

## Vita

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# A comparative study of Invertebrate food web structure in two adjacent tributaries of the Slave River with divergent chemistry

UNIVERSITY OF NEW BRUNSWICK  
THESIS DEFENCE AND EXAMINATION

in Partial Fulfillment  
of the Requirement for the Degree of  
Master of Science

by

**Beverly Hussey**

in the Department of Biology

U.N.B., Fredericton, N.B.

**Friday, December 6<sup>th</sup>, 2019  
9:00 a.m.**

Bailey Hall, Room 22

Examining Committee

Dr. Donald Baird  
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## Abstract

This study examines benthic invertebrate assemblages of two contrasting river systems. The Salt River and Dog River adjacent tributaries of the Slave River, located near the town of Fort Smith, Northwest Territories. The study sites, located in different ecoregions, express contrasting geophysical and geochemical characteristics: the Salt River draining karst geology and the Dog River draining Canadian Shield geology. Prior to this study, these two rivers were poorly studied by Western scientists, despite their cultural significance to indigenous people of the area. At the time of this study, interest in exploring the potential use of these sites as part of the Canada-Alberta Oil Sands Monitoring program was being explored. The purpose of this study was therefore to gain baseline knowledge about these systems for future biomonitoring purposes. The objectives of this thesis were to examine and compare community composition, taxon richness, prevalence, and trophic structure of the benthic invertebrate communities. Results

showed significant differences in benthic assemblages, such as, higher taxon richness in the Dog River indicating that the geophysical and geochemical differences between the two rivers lead to differences between the benthic invertebrate communities.