



Geochemical sourcing of fiber-tempered pottery and the organization of Late Archaic Stallings communities in the American Southeast

Zackary I. Gilmore^{a,*}, Kenneth E. Sassaman^b, Michael D. Glascock^c

^a Department of Anthropology, Rollins College, 1000 Holt Ave – 2761, Winter Park, FL 32789, USA

^b Department of Anthropology, 1112 Turlington Hall, University of Florida, PO Box 117305, Gainesville, FL 32611-7305, USA

^c Archaeometry Laboratory, University of Missouri Research Reactor, 1513 Research Park Drive, Columbia, MO 65211, USA

ABSTRACT

The oldest pottery technology in North America was innovated by hunter-gatherers belonging to the Late Archaic Stallings culture (ca. 5150–3200 cal B.P.) of Georgia and South Carolina. The culture history of Stallings societies is relatively well-known; however, the permanence and scale of Stallings communities, the nature of the connections among them, and the extent to which they changed over time remain poorly understood. In this study, 450 samples Stallings pottery and 24 raw clay resource samples from along the Savannah and Ogeechee Rivers were submitted for neutron activation analysis (NAA). The NAA results show a significant shift in the nature of vessel transport at the outset of the Classic Stallings phase (4100–3800 cal B.P.), an interval marked by the appearance of the region's first formalized circular villages and dedicated cemeteries. This shift involved the funneling of pots with carinated rims into a few major middle Savannah River mortuary sites, providing evidence for a novel Stallings sociality that combined relatively localized village life with periodic large-scale ritual gatherings.

1. Introduction

The oldest pottery technology in North America was innovated by hunter-gatherer communities of the Late Archaic Stallings culture of Georgia and South Carolina. The culture history of Stallings archaeology is relatively well-known, spanning a period of nearly two millennia (ca. 5150–3200 cal B.P.) and divided into three phases on the basis of changes in pottery (Sassaman, 1993, 2004). Shifts in land-use practices accompanied changes in pottery, although the permanence and scale of communities over time and the nature of connections among them remain poorly understood. The present study focuses on Stallings pottery provenance as a proxy for the movement and interaction of people and materials along the Savannah River, the main corridor of Stallings settlement, and at sites along the adjacent Ogeechee River (Fig. 1). Our ultimate goal is to better understand regional variation in Stallings communities and determine how these changed between the Early Stallings and Classic Stallings phases, a transition marked by the emergence of formalized, circular villages and dedicated cemeteries (Sassaman, 2006).

To this end, a total of 474 Stallings pottery sherds and raw clay sources from locations along the Savannah and Ogeechee rivers were sampled and subjected to neutron activation analysis (NAA). NAA has been shown to be highly effective in distinguishing among pottery from distinct geological sources across multiple contexts in the lower Southeast (e.g., Ashley et al., 2015; Gilmore, 2016; Wallis et al., 2010;

Wallis et al., 2016). This study is the first application of NAA to Stallings pottery assemblages and the first attempt within the region to systematically examine pottery movement based on compositional differences along the length of a single river valley.

Our results indicate that there is strong patterned variation in the chemical composition of both raw clay resources and Stallings pottery along the Savannah River. This variation reflects not only a distinction between local and nonlocal vessels but also the direction (i.e., upriver versus downriver) in which pottery was moved. Overall, the NAA data indicate a relatively low overall frequency of Stallings pottery movement between the Coastal Plain and Lower Piedmont/Fall Zone regions of the river valley. This pattern holds true during both Early Stallings and Classic Stallings times, perhaps suggesting some degree of continuity in the scale and structure of interacting communities, despite changes in settlement, ritual, and technology. However, one notable change in pottery was the introduction of carinated vessels, a rare form found predominately at two Classic Stallings sites, both housing large cemeteries. Compared to other vessel forms, carinated vessels involved a higher proportion of nonlocal items, and compositional data suggest that vessels deposited at mortuary locations were delivered from both upriver and downriver locations. We interpret this as evidence for a novel sociality and rituality associated with mortuary events that gathered people and artifacts from across the river valley in a few select locations during the Classic Stallings period.

* Corresponding author.

E-mail address: zgilmore@rollins.edu (Z.I. Gilmore).

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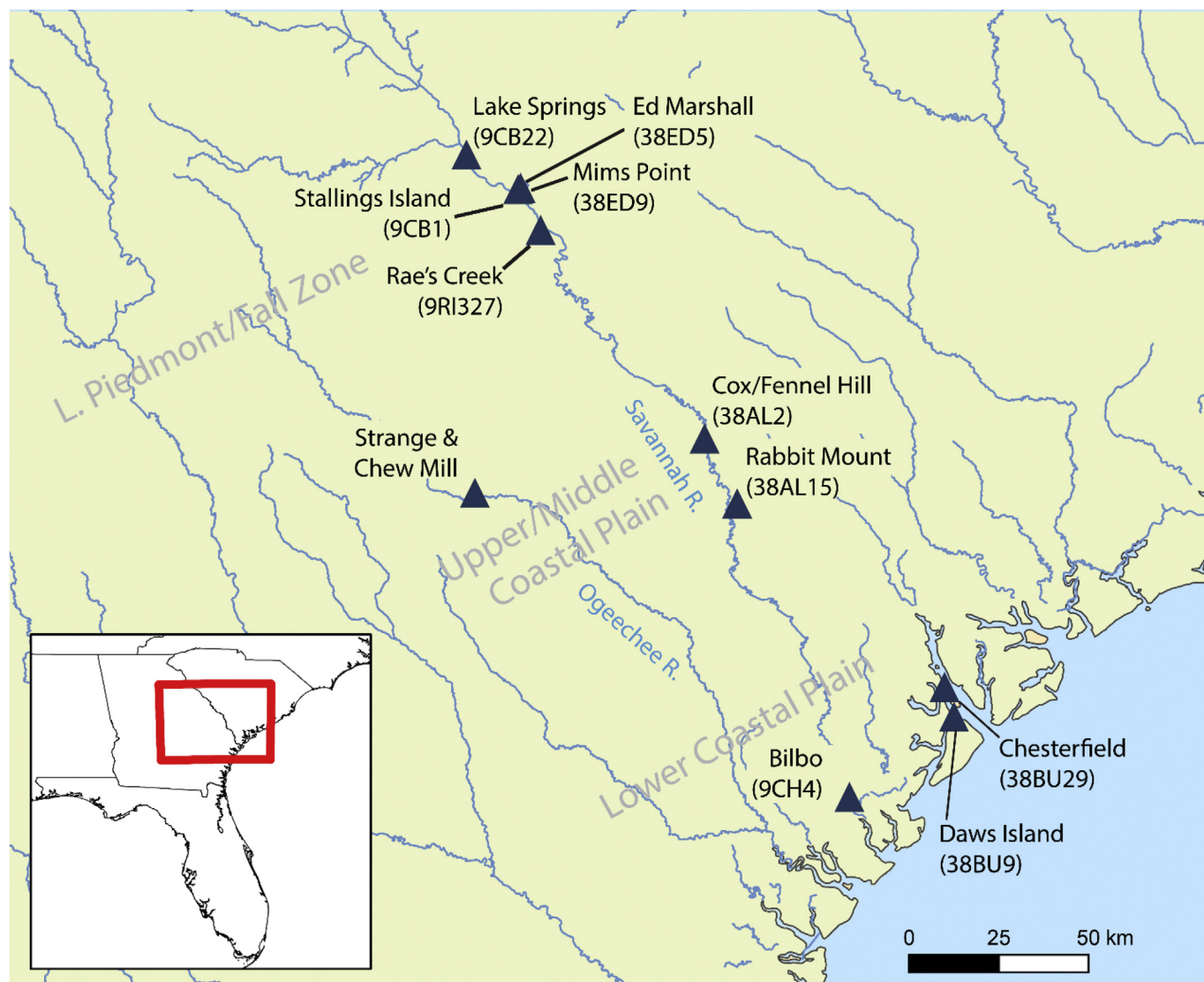


Fig. 1. Map of study area showing locations of sampled Stallings sites.

2. Incipient pottery technology in the southeastern U.S

Pottery-making has a deep history in the southeastern U.S., extending back more than 5000 years (Sassaman, 1993; Saunders and Hays, 2004). The region's earliest pottery, belonging to the Stallings tradition, is characterized by its fibrous organic temper, usually composed of Spanish moss (*Tillandsia usneoides*). Stallings pottery also frequently contains varying amounts of sand and/or grit, although the extent to which this reflects distinct tempering strategies as opposed to differences in the natural inclusions present within various clay sources is unclear. Sites with Stallings pottery extend throughout most of the Savannah River valley from the Piedmont to the coast, as well as the adjacent Ogeechee River valley, tributaries of both rivers, interriverine landforms in the Coastal Plain, and along the Atlantic coast of southern Georgia. Vessels with visible sand constituents occur most often at interior Stallings sites and their frequency seems to have increased over the course of the Stallings period (Sassaman, 1993:161). Parallel and roughly coeval fiber-tempered pottery traditions were centered along the coastline and St. Johns River valley of northeast Florida, where preexisting exchange relationships with the Stallings region may have facilitated the rapid transmission of pottery technology (Sassaman, 2004).

Stallings vessels consisted mostly of shallow, round-bottomed

bowls, and flat-bottomed basins (Sassaman, 1993:144). These were crafted using multiple different forming techniques that included coiling, molding, and slab construction (Sanger, 2017). For roughly 1000 years following their initial appearance, Stallings vessels were mostly plain. This changed at around 4100 cal BP when vessel surfaces began being adorned with various punctated and incised motifs (Fig. 2). This transition from mostly plain to mostly decorated pottery marks the boundary between the Early Stallings (~5150–4100 cal B.P.) and Classic Stallings (4100–3800 cal B.P.) phases.

Based on a variety of technofunctional and use-wear data linking early pots to cooking functions, the advent of pottery in the Southeast was undoubtedly a significant culinary innovation (Sassaman, 1993). Despite this fact, multiple regional scholars have remarked on the apparent absence of evidence for a major shift in subsistence traditions associated with early pottery (Caldwell, 1958:15; Milanich, 1994:86; Stoltman, 1972). There is, however, a great deal of evidence that pottery played an important transformative role in Late Archaic social life. The most striking instance of this comes from Florida's St. Johns River valley where pottery was initially adopted not for purposes related to domestic subsistence, but instead as an important medium of long-distance exchange and broad-scale social integration. At the Silver Glen complex, for example, highly decorated Orange pottery deposited at places of social gathering has been linked through compositional

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