Turkey bones may help trace fate of ancient cliff dwellers

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In this Aug. 27, 2005 file photo, visitors tour Cliff Palace, an ancient cliff dwelling in Mesa Verde National Park, Colo. Researchers say they have new evidence that ancestral Pueblo people who disappeared from the Mesa Verde cliff dwellings of southwestern Colorado 700 years ago migrated to what is now New Mexico. DNA from the bones of domesticated turkeys. The turkey DNA shows Native American people in the Rio Grande Valley of northern New Mexico raised and ate the same genetic strain of bird as the Mesa Verde people, and that the turkeys arrived in New Mexico about the same time Mesa Verde was abandoned, the researchers said. (AP Photo/Beth J. Harpaz,File)

Researchers say they have found a new clue into the mysterious exodus of ancient cliff-dwelling people from the Mesa Verde area of Colorado more than 700 years ago: DNA from the bones of domesticated turkeys.

The DNA shows the Mesa Verde people raised turkeys that had telltale similarities to turkeys kept by ancient people in the Rio Grande Valley of northern New Mexico—and that those birds became more common in New Mexico about the same time the Mesa Verde people were leaving their cliff dwellings, according to a paper published last month in the journal PLoS One.

That supports the hypothesis that when the cliff dwellers left the Mesa Verde region in the late 1200s, many migrated to northern New Mexico's Rio Grande Valley, about 170 miles (270 kilometers) to the southeast, and that the Pueblo Indians who live there today are their descendants, the archaeologists wrote.

The cliff dwellers would have taken some turkeys with them, accounting for the increase in numbers in New Mexico, the authors said.

Researchers have long debated what became of the people sometimes called Ancestral Puebloans, who lived in the elaborate Mesa Verde cliff dwellings and other communities across the Four Corners region, where the states of Arizona, Colorado, New Mexico and Utah meet.

Archaeologists believe the Ancestral Puebloans were a flourishing population of about 30,000 in 1200, but by 1280 they were gone, driven off by a devastating drought, social turbulence and warfare.

Because they left no written record, their paths are not known with certainty. Many archaeologists and present-day Pueblo Indians believe the Ancestral Puebloans moved to villages across New Mexico and Arizona, and that their descendants live there today.

Scott Ortman, a University of Colorado archaeologist and a co-author of the PLoS One paper, said the turkey DNA supports the explanation that many migrated to an area along the Rio Grande north of present-day Santa Fe, New Mexico.

"The patterns that we found are consistent with several other studies and several other lines of evidence," he said in an interview.

Jim Allison, an archaeologist at Brigham Young University who was not involved in the paper, agreed the findings mesh with other evidence of a southeastward migration.

But a weakness of the study is the number of DNA samples used, he said. Researchers examined DNA from nearly 270 sets of turkey remains—some from before 1280 and some from after that date. But only 11 sets of remains came from the Rio Grande before 1280.

"It would have been really nice to have 10 times as many," Allison said, but they were not available.

Ortman acknowledged that the turkey DNA alone is not conclusive evidence of migration to the Rio Grande Valley.

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The New Mexico turkeys could have come from someplace other than the Mesa Verde region, or turkey-herding communities could already have sprung up in New Mexico before the Ancestral Puebloans left their Mesa Verde communities, he said.

Some archaeologists argue the evidence for a migration to the Rio Grande Valley is thin. Even supporters, such as Allison, acknowledge that some evidence does not fit, including differences in pottery and architectural styles.

Tim Hovezak, an archaeologist at Mesa Verde National Park, said he is not convinced the Ancestral Puebloans moved to the Rio Grande, but he tries to keep an open mind.

"I think it's still a mystery, and it's a very compelling one," he said.

Ortman said other evidence besides the turkey DNA points to the migration.

The Tewa language spoken by some northern New Mexico Pueblo Indians today includes vocabulary "that seems to harken back to the material culture of the Mesa Verde area," he said.

The Tewa term for the roof of a church translates roughly to "a basket made out of timbers," Ortman said. That better describes the roofs used on kivas—ceremonial rooms—in ancient Mesa Verde communities than it does the churches in New Mexico, he said.

Another line of evidence is similarities in the facial structures of the remains of ancient people from the Mesa Verde region and New Mexico, Ortman said.

Examining human DNA from Ancestral Puebloan remains would provide a more definitive answer, Ortman said. But some contemporary Pueblo Indians object to doing that, and Ortman and others said they respect their wishes.

Theresa Pasqual, a member of the Acoma Pueblo in northwestern New

Mexico and the pueblo's former preservation director, said she knows of no pueblos that would consent to DNA testing on ancestral remains because of spiritual and cultural concerns.

Pasqual, who is studying archaeology at the University of New Mexico, said she was heartened by the turkey DNA study because it supports the oral traditions of Acoma and other present-day pueblos that point to ancestral ties to the Mesa Verde region.

Some Acoma families still raise domestic turkeys and hunt wild ones, but it would be difficult to trace that tradition to the Ancestral Puebloans, Pasqual said.

The Ancestral Puebloan sites are a key factor in what she called Acoma's "migration narrative."

"These places have been a part of our narrative and a part of our history and a part of our present-day life for as long as we can remember," Pasqual said.