ENHANCING COMMUNITY-BASED AQUATIC MONITORING: MARCH 2010 WORKSHOP

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Chief Drygeese Government Centre, Dettah

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Taking Northern Science to the Streets

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INTRODUCTION

Workshop Goal

Build a foundation of mutual trust, understanding and communication on which to build better aquatic resource monitoring programs that make the best use of government expertise and community-based knowledge.

Workshop Objectives

1. Review aquatic resource impacts in the NWT
2. Review aquatic monitoring tools and methods
3. Identify programs supporting community-based aquatic monitoring
4. Identify opportunities to improve collaboration
5. Identify ways to implement community-based monitoring objectives.

Participants

Key government and community partners involved in aquatic resource monitoring in the southern NWT including:

- Akaitcho Territory Government
- Dehcho First Nation
- Environment Canada
- Fisheries and Oceans Canada
- Indian and North Affairs
- Environment and Natural Resources, GNWT
- Aurora College

Community representatives included program administrators, resource managers, leaders, youth and elders.

When it comes to monitoring, we cannot do it without the communities. We need each other.
Deanna Leonard, DFO

NEED FOR AN INTEGRATED APPROACH

Issues

• A big obstacle to community-based monitoring is fragmentation of programs.
• Seasonal jobs inhibit development of trained staff capable of providing information useful for decision makers.
• Constant retraining and staff turnover can make these programs fall apart.
• Urgency of integrating community monitoring programs in light of increasing concerns from Alberta tar sands and the need for good baseline before Mackenzie Gas Pipeline project begins.

Solutions

• Create dedicated, year-round staff rather than just short-term jobs.
• Promote Aboriginal Aquatic Resources and Oceans Management (AAROM) as a main integrating force since all communities already involved.
• Recognize diversity among communities, since each has own monitoring priorities.

• Increase collaboration among communities, government, universities, and NGO's
• Strengthen partnerships between AAROM and AFS (Aboriginal Fisheries Strategy).

I've always felt that everybody is doing something else and not really together.
If it were together it would be more powerful and useful to the communities.
George Low, Deh Cho First Nation

TRADITIONAL KNOWLEDGE IN MONITORING

Issues
• Lack of local control and input on research or monitoring studies.
• Lack of involvement of Elders and Youth
• Fragmented, technical information not useful to wider community.

Solutions
• Recognize Dene Water rights arising from aboriginal title, implementation of Treaties, riparian rights, & aboriginal rights to protect wildlife habitat.
• Require the use of hands-on material available in plain language and Dene language formats.
• Undertake more community-driven research with a focus on Traditional Knowledge.
• Promote greater involvement of Elders and Youth.
• Recognize TK as not just another kind of information but a way of life.

We see land as including everything. We can't separate land from water.
Aside from our children, these are the most valuable resources we have.
Florence Catholique, Lutsel K'e First Nation

PROGRAMS AND PARTNERS

Aboriginal Aquatic Resources and Oceans Management (AAROM) and Aboriginal Fishery Strategy (AFS)

The Aboriginal Fishery Strategy helps aboriginal people in unsettled land claim areas to manage their fisheries for food and cultural purposes. AAROM is an offshoot of AFS and has a wider monitoring focus including fish, water quality and other ecosystem factors. It is meant to build local technical capacity, strengthen monitoring partnerships, promote information exchange, and establish structures which enhance local involvement in decision making. Both programs offer funding for such things as monitoring equipment, boats and motors, training and youth camps as well as in-kind technical support.

Participants stated that proposal writing and reporting requirements for these programs are a huge burden and need to be simplified. Even once all requirements are met, dollars are often slow to reach to communities. It was noted that are two kinds of reporting: *Bureaucratic*, to report on how funding was used, and *Community*, reporting back to local elders, youth and leadership on what was collected and what it means – all of which takes time. They recommended that each community have its own AAROM coordinator to coordinate these activities and to develop and implement a long-term plan. A more integrated, streamlined process would free up significant resources, people, and time.

I am here for three days but when I go back to work, AAROM is on the back burner.
There are so many things we have to deal with.
Jennifer Drygeese, Yellowknives Dene First Nation

Environment Canada

Water Survey of Canada is the division of Environment Canada that collects water *quantity* data across Canada, including 85 monitoring stations in the NWT. This information is used to monitor water levels, river discharge, and flow speed. This in turn is used to help manage community water supply, hydroelectric projects, infrastructure hazards (e.g. bridges, culverts), mine tailings, and recreational uses.[1]

Environment Canada also monitors water *quality* at 25 sites across the NWT. This information is used to help eveluate the ecosystem health of northern rivers, assess impacts from development projects, and provide water quality advice and expertise to other government departments, NGOs, and aboriginal groups.

The department's Canadian Aquatic Bi-monitoring Network, or CABiN program provides training for collecting water quality information at the community level. Aurora College in Fort Smith has formally incorporated CABIN methods into its 2-year monitoring training program.

Marlene Evans is an Environment Canada researcher who has done water quality studies in the Inuvialuit, Sahtu, Deh Cho and Akaitcho regions, focusing on fish contaminants, chemical pollution, and the impacts of climate change.

We are a very small office managing a huge monitoring network
so we are absolutely dependent on partnerships to do our job.
Kerry Pippy, Environment Canada

Northern Contaminants Program

The Northern Contaminants Program started in 1991 because of elevated contaminant levels in our fish and wildlife, such as fish, caribou and marine mammals. The program provides funding support for community-based monitoring aimed at understanding northern ecosystems and how they are changing. Successful proposals – called for every November – usually include a good balance of capacity building, community consultation, and blending of scientific and traditional knowledge.

I'll be frank with you, we don't know how best to incorporate traditional knowledge yet.
That's why we're so dependent on communities.
Lorna Skinner, INAC

Cumulative Impacts Monitoring Program (CIMP)

The CIMP program aims at providing advice to decision-makers on managing or mitigating cumulative impacts. It applies to the whole NWT and provides funding for monitoring, research, capacity-building, and training. The most successful projects often have a strong TK component and build lasting partnerships between communities and government.

There are a lot of things to monitor out there. Don't try to monitor everything.

[1] For real time water level data see: http://www.wateroffice.ec.gc.ca/index_e.html

Focus on priorities that are useful to decision-making.
Marc Lange, INAC

Interim Resource Management Assistance Program (IRMA)

The IRMA Program, funded by INAC and the GNWT, applies only to unsettled claim areas. It is a broad program intended on strengthening participation of communities in land and resource management activities – from environmental assessment to monitoring. Funding from this program flows to the communities in two funding ways: 1. Base funding provided to all communities on a per capita basis; requires no application and 2. Additional funding based on submission of proposals called for each winter. Both CIMP and IRMA have operated for about ten years.

Aurora College

Aurora College's Environmental Monitor Training Program is a five week hands-on course blending science-based tools and techniques with traditional knowledge. The program involves several partnerships including the Canadian Aquatic Bio-Monitoring Network (CABIN), INAC's Northern Contaminants Program, and southern universities. Delivered since 2006, the Environmental Monitor Training has trained about 150 students from communities across the Akaitcho and Deh Cho regions.

The Environmental Monitor Training is a well established program with a real community focus. It gives us the opportunity to get involved in whatever the projects the communities actually dealing with.
Kevin Smith, Aurora College

Dechinta Northern University Field School

The Dechinta program offers land-based, university level education at Blachford Lake Lodge. Through an accredited partnership with the University of Alberta, this unique program has developed home-grown courses which blend academic and traditional knowledge. These courses could include an expanded focus on environmental monitoring given sufficient demand by interested parties (www.dechinta.ca).

Designing a monitoring plan

Several steps should be followed to design a good monitoring plan:
• *Clarify your purpose*: Have a clear purpose that links monitoring data and identify the questions you want answered. Different questions lead to different kinds of monitoring and as well as the kinds of people needed to answer them.
• *Build a team:* Involve of all parties – government, scientists, Elders, and youth – to help develop trust, commitment, and a shared understanding of issues.
• *Design your monitoring plan:* Identify what information you need, who will collect it, how and when it will be collected, what training is needed to increase community involvement, and how your information will be packaged and distributed.

What and how long we monitor is determined by the questions we are asking. You can't make a plan unless you know what questions you want to answer.
Steve Kokelj, INAC

Monitoring Fish Populations

All fisheries monitoring is designed to answer specific questions such as: What species are present? How many fish are there? How old are they at maturity? How many fish are being harvested? What diseases, parasites, or contaminants are present? Local knowledge is especially important for collecting information on the spread of new species, changes in spawning patterns, subsistence harvests, and the general health of fish species.

Fish monitoring results are used to determine sustainable harvest levels, set quota levels, and identify the need for spawning closures, setting gill net mesh sizes, and establishing angling limits. Consistent sampling methods are key to making sure everyone can use the data and compare it from year to year.

Getting into the communities and showing them how to do research with the fisheries will allow them to make decisions on how they are being taken care of. Community people are more resourceful than us and we need their support.
Stacey Frame, DFO

Monitoring Fish Habitat

There are different kinds of habitat monitoring including *Compliance monitoring* (to check that special conditions to protect fish habitat are met), *Effectiveness monitoring* (to see if measures to protect or create habitat actually help the fish), and *Baseline monitoring* (collecting data in response to a specific development project). Field research can contribute to baseline data and help find better ways to protect fish and their habitat.

I encourage you to think about fish habitat while you are discussing your community's monitoring plan. You know where the fish are, you know what is important for the fish, you know what the important areas are. If you can incorporate those into your plan you can have some really good baseline information to monitor trends.
Lorraine Sawdon, DFO

Break-out session 1: Developing community-specific monitoring objectives

Workshop participants answered the question, *What do you want to achieve through community-based monitoring?* Their key aims included:

- Enhanced communication & collaboration among communities, DFO, AAROM, AFS, & INAC
- Capacity building, more youth training, & long-term employment opportunities
- Improved baseline studies that blend scientific and traditional knowledge
- Broader environmental monitoring that includes water, fish & aquatic mammals
- Greater community control in setting research & monitoring priorities

• Developing a core of expertise in communities with a long-term, well defined program
• Better access to government & academic data
• Monitoring website that all communities could use to share information

We need to recognize the fact that each community is different. Their priorities and their needs are specific to their area and we, as government people, need to recognize that.
Lorna Skinner, INAC

Break-out session 2: How to achieve long-term monitoring objectives

Workshop participants answered the question, *How do you want to achieve your community-based monitoring objectives over the next 5 years?*

• Training and Education
Courses are needed on first aid, boating, water sampling equipment, data collection, report writing, communications technology, GPS, etc. Tapping Elders' knowledge must be part of the training. Dene people already know about the bush and don't need courses on basic bush skills.

• Equipment
Water monitoring equipment needs include: boat, motor, sampling kits, safety equipment, tool box, gas, oil, emergency package, GPS, satellite phone, first aid kit, adequate food, field notebooks, and tobacco offering. In small communities it is difficult to purchase some of this equipment so think about where, how, and who will get each item. Some equipment can be shared among communities, like snowmobiles and boats. Funding and training needs related to equipment maintenance should be considered. Identify what safety certifications will be needed to use potentially hazardous equipment.

• Traditional Knowledge
Communities are not comfortable with letting just anybody on the land to gather information. The research application process, training needs, ethical responsibilities, etc should all be spelled out clearly and approved by the community. A local steering committee could be formed to coordinate all steps of the monitoring process and ensure they reflect traditional knowledge and values. Clear communication and interpretation are very important so everyone understands what work is going on and why. Elders, schools, monitors should all work together.

• Components of a community monitoring plan:

- ***Training:*** An essential foundation for any community-based monitoring.
- ***Funding:*** How the purpose and role of different funding sources.
- ***Proposal writing:*** Identify who in your organization can write proposals.
- ***Elders:*** Think how to involve Elders in monitoring.
- ***Equipment:*** What are you going to need for your monitoring plan?
- ***In-kind help:*** Identify what organizations can provide in-kind help.
- ***Monitors:*** Think about when you want them and for how long.
- ***Labs:*** Identify what labs can analyze your samples and what it will cost.
- ***Data interpretation:*** Who is going to interpret your data?
- ***Traditional knowledge:*** How are you going to incorporate TK in your report?
- ***Monitoring area:*** Identify where you want to monitor in your 5-year plan.
- ***Monitoring type:*** What kind of monitoring do you want to do - sediments, water quality, water quantity, fish?

- ***Partners:*** Who do you want to work with – INAC, DFO, other First Nations or communities, industry?
- ***Community involvement:*** How are you going to involve your community?
- ***Permits or licenses:*** These may be necessary before you start your monitoring.
- ***Report writing:*** Who's going to prepare your report?
- ***Data storage:*** What are you going to do with your raw data?

It's always advantageous if you haven't set up your monitoring program to find out what works and what may not work from somebody else who is already doing it.
Cec Heron, Smith Landing First Nation

RECOMMENDATIONS

→ A common challenge is doing more monitoring with existing financial and human resources. There are a half dozen monitoring programs each with different pots of money. Combining the administration of these programs could make it easier for everyone.

→ Develop a long-term community-based monitoring plan that forms the "centrepiece" of funding proposals for several programs such as CIMP, IRMA, & AAROM as well as for agreements with industry working in the region.

→ Target monitoring priorities to the needs of decision-makers such as land & water boards, land use planning boards, other regulators, and industry.

→ Create a community-based monitoring industry supported by consistent government funds, training programs, capacity building, and strong partnerships.

→ Funding from programs like NCP and CIMP is open to anyone but researchers are often the most common applicants. First Nations should take the lead in funding proposals with researchers as co-leads, creating a "good marriage" between sound science and community involvement.

→ Promote the hiring of community monitors by industry working in the region.

→ Develop and implement an integrated framework for streamlining proposal and reporting processes related to community-based aquatic resource monitoring.

→ Spiritual practices like "paying the land" should be part of monitoring plans and protocols.

You don't just take samples from the Land without making an offering. You need tobacco and you have to believe in this offering or it won't work.
Norman Betsina, Yellowknives Dene First Nation

It's to everyone's benefit if we all start working together and sharing.
George Low, Deh Cho First Nation