

Summer 2022 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Initiative (USI) is pleased to offer current UBC graduate students the opportunity to work on funded sustainability internship projects. Successful candidates work under the mentorship of a partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region.

- Visit the [Sustainability Scholars Program website](#) to learn [how the program works](#) and to [apply](#).
- Be sure to review the [application guide](#) to confirm your eligibility before applying.

Applications close at midnight on Sunday January 30, 2022.

>> This is a Fraser Estuary Research Collaborative Project >>

Project title: Assessing the potential for flood risk mitigation and salmon habitat restoration in the Lower Fraser

Project Background & Overview:

Flood management in the Lower Fraser River has primarily consisted of diking the majority of the floodplain for non-natural land use. A 2015 report from the Province of BC indicated that 96% of these dikes are not up to provincial standards in height, seismic stability, or maintenance. Upgrading these dikes would be prohibitively expensive as this would primarily fall on local governments. Additionally, Finn et al. (2021) identified that 85% of the floodplain, and 64% of streams in that floodplain, are cut off from the Fraser mainstem by diking infrastructure. This has large impacts on ecosystem connectivity, ecosystem health, and salmon populations overall. With the onset of climate change, and storms and sea level rise expected to continue increasing, these issues will only get worse. Clearly a different approach to flood management is needed for this area. Improved floodplain planning can involve reconnecting habitat and floodplain with the river, and allowing for some areas to be flooded, which reduces the overall water level, and therefore flood risk, in the floodplain overall. Successful examples of this have been shown in Washington State through the Floodplains by Design project, where experiments have yielded both flood risk and ecological benefits. The remaining question is how to apply these techniques in the Lower Fraser.

For First Nations communities in the Lower Mainland, this is a particular interest. These communities are significantly more impacted by freshet flooding than their local government neighbours. Additionally, communities are increasingly concerned over long-term survivability of pacific salmon and food security. As such, First Nations have been advocating for a change in floodplain management for several years.

The Lower Fraser Fisheries Alliance is hosting this work. We work with 30 First Nations around the Lower Mainland on improving fisheries for generations. For this work, we will also be working with our local partners from a variety of private consultants, ENGO's, academic, and even government. All of these partners will collaboratively support the work of the scholar.

Project description

As several streams and waterways have been disconnected from the mainstem through infrastructure, restoring and reconnecting them may contribute to both viable salmon habitat as well as provide water storage opportunities. This project seeks to better understand the potential for these opportunities

throughout the Lower Mainland. This will provide valuable data for floodplain planning into the future, for communities of the Lower Mainland and ecosystems to adapt to climate change and climate change-induced flood risk. This work will enable these communities to identify new floodplain planning options that can be implemented.

Project scope

This project will investigate potential areas for both water storage and habitat restoration in waterways around the Lower Mainland. This will build on previous research and mapping of flood infrastructure, water storage capacity, disconnected waterways, and land use in the area.

- The scholar will review land use trends with respect to water storage addition and managed retreat elsewhere in the world.
- The scholar will then compare this with existing land use in the Lower Mainland and Indigenous Knowledge to identify opportunities for water storage creation, and compare that with salmon habitat restoration opportunities.
- The ideal outcome would be to create a map of potential opportunities for the entire mainland, though a case study will also be considered depending on the availability of research and data.

Deliverables

- A final report containing a summary of the work completed
- A map and database of potential water storage opportunities
- Recommendations on how to proceed with more sustainable floodplain planning
- A final presentation
- A final report for the online public-facing Scholars Project Library.

Time Commitment

- This position is for 270 hours of work.
- This project must be completed between May 2 and August 12, 2022
- The scholars are to complete hours between 9 am and 5 pm, Monday to Friday, approximately 19 to 22 hours per week.
- The scholar will be expected to participate in staff meetings and team meetings, as well as present their work to the First Nations communities once complete.

Required/preferred Skills and Background

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- GIS training or experience.
- Background or familiarity with land use analysis or planning and climate adaptation
- Familiarity with Mainland Coast Salish First Nations and rights and title, an asset
- We welcome all candidates to apply for this position. We especially encourage applicants who have lived experience and/or strong knowledge of Indigenous ways of knowing and/or Indigenous culture.

SUSTAINABILITY SCHOLARS PROGRAM

Applications close **midnight Sunday January 30, 2022**

Apply here: [Click here to apply](#)

Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 19. [Click here for details and to register.](#)

Below are some links to useful resources to help you with your resume and cover letter (there are many more online). Some of these resources also provide information on preparing for your interview.

<https://students.ubc.ca/career/career-resources/resumes-cover-letters-curricula-vitae>

<https://www.grad.ubc.ca/current-students/graduate-pathways-success>

<https://www.grad.ubc.ca/cover-letter-cv-resume-templates-ubc-career-services>