

# Environmental Sciences



**E**nvironmental Science is the multidisciplinary study of interactions between the living and non-living components of the environment. In our unit we focused on transferable skills as well as domain-specific knowledge all while getting our hands and boots dirty. We hit the ground running by learning about ecological data analysis in the programming language R, a standard tool used by quantitative ecologists in their research.

Next, we learned about the intersection of human industry and ecology by studying ecotoxicology. Students planned a soil testing program to detect “toxins” leaching from an underground storage tank buried in a series of mini field-sites, and then mapped the spill using R.

Next, we got away from the computers and into the field with a trip to Stanley Park. We explored the rich biodiversity of the park in a variety of ecosystems in the park including the rocky shore, the forest, and bird life at Lost Lagoon, and learned common methods for data collection in the field, including transects, quadrats, and insect trapping.

In our last week, we explored population dynamics and stepped into the shoes of both predators and prey to see how these dynamics play out in real life through a high-stakes game of ecological tag! We also experimented with population models in R to understand how ecological data can be used to make big-picture management decisions for entire species and ecosystems.

Over our 4 weeks, we shivered on the shoreline, frolicked in the forest, and learned how to probe the mysteries of nature through surveys, stats, and programming. We hope our unit has helped our students find the path to take them where ever they want to go, and the passion to fuel the journey. Their adventures are just beginning!

## Special Guests



### Biodiversity Monitoring

Sebastian Pardo Ph.D. Candidate, Simon Fraser University

Sebastian works on the conservation of sharks and rays, but who is also a keen birder!



Jess Schultz M.Sc. Candidate, Simon Fraser University & Vancouver Aquarium

Jess is studying the ecological impacts of sea star wasting syndrome in Howe Sound.



Jocelyn Wood, B.Sc. Dip. T., West Coast Stewardship Coordinator, Nature Conservancy of Canada

Jocelyn is works to achieve forest conservation in Western Canada.



### Ecological Data Analysis

Brian Ma, Ph.D., Senior Systems Ecologist at ESSA Technologies Ltd.

My work focuses on the statistical modeling and simulation of complex ecological processes to inform policy, management, and conservation. I crunch the numbers and provide scientific advice to industry, First Nations, government, and academics.



## FSL Fellow

**Dr. Natascia Tamburello**

Ecologist & Technical Writer  
ESSA Technologies Ltd.



I'm a marine ecologist with a passion for science outreach and communications. I'm interested in patterns of fish movement and what factors influence when they stay or when they go. Understanding how far and fast animals move across landscapes can help up plan conservation - but also control invasive species. I also love sharing my passion for the natural world through writing and teaching, especially at FSL!

## FSL Fellow

**Faye D'Eon-Eggertson**

Environmental Scientist,  
Fisheries & Oceans Canada



I work for Fisheries & Oceans Canada on the assessment and remediation of contaminated sites along the BC coast. I got my master's degree in natural resource management studying declining fish populations and has an undergrad in biology. My past work as a field biologist has taken me paddling through swamps searching for endangered critters, and experimenting on insects.