

Welcome back to TRU's Environmental Science Seminar Series

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Thursday, January 21st - 4 to 5 pm

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Title: Assessing geographic variation in song structure and plumage coloration in the Willow Flycatcher (*Empidonax traillii*) complex

Speaker: Dr. Sean Mahoney; Post-Doctoral Fellow, Thompson Rivers University

Abstract: Animals communicate their fitness as potential mates through various modalities including acoustic and visual signals. Divergence in these signals can be an important driver in speciation and can lead to reproductive isolation when characters between populations become too different for populations to recognize each other as the same species. In birds, song and plumage coloration are two important communication modalities and therefore divergence in these characters may result in reproductive isolation between closely related populations. 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 may 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*). The subspecies designation was largely based on genetics, because, although the subspecies do not show reciprocal monophyly, the mtDNA C-haplotype is more frequent in SWFL populations. Recently the subspecific status of SWFLs was challenged and argued that it be removed from the endangered species list. Previous studies found song differed in structure between two of the four subspecies, but whether individuals recognize those differences remains unknown. Likewise, although differences in plumage coloration among Willow Flycatcher subspecies were found based on qualitative and quantitative assessments, these studies ignored UV spectra, which is invisible to humans, but are important signals in birds. I will present results on geographic variation of plumage and song structure, and behavioral experiments assessing subspecies song discrimination.

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