CANADA'S CLIMATE CHANGE ADAPTATION PLATFORM

Equipping Canadians for a Changing Climate

The *Building Regional Adaptation Capacity and Expertise (BRACE) Program* Presents:

Building Adaptation Skills for a Changing Climate Webinar Series

Building Adaptation Skills for Indigenous Communities

March 30th, 2023

Le programme Renforcer les capacités et l'expertise régionales en adaptation (RCERA) présente:

Série de webinaires sur le renforcement des compétences en matière d'adaptation aux changements climatiques

Renforcer les compétences des communautés autochtones en matière d'adaptation

30 mars, 2023

WEBINAR SERIES / SÉRIE DE WÉBINAIRES

Building Adaptation Skills…

- **for Engineers** - September 15, 1-2 pm
- **for Planners** - October 3, 1-2 pm
- **Key Considerations for Upskilling the Workforce of Tomorrow** - October 11, 1-2 pm
- **for Water Management** - November 2, 1-2 pm
- **in Economic Sectors -** December 1, 1-2 pm
- **for Young Professionals -** December 7, 1-2 pm
- **for Indigenous Communities –** March 30, 1-2:30 pm

Renforcer les capacités d'adaptation…

- **des ingénieurs** - 15 septembre, 1-2 pm
- **des urbanistes** - 3 octobre, 1-2 pm
- **Considérations clés pour la mise à niveau des compétences de la main-d'œuvre de demain** – 11 octobre, 1-2 pm
- **pour la gestion de l'eau** - 2 novembre, 1-2 pm
- **dans les secteurs économiques** - 1 décembre, 1-2 pm
- **des jeunes professionnels** - 7 décembre, 1-2 pm
- **des communautés autochtones –** 30 mars, 1-2:30 pm

BRACE PROGRAM / PROGRAMME RCERA

Overview

- $18M over 5 years (2017-2022)
- Building adaptation capacity increase adaptation action and climate resilience
- 20 thematic projects targeting a broad range of audiences

Targeted approach

- Worked with all Provinces to scope out priorities and co-develop projects

Types of deliverables

- Webinars and workshops
- Courses and online modules
- Web platforms, videos, case studies
- Guidelines for practitioners
- Networks and communities of practice
- Internships and resources for educators
- …

Aperçu

- 18M$ sur 5 ans (2017-2022)
- Renforcer les capacités en matière d'adaptation pour accroître les mesures d'adaptation et la résilience climatique
- 20 projets thématiques ciblant un large éventail de publics

Approche ciblée

- Collaboration avec toutes les provinces pour définir les priorités et élaborer conjointement les projets.

Types de produits:

- Webinaires et ateliers
- Cours et modules en ligne
- Plateformes web, vidéos, études de cas
- Lignes directrices pour les praticiens
- Réseaux et communautés de pratique
- Stages et ressources pour les éducateurs
- ...

Natural Resources Canada / Ressources naturelles Canada
Canada

PRESENTATIONS / PRÉSENTATIONS

1) From the Great Lakes to Hudson Bay: building a sustainable foundation for climate change adaptation capacity in First Nations across far north Ontario

Roxanne Metlin, Chapleau Cree First Nation, Specialist and GIS Officer in the Mushkegowuk Council
Dr. David Pearson, Emeritus Professor of Natural Sciences and Science Communication at Laurentian University

2) Thematic Approaches to Building Climate Adaptation Expertise

Laura S. Lynes, President and CEO of the Resilience Institute
Alvin First Rider, Environmental Technician, Blood Tribe Land Management Environmental Protection Division

3) Weaving Indigenous Knowledges

Christey Allen, Research Manager, Prairie Climate Centre
Brett Huson, Researcher, Prairie Climate Centre

1) Des Grands Lacs à la baie d'Hudson *: établir une base durable pour la capacité d'adaptation aux changements climatiques des Premières nations du Grand Nord de l'Ontario*

Roxanne Metlin, Première nation Cree de Chapleau, spécialiste et responsable SIG au sein du Conseil de Mushkegowuk
Dr. David Pearson, Professeur émérite de sciences naturelles et de communication scientifique à l'Université Laurentienne

2) Approches thématiques du développement de l'expertise en matière d'adaptation au climat

Laura S. Lynes, Président et directeur général de The Resilience Institute
Alvin First Rider, Technicien de l'environnement, division de la protection de l'environnement de la gestion des terres de la Blood Tribe

3) Tisser des savoirs autochtones

Christey Allen, Responsable de la recherche, Prairie Climate Centre
Brett Huson, Chercheur, Prairie Climate Centre

From the Great Lakes to Hudson Bay

Building a sustainable foundation for climate change adaptation capacity in First Nations across far north Ontario.

David Pearson, Laurentian University
dpearson@laurentian.ca

Roxanne Metlin, CreeGeo Information Services,
Mushkegowuk Council

Canada's National Adaptation Strategy

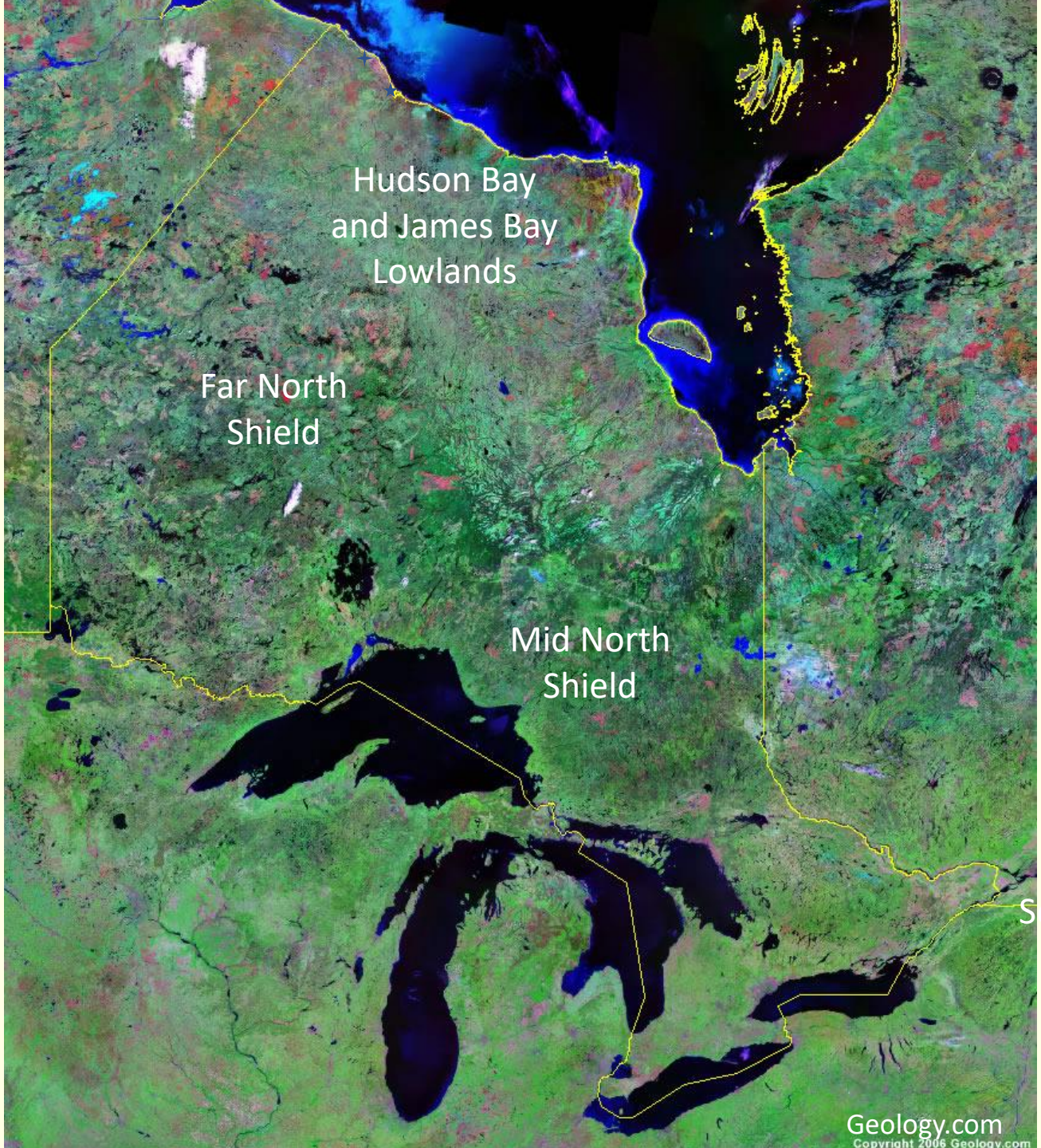
An objective we strongly support

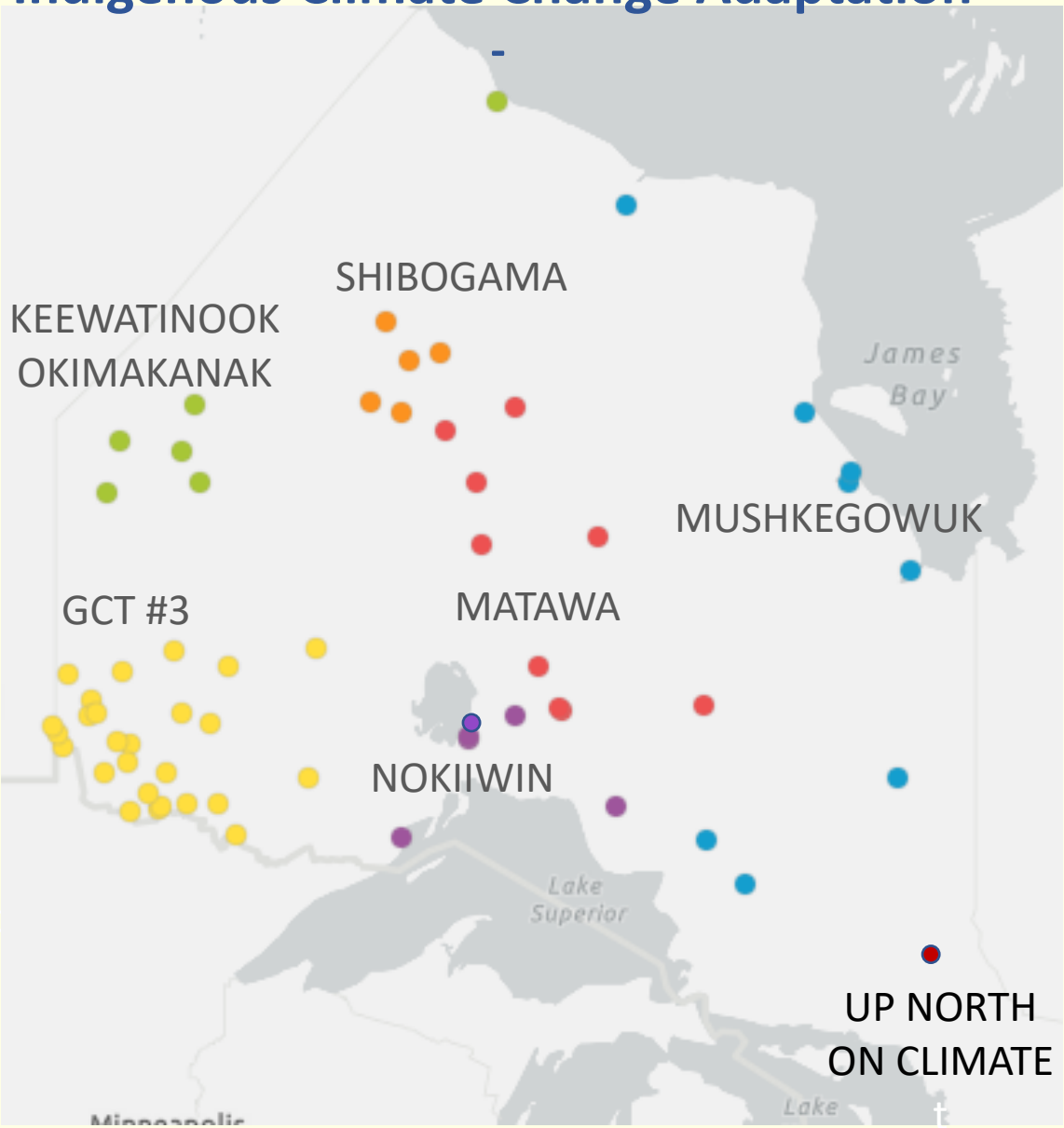
Objectives

Governance and leadership

6	Effective governance for climate change adaptation is established and is inclusive of people who are disproportionately impacted by climate change.
7	First Nations, Métis Nation, and Inuit are prepared for and have the capacity to respond to climate change through self-determined adaptation actions that are grounded in their cultures, preferences, and community priorities.

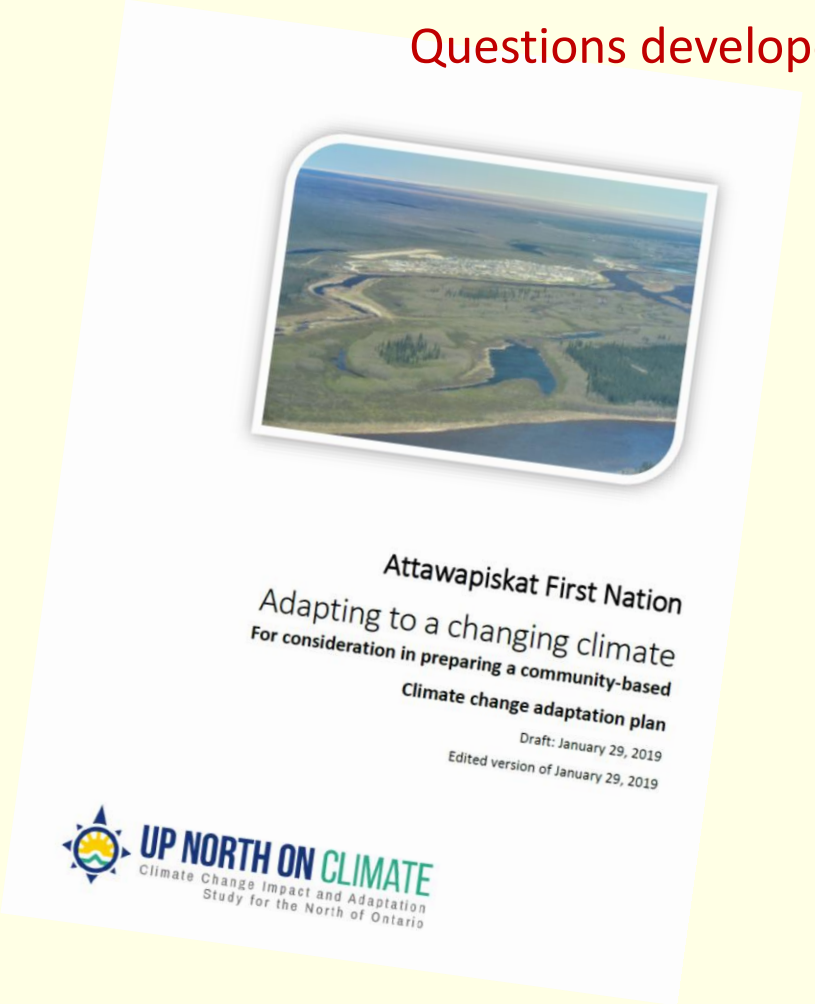
From BRACE to PICCA - Partnership for Indigenous Climate Change Adaptation

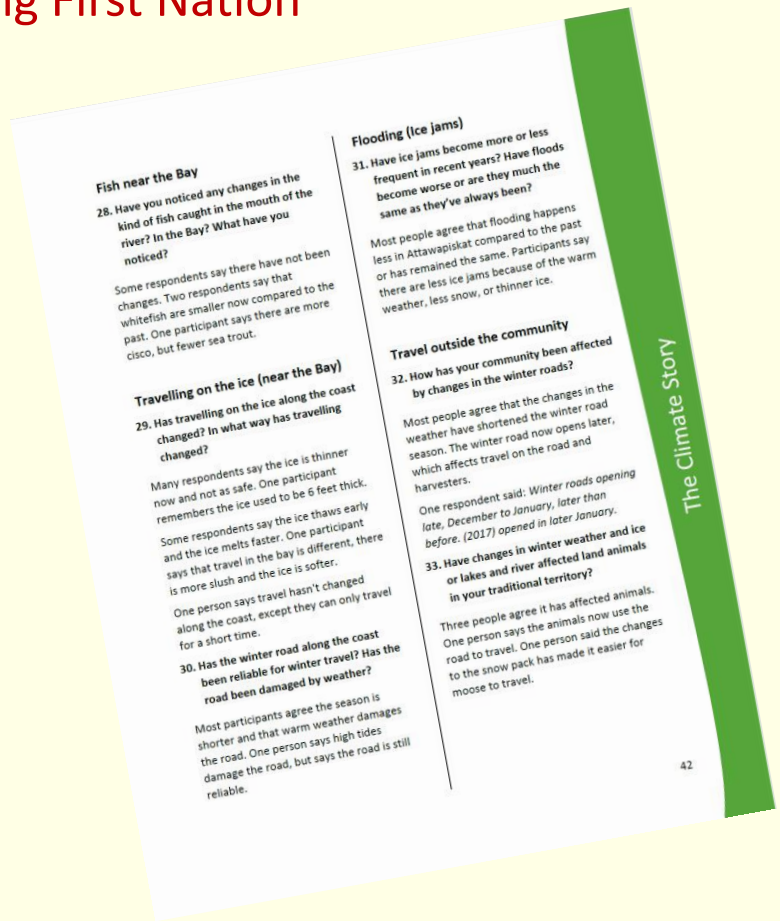




Previous experience - compiling Climate Change Vulnerability reports for 24 First Nations, braiding western science with Indigenous Climate Knowledge, gathered by a community member from stories told by Knowledge Holders in their community answering questions.

Questions developed with Xavier Sagutch, Eabametoong First Nation





Fish near the Bay

28. Have you noticed any changes in the kind of fish caught in the mouth of the river? In the Bay? What have you noticed?

Some respondents say there have not been changes. Two respondents say that whitefish are smaller now compared to the past. One participant says there are more cisco, but fewer sea trout.

Travelling on the ice (near the Bay)

29. Has travelling on the ice along the coast changed? In what way has travelling changed?

Many respondents say the ice is thinner now and not as safe. One participant remembers the ice used to be 6 feet thick.

Some respondents say the ice thaws early and the ice melts faster. One participant says that travel in the bay is different, there is more slush and the ice is softer.

One person says travel hasn't changed along the coast, except they can only travel for a short time.

30. Has the winter road along the coast been reliable for winter travel? Has the road been damaged by weather?

Most participants agree the season is shorter and that warm weather damages the road. One person says high tides damage the road, but says the road is still reliable.

Flooding (Ice jams)

31. Have ice jams become more or less frequent in recent years? Have floods become worse or are they much the same as they've always been?

Most people agree that flooding happens less in Attawapiskat compared to the past or has remained the same. Participants say there are less ice jams because of the warm weather, less snow, or thinner ice.

Travel outside the community

32. How has your community been affected by changes in the winter roads?

Most people agree that the changes in the weather have shortened the winter road season. The winter road now opens later, which affects travel on the road and harvesters.

One respondent said: *Winter roads opening late, December to January, later than before. (2017) opened in later January.*

33. Have changes in winter weather and ice or lakes and river affected land animals in your traditional territory?

Three people agree it has affected animals. One person says the animals now use the road to travel. One person said the changes to the snow pack has made it easier for moose to travel.

42

The Climate Story

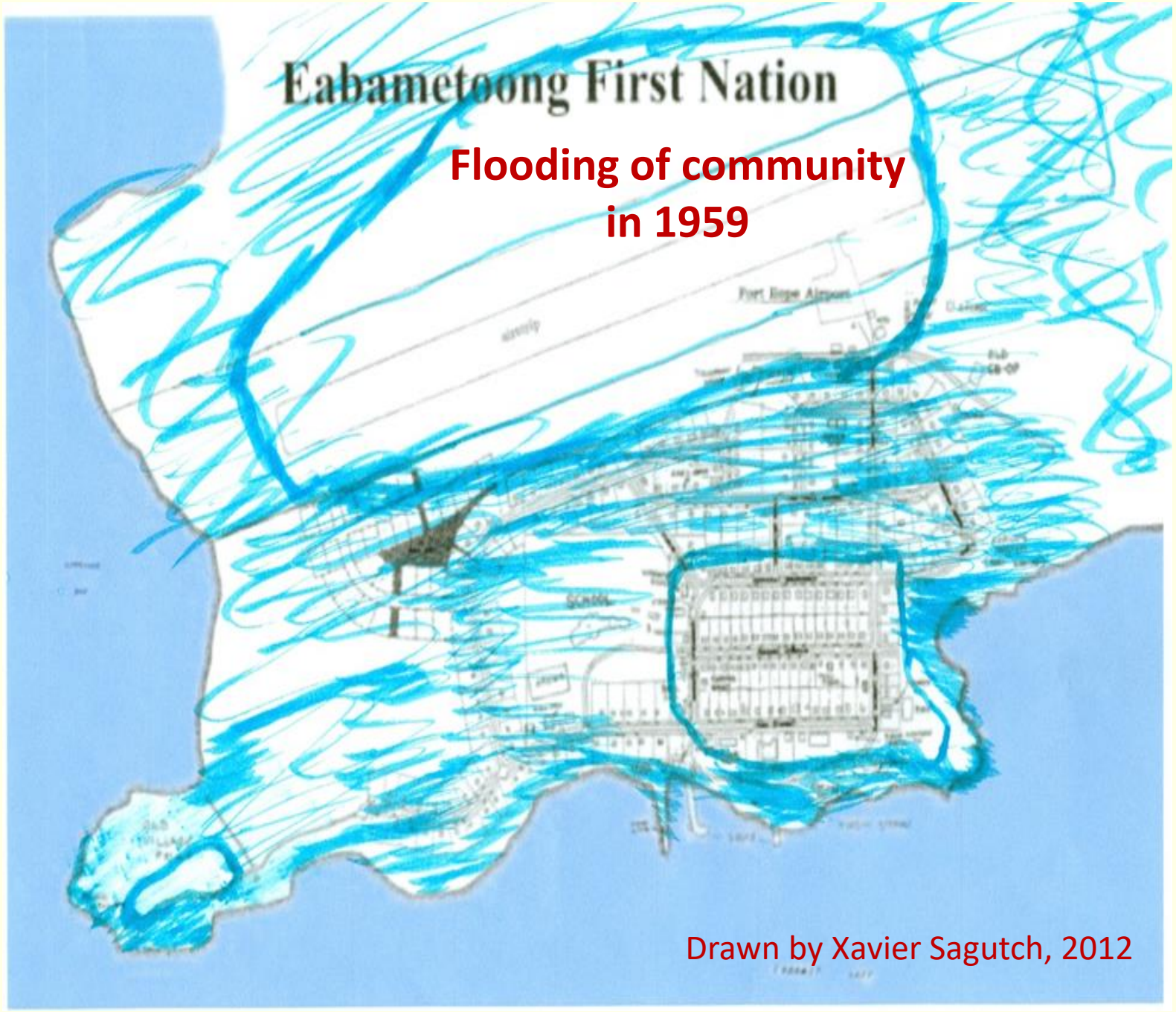
Funded by Ontario Min of Env through Min of Indigenous Relations and Reconciliation 2016 – 2018

Recall

Community members and Elders have excellent recall of events and observations such as this flood when Xavier Sagutch was a boy, 53 years before he sketched the map.

Stories and Sketches

Stories and sketches are the best ways to communicate.



Impact, Risk and Adaptation Planning Matrix with TK and western science

Community-based Climate Change Impact, Risk, and Adaptation Planning Matrix

Community: ...Attawapiskat..... (D.P. Nov 2017)

Vulnerability Indicators – land, life, infrastructure, health			Climate trends and projections to 2050		Risks and Adaptations			Priorities
TEK and Community Observations TEK	Weather Incidents Examples - flood; heavy snow; winter rain; freezing rain; heatwave; drought; fire	Technical information and follow up re observations and incidents	Examples - temp; rain; snow; freeze up; break up; seasonal weather patterns Western	Extreme Events Examples - rain, snow, heatwave, drought, wind Science	Before Adaptation Risk = Likelihood x Consequence High - Med - Low Risk	Adaption Options (for community discussion)	After Adaptation Risk = Likelihood x Consequence / Capacity to Adapt High - Med - Low Adaptation	Community Priorities Selected for action High - Med - Low
community knowledge Trees dying		One person mentioned trees dying from beavers. Other causes could include: Drought? Flooding? Bug infestation?			Difficult to say without knowing cause. Probably low.	-Monitor, determine cause. -Replant trees if necessary.		community decision
New woody plant growth in certain areas (of bush), in particular willows. Shading berry plants.		Warming climate? Drying muskeg? More disturbance in those areas?	Summer temperatures are expected to increase 1.5-3.5°C by the 2050s. Longer growing season.		**Low** Reduction in berries. Makes gathering berries more challenging. Potential benefit: more woody biomass for fuel or compost.	-Monitor vegetation changes. -Manage vegetation if necessary. -Harvest willows and trees for fuel or compost. -Identify new berry collecting locations. -Cultivate berry plants.	**Low** -Managing vegetation in certain areas may help. -Woody biomass could be a benefit. -If new berry patches can be found, or plants cultivated, risk is lower.	
New woody plant growth in certain areas (of bush), in particular willows pushing waterfowl away from 'normal' or 'expected' habitats.		Warming climate? Drying muskeg? Overgrazing of other vegetation from geese[1].	Summer temperatures are expected to increase 1.5-3.5°C by the 2050s. Longer growing season.		**Low** Reduced suitable waterfowl habitat, fewer waterfowl landing.	-Monitor -Travel to new hunting areas. -Manage vegetation if necessary. - Harvest willows and trees for fuel or compost. - Some habitat restoration may be required.	**Low** -If new hunting areas can be found, risk is lower. -Managing vegetation in certain areas may help. -Woody biomass could be a benefit.	

Ernie Thomas with a mammoth tooth he found upstream from Fort Severn

Cultural Respect

Wooly Mammoth cousins of the Asian Elephant may have migrated across Beringia from Asia to Alaska along with ancestors of Indigenous Peoples about 20,000 years ago when sea level was 120m lower during the Ice Age, adapting to extreme conditions as they travelled.

The Collaborating Team

PICCA Partnership for Indigenous Climate Change Adaptation

Up North on Climate at Laurentian University

UP NORTH ON CLIMATE

David
Lead

Chantal
Associate Lead

Kim
Research

Cassidy
Communication

Part time Climate Change Specialists from the Tribal Councils supported by the BRACE project

Mushkegowuk Council

Roxanne

KEEWAYTINOOK OKIMAKANAK

Dan

GRAND COUNCIL TREATY #3

Geneva

Nokiiwin TRIBAL COUNCIL

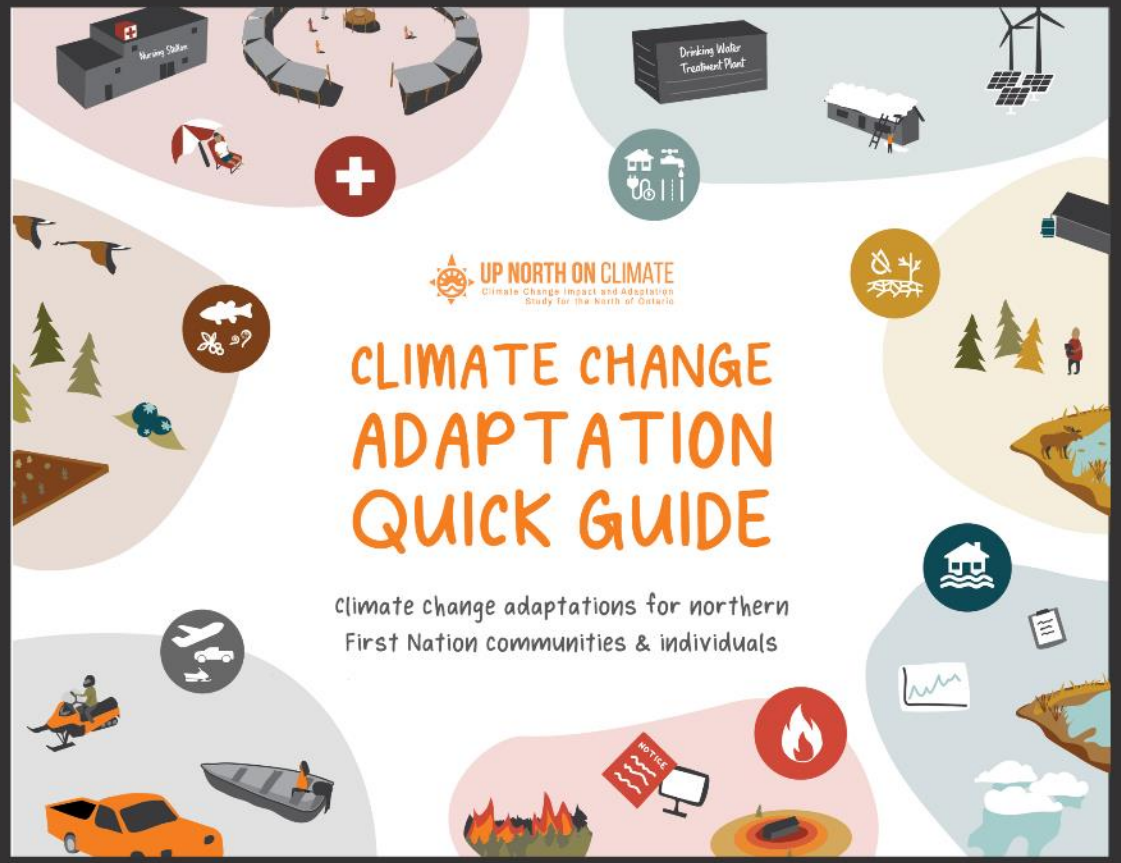
Meagan

Matawa First Nations Management

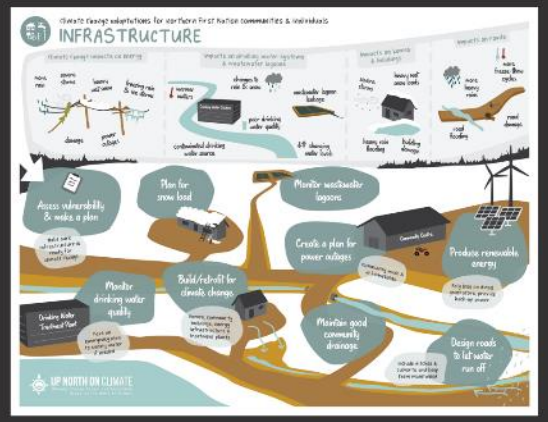
Amanda

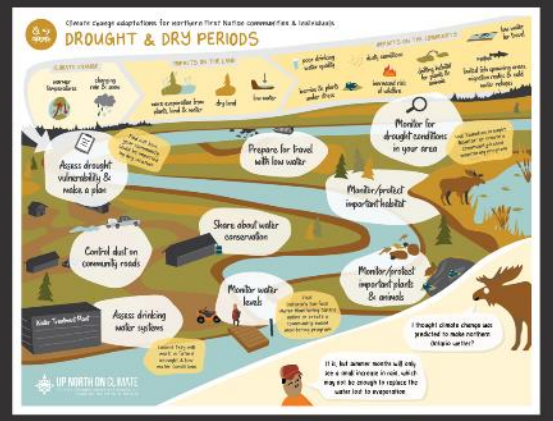
Shibogama First Nations Council

Vivian

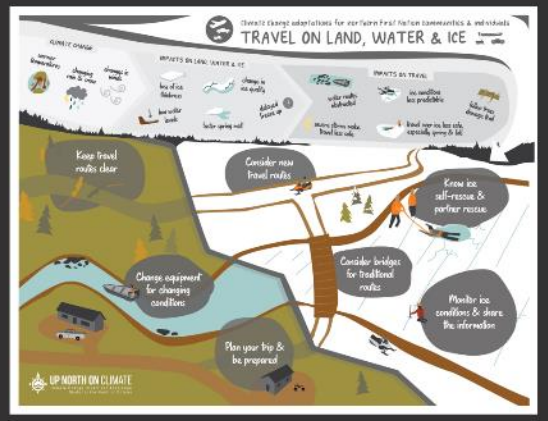

Nursing Station
Drinking Water Treatment Plant
UP NORTH ON CLIMATE
Climate Change Impact and Adaptation Study for the North of Ontario
CLIMATE CHANGE ADAPTATION QUICK GUIDE
Climate change adaptations for northern First Nation communities & individuals
NOTICE

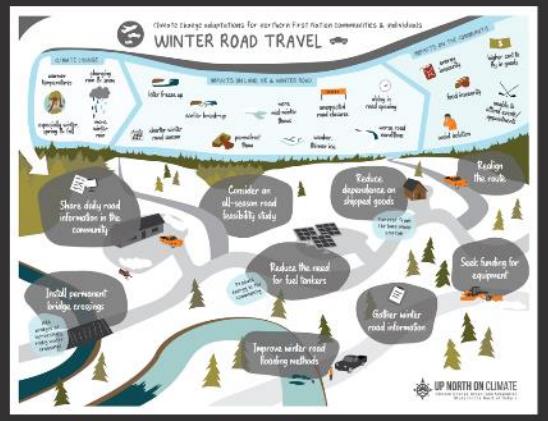
Climate change adaptations for northern First Nation communities & individuals
HEALTH
Get support from health services
Monitor air quality
Support cultural activities
Designate a refuge centre
Make a community plan for weather events
Monitor for ticks & mosquitoes and prevent bites
Protect yourself from sun & heat
Recognize & prevent mold growth in homes
Monitor for heat & heatwaves
UP NORTH ON CLIMATE


Climate change adaptations for northern First Nation communities & individuals
INFRASTRUCTURE
Assess vulnerability & make a plan
Plan for snow load
Monitor wastewater lagoons
Create a plan for power outages
Produce renewable energy
Monitor drinking water quality
Build/retrofit for climate change
Maintain good community drainage
Design roads to let water run off
UP NORTH ON CLIMATE

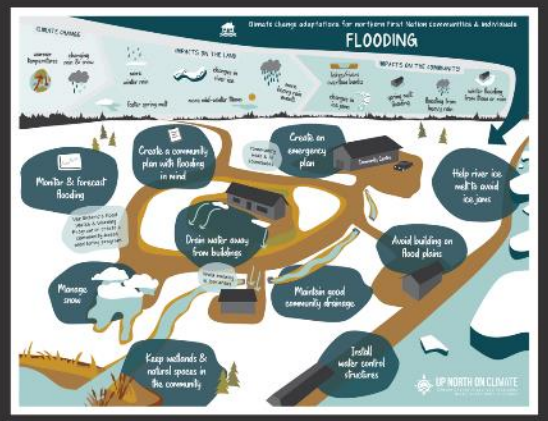

Climate change adaptations for northern First Nation communities & individuals
DROUGHT & DRY PERIODS
Monitor for drought conditions in your area
Assess drought vulnerability & make a plan
Prepare for travel with low water
Monitor/protect important habitat
Share about water conservation
Control dust on community roads
Monitor water levels
Monitor/protect important plants & animals
Assess drinking water systems
I thought climate change was predicted to make northern Ontario wetter?
Yes, but summer months will only see a small increase in rain, which may not be enough to replace the water lost to evaporation.
UP NORTH ON CLIMATE

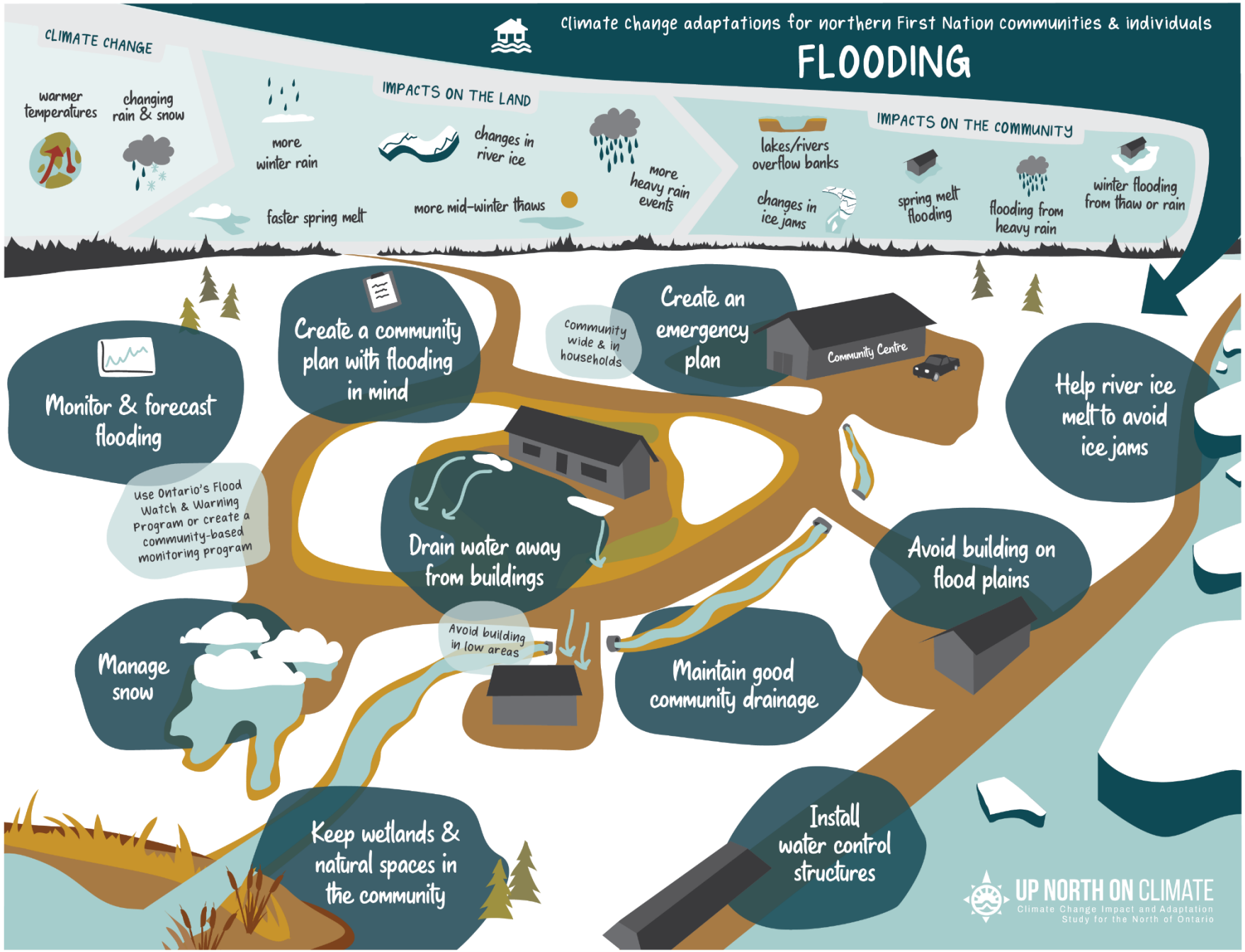
Climate change adaptations for northern First Nation communities & individuals
FOOD SECURITY
Adjust where, when & how you harvest
Assist plant migration
Monitor commonly harvested plants, animals & fish
Protect/restore important habitat
Share harvested food
Grow food in the community
Start a community food storage program
UP NORTH ON CLIMATE


Climate change adaptations for northern First Nation communities & individuals
TRAVEL ON LAND, WATER & ICE
Keep travel routes clear
Consider new travel routes
Know ice self-rescue & partner rescue
Consider bridges for traditional routes
Change equipment for changing conditions
Monitor ice conditions & share the information
Plan your trip & be prepared
UP NORTH ON CLIMATE


Climate change adaptations for northern First Nation communities & individuals
WINTER ROAD TRAVEL
Share daily road information in the community
Consider an all-season road feasibility study
Reduce dependence on shipped goods
Reroute the route
Reduce the road for fuel tankers
Seek funding for equipment
Install permanent bridge crossings
Gather winter road information
Improve winter road flooding methods
UP NORTH ON CLIMATE

Climate change adaptations for northern First Nation communities & individuals
WILDFIRE
Use fire resistant materials for homes & buildings
Monitor for smoke & air quality
Monitor for wildfire risk in your area
Monitor water quality after a fire in the area
Manage trees & plants in and around the community
Keep people informed with community alerts
Raise awareness about human-caused fires
Create an emergency plan
Become a FireSmart community
UP NORTH ON CLIMATE


Climate change adaptations for northern First Nation communities & individuals
FLOODING
Create a community plan with flooding in mind
Create an emergency plan
Monitor & forecast flooding
Help river ice melt to avoid ice jams
Drain water away from buildings
Avoid building on flood plains
Manage snow
Maintain good community drainage
Keep wetlands & natural spaces in the community
Install water control structures
UP NORTH ON CLIMATE


Climate change adaptations for northern First Nation communities & individuals
FLOODING
CLIMATE CHANGE
warmer temperatures
changing rain & snow
IMPACTS ON THE LAND
more winter rain
faster spring melt
changes in river ice
more mid-winter thaws
more heavy rain events
IMPACTS ON THE COMMUNITY
lakes/rivers overflow banks
changes in ice jams
spring melt flooding
flooding from heavy rain
winter flooding from thaw or rain
Monitor & forecast flooding
Use Ontario's Flood Watch & Warning Program or create a community-based monitoring program
Create a community plan with flooding in mind
Create an emergency plan
Community wide & in households
Community Centre
Help river ice melt to avoid ice jams
Drain water away from buildings
Avoid building on flood plains
Avoid building in low areas
Manage snow
Maintain good community drainage
Keep wetlands & natural spaces in the community
Install water control structures
UP NORTH ON CLIMATE
Climate Change Impact and Adaptation Study for the North of Ontario

FLOODING - ADAPTATION OPTIONS

Flood monitoring & forecasting

- Monitor your area for conditions that could lead to flooding. This could be things like:
  - heavy rains
  - rapid snow melt
  - high water in lakes/river
  - ice jams
- Some flood watch and warning programs already exist (like Ontario's Flood Watch and Warning Program) or communities may want to create their own.
- Flood forecasting models (made specifically for a community or area) look at what conditions have led to flooding in the past to try to predict what conditions will likely cause flooding in the future.

Water control structures

- Structures like dams, dikes and berms are sometimes used for flood control in areas where floods have happened before.
- Structures like ice booms are sometimes used to prevent ice jams from forming.

Wetlands & natural space

- Wetlands and natural forest spaces can help absorb water from rain and spring melt and provide natural flood protection.

Avoid building on flood plains

- A flood plain is an area of low-lying ground next to a lake or river. These areas are more likely to have flooding issues.
- Traditional knowledge about past floods and high water levels can give valuable information about which areas may be at risk of flooding.

Drain water away from buildings

- Keep water from entering homes and buildings with:
  - eavestroughs, drain pipes, weeping tile
  - trenches to direct water away
  - sloping the ground away from foundations
- Consider the slope of the land and how water will drain when choosing where to build homes/buildings.

Community drainage

- A good community drainage system (ditches, culverts, water storage areas, etc.) can help prevent flooding from heavy rain or during spring melt.
- Regular maintenance (clearing blockages, replacing damaged culverts, etc.) can help keep drainage systems working well.

Community planning

- Consider flooding in community planning, like when deciding where to build homes/buildings, where/how roads should be constructed, plans for drainage, etc.

Help river ice melt

- In areas where ice jams are common, weakening the ice to melt it faster can help prevent a jam or make it less severe.

Emergency planning

- Emergency planning can help keep people safe.
- Community emergency plans could include: evacuation plans, refuge centres, plans to protect infrastructure, etc.
- Households can prepare by: having emergency supplies, knowing what to pack for evacuations, knowing the community emergency plan, etc.

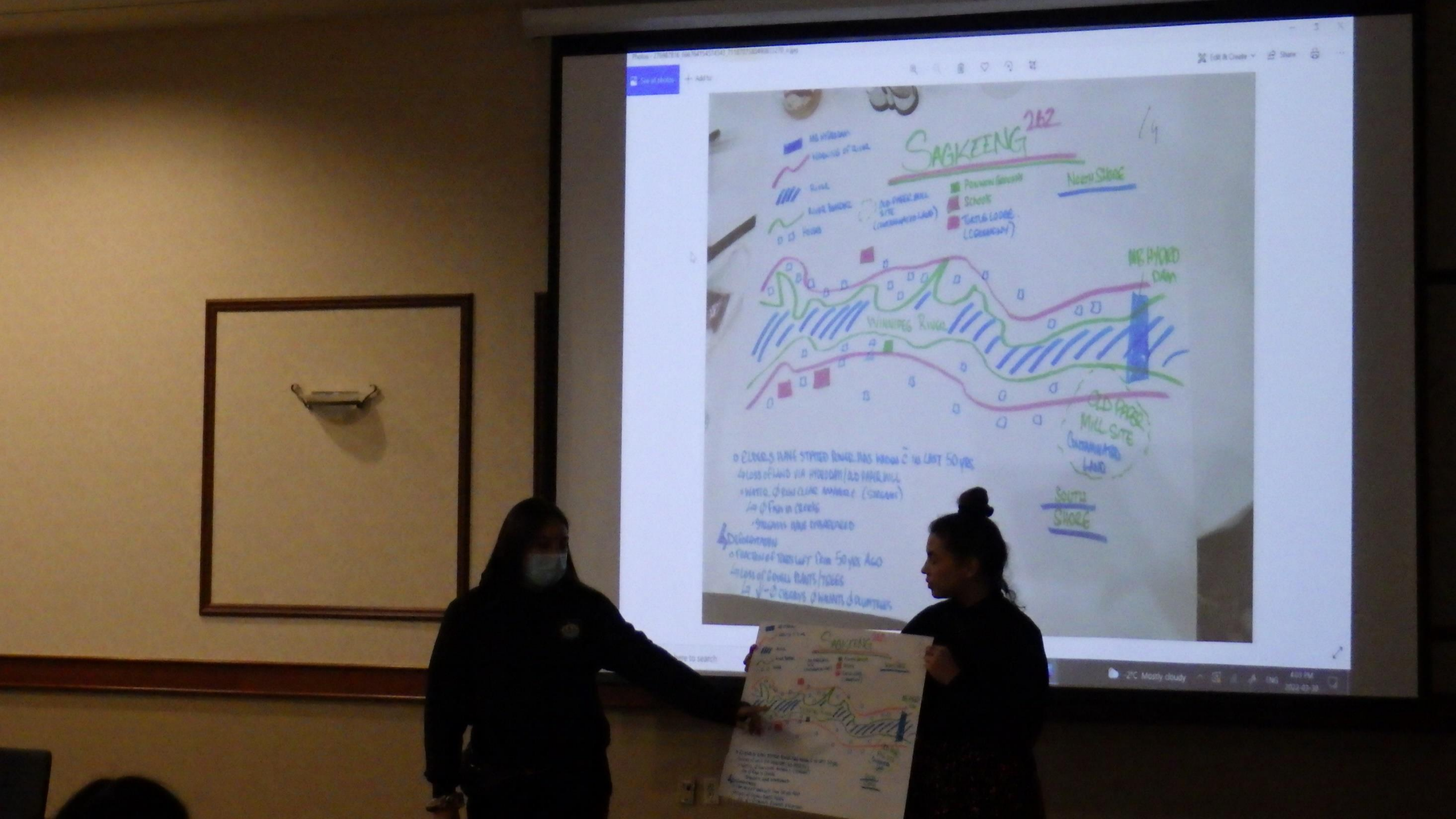
Manage snow

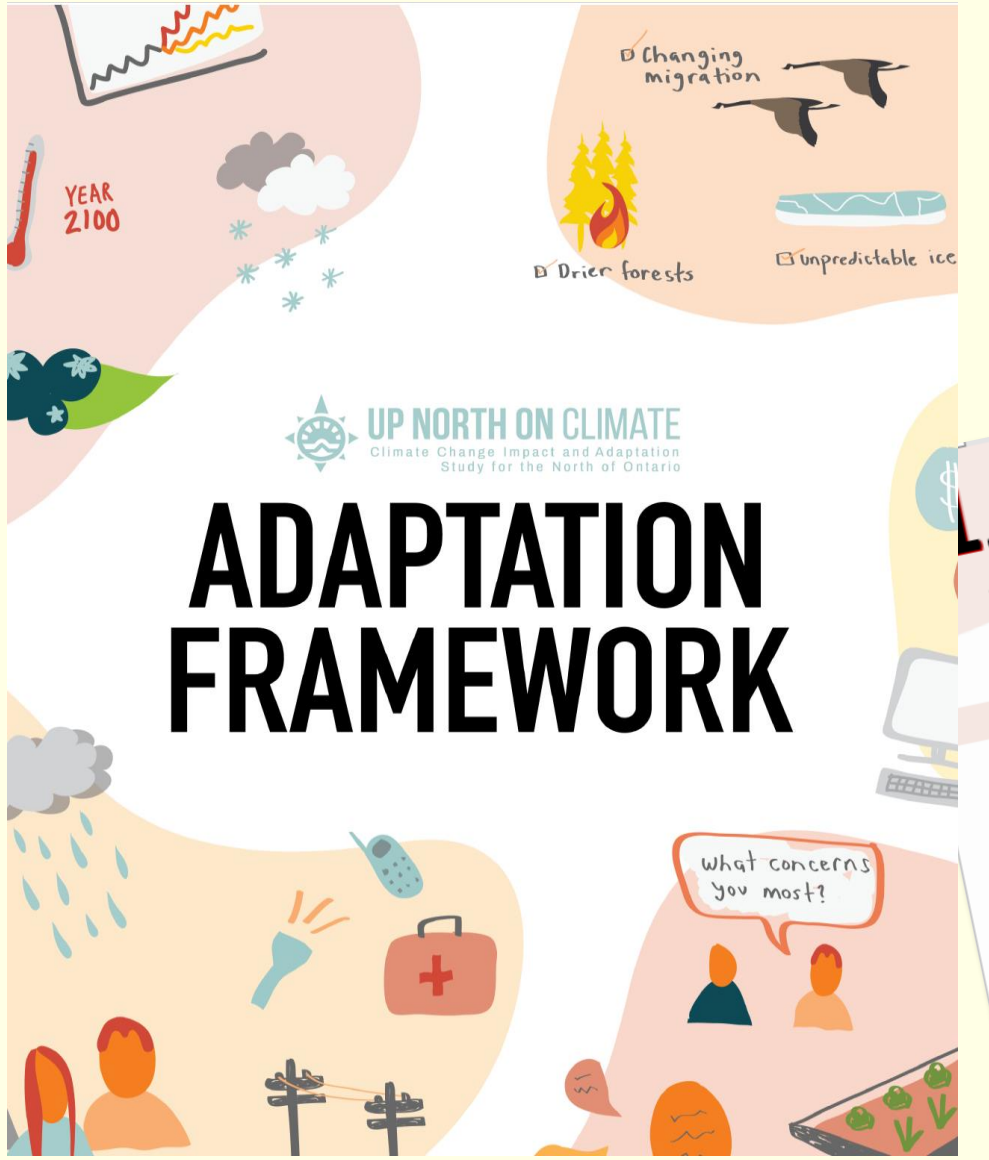
- Pile snow in a places where melt water can drain away safely from buildings and other infrastructure.

UP NORTH ON CLIMATE
Climate Change Impact and Adaptation Study for the North of Ontario
Laurentian University Université Laurentienne
www.upnorthonclimate.ca

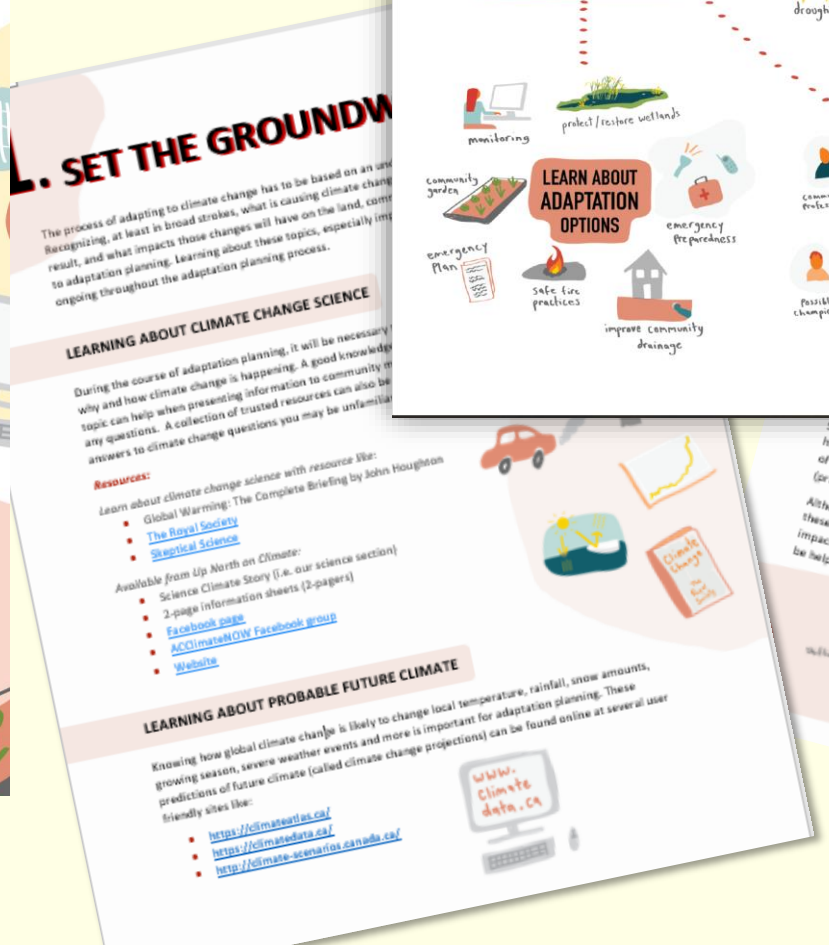
*Adaptations vary in scale (small to large), focus (individual to community) & cost (low to high). Find what works for you and your community.

Unit of Grand Council Treaty #3
SAGKEENG 262
NORTH SHORE
WE HAVE DAM
WINNIPEG RIVER
OLD PAPER MILL SITE
SOUTH SHORE


SAGKEENG
NORTH SHORE
SOUTH SHORE
WINNIPEG RIVER
OLD PAPER MILL SITE


YEAR 2100
Changing migration
Drier forests
Unpredictable ice
UP NORTH ON CLIMATE
Climate Change Impact and Adaptation Study for the North of Ontario
ADAPTATION FRAMEWORK
what concerns you most?

LEARN ABOUT CLIMATE CHANGE SCIENCE
LEARN ABOUT FUTURE CLIMATE PROJECTIONS FOR YOUR REGION
www.climatedata.ca
YEAR 2050
YEAR 2100
1. SET THE GROUNDWORK
LEARN ABOUT CLIMATE CHANGE IMPACTS FOR YOUR REGION
wildfire
food Security
transportation
+ health
drought
shifting ecosystems
infrastructure
flooding
monitoring
protect/restore wetlands
community leadership
community gardens
LEARN ABOUT ADAPTATION OPTIONS
emergency preparedness
community professionals
community groups ie. hunter/trapper association
BEGIN TO MAKE CONNECTIONS IN THE COMMUNITIES
emergency plan
safe fire practices
improve community drainage
possible champion(s)
community members
elders
contacts you have in the community


1. SET THE GROUNDW
The process of adapting to climate change has to be based on an un
Recognizing, at least in broad strokes, what is causing climate chang
result, and what impacts those changes will have on the land, comm
to adaptation planning. Learning about these topics, especially imp
ongoing throughout the adaptation planning process.
LEARNING ABOUT CLIMATE CHANGE SCIENCE
During the course of adaptation planning, it will be necessary
why and how climate change is happening. A good knowledge
topic can help when presenting information to community m
any questions. A collection of trusted resources can also be
answers to climate change questions you may be unfamiliar
Resources:
Learn about climate change science with resource like:
Global Warming: The Complete Briefing by John Houghton
The Royal Society
Skeptical Science
Available from Up North on Climate:
Science Climate Story (i.e. our science section)
2-page information sheets (2-pagers)
Facebook page
ACClimateNOW Facebook group
Website
LEARNING ABOUT PROBABLE FUTURE CLIMATE
Knowing how global climate change is likely to change local temperature, rainfall, snow amounts,
growing season, severe weather events and more is important for adaptation planning. These
predictions of future climate (called climate change projections) can be found online at several user
friendly sites like:
https://climateatlas.ca/
https://climatedata.ca/
http://climate-scenarios.canada.ca/
www.climatedata.ca

CLIMATE PROJECTIONS
Predicting the future climate depends on understanding many complex processes happening in the atmosphere, in oceans and on land, then being able to program those processes into a computer model of the climate.
It is important to recognize that projections of future climate may vary from model to model because they are based on slightly different understanding of the atmosphere. Most projections, therefore, are based on the average of many models.
YEAR 2100
2050
WITH THE IMPACTS OF CLIMATE CHANGE
Start to become familiar with what climate change means for people and communities in the north and how it has and will impact the land and resources they rely on. For example, what exactly are the results of having warmer winters? What happens when seasonal amounts of rainfall and snowfall (precipitation) change?
Although the specifics of how a community is being affected may vary from place to place (gathering these specific observations are the focus of step 2), building a knowledge base for climate change impacts in the broader area (like northeastern Ontario or northwestern Ontario, or along the coast) will be helpful as well all move forward.
shifting ecosystems
flooding
+ health
infrastructure
drought
transportation
food Security

PICCA
Partnership for Indigenous Climate Change Adaptation

PICCA GEO HUB
for Northern Ontario First Nations

Ojibway Oji-Cree Cree English

Our Home Our Climate

Search Course Word Guide

Start Here | Climate | Drought | Flooding | Food Security | Health | Infrastructure | Ecosystems | Transportation | Wildfire | Do it Yourself | Contribute | Kids Corner

This Storymap will allow you explore the impacts of changing wildfires and offer some adaptation ideas. Maps, photos, videos and graphics, help show the importance of wildfire in the North, how they are changing and why, and what the future of wildfires might look like.

You can also go directly to the resources found in the Storymap by clicking on the images below.

WILDFIRE

AFN Climate Gathering, Fredericton, Sept. 2022

facebook.com/groups/ACClimateNOW/permalink/5436449493138584/

Roxanne Metlin, BRACE Climate Change Specialist, GIS Officer, Mushkegowuk Information Services

Roxanne Metlin shared a **post**.
April 11 at 12:29 PM ·

Town of Moosonee - Emergency Updates
April 11 at 9:48 AM ·

Moose River Flood Warning is Now In effect.
Be Prepared - ensure that your family is ready to move quickly if required - keep identification, medications, and ... **See More**

Group by Up North On Climate

ACClimateNOW - Northern Ontario Adaptation Knowledge Network

Private group · **65 members**

facebook.com/groups/ACClimateNOW/permalink/543644949313858

Group by Up North On Climate

ACClimateNOW - Northern Ontario Adaptation Knowledge Network

Private group · **65 members**

About | Discussion | Guides | Rooms | Topics | Members | Events | M

Up North On Climate uploaded a file.
Admin · 12 September at 09:29 ·

When the Colorado Resiliency Framework was first presented in 2015, it followed in the wake of historic wildfires and floods that impacted much of the state. This 2020 update builds on that work and presents a plan towards resiliency that includes recognizing the need to adapt to a changing climate, identifying risks such as drought, wildfire, floods, and winter storms, setting resiliency priorities, and outlining a plan for action.

The Colorado Resiliency Framework "purposefully link[s] resiliency to regenerative recovery, climate action, and building a more equitable future to advance this vision."

Find the illustrated, reader-friendly report attached below!

PDF
Colorado Resiliency Framework_Electronic.pdf · version 1

Who we are

National charitable organization based in Canmore, Alberta, Canada

Mission – climate resilient futures and reduce risk to disasters

Distributed org with small core team + subject matter experts as needed; nimble; responsive

Transdisciplinary – we develop partnerships with local and Indigenous communities, academia, government and other charities on initiatives thatunite multi-generations in learning and sharing

Inspire transformative change at systems level by encouraging Indigenous values are woven into projects, policy and research

Co-develop activities that unite multi-generations in learning and sharing

Build local capacity for climate adaptation by creating in-community - jobs and skills

TRI
THE RESILIENCE INSTITUTE

Our BRACE Story

Invited by the Alberta Government to partner. Project was an integral component of the Government of Alberta's Indigenous Climate Change Observation Network (ICCON) designed to enable Indigenous communities to track and respond to multiple impacts of climate change.

Started off by asking – what expertise is missing from climate adaptation – both in Indigenous communities and in adaptation approaches in general?

Agreed that Indigenous communities would benefit from increasing their climate adaptation capabilities but that climate adaptation discourse in Canada would benefit from Indigenous ways of knowing.

We also agreed that taking a thematic approach to the project would help create a workable parameter and hopefully inspire participation on a specific climate risk.

But what theme?

Based on our collaborations with First Nations across Alberta we knew that wildland fire was a common threat. Fire destroys and rejuvenates and the human relationship with fire is very different across cultures and epistemologies.

Thus – *Fire with Fire* became our BRACE project with four First Nations across Alberta.

- Dene Tha' First Nation
- The Kainai First Nation (Blood Tribe)
- Samson Cree First Nation
- Piikani First Nation

FIRE WITH FIRE

Goals

Deepen understanding of the risks of changing fire regimes in the context of climate change

New insights and innovative practices for enhanced local, regional and provincial climate change resilience informed by Indigenous ways of knowing

Build capacity for adaptation monitoring in communities through learning participatory video methods

Participatory Video (PV) – proven tool for communities to document and share knowledge of climate change to inform local, regional and international climate change adaptation efforts and policy.

Community members were trained in PV as a tool to help capture their traditional views and strategies for wildland fire.

Outcomes were communicated through video creations, presentations in-community, public webinars, and online through a StoryMap. During the process the communities also developed ethical guidelines for collaboration and knowledge sharing.

Participant’s Perspective

Alvin First Rider BSc, A.A.S Environmental Technician, Blood Tribe Land Management Environmental Protection Division

Thematic Approaches - *examples*

In the adaptation cycle these build awareness, gather knowledge, community Engagement

Stories of Resilience

fire and ice

Knowledge strengthening and gathering exercises combined with thematic participatory activities can help "ready" communities for the implementation of adaptation strategies.

Stories of Resilience

Thematic learning that brings art and intellect together.

What are the attributes that make people and communities "resilient"?

The news cycle seems inundated with unprecedented disasters and challenges to the human condition and natural world we share. What about the stories that inspire personal and collective agency, that exemplify health and wellness, "can do" attitudes?

Outcomes showcase inspiring stories and strategies of personal resilience, and land / community recovery after slow and acute onset events (showing natural landscape and human adaptation).

An engagement and learning tool that can be used as a stand-alone or alongside other activities; with any community, sector, or industry audience

Highly flexible to ensure it is relevant to the region, community, or sector

Sub-themes can be many: community resilience, wildfire, flood, drought, mountains, underrepresented voices, Indigenous values, agriculture, food security….

A program, but also a concept – a process – can be sub-branded

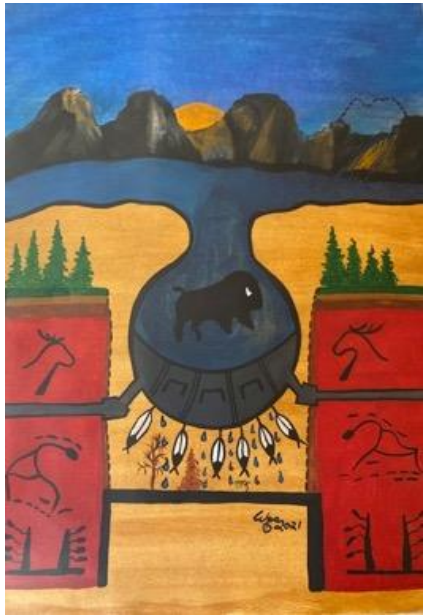
Piikani Stories of Resilience

How can Piikani adapt with the changes impacting the Environment? This question has been asked for generations, from ancestors to our elders, and community members today.

I had a great opportunity this last summer working as a summer student on my Piikani reserve to help on a climate change project…We did interviews with community members like elders, educators, and youth, gathering old to new knowledge of climate change.

This opportunity was so rewarding in the fact that I was able to connect with my community members, but also connect spiritually with the environment. Learning knowledge that connected me back to who I am as a Niitsitapi, and what my grandma taught me as a child.

Miranda Big Bull



Painting inspired by Miranda's story, by First Nation Artist, *Wesley Harry*

This painting echoes Miranda's many concerns about environmental change in Piikani territory. The mountains at the top reference mining. Below the mountains, a two-shaded lake shows contaminated water flowing downstream toward the Piikani community. The pictographs in red show animals impacted by industry and climate change. These symbols also reference Piikani stories of past days when the region was thriving with animals and plants.

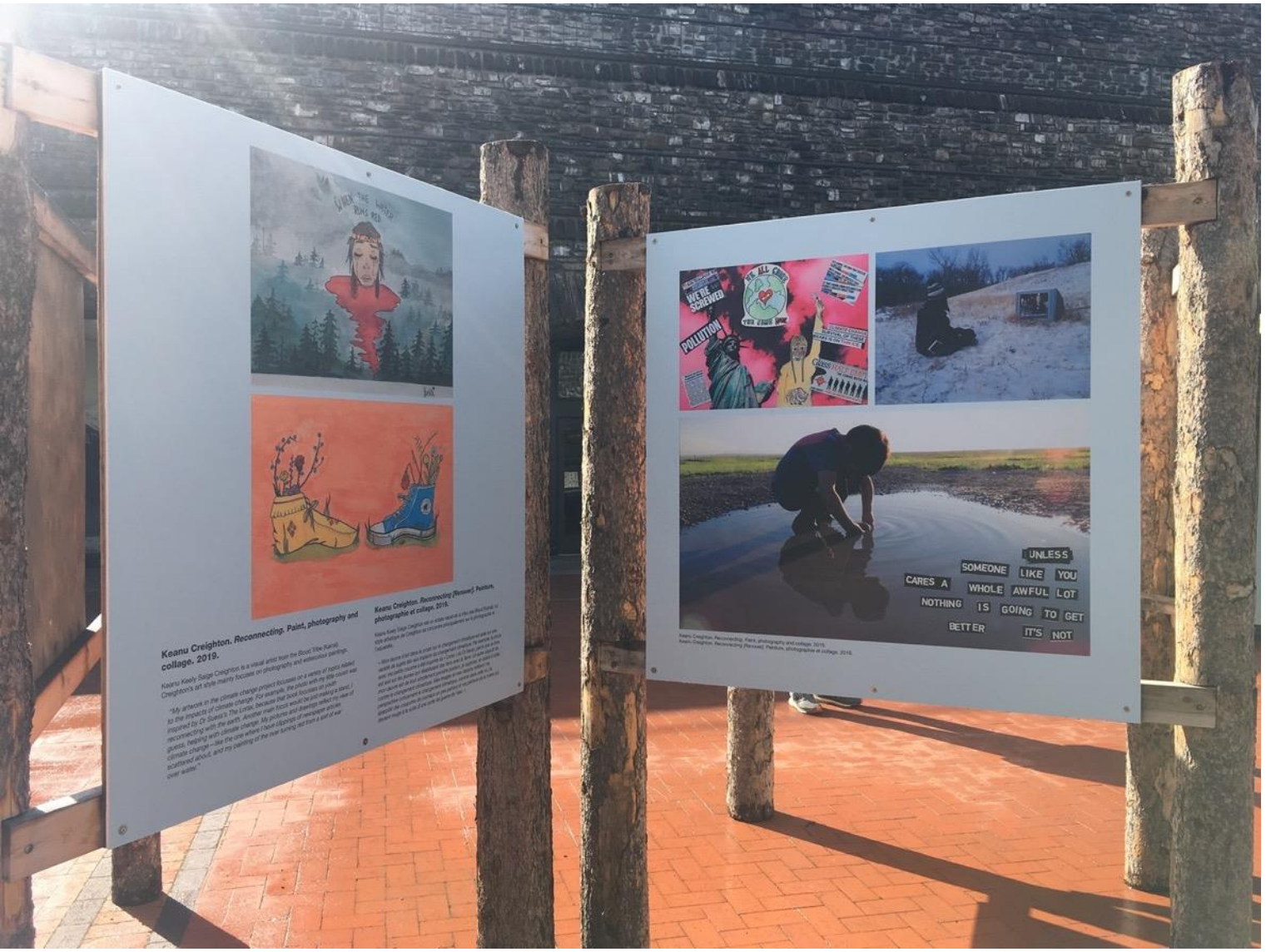
Bison and Climate Change – Region of Wood Buffalo

Erica Cree, youth project coordinator

Alongside local youth in our community, I had the honor to conduct interviews with Elders from Willow Lake Métis Nation, as well as the neighboring #468 Fort McMurray First Nation for the Stories of Resilience – Bison & Climate Change initiative.

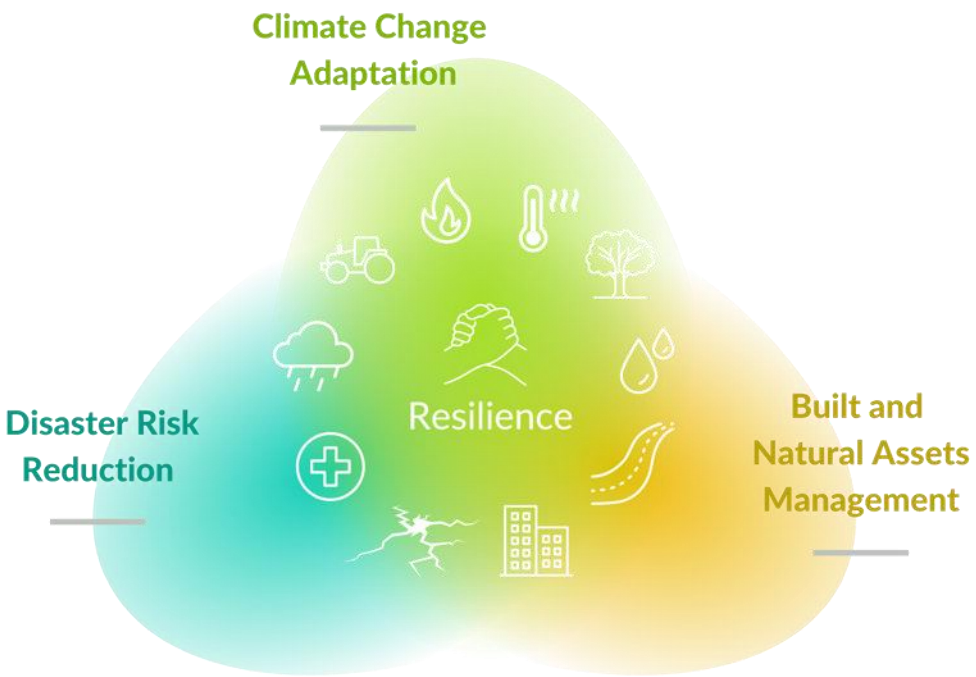
The interviews were an inspiration and have had a significant impact on my life. Sitting down, listening, and learning from people who have experienced a lot in their lives has been the greatest reward. Seeing the smiles on their faces when they are deep into thought and seeing their eyes fill up with joy from remembering the 'old days' is something I will always remember.

Laughing with them about stories of when they were younger was the best medicine.



Kainai Youth Artists, 2018

On the Horizon



Conducting several whole-community climate change vulnerability risk assessments with an eye on emerging good-practices in weaving knowledge systems and establishing community-relevant processes

Partnering on a few projects with Up North on Climate including exploring how we might help scale up and out the Partnership for Indigenous Climate Change Action (PICCA)

National Partnership with the Canadian Red Cross at the intersection of Climate Adaptation & Disaster Risk Reduction

Piikani Stories of Resilience will be featured in a new exhibition for the next two years at the Cave and Basin National Historic Site in Banff National Park

With deep gratitude to our partners in Natural Resources Canada's BRACE program and the Alberta's Indigenous Climate Change Observation Network (ICCON)

Contacts

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elliot@resilienceinstitute.ca Indigenous community liaison

THE RESILIENCE INSTITUTE

resilienceinstitute.ca TRIinitiative resilienceinstitutecanada

Prairie Climate Centre
From Risk to Resilience

MANITOBA CLIMATE RESILIENCE TRAINING

THE UNIVERSITY OF WINNIPEG

Weaving Indigenous Knowledges

An overview of the Indigenous Knowledges and Two-Eyed Seeing courses delivered through the Manitoba Climate Resilience Training Program

Prairie Climate Centre

The Prairie Climate Centre acknowledges that we are gathered here today in Treaty 1 Territory, within the traditional territories of the Anishinaabe, (Cree), Oji-Cree, Dakota, and Dene peoples, and in the homeland of the Métis Nation. In Winnipeg our water comes from Shoal lake within Treaty 3 territory. Electrical power is generated on rivers and lakes in Treaty Areas 1, 3 and 5.

THE UNIVERSITY OF WINNIPEG

Prairie Climate Centre
From Risk to Resilience

Prairie Climate Centre

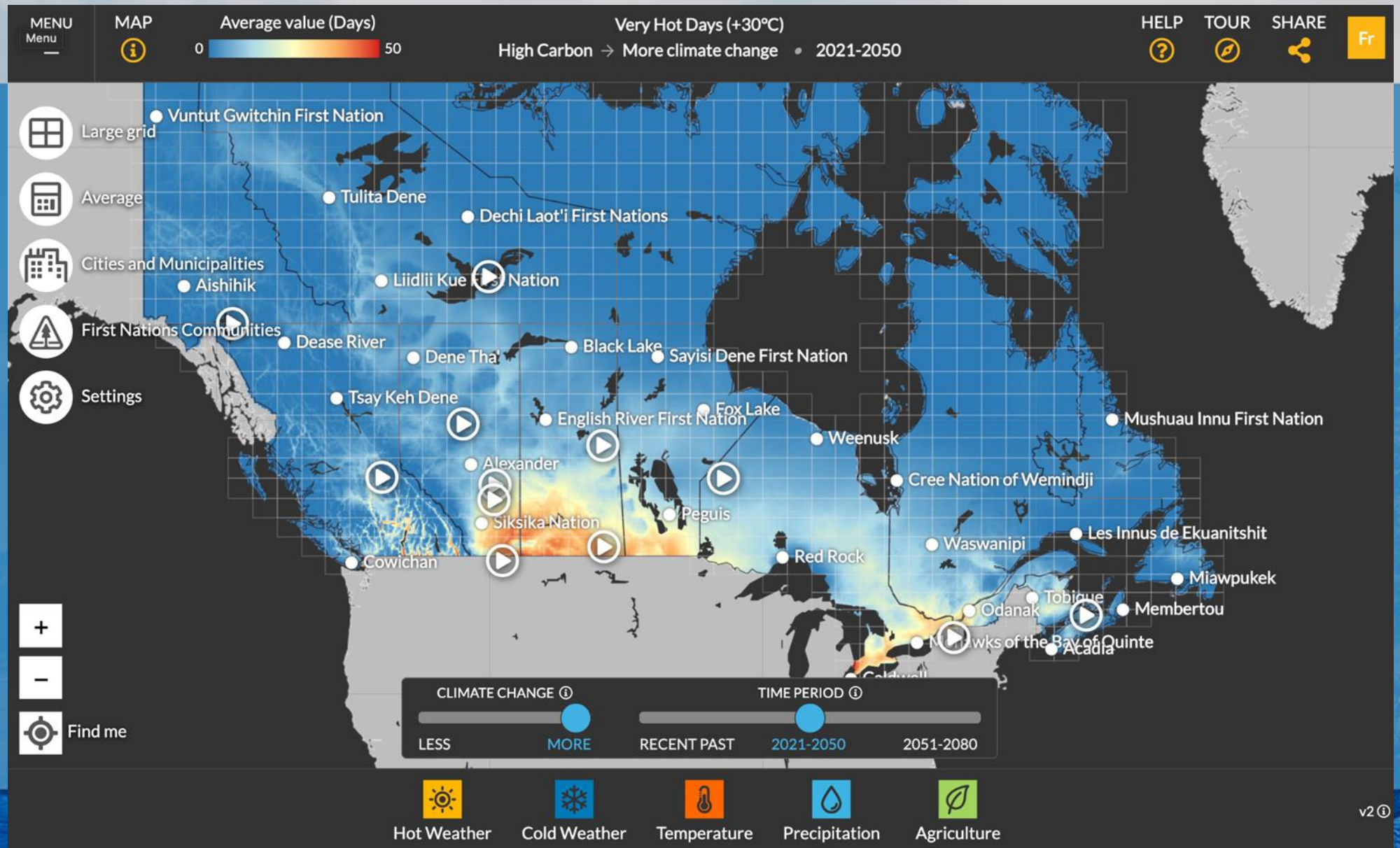
The Prairie Climate Centre is committed to making climate change meaningful and relevant. We bring an evidence-based perspective to communicating the science, impacts, and risks of climate change through maps, documentary video, research reports, and plain-language training, writing, and outreach.

The PCC team is made up of climate scientists, social science researchers, filmmakers, and community based researchers. Our transdisciplinary, community-based approach connects western climate science with diverse knowledges, human stories grounded in local experience on the landscape.

THE UNIVERSITY OF WINNIPEG

Prairie Climate Centre
From Risk to Resilience

Climate Atlas of Canada



Coordination

ICLEI Local Governments for Sustainability

Manitoba

Planning

Prairie Climate Centre
From Risk to Resilience

Northern Business

DILLON CONSULTING

Infrastructure

ENGINEERS GEOSCIENTISTS MANITOBA

Indigenous

Prairie Climate Centre
From Risk to Resilience

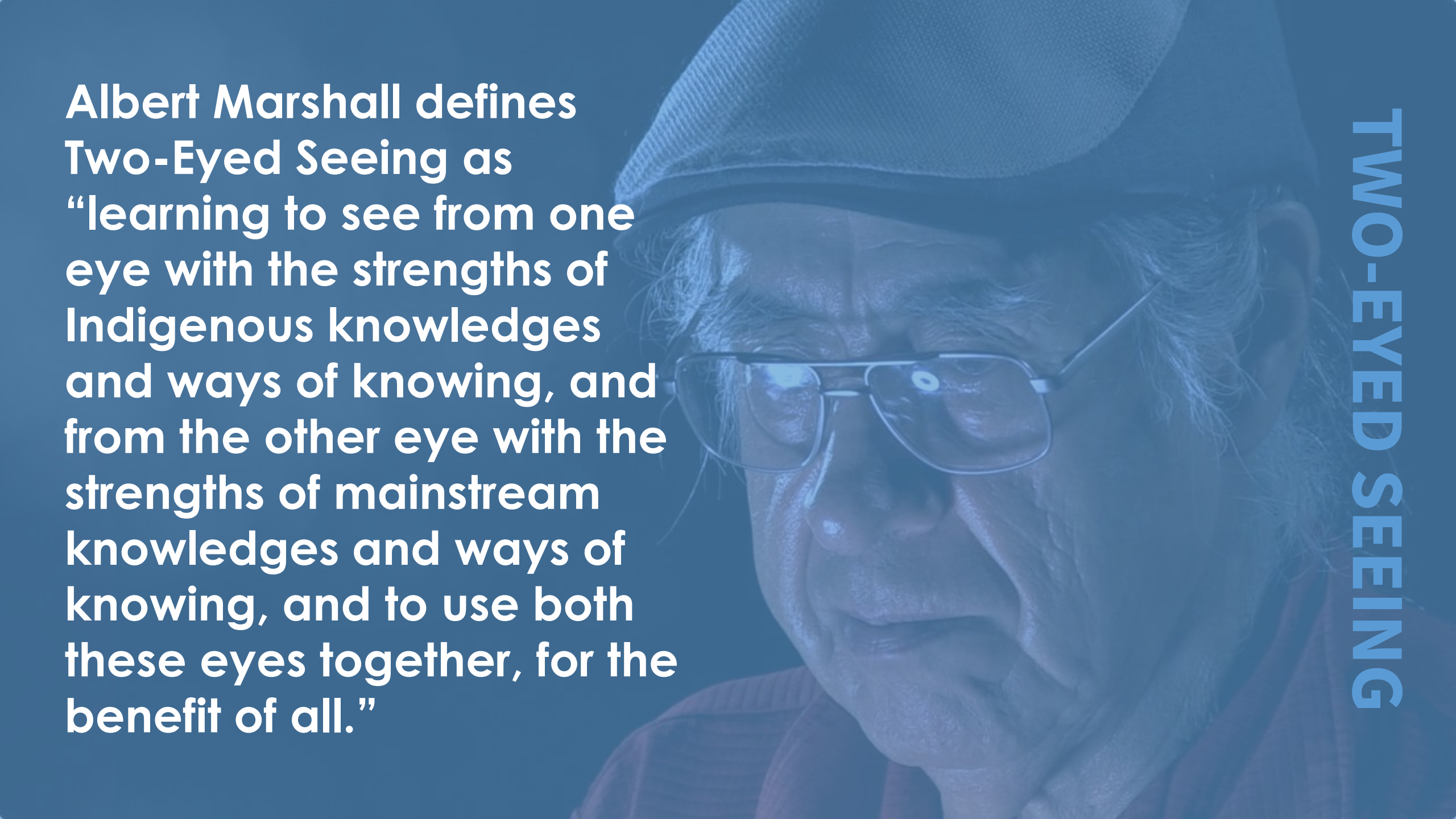
- 18 Courses offered publically
  - Foundational Courses
  - Sector-Based Courses
  - Recordings and content still available on the ClimateWest Website

MANITOBA CLIMATE RESILIENCE TRAINING

Content Development Phase

THE UNIVERSITY OF WINNIPEG

Prairie Climate Centre
From Risk to Resilience



Albert Marshall defines Two-Eyed Seeing as "learning to see from one eye with the strengths of Indigenous knowledges and ways of knowing, and from the other eye with the strengths of mainstream knowledges and ways of knowing, and to use both these eyes together, for the benefit of all."

TWO-EYED SEEING

Climate Change, Indigenous Solutions and the Future

Prairie Climate Centre

presents

A panel discussion that will explore indigenous climate adaptation solutions, the future of adaptation planning, and how we create meaningful and cooperative relationships with Indigenous communities. Join us!

Feb 24th, 2022
1PM CT

MANITOBA CLIMATE RESILIENCE TRAINING

Climate Change & Indigenous Communities

December 8th, 2021
1PM CT

An examination of climate risks and impacts on indigenous communities as well as a discussion around how climate change is defined across cultures.

Prairie Climate Centre

Indigenous Mapping and Climate Change:

Using the Climate Atlas to Evaluate and Understand Climate Risks

January 20th, 2022
1PM CST

Indigenous mapping, climate change, and how to evaluate and understand climate risks facing Indigenous communities.

Prairie Climate Centre

Indigenous Knowledges & Two-eyed Seeing

November 10th, 2021
1PM CST/3PM AST

An in-depth conversation with Elder Albert Marshall, about connecting Indigenous knowledges and western science to address climate change.

Prairie Climate Centre

GAPS/CHALLENGES

Indigenous knowledges were viewed primarily as “primitive” hunting and fishing knowledges.

A lot of projects across the country are working to connect indigenous knowledges into the mainstream, but they’re mostly one-off.

Indigenous communities are severely underfunded and lack resources, this leaves little room to plan as they’re in survival mode.

SOLUTIONS/SUCCESS

Our modules focused on work with indigenous knowledge keepers and sharing their perspectives.

We developed dialogue around methods of engagement to create meaningful reciprocal relationships between western and indigneous science.

The knowledge keepers and experts came from all walks of life and they also provided a narrative of hope in a time of crisis.

TAKEAWAYS

- Non-indigenous organizations and communities benefit from the modules as much as indigenous communities do.
- Bridging the gap between western and indigneous science will require more inclusive and meaningful connections
- Hope needs to be an underlying message throughout any work related to adaptation and resilience.

ENGAGEMENT AND CONNECTION

Participants had a great experience listening to the elders. Social media played a large part in connecting with an audience. The project allowed us to connect other organizations and institutions currently working toward similar goals. It has also been instrumental in youth and elder connections.

Thank you!

Prairie Climate Centre

From Risk to Resilience

If you want to reach out:
c.allen@uwinnipeg.ca

Questions?

RESOURCES

Up North On Climate
https://www.upnorthonclimate.ca/

The Resilience Institute- Building Regional Capacity for Climate Adaptation
https://storymaps.arcgis.com/stories/f6e2117319d141cd9f8f7e0d905c13f6

ClimateWest- MCRT
https://climatewest.ca/mcrt-indigenous-modules/

Building Regional Adaptation and Expertise (BRACE) Program
nrcan.gc.ca/climate-change-adapting-impacts-and-reducing-emissions/building-regional-adaptation-capacity-and-expertise-program/21324

Canada in a Changing Climate: Advancing our Knowledge for Action
https://changingclimate.ca/

Thank you!

Fill out a short **evaluation form** for today's webinar

https://www.surveymonkey.com/r/BRACE7

Learn more about the ***Building Adaptation Skills for a Changing Climate*** **Webinar Series**

climateriskinstitute.ca/2022/06/20/coming-soon-brace-webinar-series/

Explore past Adaptation Platform webinars

climateriskinstitute.ca/platform-webinars/

Merci!

Remplir un court **formulaire d'évaluation** pour le webinaire d'aujourd'hui

https://www.surveymonkey.com/r/BRACE7

En savoir plus sur la **série de webinaires** ***Renforcer des compétences en matière d'adaptation aux changements climatiques***

climateriskinstitute.ca/2022/06/20/coming-soon-brace-webinar-series/

Explorez les webinaires précédents de la plate-forme d'adaptation

climateriskinstitute.ca/platform-webinars/

For questions, please email / Pour toute question, veuillez envoyer un courriel à : nrcan.adaptation.rncan@Canada.ca