



**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.

Muskrat pushup abundance along the Slave River

A survey of muskrat pushups was conducted in spring 2013 along the Slave River from just north of Fort Chipewyan to Great Slave Lake. Densities and abundance of pushups were highest in the Slave River Delta, where wetlands provide good muskrat habitat. The survey provides a baseline of information that can be compared to future surveys, and enables environmental change to be tracked over time.

This project was a Slave River and Delta Partnership¹ (SRDP) led initiative, a collaboration of many partners. The SRDP also collaborated with the Peace-Athabasca Delta Ecological Monitoring Program and Parks Canada who were undertaking a survey of the Peace-Athabasca Delta and Alberta stem of the Slave River.

Why is this research important?

This project was designed to address community concerns about declining muskrat populations in the watershed. Establishing a baseline for muskrat pushup densities will contribute towards developing repeatable and standardized survey methods that can assist in monitoring cumulative environmental change over time.

What did we do?

In the spring of 2013, an aerial survey was conducted in selected areas along the Slave River to get a relative estimate of muskrat pushup densities.



Muskrat pushup

¹The SRDP comprises the Deninu Kue First Nation, Fort Resolution Métis Council, Smiths Landing First Nation, Salt River First Nation, Fort Smith Métis Council, NWT Métis Nation, Hamlet of Fort Resolution, Town of Fort Smith, Aurora College, Aurora Research Institute, Environment and Natural Resources (GNWT), Parks Canada, Environment Canada and Fisheries and Oceans Canada.

What did we find?

The highest abundance and densities of muskrat pushups were in the Slave River Delta (block 8), where over 60% of all pushups were observed (Table 1). Higher densities of muskrat pushups are expected in areas with more wetland habitats. For example, in block 3 there were many more pushups on the wetland-dominated east side of the river compared to the drier west side.

Survey Block	Pushup (pu) Count	Block Area (km ²)	Density (pu/km ²)	% of Total Count
1	55	356	0.15	2.4
2	34	335	0.10	1.5
3	159	367	0.43	7.1
4	57	253	0.23	2.5
5	109	340	0.32	4.8
6	215	329	0.65	9.6
7	204	338	0.60	9.1
8	1417	656	2.16	63.0
Total	2250			100

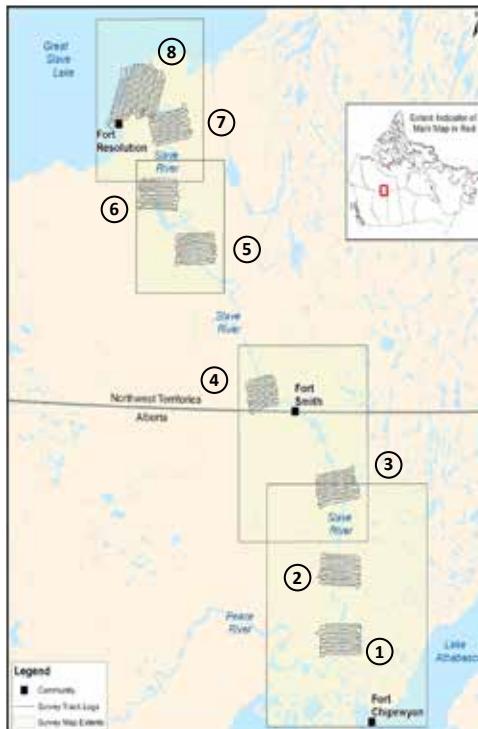
Table 1. Muskrat pushup densities along the Slave River, NWT, May 2013

What does this mean?

From this survey, we have an estimate of muskrat pushup densities and of where pushups are most abundant. The results of the survey show there were more muskrat pushups in the Slave River Delta compared to the other areas of the Slave River surveyed.

What's next?

This information can contribute, in part, to tracking change over time.



What are muskrats and pushups?

The **muskrat** (*Ondatra zibethicus*) is a small (2 kg) rodent that lives in wetlands and feeds on aquatic plants. Muskrats are important to the culture and economy of northern communities. A **muskrat pushup** is a shelter made by muskrat with mud and vegetation that provides protection from weather and predators during the winter.



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