

McGill Geographers to work with the Canadian peat industry on greenhouse gas emissions.



Professor Nigel Roulet, with Professors Tim Moore (Geography), Ian Strachan (Natural Resource Science, FAES, McGill University), Maria Strack (Geography and Environmental Management, University of Waterloo), and David Olefeldt (Renewable Resources, University of Alberta and former McGill Geography PhD student) have been given a five year, \$1,700,000 NSERC Collaborative and Research Development (CRD) grant with seven industrial partners and the Canadian Sphagnum Peat Moss Association (CSPMA) to examine the greenhouse gas emissions during peat extraction and the fate of the peat carbon when peat is used in horticulture. Roulet, Moore, Strachan and Strack have worked with the peat industry before on greenhouse gas exchanges between the atmosphere and natural, abandoned, and ecological restored peatlands and their new project on the extraction and use phases of peat will allow them to estimate the life-time and magnitude of carbon footprint of the Canadian peat industry, and the advise

the industry on how to use peatlands sustainably. The majority of field research of this project (studies of the hydrology, thermal and biogeochemical regimes of the extraction sites as well as multi-year chamber and eddy-covariance measurements of CO₂, CH₄, heat and water fluxes) will take place in Rivière-du-Loup, QC and Seba Beach, AB. There will also be a series of experiments and observational studies of the emissions of CO₂ when peat is used as a growing medium in greenhouse and other facilities that will begin spring 2020. The group will further develop the Holocene Peatland Model (HPM), which has already been adapted for simulated natural and restored peatlands, to simulate the carbon dynamics of peatlands undergoing extraction. Several graduate students from Geography are already involved in this project (Oi Yin Lai and Rachel Kendall) and two incoming Geography graduate students (Laura Clark and Bidhya Sharma) will join the project this coming September (2019). For more information contact Nigel Roulet (nigel.roulet@mcgill.ca).