



School of Natural Resources and the Environment

Seminar Series: Spring 2019

THE STUDY OF DESERT ECOSYSTEMS THROUGH AVIAN INDICATOR SPECIES

SPEAKER: Alberto Macias Duarte, *Sonora State University, Hermosillo, Mexico*

DATE: Wednesday, April 17th, 2019

TIME: 3:00-4:00 pm

LOCATION: ENR2, S107



ABSTRACT: The arid lands of northern Mexico harbor unique and diverse ecosystems, such as desert scrublands and desert grasslands, sky islands and riparian forests. These vulnerable ecosystems may rapidly evolve during the coming decades due to factors associated with climate change such as increased aridity and temperature, as well as other factors such as invasive species and changes in land use. In this context, population parameters and life histories of birds of conservation concerns may be used as ecological indicators and can provide reference baselines to track the effects of climate change. My research work has focused on the population ecology of indicator birds in large ecosystems. I have conducted research on the reproductive biology and habitat of the aplomado falcon (*Falco femoralis*) in desert grasslands of Chihuahua; abundance, survival and habitat selection in grassland birds of the Chihuahuan Desert; population genetics and migratory behavior of the burrowing owl (*Athene cunicularia hypugaea*); reproductive biology of the rufous-winged sparrow (*Peucaea carpalis*) in the Sonoran Desert; occupancy of the yellow-billed cuckoo (*Coccyzus americanus*) in riparian habitats of Sonora; winter diet and population genetic structure of the Moctezuma quail (*Cyrtonyx montezumae*) in oak savannas of Arizona, New Mexico and Texas; and natal dispersal of golden eagle (*Aquila chrysaetos*) in the Chihuahuan desert. These investigations have documented numerous important functional relationships between population parameters of these birds and ecological variables. These bird-environment relationships already provide indications of possible deep functional changes that are currently occurring in the ecosystems of northern Mexico.