

Two (2) PhD or MS Assistantships in Ecology to Study White-tailed Ptarmigan Population Processes (Demographics and Genomics)

We are recruiting two graduate students to study white-tailed ptarmigan population dynamics in the southern Rocky Mountains of Colorado. This research is part of a continuing long-term study of two ptarmigan populations (Mt. Evans and Trail Ridge [Rocky Mountain NP]) that began in 1966. The first student (Demographic) will investigate habitat relationships by combining newly collected VHF-telemetry data with an existing location database and applying resource selection functions to model quality habitats, and predict likely future changes to habitat under various climate scenarios. This student will also conduct field work to monitor breeding activities during the spring and summer, and construct population models used to estimate various demographic rates and processes. The second student (Genomic) will have access to a full genetic catalog of biological samples collected from every banded white-tailed ptarmigan captured within the past 15 years, with associated repeated measurement data on timing of breeding events (for females) and demographic data. This student will potentially conduct paternity analyses, and relatedness matrices for use in animal models to evaluate the adaptive nature and evolvability of timing of breeding and molt. This student will also participate in the collection of field data. There will be considerable freedom for both students to develop their own research program, so long as they align at least somewhat with these research topics.

Those interested in applying for a PhD assistantship must have a MS degree in wildlife biology, ecology, statistics, or a closely related field. We prefer to hire PhD students for both positions, but will also consider outstanding students with a bachelor's degree given they have demonstrated field and research/quantitative experience. Please make sure to highlight such experience in your cover letter. Ideally, students will be available to begin field work in late-May or June of 2021, and begin taking classes in the fall (mid-August) of 2021. There may be some flexibility in this start date, but coursework must begin in August. Please specify which position you are applying for in your cover letter, what skills you have that would make you ideal for this position, and why you could be a good candidate.

Required Qualifications:

- MS (PhD applicants) or BS (MS applicants) in wildlife biology, statistics, or related field
- Excellent written and oral communication skills
- Excellent organizational skills
- Ability to work independently in rugged and sometimes isolated wilderness
- Demonstrated coursework in statistics, population genetics, or demographic modeling (MS)
- Demonstrated research thesis or publications (PhD)

Desired Qualifications:

- Strong quantitative skills, including Bayesian hierarchical modeling, mark-recapture analyses, or generalized linear models
- Experience coding in R or Python, including GIS spatial processing
- Knowledge of avian biology or alpine ecosystems

Students would be enrolled in the Graduate Degree Program in Ecology at Colorado State University and directly advised by Dr Cameron Aldridge who is a Research Ecologist at the USGS Fort Collins Science Center and an Affiliate Faculty at CSU; Dr. Sara Oyler-McCance who is a Research Geneticist with USGS and runs the Molecular Ecology lab at FORT; and Dr. Greg Wann, who is also an Ecologist at USGS-FORT. This is a unique team of wildlife ecologists, who are experts in the fields of ecology, population

demography, resource selection, grouse and ptarmigan ecology, quantitative modeling, and applied genetics and genomics.

Colorado State University (<http://admissions.colostate.edu/>) has prolific research in natural resources (<http://warnercnr.colostate.edu/>) and a world class Graduate Degree Program in Ecology (<http://ecology.colostate.edu/>). CSU is located in beautiful Fort Collins, on the foothills of the Rocky Mountains, and has been voted as one of the best places in the United States to live.

Compensation includes annual stipend of ~\$26,000 (MS) or ~\$27,000 (PhD), plus tuition and benefits.

Individuals interesting in applying for this position should contact Dr. Cameron Aldridge (aldridgec@usgs.gov), with the subject Title: "**Ptarmigan Positions**". Please send 1) a cover letter explaining your long-term career/research goals and academic interests, 2) a copy of your current CV (resume), 3) GRE scores and unofficial transcripts, 4) names, addresses, and e-mail contacts for three references. Applications will be evaluated upon receipt. Deadline to apply: May 02, 2021