How-to...
trackingchange

Local and Traditional Knowledge in Watershed Governance

Some Ideas on Methods for Community-Based Research on Social-Ecological Change in the Mackenzie River Basin

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SUMMARY

Tracking Change: Local and Traditional Knowledge in Watershed Governance is a six year research program funded by the Social Sciences and Humanities Research Council and led by the University of Alberta, Mackenzie River Basin Board, the Government of the Northwest Territories in collaboration with many other valued Aboriginal organization partners and universities. The broad goal of the project is to create opportunities to collaboratively document and share local and traditional knowledge (LTK) about social-ecological change in the Mackenzie River Basin, Lower Mekong and Lower Amazon Basins and determine its' role in watershed governance. In 2016-17, the project aims to address the following themes and priorities: [1]

Themes and Priorities for Tracking Change… Sub-Projects in 2016-2017

- ✓ historical and contemporary observations and perceptions of conditions and change in the health of the **aquatic environment** (e.g., water quality, quantity, flow, groundwater, permafrost conditions);
- ✓ historical and contemporary observations and perceptions of conditions and change in **fish species** (population, movements, diversity, invasive species) and other **aquatic species** (e.g., geese, beaver);
- ✓ sustainability of **fishing livelihoods** (e.g., harvesting levels and practices, diet, health, access issues, perceptions of change in the health of valued fish species);
- ✓ implications of change for **governance** (e.g., how maintain healthy relationships to the aquatic ecosystem, maintaining respectful and spiritual relationships, respecting treaty rights);

[1] *These priorities were recommended in a workshop with the NWT Water Stewardship Strategy Aboriginal Steering Committee and the Mackenzie River Basin Board Traditional Knowledge Steering Committee (Feb. 10, 2016). Additional input was solicited for the research priorities from Aboriginal organization partners and other members of the Project Team by email in October 2015.*

Oral Histories about Social and Ecological Change

Oral Histories are an important aspect of the knowledge held by Indigenous communities about the Mackenzie River Basin. Elders and active harvesters are experts about environmental changes; their past experiences, observations and perceptions represent the only "data" exists about the regions, places and resources that matter most to communities. The Aboriginal organizations that met together for a ***Tracking Change***… meeting in February, suggested that knowledge about historical patterns in water quality, flow, water levels and other aspects of aquatic ecosystem health across the basin. There was also a lot of concern about the health of fish populations valued for harvesting; what can we learn from elders and fishers about the fish species that people value? How are changes in the health, distribution, diversity and abundance of fish affecting the livelihoods, economies, health and culture of communities in the Mackenzie River Basin? Your community and the elders and harvesters you are working with will have their own ideas about what to tell you about different issues the importance of different places and how their lives changed as a result of those changes. For some starting with broad questions such as *"tell me about this place and how it is important to you, how has it changed in your lifetime (or before you were born" is a good starting point. These general questions can help understand the big picture story of both social and environmental issues in your regions. Only asking general questions however, can sometimes lead to overly general information or may be too broad for a very short interview by someone who knows the elder well. IF you are looking for some specific questions about the issues that were identified by all the Aboriginal partner organizations*

Example questions:

- *How did you and your family used to travel on the Mackenzie River? What travel routes were most important? Have you noticed any changes in the areas of the river system where people can travel? What kinds of changes have you observed? Are there some areas that have changed a lot? Do you know any stories about these places from grandparents or others from very olden times? What were these areas like in the 1930s, 1940s, 1950s… etc. the past five years?*
- *What are your earliest memories of where, when and how people used to fish in this region?*
- *Why were these important areas for fishing? (Can these be identified on a map)? Why were these places important to you/your family/your community?*
  For example, are there fish camps that you can identify that used to be important or are still used today?
- *Do you remember these fishing locations changing seasonally, from year to year or over time? If people have stopped fishing in some areas, why did people stop fishing in these areas? What do these changes mean for people (i.e., food, wellbeing, way of life, passing of knowledge, etc.)? How did people cope with the changes going on in these areas? How should these areas be cared for in the future?*

On the Land Research

A lot of knowledge about both social and ecological change is place-specific. Elders and active harvesters have specific knowledge about places that matter to them including areas around traditional fish camps, travel routes, spiritual sites, sites for healing and more. There is also knowledge that is place-related because of hazards or problems (e.g., an area affected by mining, a permafrost slump, an abandoned mine etc.). There are different ways to document stories about places. One of the most valuable and meaningful approaches is to be able to visit the sites or places that are most important. Elders and active land users are more likely to remember details about what happened in those places historically when they are physically there; it also creates an opportunity to document different kinds of insights about contemporary changes. Dovetailing the research activity with a fish camp, youth educational canoe trip or hunting trip, creates opportunities for the research to affirm traditional or cultural practices that matter to the community, rather than creating a social activity that has no local meaning or is culturally disconnected. However, finding an appropriate balance is needed between doing no research or too much research during gatherings.

Video Interviews on Site about Peoples' Observations and Experiences

Part of the reason that people want to visit a site or talk about a "place" is to communicate why it is important to them or how it has changed in their lifetimes or in recent years. Doing interviews on site with a video camera will create a video/audio record of the elder's story but will also create opportunities to document the ecological condition of the area. For example, elders who are interviewed near a fishing camp that cannot be accessed due to river bank erosion will be able to make their point more clearly if they are near the river bank. Elders talking about how a portage is now in accessible due to lower water levels will be able to detail on camera exactly where the water levels used to be in earlier years.

- *Why is this place important? What does this place mean to you/your family/your community? What do you like about this place? How does this place make you feel?*
- *Have you noticed any changes in this place since the last time you were here? What kinds of changes have you observed? Do you remember what this area was like in the 1930s, 1940s, 1950s… etc. the past five years? What did people use this place for? How do the changes to this place make you feel? How have people coped with the changes in this place?*

Taking Photos of Key Areas

Photos of particular sites are also useful because they enable people to compare photos later from years to year or from site to site. For example,

Participatory photography is also a great way to get youth involved in research activities, and can help to document the importance of places, key aspects of the social-cultural environment and historical and contemporary understandings of changes in your area of the Mackenzie River Basin. There are many approaches to participatory photography, and it is a great

approach to document and engage youth voices, experiences and perceptions of key issues in a visual way.

One of the easiest ways is to work with students to identify core questions or themes they want to address and then have them document photos that they feel address those questions or themes. The sky is the limit and there are many ways to showcase a theme using photos and imagery. There are no right or wrong ways for youth to document their lived experiences. They can take photos once in one location, or many times over the course of the project. They can document many places that are important to them, or compose photos that they feel capture the essence of a particular theme.

Once they have their photos, they can share their experiences in a sharing circle, compose text (i.e., prose or poetry) to accompany their image to explain what it is capturing, or share their photos with their peers and document their reactions or their experiences related to the photos. Sharing of photos and/or text can help to bring out overarching themes and common experiences of young people. They can also share the photos with Elders and other members of their communities to elicit additional experiences or perspectives, or use to stimulate dialogue on other aspects of a research project. Photos can also be shared in an interactive community exhibit where members of the community can contribute.

Example questions/themes:

- Why is your community/this place important to you?
- What does it mean to be from this community/place?
- What changes have you seen in your community/this place? What do these changes mean to you or your community? What can you/your community do about these changes?

Youth-Elder Gatherings/Knowledge Exchange

Throughout the development of *Tracking Change…* and other projects, the importance of youth involvement and youth learning from their Elders was identified as a top priority for many partners. Youth-Elder gatherings and opportunities for knowledge exchange is one way to do this. The stories and discussion can be documented as part of a research project and can be used to facilitate further activities down the road that meet community objectives.

Elders can share stories about places in key locations, why those places are important and if those places have changed over time. Youth can prepare questions about places, fishing, culture, livelihoods, etc., in advance to ask their Elders while on the land.
Elders can also show youth how they notice change or how

Assessing and Testing Fish

Elders and land users have been assessing fish since time immemorial. It is important to assess the fish to make sure it is healthy to eat. Elders and land users have signs they look for to know if the fish is healthy, including looking at the texture and appearance of flesh, checking the livers and looking for parasites. Documenting fish health assessments can be done on the land while fishing, and can be recorded by hand, photo or video. Such an assessment can also help to document key information about the importance of fish and fishing livelihoods for communities, changes in fish health and population over time and ecological condition. The outcomes of the fish health assessment can be used for long-term monitoring by youth and others in the community (i.e., creating a fish log sheet or video guide).

Measurement and Water Levels

There are many ways that water levels can be tested. One short hand way of determining where water levels have changed in different parts of the Mackenzie is to ask people about areas where they know the water levels are lower? Where are the water levels are higher or the same? These sites might have short-hand signals that the water levels have changed (e.g. a high water mark line on the river bank or embankment). Portages that used to be commonly used that are now too long (e.g., was 500 m. but is now 1.5. km.) are another ways of learning about changes in water levels but depending on the area these changes in portages may also mean an sedimentation over time (e.g., in the delta areas). Asking elders for other kinds of indicator (signs/signals) that the water levels are the same, lower, or higher can help understanding how water levels and flows have changes over time. In areas affected by hydro development (e.g., on the Peace River), asking elders to talk about the seasonal ups and downs of water levels and natural flood patterns that were important before the dam was built and what water level and flood dynamics are like today,

Once this historical baseline is created, you may want to develop a plan for how to test water levels in different areas on a regular basis. Use a depth meter in a boat (e.g., a fishing depth metre from Canadian Tire), can help add numerical values to some of the qualitative observations that have been made. These areas can be visited regularly (seasonally at the same time) each year to get depth metre readings. Taking these readings in areas that people are concerned are unsafe or have become inaccessible for subsistence travel or fishing, can help you develop data around the impacts of changing water levels on treaty rights.

Measurement of Water Quality

Documenting water quality can help us understand what places were like historically and how they have changed. People who are out on the land have different signs that they look for to tell if water quality is healthy. Documenting these signs can help with long-term monitoring, as well as understanding the importance of water for animals, people, plants and fish.

Place Names Research

Place names tell us about the history and political significance of an area, they often relay cultural information and can also be useful indicators of ecological change. For many communities the documentation of place names is an important act of sovereignty – putting place names on public maps for example, serve to remind others that the land is home to Indigenous communities.

Documenting place names can also be fun and a social experience. One valuable way to get started is to purchase 1:250 000 or 1:50 000 scale maps sheets (laminated) of the areas that you will focus your research efforts. Have a look around your offices for previous reports that might already including some of the old place names. Contact researchers who you think may have been involved in documenting place names for your community through previous projects. For those communities who aim to record the names in their own Indigenous language, finding a translator with the capacity to write in Dene, Cree, or Gwich'in, is a very important starting point. While detailed place names research can involve one-to-one interviews with elders, a good way to start is to call an elders' meeting and explain the reasons why you think documenting place names is important, and what you hope to do with the outcomes of your research project. With the help of the translator, this meeting might get the ball rolling and elders will begin talking to one another and the translators about the names of particular places. This kind of group effort is also the most comfortable way for elders to start this kind of research; they often depend on one another to verify the names they remember and to stimulate their memory! A series of place names workshops as well as a series of follow up interviews may be necessary to ensure that you have all of the details correct. Be careful to record any information on the maps correctly using, lines, dots, or other shapes (we use permanent sharpie markers on laminated maps which don't smudge but wipe off with *Comet* or Windex if you really try).

- Have you written down all of the names <u>correctly</u> according the translator (use a separate sheet of paper)?
- Is the information written on the maps correct?
- Have you been able to resolve any differences of memory or opinion about particular places?
- Do you have the meaning or story associated with a particular place name documented (e.g., audio-recorded?)
- Have you developed a plan for how to store the maps or archive the information you have collected? Are there opportunities to work together with other offices or universities to digitize the information (transfer into a computer database or mapping system)?

Documenting the Social, Economic and Cultural Importance and Change in Harvesting

Harvesting of freshwater fish in the Mackenzie River Basin is a Treaty right or protected under land claim agreements in almost every region. The sustainability of fish harvesting is also very important to the health of families and communities since fish and other traditional foods are much healthier (and less expensive) than foods from the store. Not everyone nowadays is fishing however, so understanding why can be useful (e.g., because there are barriers to accessing traditional fishing areas). Fishing is sometimes done by only a few people in town who can share their harvest. Learning more about the sharing networks can tell you a lot about how many people still benefit from the harvest of fish, even though they don't fish themselves. Information about harvesting can also tell you a lot about what is going on in the environment. If people are catching very few of the species that used to be very important to their community's diet, more research might be needed about that population and whether it is in decline. If people no longer want to fish because of concerns about the health of the fish in a particular area, is that because there is an environmental stressor (E.g., a resource development project that has disturbed the lake or the river)? If the time of year when people fish or areas they catch fish are changing, this might signal a stress such as warming temperatures (or lower water levels which lead to warmer water). If people are catching different fish today than they did historically, perhaps there are invasive species appearing (e.g., salmon).

There are many kinds of detailed harvest study questions you can develop. There are for example, well developed harvest studies in the Inuvialuit, Gwich'in and Sahtu regions that provide examples of the kinds of detailed questions you might ask. These studies can be very time consuming and expensive. Coming up with a few questions that everyone agrees upon specific just to fish, for example, can give us an idea of whether people are interested in doing more or more detailed harvest studies in the future.

Example questions:

- *Was fishing an important part of the community's economy in the past? Is it still important today? Were there time historically when people only ate fish (for example, because there were fewer caribou or fewer moose to harvest?)*
- *Did men and women have the same roles in fishing?*
- *What types of fish do you harvest nowadays? (Location, Time/year)?*
- *Are people catching fewer, more same of each species as in the last 2 years, 5 years, 10 years etc.?*
- *Is it more / less difficult to fish in these areas than in the past? Why?*
- *How much of the harvest of each species do you share outside your immediate family? (some, none, all)?*
- *If you don't fish, do you receive fish from other people in your community? How often?*
- *How many meals/week do you eat fish that has been caught from the region?*
    - *In the spring, In the summer, In the fall, In the winter*

- *How concerned are you about the health of the fish you are catching? (very concerned, somewhat concerned, not concerned, don't know)? Why?*
- *Are there areas or aspect of fish harvesting that should be protected or better managed?*

Identifying Indicators of Social, Ecological and Change for Monitoring Changes in Fish Health, Water Quality and Water Quantity?

There are many different kinds of indicators that might be developed for monitoring. Many detailed indicators are site specific are developed from stories that were told about specific places on the landscape that are important. Places that are ecologically and socio-economically important to the community for cultural or spiritual reasons, for fishing or related kinds of harvesting activities are also likely to be very important ecologically. Identifying indicators can be done through a process of individual storytelling about what is healthy? What is not healthy? What has changed? What has not changed? What are the signs and signals of change? Asking people about extreme ends of change is also a useful way of determining the range of natural variability is just as important (or more important) than asking people what has changed recently.

Place-Based Indicators

1.Why is this place important to your family and community?
2. Can you describe the reasons why you value this area or describe when, how, and why you visit this area?
3. If people no longer visit this area, what are the reasons why people no longer visit this area? Why?

Indicators

1. Where and when can people find the cleanest drinking water in your area? When and where would you never drink the water in this area? Can you tell me what you see/taste/smell that would tell you the drinking water is are good or not good?
2. When/when would you find the healthiest fish in this area? Are there places where people never fish now people the fish are considered unhealthy? Can you tell me what you see/taste/smell that would tell you the fish are healthy/unhealthy?
3. When and where would you find good places to travel on the river? If these places have changed in recent years, can you tell me why you think that these area are no longer good for travel? What do you see/experience that tell you these areas are safe/unsafe or easy / not easy for travel?
4. When and where are the water levels changing? Are there areas where the water levels are much lower than they were in the past (5, 10, 20 years)? Are there areas where water levels stayed the same?

Other kinds of questions around geese migrations, water flows, moose habitat, might be asked in the same way…

Caution about asking leading Questions

Sometimes the kinds of questions, we ask are leading or push (bias) the person being interviewed to tell you something that they might not otherwise have considered important or true. Sometime questions also impact or increase peoples' fears about a particular issue.If a student asks a question such a "***What kinds of impacts has climate change had on food security?***" we would say this is a leading question. It assumes that the interviewee is experiencing climate change effects and these are impacting food security. Based on this question, "people in the Mackenzie river basin are observing and experiencing climate change" because the student hasn't given the interviewee a chance to say something about their specific experiences or observations around temperature, water levels, the health of fish, harvesting patterns. Asking questions that leave out assumptions (value judgments) about the meaning of change, creates more opportunities to learn from the people being interviewed. For example, asking people questions such as "What areas are important for fishing? Why? Are you still fishing in these same areas? Why? Why not? will create more space for the interviewee to talk about their own observations and experiences. After all the interviews are done, and you read through the transcripts (and perhaps share with other communities), we an start to piece together what exactly is occurring in the environment and how that is affecting people's lives in different areas. It is only at that point of doing analysis and reporting that concepts such as climate change or food security *might* be introduced as a way of explaining the patterns people are seeing and experiencing.

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