

Ph.D. Opportunity Sable Island Horse Ecology and Evolution

Job Title: Ph.D. applications to work with the wild (feral) horses of Sable Island, Nova Scotia: focus on ecology and evolution and/or conservation.

Location: University of Saskatchewan, Saskatoon, Saskatchewan, Canada

Closing: Will need to contact me as soon as possible to put together an application for internal scholarship, due Thursday, March 5, 2015. Start date is negotiable, but ideally students would be available July 1 or August 1 for immediate field work. Application for the scholarship will require an application to the U of S College of Graduate Studies and Research (online) well ahead of time, and to meet the deadline for the scholarship applications should be submitted asap (small online fee), i.e., by early February. Students must have a record of publication in mainstream peer-reviewed journals and GPA of 3.8 or higher (to be competitive for this scholarship opportunity).

Apply: Email me a CV and pdf copies of both undergrad and graduate transcripts. Email to philip.mcloughlin@usask.ca. Please write "Sable Island PhD" as the subject line.

Description: We are developing a long-term, collaborative individual-based program of research into the ecology and evolution of the feral horses living on Sable Island, Nova Scotia. As part of this initiative, I am looking to recruit a Ph.D. student to ask fundamental questions of the population ecology, life history, behaviour, conservation, and/or evolution of the feral horse population. I am particularly looking for a mature M.Sc. student that is interested in developing a Ph.D. program that will contribute to and make use of the long-term dataset my lab is collecting on the life histories of the horses on the island, and collaborate with geneticists aligned with our program. This summer was the seventh year of data collection, which includes summer censusing and identification of all individuals on the island using digital photography, and documentation of individual life histories with the goal of constructing whole-island pedigrees. Sample sizes are large, with 552 horses alive on the island in Aug 2014. Ph.D. students with 2–3 years of further data collection will be in a position to ask interesting questions regarding the population's mating system, landscape and conservation genetics, individual-based dynamics, band dynamics and dispersal, behaviour and dominance, habitat selection, social networks, sex ratios and sexual selection, and questions involving traits such as intestinal parasite communities, body size and coloration patterns. Trends in the above will likely be related to a very strong and interesting gradient in habitat quality along the length of Sable Island from west to east, associated with availability of preferred forage and access to fresh water (horse density drops by half from west to east). We are also very interested in students with a background in conservation biology as we are currently developing a research theme examining the risks inherent to small populations like that on Sable, including inbreeding depression and demographic stochasticity.

Field work on Sable Island is a team effort, and all students must be prepared to contribute to common aspects of field work and assist others with their projects in addition to working on their own research program. The former will include daily walking censuses and photography of horses, identifying individuals from digital photographs, database management, and collection of samples. All projects on the island flow from the individual-based study of the horse population, and contributing to the overall success of each field season is a requirement. For this particular application we are looking for a field team leader, and a demonstrated ability to fill such a role will be considered an asset. The successful student must work well in teams, deal well with life in a remote research station, be able to travel for field work for up to 2 months per summer by small airplane, fishing trawler, helicopter, or frigate; accept the limited diet available in remote field camps (with communal cooking), and be reasonably fit (as walking censuses require lots of hiking). Courses on first aid and driving All Terrain Vehicles will be provided prior to field work. Field work will occur principally in late summer on Sable Island; further information

on this field site can be found at my lab website, <http://mcloughlinlab.ca/lab/>

It is important for applicants to be mature enough to develop their own insightful questions. That said, our lab is following several lines of research that potential students may want to build on. Current students are studying or have studied spatial heterogeneity in horse population growth on the island, stress as it relates to band structure and dynamics from cortisol (from hair), parasites, dispersal, body size, condition, patterns in vegetation and successional dynamics, and spatial heterogeneity in isotopic signatures from vegetation samples and animal tissues to develop isoscapes from seal and seabird transfer of marine-derived nutrients onto the island. Opportunities to publish in good journals and set oneself up for a career in academia may be found here. Students can expect to publish outside of one's own thesis topic as part of whole-lab research questions.

Preference will be given to students that aspire to a career in academia and who have a track record that reflects this career goal. In addition to obtaining scholarships, students will be expected to apply for and help secure research funding for their own projects. Students and post-docs with funding in-hand are always welcome.

Interested applicants should contact me as soon as possible by email (philip.mcloughlin@usask.ca), and be prepared to submit a current CV with copies of transcripts. Website: <http://mcloughlinlab.ca/lab/>