

MSc Scholarship

Reducing seabed impact and carbon resuspension in Arctic trawl fisheries

An MSc position is available at the [Centre for Sustainable Aquatic Resources \(CSAR\)](#), Fisheries and Marine Institute of Memorial University, St. John's, Newfoundland and Labrador, Canada, under the supervision of [Dr. Tomas Araya-Schmidt](#).



The student will work on a research project focused on developing innovative fishing gear technologies to reduce seabed disturbance, sediment resuspension, and carbon release while maintaining fishing efficiency in Arctic trawl fisheries.

Bottom trawling with traditional rockhopper footgear can penetrate deeply into the seabed, disturbing benthic habitats and resuspending sediments that contain stored organic carbon. This project will design and evaluate a footgear system intended to reduce seabed penetration and drag while maintaining the herding performance required for efficient capture.

The research will combine gear design, flume tank experiments, underwater video analysis, and full-scale sea trials to compare the performance of the new gear with traditional trawl footgear. The project will be conducted in collaboration with industry partners and Inuit-owned fisheries, supporting the development of climate-smart fishing technologies for Arctic fisheries.

Student Training and Research Experience

The MSc student will receive training in:

- Fishing gear and trawl technology
- Hydrodynamic testing using a flume tank
- Underwater video analysis of fishing gear and animal behaviour
- Quantitative analysis of catch comparison and gear performance data
- Assessment of seabed disturbance and sediment resuspension

The student will have opportunities for conference travel and to participate in sea trials onboard a commercial factory freezer trawler, gaining hands-on experience with experimental fishing gear and commercial fishing operations.

Location

The student will be enrolled in the 2-year [Master's degree of Fisheries Science \(Fisheries Science and Technology\)](#) graduate program (course work + thesis) at the Fisheries and Marine Institute of Memorial University, located in St. John's, Newfoundland and Labrador, Canada. Memorial University is internationally recognized for its strength in ocean and fisheries research and is situated in the province's capital city. St. John's is a welcoming coastal community known for its rich history, vibrant arts and music scene, and easy access to nature, offering abundant opportunities for outdoor recreation.

The student will be based at the Centre for Sustainable Aquatic Resources (CSAR) and will have a dedicated office space/cubicle at the [Flume Tank Facility](#), the largest flume tank in the world. A significant portion of the research will involve experimental testing of fishing gear performance using this facility.

Requirements

- A BSc (or equivalent) in Fisheries Science, Marine Biology, Marine Technology, Ocean Engineering, Oceanography, or a related discipline
- Interest in fishing gear technology and sustainable fisheries
- Strong analytical and quantitative skills
- Ability to work both independently and collaboratively in applied research settings
- Interest in field work and experimental fishing gear research

Experience with R, statistical analysis, or fishing gear technology is considered an asset but is not required.

Duration

Start date: September 2026

End date: August 2028 (2 years)

Funding

The MSc student will receive a \$27,000 yearly stipend for a maximum of two years, subject to admission to the graduate program.

How to Apply

Please submit:

- Cover letter describing your interest and relevant experience
- Curriculum Vitae (CV)
- Academic transcripts
- Contact information for two academic references (letters are not required at this stage)

Applications should be sent to:

Dr. Tomas Araya-Schmidt
Centre for Sustainable Aquatic Resources
Fisheries and Marine Institute
Memorial University of Newfoundland
Email: tomas.schmidt@mi.mun.ca

Deadline for applications: May 31st, 2026. Applications will be reviewed as received.