

Session 3: Community Science

Session Moderator: TBC

Location: TBC

Date/Time: Tuesday, December 13, 10:30 am to 12:15 pm

- [Brian Starzomski](#) - The BC Parks iNaturalist Project: community science across 1035 protected areas
- [Ellyne Geurts](#) - Turning observations into biodiversity data: Spatial biases in community science in British Columbia
- [Tse-Lyn Loh](#) - Harnessing the power of community science for protected area monitoring
- [Natasha Ewing](#) - Meaningful Student Learning – Participating in BC Parks' Squirrel LTEM

Brian Starzomski

School of Environmental Studies, University of Victoria

The BC Parks iNaturalist Project: community science across 1035 protected areas

Abstract:

BC Parks contains one of the world's largest protected areas networks, encompassing over 1000 protected areas throughout the province. The BC Parks iNaturalist project partners with BC Parks to survey biodiversity across all provincial protected areas, using the community science app iNaturalist. Each year we employ a team of excellent naturalists to travel the province, spending field days documenting the species present in the parks they visit. In addition, anyone with an iNaturalist account can contribute by making an observation in any protected area: their observations are automatically collected in the BC Parks iNaturalist project (<https://inaturalist.ca/projects/bc-parks>). To date over 600,000 observations of more than 10,300 species have been made by more than 8500 people, increasing our knowledge of BC Parks' globally significant biodiversity. Here we report on the progress of the project to date.

Contributors:

- Ellyne Geurts, School of Environmental Studies, University of Victoria
- Julia Carr, School of Environmental Studies, University of Victoria
- John Reynolds, Department of Biological Sciences, Simon Fraser University

Acknowledgements:

We acknowledge with respect the many Nations on whose lands we have traveled, as well as Living Labs, BC Parks License Plate program, the Sitka Foundation, the Conservation Economic Stimulus Initiative program, BC Parks, FLNRORD, NSERC, the Canada Foundation for Innovation, the Ian McTaggart Cowan Professorship at the University of Victoria, the Pacific Wildlife Foundation, and the BC Parks Foundation.

[Ellyne Geurts](#)

School of Environmental Studies, University of Victoria

Turning observations into biodiversity data: Spatial biases in community science in British Columbia

Abstract:

Biodiversity community science projects are rapidly growing in popularity and produce enormous amounts of data. Community science collaborations like the BC Parks iNaturalist project are transforming how we conduct ecological research and conservation management. However, like much biodiversity data, community science datasets suffer from biases in time and locations of observations. To better use these data, we modeled the spatial biases present in the popular community science platform, iNaturalist. We focus on the more than 2 million observations available from British Columbia, a biodiversity hotspot. Using machine learning and species distribution modeling, we examined which landscape factors (e.g. protected areas, roads, population density) were most important in determining where observations are taken, and we created a probability map revealing how likely different regions are to be sampled by community scientists. We thus provide tools for dealing with spatial biases in community science datasets. In addition, we document regions of British Columbia that remain under-sampled on the iNaturalist platform to better target future sampling.

Contributors:

- Brian Starzomski, School of Environmental Studies, University of Victoria
- John Reynolds, Department of Biological Sciences, Simon Fraser University

Acknowledgements:

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Tse-Lyn Loh

BC Parks Foundation

Harnessing the power of community science for protected area monitoring

Abstract:

The value of community science (CS) platforms for public engagement, improving scientific literacy, and scientific research has been well-illustrated. During COVID lockdown, CS platforms made it possible for people to participate in socially distanced outdoor activities while maintaining connections through each platform's online community. In our Big Nature Challenge, the number of nature observations increased by 76% from 2020 to 2021, highlighting the marked interest in nature-reporting activities and their immense potential. Broad, participant-led approaches have greatly increased general levels of awareness and interest in CS. Now, with tens of thousands of community scientists in BC, we are moving toward targeted observations to generate monitoring data that can inform protected area management. We piloted this approach with an iNaturalist spawning salmon challenge in fall 2022, which had community scientists logging salmon species and spawning locations and times. Our ground efforts include working with local community groups to monitor the size and condition of large trees and invasive species before and after removal efforts. With iNaturalist and other CS platforms, community groups can store and view data in an accessible manner as well as easily extract data for simple trends analysis, making this a scalable, cost-effective tool for community-based monitoring.

Contributors:

- Kate Le Souef, BC Parks Foundation
- Andrew Day, BC Parks Foundation

Acknowledgements:

We would like to thank Teck for funding support.

Natasha Ewing

BC Parks

Meaningful Student Learning – Participating in BC Parks' Squirrel Long-term Ecological Monitoring

Abstract:

For the last three years the high school students (grades 8-12) in Atlin, BC have been gathering red squirrel data for BC Parks' Long Term Ecological Monitoring plots (LTEM).

Through this initiative they have connected with nature, honed their observation skills, and engaged with the science curricula in a meaningful and hands-on way. During this short presentation I will briefly describe how we started this project, why citizen science activities are wonderful for students to participate in, how BC Park staffs' engagement with the students have continued to grow each year, and how working with the high school students has enabled staff to conduct outreach with the K-7's as well. Furthermore, through a student-made video, we will highlight what the students have learned through the annual LTEM, what questions remain, and why encouraging high schools across the province to participate is a worthwhile initiative.

Acknowledgements:

I extend my gratitude to the high school students in Atlin for their dedication to the LTEM program, and to Ms. M for her eagerness to try something new and offer her students a unique learning experience.