Modeling predator-prey dynamics of large carnivores and ungulates in multi-predator, multi-prey systems

\[
\begin{align*}
\frac{dP_1}{dt} &= r_1 P_1 \left(1 - \frac{P_1}{K_1}\right) - \frac{a_1 P_1 C}{1 + T_h(a_i P_1 + a_2 P_2)}, \\
\frac{dP_2}{dt} &= r_2 P_2 \left(1 - \frac{P_2}{K_2}\right) - \frac{a_2 P_2 C}{1 + T_h(a_i P_1 + a_1 P_2)}, \\
\frac{dC}{dt} &= C \left(\frac{b(a_1 P_1 + a_2 P_2)}{1 + T_h(a_i P_1 + a_1 P_2)} - mC - h\right),
\end{align*}
\]

PhD Assistantship in Wildlife Biology at the University of Montana

One PhD assistantship is available for Fall 2017 (or potentially Spring 2017) to pursue a project focused on modeling predator-prey dynamics of large carnivores and ungulates in multi-prey, multi-predator systems in the Rocky Mountain west. The successful PhD student will work together with Idaho Department of Fish and Game to develop mathematical/statistical models of predator-prey systems and apply these models to different study areas with different densities of various predator and prey species. Opportunities for fieldwork to support the research could be developed by the PhD student and collaborating agencies, but we anticipate that this PhD project will be primarily focused on testing hypotheses about predator-prey dynamics using existing agency-collected datasets. The student will be advised jointly by Dr. Angela Luis and Dr. Mark Hebblewhite, and funding for this project will be provided by IDFG and the University of Montana.

Qualifications: Required qualifications include M.Sc./M.A. in wildlife biology, ecology, conservation biology, mathematics/statistics, physics or related field; outstanding work ethic; exceptional quantitative skills and motivation; demonstrated excellence in oral and written communication and interpersonal skills. Preferred qualifications include experience working with wildlife management agencies, experience with dynamical models, mathematical biology, statistical modeling, programming, R, GIS analyses, scientific writing, and spatial modeling.

How to apply: Send cover letter summarizing interest and relevant experience, resume/CV, unofficial transcripts, GRE scores, and contact information (including phone and email - letters not required at initial screening stage) for 3 references to Dr. Angela Luis (Email: angela.luis@umontana.edu), Wildlife Biology Program, College of Forestry and Conservation, University of Montana, Missoula, MT, USA, 59812. Start date is flexible; position could start January 2017 or as late as August 2017. University of Montana Wildlife Biology Program application deadline is Jan 15, 2016. Top candidates will be contacted by Dec 31st, 2015, and directed to apply for admission to the UM graduate school.