Indigenous communities in northern SK are taking action to mitigate climate change effects

Prince Albert Grand Council (PAGC) represents 12 northern Bands/Nations comprising 45,000 members (https://www.pagc.sk.ca/). I am proud to be a part of the cultural science activities managed by the PAGC, SK, Canada concerning their climate change adaptation strategies. Climate change is a serious concern for everyone, but Indigenous people in northern Canada are disproportionately affected by its consequences. In addition to human disturbances to the lands and wildlife that affect their livelihoods, Indigenous communities must face thawing permafrost, melting of centuries-old ice sheets and rising sea levels. These changes adversely affect the food and water supply, health and livelihoods of people living in the mid arctic and arctic Canada specifically. After years of limited opportunities to take part in research and planning concerning natural resources including climate change, Indigenous people have come forward to implement programs that will protect the environment and preserve their community that they hope for.

View of winter water quality monitoring with the participation of Indigenous youth in a section of Northern Saskatchewan River -North of Cumberland House, Saskatchewan, Canada.

PAGC is currently implementing two programs for Indigenous community-based climate monitoring (CIRNAC funded) and Indigenous fish habitat protection (DFO funded). These programs aim to understand the effects of climate change on aquatic environment by monitoring water quality and aquatic organisms(bottom dwelling insects) as indicators and use the information to develop comprehensive habitat protection and conservation plans. Many research programs carry out monitoring activities in the summer months but winter monitoring of waters and fish habitats in frozen lakes and rivers is uncommon. However, winter monitoring will become necessary as delayed ice formation and earlier ice melts affect aquatic life. PAGC

addressed this gap by holding a cultural science camp in a cold week in the beginning of February at Cumberland House Delta, SK, where their youth and Elders took part in conducting water quality and fish health monitoring activities. Summer camps have also been held at Grandmothers Bay and James Smith Cree Nation camp last summer/fall. PAGC and participating communities believe that studying the aquatic environment in both summer and winter conditions will help the climate adaptation planning process important for their survival on their traditional lands.

PAGC has so far engaged at least 12 PAGC Bands/ Nations and trained 24 youth in aquatic monitoring during the cultural science camps. They hope to continue these camps on a larger scale with youth from more member Nations. In addition to climate change impact mitigation, PAGC recognizes the importance for their youth to engage in land-based learning and training in traditional ecological knowledge, which will promote cultural transmission, self-determination and reconciliation. PAGC also wants to train their youth in scientific research so that they will be motivated to take advanced science courses and pursue careers in science. Indigenous peoples are underrepresented in STEM programs and jobs in Canada and face many difficulties in accessing these positions. Such underrepresentation can be addressed with support from the communities and organizations engaged in aquatic monitoring such as the Ministry of Environment and Climate Change Canada, DFO and Universities if they extend the support towards program like the one with PAGC and many other Nations across Canada are undertaking. PAGC hopes that their cultural science programs will be the first step in overcoming the climate and natural resource related challenges through the cultural transmission of knowledge (Elders teach the youth) along with science understanding of the process.

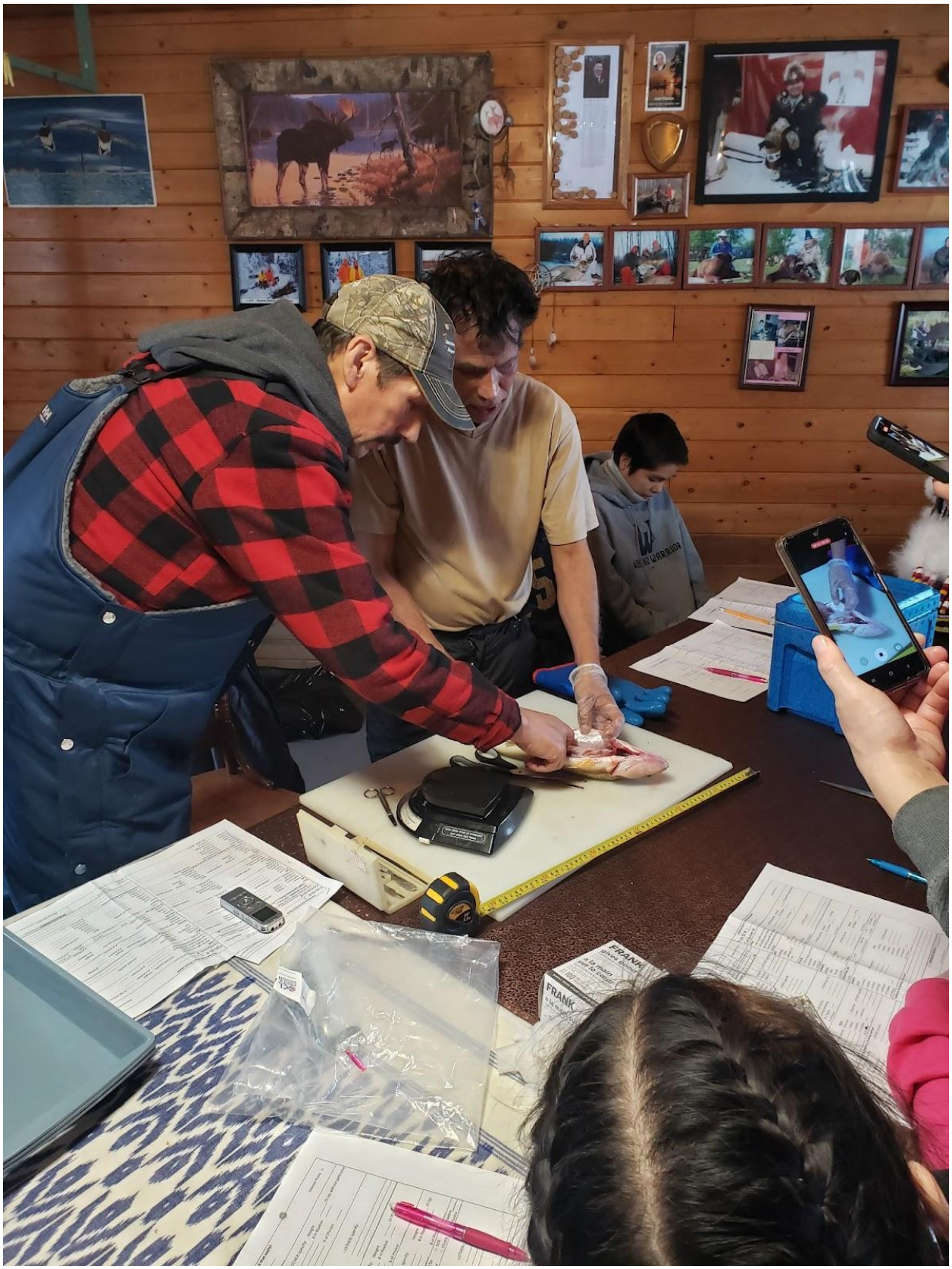
PAGC leadership Grand Chief Brain Hardlotte, vice chiefs (Joe Tssanie and Chris Jobb) and , land/resources department acting director Robin Mcleod, Executive director Al Ducharme and regional chiefs including Walli Burns (James Smith First Nation), chief Rene Chaboyer (Cumberland House First Nation), chief Coreen Syazie (Black Lake Dene Nation) former chief Peter Beatty, Senator Roy Head and many band council members appreciate the contributions of all their partners: Dr. Tim Molnar, Dr. Tim Jardine Dr. Lori Bradtford and Dr. Priscila Settee) from the University of Saskatchewan, and researchers from Northlands College (Kristy Todd), Safe Drinking Water Foundation (Nicole Hancock) and Water Rangers/ the University of Regina (Dr. Kerri Findley). They value the participating Indigenous Elders and knowledge keepers (especially Gary Carriere, John Carriere and many others) who contribute their worldviews and land-based knowledge work to make the training programs unique. Contributions from the tech supports including Michaela Merasty, Dalynn McKenzie and Nafis Mashrur, land-based teachers Jarret Nelson and Barry Carriere and camp youth guide Kestin McLeod, and program support persons Ian McKay, Brad Michael, Dr. Herman Michell, Peter Friedrichsen, Alex Zahara, Derek Tousaint, Jordan Twist, Jeanine Patterson, Tanya Moostoos, Garth Sanderson are strongly accredited by PAGC. PAGC also fully acknowledges the funding and support from organizations such as CIRNAC and DFO that make the youth camps possible.

PAGC's cultural science camps turned into a multicultural and multigenerational participations. Pipe ceremonies, offering cultural foods at community feasts/meals and offering payers/ smudging, drums and keeping youth busy with door prizes, run, soccer and bonfires made those camps enjoyable and a culturally appropriate learning environment.

There is so much to explore in creating opportunities for trained Indigenous youth, especially with aquatic monitoring programs that value Indigenous participation as a commitment to reconciliation. The trained youth will be of great help in aquatic monitoring throughout the year, particularly during winter months. This would significantly increase our understanding of the impact of climate change on aquatic habitats in the north and especially in the boreal range where almost 80% of the Indian Bands/Nations are located.

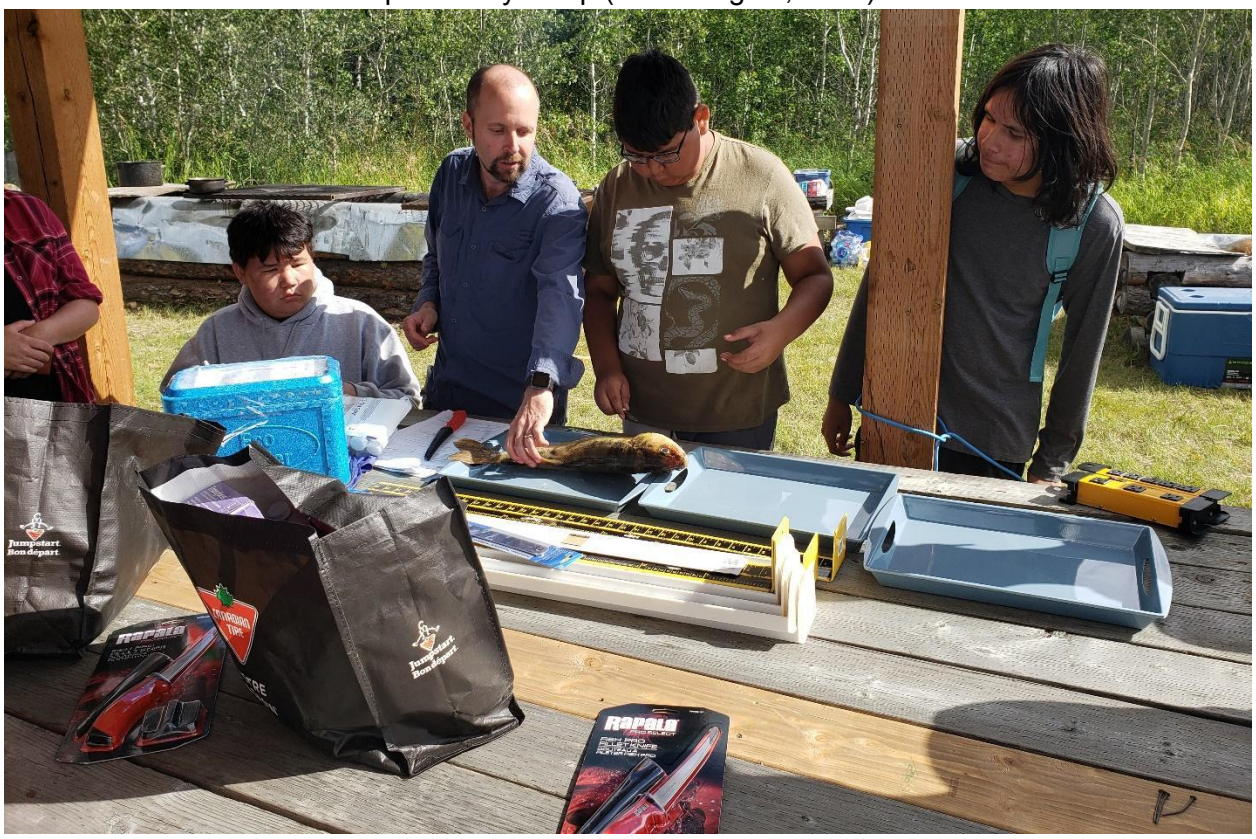
Cumberland House camp activities (2nd to 6th February, 2023)

Collected water sample gave those bugs!



Grandmothers Bay cultural science camp activities (September 16-17, 2022):

James Smith Cree Nation/Wapitti Valley camp (7-11th August, 2022)




champion