

## Fishing Livelihoods: Harvest and Perceptions of Change Fish Health

Are community members able to fish for food and share fish within the community and region?  
How has harvest and the quality and quantity of fish harvested changed in the community over time?  
How should harvesting of fish be protected for future generations?  
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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: <sup>1</sup>

#### 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);

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<sup>1</sup> 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.

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.

### **General Interview 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?*
- *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?*

**Are community members able to fish for food and share fish within the community and region?**

**How has harvest and the quality and quantity of fish harvested changed in the community over time?**

1. How many people live in your household? \_\_\_\_\_
2. Is there a member of your household that regularly fishes in Great Bear Lake and Mackenzie river?
  - € Yes
  - € No
3. How many times do you set a net during the fall/winter?
  - € More than 10 times
  - € Between 5-9 times
  - € Between 1-4 times
  - € I didn't set a net
4. How many times do you set a net during the spring/summer?
  - € More than 10 times
  - € Between 5-9 times
  - € Between 1-4 times
  - € I didn't set a net
5. When you set a net, are you harvesting more or less fish now than in the last 5 years?
  - € A lot more
  - € Somewhat more
  - € The same
  - € Somewhat less
  - € A lot less
6. When you set a net, are you harvesting more or less fish now than in the last 10 years?
  - € A lot more
  - € Somewhat more
  - € The same
  - € Somewhat less
  - € A lot less
7. When you set a net, are you harvesting more or less fish now than in the last 25 years?
  - € A lot more
  - € Somewhat more

- € The same
- € Somewhat less
- € A lot less

8. How much of your harvest do you share with your family?

- € All
- € A lot
- € Some
- € None

9. How often would you share your fish catch with other families in the community?

- € always
- € sometimes
- € from time to time
- € hardly ever
- € never

10. How much of your fish goes to feeding dogs?

- € A lot
- € Some
- € None

### **Diet**

11. How many meals of fish do you usually eat in the spring/summer?

- € More than 10
- € Between 5-9
- € Between 1-4
- € None

12. How many meals of fish per week do you usually eat in fall/winter?

- € More than 10
- € Between 5-9
- € Between 1-4
- € None

13. How much of your fish do you get from Great Bear Lake?

- € A lot
- € Some
- € None

14. How much fish do you eat from other lakes and rivers other than Great Bear Lake including the Mackenzie River?

- € A lot
- € Some
- € None

15. Which fish are most important to your family as food?

- Lake Whitefish \_\_\_\_\_
- Jackfish \_\_\_\_\_
- Lake Trout \_\_\_\_\_
- Arctic Char \_\_\_\_\_
- Arctic Grayling \_\_\_\_\_
- Inconnu \_\_\_\_\_
- Coney \_\_\_\_\_
- Other (please list) \_\_\_\_\_

16. How often do you trade or sell fish in the community?

- € Never
- € From time to time
- € Often
- € Always

If so, indicate which species do you most commonly trade or sell?

- Lake Whitefish \_\_\_\_\_
- Jackfish \_\_\_\_\_
- Lake Trout \_\_\_\_\_
- Arctic Char \_\_\_\_\_
- Arctic Grayling \_\_\_\_\_
- Inconnu \_\_\_\_\_
- Coney \_\_\_\_\_
- Other (please list) \_\_\_\_\_

17. How has your diet of fish changed since:

- a) Last year
  - € I eat more fish now than I did last year
  - € I eat the same amount of fish as I did last year
  - € I eat less fish that I did last year
- b) 5 years ago
  - € I eat more fish now than I did 5 years ago
  - € I eat the same amount of fish as I did 5 years ago
  - € I eat less fish that I did 5 years ago
- c) 10 years ago
  - € I eat more fish now than I did 10 years ago
  - € I eat the same amount of fish as I did 10 years ago
  - € I eat less fish that I did 10 years ago

18. How often did you receive fish from another household in the last month?

- € Once
- € 2-4 times
- € 5-7 times
- € 8-10 times

19. How often do you receive fish from family living outside your community?

- € always
- € sometimes
- € from time to time
- € hardly ever
- € never

20. Have you paid for fish in the last year?

- € Yes
- € No

21. How often in the last 3 months have you wanted fish and could not get it?

- € Never
- € Once
- € 2-3 times
- € 4-5 times

22. Did you harvest enough fish to meet your needs this past year?

- € No
- € Yes

### **Risk Perception**

1. In the last 5-10 years, do you think the environment has changed in ways that are more or less normal for this region?

- N
- € There are more changes that I do not recognize as normal
  - € The environment is more or less the same
  - € There are less changes than I recognize as normal

2. In the last 5-10 years, do you think there have been more or less unexpected weather events?

- € There are more unexpected weather events that I do not recognize as normal
- € The weather is the same
- € There are fewer unexpected weather events

3. Do you think the summers over the last 5 years have been cooler or warmer than in previous years?

- € The summers are warmer than in previous years
- € The summers are more or less the same as in previous years
- € The summers are cooler than in previous years

4. Do you think the winters over the last 5 years have been warmer or cooler than in previous years?

- € The winters are warmer than in previous years
- € The winters are more or less the same as in previous years
- € The winters are cooler than in previous years

Pick one of the following that best describes your feelings about the environment here?

- a) The environment is not healthy so I do not eat any wildlife, fish or plants;
- b) The environment is pretty healthy but I am uncertain about whether I should eat the wildlife, fish and plants;
- c) The environment is pretty healthy and I feel good about spending time on the land, harvesting and eating

wildlife, fish and plants from certain places;

d) The environment is healthy and I feel good about spending time on the land, harvesting and eating the wildlife, fish and plants from anywhere;

23. Which kinds of knowledges is most helpful to your understanding of what is happening to the environment? Pick 3 from the list below or provide another.

- a) Knowledge from my own experiences and observations
- b) Elders knowledge (Traditional Knowledge)
- c) Knowledge from other people in our community including resource people and staff working for our leaders;
- d) Knowledge from the provincial and federal government
- e) Knowledge from industry and their staff, resource people
- f) Knowledge from organizations or individuals outside our community
- g) Knowledge from the media (television, newspapers, radios)
- h) Other \_\_\_\_\_

24. What information is least useful? (Pick 1-3)

- a) Knowledge from my own experiences and observations
- b) Elders knowledge (Traditional Knowledge)
- c) Knowledge from other people in our community including resource people and staff working for our leaders;
- d) Knowledge from the provincial and federal government
- e) Knowledge from industry and their staff, resource people
- f) Knowledge from organizations or individuals outside our community
- g) Knowledge from the media (television, newspapers, radios)
- h) Other \_\_\_\_\_

25. With that in mind, pick one of the following:

- a) I don't feel there is enough information being shared with our community;
- b) There is some information being shared with our community but it is not useful;
- c) There is some information being shared with our community and it is somewhat or very useful;
- d) I feel there is too much information being shared with our community;

26. Choose one of the following statements that best represents your feelings towards the present environmental conditions:

- a) I don't worry about the environment because I think the land is being taken care of by the Creator and will repair itself;
- b) I don't worry about the environment as there is nothing that can be done about climate change and its effects
- c) I worry somewhat about what is happening to the environment; there are a lot of other people working to control climate change impacts so I don't really get involved;
- d) I worry somewhat about what is happening to the environment but feel I can control or cope with what is happening and the impact on my life and my family's life;
- e) I worry all the time about what is happening to the environment but don't know what to do;
- f) I worry all the time about the environment but think that getting involved will be a waste of time;
- g) I worry all the time about the environment and spend a lot of my time participating in activities I think will help address the problems

27. Are you employed?

- € Yes - Full time
- € Yes - Part time
- € Yes - Casual
- € Yes – Seasonal
- € No – Not employed
- € Other

28. Is there another member in your household who is employed?

- € Yes - Full time
- € Yes - Part time
- € Yes - Casual
- € Yes – Seasonal
- € No

€ Other \_\_\_\_\_

Age: \_\_\_\_\_

Gender

Male \_\_\_\_\_ Female \_\_\_\_\_ Other \_\_\_\_\_

Name (if consent has been provided)

Last Name \_\_\_\_\_

First Name \_\_\_\_\_

Middle Initial \_\_\_\_\_