

Some Ideas on Indicators from Tracking Change



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Tracking
Change Mackenzie
basin@ualberta.ca
Tracking Change
@mackenziebasin



Dr. Brenda Parlee
Associate Professor and Canada Research Chair
Department of Resource Economics
and Environmental Sociology
Faculty of Agricultural, Life and
Environmental Sciences
507 GSB, University of Alberta T6G2H1

www.trackingchange.ca



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Lower Amazon
Basin (Brazil)

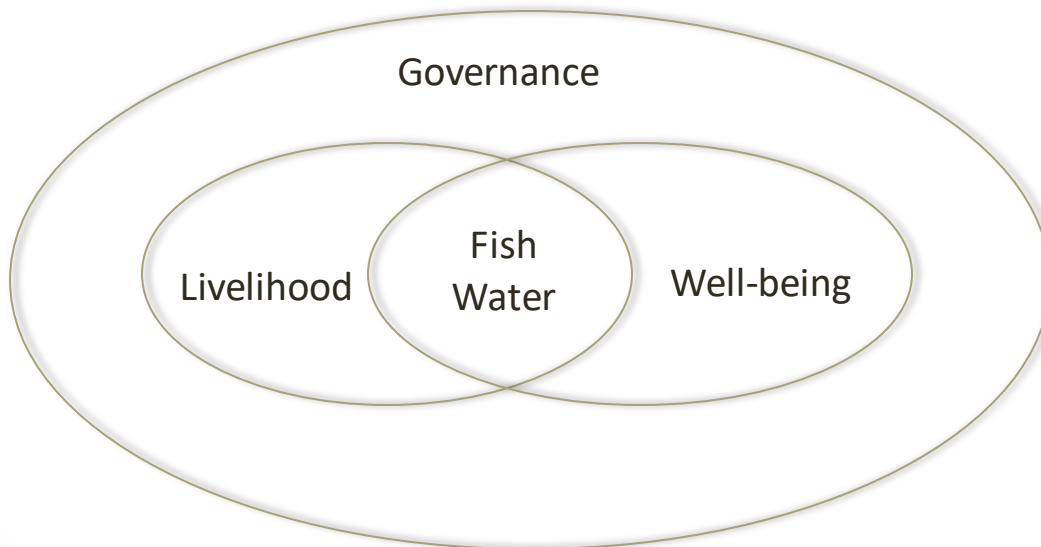


Mekong River Basin
(Thailand/Laos)

Goal and Objectives

Goal

- The goal is to determine and demonstrate the importance of local and traditional knowledge (LTK) to our understanding of social and ecological change in the Mackenzie River Basin and contribute to regional, territorial/provincial and federal decisions about its continued sustainability.





What Indicators are useful for Tracking Change?

CAN I FIND ENOUGH FISH TO MEET MY FAMILY'S NEEDS?

- Timing of fish runs
- Timing/location spawning
- Total catch
- Diversity of catch
- Catch / unit effort
- Condition - fish harvested
- Invasive species
- Barriers / opportunities to Access valued fishing sites
- Total harvest

CAN I EAT THE FISH?

- Total quantity of habitat
- Habitat quality
- Fish quality
- Fat (length/weight ratio)
- Fish Condition
- Perceived contaminants in fish/habitat

CAN I FIND GOOD WATER?

- Access to clean water from the land
- Water levels
- Disturbance from development (e.g., barriers, losses)
- Integrity of sacred water sites

CAN I DRINK THE WATER?

- Muddy water / sediment
- Greening of water (algae)
- Tea scum
- Taste
- Warming water
- Water flow
- Perceived Contaminants in Water

Who benefits? Why are we Tracking Change?

HOW IS KNOWLEDGE BEING GENERATED AND SHARED?

How is knowledge being generated?
What knowledge is being shared and how?

How accessible is knowledge to communities?

How does knowledge contribute to social learning?

How does knowledge contribute to decision-making at different levels?

What management actions and policy changes are needed to ensure sustainability of the basin?

IMPLICATIONS

Are stresses on the sustainability of freshwater ecosystems increasing?

Will the Mackenzie River Basin be more or less healthy in the future?

Will we be able to eat more or less fish from the Mackenzie River Basin in the future?

Will our grandchildren still be able to eat the fish and drink the water?



Watching the Peace River (2016)– Photo Credit Brenda Parlee

Tracking Change...

Local and Traditional Knowledge in Watershed Governance

Arctic Borderlands Knowledge Coop
Athabasca Chipewyan First Nation
Federal University of Rio Grande do Norte
First Nations Technical Services Advisory Group
Inuvialuit - Fisheries Joint Management Committee
Government of the Northwest Territories
Gwich'in Renewable Resources Board
Keepers of the Athabasca

Mikisew Cree First Nation GIR
Prince Albert Grand Council
Sahtu Renewable Resources Board
Saskatchewan Water Security Agency
Treaty 8 First Nations of Alberta
Treaty 8 Tribal Council of British Columbia
Universidade Federal do Rio Grande do Sul
University of Wisconsin – Madison

Derek Armitage, University of Waterloo
Ian Baird, University of Wisconsin – Madison
Fikret Berkes, University of Manitoba
Ellen Bielawski, University of Alberta, Yukon College
Jennifer Fresque-Baxter, GNWT
Chris Furgal, Trent University
Lars Hallstrom . University of Alberta
Henry Huntington, Huntington Consulting
Shalene Jobin, University of Alberta
Erin Kelly, Government of the Northwest Territories
Trevor Lantz, University of Victoria
Melissa Marschke, University of Ottawa
Priscila Macedo Lopes, Universidade Federal do Rio Grande Norte

Kankowan Manoram, Ubon Ratchathani University
Val Napoleon, University of Victoria
David Natcher, University of Saskatchewan
Mark Nuttall, University of Alberta
John Parkins, University of Alberta
Don Pittman, Mackenzie River Basin Board Secretariat
Sean Robertson, University of Alberta
Renato Silvano, Universidade Federal Do Rio Grande Do Sul
Chris Southcott, Lakehead University
Brent Swallow, University of Alberta
Sonia Wesche, University of Ottawa
Bruno Wichmann, University of Alberta



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Even about 20 years ago, back in the 60s, when I was on the river, ... at that time we used to take water right from the river, and I used to get sick from it and I didn't know what it was, I had stomach problems and then I found out it was actually water from the Mackenzie River, and more and more I talked to people around the river, they were saying they do notice the water quality on the Mackenzie. It's not as crystal clear as it used to be, it's a marshy kind of green, and you see a lot of muck at the bottom, and slime on the rocks, and you never used to have that before. The quality of the water has changed drastic...

In the last 10 or 20 years, the water level has changed dramatically. There have been some springs where the Nahanni River has almost dried up to a trickle, where the river itself is only 10 feet wide, and that was all the water that was coming down, and that was before the spring run on. So, elders have noticed this change as well and they do bring it up a lot. In the fall time, when the water level drops, it drops a lot, more than it did 20 years ago, and they're also noticing that change. That's a big issue for us...