

Vita

Candidate's name: Emma Elizabeth Bowser

Universities
Attended: University of New Brunswick (2021)
Bachelors of Science Honours
Bachelors of Arts Honours

University of New Brunswick (2023)
Masters of Science
Biology

Publications / Conference Presentations:

Bowser, E. Resource Use and partitioning of fish in Freshwater Tidal Zones. Atlantic Canada Coastal & Estuarine Science Society (ACCESS) Bay of Fundy Ecosystem Partnership (BoFEP) Joint Conference, Truro, NS. 2022

Bowser, E. Inter and Intraspecific Resource Use of fish in Freshwater Tidal Zones. Atlantic Society of Fish and Wildlife Biologists 59th Annual General Meeting and Conference, Fredericton, NB. 2022

Ecosystems in Transition: How Life at the Interface of Two Food Webs Shapes the Diet of Freshwater Tidal Fishes

UNIVERSITY OF NEW BRUNSWICK

THESIS DEFENCE AND EXAMINATION

in Partial Fulfillment

of the Requirement for the Degree of
Master of Science

by

Emma E. Bowser

in the Department of Biology

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

**Tuesday, August 22nd, 2023
1:00 p.m.**

Bailey Hall, Room 146

Examining Committee

Dr. Brian Hayden
Dr. Charles Sacobie
Dr. Kurt Samways
Dr. Tyler Tunney
Dr. Shawn MacLellan

Supervisor
Internal Examiner
External Examiner
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Chair of Oral Examination

Abstract

Freshwater tidal zones exist at the interface of marine and freshwater food-webs and stimulate diverse foraging strategies. This thesis characterizes the trophic ecology of fishes using the freshwater tidal zone of the Northwest Miramichi River (New Brunswick, Canada). We used estimations of resource use, dietary niche width, and trophic position to classify fishes as tidal generalist, marine specialist, or freshwater specialist and determine whether their resource use impacts both niche width and trophic position. We asked whether fishes exhibited differences in consumer diet across species, among individuals, and within the same individual over time. Using stable isotopes of carbon ($\delta^{13}\text{C}$), nitrogen ($\delta^{15}\text{N}$), and sulfur ($\delta^{34}\text{S}$) we found that resource use, niche width, trophic position, and individual specialization vary across species. Resource use did not impact niche width or influence trophic omnivory. Fish total length, resource use, and isotopic niche width did not impact individual specialization.