WOODLAND POTTERY SOURCING IN THE CAROLINA SANDHILLS

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Abstract

This study compares local clays with pottery from archaeological sites in the Carolina Sandhills, Piedmont, and Coastal Plain to explore patterns of residential mobility and resource use among people living in the Fort Bragg region of the Sandhills during the Woodland period (ca. 1500 BC–AD 1600). The performance characteristics of clays from each region were assessed through experiments that served to focus the study on anthropologically appropriate clay samples, i.e., those that might actually have been used to make pottery. Neutron activation analysis (NAA), X-ray diffraction (XRD), and petrography were combined to characterize regional variation in the chemical and mineral constituents of prehistoric pottery and clay resources in order to identify the sources of raw materials used to make pottery found on Sandhills sites.

Although it is often assumed that serviceable clay is ubiquitously distributed across the Carolina landscape, this study demonstrates that clay resources with the right combination of strength and plasticity are difficult to find and may be largely absent from some regions. Replication experiments revealed that there are very few clay resources in the North Carolina Sandhills that are suitable for making pottery vessels, suggesting that most pottery found on Fort Bragg sites was made from nonlocal resources and subsequently transported into the region.

The results of geochemical and mineralogical analyses support this conclusion. They confirm that Piedmont and Coastal Plain resources are compositionally distinct. They also indicate that most Fort Bragg pottery samples more closely resemble Coastal Plain and Piedmont resources than local Sandhills materials. The available evidence indicates that Coastal Plain resources may be better represented among the Sandhills sherds than Piedmont resources, but at least three Fort Bragg sherds appear to have been fashioned from Piedmont materials.

The significant implication of these results is that pottery was transported over broad regions, implying that the acquisition of pottery from distant sources was a routine feature of Woodland-period subsistence in the Sandhills. Such materials could have been obtained through high levels of residential mobility, exchange, or both, and we recommend that additional studies be designed to evaluate the specific strategies Woodland people used to obtain pots.

Table of Contents

List of Figures

List of Tables

Preface

This report is a companion volume to *Stone Quarries and Sourcing in the Carolina Slate Belt* (Steponaitis et al. 2006). Both of these multiyear, interdisciplinary research projects reflect the commitment of the Cultural Resources Management Program at Fort Bragg to understanding the archaeological record of prehistoric cultures inhabiting the Sandhills of North Carolina. The idea for these projects was conceived in what might seem an unlikely setting, a lively holiday party hosted by the Research Laboratories of Archaeology. A conversation with John Rogers, emeritus professor of Geological Sciences at the University of North Carolina at Chapel Hill, concerning the use of samarium and neodymium isotopes to identify metavolcanic stone sources set the lithic sourcing study in motion. A significant conclusion of that study was the importance of using multiple analytical methods to assign artifacts to specific source locations, and those methods were modeled for the present study.

The pottery sourcing project described in this volume was supported by several institutions involving many participants. It was funded by the Department of Defense and contracted through the Army Corps of Engineers Construction Research Engineering Laboratory, supervised by Mike Hargrave (and formerly by Tad Britt), and by Jeff Irwin, Program Manager, Cultural Resources Management Program at Fort Bragg. Contractual arrangements with consultants were managed by Paul Webb, Regional Manager, TRC Environmental, Inc., who also provided valuable editorial assistance. A number of scholars were recruited for their expertise and skills: Mike Glascock and Jeff Speakman of the University of Missouri for their expertise in element geochemistry and archaeological sourcing, Michael Smith of the University of North Carolina Wilmington for his knowledge of ceramic petrography, and Paul Schroeder and Sheldon Skaggs of the University of Georgia for their expertise in X-ray diffraction. Theresa McReynolds was brought into the project for her background in both archaeology and geology. The research was designed and implemented by the editors, with Vin Steponaitis at the University of North Carolina at Chapel Hill acting in an advisory capacity.

Prior to beginning this research, it was known that some pottery found on Sandhills sites contained crushed rock that originated in the Piedmont. With this knowledge serving as the starting point of exploration, we posed these questions: if some pottery was being transported into the Sandhills from Piedmont locations, then how common was the practice, and where were the original sources? To address these questions, it was necessary to characterize both pottery and clays found in the Sandhills and surrounding regions. As a result of this study, it may now be asserted with confidence that pottery vessels were being transported into the Sandhills from both Piedmont and Coastal Plain sources on a regular basis. Significantly, results indicate that the quality of clay necessary for making pots is not at all common in the Sandhills. In fact, clay of pottery-making quality was difficult to find in every region surveyed, including the Piedmont and lower Coastal Plain. The implication of this finding for modeling resource procurement strategies in a Woodland-period economy is that scheduling visits to resource areas with good clay would be a high priority, perhaps an essential condition for determining the location of settlements. This conclusion is not likely to come as a surprise to modern potters, but may be surprising to many archaeologists who have routinely assumed that pottery clay is ubiquitously distributed across the landscape, perhaps because pottery is everywhere to be found in abundance. One significant achievement of this project therefore is that the results represent an important first step in dispelling this myth. Also important is the fact that this research demonstrates with some chemical and mineralogical specificity that clay resources in the Carolina Piedmont and Coastal Plain provinces differ in ways that are geologically predictable. The data presented here should therefore be useful in future attempts to determine source areas for pottery found in these regions.

A number of people, other than those previously mentioned, contributed to this project in important ways. Hal Pugh spent a long day visiting clay exposures on Fort Bragg and assessing their quality. Hal and his wife Eleanor Minnock-Pugh were also very gracious in assisting with firing clay test tiles and providing information about matters concerning the assessment of pottery clays. Steve Watts provided assistance in building and firing pots using primitive technologies. Steve Davis, Brett Riggs, and Carl Steen assisted in acquiring pottery samples from key sites in the study area. Dolores Hall was instrumental in obtaining the Archaeological Resources Protection Act permit necessary to collect clays near the Doerschuk site, and Gene Ellis assisted in gaining access to the site. Sandra Bonner aided in the collection of clay samples near the Waccamaw site. Francis Ferrell assisted in securing a Special Gamelands Permit for collecting clay from the shoreline of B. Everett Jordan Lake. Pat Day graciously provided the opportunity to fire test tiles and replica pots. We were surprised and delighted by the interest of so many who contributed to this project, and we pleasantly anticipate future collaborations.

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