PhD opportunities in Conservation Biology, Restoration & Forest Ecology

Position: PhD, University of Alberta

Description: Applications are being accepted for 3 PhD students in Conservation Biology, Restoration Ecology, and/or Forest Ecology in the Department of Renewable Resources, University of Alberta. Specifically, I am looking for students to work on the Boreal Ecosystem Recovery & Assessment (BERA) project in northern Alberta’s oil sands region asking questions about forest recovery and restoration of disturbances associated with energy exploration (e.g., seismic lines, well pads) that threaten woodland caribou populations. This is a large multi-stakeholder (government & industry) project with collaborations across 3 universities (Alberta, Calgary, Waterloo). The 3 positions posted here relate to: (1) landscape simulations of forest recovery (trajectories) using tools such as state-and-transition models to better understand future change associated with climate change and wildfires; (2) cost-benefit analysis assessing trade-offs between passive (waiting for recovery) and active recovery (restoration practices); and (3) trophic relationships between mammals and herbivory of seedlings and saplings on seismic lines. Seismic lines (3-10 m wide clearings for mapping underground reserves) in the region total 100s of thousands of square kilometers of linear disturbance with grids in some areas at 50 m spacing resulting in very high dissection and fragmentation of boreal forests (~40 km/km² of lines). This is considered a threat to among other things woodland caribou with millions of $s being spent on restoration via silviculture (e.g. mounding) and planting. However, the larger context of trade-offs in time, $ and success, climate change, and trophic interactions are largely unknown and the focus of these projects. For general information on the conservation issues and work we’ve done to date in the lab, please see our selected publications [here](#).

Supervisor: Scott Nielsen, Google Scholar
Lab: Applied Conservation Ecology Lab

Qualifications: BSc and MSc in ecology or related field (e.g. biology, botany, conservation biology, environmental sciences); minimum 3.0 GPA for past 2 years of study, or equivalent.

Assets: Remote outdoor/field experience; skills in GIS, statistics; knowledge of boreal and/or North American forests; valid driver’s license; strong self-motivation and sense of teamwork.

Instructions: Please submit by e-mail a short cover letter describing your research interests, experience, and qualifications for this position, a curriculum vitae, and contact information for three professional references. Your cover letter, CV, and reference information should be e-mailed to Dr. Scott Nielsen at scottn@ualberta.ca with the subject line “PhD position in BERA”. Please indicate in your email which research area you are interested in and whether you’d be willing to consider one of the other topics. I am looking for start dates between fall 2021 and January 2022. We thank all applicants for their interest; only selected applicants will be contacted for an interview, but feel free to follow up with an e-mail to check on your application status.