

Six Millenia of Lowcountry Foods: Funding Proposal for Analysis of Archaeological Collections from the Brays Island Plantation, South Carolina

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Foodways—how we produce, prepare, and consume food—are an important part of structuring human societies. Foodways are also intricately linked to identity construction and expression, and throughout time, have supported key shifts in human sociocultural evolution. For example, the shift from hunter-gather lifestyles to more settled or ‘village’ lifestyles approximately 1500 years ago in the southeast US was punctuated by changes in food availability, food storage, and food preparation. Archaeological study of past foods, particularly plant and animal remains, provide insight into how people engaged and modified their local environments through both small-scale activities like daily food procurement and large-scale environmental terraforming.

Despite its value to local and regional understandings of human history, study of foodways on the Atlantic Coast has lagged behind other regions of the United States. This is due in part to sandy and often shallow cultural deposits that have faced almost near destruction from centuries of plowing. Survey of the Brays Island Plantation from 1988-1990 by Florida Archaeological Services (FAS) identified and systematically sampled intact cultural features (e.g., refuse pit, storage pit, hearth, household structures) from over 48 archaeological sites. The preservation of these features is rare for the region. They also contained numerous plant and animal remains from which we can glean unparalleled insight into six millennia of Lowcountry foods and how they supported social, economic, and environmental dynamics.

This document outlines proposed analysis of foodways from extant archaeological collections at the Brays Island Plantation. Though several cultural periods are represented by these collections, we focus on three periods where archaeological remains may answer important questions about the human past. Likewise, we propose conducting three kinds of research: faunal analysis, paleoethnobotanical analysis, and radio-carbon dating. We also briefly discuss how we intend to disseminate the results of this research.

We note that this research will have no impact on the present operations of the Brays Island Plantation Property. It relies entirely on extant collections held in storage by the Brays Island Nature Center. None of this work or its findings will lead to any kind of local, state, or federal compliance requirements by this research team or the Brays Island Plantation.

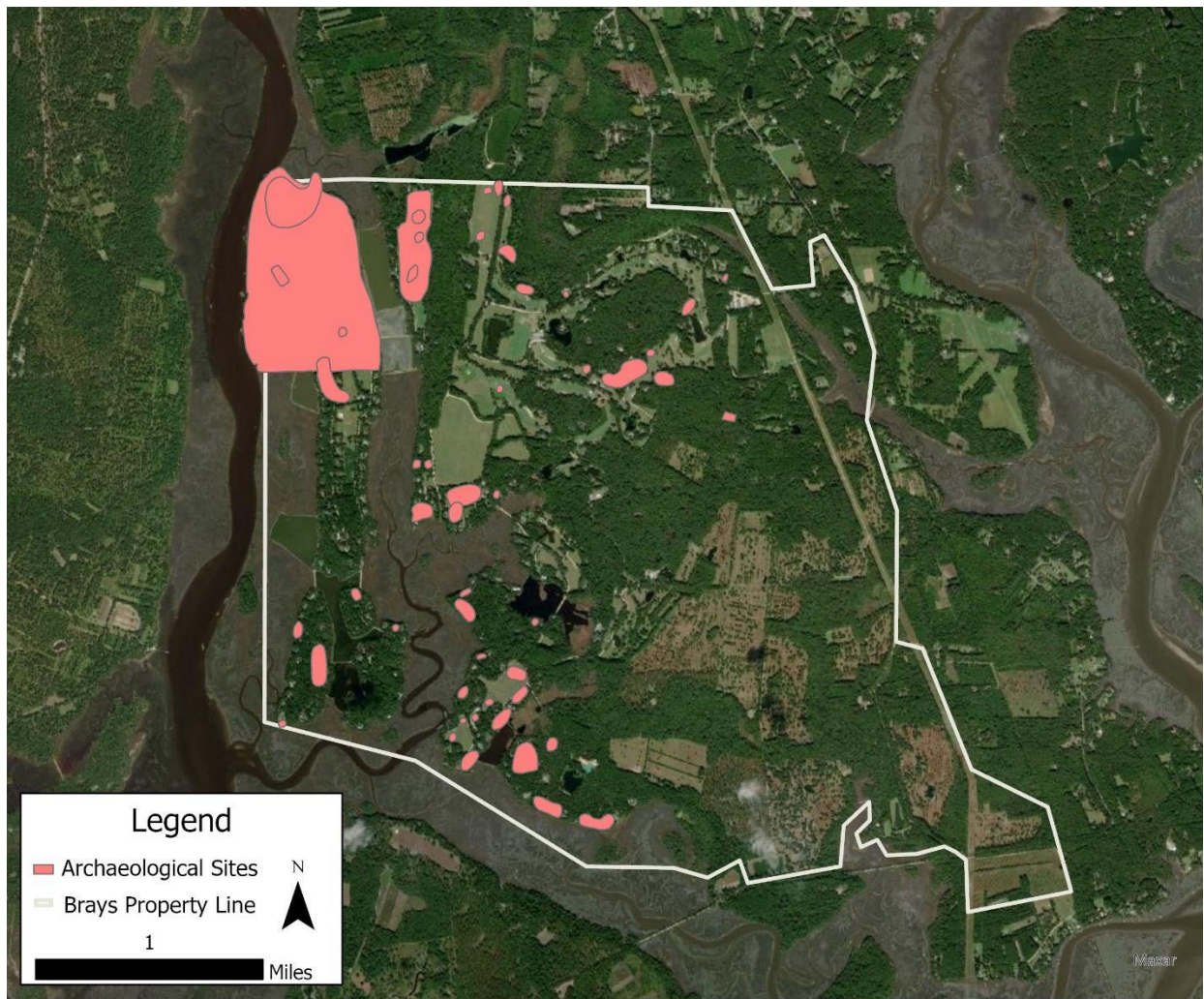


Figure 1. Archaeological sites identified by Florida Archaeological Services, 1988-1990, on the Brays Island Plantation Property.

CULTURAL AND TEMPORAL CONTEXT

Of the 48 archaeological sites surveyed on Brays Island, three cultural periods provide insight into past foodways through a combination of intact cultural features, ceramics, charred macrobotanical remains, and fauna. This includes the Early Woodland (2500-1000 BCE), Middle Woodland (1000BCE – 300 CE), and Plantation periods (mid-18th and 19th centuries).

Early Woodland

Early Woodland societies (2500 BCE–1000 BCE) of the Atlantic Coast were seasonally mobile and subsisted on shellfish and wetland resources. Their occupation sites are marked by large shell middens, sometimes taking the form of massive shell rings, that represent the refuse of daily food and/or ceremonial feasting activities. During this period, we see the emergence of pottery, an innovation in Native daily life that spread quickly across the Eastern Woodlands and beyond. This pottery tradition was fiber-tempered, typically shallow or large wide-mouthed

bowls, and is named after Stallings Island (i.e., the Stallings ceramic tradition) near Augusta, Georgia.

There are several Early Woodland sites with Stallings pottery on Brays Island. At one particular site, archaeologists also recovered numerous intact cultural features that likely represent food-related activities (e.g., prep, cooking, eating). Archaeologists also recovered a large number of clay balls, an artifact whose function is still debated. One theory is that clay balls were added to pots of water suspended above fire. They then acted as a thermal conduit to bring water to a quicker boiling point. Clay balls may have been a “bridge” technology from cooking with hides to cooking with ceramic vessels, and are thus a pivotal stage in the emergence of pottery.

Middle Woodland

During the Middle Woodland period (1000BCE – 300 CE), Native people shifted from seasonal mobility and the harvesting of wetland resources to more sedentary or semi-sedentary lifestyles. Across the southeast, “village life” emerges, accompanied by increasing social complexity, horticultural expertise, and refined ceramic production.

Early villages are some of the most difficult archaeological phases of human sociocultural evolution to locate in the Southeast. Structures built with bent-pole architecture and without subterranean basins or wall trench supports leave only small (~8cm) soil discolorations of post molds. Along the southern Atlantic Coast, where sandy soils produce little organic growth and thus shallow cultural deposits, there is only one documented Middle Woodland structure (according to the [Eastern Woodlands Household Archaeology Data Project](#)). Importantly, Brays Island has at least two archaeological sites with evidence of multiple household structures and intact cultural features. These are exceptional examples of village life with the potential to address a wide variety of research questions currently inaccessible to scholars.

Plantation

Broadly referring to the period between the initial 1730s sale of these lands and the Civil War, the plantation period on the Brays Island Property is typical for the immediate region. Documentary evidence, however, provides a useful baseline for exploring the social, environmental, and economic dynamics represented by cultural activities on archaeological sites.

- In the mid-18th century, at least some enslaved laborers on Brays Island were Native American. During this period, colonoware pottery—made by enslaved Africans and Native Americans with forms and styles borrowed from several ceramic traditions—was used on plantations across the Lowcountry. Archaeologists have long debated where colonoware first appeared and how it spread rapidly to plantations across the Atlantic Coast. Colonoware was recovered at some archaeological sites on Brays Island.
- In the mid to late 18th century, at least some agricultural focus was placed on more experimental crops, including indigo. Since indigo was difficult and toxic to process, it required specialized knowledge and processing sites far from homes and agricultural fields. This industry was ultimately abandoned by the early 19th century. Some properties during this period were also part of Carolina’s cattle economy.
- In the 19th century, there were a few large plantations supported by tidal rice. In most cases, overseers lived on these properties while owners resided in Charleston. There were at least two homesteads owned by free people of color before the Civil War.

POTENTIAL RESEARCH QUESTIONS

From these cultural periods, there are several research questions that may address key moments of human sociocultural evolution, particularly how people engaged their local environments to innovate and change the world around them. Several of these questions address scholarly debates and major gaps in disciplinary knowledge. Importantly, the archaeological sites of the Brays Island Property provide a wealth of intact data unparalleled by other local and regional archaeological collections.

Early Woodland

- First-ever pottery: What did Early Woodland societies cook using new ceramic innovations? Did this change over time as people experimented with different vessel forms? What is the “fiber” in this fiber-tempered pottery?
- Clay balls: What were clay balls used for? In particular, is there evidence for use in cooking? Was this a “bridge” technology from hides to ceramic vessels?

Middle Woodland

- Transition to more sedentary or semi-sedentary lifestyles: What was the subsistence base during this transition? In a region of abundance, why would people change their practices of mobility and food acquisition?
- Early village life: What did daily life look like in some of the earliest villages in the southeast US? How far did local hunters’ range? What kinds of local and non-local plant resources did Middle Woodland communities subsistent on?

Plantation

- Colonoware: What foods did early enslaved communities access? What styles and forms of colonoware are present at Brays Island and how does this fit into broader networks of colonoware production on other plantations in the Lowcountry?
- Indigo: Is there evidence of Indigo at early plantation-era sites? What might this mean for the initial use of this plant in daily life?
- Cattle: Is there evidence for the early cattle industry on Brays Island?
- Overseers and freed people of color: How did these families engage with the plantations and enslaved people around them? What kinds of food did they grow and have access to as compared to local plantations?

PROPOSED ANALYSIS

To address these research questions, we propose combining data from the study of ceramics, animal remains, plant remains, chronological information, and contextual information from intact cultural features. Three lines of evidence—animals, plants, and absolute dates—require extra equipment and specialists. We request \$10,000 to support this research. Below, we discuss analyses, their relevance to research questions, and a justification for requested funds.

Fauna Analysis

Faunal remains are what is left behind when an animal dies. This may include bones, shells, hair, chitin, scales, hides, proteins and DNA. Because of the acidity of Lowcountry soils, vertebrate faunal remains rarely preserve in the archaeological record. At archaeological sites on Brays Island, the vertebrate faunal assemblage consists of teeth and small bone fragments. These remains will be analyzed by Megan Savoy, a faunal expert and PhD student at the University of Michigan. Savoy will be conducting this analysis at the Ancient Protein and Isotope Laboratory (U-Michigan) using four methods: macro-analysis, ZooMS, lipids/proteomics, and stable-isotopes.

Samples:

- 10 teeth, primarily molars, 40 animal bone fragments, 10 sooted ceramic sherds

Analyses:

- Macro analysis involves identifying animal taxon from bone and teeth fragments using macroscopic observation (i.e., by eye) and optical microscopy (i.e., microscope). This method provides a baseline for exploring what kinds of local animals were hunted or domesticated by humans and how they incorporated these resources into their daily food practices. Establishing the minimum number of *animal* individuals (MNI) present at an archaeological site can also allow us to explore what proteins were at the cornerstones of past diets. For example, did local people rely more on aquatic as compared to terrestrial resources? How did their reliance on these resources change during the transition from hunter-gatherer to more sedentary lifestyles 2000 years ago?
- Zooarchaeology by Mass spectrometry (ZooMS) is a method used to identify unknown taxonomies of faunal remains. This method is especially helpful when faunal remains are small, eroded, or incomplete and are thus *unidentifiable* by macroscopic analysis. ZooMS identifies protein “fingerprints” or peptides from organic molecules which are then matched against a reference database with known faunal taxonomies. Since most faunal remains from Brays Island are only partially intact or eroded, we anticipate using ZooMS on most of the collections. The same research questions addressed by macro-analysis can also be addressed by ZooMS.
- Lipid residue analysis involves the study of fats, oils, and waxes that may be present in the clay matrix of ceramic vessels as a product of cooking. Lipids can be used to understand food processing and cooking techniques. For this analysis, we will be studying sooted ceramics from intact cultural features.
- Stable isotopes of certain elements naturally occur in the environment (e.g., plants, water, atmosphere) and do not decay over time. Stable isotope analysis allows us to identify isotopic markers of certain foods in calcified tissues like bone or teeth. These data provide information on past human/animal diets, mobility, and environmental changes over time. From the Brays Island collections, we will focus on animal teeth and two kinds of stable isotopes: carbon and nitrogen. Understanding what animals ate in the past, and thus the kinds and amounts of isotopes they absorbed, will allow us to identify ecological environments. For example, was Brays Island a long-leaf pine savannah 3000 years ago?

Proposed Budget: \$4000

This will fund supplies (\$750), equipment (\$2500), and associated labor (\$15 an hour X 50 expected hours to prepare samples and make sense of results = 750).

Paleoethnobotanical Analysis

Paleoethnobotany is the study of human and environment interactions through the recovery and analysis of ancient plant remains. Paleoethnobotanical research will be conducted by Dr. Mallory Melton and undergraduate students at Lycoming College. Dr. Melton is a paleoethnobotanist with experience working with regional flora. She will use this opportunity to train undergraduate students in macrobotanical analysis.

Samples and Analysis

- 10 flotation samples collected from intact cultural features (e.g., refuse pit, storage pit, hearth) by Florida Archaeological Services will be studied to identify macrobotanicals (e.g., hickory, indigo, maize) using optical microscopy and regional reference materials.
- *“Flotation” refers to a method of collection where archaeologists gather bulk soil samples and then suspend them in water to separate possible botanicals from the soil matrix around it. Because of locally acidic soils, “charred” macrobotanicals are the only organic plant part that preserves through time. The goal of flotation samples, then, is to capture a portion of possible charred macrobotanical remains in a cultural feature. These can then be used to explore research questions about how Native people engaged plants in their daily food practices.*

Proposed Budget: \$3000

One flotation samples take approximately eight hours to analyze. \$3000 will fund labor (\$30 an hour, an average rate for contracted specialists) in addition to necessary supplies.

Radio-Carbon Dating

Radio-carbon dating is an *absolute* dating method used by archaeologists to estimate the age of objects, cultural features, and archaeological sites. While it often can't pinpoint specific years, reference materials and calibration tools can refine radiocarbon dates down to as little as a few decade period. To conduct this method, charcoal found in flotation samples will be submitted to the Center for Applied Isotopes Study at the University of Georgia, a premier institute for radiocarbon dating services. Pairing radio-carbon dating with faunal and paleoethnobotanical research will provide insight into when changes in diet happened. This will allow us to compare sites on Brays Island to one another and to other cultural sites in the region.

Proposed Budget: \$3000

This will fund 10 samples for AMS radiocarbon dating (\$300 per sample). Samples will be collected following the results of faunal and paleoethnobotanical research to ensure dating targets cultural features with the most information potential.

DISSEMINATION OF RESULTS

We anticipate disseminating this research in three key arenas. First, results will be contextualized in regional and national contexts and ultimately published in peer-reviewed journals in the disciplines of archaeology, anthropology, history, and/or Native American and Indigenous Studies. Second, results will be written in a publicly accessible format and shared with the Nature Center. Information may be incorporated into the center's exhibit space, storyboard, and nature walks. Third, we propose creating public signage for archaeological sites not located on current residences. These boards may include contextual information and graphics.