

Summer 2021 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 31, 2021.

Research project title

Research to inform the transition of wastewater sludge lagoons to freshwater wetlands in order to restore habitat, protect birds and improve water quality on Iona Island

Project description

Iona Island, set within the dynamic and productive Fraser River estuary, is home to a large diversity of ecosystems and provides essential habitat for migratory and resident birds, fish and other wildlife. It's also the location of the Iona Island Wastewater Treatment Plant (IIWWTP) and Iona Beach Regional Park. The existing IIWWTP, built in 1963, uses four sludge lagoons to help separate solids from wastewater. These lagoons are also used by birds, such as aerial insectivores, shorebirds and waterfowl.

Planning for a new wastewater treatment plant began in 2018 with a goal to integrate the IIWWTP with the community and Iona Beach Regional Park. The function of the sludge lagoons will be replaced with technological solutions in the new IIWWTP which provides an opportunity to restore these areas into freshwater wetlands and enhance biodiversity and habitat values for birds and other wildlife.

A conceptual design has been developed that recommends transitioning some of the sludge lagoon area to freshwater wetlands, and using treated wastewater from the IIWWTP to recharge the wetlands.

In order to develop a robust detailed design further research is needed. The Sustainability Scholar would contribute to this work by surveying relevant literature, summarizing case studies and conducting expert interviews in order to synthesize evidence-based research on the effect of sludge lagoons on bird health, the restoration of wastewater treatment plant sludge lagoons to freshwater wetland habitat, and the use of treated wastewater to recharge wetlands.

Some of the key research questions that the Sustainability Scholar would investigate are:

- What are the effects of long-term sludge lagoons use on bird health? How could the insect productivity found in sludge lagoons be mimicked in new freshwater habitat?

SUSTAINABILITY SCHOLARS PROGRAM

- What was the effect of the restoration of sludge lagoons to freshwater wetlands on species diversity and composition? How were invasive species successfully managed?
- What are the ideal water quality parameters and volumes of treated effluent for the new freshwater wetlands? For BC examples, which regulatory challenges did projects face, in particular for the use of treated wastewater in natural areas designated for park use? How were these challenges addressed?

The project deliverables would include a summary report, including lessons learned and recommendations. This work will be part of on-going efforts to gather background information and survey the lagoon area to inform the detailed design of the lagoon areas being transitioned to freshwater wetland and the use of treated wastewater for wetland recharge.

The recommended design concept for the IWWTP, including integration with Iona Beach Regional Park and a suite of ecological restoration projects, was endorsed by the Greater Vancouver Sewerage & Drainage District (GVS&DD) Board in July 2020. The project definition report, which includes the design concept, will be taken to the GVS&DD Board for endorsement in early 2021.

Deliverables

- Literature survey of research on the restoration of freshwater wetlands, transition of sludge lagoons to wetlands, the effect of sludge lagoons on bird health, and the use of treated wastewater to recharge wetlands.
- Interviews with researchers, natural resource management, and wastewater professionals to capture lessons learned from the restoration of freshwater wetlands, transitioning of sludge lagoons to wetlands and the use of treated wastewater to recharge wetlands.
- Case study summaries of similar projects in other jurisdictions.
- Documentation of habitat requirements for key species that rely on these habitats.
- Recommendations for restoration design, implementation, maintenance, and adaptive management monitoring program that incorporate lessons learned from similar projects and support the habitat requirements of key species.
- Synthesis of the work into a report and presentation.
- A final report or executive summary for the online Scholars Project Library

Time Commitment

- This project will take 250 hours to complete.
- This project must be completed between May 3 and August 13.
- The scholar is to complete approximately 12 hours per week. The work is remote and the hours are flexible but the Scholar must be available for a 30-minute phone call every other week between 8:30-4:30 Monday to Friday.

SUSTAINABILITY SCHOLARS PROGRAM

- There are no mandatory meetings but there may be an opportunity for the Scholar to participate in zoom-based or in-person meetings related to the project work between 8:00-5:00 Monday to Friday.
- A detailed schedule for meetings and deliverables will be developed jointly once the Scholar is confirmed.

Required/preferred Skills and Background

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Demonstrated interest in habitat restoration, ecology and birds
- Familiarity with research methodologies and survey techniques
- Strong analytical and critical thinking skills
- Ability to work independently
- Project management and organizational skills
- Comfortable calling and interviewing experts
- Excellent listening and synthesis skills

Applications close **midnight Sunday January 31, 2021**

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>