Summer 2024 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Hub is pleased to offer current UBC graduate students the opportunity to work on sustainability internship projects. Successful candidates work under the guidance of a mentor from the partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region. These opportunities are paid. The pay rate for the summer 2024 program is $27.50/hour or $6,875 for a 250-hour project.

- Visit the Sustainability Scholars Program website to learn how the program works and to apply.
- Be sure to review the application guide on the Apply page to confirm your eligibility before applying.

Applications close at midnight on Sunday January 28, 2024.

> This is a Fraser Estuary Research Collaborative Project <

The Fraser Estuary Research Collaborative (FERC) is focussed on advancing efforts to protect the Fraser River estuary in collaboration with key NGO and Indigenous partners. If you are interested in producing new knowledge and supporting Fraser estuary protection through scientific, technical, governance and policy innovations, the following project might be for you. **Successful candidates are expected to attend workshops and other events in the lower mainland in person.**

Case study: In-river gravel mining as a flood mitigation tool & impact on fish habitat (Chilliwack/Vedder River)

Project Background & Overview:
The Chilliwack River flows into the Vedder River, which flows through the Vedder Canal before meeting the Fraser River. This reach of the Fraser is commonly known as the Heart of the Fraser River. Rich in quality gravel that comes down from the Chilliwack River Valley, the Chilliwack/Vedder River is also significant as habitat for various salmon species, and provides crucial spawning ground for several species of fish including Chinook, Coho, Chum, and Pink salmon.

In-river gravel mining, also known as in-stream or channel mining, involves the extraction of gravel from the bed and banks of rivers or streams. Generally, gravel mining is understood to destroy spawning habitat, impact egg mortality, alter river flows, increase turbidity, impact temperature, and create habitat fragmentation. All of these impacts combined can significantly affect the Pink salmon population, making it harder for them to survive, reproduce, and maintain healthy numbers.

However, gravel is an important natural resource with many uses in city building and for infrastructure such as roads. Furthermore, the removal of gravel has been cited as a flood mitigation technique.

Over the past few years, Watershed Watch has been working in the Fraser Valley with others to move towards a place of flood resilience. Gravel mining is a part of this conversation to which there is no clear solution. Our work in the region looks at governance, nature-based solutions to flooding and reconnecting waterways impacted by ageing flood infrastructure, to name a few. In the Chilliwack/Vedder especially, gravel extraction is touted as a solution to flooding but with very mixed reviews.

If we are able to add clarity to decision-making around gravel mining impacts, we can move towards more sustainable ways of conducting flood mitigation that also promotes healthier salmon habitats.

Project description

The issues around gravel mining have been divisive and we want to bring clarity to the situation.

We are looking to conduct a case study of the Chilliwack/Vedder River system as it is impacted by flooding, has high-value fish habitat and high inputs of gravel. We want to answer the questions: is gravel extraction the only way to manage for floods in this river system? Assuming it is not, what are the other options? And what are the impacts of gravel extraction on fish and fish habitat in this river system from gravel mining?

During our most recent gravel mining campaign, we learnt that there was a lot of incorrect assumptions about the costs, benefits and implications of gravel mining. We want to address those issues and misconceptions through clear and simple communications (blogs etc.) to help the average person understand this issue better and support more informed decisions. The findings from this project will also help better inform those in decision-making roles. We envision that this work can help support more open and honest conversations about gravel mining that are based in current science and are less polarizing.

Project scope

1. Literature review encompassing:
    a. in-river gravel mining and its usefulness as a flood mitigation tool.
    b. alternative methods of flood mitigation in waterways with a rich gravel bed.
    c. potential impacts of gravel mining on fish (salmon) and fish habitat.
    d. compile any associated studies of the Chilliwack/Vedder River and gravel mining.
    e. Subject matter expert interviews may also be required.
2. Case study:
    a. Based on the literature review and expert interviews, compile findings into a case study that applies the review's findings on the Chilliwack/Vedder River. Maps, images or graphs as visual tools might also be useful.
3. Communications pieces:
    a. Following the completion of the case study, prepare a series of communications pieces (such as blog posts), to share the work results. These can be themed according to the questions answered, but can be discussed as the program evolves.

Deliverables

- A final report containing a summary of the work completed
- A final report for the online public-facing Scholars Project Library.
- A literature review of the subject matter
- A Case Study of the Chilliwack/Vedder River – impacts from gravel extraction for fish and fish habitat and explorations of alternative means of flood control for the floodplain
- About 2 -3 communication pieces, such as blog posts for public engagement and education

Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15, 2024
- The Scholars is to complete their hours between 9 am and 5 pm, Monday to Friday, approximately 17 to 20 hours per week.

Required/preferred Skills and Background

☒ Excellent research and writing skills
☒ Demonstrated interest in sustainability
☒ Familiarity with research methodologies and survey techniques
☒ Strong analytical skills
☒ Ability to work independently
☒ Deadline oriented
☒ GIS training or experience
☒ Familiarity with fish habitat, hydrogeomorphology, bioengineering, river gravel mining, or related topics, would be an asset
☒ Experience writing blog posts, an asset

Applications close **midnight Sunday January 28, 2024**
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 23, 2024. 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