Natural Resources Canada

SCIENTIST PROFILE

The Pacific Forestry Centre

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WANNABE LAWYER MARKS PEAT BOG "EXHIBIT A"

Intrigued by the rapidly growing field of geospatial science, Ian Eddy made a life-changing decision—abandoning a future as a lawyer—he jumped headfirst into … a peatbog?

Ian Eddy gets in touch with nature in Victoria, BC

The Pacific Forestry Centre in Victoria—one of seven research stations across Canada—is home to a rare breed of geospatial analyst within the Cumulative Effects (CE) Program: Ian Eddy is helping a team of research ecologists build a suite of modular, interchangeable models for simulating landscape level processes, including vegetation succession, fire, timber harvesting, climate change and carbon cycling. But ecology wasn't always on Eddy's career radar.

Eddy's early aspirations to become a lawyer got sidetracked after an elective course in ecology and a field trip to a peat bog that resulted in a detour to a Master of Science in Forestry and a career in research!

Today, his combined interests in ecology and geospatial analysis are a perfect fit for the Cumulative Effects Program at PFC. "In my role as a geospatial analyst, I support research scientists on various projects but the majority of my work involves implementing simulation models," Eddy explained.

The CE Program aims to use computer models to answer questions about the consequences of various management actions on the landscape. Using high-performance computing resources, the analyses include state-of-the-art applications, such as:

- Projecting trends in forest composition and biomass under a range of future climates. Climate change may substantially alter the species composition and productivity of our forested landscapes, with enormous socio-ecological implications, including effects on forest fires, wildlife habitat, carbon cycling and the forest industry.
- Assessing the capacity of forest management activities to mitigate expected declines in forest productivity. Assisted migration, which reforests harvested areas and other disturbed sites with trees better adapted to future climates, is one activity that could help mitigate the adverse effects of cli¬mate change. Landscape models simulating forest dynamics under future climate change and assisted migration scenarios over large spatial scales can help us to quantify the benefits of adapting forest management to a changing climate.
- Projecting changes in the size and frequency of forest fires due to climate change. Forest fire regimes are being reshaped by the shifting climate, interactions with pest outbreaks, and the legacy of fire suppression. Predicting such transformations across a range of potential climates will inform our ability to manage associated risks, which include declines in human health and safety, as well as reductions in available timber.

Where does this landscape modelling take us? “We are just finishing the first generation of many of our models,” Eddy effused. “The fun part comes next! Simulating landscape change to answer a wide range of questions.” Eddy looks forward to refining the models, increasing their sophistication, and making them more representative of the real world. “Future models will account for factors like extreme weather events under a changing climate, shifting biomes, assisted migration of tree species – and that’s just the beginning.”

Ian Eddy exploring the Canadian Rockies

"I hope landscape models can reduce some uncertainty so that we can manage our natural resources more effectively and plan proactively for the future."

This work is often national in scope. "I emphasize using data and methods that are freely available, modular, transparent, and national in scope wherever possible, so that we might employ and build on the same analyses in other parts of the country. To date, much of my work has centered on the boreal forests of Northern BC and the Yukon Territory. However, I am becoming increasingly involved with research in Ontario's Ring of Fire region," said Eddy. "I'll know I'm successful when other scientists see our results and want to collaborate!"

"I hope these landscape models can reduce some uncertainty so that we can manage our natural resources more effectively and plan proactively for the future," concludes Eddy.

For more informaion please visit:

- www.nrcan.gc.ca/our-natural-resources/forests/sustainable-forest-management/cumulative-effects-canadas-boreal-forests/23568
- www.nrcan.gc.ca/science-data/research-centres-labs/forestry-research-centres/pacific-forestry-centre/13489

Hiking in the snow in Merritt, BC