

Summer 2024 Internship Opportunity

TITLE

Researching fishing gear pollution types, sources, and supply chains in West Coast fisheries to support policy reform proposals

Organization

West Coast Environmental Law (WCEL)

Project Background & Overview

Each year, more than 8,000,000 metric tons of plastic end up in the world's oceans. Abandoned, lost, or otherwise discarded fishing gear (ALDFG), known as ghost gear, is a major contributor to the plastic debris problem. Recent studies indicate that ALDFG may make up to 70% of all macro-plastics in the ocean by weight. [See [Fisheries and Oceans Canada](#)¹]

The impact of marine debris on marine life is significant: marine species can ingest debris, become entangled in it, the debris can damage their habitat, and non-native species can be transported into new areas on debris [See [U.S. NOAA](#)²]. Microplastics, which break down from plastic marine debris, negatively impact the ecosystem and likely human health [See [United Nations Development Programme](#)³].

Currently in Canada, there are some initiatives at the provincial and federal level to address ALDFG, but much is focused on retrieval – rather than addressing the underlying source of the problem, which is gear being lost or abandoned in the ocean in the first place. It is a complex issue, and there are many data gaps that make proposing policy solutions challenging. One significant gap is linking the gear that is used in West Coast fisheries with the manufacturers (and other actors in the supply chain, *e.g.*, distributors, wholesalers, retailers). In other words, in addition to which fisheries use

¹ Fisheries and Oceans Canada, “Ghost Gear Fund supported projects” (13 September 2023), online: <https://www.dfo-mpo.gc.ca/fisheries-peches/management-gestion/ghostgear-equipementfantome/programme/projects-projets-eng.html>

² National Oceanic and Atmospheric Administration, “How Marine Debris is Impacting Marine Animals” (updated 29 May 2023), online: <https://response.restoration.noaa.gov/about/media/how-marine-debris-impacting-marine-animals.html>

³ Zana Shabani Isenaj, “Microplastics on Human Health: How much do they harm us?” (5 June 2023), online: UNDP <https://www.undp.org/kosovo/blog/microplastics-human-health-how-much-do-they-harm-us>

which gear (which should be mostly answered by [this study](#) in Marine Pollution Bulletin⁴) and where does that gear fall in the list of debris collected at shoreline clean-ups, where is the gear being manufactured and sold?

Project Description

West Coast Environmental Law (WCEL), with support from Surfrider Canada, is actively working on the issue of ALDFG. WCEL and Surfrider would like to develop one or more policy proposals to address ALDFG.

The research described above would help facilitate the development of potential producer responsibility proposals (*e.g.*, take-back schemes, labelling and content requirements) by showing which actors along the supply chain for various fishing gear are in B.C., elsewhere in Canada, and outside Canada – helping to answer the jurisdictional questions that policymakers would have regarding regulating specific gear types, and regulating producers or distributors of the gear. The research would also help WCEL and Surfrider determine whether it is preferable to develop policy proposals to address specific gear types separately, or fishery-by-fishery.

Depending on the results of the research, WCEL and Surfrider intend to work on policy proposals over the course of 2024.

Project Scope

1. Debris type data:

There are various sources of information about the types of ALDFG that are collected at beach clean-ups in the province. We can provide the Scholar with some of this data. The granularity of the data varies by source (*e.g.*, “plastic pieces” as a category vs. “Hard plastic fragments (#2 HDPE, #4 LDPE, #5 PP)”, “Hard plastic buoys (#2 HDPE, #3 PVC)”, “Other packaging (single-use plastic that is hard plastic *i.e.*, not film plastic) (#2 HDPE, #4 LDPE, #5 PP)”). It may be helpful for the student to first familiarize themselves with the quantity and types of marine debris being found on the B.C. Coast. Note: though this may eventually lead to federal policy proposals in addition to provincial, it will be a B.C.-focused project.

2. Fishery and gear types:

Next, the student will determine the major fisheries in West Coast waters. Within each fishery, they will determine the main gear used (focusing on gear that is showing up on B.C. Coasts, *e.g.*, ropes, netting, hard plastic buoys). The study in Marine Pollution Bulletin cited above will be informative. If more data is required, it may be helpful to reach out directly to fishers or fisheries experts. We may be able to introduce the student to some experts.

3. Gear supply chains:

⁴ Caitlin Frenkel, *et al*, “Why, and where, is commercial fishing gear lost? A global review and case study of Pacific Canada,” Marine Pollution Bulletin, Volume 196, 2023, 115528, ISSN 0025-326X, <https://doi.org/10.1016/j.marpolbul.2023.115528>.

Next, the student will track the supply chain of each type of gear. It may be helpful to use case studies (e.g., track a specific piece of commonly used gear, which will likely require speaking directly to a fisher or fishing vessel operator). They will determine as much as they can about where it was manufactured (the company as well as the location), where it was distributed (the company as well as the location), and what retailer sold the item (the company and whether it was online or a physical retailer).

Additionally, ideally the student will attempt to determine how much of the ALDGF found in shoreline cleanups originates from non-Canadian vessels vs. Canadian vessels.

Deliverables

A report outlining the project objectives, background, research findings and analysis. If the student thinks it is feasible, they may include recommendations for future research or specific policy proposals. The format of [this report](#)⁵ prepared for Multi-Material British Columbia may be instructive on how to structure the report.

Time Commitment

WCEL and Surfrider Canada are working on this issue now, so an earlier start date would be accommodated. They expect to meet with the Scholar approximately every two weeks, or at a frequency determined in consultation with the student. We will have a staff lawyer at West Coast Environmental Law available to the Scholar for questions throughout the term.

Required/Preferred Skills and Background

- Excellent research and writing skills
- Experience conducting stakeholder engagement events, including facilitation skills, is an asset
- Familiarity with research methodologies and survey techniques
- Community engagement experience
- Strong analytical skills
- Ability to work independently
- Project management and organizational skills
- Comfortable interacting with strangers to conduct public/in person surveys

⁵ Glenda Gies & Associates “Current System for Managing Residential Packaging and Printed Paper in British Columbia: Multi-Material British Columbia” (February 2012), online: <https://productstewardship.net/sites/default/files/PDFs/libraryContainers-MMBC-Current-System-Feb2012.pdf>.

Additional Information

A familiarity with policy and law is an asset, but not necessary. The policy proposal development is planned for after this research is done and will be done by WCEL, with Surfrider Canada. However, if the student has ideas about policy reform, they are very welcome to contribute those during this project phase. Searching corporate registries and mapping ownership of corporations could be helpful. The most important skills for this project are very strong research skills, a curiosity to learn more and dig deeper on an issue and being self-motivated.

Additional Project Requirements

The student will likely need to use their phone to connect with experts, fishers, or others. It may involve long-distance calling. No travel is expected.

UVic Sustainability Scholars Program

All current UVic graduate students are invited to apply to work on an impactful sustainability research project. Sustainability Scholars Program internships are designed and mentored by partner organizations and paid at a rate of \$30.87 per hour (after deductions) for 250 hours from May 1 to Aug 15. Explore details on our [website](#) and review eligibility criteria before applying.

Application Deadline: January 31, 2024

Contact Laurel Currie with any questions: sustainability-scholars@uvic.ca.
