

The Global Center for Climate Change and Transboundary Waters (GCTW) Cohosts a Traditional Ecological Knowledge Summit

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Abstract

The Global Center for Climate Change and Transboundary Waters (GCTW) integrates hydroclimate modeling, water quality monitoring, and forecasting with community-engaged mixed-methods to harmonize Traditional Ecological Knowledge (TEK), Indigenous Knowledge (IK), and Western Science (WS) for the purposes of developing 21st century transboundary water resources governance protocols. To advance harmonizing TEK with WS, a fundamental mission of GCTW, the Center cohosted a TEK Summit with community leaders at Six Nations of the Grand River (Six Nations) in the spring of 2024. We report on how this summit facilitated discussions and establish connections among Indigenous Knowledge Holders, scholars, students, youth, environmental groups, academics, and conservationists.

Keywords: *Climate Change; Traditional Ecological Knowledge; First Nations; Resilience; Collaboration*

Introduction

The Global Center for Climate Change and Transboundary Waters (GCTW) harmonizes Traditional Ecological Knowledge (TEK), Indigenous Knowledge (IK), and Western Science (WS) for the purposes of developing 21st century transboundary water resources governance protocols. The Center is funded by the US National Science Foundation (NSF) and the Canadian Social Science and Humanities Research Council (SSHRC) and supports a multinational network of researchers designed to promote information sharing across borders [1-3].

To advance harmonizing TEK with WS, a fundamental mission of GCTW, the Center cohosted a TEK Summit with community leaders at Six Nations of the Grand River¹³ (Six Nations) in the spring of 2024. The purpose of the TEK Summit was to facilitate discussions and establish connections among Indigenous Knowledge Holders, scholars, students, youth, environmental groups, academics, and conservationists in a space where attendees could listen, learn, and engage together.

Findings

The Summit centered TEK; a methodology of place-based sustainability that is supported by Western Science and called on participants to engage with it as a globally relevant dialogue to advancing resilience to climate change. Central to this forum design was the identified need for the development of a decolonial ecological framework that is culturally informed by Indigenous epistemologies, pedagogies, and methodologies. Such a framework is critical to aiding in the formulation of practical climate change adaptation strategies, particularly within in the broader context of knowledge harmonization – i.e., understanding how WS may synergistically contribute to the restoration of the natural world.

Over 200 audience members at the Summit were invited to reflect on their connection to all of creation. Haudenosaunee creation stories inform us we were created from clay of this earth which binds us to our mother, the earth. We are part of the landscape that we live on and that we speak to. TEK is collectively held by the Indigenous peoples of Turtle Island that have stories of their creation and how they are to relate to their relatives here on earth and in the cosmos. Because of this relational aspect, Indigenous knowledges are not individualistic, but are collective, governed by laws, and owned, protected and accountable. These Indigenous philosophies instruct the GCTW members and partners to care for our relations. Hence, TEK can guide and inform climate change adaptation strategies and ecological restoration, by promoting dialogue

¹³ Six Nations of the Grand River of the Haudenosaunee Confederacy is the largest Indigenous reserve (by population) in Canada, and the community has been engaged in efforts to achieve sustainable ecosystems, health and well-being directly tied to the state of the natural environment. The environmental degradation is manifesting in Indigenous communities through proxies such as deteriorating water quality influencing socio-ecological determinants of health and well-being.

with Indigenous peoples in ways their ancient ecological knowledge can lead, inform, and shape conservation [1].

It is clear IK-TEK plays a vital role in ecosystem management and restoration, but scientists have found there are significant challenges to accessing and understanding it. The barriers to IK and TEK exist for multiple socio-political reasons, and these barriers must begin to be carefully and ethically addressed. At Summits such as this, non-Indigenous scientists are able to increase their engagement and collaboration with their Indigenous counterparts through local community-scale Indigenous-led conversation. This dialogue is essential for the benefit of the natural world for future generations. Six Nations participation in the GCTW to co-create knowledge that enables climate change resilience is central to the mission of the GCTW.

Importantly, this initiative was driven by Indigenous youth leaders and learners who seek to engage in co-learning environments that promote Indigenous Knowledge in culturally safe and ethical ways. Partnerships and agreements between regional academic institutions (like Six Nations Polytechnic and McMaster University) can enable such opportunities and create platforms for community and youth leaders to organize and affect positive change. At this Summit, undergraduate and graduate students at McMaster University engaged in brainstorming and listening sessions with Indigenous youth (see Figure 1) at Six Nations Polytechnic before voicing their thoughts (via 'recommendations' and 'key points') to community members and leading environmental organizations across Turtle Island [3].



Figure 1: Artist Dakota Brant story map of TEK Summit

In addition to supporting Indigenous co-learning opportunities for students, the Summit highlighted innovative land restoration approaches and advanced knowledge mobilization across a range of disciplines. A primary achievement of this Summit was the advancement of foundational work through resource-sharing, strategic collaboration development, and discussion of best practices that can help communities improve local ecosystems, become more resilient to climate change, and sustain overall well-being. By promoting dialogues around management and stewardship of Indigenous

Knowledge and TEK across disciplines, capacity is developed for students and Indigenous leaders to further Indigenous/Western partnerships that can advance climate change resilience strategies and nurture reconciliation [4].

Conclusion

The GCTW supports the need to ensure an accessible future for Indigenous studies and research and promotes opportunities for academic collaboration with First Nations communities in the realm of understanding climate change impacts on transboundary waters. In accordance with the Strategic Plan developed by McMaster's Indigenous Education Council (IEC) and Indigenous Research Institute (MIRI), this TEK Summit served to bolster the pursuit of numerous priorities and principles, including [5]:

- Raising the profile of Indigenous researchers, community research priorities, and methods;
- Building capacity in the community, and among scholars, in Indigenous research methods;
- Creating community research officers/navigators to support the research process, from design to knowledge translation and exchange phases;
- Building research capacity at the community level with more collaborative protocols; and
- Developing an inclusive and high-functioning academy where Indigenous epistemologies can function with moral independence or co-exist, merge and interplay with Western Science.

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