



**DALHOUSIE**  
UNIVERSITY



## **Statistical Models for Integrating Marine Animal Movement Data into Fisheries Stock Assessment PhD Opportunity**

Supervisors: Professors Joanna Mills Flemming and Théo Michelot.

Research Group: Statistical Ecology Lab at Dalhousie University.

Funding: ~\$40K (including Teaching Assistantship) per annum, with partial support from the Ocean Frontier Institute Benthic Ecosystem Mapping and Engagement Project.

Proposed Start Date: May 1, 2024.

There is great interest in understanding the spatial distribution and temporal dynamics of marine animal populations, to support conservation efforts and inform fisheries management. This poses a difficult challenge because many key variables are not directly observable in the ocean, e.g., animals can typically only be seen when they come to the surface, and the underwater physical landscape is largely unknown. Nonetheless, recent technological advances have led to the collection of new data sets, including telemetry devices attached to individual animals to record their movements, fishing surveys, and fine-scale seafloor maps. This project will focus on developing new statistical methods for the integration of several types of spatiotemporal data, to advance our understanding of the links between individual animals' behaviour and their long-term population dynamics and distribution. The project is flexible, and the student can choose to work on other questions that are relevant to improving analytical methods for spatiotemporal ecological data.

### Required Background:

MSc in relevant field (e.g., Statistics, Mathematics, Physics) with strong quantitative background, including experience with data analysis.

### Application process:

1. Applicants should send a copy of their Transcript, CV, and Statement of Interest to Dr. Joanna Mills Flemming (Joanna.Flemming@Dal.Ca) by January 31, 2024.
2. Applicants should also review the graduate school admission requirements and apply through the Faculty of Graduate Studies <https://www.dal.ca/faculty/gradstudies/apply-graduate-studies/how-to-apply.html> by January 31, 2024.