

# Bat Species Identified at FIU MMC Campus Using Automated Echolocation Recording Systems

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## Abstract Details

Bats, the order Chiroptera, make up approximately one-quarter of all mammal species on Earth yet our knowledge of them is comparatively minute. Bat species use a process known as echolocation, through which they orient and navigate using vocalizations. There are seven bat species living in Miami-Dade county, including the Florida bonneted bat, *Eumops floridanus*, a critically endangered species that is only endemic to South Florida. There are currently believed to be less than two hundred-fifty individuals of *E. floridians* left. It was completely unknown whether any bats used the FIU MMC campus as habitat. Our goal was to identify which species are present and at what locations. To do this, we deployed an automated echolocation call recorder (Songmeter, Wildlife Acoustics) at ten locations on campus from November 21, 2014 to January 28, 2015. We sampled two nights at each location and identified each bat species according to their echolocation call features. We recorded a total number of 181 bat passes. We recorded the *E. floridians*, *Nyctecius humeralis*, and *Tadarida brasiliensis*. The greatest activity was at the Football stadium and the least activity was in the nature preserve. The most common bat was *T. brasiliensis*. In conclusion, FIU does have bat species flying on campus at night including the critically endangered Florida bonneted bat. We recorded only three Florida bonneted bat echolocation passes however, these surveys were done during cold winter months when these bats aren't as active. We will sample again in March and April to compare abundance and determine whether FIU is home to more of this critically endangered species.

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