

Fossils link Caribbean bat extinction to humans, not climate change

23 January 2015, by Stephenie Livingston



The new dates demonstrate that at least five species of bats withstood this [climate change](#) and reduced land area, only to be wiped out at a time when climate conditions were largely similar to those of today, said lead author J. Angel Soto-Centeno, a post-doctoral researcher at the American Museum of Natural History who began the research as a doctoral student studying mammalogy at the Florida Museum.

"Prehistoric and modern humans have had considerable impacts on island species and ecosystems, including the early Amerindians who settled in the Bahamas and altered the natural fire regimes on a large scale," Soto-Centeno said. "We found that the demise of bat populations in the Bahamas coincides with similar land mammal, reptile and bird losses on other Caribbean islands."

Sharing caves with millions of bats, the Caribbean's first humans may have driven some species of the winged mammals to extinction.

The new study appearing online today in *Scientific Reports* rejects previous research that directly connected climate change and the loss of land with the disappearance of bat populations.

Knowing when and how Caribbean bats went extinct could contribute to better understanding biodiversity and how to save modern-day wildlife from meeting the same fate, said co-author David Steadman, a University of Florida ornithologist.

"Ours are the first radiocarbon dates for bat fossils in the whole West Indies," said Steadman, curator of ornithology at the Florida Museum of Natural History on the UF campus. "The new dates prove that certain bat populations were still in existence much later than previously thought—around the same time humans arrived."



Twenty-five thousand years before people set foot on the pristine beaches of the Abaco Islands in the Bahamas, the world was a colder place. When the planet began to warm after glaciers covering much

of the Earth melted and sea levels rose, large islands quickly became small islands.

Study researchers found that even when an island underwent a considerable reduction of land area, the minimum amount of suitable habitat to sustain healthy bat populations was likely unchanged. Steadman said the enduring result of the study is that extinction of bats in the Caribbean is much more complex than previously thought.

"Now that we have the technology to date these small bones, it opens up the possibility of determining the chronology of the extinction of bats in the Caribbean," Steadman said. "Now we have good evidence that it is not the shrinking of islands that wiped out these populations, and the only thing we know happened in the last thousand years that might affect [bat populations](#) is the arrival of people."

Liliana Dávalos, assistant professor of conservation biology/ecology and evolution at the State University of New York at Stony Brook, said the new study is an important first step in understanding the potential changes in size of population that species of bats can undergo and still survive.

"We have never had such compelling evidence of persistence well after the end of the last glaciation," Dávalos said. "The study shows that populations thought to have gone extinct because of higher sea levels at the end of the last glaciation persisted well into the post-glacial."

Provided by University of Florida

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