

Postdoc Position in Estimating the Kelp Carbon Standard Stock in British Columbia

Applications are being accepted for the Postdoc position focused on Estimating the Kelp Carbon Standard Stock in British Columbia at the University of Victoria, Department of Geography, in the SPECTRAL Remote Sensing Lab. The postdoc will be based in Victoria, Vancouver Island, Canada, and will work under the supervision of Dr. Maycira Costa from UVic and in collaboration with Veritree (<https://www.veritree.com/>), Vancouver, Canada. This position is part of Mitacs Elevate project, in partnership with Veritree.

Project Context:

Ocean-based activities for atmospheric carbon dioxide removal (CDR) are currently an important topic in the literature due to the urgency of climate change mitigation and solutions. Some potential ocean-based CDR actions are the conservation and afforestation or restoration of ecosystems to increase coastal blue carbon, i.e., the carbon sequestered and stored in natural salt marshes, mangroves, and seagrasses. Particularly, kelp forests have been indicated to contribute considerably to the blue carbon stock due to their high spatial coverage and high net primary productivity. To define the potential for CDR of kelp forests, several key estimates are required: first, estimating the carbon standing stock (CSS), which refers to the amount of carbon stored in the kelp forest; second, estimating the quantity of this stock that is exported; and finally, estimating the amount of exported carbon that is stored in the seafloor for at least 100 years. These estimates present significant challenges to achieve. Here, we aim to utilize the best available data to address the first point needed for understanding the potential kelp CDR: estimating floating kelp carbon standing stock. To achieve this, we will use advanced satellite mapping tools developed by the Spectral and Remote Sensing lab at UVic and field surveys across various coastal zones, capturing kelp density, biomass, and carbon content under different environmental conditions. We aim to estimate the CSS of canopy-forming kelp species through these efforts, providing valuable insights into their role as carbon sinks. This knowledge will enhance our understanding of kelp forests' carbon storage capacity in British Columbia and lay a foundation for evaluating the potential benefits of kelp forest restoration projects.

Postdoctoral Position:

The postdoc will be responsible for three components of this project: (1) support the coordination of the overall project, including fieldwork in collaboration with many groups, including First Nations and Veritree; (2) lead at least 2-3 manuscripts focusing on estimating floating kelp carbon standing stock in BC; and (3) produce project reports and mobilize knowledge in BC. The postdoc will contribute to field data collection efforts, analyze data from various sources, including satellite-derived environmental data, and write high-quality reports and manuscripts for peer-reviewed publications. The postdoc will also have the opportunity to be involved in related collaborative research efforts in BC and the North Pacific.

Ideal qualifications:

- A Ph.D. degree (completed by the time of appointment) in biology/geography/oceanography/marine ecology or related discipline. Within 5 years of PhD completion to qualify for MITACS.
- Established publication record
- Record of successful project management and collaboration

- Fieldwork experience and a driver's license
- Demonstrated expertise in advanced statistical methods and remote sensing and spatial data analysis skills is important.
- Interpersonal and communication skills, and the ability to work both independently and collaboratively with coastal communities.

Application closure date: Applications will be reviewed on a rolling basis until the position is filled, but not later than April 15th, 2025

Start date: Immediately

Position Length: two, pending annual review

Salary: \$70,000 Canadian per year (this includes approximately \$10,000 in mandatory employer-related costs and the employer's portion of the university-sponsored extended health and dental plans)

Applicants must submit:

- A CV, including the e-mail and phone number for three references;
- A short cover letter explaining the applicant's motivation for working on the project and how previous experience qualifies them for this position;
- Reprints of 2 published papers, if available.

Submit applications to:

Maycira Costa (maycira@uvic.ca)

Equity, Diversity and Inclusion: We value equity and diversity, and strongly encourage applicants from underrepresented groups to apply.