

## THE UNIVERSITY OF ARIZONA

# School of Natural Resources and the Environment

### Seminar Series: Spring 2023

#### INTEGRATING SENSORY ECOLOGY AND CONSERVATION SCIENCE: IMPLICATIONS FOR SOUTHWESTERN T&E SPECIES

SPEAKER: Sean Mahoney, UA SNRE DATE: Wednesday, April 19th TIME: 3:00-4:00 pm LOCATION: ENR2 S210 & Zoom

#### **ABSTRACT:**

Visual and acoustic signals mediate key animal behaviors and studying communication modalities can inform conservation of threatened and endangered species. In birds, song is a complex acoustic signal that is typically used to attract mates and repel competitors. Plumage coloration is also hypothesized to attract mates. but mav aid in thermoregulation and avoiding predation through crypsis as well. Assessing character variation has become especially important for the conservation of the endangered Southwestern Willow Flycatcher (SWFL, Empidonax traillii extimus), a subspecies of the Willow Flycatcher (E. traillii).



Recently the subspecific status of SWFLs was challenged and argued that it be removed from the endangered species list. I will present results on geographic variation of plumage and song structure, and behavioral experiments assessing subspecies song discrimination that may suggest reproductive isolation among Willow Flycatcher subspecies. In the second part of the seminar, I will discuss the audible distance of animal vocalizations, which is fundamental to the ecology of communication but is often overlooked. Red squirrels (Tamiasciurus) produce rattle vocalizations to advertise their presence in territories centered around a larderhoard. We estimated the audible distance of southwestern red squirrel rattles (*T. fremonti*) by integrating amplitude-calibrated recordings with estimates of hearing sensitivity and acoustic attenuation in the environment. I will discuss our findings in relation to the adaptive value of rattles in territorial behavior and impacts of anthropogenic noise on endangered Mt. Graham red squirrels (*T. fremonti grahamensis*).

The School of Natural Resources and the Environment ENR2, 3N 1064 E. Lowell St. Ph.: (520) 621-7255 | Fax: (520) 621-8801