



Community-Based Monitoring Methods

Indigenous Guardians:
Stewards of the Lands & Waters

NOFNEC, October 10/19
fourrivers.group



Four Rivers Group



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- Established as an environmental services group within the Tribal Council in 2011
- Environmental support services & programs in the nine Matawa member First Nations in northern Ontario
- Assist communities to actively manage the lands & waters within their homelands through community initiative support & capacity building programs
- Team with diverse backgrounds in environmental sciences, monitoring, geomatics, mining & communications

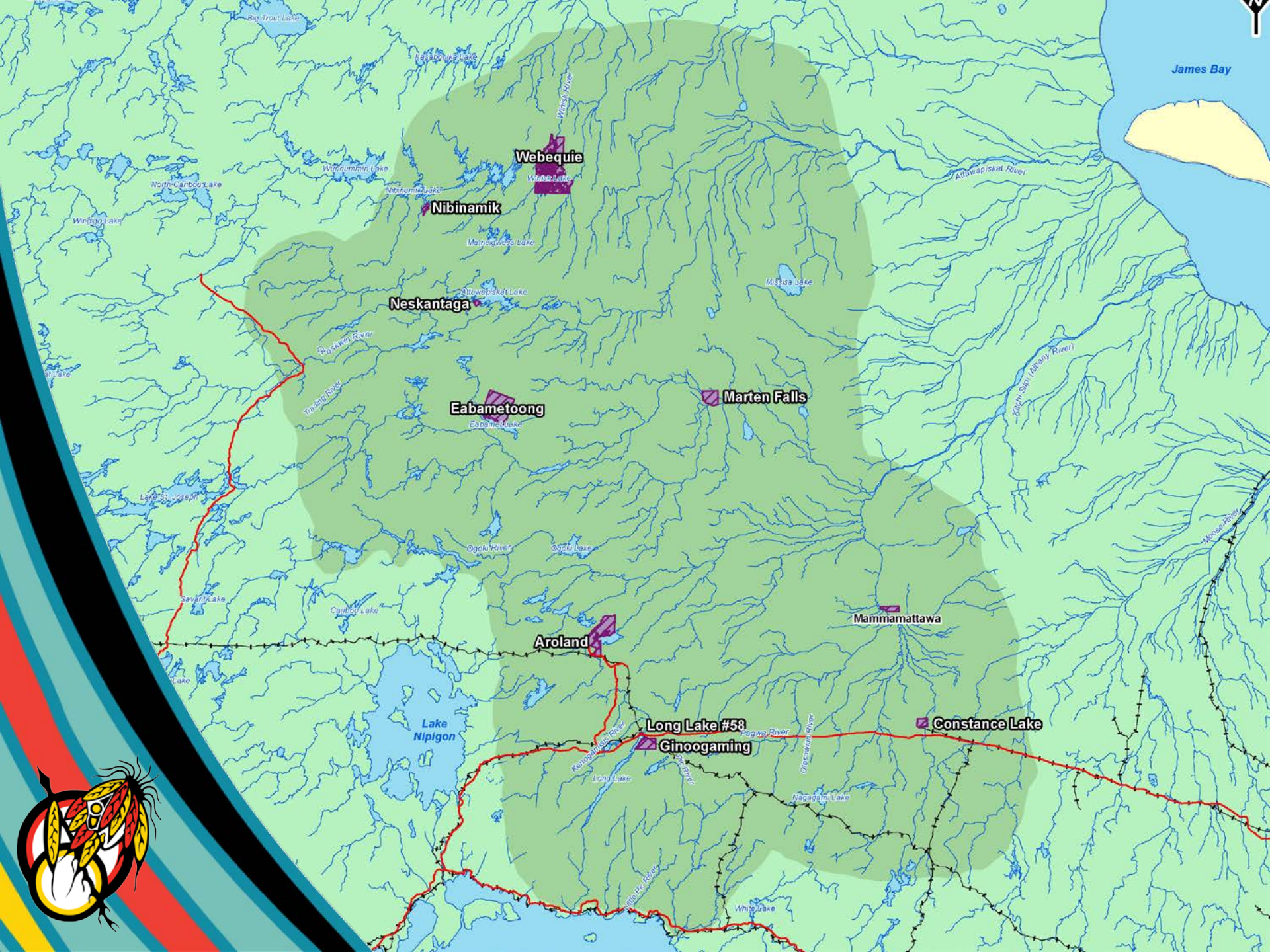


Matawa

FIRST NATIONS MANAGEMENT

The Power of Unity, The Dignity of Difference





James Bay

Webequie

Nibinamik

Neskantaga

Eabametoong

Marten Falls

Aroland

Mammamattawa

Long Lake #58

Ginoogaming

Constance Lake

Lake Nipigon



**The lands and waters form an integral part of
our shared culture and heritage.**



The sustained health of the environment is connected to the well-being and long-term sustainability of our communities.



In the face of unprecedented environmental changes from proposed industrial and infrastructure developments,



as well as an unpredictably changing climate,



How do we ensure the lands and waters are protected for future generations?



Our communities intend to take a leading role in the active stewardship of the lands & waters within their homelands.



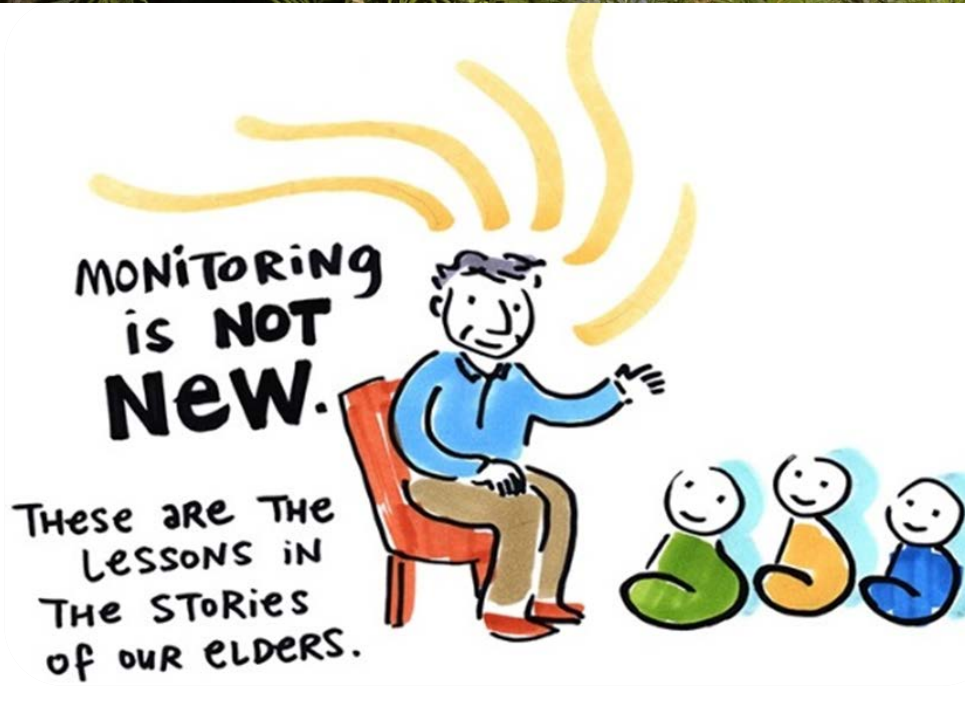
The Matawa member First Nations are committed to establishing an Indigenous Guardians program which will support active stewardship of the lands and waters.



All stewardship initiatives will be guided by and centred in community values, priorities, and processes.



All stewardship initiatives will provide opportunities to engage & involve our Elders, youth, and all membership to share Traditional Knowledge and build internal capacity.



Community-Based Monitoring



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- Getting our members on the lands and waters, armed with the resources & tools needed to observe and measure changes, to meet individual community and collective environmental monitoring & land management needs
- **Goal:** Create and support a network of trained Community Environment Monitors, with standardized data collection methodologies and identified long-term monitoring goals
- **Challenge:** Long-term, sustainable programs (need to be grassroots, community-centred, relevant and feasible)
- **Approach:** Focus on addressing individual community priorities (within an established monitoring framework/backbone), to build internal capacity one small project at a time
 - Pilot started in 2018 with five champion communities



What is Environmental Monitoring?



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- Environmental monitoring typically involves collecting samples and observations of soil, water, air, plant and/or animal matter
 - Observations can include recording sightings/sounds of animals, plant presence/absence, colour, taste, smell, etc.
 - Samples can be submitted to a laboratory for further analysis (chemical data on what you collected)
- Allows someone to capture/quantify the current conditions in a location at a specific moment in time, for **comparisons to conditions in the past, present and future**
 - Can include investigations into an environmental occurrence such as contaminants at a specific location (e.g. a diesel spill) or to answer a specific question
 - Can include baseline data collection, where observations and samples are collected & documented in a consistent manner to **observe changes/trends over time**



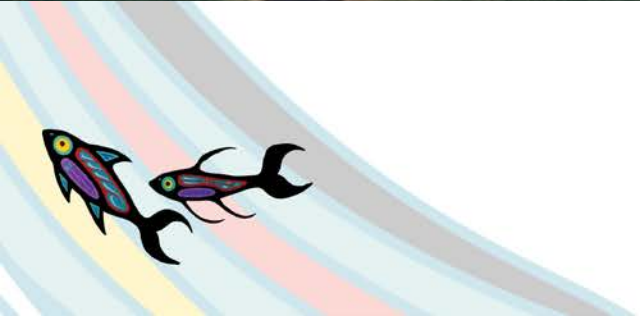
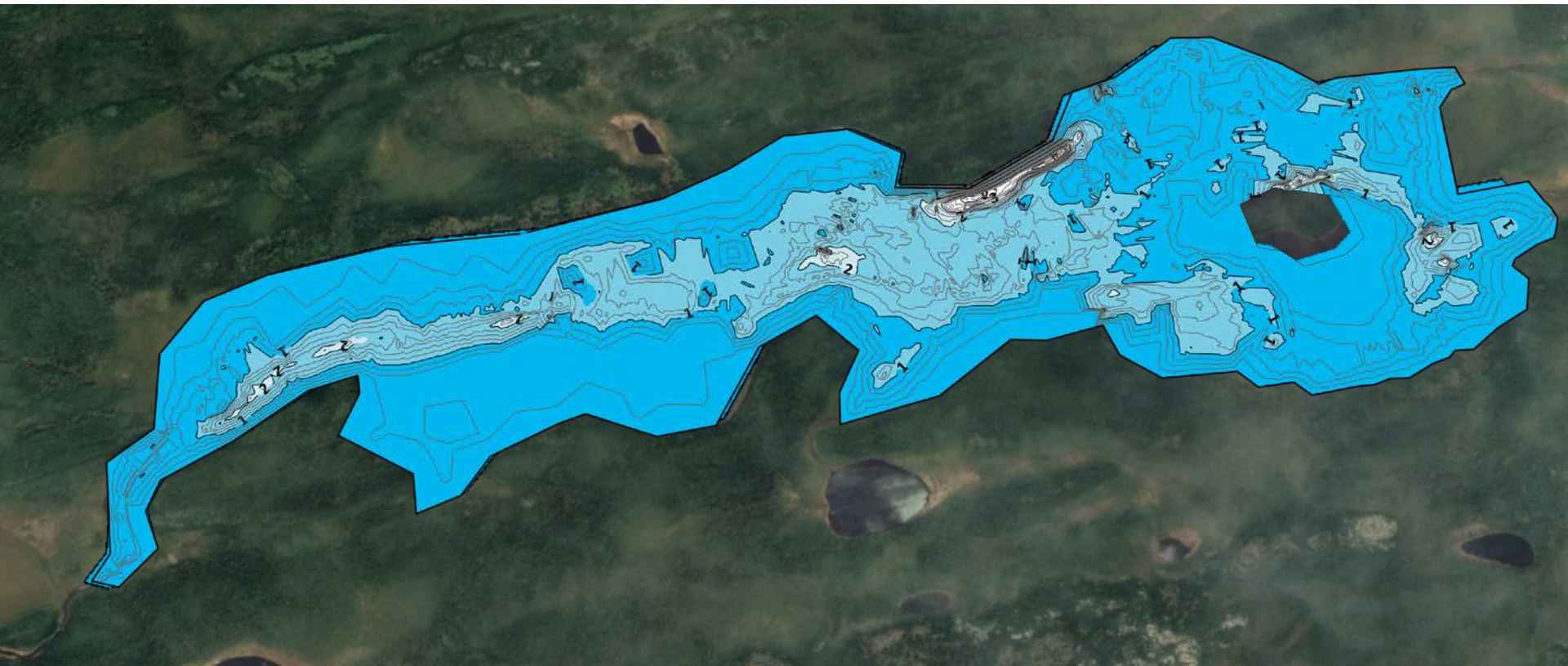


**What could be included in a
Community-Based Monitoring program?**

Community-Based Monitoring: Fish & Fish Habitat



Lake of Concern

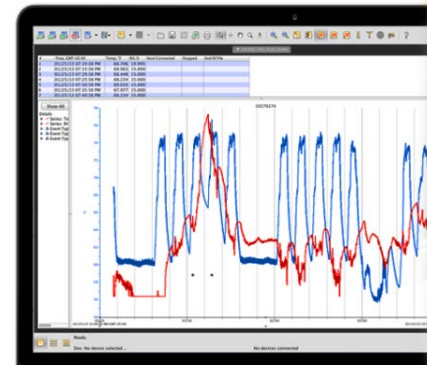


Sampling Equipment



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- PPE
- GPS Unit
- Kemmer bottle
- Water sample bottles
- YSI probe
- HOBO units
- Depth finder
- Secchi disk
- D-nets
- Benthic sample bottles
- Seine net
- Gill nets
- Fish sampling envelopes
- Measuring board
- Weigh scale
- Eckman dredge





Potential Funding Programs



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Indigenous Habitat Participation Program

Canada launched the Indigenous Habitat Participation Program (IHPP) on June 7, 2019. This \$50 million funding program gives Indigenous communities opportunities to participate in the conservation and protection of fish and fish habitat.

Services

- [Apply for contribution funding](#)
- [Apply for grant funding](#)



Community-Based Monitoring: Acoustics: Bird, Bat & Frog



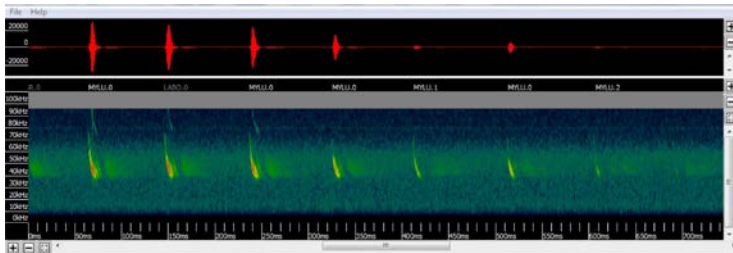
Species of Concern

- Four bat species in northern Ontario
 - All eat only flying insects, hibernate in caves, communicate ultrasonically (by echolocation)
- Little Brown Bat is at risk of extinction from White Nose Syndrome



Monitoring Equipment

- Acoustic meter, ultrasonic microphone, wind/temperature meter
 - Stationary: launch in a tree, programmed to record at sunrise/sunset for a set period of time
 - Driving transect: drive at a set speed/distance 2-3 times per year
- Software to analyze data: # of bats, species of bat
- Determine presence/absence, and population trends over time



Species of Concern

- Multiple threatened/endangered migratory birds, including:
 - Bald Eagle, Eastern Whip-poor-will, Common Nighthawk
- Monitored in a similar manner with stationary song meters launched in target locations (based on TK) to record at sunset/sunrise
- Data: bird species/populations, presence/absence
- Information can be presented in an interactive story map:
 - <https://matawa.maps.arcgis.com/apps/MapJournal/index.html?appid=66fb81a3128645b6a00680756d627eae>



Potential Funds



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Aboriginal Fund for Species at Risk

Species at Risk Stewardship Program

The Species at Risk Stewardship Program was created under the *Endangered Species Act* to encourage people to get involved in protecting and recovering species at risk through stewardship activities.

Related

[Species at Risk Stewardship Program projects](#)

[Species at risk in Ontario List](#)







Meegwetch!

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