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Abstract

Ontario's northern boreal region is home to more than 40 000 First Nations people. Due to the high cost and seasonal scarcity of fresh food many northern residents continue to supplement their diets with traditional foods, including fish. This region also includes an amazing 1500km stretch of unique subarctic coastline along which dozens of largely unregulated freshwater rivers drain an area three times the size of Lake Superior and enter Hudson Bay and James Bay. I am studying the lower reaches of 11 coastal rivers stretching from the Quebec border to the Manitoba border. Samples taken from these rivers will be used to conduct a risk-benefit analysis of consuming wild fishes by inferring risk from mercury and other trace metal concentration and inferring nutritional benefit from essential fatty acid composition of the flesh. Several fish species, including some anadromous populations, are being sampled in cooperation with local First Nations fishers. In addition my project will provide valuable baseline information on the life history characteristics and community structure present in these largely unstudied systems by analysing C, N and S stable isotope ratios. This information will be invaluable while tracking changes caused by both climate change and industrial development.

Keywords: Far North, Hudson Bay, James Bay, Subsistence Fisheries, Essential Fatty Acids, Mercury, Food Web, Stable Isotope Analysis.

Geographic Location: Ontario's subarctic coastline. The lower reaches of the following rivers:

Harricanaw R.	51.152105	-79.773319	Shagamu R.	55.862868	-86.784350
Moose R.	51.324905	-80.445034	Shell R.	55.910415	-87.269758
Albany R.	52.248277	-81.775753	Goose Cr.	55.927987	-87.421017
Attawapiskat R.	52.933203	-82.360775	Severn R.	55.988990	-87.624890
Sutton R.	55.188618	-83.784116	Pipowatin R.	56.120034	-87.687161
Winisk R.	55.239928	-85.21242			

How does your project link to Canadian aquatic ecosystem services?

The information generated by this study will help to refine fish consumption guidelines, providing far north residents with information on how to select the best fish to consume. In addition my project will provide valuable baseline information on the life history characteristics and community structure present in these largely unstudied systems. This information will be invaluable while tracking changes caused by both climate change and industrial development.