

MSc project on impacts of groundwater seepage on habitats

Ice sheet dynamics and landscape evolution contributed to the recharge of freshwater offshore aquifers offshore Prince Edward Island (PEI), and submarine groundwater discharge (SGD) may contribute significantly to the freshwater balance on the PEI shelf. Freshened groundwater seepage would be expected to influence the distribution and dynamics of shallow marine benthic ecosystems. Advances in underwater acoustic survey techniques over the past two decades, are enabling the generation of detailed maps of the ocean floor. This increase in data resolution allows fine-scale seafloor features to be resolved, significantly expanding how these data sets can be used for geological and ecological investigation of the benthic environment.

As part of the OFI funded project SOURCE, multibeam data, including water column data, was collected offshore PEI in fall 2021. This MSc project will aim to link detailed knowledge of the seafloor through the application of benthic habitat mapping to characterize surficial geological characteristics of the study area to locate and characterize sites of discharge. Video ground truthing will be conducted using an underwater drop camera system and/or benthic grab sampler to quantify benthic fauna and their spatial distribution at potential SGD sites and evaluate the effects of SGD on benthic ecosystems. Required skills include a quantitative background in ecology, marine biology, or geographic information systems and familiarity with a programming language (e.g. R), previous experience acquiring or processing acoustic or video data will be considered a strong asset. This project would be based out of Fisheries and Marine Institute of Memorial University, St John's, NL, but involve a one-year visit at Dalhousie University, Halifax, NS.

For more information, please contact Katleen Robert (Katleen.robert@mi.mun.ca) and Craig Brown (Craig.Brown@dal.ca) with a CV and a cover letter stating your main research interests.

Closing date: 20 December 2022

Prospective start date: Fall 2023

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