Researchers discover earliest use of Mexican turkeys by ancient Maya

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A new University of Florida study shows the turkey, one of the most widely consumed birds worldwide, was domesticated more than 1,000 years earlier than previously believed.

Researchers say discovery of the bones from an ancient Mayan archaeological site in Guatemala provides evidence of domestication, usually a significant mark of civilization, and the earliest evidence of the Mexican turkey in the Maya world. The study appears online in PLoS ONE today.

The discovery of the turkey bones is significant because the Maya did not use a lot of domesticated animals. While they cultivated domesticated plants, most of their animal protein came mostly from wild resources, said lead author Erin Thornton, a research associate at the Florida Museum of Natural History on the UF campus and Trent University Archaeological Research Centre.

"We might have gotten the timing of the introduction of this species to the ancient Maya wrong by a significant chunk of time," Thornton said. "The species originates from central Mexico, outside the Maya cultural area. This is the species the Europeans brought back with them to Europe -- all domestic turkeys originated from Mexico."

Using archaeological evidence, comparisons of bone structure and ancient DNA analysis, scientists determined the turkey fossils belonged to the non-local species Meleagris gallopavo gallopavo, which is native to

central and northern Mexico. The Mexican turkey is the ancestor of all domestic turkeys consumed in the world today and Mesoamerica's only indigenous domesticated animal. The discovery of the bones south of the turkey's natural range shows animal exchange occurred from northern Mesoamerica to the Maya cultural region during the Late Preclassic period from 300 B.C. to A.D. 100.

"This research has consequences for understanding Maya subsistence because they would have had access to a controlled, managed resource," Thornton said. "The turkey bones came from right within the ceremonial precinct of the site, so these are probably the remains of some sort of elite sacrifice, meal or feast."

The bones were recovered from the El Mirador archaeological site, one of the largest and most developed Preclassic locations found in the Maya lowlands. The site contains massive temple complexes, some of the largest Maya architecture ever constructed.

"Plant and animal domestication suggests a much more complex relationship between humans and the environment -- you're intentionally modifying it and controlling it," Thornton said.

Researchers assumed turkey bones previously recovered from Maya sites belonged to the native ocellated turkey, Meleagris ocellata. The new evidence means researchers may need to re-examine previously recovered bones, said Florida State University anthropology professor emeritus Mary Pohl.

"This study is extremely significant and I think it opens up a whole new perspective on the Maya and animal domestication," Pohl said. "I find it especially interesting that these turkey bones are in this very special pyramid context because people often think of turkeys as something to eat, but they were probably making some sort of special offerings of

them, which would go along with the fact that they brought them in from a long distance."

Florida Museum researchers hope a new two-year, $185,000-grant from the National Science Foundation will help answer some of the questions the study has raised about the history of turkey rearing and domestication in Mesoamerica.

"The turkeys were brought in, they weren't local, but we don't know if they were brought in and then killed shortly after, used as a trade item or bred on-site after an even earlier introduction," Thornton said. "The El Mirador study is really just a tantalizing piece of the puzzle and we still have a lot left to learn and explore."

While the fossils were originally excavated in the 1980s, they were displayed in the Brigham Young University Museum of Peoples and Cultures until being sent to Thornton for identification in 2004.

Provided by University of Florida

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