F25.28: Contemporary and Historical Effects of Species Dispersal on Aquatic

Overview

Across Northern Arizona, more variable temperatures and precipitation are changing the availability and distribution of small water bodies, threatening the persistence of aquatic species. We aim to understand how environmental changes are affecting aquatic habitat availability and how changes in habitat availability are affecting the dispersal of aquatic macroinvertebrates across an arid landscape. Additionally, through a contemporary and historical lens, we aim to understand how changes in dispersal are affecting the distribution of aquatic biodiversity across Northern Arizona. These are novel questions at the nexus of landscape ecology and conservation and span a range of ecological disciplines. Answering these questions involves remote sensing, dispersal modeling, and field sampling.

What the student will DO and LEARN

The main task of selected interns will be to sample aquatic macroinvertebrate habitats in the field and sort through these samples in the lab. In the field, interns will learn aquatic macroinvertebrate community and water quality sampling methods, as well as safe fieldwork practices. In the lab, interns will sort through community samples they collected using a dissecting microscope to the level of order or family. Through this field and lab work, interns will gain valuable experience collecting environmental and biological data and experience in invertebrate taxonomy, both of which are useful for various job opportunities in government, consulting, and research sectors. Additionally, they will be directly supporting and involved in research that our lab group aims to publish. While working in the field and lab, interns will be encouraged to pursue their own research interests within our lab setting. As an intern in our lab, they will have access to historical data and data they helped collect. A graduate student will mentor the interns, helping them develop personal research questions, analyze and interpret data, and communicate their results via poster at the Undergraduate Symposium. Such an experience will help undergraduate interns early in their academic and research careers experience the scientific process (asking questions, acquiring data, analyzing, interpreting, and communicating) while exploring their own research questions in an inclusive environment with personal and supportive mentorship.

Additional benefits

Data management skills, data analysis in Excel and/or R depending on student interests, and critical and creative thinking within a research setting.

Additional qualifications

An interest in biodiversity and ability to turn off microscope lights and lock doors when they are finished for the day.

This position is partially-funded by NAU's LSAMP program, so acceptance to this position is contingent upon LSAMP-eligibility.

Time commitment

8 hrs/week for 30 weeks