Abstract

Habitat destruction associated with urban development may be the greatest threat to Arizona’s wildlife. Arizona is one of the fastest growing states, and Pima county is among the fastest growing counties in the United States. This incredible growth has led to unprecedented sprawl, consuming pristine desert at an estimated rate of approximately 25 km² per year in Pima County. Although the desert is being developed at an alarming rate, very little is known about how urbanization affects wildlife. This is especially true for herpetofauna, a group that typically receives less scientific and conservation attention than mammals and birds. It is important to understand how anthropogenic change impacts different wildlife species, because this knowledge will inform effective management strategies that minimize loss of species in urban settings.

We studied two urban populations of Desert Spiny Lizards (*Sceloporus magister*) on the University of Arizona campus, and Rio Vista Natural Resources Park, near the Rillito River in central Tucson. We captured lizards using a noose attached to a long, telescoping fishing pole. We weighed and measured, determined sex, and obtained temperature and humidity data on all lizards captured. We implanted microchips (PIT-tags) under the skin of lizards to allow for individual identification. We attached radio transmitters to the backs of selected lizards and radio tracked a total of 17 lizards on the UA Campus and 5 at Rio Vista, from August-October, 2017 and 2018. We recorded UTM coordinates using a handheld GPS receiver each time we located a lizard. We used their location data to determine activity patterns and home range characteristics. Our results showed an average difference in home range size of > 300m² in 2018 compared to 2017. We speculate that this change in home range size was likely due to the fact that we only radio tracked males in 2017, but we tracked both males and females in 2018. Because males are territorial, they expanded their home ranges by chasing other males off and occupying their territories. In addition, males tend to have larger home ranges than females, traveling longer distances in search of mates. Indeed, in many social lizard species, males tend to be riskier than females which maintain smaller home ranges that males seek out for mating opportunities.

Our data revealed no difference in *S. magister* home range size between UA campus and Rio Vista from August-November 2018, which was the only period of time that we radio tracked lizards at both sites simultaneously. These results may indicate that *S. magister* living in highly urbanized settings can maintain home ranges similar to individuals living in less disturbed areas. The fact that *S. magister* is commonly found in urban settings indicates that the species may be well suited to persist in the face of increased levels of anthropogenic disturbance.