**Supplemental Text**

***SI Text 1.*** *Archaeological Site and Sample Descriptions*

Fewkes (40WM1) is a Middle-Late Mississippian period (AD 1150-1450) palisaded mound complex and associated town located at the headwaters of the Harpeth River in Williamson County, Tennessee. A large faunal assemblage (NISP = 37,297) recovered from excavations conducted in 1998 contained a total of 440 turkey bones (1.2% total site NISP). Turkey skeletal remains were recovered from feature contexts (e.g., structure floors, refuse pits, burial deposit fill) and general excavation levels (Peres 2010) (see SI Table 3).

Mound Bottom (40CH8) was established along the Harpeth River in Cheatham County, Tennessee. The site consists of a central plaza, fourteen mounds, and associated residential areas. Excavation of the site in the 1970s yielded 167 turkey bones, which compose 5.9% of the site’s total faunal assemblage (NISP = 2818) (O’Brien, and Kuttruff 2012). Turkey bones were recovered from refuse pits, structure floors, and within a test unit placed within the site’s second largest mound (Mound B) (see SI Table 3).

Sandbar Village (40DV36) is a Middle-Late Mississippian period (AD 1100-1450) town located on the Cumberland River in Davidson County, Tennessee. Although the site lacks an earthern mound, it may be a peripheral section of the larger Mississippian town known as the Widemeier site (40DV9) (Smith and Moore 2012). The relatively small faunal assemblage from Sandbar Village (NISP = 698) yielded a total of 12 turkey specimens (1.7% NISP). The single turkey analyzed for δ13C and δ15N as part of this study (see SI Table 3), came from a trash pit radiocarbon dated to between AD 990 and 1190 (Smith and Moore 2012).

Inglehame Farm (40WM342) **i**s a Middle-Late Mississippian period (AD 1100-1450) town on the Harpeth River in Williamson County, Tennessee. A total of 31 turkey elements were identified from the site, accounting for 0.6% of the site’s total faunal assemblage (NISP = 4960) (Moore 2016). Turkey specimens were recovered from feature and general excavation levels, but no detailed contextual information was available (see SI Table 3).

Gordontown (40DV6) is a fortified Middle-Late Mississippian period (A.D. 1250–1450) mound village located adjacent to two natural springs feeding into a tributary of the Cumberland River. Excavations recovered 34 turkey bones, which represent 7.2% of the site’s modest faunal assemblage (NISP = 473) (Moore et al. 2006). Turkey specimens analyzed in this study were recovered from a refuse pit and from deposits associated with a residential structure in the southwestern portion of the site (see SI Table 3).

Toqua (40MF6) is located along the Little Tennessee River in Monroe County, Tennessee. The very large vertebrate faunal assemblage reported by Bogan (1980) contained 376 turkeys bones, which account for <1% of the site’s entire assemblage (NISP =75,887). Detailed contextual information is not available for the turkeys analyzed in this study, but over 55% of the faunal remains reported by Bogan (1980) were recovered from midden contexts, with the remaining coming from structures (22%) and non-mortuary features (22%). It is worth noting that small quantities of unidentified avian eggshell were also identified at the site.

Irene Mound (9CH1) is a Middle-Late Mississippian (AD 1150-1450) site located on a bluff overlooking the Savannah River in Chatham County, Georgia. The site has been destroyed by urban expansion in the city of Savannah, but it previously consisted of eight superimposed mounds, a burial mound, a rotunda or council house, and smaller residential structures. The site’s location and construction suggest it was an elite community occupied by a high-ranking chief and members of his lineage (Williams 1995). Analysis of 4348 faunal specimens from the site identified 61 turkey bones (1.4% NISP) (Reitz et al. 2020). The site was primarily excavated between 1937 and 1940, and many of the original excavation records have been lost so detailed contextual information is not available for turkeys included in this isotopic study, but the remains were recovered from shell layers likely associated with the residential part of the compound (see SI Table 3)

***SI Text 2.*** *Stable Isotope Analysis Laboratory Methods*

At WSU, sample preparation and cleaning were conducted in the Department of Anthropology Stable Isotope Prep Lab. Bone samples were cleaned and sonicated in deionized water to remove visible dirt and debris, and ground using a ceramic mortar and pestle. For bone collagen δ13Cco and δ15N analysis, samples were demineralized in 0.2M hydrochloric acid (HCl) and treated with 0.125M sodium hydroxide (NaOH) to remove organic contaminants. Collagen samples were then solubilized with 10-3M HCl at 90°C and centrifuged to remove particulate contaminants. At CAIS, collagen samples were solubilized at 80°C, and particulates were removed using Whatman fiberglass filters. For analysis of δ13C in bone apatite of a subset of remains (61 turkeys, 5 deer, and 4 canids), sample organics were dissolved by soaking in a 2% v/v sodium hypochlorite (NaClO) solution for 16 hours. Non-biogenic carbonates were removed by soaking the samples for 4 hours in 0.1M acetic acid (C2H4O2). Collagen and apatite samples were freeze-dried for 48 hours prior to loading into the mass spectrometer.

Stable isotope ratios were measured on isotope ratio mass spectrometers housed in the WSU Stable Isotope Core and the University of Georgia Center for Applied Isotope Studies (CAIS). Similar machines were used at both institutions (Thermo Delta Plus, Micromass PRISM Series II). Carlo Erba NA series elemental analyzers were used to obtain C/N ratios as a measure of sample integrity. Accuracy of δ13C and δ15N in both labs was confirmed through repeated (n>10) analysis of international laboratory standards (NBS-19 and USGS-40). δ13Cco and δ15N measured in archaeological turkeys analyzed at WSU (n=71) and CAIS (n=12) were not statistically significant (p=0.60, 0.62, respectively), and excluding the small number of samples analyzed at CAIS would not alter the study’s interpretations. We therefore feel confident combining isotopic values obtained from these two well-established laboratories.

Stable isotope ratios are reported in delta notation (δ) as parts per thousand (‰, per mil) which constitutes the difference of the sample from a standard reference material as outlined in the following equation:

δ (‰) = [(*R*sample) / (*R*standard) –1] x 1000

where R is the ratio of the heavier isotope to the lighter isotope. The established standard for δ13C is Vienna Pee Dee Belemnite (v-PDB) and atmospheric air (AIR) for δ15N.

***SI Text 3.*** *Ancient DNA Extraction and Analysis Laboratory Methods*

At WSU, DNA was extracted from samples in one of two ways. For the first method, approximately 50 mg of material or less was carefully removed from the whole. These subsamples were submerged in 6% sodium hypochlorite (w/v) for 4 minutes and rinsed twice by submersion in DNA free water. Samples were transferred to 1.5 mL tubes, to which aliquots of 500 μL of 0.5M (pH 8) *E*thylenediaminetetraacetic acid (EDTA) were added, and gently rocked at room temperature for >48 hours. DNA was extracted following the WSU method described by Kemp et al. (2014).

A second DNA extraction was attempted on a set of the samples that failed to yield analyzable DNA with the first method or to confirm sequence results where positive. Here, approximately 160-209 mg subsamples of bone material were removed from the whole for extraction. Following decontamination with bleach, as described above, samples were transferred to 15 mL tubes to which 2 mL of EDTA was added. DNA was extracted following the modified Kemp et al. (2007) method described by Moss et al. (2014).

DNA extracts were tested for the presence of co-extracted polymerase chain reaction (PCR) inhibitors following Kemp et al. (2014), using northern fur seal (*Callorinus ursinus*) mtDNA as a positive control (Winters et al. 2001). If deemed to be inhibited, the silica extractions were repeated and extracts were tested again for inhibition. Samples were carried through to the point that they either yielded positive results or were deemed to be inhibitor free, despite producing only negative results.

At BioArCh, turkey bones were subsampled using a sterile saw blade, and chemically decontaminated through immersion in 6% sodium hypochlorite for 5-7 minutes, and rinsed two times in HPLC grade water. Bone samples were UV irradiated for 30 minutes on two sides before being crushed into powder, and incubated overnight at 50°C in 2 mL of lysis (0.5 mg/mL proteinase K, 0.5M EDTA, pH 8). DNA extraction followed a silica spin-column protocol [(Yang et al. 1998)](https://paperpile.com/c/bcj138/Su0Ot) modified as described in Speller et al. [(2010)](https://paperpile.com/c/bcj138/q7GIb/?noauthor=1) using Amicon centrifugal filters (Ultra-4, Millipore) and purified using a Qiagen MinElute PCR Purification Kit.

Ancient DNA also was extracted and analyzed at the Laboratories of Molecular Anthropology and Microbiome Research at the University of Oklahoma from four archaeological canids from Fewkes. DNA Extraction followed the WSU procedures for samples weighing ≤50 mg.

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