

# Ph.D. Opportunity

## Modeling climate change effects on pygmy rabbits



October 19, 2023

### **Soliciting applications for a Ph.D. degree program in Natural Resources (Wildlife) at the University of Idaho, beginning Spring – Fall 2024.**

The incumbent will join a team of researchers and managers seeking to understand and inform approaches to sustain threatened pygmy rabbit (*Brachylagus idahoensis*) populations. The incumbent will develop and integrate physically-based surface energy and biological models of pygmy rabbit habitat and fitness under climate change. Physically-based modeling includes parameterizing and applying an existing model of soil-plant-atmosphere moisture and temperature under current and climate-changed scenarios. This will involve collecting basic hydrometeorological data to drive and validate the model and applying the model using a semi-distributed approach to identify where habitat microrefugia are likely to emerge, persist, or disappear in projected future climates. Biological modeling includes behavioral and physiological responses to physical conditions, and work in a team to link results to current and projected future distributions. The incumbent will also develop a sophisticated optimization of behavioral choices that maximize lifetime fitness. The optimization will track energetic demands under different thermal conditions and explore tradeoffs between foraging and predation. Knowledge of GIS and/or stochastic dynamic programming is preferred but not required. Parameterization of this model will entail thorough review of relevant literature on bioenergetics, survival, and behavior.

The incumbent will have interest in becoming an expert modeler that integrates physical and biological processes using computer algorithms, statistics, and mathematics. The incumbent will also have interest in developing practical solutions to wildlife management problems. The successful applicant will possess experience, knowledge, and/or interest in the following areas: (1) writing R code to process data and model systems; (2) climate dynamics with ecological challenges; (3) basic GIS skills to analyze geospatial data; (4) theory and models of population dynamics and individual behavior, and (5) cultivation of professional relationships.

This opportunity includes a Research Assistantship that will cover costs of tuition and health insurance and provide a starting annual stipend of approximately \$29,250/year. Position contingent on funding. Inquiries about project funding and objectives may be directed to Principal Investigators Drs. Matt Falcy ([mfalcy@uidaho.edu](mailto:mfalcy@uidaho.edu)) and Tim Link ([tlink@uidaho.edu](mailto:tlink@uidaho.edu)) at the University of Idaho.

The position is located on the campus of the University of Idaho in Moscow, ID. Remote work is not possible.

To apply, merge the bulleted items below into a single PDF and email to [tlink@uidaho.edu](mailto:tlink@uidaho.edu) and [mfalcy@uidaho.edu](mailto:mfalcy@uidaho.edu) by January 1, 2024 using the subject line *Pygmy Rabbit Opportunity*:

- Cover letter describing (i) qualifications 1 – 5 above, and (ii) a statement of work ethic/philosophy that you intend to implement in this position to achieve your longer-term goals. Do not exceed two pages.
- CV/resume that includes contact information for three professional references.
- Photocopy of GRE general test scores, if available.
- Unofficial or official transcripts of all coursework.