SUSTAINABILITY SCHOLARS PROGRAM

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 >>

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. Read on for more details.

Project title: Identifying and assessing climate change indicators in the Fraser estuary

Project Background & Overview:
Climate change is one of the most pressing risks to Pacific salmon, impacting various life stages in both marine and freshwater habitats. Knowledge of climate impacts to Pacific salmon and their habitats is needed to inform forward-thinking management and recovery actions and identify priority areas for climate change mitigation efforts. The Pacific Salmon Foundation's Salmon Watersheds Program is undertaking a multi-year project to assess climate indicators for salmon habitats and conduct climate change vulnerability assessments for salmon Conservation Units throughout BC (www.salmonwatersheds.ca/projects/freshwater-climate-indicators-salmon-vulnerability/). The outputs of this work will be integrated into our online data visualization tool, the Pacific Salmon Explorer (www.salmonexplorer.ca).

Project description
Estuarine habitats are important rearing habitats for juvenile salmon exiting freshwater and are the gateway for adult salmon returning to spawn. Unfortunately, these habitats are threatened by the combination of human land-use changes and climate change. Sea level is rising, and along much of BC's coast there is little opportunity for estuaries to shift inland as human

developments have put a hard line in the path of advancing shorelines. There are other climate-related threats to estuaries, including the Fraser River estuary, and one of the goals of the proposed project is to describe these threats and candidate indicators that would enable us to quantify their magnitude. Assessing the state of climate-related threats to estuarine habitats used by salmon is an important first step towards habitat restoration work required to improve survival of salmon and mitigate climate change risks.

Project scope

The Scholar will lead research into the climate-related threats to estuarine habitats used by Pacific salmon and identify indicators that allow us to track the magnitude of these threats. Through discussions with their mentor (and potentially input from a broader group of experts), several key indicators will be identified. The scholar will then seek out appropriate, publicly available datasets needed to quantify these key indicators, and assess the indicators (where possible) for the Fraser River estuary. Key research questions and associated tasks are:

1. What are the major climate-related threats to estuarine habitats used by salmon?
    - Tasks: Literature review, to be summarized in 1-2 pages of the final report.
2. What are some candidate indicators that would allow us to track the magnitude of these threats?
    - Tasks: Literature review and discussions with mentors at PSF, as well as potential input from a Climate Change Technical Working Group that is being convened by the Salmon Watersheds Program and will include experts from DFO, the province, universities, and other groups.
3. What are available datasets that could be used to quantify indicators?
    - Tasks: Survey the data landscape, compile and synthesize publicly available data and pursue other datasets that are not openly available as time permits. This may involve contacting data custodians with various government agencies, regional boards, First Nations, or community organizations. These tasks will be carefully scoped through ongoing discussions with mentors to ensure that this step of the project does not exceed the time allotted. Summarize the data landscape in the final report, including the spatial and temporal scope of each available dataset.
4. What is the state of climate indicators in the Fraser River basin?
    - Tasks: Apply available data to assess key indicators in the Fraser River basin. Summarize outputs in the final report.

Recognizing the scope of this project may be ambitious, the last question and associated tasks are **not required deliverables**. Regardless of the Scholar's progress here, the final report on applicable indicators and relevant datasets will assist PSF staff in following up to determine the state of key indicators in the Fraser Estuary, thus furthering the goals of PSF's broader multi-year project to assess climate change indicators. The Scholar's final report will also lay the groundwork for PSF to work towards applying indicators across other regions.

Deliverables

- A final report containing a summary of the work completed, including documenting candidate indicators, the selection of key indicators, the data landscape, and results from the assessment of selected key indicators in the Fraser estuary (if possible).
- A final report (or executive summary) for the online public-facing *Scholars Project Library*.

Time Commitment

- This position is for 270 hours of work.
- Project work will take place May 2 to August 12, 2022
- The Scholar's working hours are to be negotiated with the mentors, but it is expected that the Scholar would work 19-22 hours per week (270 hours over the entire period) and would be available for regular meetings between 9 am and 5 pm, Monday to Friday.
- It is anticipated that this project will mostly involve remote work, and we are flexible to involve Scholars that reside outside of the Greater Vancouver Area.
- In the event that there is an opportunity for the Scholar to attend in-person meetings related to the project, we will work with them to find a mutually agreeable time for these meetings

Required/preferred Skills and Background

☒ Excellent research and writing skills
☒ Demonstrated interest in sustainability
☒ Statistical analysis
☒ Strong analytical skills
☒ Ability to work independently
☒ Project management and organizational skills
☒ Programming skills (R; ArcGIS or QGIS an asset)
☒ Ability to load and manipulate datasets in R is required.
☒ Experience working with environmental monitoring data
☒ Familiarity with conducting climate change vulnerability assessments an asset

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