

Acorn Woodpecker Behavior and Reproductive Success Across an Urban Gradient

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Urban characteristics, such as light and noise pollution, can dramatically alter behavior, physiology, morphology, and ultimately survival and reproductive success in wild species. We investigated the impacts of urbanization on daily activity patterns in cavity-nesting, cooperatively-breeding acorn woodpeckers residing in Santa Barbara. Based on previous research in urban birds, we predicted that urban-dwelling groups exposed to high levels of artificial light would start activity earlier, cease activity later, and be more active at sunrise and sunset than more rural-dwelling groups, and that this extended daily activity could result in energetic costs that translate to reduced reproductive success. We tested this hypothesis by observing daily activity patterns in 20 different woodpecker groups across an urban light gradient, and recording number of chicks fledged at 28 different nest cavities. We found that, contrary to expectation, urban woodpeckers began activity later in the day and were less vocal in the early morning than their more rural counterparts, and did not differ in what time they ceased activity at night--though they were less vocal at that time. Furthermore, there was no difference in fledglings produced between more urban and more rural groups. These findings raise further questions about how this distinctive species is able to persist in urban contexts, and the causes and consequences of these notable differences in behavior across the urban gradient.