

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.

Project title: Standardizing methods for citizen science BioBlitzes to monitor and support urban ecology (focus on green rainwater infrastructure)

Project Background & Overview:

As Vancouver continues to grow and densify, its residents are increasingly coping with the wellbeing impacts associated with low daily access to nature.¹ City and Park Board staff are simultaneously seeking creative ways to enable access to, and understanding of, urban nature. In order for people to connect with nature, we need to have healthy habitats within the city, and many staff teams work toward this goal. Species presence is an essential component of understanding and monitoring the health of ecosystems, especially in complex areas such as urban environments.

Many environmental non-profits, community organizations, and everyday residents use citizen science apps such as iNaturalist or eBird to connect with nature and learn more about it. Local environmental non-profits also often use these citizen science tools to engage communities and conduct long-term ecological monitoring programs. One popular citizen science tool is the BioBlitz, which City of Vancouver staff teams have been experimenting with for decades. St. George Rainway and Still Creek Rainwater Integration are examples of recent City-led projects that have recently used BioBlitzes to engage communities and inform design; many of the Park Board's environmental stewardship partners also use BioBlitzes regularly.

Staff recognize that citizen science can be a powerful tool for both public engagement and biodiversity tracking; notably, it can help to identify locally relevant wildlife and plant communities that urban greening projects can be designed to support. Citizen science programs can make valuable contributions to conservation, but only when they are well-designed, and "well-designed" for citizen science involves having a standardized protocol, a clear research design, and a plan for analyzing the data.² Unfortunately, this is where the City and Park Board's

¹ Source: [Fitzgibbons, 2020](#)

² Source: [Brown and Williams, 2019](#) ; [Ottinger, 2010](#); [Sherbinin et al., 2021](#)

efforts at facilitating citizen science have fallen short. Although staff have been facilitating BioBlitzes for decades, we have not been doing so with any consistent, standardized or replicable methodology across or within staff teams. As such, the resulting data from BioBlitzes (etc.) is limited in its usefulness; only so many conclusions can be drawn by a single data-set showing a snapshot in time, or even recurring data sets that are not collected in a standardized way. This is part of why BioBlitz data has rarely been used to inform neighbourhood- or site-specific planning, even though biodiversity improvements are an increasingly common goal of such work.

Designing green spaces with an eye to the ecological communities that actually inhabit those spaces (or that have the potential to) can help the City and Park Board to meet nature-focused targets that appear in the **Biodiversity Strategy, the Environmental Education and Stewardship Action Plan, the Rain City Strategy, VanPlay, the Climate Emergency Action Plan (Big Move 6)** and more. Designing around key indicator species produces better ecological outcomes. Moreover, the act of collecting this data provides citizens with opportunities to interact with green spaces, influence project outcomes, and feel a sense of connection and understanding to work happening in their communities. Thus, citizen science can be understood as contributing mainly to environmental sustainability, but also social sustainability by fostering social capital and community-engaged public spaces.

Purpose:

The purpose is to develop a standardized methodology and recommendations that can be implemented by staff teams throughout the city who currently or potentially would use citizen science for their work. Interest in having a standardized protocol has been expressed by multiple staff teams including those in CoV's Green Infrastructure branch, and multiple sub-teams within Park Board's Planning, Policy and Environment branch.

Value:

More systematic and logical use of citizen science tools (and resulting data sets) can enable staff to measure, communicate and report on the biodiversity/habitat impacts of restoration efforts and urban greening interventions, with considerably less investment in human and financial resources compared to collecting the data ourselves or engaging consultants to do so.

Improving the quality and collection methods for citizen science data can help staff to:

- Identify key indicator species and habitat parcels within the city
- Support monitoring and evaluation of the ecological impacts of projects and interventions that aim to support nature
- Track ecological changes (at specific sites, and throughout the city) over time
- Gain insight into the effectiveness of our environmental maintenance regimes
- Make evidence-based policy and project decisions based on all of the above.

Some staff may have the skills to conduct biodiversity monitoring themselves, but usually lack the financial and human resources to do so consistently. For example, although indicator species and habitat targets were articulated in the Biodiversity Strategy, there was never

internal capacity to conduct ongoing monitoring and evaluation of Biodiversity Strategy implementation. Engaging local volunteers can help ensure biodiversity monitoring gets done even when in-house resources are scant. Having the methods codified can ensure the knowledge is not lost with staff turnover.

Utility:

The resultant guidance document would be immediately implementable among staff teams who already use BioBlitzes as a part of their work – notably, the Park Board – Environment and Sustainability Team and the City of Vancouver – Green Rainwater Infrastructure teams, who are collaborating on rainwater integration in parks and public lands.

Project scope

The **main deliverable** would be a report and guidance document containing step-by-step protocols for how to conduct a BioBlitz in Green Rainwater Infrastructure (GRI) features (notably rain gardens and constructed wetlands), with suggestions for the appropriate timing and recurrence of BioBlitzes to support ecological monitoring and evaluation. The report will also contain general recommendations regarding the design and implementation of a strong citizen science program.

To develop this deliverable, the scholar will undertake:

- **Desktop research and literature review** (both scholarly and grey literature acceptable), covering:
 - What citizen science is, and various popular tools that are used today
 - Challenges and opportunities of using citizen science for planning, design and conservation
 - Jurisdictional scan of citizen science programs and projects led by other municipalities in North America
 - Examples of how citizen science has been used in the City of Vancouver on previous projects
- **Interviews** with N~4 (minimum) to 10 (maximum) external parties
 - Interviewees would mostly be with community stewardship and research partners of the Park Board, e.g., Stanley Park Ecology Society or Still Moon Arts Society, who conduct regular BioBlitzes and citizen science work (N~4 anticipated)
 - If prominent examples of other municipally-led citizen science programs from North America arise from desktop research, the scholar may request an interview with them (N~1-3 preferred but optional/dependent on availability)
 - Purpose: Explore key “lessons learned” and recommendations from citizen science experts, and local considerations (e.g. related to Vancouver’s unique ecology, or public interest in citizen science).
- **One workshop** with relevant staff members who have an interest in this work, i.e. staff who already use citizen science or who are interested in potentially using it in the future.

SUSTAINABILITY SCHOLARS PROGRAM

Purpose: to gain contextual familiarity with how staff imagine using citizen science, what work has been done before, etc. and also to support the scholar's networking.

Deliverables

- A final report containing a summary of the work completed
- A final report for the online public-facing [Scholars Project Library](#) and for internal staff use. The report would include
 - a discussion section covering key considerations relating to citizen science applications for municipal planning and conservation, such as:
 - Potential incentives for citizen involvement
 - Staffing considerations
 - Risks (e.g. associated with asking people to take photos of wild animals)
 - Staffing and administrative considerations
 - Principles of good program design for citizen science
 - a methods protocol for how City/PB staff can design and lead BioBlitzes to support biodiversity monitoring and evaluation in green rainwater infrastructure features such as rain gardens and constructed wetlands.
 - a clear indication of which protocol steps or features are uniquely tailored to GRI, and/or discussion of how the protocol might change if conducting a BioBlitz in a different habitat type.

Time Commitment

- This project will take 250 hours to complete
- This project must be completed between May 1 to August 15, 2024
- The Scholar is to complete 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
- Project management and organizational skills
- Training or experience working/volunteering in ecology and conservation contexts
- Comfortable interacting with strangers to facilitate meetings and interviews
- Experience facilitating (i.e., leading, designing, organizing, or implementing) community-based research and/or citizen science efforts, an asset
- Experience participating in citizen science activities, an asset
- Knowledge of local ecology and biodiversity (e.g., community composition, keystone species, seasonal variations, etc.), an asset

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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>