

MS Graduate Research Assistantship: Utah State University, UCFWRU (USGS) – Drs. Phaedra Budy (Fish Ecology Lab -<http://www.usu.edu/fel/>) and Julie Young (https://qcnr.usu.edu/directory/young_julie)

Project: Understanding the dynamics and behavior of re-introduced beavers aimed at restoring habitat for imperiled desert fishes.

Responsibilities: The prospective graduate student will develop their master's thesis within the overall framework of a study designed to enhance passive, desert stream restoration through a better understanding of translocated beaver behavior, population dynamics and vital rates, and potential movement patterns when accompanied by BDAs and PALs. The desert tributaries of the Green River are used by four large rivers, ESA endangered fishes as well as the “Three Species”, two imperiled suckers spp. and a chub. Several rivers are currently undergoing adaptive, passive restoration aimed at reversing the impacts of reduced flow, non-native vegetation establishment, and consequent channelized in-stream habitat and intermittent drying. Passive restoration of rivers and streams using beavers (*Castor canadensis*) and beaver dam analogs (BDAs) is rapidly growing in response to demonstrated success and affordability.

While boreal translocation projects are effective at reestablishing beaver populations, with success typically defined as the prolonged presence of beavers post-release, there is limited data on several relevant factors to understanding ecological impacts of beaver reestablishment, particularly in desert rivers. These uncertainties include behavior (including dam building) and space use patterns post-release (long-distance and fine-scale movements). For the past two years, we have evaluated translocation success relative to resident beavers. Now, BDAs will be added before additional translocation efforts. Thus, the proposed objectives of this study are to: 1) relocate nuisance beavers to on-going restoration sites within the Green River watershed, 2) study the recolonization process, vital rates, and movement and dam building patterns of new beavers, and 3) identify the most effective (in terms of restoration and cost) combinations of passive restoration techniques and beaver reintroduction strategies.

Qualifications: B.S. degree in ecology, biology, wildlife, zoology, or related field. Candidates from underrepresented groups in STEM are strongly encouraged to apply and also will be encouraged to apply for an additional [JEDI fellowship](#) if opting to join WATS. For additional information describing the department, graduate school requirements, faculty, and programs see <http://www.cnr.usu.edu> (*WATS or WILD*).

Funding and stipend: The project is funded largely by the Bureau of Land Management and the UDWR Watershed Restoration Initiative, with in-kind support from the USDA-National Wildlife Research Center and the US Geological Survey UCFWRU. A monthly stipend starting at \$1650/month will be provided with opportunities for tiered raises. Tuition and university-student medical insurance are paid by the project/university. Total annual award = ~\$30,000/year. Candidates must be willing to work in the hot, arid deserts of Southeast Utah and camp in

undeveloped, dispersed camping areas (a travel trailer will be available). QCNR offers a vibrant and extremely interdisciplinary, intellectual community.

To apply: Please email as one pdf: (1) letter of interest, (2) CV-resume (including GPA), (3) informal copies of transcripts, and (4) reference list (no letters needed yet) to Phaedra Budy (phaedra.budy@usu.edu) and Julie Young (julie.young@usu.edu). Closing: Until filled. Start date: Negotiable; however, preferred start date, spring 2021 to overlap with current MS student and begin field work (hired as a technician until enrolled in the fall semester).

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