Two MSc position open in the 4D OCEANS Lab studying fjord spatial ecology

Investigation of steep slope habitats in Bay d'Espoir

Fjords are geological features formed by the marine inundation of valleys carved during glaciations which consist of deep coastal incisions, in which deep-water species typical of offshore areas can establish. Fjord walls are of particular interest, as deep-water vertical and steep slope habitats are increasingly being discovered as hosting rich communities of suspension feeders, with community composition often differing from the surrounding flatter terrain. However, for the most part, these striking landscapes have remained unexplored, owing to the ineffective nature of traditional sampling equipment (e.g. towed-camera systems) in rugged environments, and the fact that multibeam echosounders (MBES) surveys tend to underestimate steepness. As such, the extent of cliff habitats remains underestimated worldwide. This MSc project will focus on video analysis of steep slope habitats in Bay D'Espoir, NL, to understand the complexity of deep-water vertical habitats and their influence on local biodiversity spatial patterns.

Benthic habitat mapping of two Arctic Fjords

High spatial heterogeneity in the environment can lead to high biological diversity. Unfortunately, a large portion of Canada's coastal regions have not been mapped, yet alone had their marine habitat characterised at sufficient resolutions to enable monitoring of habitat. Fjords are common geological features along our coasts which can host high habitat complexity owing to their complex topography, interaction with currents, and natural gradients in water column properties (e.g. temperature, salinity, oxygenation). Fjords can also host deep-water species many of which are slow growing taxa, particularly vulnerable to anthropogenic influences, and whose location in coastal fjords bring in closer contact to human activities. Multibeam data was collected over many years in two Arctic fjords, Southwind fjords and Pangnirtung Fjord, on Baffin Island, Nunavut, and this dataset has now been complemented by benthic video imagery collected in 2021 onboard the *CCGS Amundsen*. This MSc project will focus on characterizing and comparing seascapes and their biodiversity.

Required skills include a quantitative background in ecology or marine biology, and familiarity with a programming language (e.g. R), previous experience acquiring or processing acoustic or video data will be considered a strong asset.

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

Closing date: 01 December 2021

Prospective start date: Summer or Fall 2022

Please visit: https://www.mi.mun.ca/graduateopportunities/