

NWT Environmental

Research Bulletin (NERB)



NWT Cumulative Impact Monitoring Program (NWT CIMP)

A source of environmental monitoring and research in the NWT. The program coordinates, conducts and funds the collection, analysis and reporting of information related to environmental conditions in the NWT.

NWT Environmental Research Bulletin (NERB)

A series of brief plain language summaries of various environmental research findings in the Northwest Territories. If you're conducting environmental research in the NWT, consider sharing your information with northern residents in a bulletin. These research summaries are also of use to northern resource decision-makers.

Tracking Wildlife in the Sahtú Region

To help address concerns raised about potential impacts from oil and gas exploration on wildlife and their habitat in the Sahtú region, a three-year community-based monitoring program to survey wildlife tracks in the winter from 2014-2017 was implemented. Results from the long-term surveying of winter tracks can be used by communities, industry and others to help detect changes in the distribution of several mammals and possibly relate changes to future development in the region.

Why is the research important?

Snow track surveys are an easy and non-invasive way for community members to monitor the relative abundance and distribution of several mammal species that are active during winter. The program could be applied at a regional scale by communities, industry and government to detect the cumulative impacts of human development and natural change.

Directly involving community members in the design and implementation of the monitoring program was important to its success. The program also provides an opportunity for knowledge transfer by elders and youth working together to conduct the surveys.

What did we do?

Youth and elders from Tulít'a and Norman Wells measured whether mammals were present. Surveys of winter animal tracks were conducted by snowmobile along existing trails and seismic lines. Mobile hand-held computers were used to answer standard questions each time observers stopped to record a



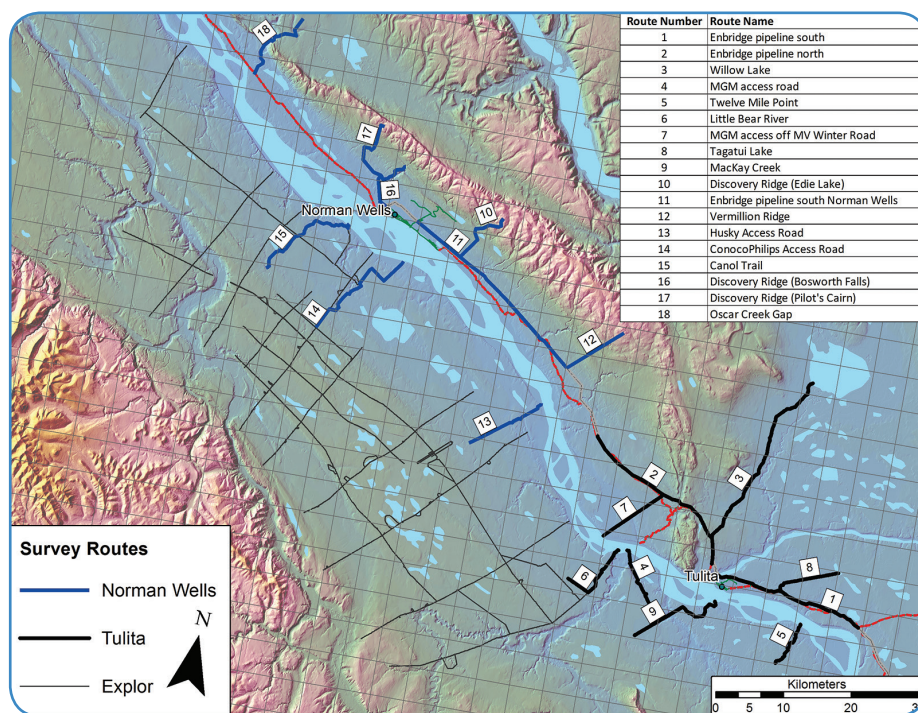
Jonathan Yakeleya recording a marten track with the Trailmark™ data collection app on an Archer hand-held computer.

track or other signs of wildlife. Photographs were taken of each track and surrounding habitat.

Different devices were tested for data collection to determine how easy the devices were to use and how reliable they were.

What did we find?

- We learned how best to record wildlife tracks and make the program run efficiently when working with assistance from the Renewable Resource Councils and Sahtú Renewable Resources Board.
- Twelve different species were identified during three winters of surveys, with marten, lynx and moose being the most common.
- Breaking survey routes up into 500-metre segments is likely the most suitable for monitoring the presence or absence of a wide variety of species with different home range sizes.
- In 2016, the final winter of the project, the Tulit'a Renewable Resource Council took a lead role in coordinating the field work. This proved to be a highly successful approach to implementing the monitoring program.



Routes surveyed by community monitors. Thin grey lines represent recent industry seismic lines.

What does this mean and what do we do next?

The pilot project found a relatively easy way to track wildlife in the winter and could be conducted in other Sahtú communities in order to collect more information.

There is also an opportunity for industry to undertake surveys within their areas of operation. This would help achieve the regional coverage necessary for monitoring changes to wildlife distribution brought about by industrial development, natural disturbance and climate change.

What is relative abundance?

Relative abundance is the number of a particular species of animal in an area compared to the total number of animals in that area.

Recommended Reading:

Whittington, J., K. Heuer, B. Hunt, M. Hebblewhite, and P. M. Lukacs. 2015. Estimating occupancy using spatially and temporally replicated snow surveys. *Animal Conservation* 18:92-101.

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