

Coastal Resilience in the Great Lakes Region: Traditional Knowledge, Vulnerability and Adaptation in the Ceded Territories



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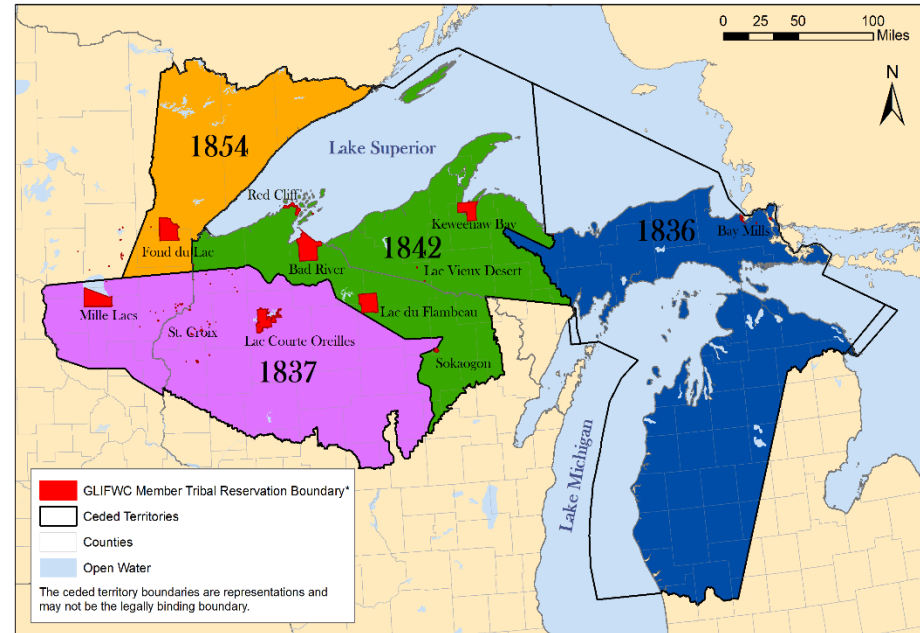
What is GLIFWC?

A “tribal organization” (PL 93-638)

exercising authority delegated by its 11 member tribes to implement federal court orders and interjurisdictional agreements related to their treaty rights.

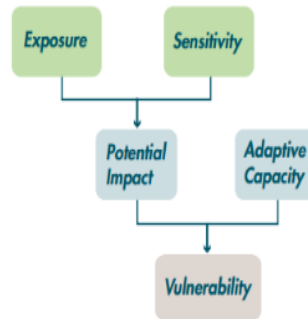


- GLIFWC assists its member tribes in:
 - Securing and implementing treaty guaranteed rights to hunt, fish and gather in the 1836, 1837, 1842 and 1854 Chippewa treaty ceded territories.
 - Cooperatively managing, restoring and protecting ceded territory natural resources and their habitats.



GLIFWC Climate Change Projects

- Lake Superior adikameg diet study
- Lake Superior namegos projects
- Phenology study
- Seed Bank
- Ogaa study/Mille Lacs Telemetry Study
- Waabizheshi Project
- Vulnerability assessment
- Tribal Climate Adaptation Menu



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Climate Change Vulnerability Assessment

- Use a holistic approach to assess vulnerability of over 60 culturally important beings to climate change.
- Promote recognition that Anishinaabe knowledge and worldview provide important and needed contributions to the understanding of resource vulnerability.



Climate Change Vulnerability Assessment

Scientific Ecological Knowledge

- NatureServe's Climate Change Vulnerability Index tool incorporates climate projections and literature on natural history
- Expert reviews of each being's assessment used to validate and adjust scores.

Traditional Ecological Knowledge

- At least 3 interviews in each community.
- Interviewees provide stories, teachings, knowledge about changes.
- Given equal weight to expert reviews and used to validate and adjust scores.

Results
Incorporate both

Extremely
Vulnerable



Lake whitefish, tullibee



American marten, moose, snowshoe hare



Wild rice, labrador tea, northern white cedar, tamarack

Highly
Vulnerable



Northern pike, yellow perch, lake trout, walleye



Fisher



Wild leek, black ash, wild ginger, paper birch, sugar maple, balsam fir, American ginseng



Wood duck, trumpeter swan, common loon, cave bats, sharp-tailed grouse



Wood turtle

Moderately
Vulnerable



Sturgeon, smallmouth bass, muskellunge



Blueberry, sweetgrass, American basswood, broadleaf arrowhead, sweet flag, bloodroot, princess pine, white ash



Sandhill crane, fireflies



Snapping turtle, painted turtle, spring peeper

Less
Vulnerable



Largemouth bass



Long-tailed weasel, short-tailed/least weasel, American mink, white-tailed deer, river otter

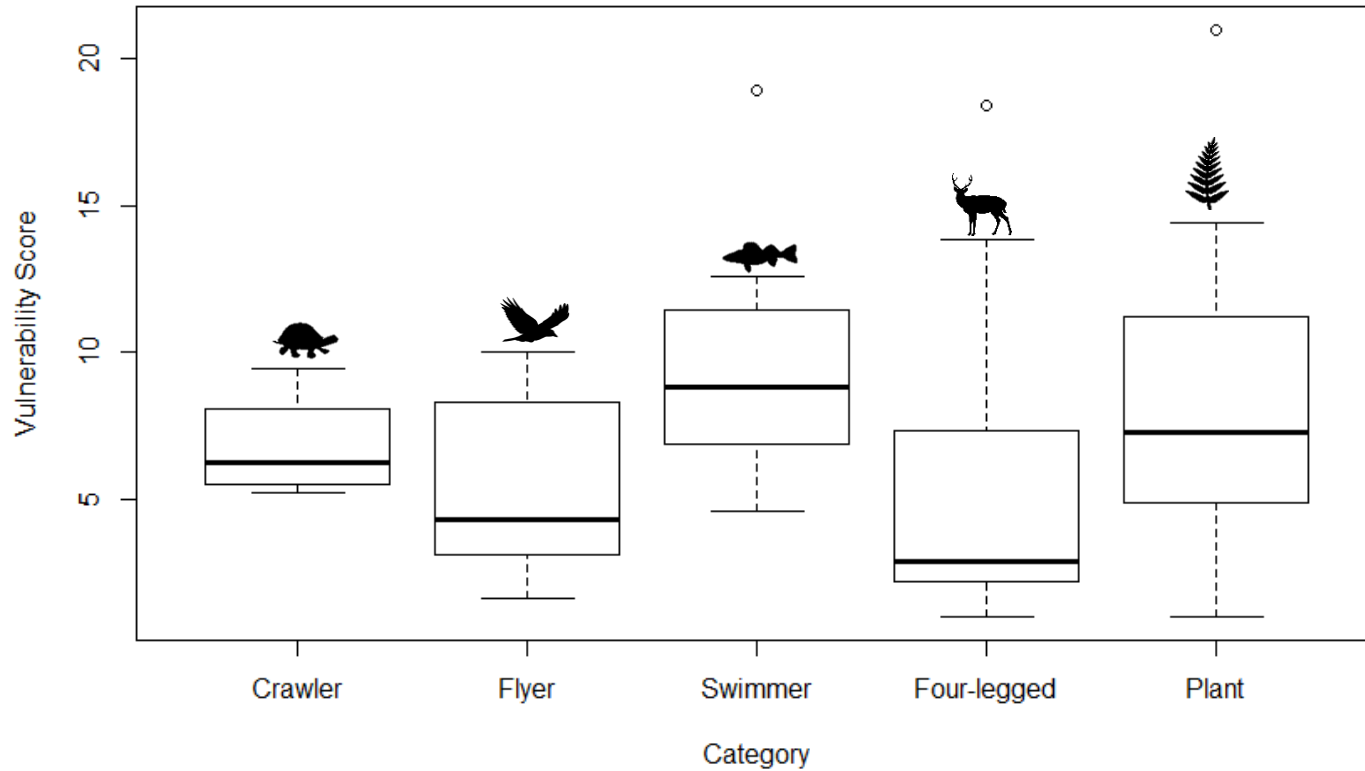


Raspberry, red-osier dogwood, strawberry, ostrich fern, wild sage



Wild turkey, common raven, Canada goose, mallard, American crow, blue-winged teal, tree bats, bald eagle

Vulnerability Across Categories



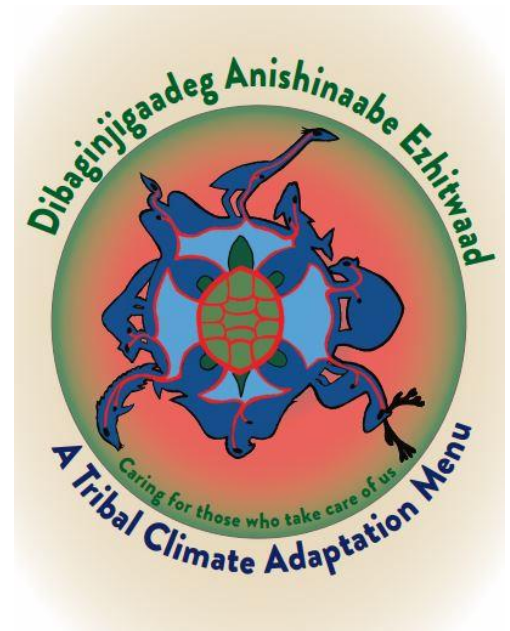


- Culturally important beings moving (shifting ranges) or disappearing due to climate change
- Seasonal indicators no longer correspond with their associated natural phenomena
- Loss of access to culturally important beings and those reciprocal relationships that have been maintained since time immemorial is an existential threat to indigenous culture and physical & emotional health
- Tribal homelands, reservations and treaty ceded territories are fixed in place
- Adaptation actions must be culturally appropriate and community supported.

Dibaginjigaadeg Anishinaabe Ezhitwaad: A Tribal Climate Adaptation Menu

How do we create an adaptation planning tool that integrates indigenous knowledge, culture, science and perspective with western science and perspectives?

How can we facilitate culturally appropriate climate adaptation between tribes and non-tribal partners?



Michigan Tech



Guiding Principles

Provides a framework to integrate indigenous and traditional knowledge, culture, language and history into the climate adaptation planning process

Facilitates community engagement and decolonization of scientific research and application in indigenous communities and co-management areas (ceded territories)

Provides general guidance for non-tribal partners working in indigenous communities

Written from an Ojibwe/Menominee perspective but intentionally designed to allow other tribal communities to integrate their customs and culture.



nindinawemaaganidag “all my relatives”

- Decisions for use of our relatives were originally communal decisions made with recognition, acknowledgement and reciprocity throughout
- Today management and decision-making for land and the natural environment is no longer communal, but made by individuals, agencies and institutions



Cultural Practices and Community Engagement

Strategy 1: Consider cultural practices and seek spiritual guidance.

- 1.1. Consult cultural leaders, key community members, and elders.
- 1.2. Consider mindful practices of reciprocity.
- 1.3. Understand the human and landscape history of the community.
- 1.4. Hold respect for all of our relations, both tangible and intangible.
- 1.5. Maintain dynamic relationships in a changing landscape.

Strategy 2: Learn through careful and respectful observation (gikinawaabi).

- 2.1. Learn from beings and natural communities as they respond to changing conditions over time.

Strategy 3: Support tribal engagement in the environment.

- 3.1. Maintain and revitalize traditional relationships and uses.
- 3.2. Establish and support language revitalization programs.
- 3.3. Establish, maintain, and identify existing inventory and monitoring programs.
- 3.4. Establish and maintain cultural, environmental education, and youth programs.
- 3.5. Communicate opportunities for use of tribal and public lands.
- 3.6. Participate in local- and landscape-level management decisions with partner agencies.



“TAM” Workshops

- Paper birch habitat & restoration – GLIFWC
- Forest management/cultural fire/moose habitat – Grand Portage Band of Ojibwe
- Tribal wetland restoration – Iowa Tribe of Oklahoma
- Great Lakes coastal marsh/manoomin restoration – Sault Tribe of Chippewa
- Cedar restoration – Bay Mills Indian Community
- Road/stream crossings – Hiawatha National Forest
- Sea level rise preparation – Miccosukee Tribe of Florida
- Creating an indigenous focused master naturalist class – Ho Chunk Nation
- Culturally appropriate invasive species control – Mohawk Council of Akwesasne

Reviving Manoomin

Objectives:

1. Restore manoomin
2. Increase community involvement and access
3. Improve habitat for fish, waterfowl and secretive marsh birds

Challenges	Opportunities
<ol style="list-style-type: none"> 1. Warmer water temps 2. high stream flow in spring 3. heavy precipitation events 	<ol style="list-style-type: none"> 1. longer growing season 2. Renewed interest within community in manoomin

Adaptation Tactics:

- 1.1 Work with tribal leaders & members to identify knowledgeable individuals and consult in a respectful way.
- 7.6 Partner with outside agencies and tribes within 1836 Treaty territory
- 8.1 Identify native sources of manoomin & plant in historic and suitable areas
- 3.5 Establish SOPs for seeding manoomin and harvest regulations
- 7.1 Identifying historical and cultural sites for manoomin restoration
- 2.3 Use manoomin to restore historically disturbed sites
- 3.4 Establish and maintain cultural, environmental education & youth programs

1.1.1.3 Consult w/ leaders & cultural history

- Storytelling on sign. manoomin
- understanding enviro for growth & harvest techniques (can it be used to stabilize areas?)
- partnerships (Forest Service) - boys & girls club, drug court, Canada First Nations Parks Unlimited
- Examine historical maps/records

10.1 Beings across a greater geographical range

- Artificial impoundments

Miigwech!



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