

Ice age era bones recovered from underwater caves in Mexico

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A diver inspects the arm bones of a giant ground sloth. Credit: Roberto Chavez Arce

When the Panamanian land bridge formed around 3 million years ago, Southern Mexico was in the middle of a great biotic interchange of large

animals from North and South America that crossed the continents in both directions. However, fossil animals from this time have been rare for the in-between environments of Central America and southern Mexico. Recently, a team technical cave divers are helping fill in this gap by discovering remains of large animals that once roamed the Yucatán Peninsula, during the end of the last Ice Age (around 13,000 years ago). Lead author, Dr. Blaine Schubert will present the team's findings at this year's annual meeting of the Society of Vertebrate Paleontology held this year in Calgary, Alberta (Canada) on Saturday, Aug. 26th.

The team of divers descended into the flooded passageways to an underground pit known as "Hoyo Negro" (Spanish for "Black Hole"), reaching down 180 ft (55 m) into the darkness. During the last Ice Age, sea level was much lower, and the prehistoric animals were able to walk to Hoyo Negro through horizontal passageways, only to fall into the inescapable pit within the cave. Divers have been photo-documenting the material before extraction, using re-breathing SCUBA equipment to prevent bubbles from disturbing the site. Dr. Blaine Schubert of East Tennessee State University, one of the lead researchers on the project says, "preservation of the fossil material is extraordinary, and will allow us to reconstruct various aspects of anatomy, evolutionary relationships, and behavior. The diversity of the fauna gives us an exciting new picture of this region in the midst of rapid climatic and environmental change."

Thus far the crew has recovered remains of three different [giant ground sloths](#) (including an entirely new species), short-faced bears, mountain lions, sabertooth cats, a bizarre relative of elephants called a gomphothere, tapirs, and even a human. "This represents the oldest and most complete early human skeleton in the Americas, and she co-existed with a variety of megafauna" says Schubert. "The remains of the short-faced bear *Arctotherium* are particularly significant, representing not only the most complete and abundant material from one location, but

also the first evidence that they crossed from South America into North America." This fossil fauna is fleshing out a larger ecosystem for southern North America, which has typically been thought of as more of a bridge between landmasses than its own thriving community of local inhabitants. As the international collaboration of U.S. and Mexican researchers continues its work, the scientists hope to better understand the nature of this bridge and its own ecological complexities.



A diver with a human skull, found in Hoyo Negro. Credit: Daniel Riordan Araujo



The Hoyo Negro well lit by the lights of cave divers. Credit: Roberto Chavez Arce

Provided by Society of Vertebrate Paleontology

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