Ayla Pearson

Intermediate Computational Biologist

Poisson Consulting Ltd

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Background

Ayla Pearson, MDS is an Intermediate Computational Biologist with Poisson Consulting Ltd. who specializes in web development, dev ops and data analysis. She aspires to use data science to ensure the best available information is utilized when making decisions about natural resources and ensure the sustainable management of ecosystems. She was a Women in Data Science (WiDS) ambassador in 2019.

Education

2019	Masters in Data Science (MDS)	*UBC*
2015	BSc in Chemistry	*UVIC*
2014	Natural Resource Science Field School: Haida Gwaii Semester	*UBC*

Career

2020	Intermediate Computational Biologist	*Poisson Consulting*
2018-19	Intermediate Computational Biologist (Part-Time)	*Poisson Consulting*
2019	Office Services Supervisor and Portfolio Administrator	*MFLNRORD*
2017	Resource Stewardship Technologist	*MFLNRORD*
2015	Resource and Contract Clerk	*MFLNRORD*

Example Projects

Analytical Support for Camera-Based Wood Bison Demographic Data (2022 - ongoing)

Developed the `shinybisonpic` and `runbisonpic` R shiny apps which are GUI's to the `bisonpictools` R package. The `shinybisonpic` app allows users to explore camera trap data by viewing camera locations on a map and calculating ratios between various sex and life stages. The `runbisonpic` app runs an integrated population model to estimate total abundance, survival, fecundity rates and selected ratios.

Boreal caribou population growth (2021 - 2024)

Performed a literature review on methods to calculate survival, recruitment and population growth of boreal caribou. Developed a R data package `bboudata` which contains sample data that can be used in the `bbou` suite of tools. Developed `bboushiny` which is GUI for the `bboutools` package which uses a Bayesian model to estimate survival, recruitment and population growth.

Emerging Contaminants Benchmark Generator (2022 - 2023)

Developed the wqbench suite of packages which includes `wqbenchdata`, `wqbench`, and `shinywqbench`. This tool downloads the most recent US EPA ECOTOX database, cleans and standardizes the data, uses a species sensitivity distribution or deterministic method to calculate the HC5 value and generates an aquatic life benchmark for a given chemical. The `shinywqbench` app allows non-R users to be able to utilize the `wqbench` package.

Key Software

Maintainer

- dttr2 - R package that makes working with date/times easier.
- yesno - R package that asks custom yes-no questions.

Author

- wqbench - R package that downloads the US EPA ECOTOX database, processes the data and generates aquatic life water quality benchmarks.
- shinywqbench - R shiny app that is a GUI for the `wqbench` package.
- bboushiny - R shiny app that is a GUI for the `bboutools` package.
- shinybisonpic - R shiny app that is a GUI for the `bisonpictools` package.

Professional Courses Taught

- Introduction to R - A four-day (12-hour) course taught through the Columbia Mountains Institute of Applied Ecology offered twice a year.
- Data Manipulation and Visualization in R - A four-day (12-hour) course taught through the Columbia Mountains Institute of Applied Ecology offered once a year.

Presentations

- Applications of emerging technologies, a case study on benchmarks for emerging contaminants - Canadian Ecotoxicity Workshop (CEW) 2024, Kitchener-Waterloo, ON.