Sawmill Sink, the flooded sinkhole from which fossils of almost 100 vertebrate species were found.

Nearly 100 fossil species found in a flooded cave on Abaco Island in the Bahamas reveal a story of persistence against all odds--at least until the time humans stepped foot on the islands.

Researchers say the discovery, detailed in a paper published this week in the journal *Proceedings of the National Academy of Sciences*, shows that human activities pose a threat to the future of island biodiversity, with modern climate change not necessarily being the most important factor.

"The results of this project provide another perspective on the ways natural and human forces have interacted over time and space," says Tom Baerwald, geography program director at the National Science Foundation (NSF), which funded the research. "Although focusing on one locale, this project expands our insights into nature-human interactions for nearby regions, including many parts of the U.S."

Baerwald adds, "The rich array of materials discovered, and their value in helping interpret past environmental conditions, helped lead to the inclusion of these sites in new national parks and marine reserves in the Bahamas."

A green sea turtle shell that was recovered from Sawmill Sink in very good condition.

Exploring why some species were more flexible than others in the face of climate and human-driven changes could alter the way we think about conservation and restoration of species today.

Scientists fear that activities like habitat alteration and the introduction of invasive species could pose the greatest risk to island species, says lead paper author David Steadman, ornithology curator at the Florida Museum of Natural History.

Abaco Island has lost 39 of the species in the study. Of those, 17 species of birds likely fell victim to changes in climate and rising sea levels around the end of the Ice Age, about 10,000 years ago.

Future research will explore whether there are genetic differences between the Bahamas species that persisted and those that were lost when humans arrived. The scientists hope to learn whether there's a genetic basis for adaptability.

"The answer could help us predict what animals will be affected most by a changing climate, and by humans," Steadman says.

National Science Foundation

-- Cheryl Dybas & Stephanie Livingston

http://nsf.gov/discoveries/disc_summ.jsp?cntn_id=136469&org=NSF&from=news