integrated Resources Management, Emergency Management, and Strategic Energy Plans. In addition, the TCRP finalized a [Climate-Smart Hazard Mitigation Plan](#), which was adopted by the Tribal Council and approved by FEMA in 2019. With this information, Tribal member Eric Chapman Senior participated in a panel on climate-smart hazard mitigation during the National Adaptation Forum and then reprised that role for a National Adaptation Forum webinar, which had the most attendees ever for one of the webinar’s series events. The collaboration also prompted Chapman to attend the 2018 Great Lakes Adaptation Forum and connect with other practitioners in the region.

In addition to using the climate data in plans and policies, the process of engaging in the planning efforts has increased the Tribe’s capacity when it comes to communicating about climate change. Petersen reflected, “GLISA helped the Tribe be confident talking about climate change,” by providing the data and clear explanations about how it was developed. As part of new funding the Tribe won from the Bureau of Indian Affairs as a result of the vulnerability assessment, Lac du Flambeau will conduct research on four seasons traditional food cycles and host a regional conference about Tribal climate adaptation planning.

“ [GLISA] is committed to the co-development of products that are both useful and usable by the project partners and that commitment came through clearly in this project... Tribal staff members are using this information to help develop their annual budgets and guide investment in climate preparedness. ”

– Sascha Petersen, Founder & Director, Adaptation International

About GLISA Advancing Climate Knowledge for Adaptation and Resilience with Great Lakes Communities

Established in 2010, GLISA is a collaboration between the University of Michigan and Michigan State University, supported by the National Oceanic and Atmospheric Administration (NOAA). As one of 11 NOAA Regional Integrated Sciences and Assessments (RISA) teams, GLISA works at the boundary between climate science and decision-makers, striving to enhance Great Lakes communities’ capacity to understand, plan for, and respond to climate impacts now and in the future. Our team of social and physical scientists collaborates to:

- Develop usable climate information tailored to stakeholder needs;
- Develop, implement, and evaluate resources and tools to apply climate information to decision-making;
- Facilitate collaborative activities, education, and training and support stakeholder networks; and,
- Investigate emerging climate issues and synthesize findings for practitioners.



Great Lakes Integrated Sciences + Assessments (GLISA)

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Example of GLISA’s boundary chain model of stakeholder engagement for the Great Lakes Climate Adaptation Network (GLCAN). Climate information is tailored and moves through different boundary organizations (links in the chain) to connect science to users. Adapted from Lemos et al. 2014.