

Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our [Editorial Policies](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a Confirmed

- The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement
- A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
- The statistical test(s) used AND whether they are one- or two-sided
Only common tests should be described solely by name; describe more complex techniques in the Methods section.
- A description of all covariates tested
- A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
- A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
- For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
Give P values as exact values whenever suitable.
- For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
- For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
- Estimates of effect sizes (e.g. Cohen's d , Pearson's r), indicating how they were calculated

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection

Data analysis

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our [policy](#)

All data and code used to produce results and figures presented in this text are available in either the main text itself or the supplementary materials. Data are also archived and available at Zenodo t DOI: 10.5281/zenodo.13685025

Human research participants

Policy information about [studies involving human research participants and Sex and Gender in Research](#).

Reporting on sex and gender	NA
Population characteristics	NA
Recruitment	NA
Ethics oversight	NA

Note that full information on the approval of the study protocol must also be provided in the manuscript.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

Life sciences Behavioural & social sciences Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see nature.com/documents/nr-reporting-summary-flat.pdf

Ecological, evolutionary & environmental sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	AMS dating and chronological modeling of archaeologically preserved peach pits to assess the geography and temporality of their spread in the 16th and 17th centuries.
Research sample	Data on the distribution of all known archaeologically (16th and 17th C) preserved peach pits (<i>Prunus persica</i>) from eastern North America were compiled from published and unpublished sources.
Sampling strategy	Sampling strategy is constrained by archaeological preservation, locations of archaeological excavations, and the reporting of results. All known sites in eastern North America with known peach pits were included in the study
Data collection	All known data on 16th and 17th archaeological peaches are included. Extant radiocarbon dates were included alongside new AMS dates.
Timing and spatial scale	The temporal period of interest are archaeological deposits dating to the 16th and 17th century. Spatially, eastern North America serves as the geographic scale, though 16th and 17th preserved peach pits are constrained primarily to the southeastern United States.
Data exclusions	No data were excluded.
Reproducibility	All raw data (AMS dates) and code (OxCal v. 4.4) are included for reproducibility.
Randomization	NA
Blinding	NA

Did the study involve field work? Yes No

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

Methods

- n/a Involved in the study
- Antibodies
- Eukaryotic cell lines
- Palaeontology and archaeology
- Animals and other organisms
- Clinical data
- Dual use research of concern

- n/a Involved in the study
- ChIP-seq
- Flow cytometry
- MRI-based neuroimaging

Palaeontology and Archaeology

- Specimen provenance All newly AMS dated specimens are from archaeological sites in the Oconee Valley of north-central Georgia. Specific sites and contexts for each sample are provided as Supplementary Data 2. All materials (including peach pits) from these sites are curated at the University of Georgia Laboratory of Archaeology. Permits for access to collections and for destructive AMS analyses were granted by the Laboratory. The Laboratory issues permits after consultation with c. 15 Tribal Historic Preservation Officers representing relevant Indigenous descendant communities.
- Specimen deposition All specimens dated via AMS dating are curated at the University of Georgia Laboratory of Archaeology
- Dating methods New AMS dates were obtained on samples curated at the University of Georgia Laboratory of Archaeology. Samples were collected by the corresponding author and sent to the Penn State AMS Lab for AMS dating. Ages were calibrated using IntCal20 and modeled using OxCal v. 4.4. Description of facilities and procedures adhered to by the Penn State AMS Lab can be found here: <https://iee.psu.edu/labs/radiocarbon-laboratory/working-radiocarbon-laboratory>
- Tick this box to confirm that the raw and calibrated dates are available in the paper or in Supplementary Information.
- Ethics oversight The University of Georgia Laboratory of Archaeology and appropriate Indigenous descendant community representatives (Tribal Historic Preservation Officers) approved the research design and study through the University of Georgia Laboratory of Archaeology's institutional permitting process.

Note that full information on the approval of the study protocol must also be provided in the manuscript.