Four graduate student positions (M.Sc. and Ph.D.) are available for forest ecology research investigating the impact of abiotic stresses such as water and nutrient limitations and biotic conditions such as inter- and intra-specific competition on tree species. The research is part of a large project that investigates the role of early successional tree species as reclamation species in mining areas of the boreal mixed wood forest and parkland regions of Alberta. The overall aim of the research is to understand underlying forest ecosystem processes, to develop innovative reclamation techniques, and to determine stand trajectories to successfully regenerate surface mined lands to self-sustaining forests by restoring ecosystem functions and processes that are essential for the development of resilient forests. Of particular interest are (1) growth and biomass and resource allocation (rooting behavior) in plants and their effect on water, carbon, and nutrient cycling, (2) characteristics necessary to improve the success of planted tree seedlings, (3) the impact of various growing conditions such as soil, water and nutrients on forest establishment and growth, and 4) successional trajectories of ectomycorrhizal fungal communities.

Graduate students in this project will be under the supervision of Simon Landhäusser, Industrial Research Chair in Forest Land Reclamation, Department of Renewable Resources at the University of Alberta, (http://www.ales.ualberta.ca/rr/). Depending on the interest and quality of the applicants, the project offers considerable flexibility in designing a research program that investigates areas of personal interest within the overall framework of the project.

Background in plant biology, forest ecology or related field is essential, as is an interest in the linkages between forests and disturbance. Experience with any of the following will be an asset, but is not required: soil science, ecophysiology, plant nutrition, silviculture, and molecular techniques. Proficiency in spoken and written English is a necessity. Selection of a student will be based on academic achievements, reference letters and if applicable previous research experience. Strong verbal, written, and computational skills are essential.

Application deadline: March 1, 2015 or until the positions are filled. Salary ranges between CAN$ 19,500 – 23,500 per year for a period of 2 years for a M.Sc. and 3 years for a Ph.D.; extensions are possible, but will depend on student performance. Canadian students could also be eligible for Tri-Council graduate scholarships (e.g. NSERC) in their first year. It is preferable that successful candidates start their laboratory and fieldwork in May 2015 while applying to the graduate program at the University of Alberta for the fall or winter of 2015. The applicants must meet the entrance requirement for the University of Alberta, Department of Renewable Resources, which can be viewed at: http://www.ales.ualberta.ca/rr/phdprograms.cfm

Interested candidates should e-mail their transcript, curriculum vitae, a letter describing their research experience and interests (2 page limit), recent TOEFL scores (if appropriate), and the names and contact information of three references to Dr. Simon Landhäusser, Department of Renewable Resources, 4-42 Earth Science Building, University of Alberta, Edmonton, Alberta T6G 2E3, CANADA. Phone: (780)-492-6381; Fax: (780)-492-1767.

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