Decolonizing Freshwater and Fish Monitoring: Opportunities for Social Learning in the Dehcho Region

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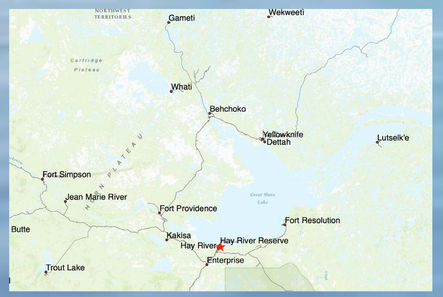
Hay River, September 2018
Photo taken by Sydney Stenekes

Community Partner

This research is in collaboration with **Kátł'odeeche First Nation (KFN)**. The First Nation have occupied their traditional territory in the Northwest Territories' Dehcho region for thousands of years. Situated in the Mackenzie River Basin**, Hay River, Great Slave Lake, Sandy Creek, Buffalo River and Lake** are culturally significant bodies of water to the community, as Traditional Knowledge has been passed down for generations through the practice of fish harvesting and monitoring.

Kátł'odeeche First Nation is currently developing and implementing **a culturally appropriate community-based environmental monitoring** program that is driven by Traditional Knowledge and built around seasonal traditional harvesting activities.



Map from Government of Northwest Territories

Hay River, October 2018
Photo taken by Sydney Stenekes

Research Significance

ACADEMIC

With the aim of decolonizing monitoring in Canada's sub-arctic region, along with the growing uncertainty regarding the health of freshwater systems for future generations, community-based environmental monitoring (CBEM) programs are increasingly emphasizing Traditional Knowledge in their design and implementation.[1]

According to scholars, community-based monitoring has the potential to foster an environment for learning.[2] However, studies are often technically driven, and few academic case studies exist that analyze monitoring programs from an Indigenous perspective and through the lens of social learning.[3] Overall, this research contributes to emerging literature that documents Traditional Knowledge indicators of aquatic ecosystem change, and presents a northern First Nation case study that analyzes social learning in the context of CBEM.

COMMUNITY

This research will help inform the design of Kátł'odeeche First Nation's CBEM program and contribute to establishing a baseline of environmental information, as interviews have captured Traditional knowledge, observations and the concerns of elders, harvesters and youth regarding the health of freshwater and fish.

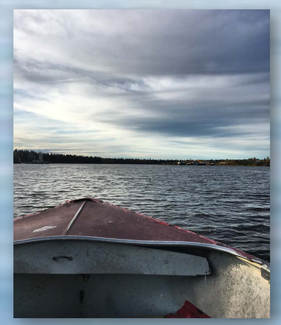
Key Objectives

1. Document the Traditional Knowledge indicators used by KFN elders, fish harvesters, and youth to assess the health of the water and fish in their traditional territory, and provide an assessment of the health of these freshwater systems based on community observations and experiences.

2. Determine what knowledge related to water and fish in KFN's traditional territory is shared at local, regional, territorial and federal levels. Specifically, this research aims to distinguish between knowledge that is shared *by* versus *with* the community.

3. Investigate how knowledge (e.g. ecological observations, freshwater monitoring information) is shared by Kátł'odeeche First Nation, government and researchers.

Fish Camp along the Hay River, October 2018
Photo taken by Patrick Riley



The mouth of Hay River, September 2018
Photo taken by Sydney Stenekes

Photo taken by Patrick Riley

Methodological Approach

This project employs a community-based participatory research approach[4], as collaboration and partnership with Kátłodeeche First Nation has been crucial to contribute to meaningful research outcomes for the community. I strive to conduct insurgent research,[5] which involves directing researcher responsibility back to the community.

Research Activities

March 2018
Attended a Community-Based Monitoring Data Tools Workshop in YK, where I met representatives from KFN.

July 2018
Invited to visit KFN and attend a Traditional Knowledge Indicators / Monitoring Workshop.

September 2018
Participated in a Fall Fish Camp along the Hay River. Built relationships with Elders and fishers.

October 2018
Conducted 15 semi-structured interviews with KFN Elders (8), fish harvesters (4), and youth (3).

November 2018 – Present
Transcribed interviews and applied conventional content analysis to uncover dominant themes.

Next Steps
In May 2019, I plan to verify preliminary findings with the community and conduct interviews with government stakeholders and researchers.

Southern Shores of Great Slave Lake, October 2018
Photo taken by Sydney Stenekes

Preliminary Findings

Indicators of Fish Health

The colour of fish gills, fat content, texture (i.e. firmness), and presence of abnormalities (e.g. scars, soars, bruising, puncture wounds with pus, growth, worms and bugs are used to determine the health of the fish.

Indicators of Freshwater Health

Changes in turbidity (i.e. the colour and clearness of the water), water levels (e.g. drying up of creeks, increase in sandbars and shoreline), ice thickness, the presence of "green stuff" or algae, and the health of fish and other animals signify KFN indicators of change.

Socio-Ecological Change

More fish are being caught with marks, lumps and pus. Fish with pus are thrown away and not consumed by humans, or dogs.

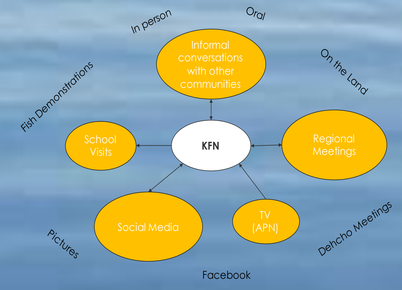
Decreasing ice thickness on Great Slave Lake and concerns regarding **declining water levels** in Great Slave Lake, Hay River and Buffalo River. Low water levels are impeding access to traditional hunting areas.

Concerns regarding **downstream impacts of resource development (oil & gas, dams) on water quality and quantity.** The Hay River is reported to be darker, murkier and less clear than it once was.

Social Learning - *These diagrams represent social learning at various institutional scales (i.e. how knowledge related to freshwater and fish is shared and learned within and outside of the community). The arrows indicate the direction and flow of knowledge. The size of the bubbles coincide with the frequency this specific transfer mechanism for sharing and/or receiving information was discussed.*

Figure 1 – Local Knowledge Sharing

Figure 2 – Regional Knowledge Sharing



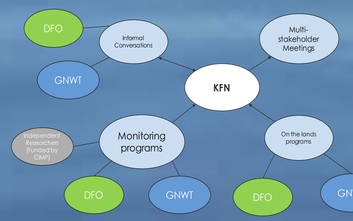


Figure 3 –Territorial and Federal Knowledge Sharing

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NWT Map: http://www.geomatics.gov.nt.ca/maps/NWT_Topography2_Map-36x48_HighRes.pdf
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