# ARCHAEOLOGICAL INVESTIGATIONS AT BIRD ISLAND (8DI52), DIXIE COUNTY, FLORIDA

**Paulette S. McFadden and Andrea Palmiotto**

**Technical Report 14**
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Cover photo: Elyse Anderson (right) and Paulette McFadden (left) excavating Test Unit 1 at Bird Island (8DI52), May 2011.

## MANAGEMENT SUMMARY

Archaeological testing on Bird Island was performed from May 17-18, 2011 by the Laboratory of Southeastern Archaeology at the University of Florida, as part of the overall Lower Suwannee Archaeological Survey project. Initial shovel testing revealed intact pre-Columbian midden remains that were over one meter thick at the highest elevation of the island, with intact midden deposits thinning as elevation decreased. Two test units were excavated. Test Unit 1 revealed that the midden remains at the highest point were deeply stratified, with three discrete strata of midden deposits that represent over 3000 years of human occupation. Test Unit 2 contained no intact midden deposits and confirmed that the southwestern portion of the island experienced significant disturbance and reworking in both the ancient and more recent pasts. Faunal analysis suggests year-round exploitation of the marine, seagrass, and tidal creek habitats along a significant salinity gradient. In addition to shellfish, fish and turtle contributed significantly to the diet, with terrestrial species, such as mammals and birds, constituting a minor portion of the faunal assemblage. Analysis of a significant surface collection of pottery suggests that the ancient occupants of Bird Island interacted with other regions of the southeast as early as 4000 years ago. Activities appear to have centered on cooking and serving for large groups, likely ritual feasting that was associated with the Late Archaic burial ground, with these activities continuing through the Late Woodland Period. Recommendations for future investigations include additional subsurface testing on the island and more in-depth analysis of surface collected materials. Chapter 1 provides brief background information, including geologic setting and previous research. Methods and results of shovel testing and test unit excavation are provided in Chapters 2 and 3, followed by the results of faunal analysis in Chapter 4 and the results of analysis of surfaced collected pottery in Chapter 5. Finally, Chapter 6 presents conclusions and recommendations for further research.

## ACKNOWLEDGMENTS

Ken Sassaman's guidance, input, and support have been invaluable in all phases of this project. Access to Bird Island was granted by the landowner, David Nelms, and the archaeological investigations were greatly facilitated by Warren and Patsy Nelms, who enthusiastically embraced the project and provided optimal working conditions for the crew. Members of the Nelms family have been wonderful stewards of the archaeological record and continue to be important advocates for preserving the history of Bird Island. Background information, advice, and moral support were freely provided by Julian Granberry, who for decades has argued that the Horseshoe Cove area merited significant archaeological attention and consideration on its own terms.

Fieldwork was performed by Elyse Anderson, Micah Monés, and Ken Sassaman, and laboratory assistance was provided by Dale Torres, Alan Schneider, Patricia Caldwell. Asa Randall provided LiDAR maps and data. Our thanks to Charles Stoer for the use of his lovely home in Horseshoe Beach as a base station for field operations.

Sorting pottery rims from the substantial assemblage of surface collected materials was a daunting task, but thanks to Patsy Nelms, Shannon Moore, Kathleen Bonany, Reshmie Punwasi, Stephen McFadden, and Helen Sizemore it was an enjoyable undertaking. Neill Wallis and Ken Sassaman provided advice and guidance during the analysis of the surface collection of pottery from the island.

Eleanor Blair provided space for a display at her art studio and Patsy and Warren Nelms invited us to present the results of the archaeological investigations at a luncheon at Oak Hammock during the Bird Island Reunion Weekend/February Art Walk. The Art Walk and luncheon provided an excellent outreach opportunity, introducing many people to the pre-Columbian northern Gulf Coast.

Funding for the Bird Island project was provided by the Hyatt and Cici Brown Endowment for Florida Archaeology.

## CONTENTS

# CHAPTER 1
# BACKGROUND AND PREVIOUS RESEARCH

Paulette S. McFadden

Bird Island is a small island (~1 ha) situated 0.8 km to the south of the town of Horseshoe Beach, Florida in the very shallow marine area of Horseshoe Cove. This privately owned island is the location of an archaeological site (8DI52) that contains cultural materials dating to at least the Late Archaic and possibly earlier. Storms and erosion due to changing currents and sedimentation patterns, as well as wave and boat wake energies, have significantly impacted cultural remains along the southwest shoreline of the island. Despite the construction of a seawall that has acted to protect the island and the cultural remains from additional erosion, cultural materials continue to erode from the northern portion of the island.

In 2011, the Laboratory of Southeastern Archaeology, at the invitation of the property owners, began testing to recover archaeological data from Bird Island as part of an overall research project that has been outlined in the initial Lower Suwannee Archaeological Survey report (Sassaman et al. 2011). This research project includes Bird Island and the surrounding area of Horseshoe Cove.

## BACKGROUND

With a central goal of exploring the pre-Columbian archaeological record along the northern Gulf Coast of Florida, the Laboratory of Southeastern Archaeology of the Department of Anthropology, University of Florida launched the Lower Suwannee Archaeological Survey in 2009 (LSAS). This long-term research project focuses on the 47-km-long coastline that stretches from Horseshoe Beach, south, to Cedar Key and includes the Lower Suwannee and Cedar Keys National Wildlife Refuges (Figure 1-1). Although previous archaeological investigations conducted along this coastal area are sparse, past research suggests that this region supported large aboriginal populations over a span of at least 4500 years (Sassaman et al. 2011). The LSAS has the goal of exploring the untapped archaeological potential of this area of the northern Gulf Coast, and as a result significantly contribute to the poorly understood pre-Columbian history of this region.

The lack of archaeological attention along the northern Gulf Coast is primarily due to the fact that it has been protected as part of the Lower Suwannee National Wildlife Refuge. While this has limited archaeological attention in the region, it has also worked in favor of preserving many archaeological sites. Unfortunately, these sites are now being threatened by erosion due to sea level rise. As a result of this erosion, one of the primary goals of the LSAS project is the salvaging of threatened archaeological sites in the study area.

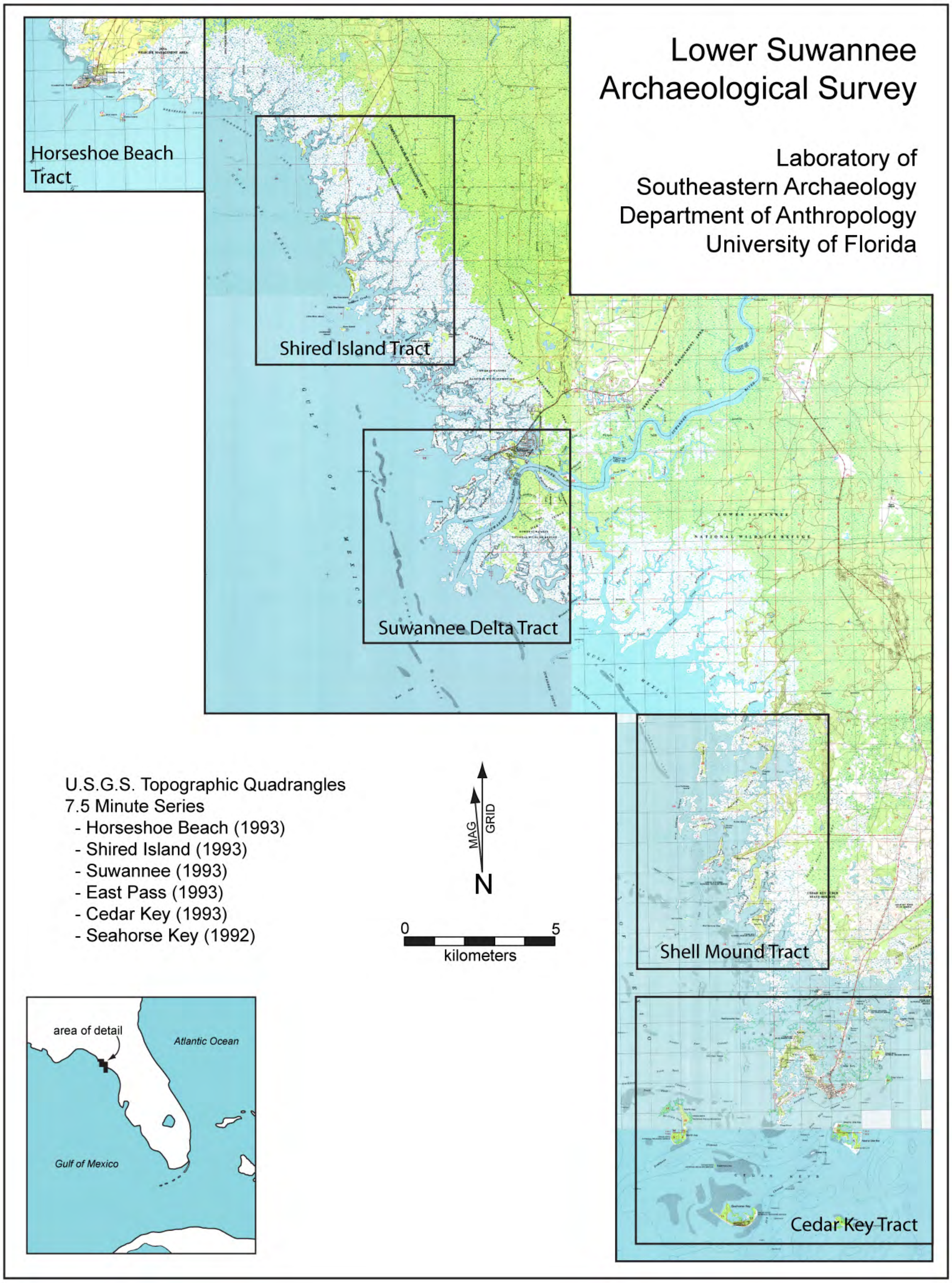



Figure 1-1. Study area of the Lower Suwannee Archaeological Survey, showing survey tracts (Sassaman et al. 2011).

Another focus of the project centers on understanding how humans have interacted with the environment through time in this region. Evidence for human occupation along the northern Gulf Coast dates to at least the Middle Archaic period (7500-4600 cal B.P.), and the result of thousands of years of human occupation and landscape modification is the anthropogenic landscape that exists today along the northern Gulf Coast. This area experiences cyclical changes in daily and seasonal tides, along with random changes due to winds and other weather conditions. The variation in this highly dynamic environment likely necessitated flexible cultural structures that could incorporate these changing conditions into routine daily life. Indeed, much of the physical environment inhabited by humans was constructed through the routine activities performed by those humans. These activities ranged from simple tasks that rarely required conscious thought, to intentional projects that required planning and coordinated labor. As routine life was mapped onto the landscape in the form of middens, mounds, and other material remains, the durability of these objects perhaps created the perception of permanence for those living along a coastline that experiences continuous morphological changes. Other alterations occurred sporadically during high energy storms, and because of the low gradient of the region, significant shoreline transgressions were likely during periods of rapid sea level rise. While normal variation were likely incorporated into existing cultural structures, punctuated changes could have been traumatic and may have required cultural shifts to incorporate the new conditions brought about by significant environmental changes.

Excavations at Bird Island represent the initial stage of research that seeks to answer some of the above issues. Future plans include additional archaeological excavations at Bird Island, and the initiation of archaeological research at nearby sites on Cotton and Butler islands. Because paleoenvironmental reconstruction is a vital step in the process of understanding human-environment interaction, geological research will be conducted that includes coring of the marine and marsh areas that surround Bird Island, sedimentological and geomorphological studies of Bird, Cotton, and Butler islands, and if necessary, coring of inland ponds that border the salt marshes of Horseshoe Cove.

*Setting*

Horseshoe Cove is located at the northernmost extent of the LSAS research area, approximately 16 km from the mouth of the Suwannee River. It is bordered on the northwest by the mainland town of Horseshoe Beach, to the north by extensive salt marsh and low-lying forested areas, and to the east by Fishbone Creek. Several small islands are encompassed by the cove, including Bird, Cotton, and Butler islands, along with numerous other small islands and hammocks located within the marshy areas.

A relatively thin sediment drape overlies the limestone substrate in the area, and dissolution and collapse of the limestone has produced complex karst topography. In addition to the karst topography of the area, many of the small islands protruding from the shallow waters along the coastline are relict paleodunes that most likely formed during the late Pleistocene and early Holocene. These landforms are consistent with other similar inland dunes that accreted throughout the southeastern United States between 30,000 and 15,000 years ago during a period of glaciation and drier climatic conditions (Ivester 2003).

Compositionally, inland dunes are accumulations of aeolian (wind-borne) sediments, which originated in the floodplains of nearby rivers and streams. These sediments overlie older fluvial (water-borne) levee deposits or are the result of reworked riverine sands (Markewich and Markewich 1994; Wright et al. 2005). Dune sediments are well-sorted medium-sized sand, with little or no pedogenic development. The distinctive filled-in parabolic, or U-shape is a product of the direction of the prevailing winds in the region at the time of formation (Markewich and Markewich 1994), and in the case of the coastal region, reworking by marine processes as sea level rose and the land around the dunes was inundated (Wright et al. 2005)

Significant oyster bars characterize the offshore areas of Horseshoe Cove. The eastern oyster (*Crassostrea virginica)* thrives in both subtidal and intertidal zones of brackish water estuaries, including the Big Bend region of Florida. The reefs constructed by these filter-feeding bivalves can grow from a small colony of around one square meter to hundreds of hectares in size, and it is common for oyster reefs to be exposed during periods of low tide since they tend to cluster in depths of less than 3 meters of water. Firm, muddy bottoms and faster moving nutrient-rich currents provide optimal conditions for oyster colonization and areas with these attributes tend to foster the largest reefs (Kilgen and Dugas 1989).

Bird Island is situated in a very shallow area within Horseshoe Cove. Surrounded by oyster beds, the island sits just seaward of substantial areas of salt marsh (Figure 1-2). Its location suggests that it was likely the distal end of the northern arm of Butler Island, which appears to be a relict paleodune (Wright et al. 2005). The shoreline of the Gulf of Mexico was nearly 400 km to the west of its present location during the initial formation of this paleodune. The common morphology of these types of dunes suggests that the distal arms will decrease in elevation with distance from the centermost portion. However, Bird Island appears to be elevated above what would be expected of this type of landform. While the surrounding landscape and the lower elevations of this paleodune were inundated by Holocene sea level rise, Bird Island survived, perhaps partially due to the substantial anthropogenic deposits that cap the island.

Patsy Nelms has spent much of her leisure time on the island over the last several decades and has seen many changes during this time. The most significant changes occurred after the dredging of a channel near the island to accommodate larger seafaring vessels. According to Mrs. Nelms, the southwestern shoreline, fronting the Gulf, began to erode shortly after the channel was dredged. The resulting redirection of currents and sediment movement was amplified by wave and storm energies. The Storm of the Century in 1993 caused significant damage to the island, both in terms of lost land area and lost archaeological data. As a result, the Nelms constructed a seawall that acted to stop erosion of the island and protect the cultural remains that had yet been disturbed.


Figure 1-2. Topographic map of Horseshoe Beach tract, showing locations of sites on file with the Florida Master Site Files, Bureau of Archaeological Research (Sassaman et al. 2011).

### *Previous Research*

The archaeological site on Bird Island was first reported by John Goggin in 1954 as a small shell midden containing pottery sherds. The island began to receive more significant attention from archaeologists after human and cultural remains began eroding from a midden along the southwestern shoreline due to partial destruction during hurricane Elena in 1985. One eroding burial was excavated in 1986 by Julian Granberry. In his letter dated July 17, 1986, to Mr. Warren Nelms, Granberry writes that he "excavated an Orange Period…burial just below the high-tide line on the south side of Bird Island. It was a flexed burial …of an adult male, aged ca. 40-55 yrs., about 5'6"

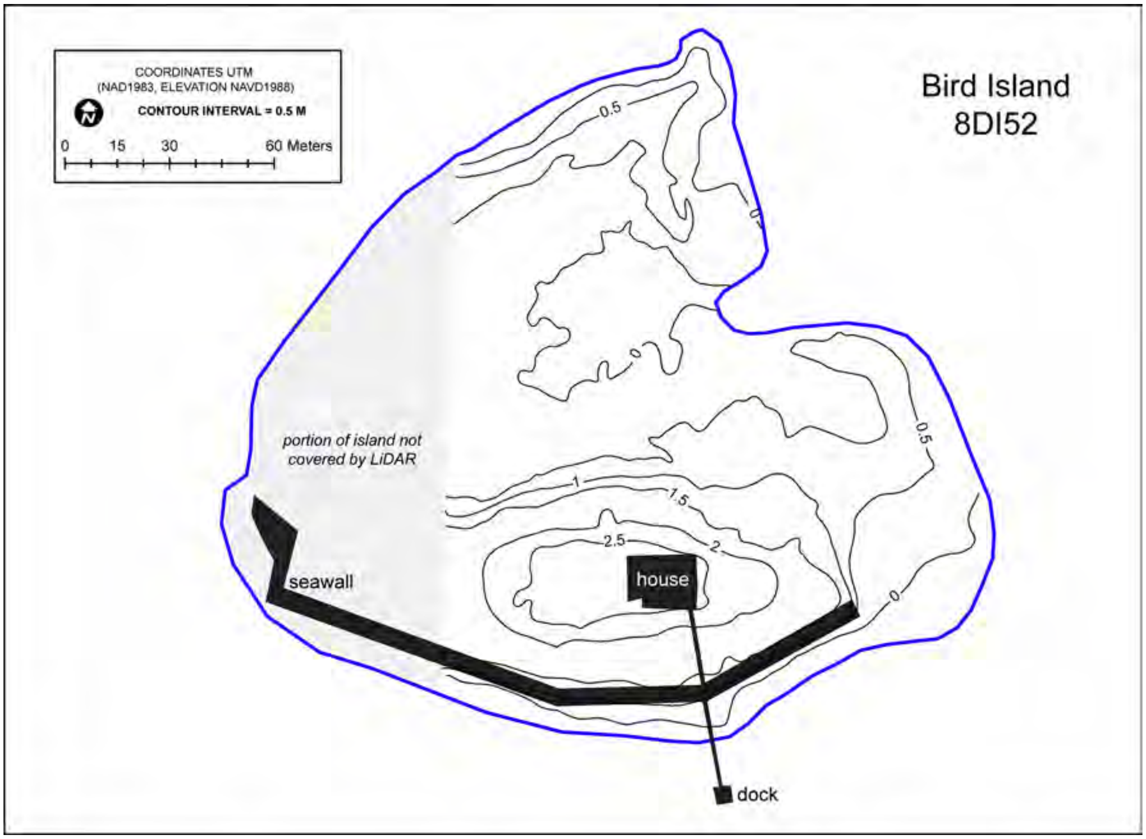



Figure 1-3. Bird Island with partial LiDAR topographic information with house, dock, and seawall superimposed. Note: Map courtesy of Asa Randall.

tall. He was accompanied by what was left of fragments of Norwood Incised pottery …and several flint points …clearly buried with the gentleman" (Granberry 1986). The association of Norwood pottery with the burial led Granberry to assume the burials dated to the Orange Period. This excavation appears to be the last on Bird Island until the next decade, despite continued erosion of cultural materials.

In 1993, a multidisciplinary team from Florida State University surveyed the island, including the exposed midden on the southwestern shore. Unfortunately, in March of that year, within weeks of the initial survey, and prior to subsequent archaeological work, the so-called "Storm of the Century" moved through the northern Gulf Coast. The damage to Bird Island was significant and the majority of the midden was destroyed. In late 1993, excavation into a small portion of remaining midden recovered human remains and associated burial goods (Stojanowski and Doren 1998).

Stojanowski and Doren (1998) published the results of analysis of the human remains recovered from Bird Island, including an uncalibrated radiocarbon date, obtained by Julian Granberry, of 4570 ± 100 B.P. (Stojanowski and Doran 1999:139). The radiocarbon date supplied by Granberry is problematic in that it was not corrected for 12/13C fractionation, making the age of the human burials uncertain, but likely from the preceramic Archaic. As opposed to the earlier burial described by Granberry, the burial level excavated by FSU contained no pottery, which does support the earlier preceramic radiocarbon date. The authors concluded that the population of the island, represent by the remains of at least 36 individuals, were robust individuals who enjoyed relatively good health and relied on a marine-based diet.

Dasovich (1999) investigated Bird Island after the 1993 "Storm of the Century" as a means to understand how archaeological remains are affected by high energy events. He argued that midden material was scoured from the shoreline by storm surge and redeposited on the surface at higher elevations on the island, along with a significant amount of sand that was transported from offshore bars. After the collection of random hand cores in the island's interior, Dasovich reported that he found no buried cultural material. In addition, he reports that up to 1.5 meters of new sand was deposited on the island after the 1993 storm. He concluded that, much like the now destroyed Coon Island to the south, Bird Island was topped with a thin layer of redeposited shell, and other cultural materials, but lacked intact archaeological remains.

A later study by Yates (2000) included soapstone recovered from Bird Island in a study using inductively coupled plasma mass spectroscopy (*ICP-MS*) to identify and compare the signatures of rare earth elements (REEs) as a means to determine the source of soapstone found in archaeological deposits in Florida. Three soapstone fragments were tested by Yates (2000) with somewhat ambiguous results. However, the analysis suggests that the soapstone from Bird Island has similarities with soapstone sources in Spartanburg, South Carolina. A single radiocarbon date obtained from soot on one of the soapstone fragments returned an age range of 4143 - 3722 cal. B.P. (Yates 2000).

In 2011, Maranda Kles from the University of Florida conducted a comparative craniometric analysis of skeletal populations from several Archaic period Florida sites, including Warm Mineral Springs, Windover, Little Salt Springs, Bay West, Gauthier, and Bird Island. The goal of the study was to evaluate the usefulness of cranial measurements as a means of determining genetic relationships between the different populations. While there is variation among the different skeletal populations, several patterns emerge that suggest genetic relationships between the burials from several of the sites. However, the individuals from Bird Island appear to be far outside of the range of variation that exists among the other groups, suggesting a larger biological distance between the Bird Island population and those of the other Florida sites (Kles 2011). Future analysis of skeletal remains from southern Georgia is planned in an attempt to find populations that appear to have genetic affiliation with the Bird Island individuals.

## CONCLUSION

Bird Island is a small island, likely the remnant of a relict paleodune, situated along the northern Gulf Coast of Florida that contains cultural remains spanning the Late Archaic to Late Woodland Periods. Previous archaeological investigations have focused on the southwestern portion of the island where human remains, apparently dating to the Late Archaic Period, were eroding from the shoreline. Analysis of skeletal remains by

Stojanowski and Doren (1998) of individuals from this ancient cemetery revealed that the individuals buried on Bird Island subsisted on a diet of marine resources, were robust, healthy individuals, and likely were not genetically related to other Archaic populations in south and east Florida. After much of the midden on the southwestern shoreline was lost to substantial erosion after the 1993 "Storm of the Century," archaeological research was halted on the island due to suggestions that the cultural deposits remaining were the result of redeposition of materials by storm surge. However, the Laboratory of Southeastern Archaeology revisited Bird Island in 2011 and conducted shovel testing and test unit excavations, the results of which are provided in subsequent chapters of this report.

# CHAPTER 2
# METHODS AND RESULTS OF SHOVEL TESTS

Paulette S. McFadden

Archaeological investigations at Bird Island took place from May 17-18, 2011, and included shovel testing and test unit excavation. Advantageous tides and fair weather allowed the crew of four people to arrive on the island early each morning and leave by late afternoon before the tide was too low to return to the mainland. The property owners, Patsy and Warren Nelms, were present for the excavations and graciously provided food and beverages for the crew.

## SHOVEL TESTING

Shovel test pits (STPs) were excavated at roughly 20-meter intervals in a northwest to southeast transect across the highest elevation of the island to examine the subsurface distribution of archaeological remains. One additional discretionary STP was excavated to the north of the main transect. Figure 2-1 shows the location of the seven STPs that were excavated. Each was excavated to a depth of at least 1.0 m with all materials screened through 1/4-in mesh. Excavation continued beyond 1.0 m depths if cultural remains continued to be present, and additional depth was obtained in several STPs by use of a 4-inch bucket auger that allowed for extended sample collection beyond what was possible with shovels. All cultural materials and faunal remains were bagged and stratigraphic information was recorded for each STP.

Shell midden was identified in all of the STPs, with the exception of STP 3. Midden deposits extended down to 110 cm below surface (BS) in STP 1, which was located immediately to the east of the house and at the highest point on the island. Midden deposits extended down to only 40-45 cm BS in STPs 2, 4, 6, and 7, and to 20 cm BS in STP 5. Two shovel test pits, STPs 2 and 6, contained apparent redeposited shell at or near the surface that sat atop intact midden deposits.

Where present, midden material overlaid medium to fine brown sands that appeared to have no significant stratigraphic unconformities, with the exception of STP 6. An apparent A-horizon, consisting of dark brown sands, was situated at around 78-80 cm BS, sandwiched between strata consisting of light to medium brown sands. STP 1, which had the most significant intact midden, contained a 10-cm-thick layer of sand between shell bearing deposits around 60-70 cm BS.

### *Shell Deposits*

Figure 2-2 shows STP locations with depths of shell deposits. Observation of artifact frequencies and shovel test pit stratigraphy suggest that the highest point on the island contains the best preserved archaeological remains, with stratified midden deposits

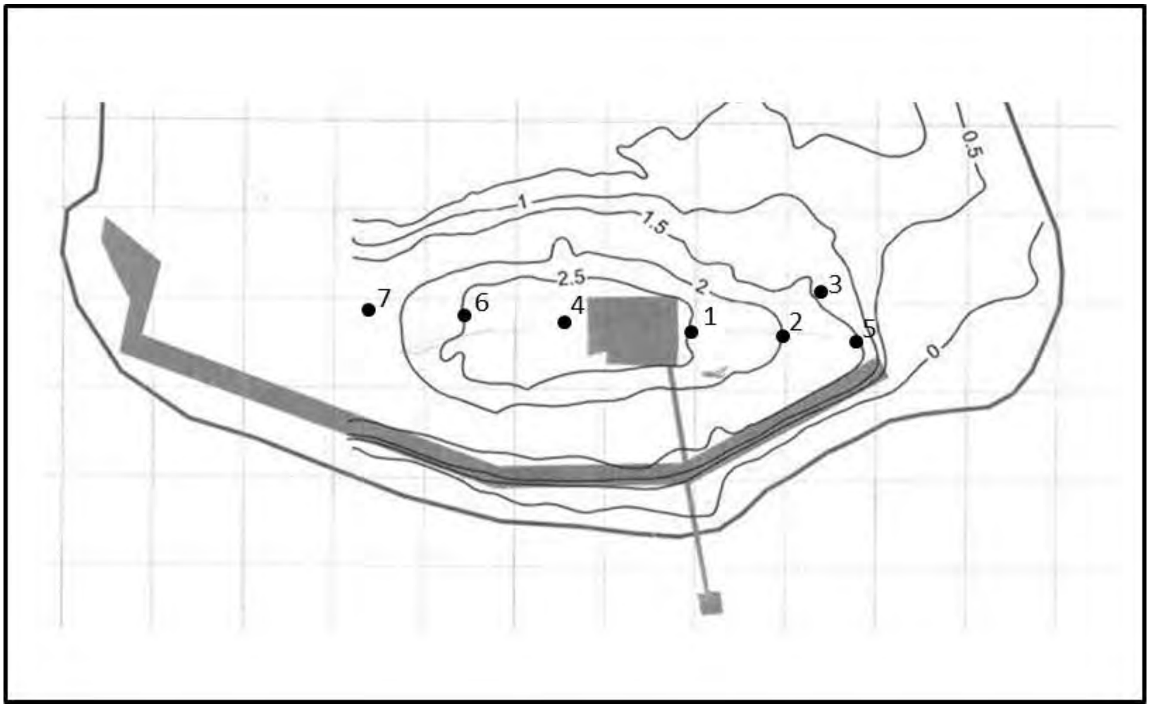



Figure 2-1. LIDAR-generated topographic map of Bird Island showing locations of shovel test pits (LIDAR map courtesy of Asa Randall).

that extend below a meter deep. Midden deposits thin with distance from the highest elevation and nearing the perimeter of the island. Topographic correlation of the STPs suggests that the buried A-horizon found in STP 6 may correspond to the bottom of the undisturbed midden deposits in STPs 7, 1, and 5. This may have been the original ground surface of the landform prior to deposition of shell by the ancient inhabitants. Redeposited shell and cultural remains at or near the surface in STPs 6 and 2, both located between 2 and 2.5 meters amsl, suggest that these materials are remnants of midden deposits that were scoured from lower elevations and deposited at this elevation when storm surge energies were no longer sufficient to transport them. While deposition of midden materials around the area of TU1 likely continued to raise the elevation of this highest portion of the island, the lower elevations appear to have suffered continual reworking by storms that likely removed much of the intact archaeological remains. STP 3 is located at a lower elevation than all of the other STPs and likely has been scoured of any cultural materials that may have been deposited there.

*Artifacts Recovered*

Artifacts were present in all STPs and included pottery (n = 84), lithics (n = 18), and shell tools (n = 4). Table 2-1 provides total artifact frequencies by STP. Shovel test pit 1 contained the highest frequency with 30 pot sherds, 5 lithics and 4 shell tools. STP

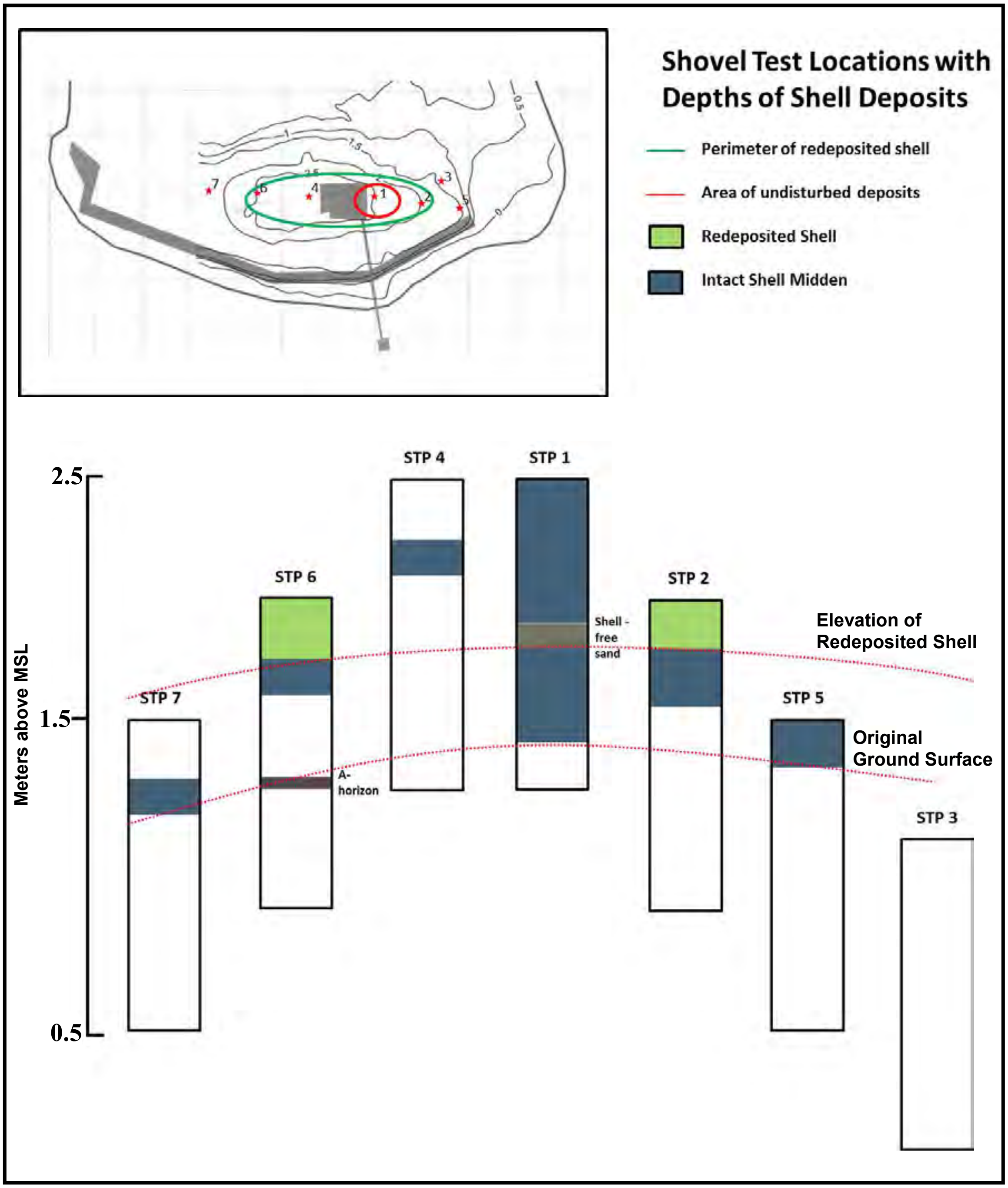



Figure 2-2. Schematic profiles of shovel test pits, showing strata calibrated to absolute elevation.

3 had the lowest frequency of artifacts, yielding only a few flakes, but no pottery, shell tools, or vertebrate fauna. A soapstone fragment was recovered from STP 6 from the possible buried A-horizon at about 80 cm BS, below which a Newnan-like point and a large flake were recovered at around 1.0 m BS. STP 7 contained a biface fragment. Only STP 1 yielded shell tools.

Table 2-1. Inventory of Materials Recovered from Shovel Test Pits, 8DI52.

| | Pottery (n) | Lithics (n) | Shell Tool (n) | Vert. Fauna (g) | Shell (g)[1] | Concret./ Pebbles (g) | Other (g) |
|---|---|---|---|---|---|---|---|
| STP | | | | | | | |
| 1 | 30 | 5 | 4 | 189.9 | 8.4 | 11.7 | 2[3], 5.0[2] |
| 2 | 10 | | | 131.6 | | 4.3 | 2.2[4] |
| 3 | | 5 | | | | | |
| 4 | 13 | 2 | | 37.5 | | 2.4 | 1[3] |
| 5 | 14 | 1 | | 28.8 | | | |
| 6 | 12 | 3 | | 8.3 | | 23.2 | 1[5] |
| 7 | 5 | 2 | | 53.8 | | 0.4 | 2.4[2] |
| Total | 84 | 18 | 4 | 449.9 | 8.4 | 42.0 | 58.6 |

[1] Includes marine, fresh, and terrestrial shell.
[2] Metal fragments (g)
[3] Modified bone (n)
[4] Plastic fragments (g)
[5] Soapstone (n)

*Pottery.* Table 2-2 provides pottery frequencies by type for each STP and Figure 2-3 provides examples of pottery recovered from STPs. Identified types recovered during shovel testing include Deptford linear check-stamped (n = 6), Pasco plain (n = 2), St. Johns plain (n = 1), St. Johns check-stamped (n = 5), St. Johns UID (n = 7), and Swift Creek complicated-stamped (n = 1). Sand tempered plain (n = 6), incised (n = 2), and check-stamped (n = 7) sherds were also recovered, as well as sand tempered sherds that were too badly eroded to identify the surface treatment (n = 12). Sherds that were less than 1/2-inch in maximum dimension were classified as crumb sherds and totaled 35 individual sherds.

Table 2-2. Absolute Pottery Frequency of Pottery Sherds Recovered from Shovel Tests at Bird Island.

| | | | -------St. Johns------- | | | Swift | -------------Sand Temp------------- | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Deptford | Pasco | Plain | Check | UID | Creek | Plain | Incised | Check | UID | Crumb | Total |
| STP | | | | | | | | | | | | |
| 1 | 1 | 2 | | | | 1 | 2 | 2 | | 7 | 15 | 30 |
| 2 | 1 | | | | 4 | | 2 | | | | 3 | 10 |
| 3 | | | | | | | | | | | | 0 |
| 4 | | | | | 2 | | 1 | | 2 | 1 | 7 | 13 |
| 5 | 4 | | 1 | 1 | 1 | | | | 1 | 1 | 5 | 14 |
| 6 | | | | 4 | | | | | 2 | 2 | 4 | 12 |
| 7 | | | | | | | 1 | | 2 | 1 | 1 | 5 |
| Total | 6 | 2 | 1 | 5 | 7 | 1 | 6 | 2 | 7 | 12 | 35 | 84 |


Figure 2-3. Representative samples of pottery recovered during shovel testing: a) sand-tempered plain, b) Pasco plain, c) Deptford Linear Check Stamped, d) Swift Creek complicated stamped, e) St. Johns check stamped, f) sand-tempered incised.

Spatial analysis of the pottery recovered during shovel testing does not reveal significant correlations of pottery types with specific locations on the island. STP 1 had the greatest frequency of pottery (n = 30). Even though the majority of recovered pottery consisted of crumb sherds (n = 15) and unidentifiable sand tempered sherds (n = 7), STP 1 also had the greatest frequency of identifiable sherds and is the only STP that yielded Pasco plain (n = 2) and Swift Creek complicated-stamped (n = 1) pottery. No St. Johns pottery was recovered from STP 1, even though it is present in several other STPs. Sand tempered pottery, including plain, incised, and check-stamped sherds was found in all STPs, with the exception of STP 3.

*Lithic Artifacts.* A total of 18 lithic artifacts, all made of chert, were recovered from the shovel tests, including flakes (n = 14), one modified flake, one biface fragment, one stemmed biface, and a small chunk of highly weathered angular rock. The biface fragment (Figure 2-4b) is the tip portion of the biface and was recovered from STP 7. It measures 1.4 cm long and 1.7 cm wide and is made on reddish-pink chert. It has a very small lateral fracture at the very top and terminates at the base in another lateral fracture, possibly due to impact.

The modified flake (Figure 2-4c) was recovered from STP 6 and measures 3.1 cm long by 4.8 cm wide. This large medium beige colored flake contains a portion of weathered cortical material and appears to have been struck from a larger piece during primary reduction. The right and left side edges of the flake exhibit evidence of pressure flaking, giving them a serrated appearance. Additional flaking along the left edge shows differential weathering and may suggest recycling. The distal portion of the flake terminates in a lateral snap, with the edge showing differential weathering similar to the flake scars on the left side.

The stemmed biface (Figure 2-4a) was also recovered from STP 6 at 1.0 m below surface. It measures 5.1 cm long by 3.2 cm wide at the shoulders and is made on a weathered white to medium beige chert that is mottled with dark brown to black inclusions. With the exception of a small nick at the top from contact with the shovel during excavation, the point is unbroken. The blade portion measures 3.7 cm from shoulder to tip, and the stem extends an additional 1.4 cm from the shoulder and measures 1.4 cm wide. Morphologically, the point resembles the Newnan type, which is characterized by broad blades and stems for hafting. Temporally, the Newnan type is associated with the Middle Archaic period (Milanich 1994).

S*oapstone.* One soapstone fragment was recovered from STP 6 at 80 cm below surface (Figure 2-4a). This roughly triangular shaped fragment measures 2 cm long by 4.1 cm wide and exhibits angular fractures on one side. The opposite side has two smooth grooves that may suggest that this piece was reused as an abrader or polishing implement.


Figure 2-4. Lithic artifacts recovered from shovel test pits, a) stemmed biface, b) biface fragment, c) modified flake.

*Modified Shell.* Four modified gastropod shells, 2 hammers and 2 modified columellae, were recovered during shovel test excavations, all from STP 1. The largest hammer (Figure 2-5e) is made from a crown conch (*Melongena corona*). This 9.7 cm long highly weathered shell artifact is missing a significant portion of the shell, including the apex, due to breakage and no evidence remains of hafting holes. Additionally, the base exhibits significant attrition and beveling. The second hammer (Figure 2-5d) measures 6.6 cm long, and like the larger of the two, has significant loss of both the body and the apex due to breakage, obliterating any evidence of hafting holes. Like the large hammer, this crown conch also exhibits the characteristic attrition of the base.

Based on the direction of the spiral, both of the modified columellae appear to be crown conch. The largest (Figure 2-4b) measures 15.5 cm long and still retains a portion of the inner whorl. While the shell fragment is highly weathered, the angular morphology of the base suggests possible modification through use. The second gastropod columella (Figure 2-4c) measures 10.0 cm long and retains only a small fragment of the body whorl near the base. Attrition and beveling at the base are characteristic of use wear.


Figure 2-4. Soapstone and modified shell: a) soapstone sherd from STP 6, b) possibly modified columella from STP 1, c) modified columella from STP1, d) gastropod hammer from STP 1, e) gastropod hammer from STP1.


Figure 2-5. Modified bone recovered from STP4.

*Modified Bone.* Two pieces of modified bone were recovered from STP 1 (Figure 2-5). The pieces crossmend, and together measure 9.5 cm long. The implement is made from the metapodial of a deer and is shaped to a point at one end. The opposite end has an irregular break, suggesting that these two pieces are fragments of a larger bone tool.

*Faunal Remains.* The highest frequencies of faunal remains, based on weight, were in STPs 1 and 2, with 189.9 grams and 131.6 grams respectively. This is not unexpected given that these appear to have greater intact midden deposits than the other STPs. STP 7 has the next highest weight at 53.8 grams, even though this STP has less intact midden and is located in an area of the island that has experienced significant modern disturbance from storms.

## CONCLUSION

Results of shovel tests at Bird Island suggest that the island has experienced significant disturbances from both ancient and modern storms. These storms likely scoured cultural deposits, dating as far back as the Late Archaic, from the lower elevations and redeposited them in other areas of the island, specifically at an elevation between 2.0 and 2.5 m above mean sea level. This scouring left only thin intact midden deposits over most of the landform, with the exception of STP 3, which had no evidence of intact midden. Artifacts recovered during shovel testing include pottery, shell tools, bone, soapstone, and lithics. The archaeological remains at the highest elevation appear to have suffered no significant reworking, at least during modern times, and offer the best opportunity for further archaeological investigations.

# CHAPTER 3
# METHODS AND RESULTS OF TEST UNIT EXCAVATIONS

Paulette S. McFadden

Based on the results of shovel testing, two locations were chosen for excavation of 1 x 2-m test units. Level A of both units was excavated to 20 cm below datum (BD) in order to remove turf and overlying modern disturbances, after which the test units were excavated in arbitrary 10-cm levels using standard archaeological techniques (see Figure 3-1). All materials were screened through 1/4-in hardware cloth, with artifacts and vertebrate faunal remains bagged by level for later analysis. Level forms were completed after each level with depths recorded for each corner and center from the established datum, observations made on the content and composition of level matrix, and any obvious features noted. All four profiles were cleaned, photographed, and drawn to scale after excavation was completed and bulk samples were collected. All recovered materials were bagged and transported to the Laboratory of Southeastern Archaeology in Gainesville for analysis.

At the laboratory, the materials collected during level excavation were washed, sorted, and cataloged. A small portion of each bulk sample was screened to collect the sediment matrix for additional soil analysis, with the remainder of the samples processed using a flotation tank. The light fraction, or the materials that float, were preserved for future analysis. The heavy fraction (the materials that do not float) was fractionated into three different size classes: greater than 1/4-in, less than 1/4-in but greater than 1/8-in, and less than 1/8-in. Each size fraction was sorted and classified, with the exception of the less than 1/8-in fraction, which was curated for future analysis.

## TEST UNIT 1

Test Unit 1 (TU1) was placed in the vicinity of STP 1, immediately to the east of the house and oriented east to west. This location was chosen because of the depth of midden material present in the shovel test pit, which afforded the best opportunity for finding undisturbed stratified archaeological remains. A datum was established 4 cm above ground surface at the northwest corner of the unit. Additional bulk samples were collected from a 50 x 50-cm column in 10-cm levels within identifiable archaeostrata from the west profile of TU1.

Photographs of the north and south profiles of TU1 are provided in Figures 3-3 and 3-4. Scaled drawings of all four profiles of this test unit are provided in Figure 3-5. Table 3-1 provides description of the strata identified in Figure 3-5, and an inventory of the archaeological materials recovered by level and column strata is provided in Table 3-2.

Seven distinct strata were identified in TU1. Stratum I, the uppermost stratum, consisted of zoysia grass turf and a heavy root mat that extended into dark gray fine sand and sparse oyster shell to a maximum depth of 10 cm BD. Bits of metal, including nails,

Figure 3-1. LSA Crew excavating Test Unit 1 at 8DI52 on May 17, 2011.

Figure 3-2. Removal of sample column from Test Unit 1 at 8DI52 on May 18, 2011.

screws, and other modern debris were mixed with the shell, suggesting modern disturbance to the area. The presence of modern debris is not surprising given TU1's close proximity to the house. Pottery types ranging from the Deptford through late Weeden Island periods, along with lithic artifacts, were present in Level A, which encompasses all of Stratum I and the top portion of the stratum beneath.

Stratum I grades into the underlying intact shell midden of Stratum II, which extends down to 31 cm BD and consists of moderately dense oyster shell, faunal remains, and pottery in a matrix of dark grayish brown sand. A charcoal sample recovered from the basal portion of the stratum returned a conventional AMS assay of 1140 ± 30 B.P., or a two-sigma calibrated date range of 1140-970 cal B.P.

A change in shell density and content marks the transition to Stratum III, which continues to 71 cm BD. In addition to increased oyster shell, this dark grayish brown fine sand stratum has a higher frequency of gastropod. While pottery is present, the density of sherds is much lower than in the two overlying strata. Likewise, bone density is lower than in the overlying deposits. A charcoal sample recovered from the basal portion of this stratum returned a conventional AMS assay of 2170 ± 30 B.P., or a two-sigma calibrated date range of 2310-2120 cal B.P.

Stratum IV is a thin layer of very dark grayish fine sand with virtually no shell or faunal remains. This stratum of sand that extends to a maximum depth of 97 cm BD has very sharp contacts with both the overlying and underlying strata and contains no artifacts. Stratum V, directly beneath the sand layer and continuing to a maximum depth of 110 cm BD, consists of dense midden in a very dark gray fine sand matrix that is fundamentally different in composition from the shell-bearing strata above. In addition to the dense oyster shell, there is a significant increase in gastropod shell. Faunal remains are not as well represented in this shell-bearing stratum as in those above. An increase in lithic artifacts in the absence of pottery suggests a pre-ceramic age for this midden deposit. This assumption was verified by radiocarbon dating of a charcoal sample collected from the basal portion of this stratum. It returned a conventional AMS assay of 3910 ± 40 B.P., or a two-sigma calibrated date range of 4430-4240 cal B.P. The shell deposits in this stratum thin toward the southwestern portion of the unit and the fine sand matrix grades into the stratum beneath.

The dark grayish brown fine sand of Stratum VI suggests high organic content in the sediments that continue to a maximum depth of 154 cm BD. These deposits contain no shell, vertebrate fauna, or artifacts; however, three small pit-like depressions extended downward into the stratum from Stratum V and contain a relatively high proportion of gastropod shells. The dark, organic sediments of Stratum VI grade into Stratum VII, the lowermost deposits in TU1. Brownish yellow fine sand sediments contain no shell, vertebrate fauna, or artifacts, and appear to have little or no organic content. These sterile deposits continue beneath the 160 cm BD terminus of TU1.


Figure 3-3. North profile of Test Unit 1, 8DI52.


Figure 3-4. South profile of Test Unit 1, 8DI52.

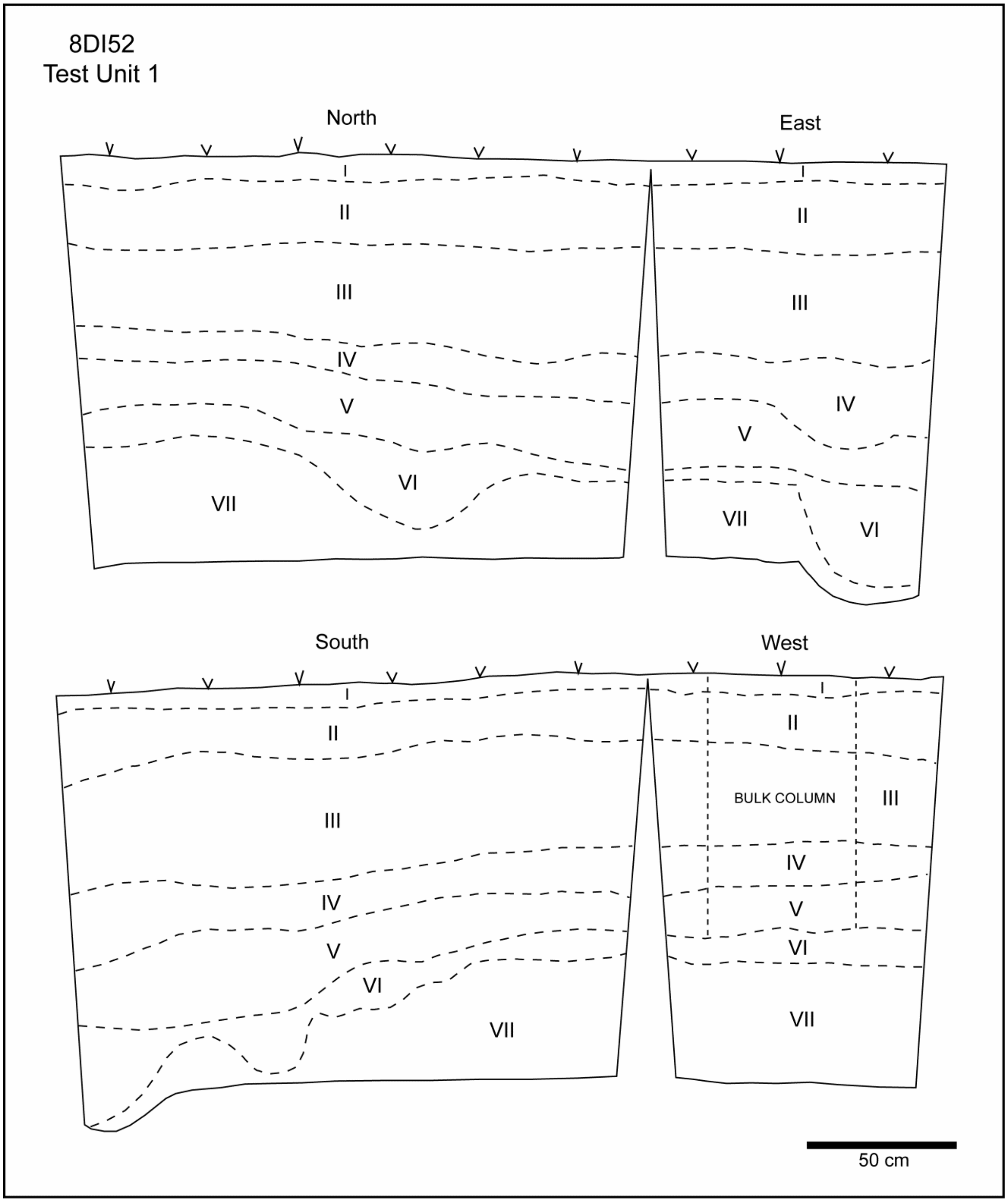



Figure 3-5. Stratigraphic profiles for Test Unit 1, 8DI52.

Table 3-1. Stratigraphic Units of Test Unit 1.

| Stratum | Max. Depth (cm BD) | Munsell Color | Description |
|---|---|---|---|
| I | 10 | 10YR3/1 | Very dark gray fine sand with abundant roots and rootlets and sparse oyster shell. |
| II | 31 | 10YR4/2 | Dark grayish brown fine sand oyster shell midden: Fine sand with moderate shell density. |
| III | 71 | 10YR4/2 | Dark grayish brown fine sand dense oyster shell midden with occasional gastropod. |
| IV | 97 | 10YR3/2 | Very dark grayish brown fine sand. |
| V | 110 | 10YR3/1 | Very dark gray fine sand. Variable density oyster/gastropod midden. |
| VI | 154 | 10YR4/2 | Dark grayish brown fine sand, lacking shell except in 3 pit-like depressions that contain relatively high proportion of gastropods in depressions. |
| VII | 160 | 10YR6/6 | Brownish Yellow fine sand, shell free. |

## TEST UNIT 2

Test Unit 2 (TU2) was placed near STP 6, approximately 55 meters to the west of TU1, also oriented east to west. Even though STP 6 had redeposited shell at the surface above only a thin layer of intact midden material, the presence of soapstone near the buried A-horizon and the deeper Newnan-like point suggested the possibility of an intact Middle-Late Archaic component. A local datum was established at the ground surface of the northwest corner of the unit, and the unit was excavated in the same manner as TU1 except that only two 50 x 10-cm bulk samples were collected from the north wall at approximately 50-60 cm BD and 70-80 cm BD (see Figure 3-6).

Photographs of the north and south profiles of TU2 are provided in Figures 3-7 and 3-8. Scaled drawings of all four profiles of this test unit are provided in Figure 3-9. Table 3-3 provides description of the strata identified in Figure 3-9, and an inventory of the archaeological materials recovered by level and column strata is provided in Table 3-4.

Table 3-2. Inventory of Materials Recovered from Test Unit 1, 8DI52.

| | Pottery (n) | Lithics (n) | Shell Tool (n) | Vert. Fauna (g) | Shell (g)[1] | Concret./ Pebbles (g) | Charcoal (g) | Other (g) |
|---|---|---|---|---|---|---|---|---|
| Level | | | | | | | | |
| A | 45 | 5 | 1 | 302.0 | | 208.4 | | 167.6[2,3] |
| B | 20 | 1 | | 626.0 | | 59.4 | | |
| C | 20 | 2 | 1 | 267.0 | | 9.5 | | |
| D | 4 | 2 | | 105.0 | | | | |
| E | 4 | | 3 | 148.2 | | 5.3 | | |
| F | 10 | | 2 | 117.0 | | | | |
| G | 1 | | 2 | 71.1 | | | | |
| H | | | | 110.3 | | | | |
| I | | 1 | 3 | 58.9 | | | | |
| J | | 1 | 1 | 16.2 | | 195.5 | | |
| K | | 2 | | 10.3 | | 202.6 | | |
| L | | 7 | | 3.8 | | | | |
| M | | 2 | | 3.9 | | | | |
| Total | 104 | 23 | 13 | 1839.7 | | 680.7 | | 167.6 |
| | | | | | | | | |
| Bulk | | | | | | | | |
| II | 10 | 2 | | 260.6 | 7680.9 | 135.2 | 0.3 | |
| II-B | 2 | | | 212.3 | 2600.5 | 37.8 | 0.1 | |
| III-A | | | 1 | 135.9 | 10,002.1 | 36.9 | 0.6 | |
| III-B | 1 | | | 47.8 | 10,166.3 | 25.8 | 0.2 | |
| IV | | | | 23.8 | 819.6 | 2.0 | 0.2 | |
| V-A | | | | 71.7 | 6313.5 | 4.8 | 0.2 | 1[3] |
| V-B | | | | 41.0 | 2751.4 | 56.5 | 0.1 | |
| Total | 13 | 2 | 1 | 793.1 | 40,334.3 | 299.0 | 1.7 | 1 |

[1] Includes marine, fresh, and terrestrial shell.
[2] Coral fragments
[3] Metal fragments

Stratigraphy in TU2 is a bit more complex than that of TU1 and observation of the eight strata that were identified and described suggest that this area of the island has experienced significant disturbance in the past. Stratum I varied in depth from 10 cm BD to a maximum of 25 cm BD and consisted of a dark yellowish brown fine sand containing thick plant roots and loosely packed oyster shell. In addition to shell, the midden material in this stratum contained pottery, lithics, and vertebrate fauna. Excavation of TU2 supports the original interpretation of this stratum in STP 6 as redeposited materials. In the southern portion of the unit, Stratum I dips to a depth of 50 cm BD and intrudes into strata II, III, and IV. The inclusion of rotted root material and the intrusion into older strata suggest the disturbance occurred in the area sometime after the sediments of Stratum I had been deposited and likely are the result of a small tree throw.

Figure 3-6. LSA crew excavating Test Unit 2 at 8DI52 on May 18, 2011.

Stratum II was identified by a change in color and content from the overlying stratum. The grayish brown fine sand matrix contained sparse shell, less bone, and significantly fewer artifacts than Stratum I. Unlike the wide variability of depth of Stratum I, this stratum terminated around 48-50 cm BD throughout the unit with the exception of the northwest corner, where the stratum terminated at about 40 cm BD. A thin lens, only 1-2 cm thick, of sparse shell intruded into the stratum at around 35 cm BD in the southeastern portion of the unit and was truncated in the central portion of the southern profile by some type of soil disturbance. No shell deposits were present in the unit below this lens.

Stratum III was a very thin layer of black, highly organic fine sand and silt that was markedly different from the strata above and below it. This roughly 4-cm-thick stratum, which extended to a maximum depth of 52 cm BD in the northern portion of the unit, appears to be a buried A-horizon that was likely truncated by scouring before being buried by the sediments of stratum II. The A-horizon is interrupted in the southern portion by the disturbance that brought deposits down from Stratum I, but otherwise is continuous throughout the unit. While the sharp contact at strata II and III is continuous and relatively uniform across the north profile, the dark, highly organic soil dips to a depth of 91 cm BD in the north profile. This disturbance is outlined with dark black soil


Figure 3-7. North profile of Test Unit 2, 8DI52.


Figure 3-8.  South profile of Test Unit 2, 8DI52.

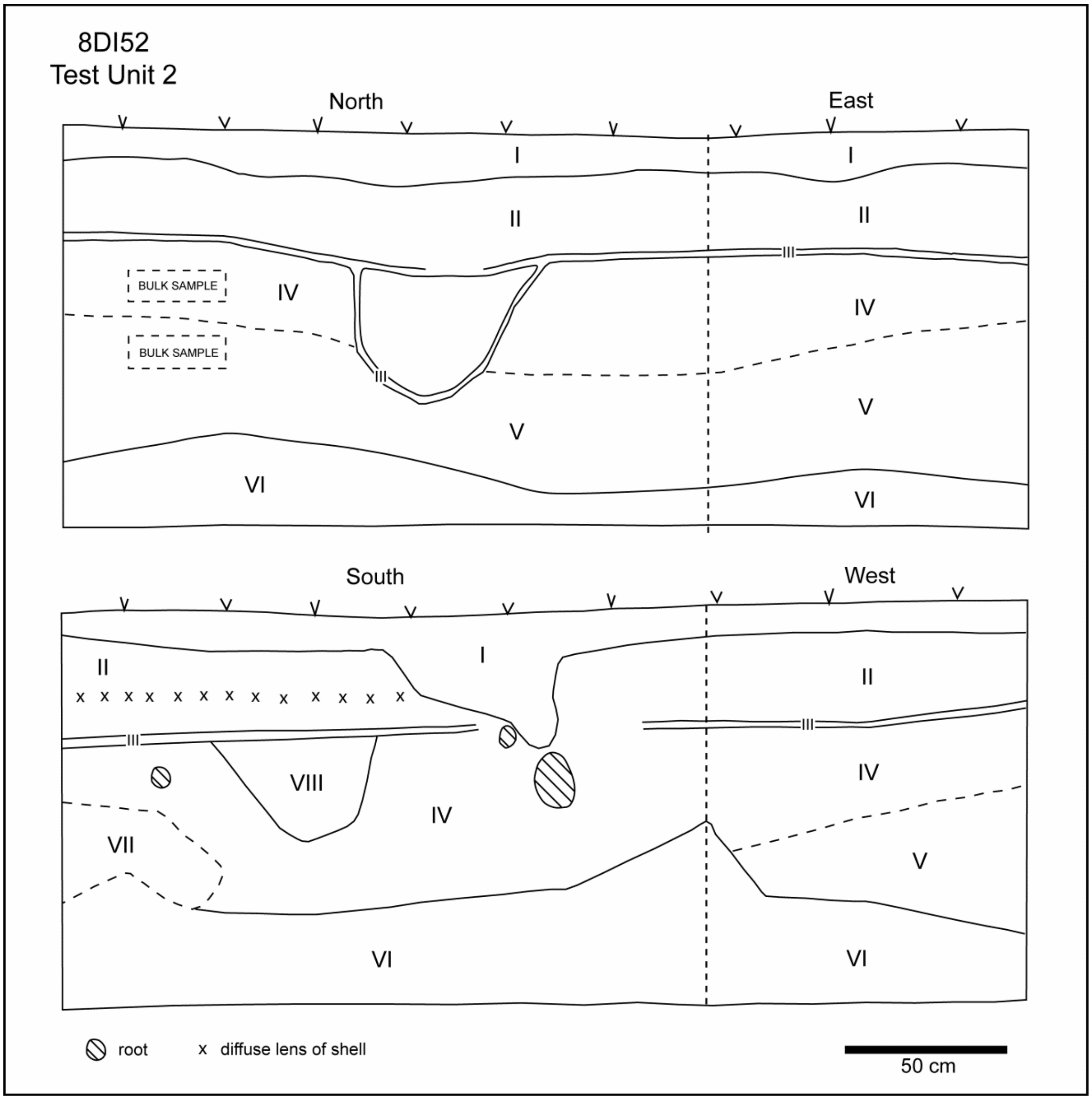


Figure 3-9. Stratigraphic profiles of Test Unit 2, 8DI52.

that contains dense charcoal fragments, and is likely the remnants of an old tree root burn.

Stratum III was excavated as part of the lower portion of level D and the upper portion of level E. Level D contains no pottery and significantly less vertebrate fauna. The only lithic artifact in this level was a chert point that was recovered at or near the sharp contact between strata II and III. A chert flake that fits to a portion of a large flake scar near the tip of this point was recovered from level E. Level E also contained four pieces of unidentifiable metal, suggesting that there had been some sort of disturbance that moved this modern material down 50-60 cm BD into these sediments, possibly as part of the disturbance in the southern portion that came from Stratum I. Alternatively, the metal could have been part of the redeposited sediments that make up the upper strata of this unit.

Table 3-3. Stratigraphic Units of Test Unit 2.

| Stratum | Max Depth (cm BD) | Munsell Color | Description |
|---|---|---|---|
| I | 25 | 10YR4/4 | Dark yellowish brown fine sand with dense shell and high organic matter |
| II | 50 | 10YR5/2 | Grayish brown fine sand with sparse shell |
| III | 52 | 10YR2/1 | Black very organic fine sand with silt |
| IV | 84 | 10YR5/1 | Gray fine sand, with many roots, that grades into Stratum V. |
| V | 120 | 10YR6/1 | Gray fine sand with many roots |
| VI | 130 | 10YR5/3<br>10YR4/3 | Brown medium sand mottled with darker brown medium sand |
| VII | 100 | 10YR4/2 | Dark grayish brown fine sand |
| VIII | 80 | 10YR4/1 | Dark gray fine sand |

The deposits below Stratum III are significantly different in texture, color, and content from those above it. The recognition of discrete strata below Stratum III was difficult as the changes with depth were very subtle in some cases, and there were several large natural soil disturbances. Stratum IV consisted of fine gray sand, with dense palm roots, that graded into the fine gray sand of Stratum V at a maximum depth of 84 cm BD. Levels E through G are included in this stratum, and yielded pottery, lithics, and vertebrate fauna. Several large pieces of pottery were recovered from level F, including sherds of the Deptford linear check-stamped, Ruskin dentate, and St. Johns check-stamped types. One sherd crossmended with a sherd from level E.

Only a slight variation in sediment color marked the changes between strata IV and V, and no obvious changes in root density or artifact content were noted. Terminating at a maximum depth of 120 cm BD, Stratum V was observed in the north and east profiles, pinched out in the west profile, and was completely absent from the south profile. Finally, Stratum VI consisted of medium sand that was mottled with varying shades of brown and extended below the terminus of the unit at 130 cm BD. No artifacts were present in this lowermost stratum.

Two additional strata were identified within the profiles. Stratum VII consists of a mottled brown medium sand and Stratum VIII was dark gray sand. Both of these strata were identified by color change only and did not appear to have significant textural differences or differences in artifact frequencies. In addition to strata VII and VIII, two

Table 3-4. Inventory of Materials Recovered from Test Unit 2, 8DI52.

| | Pottery (n) | Lithics (n) | Modified Bone (n) | Vert. Fauna (g) | Concret./ Pebbles (g) | Other (g) |
|---|---|---|---|---|---|---|
| Levels | | | | | | |
| A | 51 | 4 | 1 | 205.6 | 15.2 | |
| B | 9 | 2 | 1 | 126.7 | 0.2 | |
| C | 3 | 1 | | 90.7 | | |
| D | | 1 | | 2.1 | 0.3 | |
| E | 3 | 2 | | 1.3 | | 5.9[2] |
| F | 10 | | | | | |
| G | 9 | 9 | | 3.6 | 2.8 | |
| H | 8 | 11 | | 1.5 | | |
| I | 3 | 19 | | 0.6 | | |
| J | | 12 | | 0.1 | 91.6 | |
| K | | 6 | | 0.3 | 29.2 | |
| Total | 96 | 67 | 2 | 432.5 | 139.3 | 5.9 |

[2] Metal fragments (g)

soil disturbances were observed in the southern profile, both likely natural occurrences rather than anthropogenic.

## ARTIFACT ASSEMBLAGE FROM TEST UNITS

### *Pottery*

Tables 3-5 and 3-6 provide pottery frequencies by level for TU1 and TU2, with representative sherds shown in Figures 3-10 and 3-11. Sherds recovered from TU1 and TU2 that exhibited diagnostic characteristics of a particular culture-historical type were designated as such. When diagnostic attributes were not present, a generic classification system was utilized and was based on descriptive characteristic of temper and surface treatment, for example, “sand-tempered plain” or “sand-tempered incised.” Sherds that were smaller than ½ inch in maximum dimension were classified as “crumb” sherds.

The pottery assemblage from test unit excavations consists of 128 identifiable sherds. An additional 85 sherds were classified as crumb sherds and were excluded from analysis. Culture-historical types identified have a large temporal range and include Deptford linear check-stamped; Pasco plain; Swift Creek complicated stamped; St. Johns plain, check-stamped, and UID; Weeden Island incised; Tucker Ridge pinched; Pappy’s Bayou; Carrabelle punctated; and Ruskin dentate. Generic types include sand-tempered plain, check-stamped, incised, punctated, and unidentifiable (UID), and fiber-tempered UID. Crossmends (i.e., pieces of pottery that can be fitted back together) were sought during the sorting process. Crossmends that were from fresh breaks were counted as one sherd to avoid inflating the type frequencies in the assemblage.

TU1 had the highest number of sherds (n = 177), of which 65 sherds were identified to type. The highest densities of pottery occurred in the upper 20 cm of both TU1 and TU2. This is due to several factors: first, level A of both test units was 20 cm thick rather than 10 cm since the upper turf and any modern disturbances were removed in hopes of quickly reaching intact archaeological deposits. Additionally, the higher density in TU2 is likely due to the redeposition of midden material that contained pottery. Secondly, the densities are skewed by higher numbers of crumb sherds that are likely the result of fragmentation due to trampling and other weathering processes that break down sherds that are closer to the surface and relatively unprotected.

In TU1, pottery frequency remains relatively high to a depth of around 40 cm BD in the dense midden material of Stratum II (n = 77). After a significant decrease, frequency increases again between 60 to 70 cm BD (n = 11), which is within the dense midden material of Stratum III. No pottery was recovered below 80 cm BD even though dense midden material lies below in Stratum V. Sand-tempered wares were by far the most frequent (n = 45) with sand-tempered UID (n = 19) being dominant. The vast majority of these sherds were recovered from the upper 60 cm of the unit, with only five sand-tempered sherds coming from the 60 to 80 cm BD depth. The majority of other types was recovered from the upper 20 cm BD, or the 20 cm thick level A. Deptford linear check-stamped sherds (n = 4) were present in much lower frequencies overall, with two of the sherds coming from the upper 20 cm. One Deptford sherd was recovered from 30 to 40 cm BD and the last from 60 to 70 cm BD. The Deptford pottery co-occurred with Swift Creek complicated-stamped (n = 4); two of which came from the upper 20 cm and 2 from 40 to 50 cm BD; Pasco (n = 3), with two sherds from the upper 20 cm and one from 40 to 50 cm BD; St. Johns plain (n = 2), both of which were recovered from the upper 20 cm; and St. Johns UID (n = 2), both from 50 to 60 cm BD. A Tucker Ridge Pinched sherd and a Weeden Island Incised Rim were recovered from the upper 20 cm BD, below which a Pappy's Bayou sherd was found between 30 to 40 cm BD. An additional Carrabelle punctated sherd was recovered from the same depth in the bulk sample from Stratum II. One fiber-tempered sherd was recovered from 60 to 70 cm BD.

While the overall number of sherds in TU2 (n = 96) is lower, the 63 identifiable sherds are very close in number to TU1. After the initial high frequency of pottery in the upper 20 cm BD of TU2, frequencies were highly variable. The highest frequency, below the upper 20 cm BD, came from the area of 70 to 90 cm BD (n = 27), below the buried A-horizon in strata IV and V. As in TU1, the assemblage in TU2 is dominated by sand-tempered sherds (n = 44). With the exception of the increased frequency in the upper 20 cm BD, there appears to be no clustering of sand-tempered sherd at any particular depth and sherds are present in all levels above 80 cm BD, with the exception of level D (40 to 50 cm BD) that includes the buried A-horizon of Stratum III.

Deptford linear check-stamped (n = 6) sherds recovered from TU2, as in TU1, are a distant second in frequency to the sand-tempered wares, with four recovered from the upper 20 cm BD, one from 20 to 30 cm BD, and the last sherd from 60 to 70 cm BD. St.

Table 3-5. Absolute Frequencies of Pottery Sherds from Test Unit 1, by Level, 8DI52.

| | Deptford LCS | Pasco | Swift Creek | ---St. Johns--- Plain | UID | --Sand Tempered-- Plain | Check | UID | Crumb | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Level | | | | | | | | | | | |
| A | 2 | 2 | 2 | 2 | | 5 | 3 | 7 | 20 | 2[1,2] | 45 |
| B | | | | | | 5 | 1 | 6 | 7 | 1[3] | 20 |
| C | 1 | | | | | 3 | 2 | 3 | 10 | 1[4] | 20 |
| D | | 1 | 2 | | | | | | 1 | | 4 |
| E | | | | | 2 | | | 1 | 1 | | 4 |
| F | 1 | | | | | 3 | 1 | | 4 | 1[5] | 10 |
| G | | | | | | | | | 1 | | 1 |
| Total | 4 | 3 | 4 | 2 | 2 | 16 | 7 | 17 | 44 | 5 | 104 |
| Bulk | | | | | | | | | | | |
| II | | | | | | | | 2 | 7 | 1[6] | 10 |
| IIB | | | | | | 1 | | | | 1[7] | 2 |
| IIIB | | | | | | | | | 1 | | 1 |
| Total | | | | | | 1 | | 2 | 8 | 2 | 13 |

[1]Tucker Ridge pinched
[2]Weeden Island incised rim
[3]Pappy's Bayou
[4]sand tempered incised
[5]fiber tempered UID
[6]sand tempered punctated
[7]Carrabelle punctated

Johns check-stamped (n = 4) is the next most frequent type, all recovered from 50 to 70 cm BD. Three of the St. Johns check-stamped sherds were recovered in level F (60 to 70 cm BD), one of which is a very large rim sherd that is heavily sooted. This large sherd crossmends with the one St. Johns check-stamped sherd from level E (50 to 60 cm BD). Several other large sherds were clustered with the St. John check-stamped sherds in the western half of the unit, including one of the Deptford sherds and a Ruskin dentate sherd. Like the St. Johns check-stamped sherd, the large Ruskin dentate sherd is a portion of a sooted rim. St. Johns plain sherds (n = 2) were all recovered above 40 cm BD in TU2. Both Pasco sherds were found in the upper 20 cm BD and one fiber-tempered UID sherd was recovered from 30 to 40 cm BD. Finally, one Carrabelle punctated sherd was found between 70 and 80 cm BD. No identifiable sherds were found below 90 cm BD and no pottery was recovered from levels deeper than 100 cm BD.

Table 3-6. Absolute Frequencies of Pottery Sherds from Test Unit 2, by Level, 8DI52.

| | Deptford | | -------St. Johns------- | | | ----Sand Tempered---- | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LCS | Pasco | Check | Plain | UID | Plain | Check | UID | Crumb | Other | Total |
| Levels | | | | | | | | | | | |
| A | 4 | 2 | | 1 | | 13 | 2 | 10 | 19 | | 51 |
| B | 1 | | | | | 3 | | 4 | | 1[1] | 9 |
| C | | | | 1 | | 1 | | | 1 | | 3 |
| D | | | | | | | | | | | 0 |
| E | | | 1 | | | | | 1 | 1 | | 3 |
| F | 1 | | 3 | | | 3 | | 1 | | 2[2,3] | 10 |
| G | | | | | | 4 | 1 | | 3 | 1[4] | 9 |
| H | | | | | 2 | | | | 6 | | 8 |
| I | | | | | | | | | 3 | | 3 |
| Total | 6 | 2 | 4 | 2 | 2 | 24 | 3 | 16 | 33 | 4 | 96 |

[1] fiber tempered UID
[2] One sand tempered punctated
[3] One Ruskin dentate
[4] Carrabelle punctated

In addition to the pottery recovered during shovel testing and test unit excavation, the Nelms family curates a substantial collection of pottery that has been collected over the span of decades from the island. Detailed analysis was conducted on a subsample of this extensive collection and the results are provided in Chapter 5 of this report.

*Lithic Artifacts*

Frequencies of lithic artifacts in test units by level and strata are provided in Tables 3-7 and 3-8. A total of 92 lithic artifacts were recovered from test unit excavations, the majority (n = 67) from TU2, and included flakes (n = 79), chunks of stone (n = 7), biface fragments (n = 2), one modified flake, one spokeshave, one abrader, and one biface. With the exception of two chunks of limestone, and two flakes, all of the flaked raw material was chert.

TU1 contained 25 lithic artifacts, including bifacial reduction flakes (n = 19), chunks of stone (n = 3), a biface fragment, a spokeshave, and a modified flake. The majority of flakes were recovered below 90 cm BD in Stratum V, with only six flakes coming from the upper levels in Strata II and III. Three angular chunks of stone were recovered, one of limestone from 30 to 40 cm BD and two of chert from 40 to 50 cm BD. The biface fragment (Figure 3-12a), recovered from the upper 20 cm BD, measures 1.7 cm from the tip to the base, where it terminates in a lateral fracture, and 1.8 cm at its greatest width. It is made on mottled pink chert that contains inclusions and voids. It appears to have been in the later stages of production and the lack of use wear on the edges of the biface suggests it broke during the reduction process.

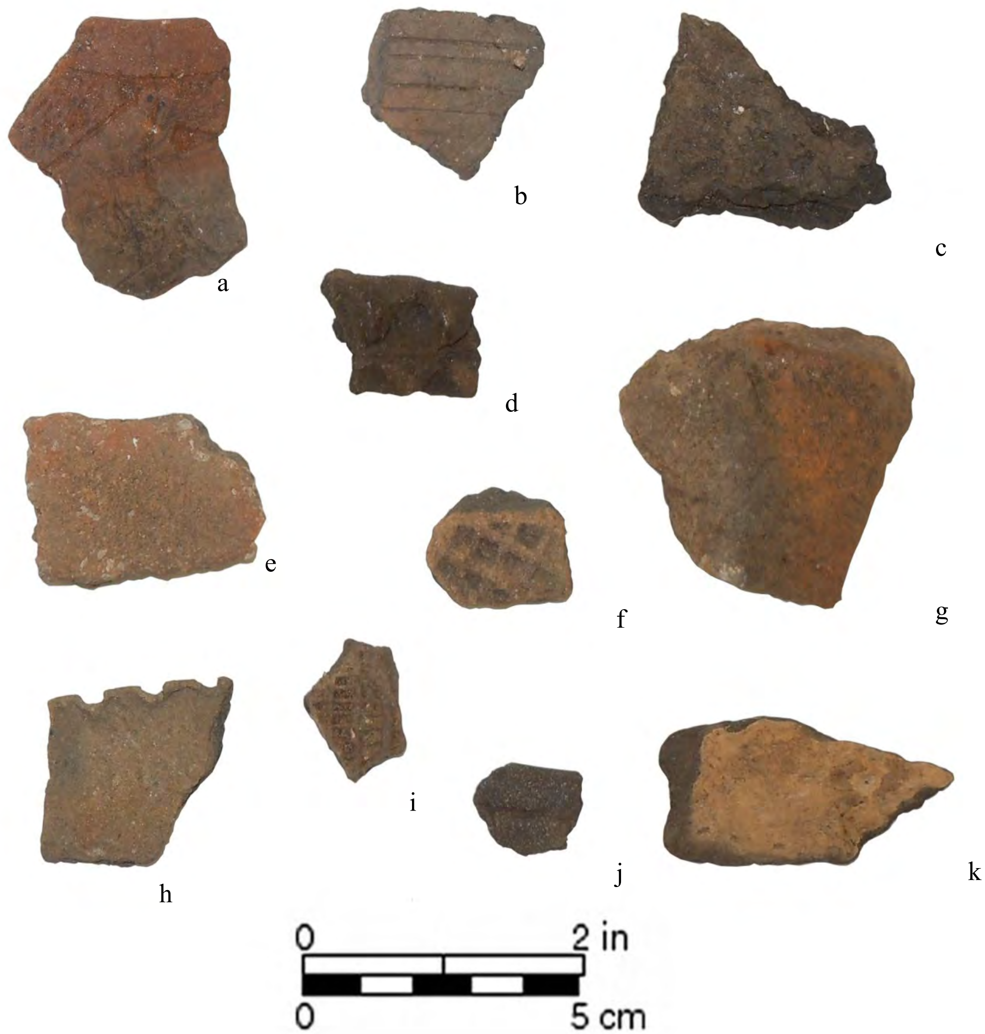
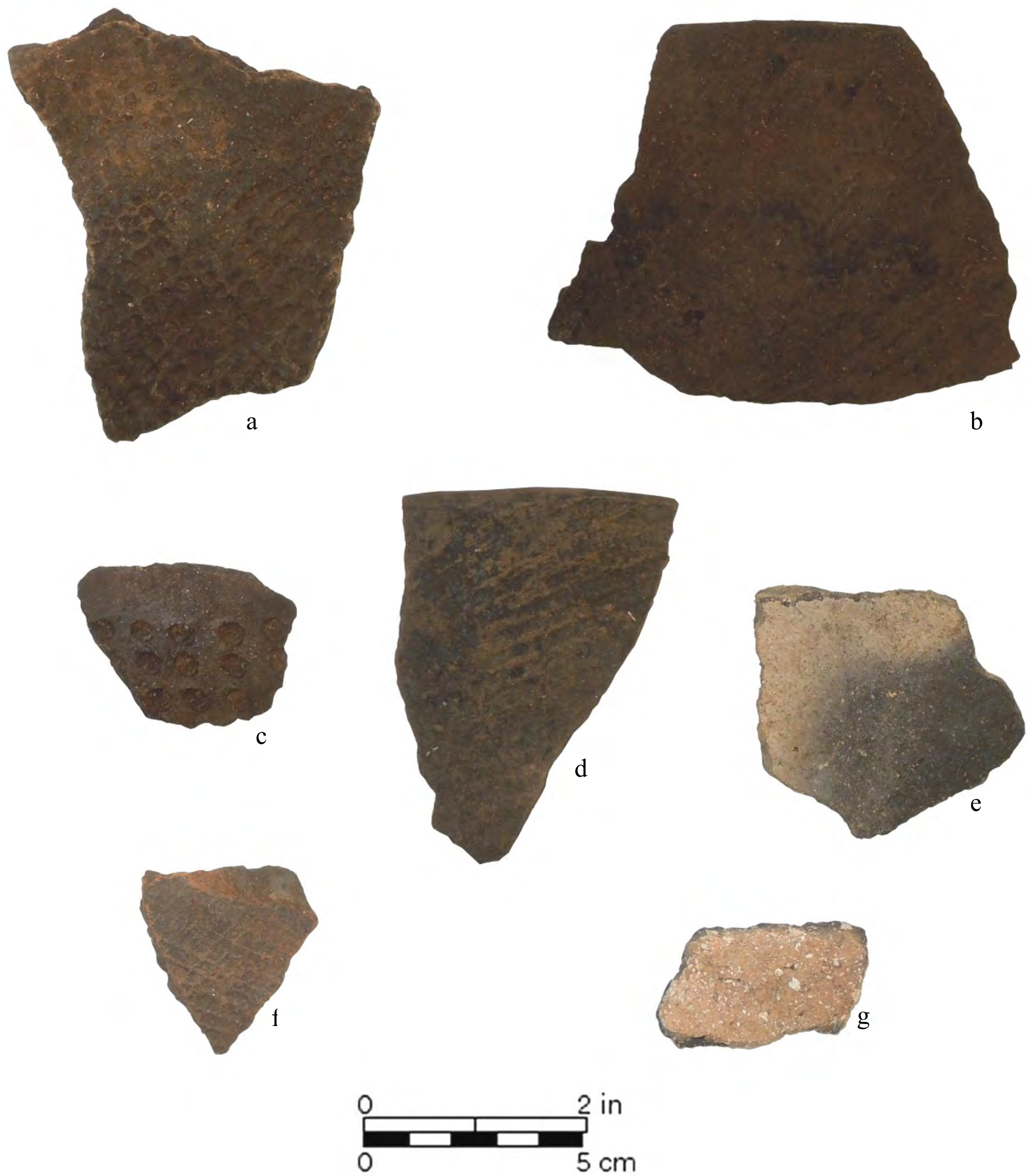



Figure 3-10. Examples of sherds recovered from Test Unit 1, a) Pappys Bayou, b) sand-tempered incised, c) Orange plain, d) Tucker Ridge pinched, e) Pasco plain, f) sand-tempered check-stamped, g) sand-tempered plain, h) Swift Creek complicated stamped, i) Deptford linear check-stamped, j) Weeden Island incised, k) St. Johns plain.




Figures 3-11. Examples of sherds recovered from Test Unit 2, a) Deptford linear check-stamped, b) Ruskin dentate, c) Carrabelle punctated, d) St. Johns check-stamped, e) sand tempered plain, f) sand tempered check-stamped, g) Pasco plain.

Table 3-7. Absolute Frequencies of Lithic Artifacts from Test Unit 1, by Level, 8DI52.

| | Flake | Modified Flake | Spokeshave | Biface Frag | Chunk |
|---|---|---|---|---|---|
| Levels | | | | | |
| A | 2 | 1 | 1 | 1 | |
| B | | | | | 1 |
| C | | | | | 2 |
| D | 2 | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |
| H | | | | | |
| I | 1 | | | | |
| J | 1 | | | | |
| K | 2 | | | | |
| L | 7 | | | | |
| M | 2 | | | | |
| Total | 17 | 1 | 1 | 1 | 3 |
| | | | | | |
| Bulk | | | | | |
| II | 2 | | | | |
| Total | 2 | 0 | 0 | 0 | 0 |

.

The modified flake (Figure 3-12b) that was recovered from the upper 20 cm BD of TU1 is of a light-colored beige to pink chert. It measures 2.4 cm wide and 2.0 cm long. The dorsal side of the flake contains several large flake scars and several small step fractures at the base. The left edge of the flake has had additional material removed, likely by pressure flaking. The striking platform and bulb of percussion are clearly evident on the ventral surface of the flake at its base and the flake terminates in a lateral fracture at its top. The ventral surface has no other alteration.

The spokeshave (Figure 3-12c), also from the upper 20 cm BD, is an angular chunk of white to light pink, highly weathered chert. The triangular shaped chunk measures 4.7 cm long and 3.1 cm at its widest point, near a rounded notch, likely used to shape or smooth some type of wooden shaft or rod. This is an expedient tool, one in which a specific use was found for an unspecified mass of material. With the exception of flakes, no other stone tools were recovered from TU1.

A total of 67 lithic artifacts were recovered from TU2, including flakes (n = 60), chunks of stone (n = 4), one biface, one biface fragment, and one abrader. With the exception of one UID flake from 90 to 100 cm BD, all of the flakes recovered were chert. One angular chunk of limestone was recovered from the upper 20 cm BD, along with one chunk of chert. Two additional chunks of chert were recovered from 20 to 40 cm BD.

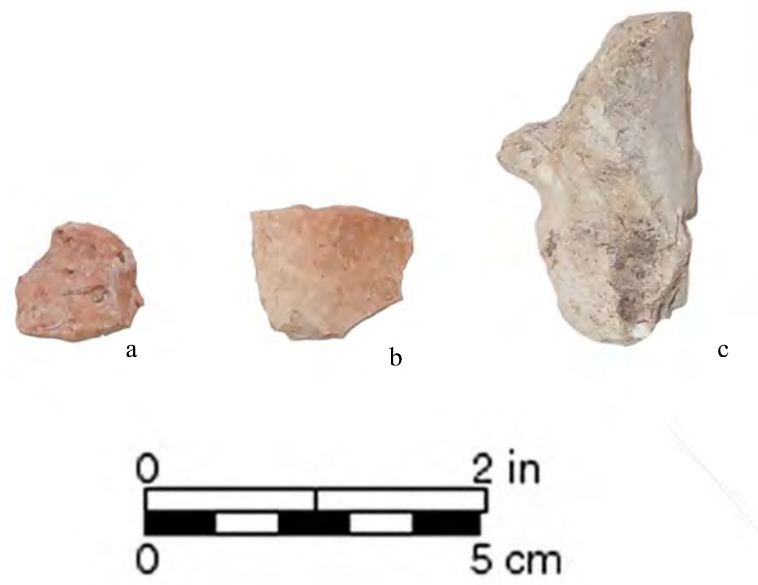



Figure 3-12. Lithic artifacts recovered in Test Unit 1: a) biface fragment, b) modified flake, c) spokeshave.

Table 3-8. Absolute Frequencies of Lithic Artifacts from Test Unit 2, by Level, 8DI52.

| | Flake | Abrader | Biface Frag | Biface | Chunk |
|---|---|---|---|---|---|
| Levels | | | | | |
| A | 2 | | | | 2 |
| B | | 1 | | | 1 |
| C | | | | | 1 |
| D | | | | 1 | |
| E | 2 | | | | |
| F | | | | | |
| G | 9 | | | | |
| H | 10 | | 1 | | |
| I | 19 | | | | |
| J | 12 | | | | |
| K | 6 | | | | |
| L | | | | | |
| M | | | | | |
| Total | 60 | 1 | 1 | 1 | 4 |

The biface (Figure 3-13a), recovered from 50 to 60 cm BD, is made on thermally altered chert that is mottled with dark red, pink, medium to dark gray, and light beige. It measures 5.1 cm long and 3.1 cm at its greatest width. The portion above the hafting element is symmetrical. The biface narrows at its base, with one shoulder more pronounced than the other, and has a deep concave base that is thinned by the removal of flakes that emanate from the base. The edges of the entire biface have been retouched with significantly more reworking at the base. This suggests that this item may be recycled from the tip of a larger biface. A large flake emanating from the tip and terminating in a step fracture in the center could be an impact flute or an attempt to thin the center portion of the biface. A flake recovered in the level from 60 to 70 cm BD crossmends with the lower portion of this large flake (see Figure 3-13b). Several flakes emanating from the base on the same side of the biface may suggest another attempt to thin the center section with no success as these both also terminate in step fractures. Several small flake scars overlying the larger channel flake at the tip suggest retouching or continued edge working after the removal of the material. Multiple small step fractures observed under magnification along the edges of the biface suggest the biface may have been used as a knife rather than as a projectile point.

Morphologically, the biface from TU2 is similar to Early Archaic bifaces but exhibits no grinding at the hafting element, a defining characteristic of Early Archaic forms. Perhaps the closest known type is the Arredondo, a type typically found in Alachua, Dixie, and Gilchrist counties of Florida and having a wide range of reported dates from the Early Archaic (Milanich 1994) through the late preceramic Archaic (Farr 2006). Arredondo points are described as “crude, percussion-flaked [and as] Florida’s

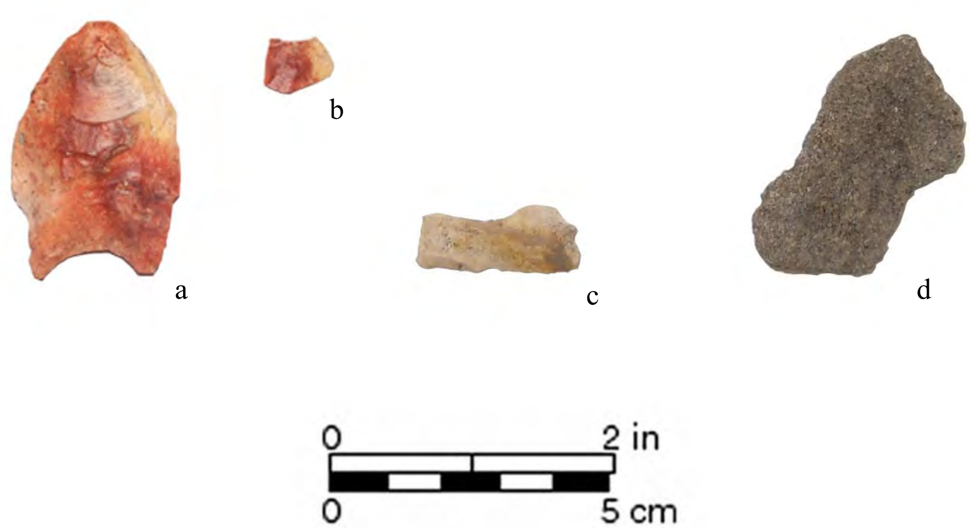



Figure 3-13. Lithic artifacts recovered in Test Unit 2, 8DI52: a) chert biface, b) chert flake that refits a distal flake scar of the biface, c) biface fragment, d) abrader.

only bifurcate point" (Farr 2006:87-88); however, the biface recovered from TU2 is obviously refined by pressure flaking along the edges and the morphology of the base could not be considered truly bifurcated. At the present, it is difficult to assign a culture-historical type to this biface and therefore to glean better temporal information from it.

A biface fragment (Figure 3-13c) recovered from 80 to 90 cm BD is a small portion of the base of the biface, and is made of beige to medium brown chert. It measures 1.2 cm long and 2.7 cm wide. Unfortunately the fragment of the base is too small to determine the stage of manufacture of the point, whether it was a perform biface, or if it was a finished point, and therefore it cannot be assigned to a particular culture-historical type.

A chunk of unidentified stone material (Figure 3-13d) was recovered from 20 to 30 cm BD and has been tentatively classified as an abrader. The material is very light, porous, and abrasive, almost pumice-like, and appears to have grooves worn into the material in several areas. The dark gray, irregularly shaped abrader measures 2.4 cm long and 4.7 cm wide.

*Modified Shell*

A total of 12 modified shell artifacts were recovered during test unit excavation, all from TU1, and include gastropod hammers (n = 6), modified gastropod columella (n = 3), a large gastropod adze, and various modified shell fragments (n = 2) (See Figure 3-14 for representative samples). In the upper 20 cm BD in Stratum II, only two small shell tools were recovered. A small badly degraded gastropod columella, measuring 3.9 cm long, has angular beveling at the base that could be suggestive of use wear; however it is ambiguous and could be a result of natural rather than anthropogenic processes. A shell fragment recovered from the same level appears to be a fragment of a large gastropod shell that measures 2.5 by 3.3 cm. One side of the fragment has parallel linear striations that appear to be naturally occurring. The reverse side has similar parallel linear striations that are truncated by a slightly elevated 0.4 cm wide band of shell that runs perpendicular to the striations. Below this band the upper layer of shell has been removed. It is unclear if this removed layer is due to intentional modification or is the result of natural exfoliation. It is possible that this pattern is the result of the natural degradation of the shell that mimics human alteration.

Stratum III yielded three gastropod hammers, all of crown conch (*Melongena corona*), and two gastropod columellae. One hammer, measuring 6.2 cm long, was recovered from 30 to 40 cm BD and is highly weathered. It has a slightly ovate hafting hole measuring 2.1 by 2.3 cm and a hafting notch of 0.9 cm cut into the aperture. The base of the shell has experienced significant attrition due to battering and exhibits a small amount of beveling. The apex is broken, making it difficult to identify degradation from use; however, there is significant wear that has obliterated several of the spins near the broken apex, suggesting the top of the shell, as well as the bottom, may have been used. The two remaining hammers were recovered from between 50 and 60 cm BD. Both are


Figure 3-14. Modified shell recovered from Test Unit 1: a) gastropod hammer from Level E, b) possibly modified shell fragment from Level A, c) gastropod hammer from Level C, d) gastropod hammer from Level E, e) possibly modified gastropod from Level G, zone B.

broken with significant portions of the shell missing. The larger of the two measures 6.5 cm long and is missing the apex and a significant portion of the body of the shell. The pattern of breakage makes it impossible to identify a hafting hole, and there is no notch in the aperture. The base exhibits moderate attrition and beveling, which is suggestive of use wear. The smaller hammer, measuring 5.7 cm long, is also missing the apex and much of the upper whorl. No hafting hole or aperture notch can be identified, but the base has been significantly battered. One columella, found between 50 and 60 cm BD, is 6.9 cm long. It is badly weathered, making it difficult to determine if attrition to the base and top are the result of natural processes or indicative of use wear. The second columella was recovered from the Stratum III bulk samples and measures 4.5 cm long. Portions of the whorl are still present, suggesting that the outer portion of the shell was broken by weathering or other natural processes; however, the base is beveled from use.

The contact between Strata III and IV sloped from the east to west, resulting in deposits from both being present in level G (70 to 80 cm BD). Two zones were identified in the horizontal plane of the unit as level G was being excavated. Zone A contained midden material that was associated with Stratum III, while zone B contained sandy deposits more closely resembling Stratum IV. Two shell artifacts were recovered from zone B of this level; a lightning whelk (*Busycon contratium*) and an additional gastropod fragment. The lightning whelk measures 9.2 cm long. It has a broken apex and is missing a portion of the upper whorl. The body contains a small rounded hole measuring 1.5 cm across that could be a small hafting hole; however, this hole is intersected with a larger irregular hole that appears to be the result of breakage. The base does not appear to be shortened from battering, but a portion of the aperture and the base of missing with evidence of fresh breakage, likely due to shovel impact during excavation. An additional shell fragment was recovered from the same area that appears to be the aperture portion of a gastropod. One edge of the fragment has a regular, smooth, stepped surface that appears to be the result of cutting or hacking of the shell. The patina on the exterior surface is uniform, suggesting that this is not the result of recent activity. Even though these two shell artifacts were found in zone B, it is likely that they were associated with the lowermost deposits of Stratum III rather than Stratum IV.

Stratum V yielded three gastropod hammers. The largest was recovered from the area between 90 and 100 cm BD. This 9.8-cm-long crown conch (*Melongena corona*) shell is missing the apex and a significant portion of the body whorl in the area that would most likely contain the hafting hole. An unknown portion of the aperture appears to be missing, but this does not appear to be due to recent breakage. The base of the hammer is battered and beveled. A second gastropod hammer was recovered from the same depth range. It measures 6.9 cm long and is missing the entire area of the upper whorl and the apex. The body portion of the whorl has two rounded hafting holes, one approximately 2.1 cm and the other 1.7 cm in diameter and exhibits significant attrition at the base. A third hammer is made from a small lighting whelk (*Busycon contratium*) shell. It is 7.4 cm long and is only missing a minimal portion of the apex and a small portion of the upper whorl due to breakage. The body portion of the whorl has a small round hafting hold, measuring 1.5 cm in diameter. A portion of the aperture is broken, so it is not possible to identify a notch. The base of the hammer is heavily battered.

A large adze (Figure 3-15), measuring 14.6 cm long and made from a lighting whelk (*Busycon contratium*) shell was recovered from 90 to 100 cm BD in Stratum V. It has two hafting holes in the upper portion of the whorl above the shoulders: one round hole is 2.1 cm in diameter, and the second is a slightly ovate hole measuring 2.1 cm by 1.8 cm. These two holes do not line up, making it unlikely that the tool was hafted using them together. The body portion of the whorl has a third rounded hole of 1.6 cm in diameter. The aperture is reduced and shows evidence of grinding along the majority of the edge, with the exception of what appears to be the remnants of a hafting notch. The base is heavily beveled and exhibits significant attrition. It is likely that the tool was hafted through one of the holes on the upper portion of the whorl and a hafting notch on the aperture. Either due to significant wear or breakage, it appears that a portion of the aperture was removed through grinding and a second hafting hole was added to extend the use life of this tool.


Figure 3-15. Gastropod adze recovered from Level I of Test Unit 1.

*Modified Bone*

Two pieces of modified bone were recovered from TU2. The first (Figure 3-16a) was recovered from the upper 20 cm BD and appears to be the tip of a longer sharpened or tapered implement. The fragment is made from a portion of mammalian long bone; however, it is too small to identify to species. It measures 3.4 cm long by 1.1 cm wide near the break. The second (Figure 3-16b) is a small implement made from a long bone of a medium to small mammal, possibly a very young deer. It measures 4.1 cm long by 1.4 cm wide. The flaring upper portion of the implement is the remnants of the epiphysis and retains a small foramen, below which the implement has been ground to a tapering point at the base.


Figure 3-16. Modified bone from Test Unit 2: a) level A and b) level B.

## FAUNAL ASSEMBLAGE

*Vertebrate Fauna*

Vertebrate faunal remains were collected in level excavations of both test units and in the bulk samples collected from TU1. Analysis of the total weight of animal bone in the bulk samples collected from TU1 suggests that bone frequency (by weight) does not correlate with shell density in the midden material. The highest bone frequency is found in Stratum II, with a total of 472.9 g of bone. Stratum III, which has a much higher density of shell than that of the upper stratum, has a total of only 183.7 g, followed by the lowermost shell-bearing Stratum V with 112.7 total grams. The buried shell-free sand deposits of Stratum IV have the lowest bone frequency at 23.8 g.

Animal bone recovered from level excavation of TU1 follow this same trend, with the highest bone frequency in the upper 40 cm BD, 1195.0 g, followed by the 40 to 70 cm BD range, which roughly corresponds to stratum III, at only 370.2 g. The levels that encompass the 70 to 100 cm BD range, which includes the shell-free sandy deposits of Stratum IV, contained 240.3 g of bone. However, because of the sloping nature of the stratigraphy in TU1, it is likely that the majority of the bone recovered in those levels is associated with either the upper Stratum III or the deeper midden material in Stratum V. Bone frequency tapers significantly in the lower levels, below 100 cm BD, containing only 34.2 g total. Detailed analysis of the vertebrate fauna from the bulk samples of TU1 is provided in Chapter 4 or this report.

Test Unit 2 yielded the highest bone frequency in the upper 40 cm BD, with 205.6 g in level A, 126.7 g in level B, and 90.7 g in level C. Below this level, bone is a negligible contributor to the materials recovered during excavation. As in TU1, the higher bone frequency in the upper portion of the unit also co-occurs with higher shell density.

*Marine Shell*

The only marine shell collected from shovel testing and level excavations were shell tools; however, all marine shell was collected and analyzed from the bulk samples that were collected from TU1. Shell was sorted into categories to the lowest taxonomic unit and included oyster (*Crassotrea virginica*), crown conch (*Melongena corona*), periwinkle (*Littoraria irrorata)*, clam (*Polymesoda caroliniana*), scallop (*Argopecten irradians*), barnacle (*Cirripedia*), and miscellaneous gastropod. Unidentifiable shell was categorized as UID marine shell. Each category of shell was weighed and the percentage of each by stratum and by total assemblage was calculated.

Absolute frequencies of marine shell weight by taxa and strata with percentage of total weight for each are provided in Table 3-9. By far, oyster is the largest identifiable marine shell category by weight (29,558.6 g) and percentage (73.0%). Oyster is followed by crown conch at 2.9% (1168.1 g), miscellaneous gastropod at 1.3% (518.6 g), periwinkle at 0.5% (195.4 g), clam at 0.03% (13.3 g), scallop at 0.01% (2.2 g), and barnacle at 0.01% (6.0 g). UID marine shell was 22.0% of the total assemblage with 8854.7 g of predominately crushed shell.

Shell weight correlates with strata thickness. The 39-cm-thick Stratum III has the highest total weight of shell (20169.1 g), twice that of strata II and V. Oyster constitutes 81 percent of the assemblage in this stratum, a greater percentage than that of oyster in other strata, but increases in most other taxa also occur in this stratum. Stratum II is 20-cm thick and has next highest marine shell weight (10,280.4 g), followed by the 12-cm thick Stratum V (9064.9 g). Stratum VI has the lowest total shell weight (819.6 g) of all of the strata from which bulk samples were collected.

Analysis reveals interesting changes in the assemblage through time, with several taxa increasing in both weight and percentage of total in strata IV and V. Periwinkle is present in a significantly higher density in Stratum V, making up 2.0% (182.4 g) of the total for that stratum. Strata II, III, and IV do not have nearly the same frequency, with

Table 3-9. Weight (g) of Shell by Strata and by Percentage of Total for Test Unit 1, 8DI52.

| | Oyster | Crown Conch | Scallop | Clam[1] | Peri-winkle | Barnacle | Misc. Gastropod | UID Marine Shell | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| STR | | | | | | | | | | |
| II | 7545.2 | 41.3 | 0.5 | | 2.1 | 0.7 | 42.5 | 2647.4 | 0.7[2] | 10,280.4 |
| III | 16327.6 | 208.9 | 0.2 | 13.3 | 7.3 | 4.4 | 121.2 | 3479.0 | 7.2[3] | 20,169.1 |
| IV | 513.0 | 10.2 | | | 3.6 | | 35.7 | 257.1 | | 819.6 |
| V | 5172.8 | 907.7 | 1.5 | | 182.4 | 0.9 | 319.2 | 2471.2 | 9.2[4] | 9064.9 |
| Total | 29558.6 | 1168.1 | 2.2 | 13.3 | 195.4 | 6.0 | 518.6 | 8854.7 | 17.1 | 40,334.0 |

| | Oyster | Crown Conch | Scallop | Clam[1] | Periwi nkle | Barnacle | Misc. Gastropod | UID Marine Shell | Other | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| STR | | | | | | | | | | |
| II | 73.39% | 0.40% | 0.00% | | 0.02% | 0.01% | 0.41% | 25.75% | 0.01% | 100.00% |
| III | 80.95% | 1.04% | 0.00% | 0.07% | 0.04% | 0.02% | 0.60% | 17.25% | 0.04% | 100.00% |
| IV | 62.59% | 1.24% | | | 0.44% | | 4.36% | 31.37% | | 100.00% |
| V | 57.06% | 10.01% | 0.02% | | 2.01% | 0.01% | 3.52% | 27.26% | 0.10% | 100.00% |
| Total | 73.28% | 2.90% | 0.01% | 0.03% | 0.48% | 0.01% | 1.29% | 21.95% | 0.04% | 100.00% |

[1] *Polymesoda caroliniana* (Carolina Marsh Clam)
[2] Mussel
[3] Misc. Bivalve
[4] Moon Snail

2.1 g, 7.3 g, and 3.6 g respectively. Likewise, crown conch is most abundant in Stratum V, with 907.7 g. Stratum III contains 208.9 g, with the other strata at much lower weights. Finally, miscellaneous gastropod is at its highest weight (319.2 g) in Stratum V, but is at its highest percentage of the total in Stratum IV.

## CONCLUSION

Based on observations of stratigraphy and artifact content of shovel tests, two test units were excavated, one at the highest point of the island and a second approximately 55 m to the west at a lower elevation. TU 1 contained over a meter of intact midden deposits, with three distinct shell-bearing strata. The lowermost stratum, dating to between 4430 and 4240 cal B.P., contained bone, shell tools, and lithics, but no pottery. It is possible that this stratum has been truncated or scoured by a high energy storm event that left a thin stratum of relatively sterile sand situated atop these deposits. Alternatively, the sterile sand layer could be pedogenic and represent a period of hiatus that lasted as much as 2000 years. Dating to between 2310 and 2120 cal B.P., the stratum above the sterile sand contains bone, shell tools, lithics, and pottery, including a small, highly eroded fiber-tempered sherd near the base of the stratum. When compared to the lowest stratum, this stratum has a much lower frequency of marsh periwinkle shells and a higher frequency of bone. The uppermost stratum dates to between 1140 and 970 cal B.P. and also contains bone, shell tools, lithics, and pottery. The frequency of pottery is higher in this stratum than in the one below and pottery types date to a later period.

Test Unit 2 contained no intact midden. The lowest strata of the unit consisted of shell-free sands that contained pottery and lithics, including a biface that resembles the Arredondo type. A thin lens of dark organic sediments appears to be a buried A-horizon, above which the sandy deposits are significantly different both in color and content. The deposits above the relict surface appear to be reworked sediments that are topped by redeposited midden material. While TU1 contained well stratified intact cultural remains, with the exception of the sterile sand layer, observations of stratigraphy in TU2 suggest that this lower-lying portion of the island has been highly disturbed, both in the distant and recent past.

# CHAPTER 4
# ANALYSIS OF VERTEBRATE FAUNA

Andrea Palmiotto

Faunal materials ≥1/8-inch, were analyzed to examine variation in bone density and species distribution through time at Bird Island (8DI52). Materials were collected from Test Unit 1, Strata II through V after excavations were complete. All bulk samples were collected from a 50x50-cm column in the west profile of the unit. The sample size varied depending on the thickness of the stratum. The Stratum II sample was collected between 10 and 25 cm below datum (BD), and the Stratum III sample was collected between 30 and 50 cm BD. The Stratum IV sample was collected between 60 and 70 cm BD, and the Stratum V sample was collected between 70 and 85 cm BD.

The earliest deposits (Stratum V) were deposited during the Late Archaic period, with a radiocarbon age estimate of 4430-4240 cal B.P. During this time, sea level was at least 2.5 km west of 20$^{th}$-century averages. Stratum IV is a relatively shell-free stratum, suggestive of a period of abandonment or a large storm event. Stratum III was deposited during the Middle Woodland period/Deptford phase, with a radiocarbon age estimate of 2310-2120 cal B.P. During this time, sea level reached close to 20$^{th}$-century averages. Stratum II was deposited during the Weeden Island occupation, with a radiocarbon age estimate of 1140-979 cal B.P. (See Chapter 3).

Table 4-1 presents a tabulation of zooarchaeological material by stratum and Table 4-2 provides minimum number of individuals (MNI) by class and stratum. In terms of number of identified specimens per taxon (NISP), bone frequency generally decreases from the more recent Stratum II (42 percent of NISP) to the earlier Stratum IV (5 percent of NISP), however, Stratum V has a markedly higher bone frequency (nearly 31 percent of total NISP). This pattern is also observed in mammal (Mammalia), bird (Aves), and turtle (Testudines) frequencies (Tables 4-4 – 4-7). Mammal and bird remains each contribute less than 1 percent NISP per sample. Turtles, on the other hand, are the second most common vertebrate class after fishes (Actinopterygii), contributing up to nearly 9 percent in Stratum II (Table 4-4). Small, fragile amphibian (Anura) and salamander (Sirenidae) specimens were identified in Strata III, which also contained the highest frequency of freshwater fishes (Table 4-5).

Table 4-1. Absolute and Relative Frequencies of ≥1/8-in Faunal Material by Stratum and Number of Identified Specimens (NISP), Minimum Number of Individuals (MNI), and Weight (g), Test Unit 1, 8DI52.

| Str | NISP (n) | NISP (%) | MNI (n) | MNI (%) | Wt (g) | Wt (%) |
|---|---|---|---|---|---|---|
| II | 4534 | 42.0 | 58 | 30.2 | 420.4 | 61.6 |
| III | 2406 | 22.3 | 49 | 25.5 | 141.8 | 20.8 |
| IV | 544 | 5.0 | 17 | 8.9 | 20.7 | 3.0 |
| V | 3309 | 30.7 | 68 | 35.4 | 99.7 | 14.6 |
| Total | 10,793 | 100.0 | 192 | 100.0 | 682.6 | 100.0 |

Table 4-2. Relative Frequency of Minimum Number of Individuals (MNI) by class and strata, Test Unit 1, 8DI52.

| Str | Mammals | Birds | Reptiles/ Amphibians | Sharks/ Rays | Marine Fishes | Freshwater Fishes | Total |
|---|---|---|---|---|---|---|---|
| II | 6.9 | 1.7 | 8.6 | 1.7 | 74.2 | 6.8 | 100.0 |
| III | 8.2 | 4.1 | 8.2 | 2.0 | 63.4 | 14.2 | 100.0 |
| IV | 11.8 | 5.9 | 11.8 | 5.9 | 58.8 | 5.9 | 100.0 |
| V | 1.5 | 1.5 | 7.4 | 1.5 | 80.7 | 7.5 | 100.0 |

Fishes are the most commonly identified faunal class among all samples, contributing on average nearly 94 percent of assemblage NISP. The majority of fishes are marine fishes, but several species of freshwater fish are also identified. General species distribution trends are better examined in terms of MNI. Species distribution trends suggest more emphasis on sea catfishes (Ariidae) in more recent contexts (Stratum II and III, (Tables 4-4 and 4-5) than in later contexts. High quantities of species such as toadfishes (*Opsanus* sp.) and pinfish (*Lagodon rhomboides*) are persistent through time at the site.

Stratum II yielded a total of 4534 bone fragments, contributing 42 percent of total NISP among all assemblages (Table 4-1). Fishes contribute nearly 89 percent of assemblage NISP, followed by turtles (Testudines) with nearly 9 percent (Table 4-1). Thirty-two taxa were identified, 22 of which are fish species. The most common species in terms of MNI include: sea catfishes, toadfish, killifish (*Fundulus* sp.), sheepshead (*Archosargus probatocephalus*), pinfish, silver perch (*Bairdiella chrysoura*), red drum (*Sciaenops ocellata*), striped burrfish (*Chilomycterus schoepfii*), seatrout (*Cynoscion* sp.), and golden shiner (*Notemigonus crysoleucas*). Freshwater fish species include gar (*Lepisosteus* sp., which also can be found in brackish waters), golden shiner, and redbreast sunfish (*Lepomis auritis*). Among non-fish species, raccoon (*Procyon lotor*), hispid cotton rat (*Sigmodon hispidus*), common merganser (*Mergus merganser*), snapping turtle (*Chelydra serpentina*), pond turtle (Emydidae), and rays/skates (Rajiformes) were identified, in addition to snakes (Serpentes) and several other specimens (Table 4-2).

Stratum III yielded a total of 2406 bone fragments, contributing 22 percent of total NISP among all assemblages (Table 4-5). Fishes contribute 92 percent of assemblage NISP, followed by turtles with 5 percent (Table 4-1). Thirty-three taxa were identified, 24 of which are fish species. The most common species in terms of MNI include: toadfish, killifish, sea catfishes, sheepshead, pinfish, golden shiner, and gar. Freshwater species include gar, golden shiner, warmouth (*Chaenobryttus gulosus*), and largemouth bass (*Micropterus salmoides*). Among non-fish species, deer (*Odocoileus virginianus*), hispid cotton rat, mud/musk turtles (Kinosternidae), and lemon shark (*Negaprion brevirostris*) were identified, in addition to birds, snakes, salamanders, and frogs/toads. (Table 4-5).

Stratum IV yielded a total of 544 bone fragments, contributing only 5 percent of total NISP among all assemblages (Table 4-1). Fishes contribute 97 percent of assemblage NISP (Table 4-6). Fifteen taxa were identified, nine of which are fish species. The most common species in terms of MNI include toadfish and silver perch. Freshwater fishes are represented by only gar. Non-fish species are represented by unidentified mammals, rodents, birds, snakes, turtles, and sharks/rays (Table 4-6).

Stratum V yielded a total of 3309 bone fragments, contributing nearly 31 percent of total NISP among all assemblages (Table 4-1). Fishes contribute nearly 97 percent of assemblage NISP, followed by turtles with 2 percent (Table 4-7). Thirty-two taxa were identified, 24 of which are fish species. The most common species in terms of MNI include: toadfish, pinfish, silver perch, sheepshead, striped burrfish, seatrout, red drum, killifish, mojarra (*Eucinostomus* sp.), and pigfish (*Orthopristis chrysoptera*). Among non-fish species, hispid cotton rat, snapping turtle, and mud/musk turtles were identified, in addition to birds, snakes, frogs/toads, and rays/skates (Table 4-7).

As stated above, mammals, birds, and turtles contribute least to Stratum IV than to the other strata in terms of NISP (Tables 4-4 – 4-7); however, in terms of MNI, these fauna classes are better represented in Stratum IV than in other strata (Table 4-6). The least amount of mammals is identified from Stratum V. Concerning fishes, marine fishes make up the majority of individuals identified among all samples. Freshwater fishes are evident in small quantities in all samples, but the highest number of freshwater fishes is identified from Stratum III (Table 4-5).

Diversity estimates provide a means of comparing the range of taxa represented in a sample. The following formula (from Reitz and Wing 2008:235) was used to calculate diversity:

$$H' = -\Sigma \left[ ( p_i ) ( \ln ( p_i ) ) \right],$$

where H' is the diversity value. $P_i$ is calculated by dividing the MNI of each taxon by the total MNI of the sample. The diversity value is the absolute value of the sum of $p_i$ multiplied by the natural log of $p_i$. Diversity values range between 0 and 5, where the higher the value, the higher the diversity.

Equitability measures how evenly a taxon is used with regard to other taxa in a sample. The following formula (from Reitz and Wing 2008:235) was used to calculate equitability:

$$V' = H' / \ln ( S ),$$

where V' is the equitability estimate. H' is the diversity value, and S represents the number of taxa for which MNI was determined. Equitability is the diversity value divided by the nautral log of S. Equitability values range between 0 and 1, where the higher the value, the more evenly all taxa were used. An equitability value closer to 0 indicates an intense focus on one or few taxa.

There is little variation among diversity and equitability estimates per sample (Table 4-3). Diversity is low among all samples, ranging between 1.2 and 1.5. Equitability values suggest that all taxa are close to equally represented, with values

Table 4-3. Diversity and Equitability Values by Stratum, Test Unit 1, 8DI52.

| Stratum | # of Species | MNI | Diversity | Equitability |
|---|---|---|---|---|
| II | 32 | 58 | 1.41 | 0.94 |
| III | 33 | 49 | 1.45 | 0.96 |
| IV | 15 | 17 | 1.16 | 0.99 |
| V | 32 | 68 | 1.33 | 0.88 |

among samples ranging between 0.88 and 0.99. Stratum IV had the lowest diversity of taxa, but the highest equitability. Stratum V had the lowest equitability among samples (Table 4-3).

## INTERPRETATIONS

Understanding species characteristics and tolerances provides a means for interpreting paleoenvironmental conditions, resource collection practices, and exploited habitats associated with each stratum. Ecological reports (e.g., Tuckey and Dehaven 2006) and fish databases, such as FishBase (2010) and the Smithsonian Marine Station (2011), provide a foundation for interpreting archaeological data. Tables 4-4 through 4-7 provide species lists for each of the four strata in TU1.

Tuckey and Dehaven (2006) examined relationships among fishes, habitats, and seasonal occupations in the Suwannee River estuary in the late 1990s. They collected fishes monthly for nearly three years using 1/8-in meshes. Although they avoided oyster beds, they did distinguish between seagrass flats and tidal creek habitats (Tuckey and Dehaven 2006:102-106).

Sunfishes, killifishes, and gars were found in only tidal creeks. Spot (*Leiostomus xanthurus*) and red drum were more common in these areas between winter and spring. Mojarra and seatrout were more common during the summer season. Mojarra, killifish, and mullet (*Mugil* sp.) were common during the fall season. Low-salinity fish, such as killifish, were more common around tidal creeks than in seagrass flats. Pinfish generally were common during every season (Tuckey and Dehaven 2006).

Toadfishes and burrfishes were found only in seagrass flats. Pinfish were commonly found in these areas during all seasons. Pigfish and pufferfishes (*Sphoeroides* sp.) were common between winter and spring. Silver perch and pigfish were common during the summer season. Seabass (*Centropristis* sp.), mojarra, and burrfish were more common during the fall season. Winter and spring assemblages had high numbers of pinfish and pigfish, which is consistent with observations of fishes using seagrasses as nurseries for juvenile fishes. Summer assemblages had increased species abundances and diversity. During times of low salinity levels fishes such as spot were found in the seagrass flats, but otherwise this species was not evident in this area during this time of year (Tuckey and Dehaven 2006).

Table 4-4. Species List for ≥ 1/8-in faunal materials, Stratum II, Test Unit 1, 8DI52.

| Scientific name | Common name | NISP (n) | NISP (%) | MNI (n) | MNI (%) | Wt (g) | Wt (%) |
|---|---|---|---|---|---|---|---|
| Vertebrata | Vertebrates | | | | | 202.5 | 48.2 |
| Mammalia | Mammals | 22 | 0.5 | 1 | 1.7 | 3.7 | 0.9 |
| *Procyon lotor* | Raccoon | 2 | | 1 | 1.7 | 0.8 | 0.2 |
| *Sigmodon hispidus* | Hispid cotton rat | 16 | 0.4 | 2 | 3.4 | 0.4 | 0.1 |
| Aves | Birds | 31 | 0.7 | | | 2.2 | 0.5 |
| *Mergus merganser* | Common merganser | 1 | | 1 | 1.7 | 0.2 | |
| Serpentes | Snakes | 28 | 0.6 | 1 | 1.7 | 0.6 | 0.1 |
| Testudines | Turtles | 387 | 8.5 | 1 | 1.7 | 43.4 | 10.3 |
| *Chelydra serpentina* | Snapping turtle | 3 | 0.1 | 1 | 1.7 | 1.8 | 0.4 |
| Emydidae | Pond turtles | 2 | | 1 | 1.7 | 0.7 | 0.2 |
| cf. *Malaclemys terrapin* | Diamondback terrapin | 2 | | 1 | 1.7 | 0.2 | |
| Chondrichthyes | Sharks/rays | 18 | 0.4 | | | 0.6 | 0.1 |
| Rajiformes | Rays/skates | 3 | 0.1 | 1 | 1.7 | 0.2 | |
| Actinopterygii | Fishes | 3411 | 75.2 | | | 116.9 | 27.8 |
| *Lepisosteus* sp. | Gar | 349 | 7.7 | 1 | 1.7 | 15.9 | 3.8 |
| *Elops saurus* | Ladyfish | 8 | 0.2 | 1 | 1.7 | 0.2 | |
| *Notemigonus crysoleucas* | Golden shiner | 2 | | 2 | 3.4 | | |
| Ariidae | Sea catfishes | 47 | 1.0 | 7 | 12.1 | 6.9 | 1.6 |
| *Ariopsis felis* | Hardhead catfish | 25 | 0.6 | 2 | 3.4 | 3.5 | 0.8 |
| *Bagre marinus* | Gafftopsail catfish | 9 | 0.2 | | | 1.5 | 0.4 |
| *Opsanus* sp. | Toadfish | 31 | 0.7 | 4 | 6.9 | 1.6 | 0.4 |
| Belonidae | Needlefishes | 1 | | 1 | 1.7 | 0.1 | |
| *Fundulus* sp. | Killifish | 32 | 0.7 | 4 | 6.9 | 0.5 | 0.1 |
| cf. *Lepomis auritis* | Redbreast sunfish | 1 | | 1 | 1.7 | | |
| *Centropomus parallelus* | Snook | 1 | | 1 | 1.7 | | |
| *Orthopristis chrysoptera* | Pigfish | 2 | | 1 | 1.7 | 0.1 | |
| *Archosargus probatocephalus* | Sheepshead | 8 | 0.2 | 3 | 5.2 | 1.6 | 0.4 |
| *Lagodon rhomboides* | Pinfish | 21 | 0.5 | 3 | 5.2 | 0.5 | 0.1 |
| *Bairdiella chrysoura* | Silver perch | 6 | 0.1 | 3 | 5.2 | 0.2 | |
| *Cynoscion arenarius* | Sand seatrout | 1 | | 1 | 1.7 | 0.1 | |
| *Cynoscion nebulosus* | Spotted seatrout | 3 | 0.1 | 2 | 3.4 | 0.9 | 0.2 |
| *Sciaenops ocellata* | Red drum | 6 | 0.1 | 3 | 5.2 | 2.5 | 0.6 |
| *Mugil* sp. | Mullet | 16 | 0.4 | 1 | 1.7 | 1.4 | 0.3 |
| *Paralichthys* sp. | Flounder | 1 | | 1 | 1.7 | 0.2 | |
| *Sphoeroides spengleri* | Bandtail puffer | 1 | | 1 | 1.7 | | |
| Diodontidae | Porcupinefishes | 17 | 0.4 | | | 0.8 | 0.2 |
| *Chilomycterus schoepfii* | Striped burrfish | 9 | 0.2 | 3 | 5.2 | 7.2 | 1.7 |
| Ostraciidae | Trunkfishes | 11 | 0.2 | 1 | 1.7 | 0.5 | 0.1 |
| TOTAL | | 4534 | 100.0 | 58 | 100.0 | 420.4 | 100.0 |

Table 4-5. Species List for ≥ 1/8-in faunal materials, Stratum III, Test Unit 1, 8DI52.

| Scientific name | Common name | NISP (n) | NISP (%) | MNI (n) | MNI (%) | Wt (g) | Wt (%) |
|---|---|---|---|---|---|---|---|
| Vertebrata | Vertebrates | | | | | 38.8 | 27.4 |
| Mammalia | Mammals | 4 | 0.2 | 1 | 2.0 | 0.8 | 0.6 |
| *Odocoileus virginianus* | White-tailed deer | 1 | | 1 | 2.0 | 1.0 | 0.7 |
| *Sigmodon hispidus* | Hispid cotton rat | 7 | 0.3 | 2 | 4.1 | 0.2 | 0.1 |
| Aves | Birds | 12 | 0.5 | 2 | 4.1 | 1.9 | 1.3 |
| Serpentes | Snakes | 23 | 1.0 | 1 | 2.0 | 0.6 | 0.4 |
| Testudines | Turtles | 121 | 5.0 | | | 6.3 | 4.4 |
| Kinosternidae | Mud/musk turtles | 1 | | 1 | 2.0 | 0.1 | 0.1 |
| Sirenidae | Salamanders | 2 | 0.1 | 1 | 2.0 | | |
| Anura | Frogs/toads | 5 | 0.2 | 1 | 2.0 | 0.1 | 0.1 |
| Chondrichthyes | Sharks/rays | 17 | 0.7 | | | 0.5 | 0.4 |
| *Negaprion brevirostris* | Lemon shark | 1 | | 1 | 2.0 | 0.1 | 0.1 |
| Actinopterygii | Fishes | 1973 | 82.0 | | | 71.5 | 50.4 |
| *Lepisosteus* sp. | Gar | 49 | 2.0 | 2 | 4.1 | 4.8 | 3.4 |
| *Elops saurus* | Ladyfish | 4 | 0.2 | 1 | 2.0 | 0.2 | 0.1 |
| Clupeidae | Herrings/shads | 1 | | 1 | 2.0 | 0.1 | 0.1 |
| *Notemigonus crysoleucas* | Golden shiner | 2 | 0.1 | 2 | 4.1 | | |
| Ariidae | Sea catfishes | 30 | 1.2 | 3 | 6.1 | 1.6 | 1.1 |
| *Ariopsis felis* | Hardhead catfish | 21 | 0.9 | | | 2.5 | 1.8 |
| *Bagre marinus* | Gafftopsail catfish | 2 | 0.1 | | | 0.5 | 0.4 |
| *Opsanus* sp. | Toadfish | 32 | 1.3 | 5 | 10.2 | 1.7 | 1.2 |
| Belonidae | Needlefishes | 1 | | 1 | 2.0 | | |
| *Fundulus* sp. | Killifish | 12 | 0.5 | 3 | 6.1 | 0.2 | 0.1 |
| *Chaenobryttus gulosus* | Warmouth | 1 | | 1 | 2.0 | | |
| *Micropterus salmoides* | Largemouth bass | 1 | | 1 | 2.0 | 0.1 | 0.1 |
| *Centropristis striata* | Black seabass | 2 | 0.1 | 1 | 2.0 | 0.1 | 0.1 |
| *Caranx hippos* | Crevalle jack | 1 | | 1 | 2.0 | 1.1 | 0.8 |
| *Orthopristis chrysoptera* | Pigfish | 3 | 0.1 | 1 | 2.0 | 0.1 | 0.1 |
| *Archosargus probatocephalus* | Sheepshead | 13 | 0.5 | 3 | 6.1 | 3.2 | 2.3 |
| *Lagodon rhomboides* | Pinfish | 14 | 0.6 | 3 | 6.1 | 0.4 | 0.3 |
| cf. *Pagrus pagrus* | Red porgy | 1 | | 1 | 2.0 | | |
| *Bairdiella chrysoura* | Silver perch | 1 | | 1 | 2.0 | 0.1 | 0.1 |
| *Cynoscion* sp. | Seatrout | 2 | 0.1 | 1 | 2.0 | 0.2 | 0.1 |
| *Sciaenops ocellata* | Red drum | 1 | | 1 | 2.0 | 0.1 | 0.1 |
| *Mugil* sp. | Mullet | 14 | 0.6 | 1 | 2.0 | 0.7 | 0.5 |
| *Paralichthys* sp. | Flounder | 3 | 0.1 | 1 | 2.0 | 0.2 | 0.1 |
| *Sphoeroides spengleri* | Bandtail puffer | 4 | 0.2 | 1 | 2.0 | 0.1 | 0.1 |
| Diodontidae | Porcupinefishes | 10 | 0.4 | | | 0.2 | 0.1 |
| *Chilomycterus schoepfii* | Striped burrfish | 3 | 0.1 | 1 | 2.0 | 1.3 | 0.9 |
| Ostraciidae | Trunkfishes | 10 | 0.4 | | | 0.1 | 0.1 |
| *Lactophrys* sp. | Trunkfish | 1 | | 1 | 2.0 | 0.3 | 0.2 |
| TOTAL | | 2406 | 100.0 | 49 | 100.0 | 141.8 | 100.0 |

Table 4-6. Species List for ≥ 1/8-in faunal materials, Stratum IV, Test Unit 1, 8DI52.

| Scientific name | Common name | NISP (n) | NISP ( %) | MNI (n) | MNI ( %) | Wt (g) | Wt (%) |
|---|---|---|---|---|---|---|---|
| Vertebrata | Vertebrates | | | | | 5.3 | 25.6 |
| Mammalia | Mammals | 1 | 0.2 | 1 | 5.9 | 0.3 | 1.4 |
| Rodentia | Rodents | 1 | 0.2 | 1 | 5.9 | | |
| Aves | Birds | 4 | 0.7 | 1 | 5.9 | | |
| Serpentes | Snakes | 1 | 0.2 | 1 | 5.9 | | |
| Testudines | Turtles | 4 | 0.7 | | | 0.3 | 1.4 |
| Kinosternidae | Mud/musk turtles | 1 | 0.2 | 1 | 5.9 | 0.2 | 1.0 |
| Chondrichthyes | Sharks/rays | 2 | 0.4 | 1 | 5.9 | | |
| Actinopterygii | Fishes | 497 | 91.4 | | | 1.2 | 58.0 |
| *Lepisosteus* sp. | Gar | 6 | 1.1 | 1 | 5.9 | 0.5 | 2.4 |
| Ariidae | Sea catfishes | 2 | 0.4 | | | 0.5 | 2.4 |
| *Ariopsis felis* | Hardhead catfish | 1 | 0.2 | 1 | 5.9 | | |
| *Opsanus* sp. | Toadfish | 11 | 2.0 | 2 | 11.8 | 0.4 | 1.9 |
| *Fundulus* sp. | Killifish | 3 | 0.6 | 1 | 5.9 | | |
| *Archosargus probatocephalus* | Sheepshead | 2 | 0.4 | 1 | 5.9 | 0.6 | 2.9 |
| *Diplodus holbrooki* | Spottail pinfish | 1 | 0.2 | 1 | 5.9 | | |
| *Lagodon rhomboides* | Pinfish | 4 | 0.7 | 1 | 5.9 | 0.1 | 0.5 |
| *Bairdiella chrysoura* | Silver perch | 2 | 0.4 | 2 | 11.8 | | |
| *Sciaenops ocellata* | Red drum | 1 | 0.2 | 1 | 5.9 | 0.5 | 2.4 |
| TOTAL | | 544 | 100.0 | 17 | 100.0 | 20.7 | 100.0 |

The most common freshwater species (gar) in the archaeological assemblages is common in both freshwater and brackish waters. Several other species in the samples (such as killifish, mojarro, and mullet) are also occasionally found in freshwater habitats (FishBase 2010). Sea catfishes, killifish, and burrfish are reportedly more common in warmer waters, however, they have wide temperature tolerances (FishBase 2010; Smithsonian Marine Station 2011). Sea catfishes and seatrouts tend to migrate offshore into deeper waters when temperatures become cold (Smithsonian Marine Station 2011). Sturgeon, redbreast sunfish, and warmouth prefer slightly lower temperatures than sea catfishes (FishBase 2010). Golden shiners, redbreast sunfish, warmouth, and largemouth bass prefer fresh backwaters and vegetated habitats with slower currents (FishBase 2010).

Although all samples contain predominantly marine or brackish water fishes, fish distribution suggests that marine fishes were collected year-round from a multitude of habitats including seagrass flats, tidal creeks, and oyster beds in close proximity to freshwater sources across time. The freshwater fishes found in several strata could have been collected from the estuary or from backwater areas upstream.

Table 4-7. Species List for ≥ 1/8-in faunal materials, Stratum V, Test Unit 1, 8DI52.

| Scientific name | Common name | NISP (n) | NISP (%) | MNI (n) | MNI (%) | Wt (g) | Wt (%) |
|---|---|---|---|---|---|---|---|
| Vertebrata | Vertebrates | | | | | 24.2 | 24.3 |
| *Sigmodon hispidus* | Hispid cotton rat | 3 | 0.1 | 1 | 1.5 | 0.1 | 0.1 |
| Aves | Birds | 7 | 0.2 | 1 | 1.5 | 0.4 | 0.4 |
| Serpentes | Snakes | 8 | 0.2 | 1 | 1.5 | 0.1 | 0.1 |
| Testudines | Turtles | 68 | 2.1 | 1 | 1.5 | 6.2 | 6.2 |
| *Chelydra serpentina* | Snapping turtle | 3 | 0.1 | 1 | 1.5 | 0.2 | 0.2 |
| Kinosternidae | Mud/musk turtles | 2 | 0.1 | 1 | 1.5 | 0.1 | 0.1 |
| Anura | Frogs/toads | 1 | | 1 | 1.5 | | |
| Chondrichthyes | Sharks/rays | 9 | 0.3 | | | 0.1 | 0.1 |
| Rajiformes | Rays/skates | 2 | 0.1 | 1 | 1.5 | | |
| Actinopterygii | Fishes | 2921 | 88.3 | | | 53.2 | 53.4 |
| *Acipenser oxyrhynchus* | Sturgeon | 1 | | 1 | 1.5 | 0.1 | 0.1 |
| *Lepisosteus* sp. | Gar | 18 | 0.5 | 1 | 1.5 | 0.8 | 0.8 |
| Ariidae | Sea catfishes | 2 | 0.1 | | | | |
| *Ariopsis felis* | Hardhead catfish | 4 | 0.1 | 1 | 1.5 | | |
| *Bagre marinus* | Gafftopsail catfish | 3 | 0.1 | 1 | 1.5 | 0.8 | 0.8 |
| *Opsanus* sp. | Toadfish | 105 | 3.2 | 10 | 14.7 | 4.1 | 4.1 |
| Belonidae | Needlefishes | 1 | | 1 | 1.5 | | |
| *Fundulus* sp. | Killifish | 48 | 1.5 | 2 | 2.9 | 0.2 | 0.2 |
| Centrarchidae | Sunfishes | 4 | 0.1 | 1 | 1.5 | - | - |
| *Chaenobryttus gulosus* | Warmouth | 1 | | 1 | 1.5 | | |
| *Centropristis striata* | Black seabass | 2 | 0.1 | 1 | 1.5 | | |
| *Eucinostomus gula* | Mojarra | 2 | 0.1 | 2 | 2.9 | | |
| *Orthopristis chrysoptera* | Pigfish | 5 | 0.2 | 2 | 2.9 | 0.2 | 0.2 |
| *Archosargus probatocephalus* | Sheepshead | 10 | 0.3 | 4 | 5.9 | 0.9 | 0.9 |
| cf. *Calamus artifrons* | Grass porgy | 1 | | 1 | 1.5 | 0.1 | 0.1 |
| *Lagodon rhomboides* | Pinfish | 26 | 0.8 | 10 | 14.7 | 0.2 | 0.2 |
| *Bairdiella chrysoura* | Silver perch | 16 | 0.5 | 6 | 8.8 | 0.5 | 0.5 |
| *Cynoscion arenarius* | Sand seatrout | 2 | 0.1 | 1 | 1.5 | 0.1 | 0.1 |
| *Cynoscion nebulosus* | Spotted seatrout | 6 | 0.2 | 3 | 4.4 | 0.9 | 0.9 |
| cf. *Pogonias cromis* | Black drum | 1 | | 1 | 1.5 | 0.1 | 0.1 |
| *Sciaenops ocellata* | Red drum | 5 | 0.2 | 3 | 4.4 | 1.9 | 1.9 |
| *Mugil* sp. | Mullet | 5 | 0.2 | 1 | 1.5 | 0.6 | 0.6 |
| *Paralichthys* sp. | Flounder | 5 | 0.2 | 1 | 1.5 | 0.3 | 0.3 |
| *Chilomycterus schoepfii* | Striped burrfish | 10 | 0.3 | 4 | 5.9 | 3.3 | 3.3 |
| Ostraciidae | Trunkfishes | 2 | 0.1 | 1 | 1.5 | | |
| TOTAL | | 3309 | 100.0 | 68 | 100.0 | 99.7 | 100.0 |

Seasonal changes in temperature and rainfall and fluctuations in sea level affect salinity levels. Generally, higher salinities are associated with drier conditions, while lower salinities are associated with wetter conditions (Livingston 1976:389-390). Sea level rises are associated with increased salinities within an estuary, while sea level decreases are associated with lowered salinity levels (EPA 2011).

Strata III has the highest frequencies of freshwater fishes (Tables 4-4 – 4-7), which suggests that people were traveling farther to fish, or that these resources were collected during slightly lower salinity levels than at other times, suggesting relatively lower sea levels or wetter conditions. However, no spot were identified in this sample, possibly suggesting that salinity levels were never so low, or that fishing activities or certain areas were generally avoided when conditions were not ideal.

All samples have similar species distributions. The diversity of taxa within each strata does not fluctuate greatly, but there is variation in quantities of specimens. For instance, the highest number of individuals was identified from the stratum with the second-highest NISP, which ironically had the second lowest overall sample weight (i.e., Stratum V, Table 4-1).

In summary, subtle variations exist among TU1's Strata II through V faunal assemblages. All samples indicate resource collecting in a variety of habitats during a variety of conditions. Bone frequencies are highest in the most recent (II) and earliest (V) strata. Faunal distributions suggest principle resource collecting was focused on year-round fishing activities at seagrass flats, tidal creeks, oyster beds, and fresh backwaters. Fish remains comprise an average of 93 percent bone frequency (in terms of NISP) per sample, with turtle remains being the next most common resource class. Toadfish and pinfish are the most common taxa across all samples.

When Stratum V was deposited (ca. 4430 cal B.P.), sea levels were about 2.5 km more seaward than 20th-century averages (See Chapter 3). Despite its distance from shore, this stratum contains the highest number of identified individuals (Table 4-7) and the most diverse assemblage (Table 4-3). A period of abandonment is suggested by the general sparsity of bone and shell materials in Stratum IV (Table 4-6). When Stratum III was deposited (ca. 2310), sea levels were close to 20th-century levels (See Chapter 3). Salinity levels may have been slightly lower at this time, suggesting overall wetter conditions, as reflected in the marginally higher quantity of freshwater fish in Stratum III (Table 4-5). These results provide a preliminary view of paleoenvironmental conditions and faunal collection and disposal practices at Bird Island in the past. With future analyses of faunal assemblages from this region, environmental and cultural patterns may become more evident.

# CHAPTER 5
# ANALYSIS OF SURFACE COLLECTED POTTERY

Paulette S. McFadden

This chapter outlines the results of analysis of pottery from a substantial assemblage of surface collected artifacts from Bird Island. This assemblage is the result of some 50 years of unbiased collecting by the property owners. Everything, even objects that appeared natural but were unusual for the island, was collected and preserved. The pottery component of this assemblage consists of thousands of pot sherds with types ranging from fiber-tempered wares to Late Woodland Period types. Analysis of a subset of the pottery was conducted at the Laboratory of Southeastern Archaeology.

This analysis had two main goals. First, as a means to understand the spatiotemporal aspects of the assemblage, the sherds were classified by culture-historical type when possible. Willey (1949) provided the most comprehensive pottery typology for the Gulf Coast of Florida over five decades ago, and until further research is conducted in the region to refine his typology, Willey's types are the accepted standard and are used for identification in this study. Second, formal analysis of the assemblage offers information on the form, size, and likely function of each vessel. Comparative analysis of formal properties by pottery type can offer details about the sorts of activities performed on the island, and if those activities changed over time.

## METHODS

Due to the large size of the pottery assemblage, only rim sherds were used in this analysis. Rims were sorted out of the collection at Bird Island (Figures 5-1, 5-2) and transported to the Laboratory of Southeast Archaeology (LSA) for further analysis. A total of 477 rims were brought to the LSA. Rim sherds were first sorted by temper and surface treatment into 29 discrete categories (Table 5-1). Rims within each category were then sorted into 410 vessel lots. Because many sherds were too small for formal analysis, only vessel lots that included at least 5 percent of the orifice diameter and measured at least 5 cm from rim to the base of the sherd were further analyzed. This resulted in the exclusion of all but 81 vessel lots (Table 5-2).

The largest sherd from each vessel lot was removed for further analysis. A suite of attributes were recorded for each vessel (see Appendix C). Culture-historical type was identified when possible; otherwise, vessels were identified by temper and surface treatment. Temper identification included fiber, sand, sponge spicule, and limestone. External surface treatment included incised, simple stamped, check stamped, plain, and unidentifiable (UID). Internal surface treatment was recorded if present and included, in addition to external surface treatment categories, burnishing, and slipping. Use alteration was identified and consisted of sooting and repair holes. Rim and lip form and thickness were recorded for each sherd and orifice diameter and percentage of total orifice were determined. A complete reporting of recorded attributes is available in Appendix D.

Figure 5-1. From left to right, Shannon Moore, Reshmie Punwasi, and Kathleen Bonany sorting pottery from the Bird Island surface collection.

Figure 5-2. From left to right, Paulette McFadden and Patsy Nelms sorting pottery from the Bird Island surface collection.

Table 5-1. Absolute and Relative Frequency of Sherds and Vessel Lots by Temper and Surface Treatment, 8DI52.

| Temper/Surface Treatment | Sherds (n) | % of Sherds | Vessel Lots (n) | % Vessel Lots |
|---|---|---|---|---|
| *Fiber-tempered* | | | | |
| Fiber /Sand-Tempered Incised | 17 | 30.91 | 12 | 31.58 |
| Fiber/Sand Temp. Incised and Punctated | 3 | 5.45 | 3 | 7.89 |
| Fiber/Sand-Tempered Plain | 8 | 14.55 | 5 | 13.16 |
| Fiber/Spicule Tempered Incised and Punctated | 1 | 1.82 | 1 | 2.63 |
| Fiber/Spicule Tempered Plain | 26 | 47.27 | 17 | 44.74 |
| *Subtotal* | 55 | 100.00 | 38 | 100.00 |
| *Limestone-tempered* | | | | |
| Incised | 4 | 21.05 | 3 | 20.00 |
| Incised with Folded Rim | 4 | 21.05 | 4 | 26.67 |
| Plain | 11 | 57.89 | 8 | 53.33 |
| *Subtotal* | 19 | 100.00 | 15 | 100.00 |
| *Sand-tempered* | | | | |
| Incised and Punctated | 5 | 1.46 | 5 | 1.64 |
| Incised Rim | 24 | 7.02 | 13 | 4.28 |
| Check Stamped and Punctated | 1 | 0.29 | 1 | 0.33 |
| Check Stamped | 91 | 26.61 | 82 | 26.97 |
| Complicated Stamped | 10 | 2.92 | 8 | 2.63 |
| Dentate | 5 | 1.46 | 4 | 1.32 |
| Incised | 4 | 1.17 | 4 | 1.32 |
| Incised w/ Incised Rim | 5 | 1.46 | 5 | 1.64 |
| Linear Check Stamped | 46 | 13.45 | 41 | 13.49 |
| Linear Check Stamped with Folded Rim | 1 | 0.29 | 1 | 0.33 |
| Plain | 117 | 34.21 | 111 | 36.51 |
| Punctated | 10 | 2.92 | 9 | 2.96 |
| Simple Stamped | 8 | 2.34 | 6 | 1.97 |
| UID | 15 | 4.39 | 14 | 4.61 |
| *Subtotal* | 342 | 100.00 | 304 | 100.00 |
| *Sponge Spicule tempered* | | | | |
| Check Stamped | 22 | 36.07 | 21 | 39.62 |
| Complicated Stamped | 1 | 1.64 | 1 | 1.89 |
| Incised | 2 | 3.28 | 2 | 3.77 |
| Plain | 28 | 45.90 | 22 | 41.51 |
| Incised Rim | 1 | 1.64 | 1 | 1.89 |
| UID | 7 | 11.48 | 6 | 11.32 |
| *Subtotal* | 61 | 100.00 | 53 | 100.00 |
| TOTAL | 477 | | 410 | |

## RESULTS

Each of the 81 vessels lots was identified to culture-historical type when possible and vessel form was determined based on analysis of sherd characteristics, including orifice diameter and rim form. Table 5-2 shows vessel form by culture-historical type and Figure 5.3 provides representative samples of the surface collected pottery. Following are descriptions of each type as well as descriptions of vessel forms with inferred function for each.

### *Culture-Historical Types*

Absolute frequencies of vessel lots by form and culture-historical type are provided in Table 5-2. Culture-historical types are temporal markers that can be used to construct chronologies of occupation at a particular site. Pottery from Bird Island spans nearly the entire pre-Columbian ceramic history in the Southeast and suggests that people were using pottery on the island as early as 4000 years. The temporal and spatial aspects of each cultural type that were identified in the surface collection are discussed below beginning with the earliest type and concluding with the latest.

*Fiber-Tempered Wares.* Fiber-tempered pottery likely originated along the south-central coast of Georgia and northern Florida around 5200-5000 cal B.P., and is the oldest pottery in the southeastern United States (Sassaman 2004:23). The technology spread southward to the St. Johns River Valley and eventually westward toward the Gulf Coast of Florida. Three main divisions of these fiber-tempered wares include Orange Incised, Orange Plain, and Tick Island Incised (Milanich 1994). Dates for fiber-tempered pottery from Silver Glen Springs suggest these wares were in use in northeastern Florida as early as 4600 cal B.P. and continued until around 3900 cal B.P. (Sassaman et al. 2011). At Bird Island, one eroded fiber-tempered sherd was recovered from Stratum III in TU1, which was radiocarbon dated to 2310-2120 cal. B.P. but likely displaced from below.

The Norwood type is an additional fiber-tempered variety that is distinguished by paste attributes. It was originally described by Phelps (1965) as a fiber-tempered ware, contemporaneous with Orange, from the northern Gulf Coast of Florida that occurred between the Apalachicola and Suwannee rivers. By Phelps' (1965) definition, Norwood paste contains fine to medium sand, which he contrasts with the sponge spicule inclusions in the paste of Orange pottery. However, this classification is problematic in that the paste characteristics for Orange pottery are highly variable with both sponge spicule and sandy paste varieties found in the northeastern regions of Florida. Cordell (2004) investigated variations in paste for fiber-tempered wares and found that there was no correlation between paste attributes and geographic area, leading her to suggest that the Norwood designation was not merited and may actually act to mask interregional interactions between the Gulf Coast and other regions where fiber-tempered wares were used. In light of the study by Cordell (2004), and suggestions by others (e.g., Campbell et al. 2004), the Norwood designation was not used in this study. All fiber-tempered pottery was classified as Orange Incised, Orange Plain, or Tick Island Incised. Four Orange Incised open rimmed vessels (see Figure 5-3b and 5-3j), six Orange Plain open

Table 5-2. Absolute Frequency of Vessel Lots by Form and Culture-Historical Type, 8DI52.

| Culture-Historical Type | Open Rim Vessel | Restricted Rim Vessel | Flared Rim Vessel | Shallow Vessel | Jar | Small Vessel | Total |
|---|---|---|---|---|---|---|---|
| Carrabelle Punctated | | 3 | | | | | 3 |
| (% of Total Vessel Lots) | | 3.70 | | | | | 3.70 |
| Deptford LCS | 7 | 2 | 1 | | | | 10 |
| (% of Total Vessel Lots) | 8.64 | 2.47 | 1.23 | | | | 12.35 |
| Orange Incised | 4 | | | | | | 4 |
| (% of Total Vessel Lots) | 4.94 | | | | | | 4.94 |
| Orange Plain | 6 | | | | 1 | | 7 |
| (% of Total Vessel Lots) | 7.41 | | | | 1.23 | | 8.64 |
| Pasco | 3 | 1 | | | | | 4 |
| (% of Total Vessel Lots) | 3.70 | 1.23 | | | | | 4.94 |
| Perico | 1 | | | | | | 1 |
| (% of Total Vessel Lots) | 1.23 | | | | | | 1.23 |
| Ruskin | 1 | | | | 1 | | 2 |
| (% of Total Vessel Lots) | 1.23 | | | | 1.23 | | 2.47 |
| Safety Harbor | 1 | | | | | | 1 |
| (% of Total Vessel Lots) | 1.23 | | | | | | 1.23 |
| St. Johns | 11 | 2 | 2 | | | | 15 |
| (% of Total Vessel Lots) | 13.58 | 2.47 | 2.47 | | | | 18.52 |
| Swift Creek | 1 | | | | | | 1 |
| (% of Total Vessel Lots) | 1.23 | | | | | | 1.23 |
| Tick Island | 1 | | | | | | 1 |
| (% of Total Vessel Lots) | 1.23 | | | | | | 1.23 |
| Sand Temp. Check | 10 | 1 | 2 | | | 2 | 15 |
| (% of Total Vessel Lots) | 12.35 | 1.23 | 2.47 | | | 2.47 | 18.52 |
| Sand Temp. Plain | 6 | 1 | 4 | 2 | | | 13 |
| (% of Total Vessel Lots) | 7.41 | 1.23 | 4.94 | 2.47 | | | 16.05 |
| Sand Temp. Simple Stmp. | 1 | | | | | | 1 |
| (% of Total Vessel Lots) | 1.23 | | | | | | 1.23 |
| Sand Temp. UID | 2 | | | | | | 2 |
| (% of Total Vessel Lots) | 2.47 | | | | | | 2.47 |
| Weeden Island Incised | | | | | 1 | | 1 |
| (% of Total Vessel Lots) | | | | | 1.23 | | 1.23 |
| Total | 55 | 10 | 9 | 2 | 3 | 2 | 81 |
| (% of Total Vessel Lots) | 67.90 | 12.35 | 11.11 | 2.47 | 3.70 | 2.47 | 100.00 |

rimmed vessels, one Orange Plain jar, and one Tick Island Incised open rimmed vessel (see Figure 5-3k) were identified in the surface collection.

*Deptford Linear Check Stamped.* The Deptford period began around 2500 cal B.P. and spanned a thousand years in the central Gulf coast of Florida, and north and east through the panhandle (Stephenson et al. 2002). One of the most diagnostic pottery types for this period is Deptford Linear Check Stamped, with a surface treatment characterized by lands that are intersected perpendicularly with lands of a different thickness. The wider lands are usually spaced further apart than the thinner perpendicular lands (Willey 1949:355). Even though check stamping remained a popular surface treatment through the late prehistoric period, the perpendicular lands of differing thickness are always interpreted as Deptford period pottery. Ten Deptford Linear Check Stamped vessel lots were identified in the assemblage, with seven open rim vessels, two restricted rim vessels, and one flared rim vessel. Four of the vessels are sooted, three open rim bowls/pots and one restricted rim bowl/pot, suggesting that they were used as cooking pots (see Figure 5-3h).

*Perico Incised.* Perico pottery is tempered with crushed limestone rock and decorated with incised lines. Often, the limestone leaches out of the pottery leaving large voids in the paste. Temporally, Perico overlaps with the Deptford and later Swift Creek pottery types, from about 2500 – 1500 B.P., and is found mostly in the Tampa Bay region of the Gulf Coast of Florida (Willey 1949). One Perico open rim vessel was identified in the assemblage (Figure 5-3f).

*Swift Creek Complicated Stamped.* Swift Creek Complicated Stamped pottery is a sand-tempered ware that is decorated with elaborate designs impressed into the clay prior to firing. The distinctive patterns are diagnostic of this pottery type and therefore make it an easy type to identify archaeologically as well as a useful temporal marker. Swift Creek pottery originated in Georgia and bordering areas of surrounding states and dates from around 2050 to 1100 cal B.P. (Wallis 2011:28). It is found in association with both Deptford and Weeden Island pottery types, suggesting that the Swift Creek tradition overlaps temporally with these two periods (Wallis 2011). One Swift Creek Complicated Stamped open rim vessel was identified in the assemblage (Figure 5-3a).

*Weeden Island Incised.* The Weeden Island period began around 1650 cal B.P. and continued for at least five centuries in the central and Gulf Coast regions of Florida (Bense 1994). Spatial and temporal variation in pottery types during this period are significant, with types ranging from sand-tempered plain wares to multi-compartment and highly decorated vessels. Several pottery types are subsumed by the Weeden Island period, with identification of each based on diagnostic surface treatment or decorative motifs. Identifying Weeden Island period vessels that are undecorated is difficult with body sherds, however one of the most diagnostic characteristics of Weeden Island plain pottery is a folded rim. In some cases, rather than folding the rim during manufacture, a line was incised all the way around the pot just under the rim creating a faux fold. One sherd with an incised rim characteristic of Weeden Island wares was identified in the assemblage and interpreted as a jar based on rim morphology (Figure 5-3d).

*Carrabelle Punctated.* The sand-tempered Carrabelle punctuated pottery is a Weeden Island period type from the northwest Gulf coast of Florida. The defining characteristic of this type is a band of punctuations arranged in a row around the rim of the vessel. The assemblage includes three restricted rim vessels of this type (see Figure 5-3i).

*Ruskin Dentate.* Another Weeden Island period sand-tempered pottery, Ruskin Dentate, is found along Florida's Gulf coast. The surface treatment of this type consists of rows of indentions that are impressed into the vessel prior to firing using some type of implement with small teeth, or perhaps the edge of a shell. Only one Ruskin Dentate open rim bowl/pot was found in the assemblage (Figure 5-3c).

*Pasco Plain.* Pasco pottery is much like Perico in that it is a thick pottery that is tempered with crushed limestone. However, Pasco is characterized by a plain surface treatment and is contemporaneous with the Weeden Island period, making it later than the Perico pottery type. Radiocarbon dates from the base of midden deposits containing Pasco type pottery at Little Bradford Island (8DI32) returned a radiocarbon date of 1830 – 1620 cal B.P. (Sassaman et al. 2011). This type is believed to have originated in the southwestern region of central Florida, although it is also found along the Gulf coast (Willey 1949). Three open rim vessels and one restricted rim vessel was identified during the analysis.

*Safety Harbor.* The Safety Harbor period began around 1100 B.P., overlapping and post-dating the Weeden Island period. Like the Weeden Island pottery types, Safety Harbor vessels are highly decorated, and include stamping, incising, and punctating. The Safety Harbor Incised type originates from the Tampa Bay region of Florida (Willey 1949). One open rim vessel of this type was identified in the assemblage (Figure 5-3e).

*St. Johns.* St. Johns pottery is a long-lived type that is characterized by "chalky" sponge spicule tempered wares. Plain surface treatments are common in the early St. Johns Period, from about 2500 to 1200 cal B.P., and check stamping is more common in the later St. John Period, from about 1200 to 500 cal B.P. (Randall et al. 2007:24). St. Johns pottery co-occurs with Weeden Island and Safety Harbor types. While originating from the northeastern region of Florida, it is also found along the northern and central Gulf coast. Both plain and check stamped surface treatments were identified in this assemblage and St. Johns vessels represent 18 percent (n = 15) of the assemblage, with 11 open rim vessels, two restricted rim vessels, and two flared rim vessels (See Figure 5-3g and 5-3l).

*Other types.* Vessels that could not be assigned to a specific cultural type were classified by temper and surface treatment. Sand-tempered check-stamped vessels represent the largest percentage of the assemblage (the same as St. Johns vessels) at 18 percent (n = 15), and includes 10 open rim vessels, two flared rim vessels, one restricted rim vessel, and two small vessels. Sand-tempered plain vessels represent 16 percent (n = 13) of the assemblage with sex open rim vessels, four flared rim vessels, two shallow

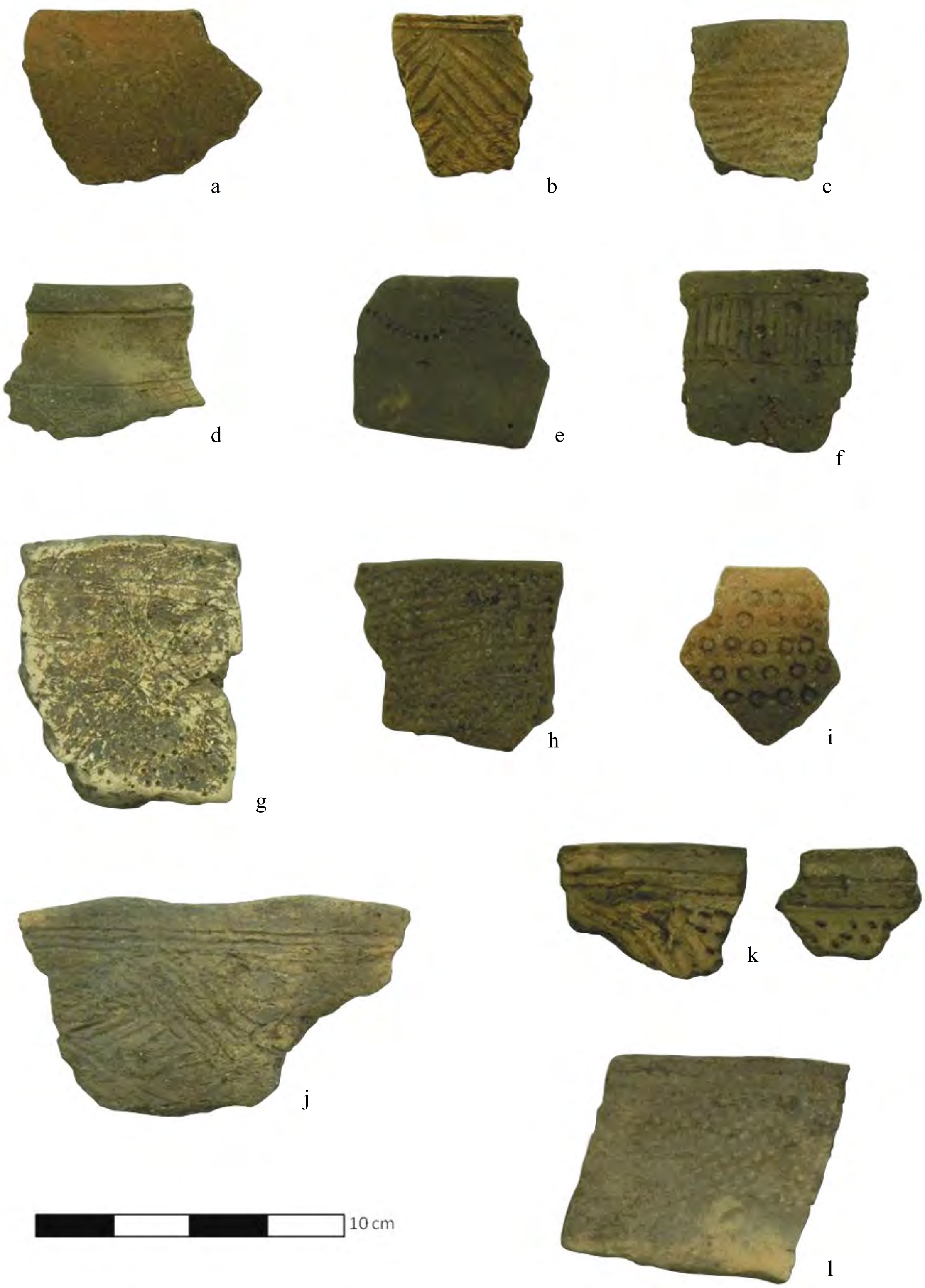



Figure 5-3. Pottery types from surface collection: a) Swift Creek complicated stamped; b) Orange; c) Ruskin dentate; d) Weeden Island incised; e) Safety Harbor; f) Perico incised; g) Orange incised and punctuated; h) Deptford check-stamped with sooting; i) Carrabelle punctate; j) Orange incised; k) Tick Island incised; l) St. Johns check-stamped.

vessels, and one restricted rim vessel. There is one sand-tempered simple stamped open rim vessel and two sand-tempered unidentifiable open rim vessels.

*Vessel Form*

The vessel form typology for this analysis is rather narrow due to the highly fragmented nature of the pottery assemblage. The small sizes of the sherds from the surface collection make vessel form identification difficult; for instance, determining if a vessel is a bowl or a pot is nearly impossible. Bowls and pots are distinguished by ratios of height to width. For bowls, the diameter at the largest portion of the body is typically greater than the height of the vessel. In contrast, the diameter at the largest portion of the body of a pot is typically smaller than its height. The uses of bowls and pots are variable, and can include cooking, serving, and storing. However, bowls are likely to be used for serving more often than pots (Rice 1987). Serving food from pots would mean individuals would be required to reach down into the vessel, as opposed to the low profile of a bowl that would make it easier to access the contents and more portable.

*Open Rim Vessels.* Open rim vessels represent the largest component of the assemblage at 70 percent (n = 57) (Figures 5-4 – 5-8). The majority of these vessels are St. Johns (n = 11) (Figure 5-4), fiber-tempered wares (n = 11) (Figure 5-5), and sand-tempered check stamped (n = 10) (Figure 5-6), followed by Deptford Linear Check Stamped (n = 7) (Figure 5-7), and various other culture-historical types (Figure 5-8).

Open rim vessels are more likely to be used for serving and cooking as the unrestricted opening allows for easy access to the vessel's contents. Cooking is inferred in several vessels by sooting along the exterior surface near the rim. All of the sooted sherds (n = 13) are open rim vessels, with the exception of one restricted rim vessel. The location of the soot on the majority of the sherds suggests these cooking pots were placed in the fire, and most likely had a rounded or conical bottom that allowed for more efficient and consistent heat transfer for boiling (Hally 1986). Only one sherd (vessel 51) had sooting on the inside, suggesting the contents of the vessel were burned. This could suggest use as a brassier, a vessel for transporting fire, or burning for some ritual purpose.

Three vessels had repair holes, two of which co-occurred with sooting on sand-tempered check stamped sherds (vessels 53 and 54). The third was on a Deptford Linear Check Stamped sherd (vessel 52) with two repair holes but no sooting. The repair holes suggest that these pots were valuable enough to be repaired rather than discarded when they cracked or broke.

*Restricted Rim Vessels.* The second numerous vessel form in the Nelms collection is the restricted rim vessel, representing 10 percent (n = 8) of the total. The most common cultural types with this vessel form are Carabelle Punctated (n = 2) and Deptford Linear Check Stamped (n = 2), but also includes one each of St. Johns, Pasco, sand-tempered check stamped, and sand-tempered plain types (Figure 5-9).

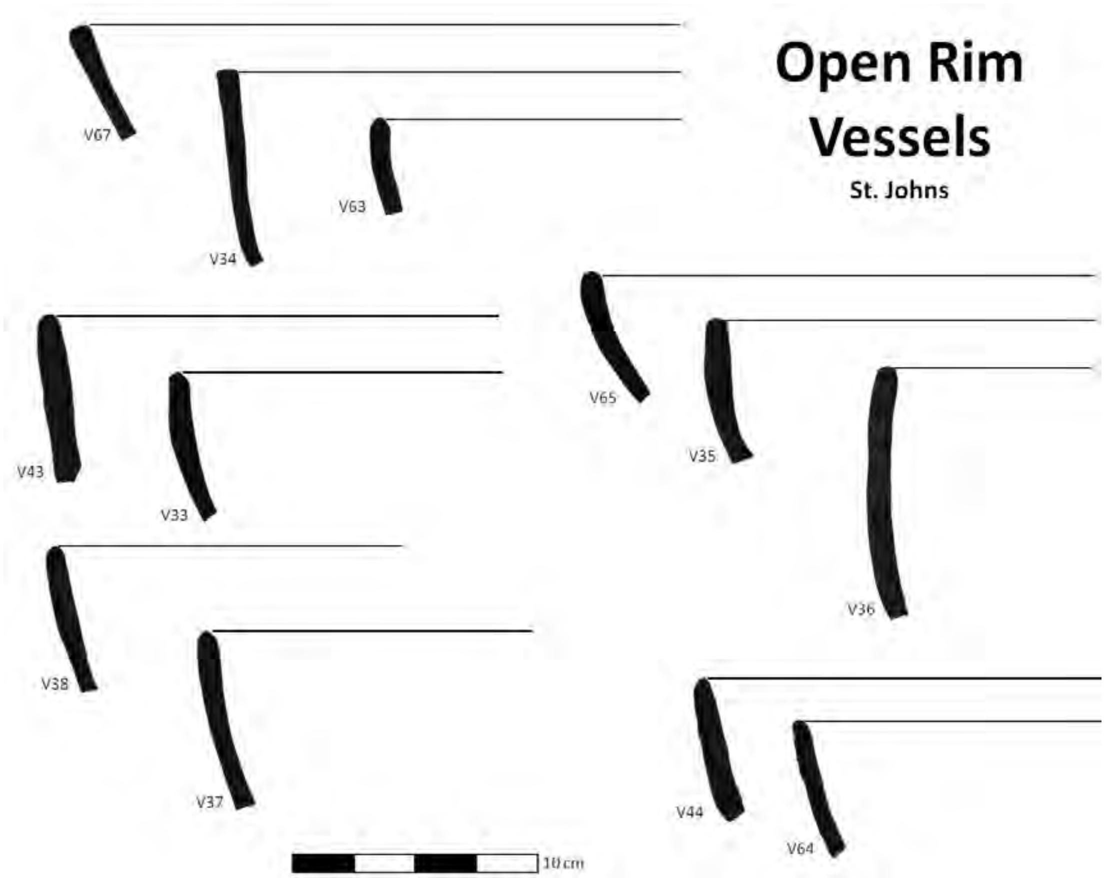



Figure 5-4. Profiles for St. Johns open rim vessels.

Restricted rim vessels are particularly useful for storing and transporting liquids. The smaller opening reduces loss due to sloshing or spilling and evaporation. As mentioned above, only one of these vessels (vessel 55) had sooting, suggesting that it was used over an open fire. The rim of this vessel is only slightly incurving, and therefore, the orifice is not significantly restricted and would not have precluded its use as a cooking pot.

*Flared Rim Vessels.* Eleven percent (n = 9) of the vessels analyzed are vessels with flaring rims (Figure 5-10). Four of these vessels were sand-tempered plain, followed by two each of sand-tempered check stamped and St. Johns types and one Deptford Linear Check Stamped. The uses of these types of vessels are variable; the flaring rim is convenient for attaching covers to protect contents while also being a more efficient shape for pouring liquid contents. Flared rim vessels are the only vessel type in the assemblage that have burnished surfaces, which is strong evidence for the use of the vessel to hold liquid contents since burnishing significantly decreases the permeability of the vessel. No sooting was found on any of the flared rim vessels, suggesting they were

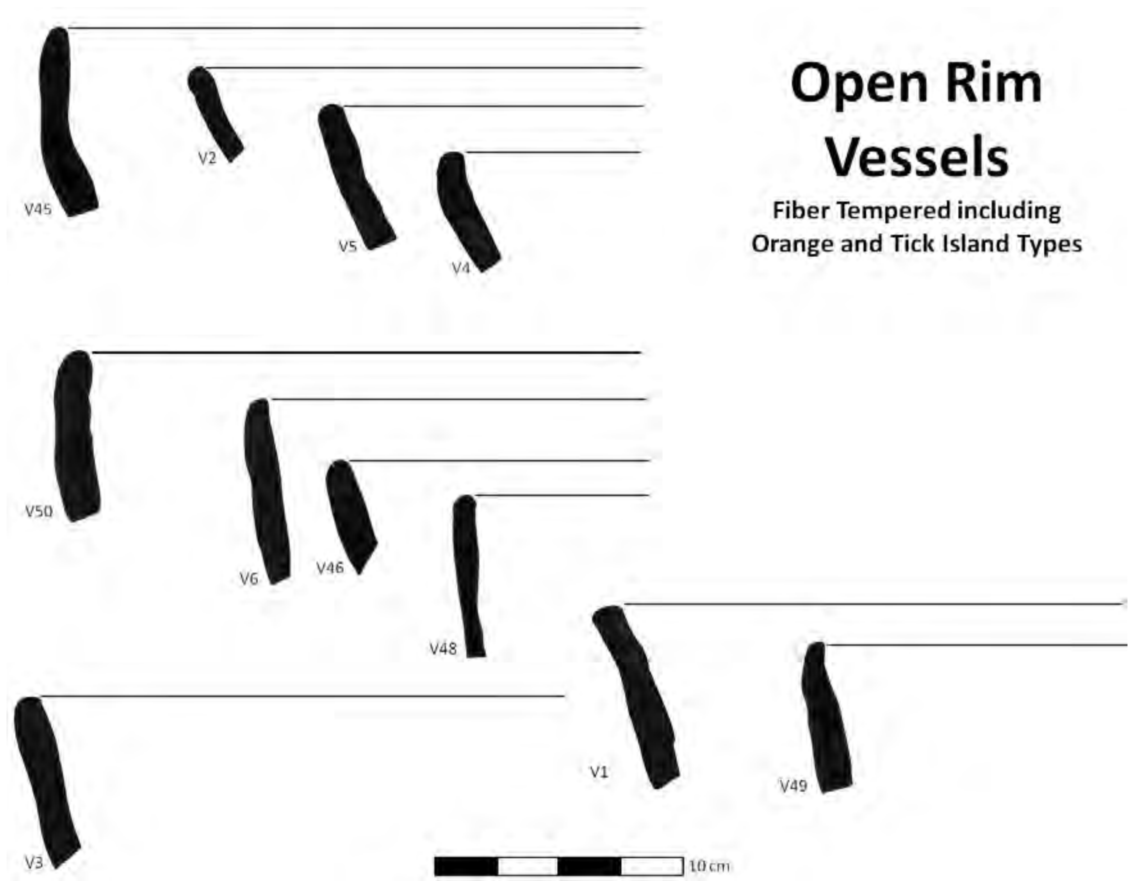



Figure 5-5. Profiles for fiber-tempered open rim vessels, Including Orange (vessels 1, 3, 4, 5, 6, 45, 46, 48, 49, and 50) and Tick Island Incised types (vessel 2).

not used for cooking. One sand-tempered plain vessel (vessel 68) was burnished on the exterior surface, and two vessels, one Deptford Linear Check Stamped (vessel 57) and one sand-tempered plain (vessel 79), were burnished on the interior surface. Another vessel (vessel 71) was tempered with either grog or inclusions of a different clay type in addition to sand and is the only vessel with this type of temper in the assemblage.

*Shallow Bowls.* Only two shallow bowls were identified in the assemblage, both sand-tempered plain (Figure 5-11). Because they have such a low profile and wide orifice, these vessels were not suited for liquid contents, but most likely were used as serving vessels for solid foods (Wallis 2011:169).

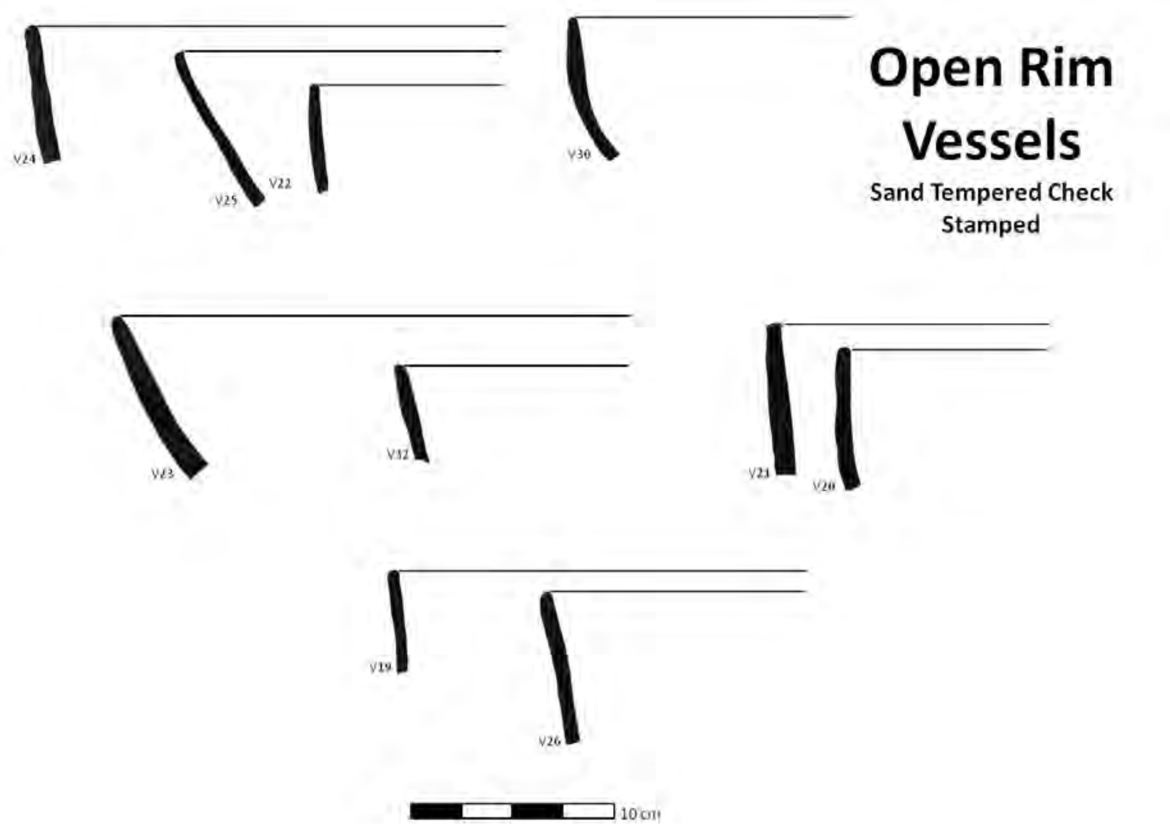



Figure 5-6. Profiles for sand-tempered check stamped open rim vessels.

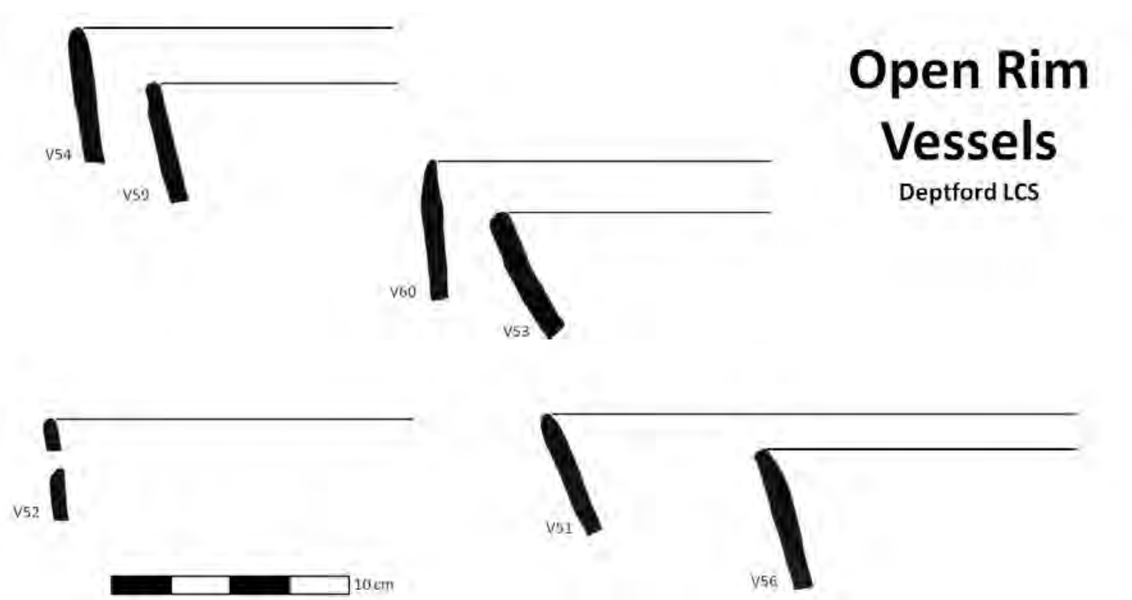



Figure 5-7. Profiles for Deptford LCS open rim vessels.

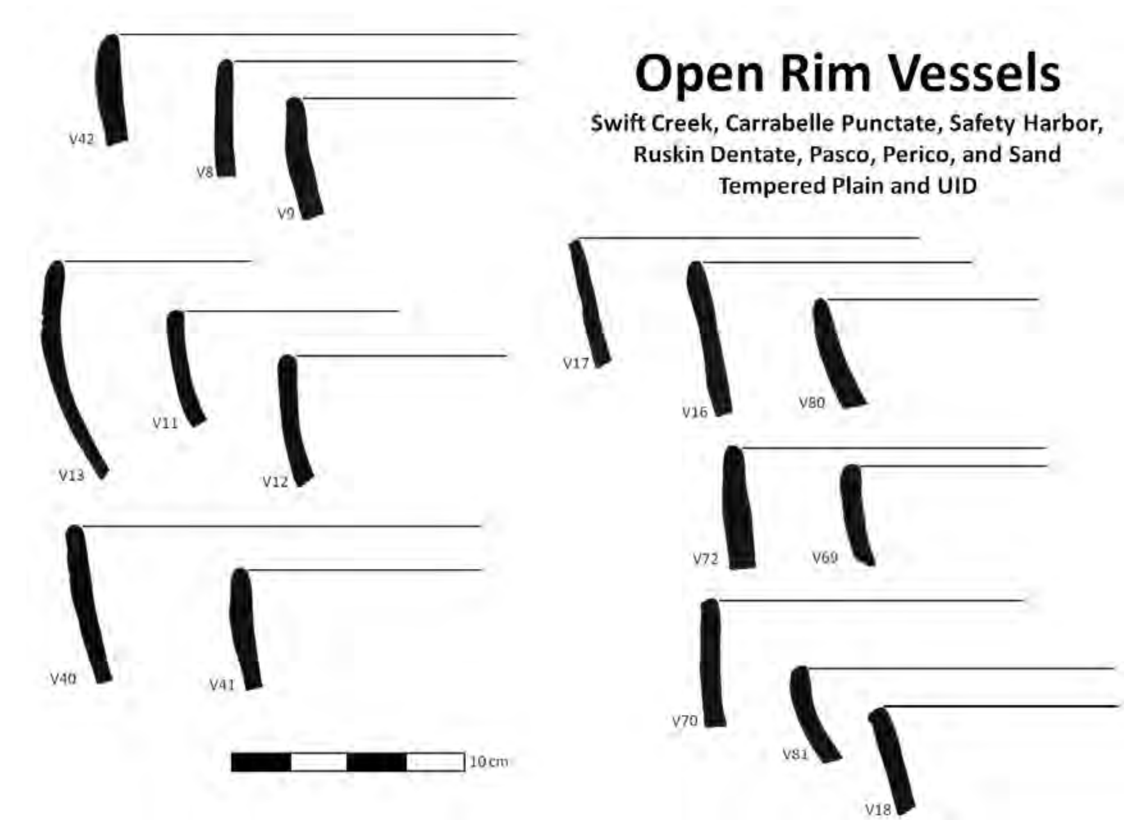



Figure 5-8. Profiles for other open rim vessels, including Swift Creek (vessel 9); Carrabelle punctated (vessel 13); Safety Harbor (vessel 11); Ruskin dentate (Vessel 8); Pasco (vessels 40, 41, 42); Perico (vessel 12); sand-tempered plain (vessels 69, 70, 72, 80, 81); sand-tempered simple stamped (vessel 16); and sand-tempered UID (vessels 17, 18).

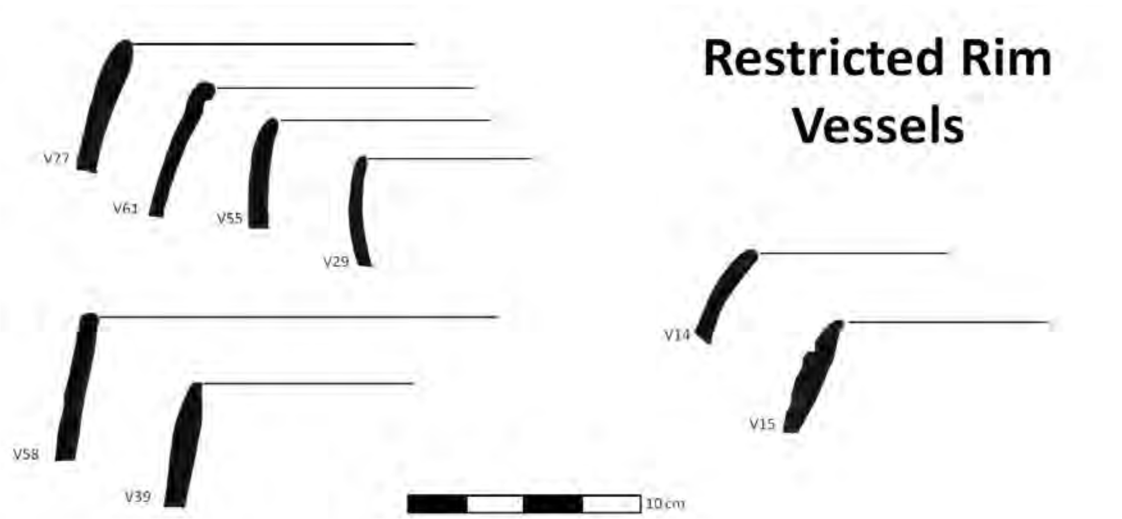



Figure 5-9. Profiles of restricted rim vessels, including Carrabelle punctated (vessels 14, 15); Pasco (vessel 39); Deptford linear check stamped (vessels 55, 58); St. Johns plain (vessel 61); sand-tempered check stamped (vessel 29); and sand-tempered plain (vessel 77).

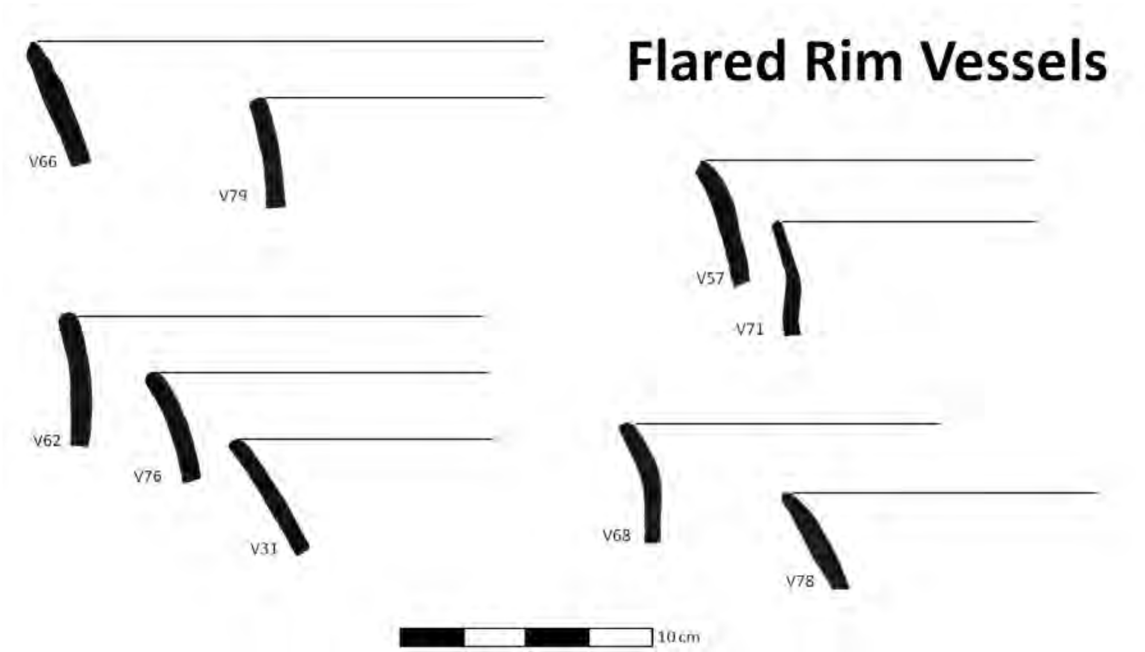



Figure 5-10. Profiles for flared rim vessels, including St Johns Plain (vessels 62, 66); Deptford Linear Check Stamped (vessel 57); sand-tempered check stamped (vessels 31, 78); and sand-tempered plain (vessels 68, 71, 76, 79).

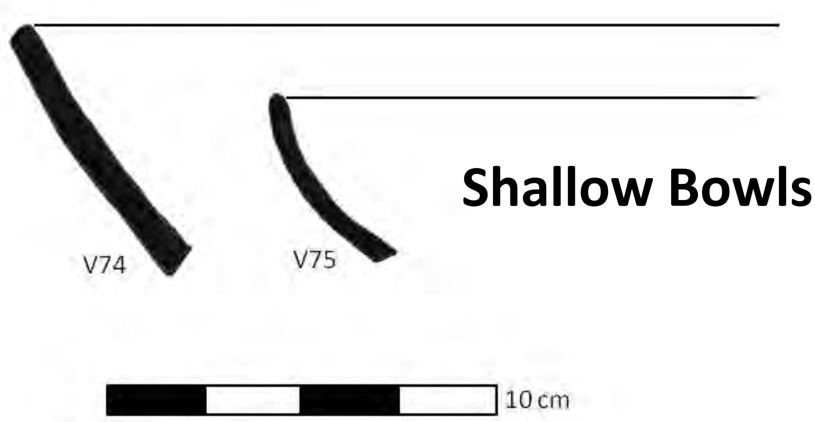



Figure 5-11. Profiles for shallow bowls, both sand-tempered plain.

*Jars.* A jar is defined as a vessel with a restricted neck that has a height greater than the maximum diameter of the body (Rice 1897:217). Only three vessels were determined to be jars: one Ruskin dentate, one fiber and spicule-tempered plain, and one Weeden Island incised sherd (Figure 5-12). Only the Weeden Island Incised sherd exhibits a recurvate rim that suggests a restricted neck; however, the low angularity of the Ruskin and Orange sherds suggest they may be portions of collared jars. Jars typically function as containers for liquids and may have been used for transport, storage, or serving of liquids. The scarcity of jars in the assemblage suggests that storage and transport of liquids was not a common activity and consumption may have been from other types of vessels, such as smaller cups or bowls.

*Small Vessels.* Wallis describes small cups and bowls as being identified by their small orifice diameter, between 5.2 and 13.0 cm (Wallis 2011:161). Two (2%) sand-tempered check stamped small vessels were identified in the Nelms collection (Figure 5-13). Morphologically, these vessels mimic the open rim pots and bowls but are much smaller than those vessels. Vessel 27 has an orifice diameter of 9 cm and vessel 28 has a diameter of 12 cm. The small size suggests that these were cups and bowls that were used by individuals or held individual serving sizes of foods or beverages.

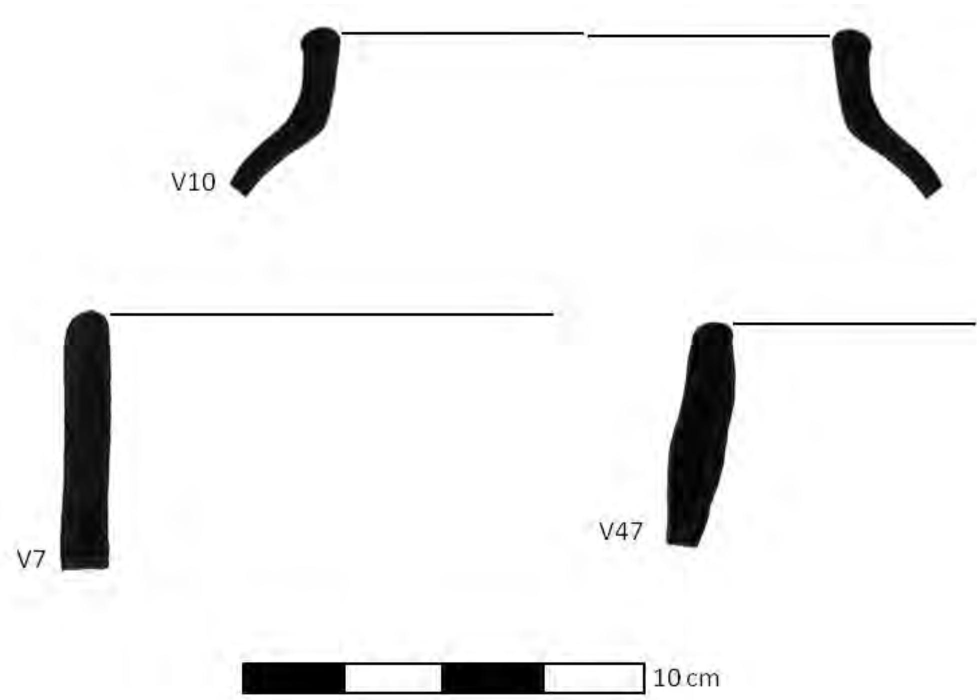



Figure 5-12. Profiles for jars, including Orange (vessel 47); Ruskin Dentate (vessel 7); and Weeden Island Incised (vessel 10).

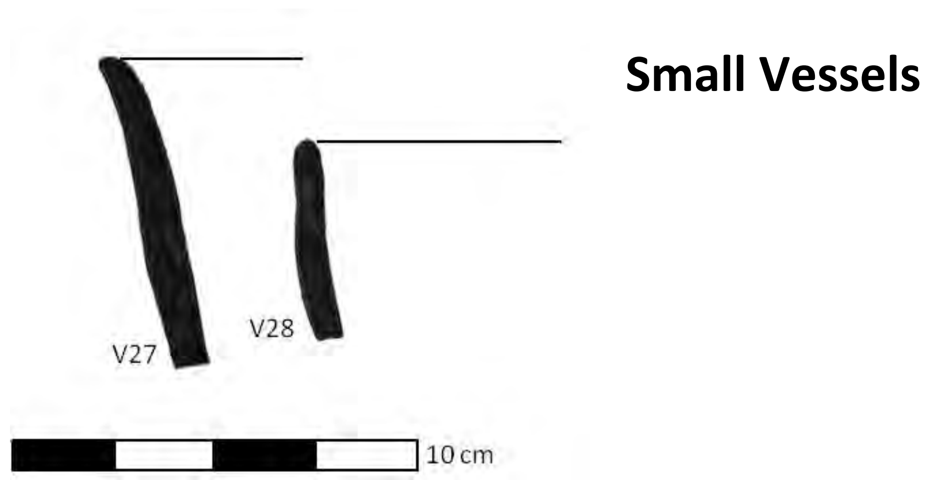



Figure 5-13. Small vessels, both sand-tempered check stamped.

*Vessel Size*

Summary statistics of orifice diameter for culture-historical types by vessel form are provided in Table 5-2 and Figure 5-14 shows the frequency of vessel lots by orifice diameter for vessel lots analyzed from the surface collection. Vessel size is an important attribute that can be used to infer vessel form and function, and can be used to identify different activities with different numbers of participants. For instance, small cooking vessels likely suggest the preparation of meals for a small family group, whereas large cooking vessels may suggest meal preparation for larger groups, or feasting activities. One means of establishing vessel size is through the determination of orifice diameter, especially for open and flared rim vessels, since larger vessels with unrestricted necks usually have larger opening. The most frequent orifice diameter (n = 11) is 26 cm, with the distribution of vessel orifice diameters skewed toward the smaller end of the total range of orifice sizes. Shallow vessels, open rim vessels, and flared rim vessels have the largest orifice diameters, while vessels with restricted rims or jars may be much larger vessels than their orifice diameters suggest. For this reason, the distribution in Figure 5-14 is slightly skewed by the fact that there are many more open rim bowls and pots than there are other vessel forms.

Data on vessel size by culture-historical type suggests that the largest vessels are Tick Island and St. Johns plain and incised types. The smallest vessels are Perico, Swift Creek, and Safety Harbor types. The inclusion of the Perico, Swift Creek, Ruskin, and Safety Harbor types is problematic in that there was only one vessel of each type identified in the assemblage, making inferences about the average size of the vessels for those types and how they relate to the other types in the assemblage unwarranted. Two additional types, sand-tempered plain and sand-tempered check, are not useful temporal markers since they appear to have a long history of use that is coeval with many different cultural types.

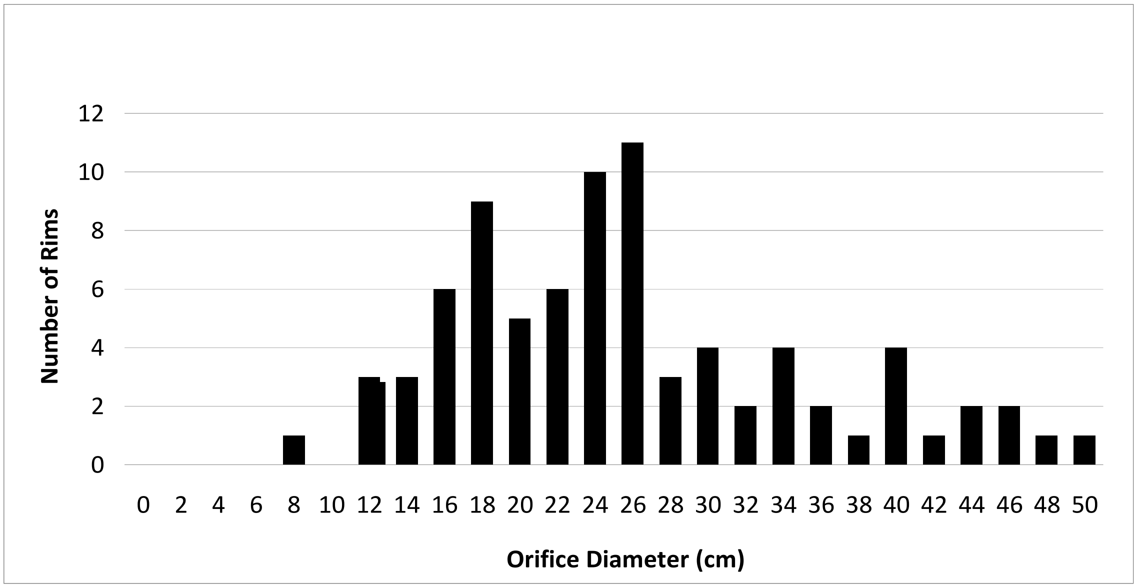



Figure 5-14. Absolute frequency of vessel lots by orifice diameter (cm).

## CONCLUSIONS

Analysis of the surface collection of pottery from Bird Island was somewhat limited by the lack of archaeological context, however, the presence of a continual gradient of pottery types from different culture-historical periods suggests that Bird Island was persistently occupied from at least the Late Archaic through the Late Woodland and early Mississippian periods. Soapstone vessels and early fiber-tempered pottery suggest occupation by at least 4000 years ago. Intermediate pottery types, including Deptford Linear Check Stamped, St. John's, Pasco, Swift Creek, and Weeden Island types imply no significant occupational hiatuses, and the presence of a late Safety Harbor sherd suggests occupation as late as 600 B.P.

Pottery types associated with different geographic regions, as well as the presence of soapstone, suggests that the occupants of Bird Island interacted with peoples from a large and variable geographic area. It is likely that the pots themselves traveled to the island either through trade or with the movement of people, rather than simply a diffusion of technology. This is definitely the case with the soapstone since that particular material is found only in the northerly portions of Alabama and Georgia and northward through the Carolinas into the New England areas. In addition to the soapstone, the presence of Tick Island and Orange pottery from the St. Johns region in northeast Florida suggest this interaction was very early.

Table 5-3. Summary Statistics of Orifice Diameter by Culture-Historic Type and Vessel Form.

| | Open Rim Vessels | Restricted Rim Vessels | Flared Rim Vessels | Jar | Small Vessels | Shallow Bowls |
|---|---|---|---|---|---|---|
| Carrabelle Punctated | | | | | | |
| range (n) | 16 (1) | 16-17 (2) | | | | |
| mean (st. dev.) | 16.0 (NA) | 16.5 (0.7) | | | | |
| Deptford Lin. Ck. Stmp. | | | | | | |
| range (n) | 20-44 (7) | 18-34 (2) | 26 (1) | | | |
| mean (st. dev.) | 28.0 (7.8) | 26 (11.3) | 26.0 (NA) | | | |
| Orange Incised | | | | | | |
| range (n) | 14-40 (4) | | | | | |
| mean (st. dev.) | 27.0 (10.89) | | | | | |
| Orange Plain | | | | | | |
| range (n) | 14-46 (6) | | | 12 (1) | | |
| mean (st. dev.) | 32.3 (13.35) | | | 12.0 (NA) | | |
| Pasco | | | | | | |
| range (n) | 20-34 (3) | 18 (1) | | | | |
| mean (st. dev.) | 29.3 (8.1) | 18.0 (NA) | | | | |
| Perico | | | | | | |
| range (n) | 18 (1) | | | | | |
| mean (st. dev.) | 18.0 (NA) | | | | | |
| Ruskin | | | | | | |
| range (n) | 24 (1) | | | 22 (1) | | |
| mean (st. dev.) | 24.0 (NA) | | | 22.0 (NA) | | |
| Safety Harbor | | | | | | |
| range (n) | 18 (1) | | | | | |
| mean (st. dev.) | 18.0 (NA) | | | | | |
| St. Johns Check Stamped | | | | | | |
| range (n) | 16-36 (6) | | | | | |
| mean (st. dev.) | 27.0 (6.5) | | | | | |
| St. Johns Incised | | | | | | |
| range (n) | 32-36 (2) | | | | | |
| mean (st. dev.) | 34.0 (2.8) | | | | | |
| St. Johns Plain | | | | | | |
| range (n) | 24-48 (4) | 22 (1) | 32-40 (2) | | | |
| mean (st. dev.) | 34.0 (12.0) | 22.0 (NA) | 36.0 (5.7) | | | |
| Swift Creek | | | | | | |
| range (n) | 18 (1) | | | | | |
| mean (st. dev.) | 18.0 (NA) | | | | | |
| Tick Island Incised | | | | | | |
| range (n) | 34 (1) | | | | | |
| mean (st. dev.) | 34.0 (NA) | | | | | |
| Weeden Island Incised | | | | | | |
| range (n) | | | | 12 (1) | | |
| mean (st. dev.) | | | | 12.0 (NA) | | |
| Sand-Tempered Check Stamped | | | | | | |
| range (n) | 18-50 (10) | 14 (1) | 20-24 (2) | | 9-12 (2) | |
| mean (st. dev.) | 30.4 (11.2) | 14.0 (NA) | 22.0 (2.8) | | 10.5 (2.12) | |
| Sand-Tempered Plain | | | | | | |
| range (n) | 16-26 (6) | 18 (1) | 20-26 (4) | | | 24-38 (2) |
| mean (st. dev.) | 21.3 (5.2) | 18.0 (NA) | 23.0 (2.6) | | | 31.0 (9.9) |
| Sand-Temp. Simple Stamped | | | | | | |
| range (n) | 23 (1) | | | | | |
| mean (st. dev.) | 23.0 (NA) | | | | | |
| Sand-Tempered UID | | | | | | |
| range (n) | 20-29 (2) | | | | | |
| mean (st. dev.) | 24.5 (6.4) | | | | | |

An inordinate amount of soapstone, at least 66 kg, as reported by Dasovich (1999:269), was recovered from Bird Island, making it one of the largest soapstone assemblages in Florida (K.E. Sassaman, personal communication, 2012). The presence of such a large amount of soapstone suggests interaction with the Panhandle region of Florida, possibly the Elliot's Point Complex. This cultural complex is centered around the Choctawhatchee Bay in the Panhandle of Florida and dates to as early as 4200 cal B.P. (Campbell et al. 2004:138). Sassaman (2010) suggests that soapstone appeared in the Panhandle region of Florida around 4150 cal B.P., where it became an important component in extralocal interactions. Traveling from the Piedmont areas of Georgia and Alabama, along the Chattahoochee, soapstone eventually made its way westward through the Gulf Coast and eventually to Poverty Point in northern Louisiana (Sassaman 1993).

The Poverty Point site was the center of the Poverty Point Culture, a unique Late Archaic cultural tradition that spanned the lower Mississippi Valley into the northern Gulf Coast. Radiocarbon dates from the Poverty Point site in northern Louisiana suggest early human modification of the landscape at around 4000 cal. B.P. (Kidder et al. 2009:58), slightly later than the earliest Elliot's Point Complex site in the western Panhandle. The presence of Poverty Point type artifacts at Elliot's Point Complex sites, including baked clay objects, copper beads, hematite, and diagnostic microliths, suggest significant interaction between Elliot's Point sites and Poverty Point (Campbell et al. 2004). Archaeological investigations of Elliot's Point sites revealed that villages of this complex continued to use soapstone almost exclusively, even after fiber-tempered pottery was well established in the region, suggesting that the linkage with Poverty Point was more important that the acceptance of the new pottery technology (Campbell et al. 2004).

Bird Island appears to have had early and intense interaction with the Panhandle region, but was either on the far periphery or did not participate at all in the Poverty Point interaction sphere. One soapstone sherd from Bird Island was radiocarbon dated to between 4143 and 3722 cal. B.P. (Yates 2000), placing it early in the advent of soapstone movement through the Gulf Coast. However, there appears to be a lack of other Poverty Point type artifacts, both in the surface collection and in the excavated units. Additionally, the presence of fiber-tempered pottery, that is likely contemporaneous with the date of the soapstone sherd, suggests that there was no reluctance to accept the fiber-tempered technology, and like other areas of the southeast, both soapstone and fiber-tempered wares were likely used concurrently at Bird Island (e.g., Sassaman 2006).

Cordell (2004) described three gross categories of paste for fiber-tempered wares, a "chalky" paste that contained sponge spicules, an intermediate paste that included sponge spicules and sand, and a paste that contained only sand. It does not appear that paste variation is temporally associated, however, recent work at Silver Glen Run (8LA1) suggest that there is a spatial component to paste variation along with surface treatment. Comparative analysis between two loci of the site revealed that pottery in association with the mound tended to have chalky paste, surface decorations, and an average orifice diameter of 25.8 cm. In contrast, pottery associated with the non-mound context tended to have sandier paste, less decoration, and an average orifice diameter of only 16.7 cm (Gilmore 2011).

The Bird Island fiber-tempered assemblage more closely resembles the pottery from the mound context at Silver Glen Run, which suggests that ritual or feasting activities were taking place on the island during the early stages of occupation. Of the 12 fiber-tempered vessels analyzed, eight are made from chalky spiculate paste, while only four have sandy paste. Additionally, the mean orifice diameter for both the chalky and sandy paste varieties at Bird Island is 29 cm, which is a bit larger than the average for the mound assemblage at Silver Glen Run. However, the proportion of decorated fiber-tempered vessels was much higher at Silver Glen Run, and, in contrast, the majority of the fiber-tempered sherds from Bird Island are plain. Of the total fiber-tempered assemblage, seven vessels are plain and four vessels are decorated, and of the eight spiculate paste vessels, six are plain and only one is decorated.

Formal analysis suggests that activities on the island consisted mainly of cooking and serving of foods for groups of people. Even though the distinction between bowls and pots was not possible, and the two had to be collapsed into a single vessel form category, these two vessel forms constitute the overwhelming majority of the assemblage. Vessels that are indicative of liquid transportation and storage, such as jars, are virtually absent from the collection, which suggests that these activities were not a priority on the island. Small cups and bowls are also rare, implying that food was not consumed in individual serving vessel but instead in larger vessels that most likely were used by several people at a time.

Analysis of mean orifice diameter of open rimmed vessels by type suggests that there was no significant change in the size of vessels through time. Mean rim diameters for all of the culture-historical types are between 28 and 34 cm. The extent to which this is a product of continuity of activities is as yet unknown. If vessel size can be used as an indication of the size of the participant group, it appears that group size did not significantly change. Comparative data from future studies at other sites in the northern Gulf Coast region will be useful for understanding the implications of vessel size at Bird Island.

In summary, soapstone and fiber-tempered pottery suggest occupation of Bird Island by at least 4000 years ago. Early and likely intense interaction, with at least the Panhandle region facilitated the movement of soapstone into the area, while fiber-tempered pottery likely came from interactions with groups from the northeastern region of Florida. Ritual or feasting activities during the early stages of occupation, likely linked to the Late Archaic cemetery, are indicated by the presence of the soapstone, but also by the size and attributes of the fiber-tempered wares in the assemblage. Cooking and serving for large groups appear to be the main activities associated with pottery, and the uniformity of size through time implies that those same activities continued through the Late Woodland. Comparative data from other locations of the northern Gulf Coast will help to refine existing pottery-based chronologies and put Bird Island into a broader, regional context.

# CHAPTER 6
# CONCLUSIONS AND RECOMMENDATIONS

Paulette S. McFadden

Evidence suggests that Bird Island has a long history of occupation, dating as far back as 4000 years and continuing for at least 3400 years. Despite the loss of archaeological remains along the southwestern portion of the island due to erosion and storm damage, the highest elevation of the island still contains significant intact midden deposits that can offer much information about the aboriginal populations that lived in the Horseshoe Cove area. Using cultural materials recovered during excavations, stratigraphic analysis, radiocarbon dates obtained from midden deposits, and the results of a geological study performed at the Suwannee Delta, it is possible to construct a preliminary chronology of the occupation of the island and the environmental changes that the inhabitants experienced.

During the late Pleistocene, at the end of the last Ice Age, a sand dune began to form in a floodplain approximately 400 km from the shoreline of the Gulf of Mexico, in what was then central Florida. Other similar types of landforms were developing throughout the southeastern United States at the same time, and by the Early Archaic Period (11,450 – 8900 cal B.P.) these parabolic, or U-shaped, vegetated landforms appeared to have been optimal locations for human occupation. Most were located near a fresh water source and were elevated above the floodplain, keeping the inhabitants safe from inundation during flooding. A portion of this relict, or inactive, sand dune would later become Bird Island.

Around 5000 years later, at a time when the shoreline of the Gulf of Mexico was as much as 5 km to the west of its current location, a portion of this paleodune was used as a cemetery during the Late Archaic period. Around 4430-4240 cal B.P., the shoreline had transgressed to within 2.5 km of its current location, making the oyster beds more readily accessible, and deposition of midden material began. Marsh formation along the approaching shoreline is evidenced by the presence of numerous small marsh-grass-dwelling periwinkles in the lowermost shell deposits in TU1, and is further supported by the identification of marsh sediments in cores collected at the Suwannee Delta (Wright et al. 2005).

The people who deposited this earliest midden material collected marine resources throughout the year from all of the available habitats, including the oyster beds, seagrass, and tidal creek areas. The lack of remains of terrestrial species, such as deer, in the midden suggests that these were not an important component of the diet (see Chapter 4). The presence of shell hammers and an adze, suggest woodworking activities, and the presence of flakes is indicative of the continued importance of stone tools.

The early occupants of Bird Island interacted with other groups to the north and in the Panhandle region, perhaps the Elliot's Point Complex sites, evidenced by the substantial soapstone assemblage. With the exception of soapstone, the lack of Poverty Point type artifacts suggests that any interaction with the Poverty Point complex was peripheral at best. Early activities on the island may have centered on ritual feasting in association with the cemetery, which is indicated by the presence of higher proportions of spiculate paste in the fiber tempered pottery assemblage, and also by the large size of the vessels.

A relatively sterile layer of sand separates the oldest midden material at the base of TU1 from later deposits in the upper portion. There are two potential interpretations of this sandy layer. First, it is possible that this portion of the landform was abandoned after ca. 4240 cal B.P. This allowed sands to accumulate atop the midden, likely through aeolian transport (wind-blown sand) or simply pedogenesis. Radiocarbon dating of the midden material above this layer suggests that this abandonment lasted for as much as 2000 years. Around 2310-2120 cal B.P., when the shoreline was very near its present location and vast areas around the elevated landform had been flooded, people returned to live on Bird Island. An alternative hypothesis is that there was no hiatus of occupation, but rather a large storm moved into the northern Gulf Coast sometime before 2000 years ago, scouring midden material from the highest elevation of the island and depositing the layer of sand. The inhabitants of the island then continued depositing midden material, as was their routine, on top of the storm deposits.

In either case, the people who deposited the midden materials above this layer had a very different culture than those who had lived before them. Shell hammers and adzes are were no longer in widespread use; likewise, stone tools were less frequent. By 1140-970 cal B.P., Bird Island was surrounded by sea water and marsh. Deposition of midden material continued during year-round occupation, with evidence of increased utilization of fish species. The presence of Late Woodland pottery types suggest that the island continued to be occupied until at least 1100 year ago, with the inhabitants continuing to participate in widespread interactions with other regions.

It is unclear if the later occupants of the island identified with the ancient individuals that were buried in the cemetery, although it is likely that they were aware of them. Even though pottery types changed through time, evidence from analysis of the surface collection suggests that the size and function of the pottery remained relatively uniform. The large size of the vessels suggests that meals were cooked for and served to groups of people rather than individuals, and likely in the context of feasting. Finally, the lack of storage vessels suggests that storage was not a priority on the island and may suggest that resources, such as fresh water, were close by and easily accessible.

Shovel testing revealed that midden deposits thin with distance from the highest point on the island, near the house. The presence of redeposited shell near the surface in STP 6 and STP 2 suggests that shell and other midden material was scoured from lower elevations of the island and deposited at the 2 to 2.5 meter elevation. Furthermore, the stratigraphy of STP 6 suggests that the portion of the island near the burials had experienced significant disturbances in the past. However, the buried A-horizon at 80 cm BS, and the presence of the Archaic Period biface below it, provided hope that the underlying deposits were of the same age as the cemetery and had survived intact. Excavation of TU2 confirmed that the deposits above the buried A-horizon were the result of significant, and likely multiple, disturbances. Even though pottery was recovered below the A-horizon, it appears to be out of context. The absence of midden material along with the evidence of numerous natural disturbances suggests that the archaeological remains in this area of the island have been compromised.

## FUTURE WORK

Archaeological investigations and analysis of the surface collected pottery has contributed significantly to our understanding of the pre-Columbian occupations of Bird Island. From an archaeological standpoint, additional excavation can provide important information about the spatial distribution of midden material and may help identify variation in activities that occurred at the site. The relationship between the individuals buried in the cemetery and the people who deposited the later midden material is unclear since there appears to be a spatial separation between the two and no cultural remains were reported with the burials. Additionally, it is unknown whether the substantial amount of soapstone on the island is associated with the early burials or the later midden materials, or perhaps both. Additional excavations may find deposits that connect these two areas of the site and determine continuity between the two populations.

Of particular interest is the layer of relatively sterile sand above the oldest midden stratum in TU1. Several questions arise from the presence of this sandy layer. Does it represent a hiatus in occupation of the entire island, just a portion of the island, or does it represent a catastrophic storm event? Additional testing could seek to identify this same layer in other areas of the site, which would suggest the hiatus (or damage) was island-wide. Sedimentological analysis of soil samples from this layer could help to determine the nature of the deposits, whether they are the result of one depositional episode, or the result of long term sediment accumulation. Comparative data from cores collected in the marine and marsh environment surrounding the island may also be useful in identifying this layer as storm deposits.

Comparative data from other sites in the Gulf Coast area is a priority so that Bird Island can be understood in its context within the larger region. This will entail identification and excavation of archaeological sites, as well as analysis of existing collections held by private individuals and museums. Archaeological data from other types of sites, for instance village or camping sites, is crucial to interpreting and understanding the meaning of the archaeological remains at Bird Island.

Another issue that merits further investigation is whether the pottery found at Bird Island is the result of the movement of people and/or pottery, or diffusion of technology from other regions. Petrographic analysis of sherds can be utilized as a means to determine geographic sources for the clay and tempers that were used to make the pottery and would be useful for identifying locations of manufacture, and by extension, networks of interactions.

Finally, more in-depth analyses that include all of the sherds in the surface collection may help to address additional questions. Why are there so few jars and small cups and bowls in the assemblage? Is this directly related to feasting activity or is this the norm for pre-Columbian residents along the northern Gulf Coast? Why is there variation in vessel size by cultural type? Is this variation a product of the culture-historical type, in which case intersite assemblages should show similar variation, or is it a product of vessel function? Sooting appears on check-stamped vessels in the assemblage. Does this suggest that certain pottery types were utilized for only certain activities? For instance, were Deptford linear check-stamped and sand-tempered check-stamped types used for cooking while other types, perhaps sand-tempered plain, were used for only serving or storing?

The current owners of Bird Island represent several generations of the same family. They know how special this island is, and their emotional attachment to this beautiful landscape continues a tradition of people forming attachments to this extraordinary place. It has seen thousands of lives lived, relationships formed, and many loved ones buried (including a member of the Nelms family), and in its archaeology, it preserves the material expression of all of these.

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# APPENDIX A:

# CATALOG

## CATALOG CODES

| MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | DESCRIPTION |
|---|---|---|---|---|
| Charcoal | | Frag | | Charcoal Fragments |
| Coral | | Frag | | Fragments of Coral |
| Concretions | | | | Concretions of sand and fine sediments |
| Lithic | Chert | Biface | | Chert Biface |
| Lithic | Chert | Biface/Stemmed | | Chert Stemmed Biface |
| Lithic | Chert | Biface Frag | | Chert Biface Fragment |
| Lithic | Chert | Spokeshave | | Chert Spokeshave |
| Lithic | Chert | Flake | | Chert Flake |
| Lithic | Chert | Flake/Mod | | Modified Chert Flake |
| Lithic | Chert | Chunk | | Chunk of Chert |
| Lithic | Limestone | Chunk | | Chunk of Limestone |
| Lithic | UID | Abrader | | Unidentified Stone Abrader |
| Lithic | UID | Flake | | Unidentified Stone Flake |
| Lithic | Misc. Rock | | | Miscellaneous Rock |
| Lithic | Pebble | | | Pebbles |
| Marine Shell | Barnacle | | | Barnacle Shell |
| Marine Shell | Bivalve | Misc | | Miscellaneous Bivalve Shell |
| Marine Shell | Clam | | | Clam Shell |
| Marine Shell | Crown Conch | | | Crown Conch Shell |
| Marine Shell | Gastropod | Adze | | Gastropod Adze |
| Marine Shell | Gastropod | Hammer | | Gastropod Hammer |
| Marine Shell | Gastropod | Modified Columella | | Modified Gastropod Columella |
| Marine Shell | Gastropod | Frag | | Fragment of Gastropod Shell |
| Marine Shell | Gastropod | Misc | | Miscellaneous Gastropod Shell |
| Marine Shell | Moon Snail | | | Moon Snail |
| Marine Shell | Mussel | | | Mussel Shell |
| Marine Shell | Oyster | | | Oyster Shell |
| Marine Shell | Periwinkle | | | Periwinkle |
| Marine Shell | Scallop | | | Scallop Shell |
| Marine Shell | | Modified | | Modified Unidentified Shell |
| Marine Shell | UID | | | Unidentifiable Marine Shell |
| Metal | Lead | Frag | | Fragment of Lead |
| Metal | | Frag | | Fragment of Metal |
| Metal | | Screw | | Metal Screw |
| Plastic | | Frag | | Fragments of plastic |
| Pottery | Sand Temp | Rim | Puncated/CA | Carrabelle Puntated/Weeden Island |
| Pottery | Sand Temp | Body | Puncated/CA | Carrabelle Puntated/Weeden Island |
| Pottery | Sand Temp | Rim | LCS | Deptford Linear Check Stamped |
| Pottery | Sand Temp | Body | LCS | Deptford Linear Check Stamped |
| Pottery | Fiber Temp | Body | UID | Orange with Unidentifiable Surface Treatment |
| Pottery | Sand Temp | Rim | Incised/Punctated | Pappy's Bayou/Weeden |

| MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | DESCRIPTION |
|---|---|---|---|---|
| | | | | Island |
| Pottery | Limestone Temp | Body | Plain | Pasco Plain |
| Pottery | Limestone Temp | Body | UID | Pasco Unidentifiable Surface Treatment |
| Pottery | Sand Temp | Rim | Dentate | Ruskin Dentate |
| Pottery | Spiculate | Rim | Check | St. Johns Check Stamped |
| Pottery | Spiculate | Body | Check | St. Johns Check Stamped |
| Pottery | Spiculate | Rim | Plain | St. Johns Plain |
| Pottery | Spiculate | Body | Plain | St. Johns Plain |
| Pottery | Spiculate | Body | UID | St. Johns with Unidentifiable Surface Treatment |
| Pottery | Spiculate | Crumb | | St. Johns Crumb Sherd |
| Pottery | Sand Temp | Rim | Check | Sand Tempered Check Stamped |
| Pottery | Sand Temp | Body | Check | Sand Tempered Check Stamped |
| Pottery | Sand Temp | Body | Incised | Sand Tempered Incised |
| Pottery | Sand Temp | Rim | Plain | Sand Tempered Plain |
| Pottery | Sand Temp | Body | Plain | Sand Tempered Plain |
| Pottery | Sand Temp | Rim | Punctated | Sand Tempered Puncated |
| Pottery | Sand Temp | Body | Punctated | Sand Tempered Puncated |
| Pottery | Sand Temp | Rim | UID | Sand Tempered with Unidentifiable Surface Treatment |
| Pottery | Sand Temp | Body | UID | Sand Tempered with Unidentifiable Surface Treatment |
| Pottery | Sand Temp | Rim | Comp Stamp | Swift Creek Complicated Stamped |
| Pottery | Sand Temp | Body | Pinched | Tucker Ridge Pinched/Weeden Island |
| Pottery | | Crumb | | Crumb Sherd |
| Soapstone | | Fragment | | Fragment of Soapstone |
| Terrestrial Shell | Euglandina | | | Euglandina Shell |
| Terrestrial Shell | Land Snail | | | Land Snail Shell |
| Terrestrial Shell | Wolf Snail | | | Wolf Snail Shell |
| Vert Fauna | Bone | | | Vertebrate Fauna |
| Vert Fauna | Bone | | Modified | Modified Vertebrate Fauna |
| Unsorted | | | | Unsorted Material Smaller Than 1/8” |

| CAT | PROVTYPE | PROV | STRAT | SUBSTRAT | SAMPLE | RECOVERY | SIZEGRADE | MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | MODIFICATION | KOUNT | WEIGHT | CULTURE TYPE/TRADITION | NOTE/OBSERVATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | STP | 1 | | | | | .25 | CONCRETIONS | | | | | 5 | 1.1 | | |
| 10 | STP | 1 | | | | | .25 | LITHIC | CHERT | FLAKE | | | 5 | 2.5 | | |
| 11 | STP | 1 | | | | | .25 | MARINE SHELL | GASTROPOD | HAMMER | | | 2 | 144.5 | | |
| 12 | STP | 1 | | | | | .25 | MARINE SHELL | GASTROPOD | | | MODIFIED | 1 | 22.7 | | MODIFIED COLUMELLA |
| 13 | STP | 1 | | | | | .25 | MARINE SHELL | GASTROPOD | | | | 1 | 55.0 | | POSSIBLY MODIFIED COLUMELLA |
| 17 | STP | 1 | | | | | .25 | METAL | | SCREW | | | 1 | 5.0 | | |
| 19 | STP | 1 | | | | | .25 | MUDSTONE | | | | | 3 | 10.6 | | |
| 1 | STP | 1 | | | | | .25 | POTTERY | LIMESTONE TEMP | BODY | PLAIN | | 1 | 13.8 | PASCO | |
| 2 | STP | 1 | | | | | .25 | POTTERY | LIMESTONE TEMP | BODY | UID | | 1 | 2.2 | PASCO | |
| 3 | STP | 1 | | | | | .25 | POTTERY | SAND TEMP | BODY | LCS | | 1 | 3.0 | DEPTFORD | |
| 4 | STP | 1 | | | | | .25 | POTTERY | SAND TEMP | RIM | COMP STAMP | | 1 | 3.8 | SWIFT CREEK | |
| 5 | STP | 1 | | | | | .25 | POTTERY | SAND TEMP | BODY | INCISED | | 2 | 3.5 | | |
| 6 | STP | 1 | | | | | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 2 | 6.9 | | |
| 7 | STP | 1 | | | | | .25 | POTTERY | SAND TEMP | BODY | UID | | 6 | 17.2 | | |
| 8 | STP | 1 | | | | | .25 | POTTERY | SAND TEMP | RIM | UID | | 1 | 3.0 | | |
| 9 | STP | 1 | | | | | .25 | POTTERY | | CRUMB | | | 15 | 17.3 | | |
| 15 | STP | 1 | | | | | .25 | TERRESTRIAL SHELL | EUGLANDINA | | | | 2 | 8.4 | | |
| 14 | STP | 1 | | | | | .25 | VERT FAUNA | BONE | | | MODIFIED | 2 | 6.5 | | 2 PCS. CROSSMEND |
| 16 | STP | 1 | | | | | .25 | VERT FAUNA | BONE | | | | | 189.9 | | |
| 7 | STP | 2 | | | | | .25 | MUDSTONE | | | | | 2 | 4.3 | | |
| 6 | STP | 2 | | | | | .25 | PLASTIC | | FRAG | | | 3 | 2.2 | | |
| 2 | STP | 2 | | | | | .25 | POTTERY | SAND TEMP | BODY | LCS | | 1 | 3.2 | DEPTFORD | |
| 3 | STP | 2 | | | | | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 2 | 34.3 | | |
| 1 | STP | 2 | | | | | .25 | POTTERY | SPICULATE | BODY | UID | | 4 | 34.0 | ST. JOHNS | |
| 4 | STP | 2 | | | | | .25 | POTTERY | | CRUMB | | | 3 | 3.6 | | |
| 5 | STP | 2 | | | | | .25 | VERT FAUNA | BONE | | | | | 131.6 | | |
| 1 | STP | 3 | | | | | .25 | LITHIC | CHERT | FLAKE | | | 5 | 4.2 | | |
| 6 | STP | 4 | | | | | .25 | LITHIC | CHERT | FLAKE | | | 2 | 6.9 | | |
| 5 | STP | 4 | | | | | .25 | LITHIC | MISC ROCK | | | | 3 | 2.4 | | |
| 1 | STP | 4 | | | | | .25 | POTTERY | SAND TEMP | BODY | CHECK | | 2 | 13.2 | | 2 PCS. CROSSMEND |
| 2 | STP | 4 | | | | | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 1 | 13.6 | | |
| 3 | STP | 4 | | | | | .25 | POTTERY | SAND TEMP | BODY | UID | | 1 | 4.6 | | |
| 4 | STP | 4 | | | | | .25 | POTTERY | SPICULATE | BODY | UID | | 2 | 7.8 | ST. JOHNS | |
| 5 | STP | 4 | | | | | .25 | POTTERY | | CRUMB | | | 7 | 5.8 | | |
| 7 | STP | 4 | | | | | .25 | VERT FAUNA | BONE | | | MODIFIED | 1 | 1.3 | | |
| 8 | STP | 4 | | | | | .25 | VERT FAUNA | BONE | | | | | 37.5 | | |
| 8 | STP | 5 | | | | | .25 | LITHIC | CHERT | FLAKE | | | 1 | 9.4 | | |
| 4 | STP | 5 | | | | | .25 | POTTERY | SAND TEMP | RIM | CHECK | | 1 | 1.9 | | |
| 5 | STP | 5 | | | | | .25 | POTTERY | SAND TEMP | RIM | UID | | 1 | 13.7 | | |
| 6 | STP | 5 | | | | | .25 | POTTERY | SAND TEMP | BODY | LCS | | 4 | 13.9 | DEPTFORD | |
| 1 | STP | 5 | | | | | .25 | POTTERY | SPICULATE | RIM | PLAIN | | 1 | 6.0 | ST. JOHNS | |
| 2 | STP | 5 | | | | | .25 | POTTERY | SPICULATE | BODY | UID | | 1 | 5.7 | ST. JOHNS | |
| 3 | STP | 5 | | | | | .25 | POTTERY | SPICULATE | BODY | CHECK | | 1 | 2.0 | ST. JOHNS | |
| 7 | STP | 5 | | | | | .25 | POTTERY | | CRUMB | | | 5 | 6.5 | | |
| 9 | STP | 5 | | | | | .25 | VERT FAUNA | | | | | | 28.8 | | |
| 5 | STP | 6 | | | | | .25 | LITHIC | CHERT | FLAKE | | MODIFIED | 1 | 12.0 | | MODIFIED FLAKE |
| 6 | STP | 6 | | | | | .25 | LITHIC | CHERT | BIFACE/STEMMED | | | 1 | 12.7 | | |
| 7 | STP | 6 | | | | | .25 | LITHIC | CHERT | FLAKE | | | 1 | 19.4 | | |
| 10 | STP | 6 | | | | | .25 | MUDSTONE | | | | | 1 | 23.2 | | |
| 1 | STP | 6 | | | | | .25 | POTTERY | SAND TEMP | BODY | CHECK | | 2 | 9.6 | | |
| 3 | STP | 6 | | | | | .25 | POTTERY | SAND TEMP | BODY | UID | | 2 | 6.8 | | CROSSMEND |
| 2 | STP | 6 | | | | | .25 | POTTERY | SPICULATE | BODY | CHECK | | 4 | 30.8 | ST. JOHNS | 2 PCS. CROSSMEND – 1 SHERD SOOTED |
| 4 | STP | 6 | | | | | .25 | POTTERY | | CRUMB | | | 4 | 3.1 | | |
| 8 | STP | 6 | | | | | .25 | SOAPSTONE | SOAPSTONE | FRAGMENT | | | 1 | 12.9 | | |
| 9 | STP | 6 | | | | | .25 | VERT FAUNA | BONE | | | | | 8.3 | | |
| 5 | STP | 7 | | | | | .25 | LITHIC | CHERT | BIFACE FRAG | | BIFACIAL | 1 | 0.9 | | |
| 6 | STP | 7 | | | | | .25 | LITHIC | CHERT | CHUNK | | | 1 | 3.5 | | |

| CAT | PROVTYPE | PROV | STRAT | SUBSTRAT | SAMPLE | RECOVERY | SIZEGRADE | MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | MODIFICATION | KOUNT | WEIGHT | CULTURE TYPE/TRADITION | NOTE/OBSERVATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | STP | 7 | | | | | .25 | LITHIC | MISC ROCK | | | | 2 | 0.4 | | |
| 8 | STP | 7 | | | | | .25 | METAL | LEAD | FRAG | | | 1 | 2.4 | | |
| 1 | STP | 7 | | | | | .25 | POTTERY | SAND TEMP | BODY | CHECK | | 2 | 5.5 | | |
| 2 | STP | 7 | | | | | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 1 | 12.3 | | |
| 3 | STP | 7 | | | | | .25 | POTTERY | SAND TEMP | BODY | UID | | 1 | 4.0 | | |
| 4 | STP | 7 | | | | | .25 | POTTERY | | CRUMB | | | 1 | 1.9 | | |
| 7 | STP | 7 | | | | | .25 | VERT FAUNA | BONE | | | | | 53.8 | | |
| 18 | TU | 1 | A | | GEN | LEVEL | .25 | CORAL | | FRAG | | | 1 | 3.2 | | |
| 12 | TU | 1 | A | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | MODIFIED | 1 | 2.9 | | MODIFIED FLAKE |
| 13 | TU | 1 | A | | GEN | LEVEL | .25 | LITHIC | CHERT | BIFACE FRAG | | BIFACIAL | 1 | 1.6 | | |
| 14 | TU | 1 | A | | GEN | LEVEL | .25 | LITHIC | CHERT | SPOKESHAVE | | | 1 | 20.4 | | |
| 15 | TU | 1 | A | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 2 | 0.4 | | |
| 19 | TU | 1 | A | | GEN | LEVEL | .25 | LITHIC | PEBBLE | | | | 1 | 0.4 | | POSSIBLE GASTROLITH |
| 16 | TU | 1 | A | | GEN | LEVEL | .25 | MARINE SHELL | | | | | 2 | 7.3 | | POSSIBLY MODIFIED |
| 21 | TU | 1 | A | | GEN | LEVEL | .25 | METAL | | FRAG | | | 7 | 164.4 | | METAL FRAGMENTS INCLUDE 1 NAIL AND 1 SCREW |
| 20 | TU | 1 | A | | GEN | LEVEL | .25 | MUDSTONE | | | | | 4 | 208.0 | | |
| 4 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | LIMESTONE TEMP | BODY | PLAIN | | 2 | 13.1 | PASCO | |
| 1 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | COMP STAMP | | 2 | 48.1 | SWIFT CREEK | 2 PCS. CROSSMEND |
| 3 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PINCHED | | 1 | 5.3 | TUCKER RIDGE PINCHED/WI | |
| 5 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | UID | | 1 | 1.5 | WI | WEEDEN ISLAND RIM |
| 6 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | CHECK | | 3 | 15.1 | | |
| 7 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | LCS | | 1 | 2.9 | DEPTFORD | |
| 8 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | LCS | | 1 | 1.8 | DEPTFORD | |
| 9 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 5 | 44.0 | | |
| 10 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | UID | | 7 | 31.6 | | |
| 2 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | SPICULATE | BODY | PLAIN | | 2 | 10.2 | ST. JOHNS | |
| 11 | TU | 1 | A | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 20 | 18.8 | | |
| 17 | TU | 1 | A | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 302.0 | | |
| 9 | TU | 1 | B | | GEN | LEVEL | .25 | CONCRETIONS | | | | | 3 | 2.9 | | |
| 6 | TU | 1 | B | | GEN | LEVEL | .25 | LITHIC | LIMESTONE | CHUNK | | | 1 | 12.8 | | |
| 8 | TU | 1 | B | | GEN | LEVEL | .25 | MUDSTONE | | | | | 2 | 56.5 | | |
| 1 | TU | 1 | B | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | INCISED/PUNCTATED | | 1 | 13.8 | PAPPY'S BAYOU/WI | |
| 2 | TU | 1 | B | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | CHECK | | 1 | 2.8 | | |
| 3 | TU | 1 | B | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 5 | 42.5 | | |
| 4 | TU | 1 | B | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | UID | | 6 | 25.1 | | |
| 5 | TU | 1 | B | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 7 | 8.2 | | |
| 7 | TU | 1 | B | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 826.0 | | |
| 7 | TU | 1 | C | | GEN | LEVEL | .25 | LITHIC | CHERT | CHUNK | | | 2 | 31.5 | | |
| 8 | TU | 1 | C | | GEN | LEVEL | .25 | MARINE SHELL | GASTROPOD | HAMMER | | MODIFIED | 1 | 80.1 | | |
| 10 | TU | 1 | C | | GEN | LEVEL | .25 | MUDSTONE | | | | | 1 | 9.5 | | |
| 1 | TU | 1 | C | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | LCS | | 1 | 11.0 | DEPTFORD | |
| 2 | TU | 1 | C | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | CHECK | | 2 | 8.2 | | |
| 3 | TU | 1 | C | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | INCISED | | 1 | 8.7 | | |
| 4 | TU | 1 | C | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 3 | 13.7 | | |
| 5 | TU | 1 | C | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | UID | | 3 | 14.1 | | |
| 6 | TU | 1 | C | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 10 | 7.9 | | |
| 9 | TU | 1 | C | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 267.0 | | |
| 4 | TU | 1 | D | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 1 | 5.3 | | |
| 5 | TU | 1 | D | | GEN | LEVEL | .25 | LITHIC | UID | FLAKE | | | 1 | 1.9 | | |
| 2 | TU | 1 | D | | GEN | LEVEL | .25 | POTTERY | LIMESTONE TEMP | BODY | PLAIN | | 1 | 17.9 | PASCO | |
| 1 | TU | 1 | D | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | COMP STAMP | | 2 | 15.0 | SWIFT CREEK | |
| 3 | TU | 1 | D | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 1 | 0.7 | | |
| 6 | TU | 1 | D | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 105.0 | | |
| 7 | TU | 1 | E | | GEN | LEVEL | .25 | CONCRETIONS | | | | | 7 | 1.7 | | |
| 4 | TU | 1 | E | | GEN | LEVEL | .25 | MARINE SHELL | GASTROPOD | HAMMER | | MODIFIED | 2 | 67.3 | | |
| 5 | TU | 1 | E | | GEN | LEVEL | .25 | MARINE SHELL | GASTROPOD | COLUMELLA | | | 1 | 5.1 | | POSSIBLY MODIFIED COLUMELLA |
| 8 | TU | 1 | E | | GEN | LEVEL | .25 | MUDSTONE | | | | | 1 | 3.6 | | |

| CAT | PROVTYPE | PROV | STRAT | SUBSTRAT | SAMPLE | RECOVERY | SIZEGRADE | MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | MODIFICATION | KOUNT | WEIGHT | CULTURE TYPE/TRADITION | NOTE/OBSERVATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | TU | 1 | E | | GEN | LEVEL | 25 | POTTERY | SAND TEMP | BODY | UID | | 1 | 3.4 | | |
| 1 | TU | 1 | E | | GEN | LEVEL | 25 | POTTERY | SPICULATE | BODY | UID | | 2 | 24.7 | ST. JOHNS | |
| 3 | TU | 1 | E | | GEN | LEVEL | 25 | POTTERY | | CRUMB | | | 1 | 1.4 | | |
| 6 | TU | 1 | E | | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 148.2 | | |
| 7 | TU | 1 | F | | GEN | LEVEL | 25 | MARINE SHELL | GASTROPOD | FRAG | | | 2 | 135.1 | | CROSSMEND |
| 1 | TU | 1 | F | | GEN | LEVEL | 25 | POTTERY | FIBER TEMP | BODY | UID | | 1 | 10.3 | | |
| 2 | TU | 1 | F | | GEN | LEVEL | 25 | POTTERY | SAND TEMP | BODY | CHECK | | 1 | 6.4 | | |
| 3 | TU | 1 | F | | GEN | LEVEL | 25 | POTTERY | SAND TEMP | RIM | LCS | | 1 | 6.3 | DEPTFORD | |
| 4 | TU | 1 | F | | GEN | LEVEL | 25 | POTTERY | SAND TEMP | BODY | PLAIN | | 3 | 22.8 | | |
| 5 | TU | 1 | F | | GEN | LEVEL | 25 | POTTERY | SPICULATE | CRUMB | | | 4 | 1.4 | ST. JOHNS | |
| 6 | TU | 1 | F | | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 117.0 | | |
| 1 | TU | 1 | G | ZONE B | GEN | LEVEL | 25 | MARINE SHELL | GASTROPOD | | | | 1 | 61.3 | | POSSIBLY MODIFIED |
| 2 | TU | 1 | G | ZONE B | GEN | LEVEL | 25 | MARINE SHELL | | | | MODIFIED | 1 | 7.8 | | |
| 1 | TU | 1 | G | ZONE A | GEN | LEVEL | 25 | POTTERY | | CRUMB | | | 1 | 0.9 | | |
| 2 | TU | 1 | G | ZONE A | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 23.0 | | |
| 3 | TU | 1 | G | ZONE B | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 37.4 | | |
| 1 | TU | 1 | G | ZONE C | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 10.7 | | |
| 1 | TU | 1 | H | ZONE B | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 63.0 | | |
| 1 | TU | 1 | H | ZONE C | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 47.3 | | |
| 3 | TU | 1 | I | | GEN | LEVEL | 25 | LITHIC | CHERT | FLAKE | | | 1 | 0.1 | | |
| 1 | TU | 1 | I | | GEN | LEVEL | 25 | MARINE SHELL | GASTROPOD | ADZE | | MODIFIED | 1 | 368.7 | | GASTROPOD ADZE |
| 2 | TU | 1 | I | | GEN | LEVEL | 25 | MARINE SHELL | GASTROPOD | HAMMER | | | 2 | 170.3 | | |
| 4 | TU | 1 | I | | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 58.9 | | |
| 2 | TU | 1 | J | | GEN | LEVEL | 25 | LITHIC | CHERT | FLAKE | | | 1 | 0.6 | | |
| 1 | TU | 1 | J | | GEN | LEVEL | 25 | MARINE SHELL | GASTROPOD | HAMMER | | | 1 | 53.4 | | |
| 4 | TU | 1 | J | | GEN | LEVEL | 25 | MUDSTONE | | | | | 2 | 195.5 | | |
| 3 | TU | 1 | J | | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 16.2 | | |
| 1 | TU | 1 | K | | GEN | LEVEL | 25 | LITHIC | CHERT | FLAKE | | | 2 | 0.9 | | |
| 2 | TU | 1 | K | | GEN | LEVEL | 25 | MUDSTONE | | | | | 1 | 202.6 | | |
| 3 | TU | 1 | K | | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 10.3 | | |
| 1 | TU | 1 | L | | GEN | LEVEL | 25 | LITHIC | CHERT | FLAKE | | | 7 | 2.1 | | |
| 2 | TU | 1 | L | | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 3.8 | | |
| 1 | TU | 1 | M | | GEN | LEVEL | 25 | LITHIC | CHERT | FLAKE | | | 2 | 0.2 | | |
| 2 | TU | 1 | M | | GEN | LEVEL | 25 | VERT FAUNA | | | | | | 3.9 | | |
| 22 | TU | 1 | II | | BULK | COLUMN | 0.125 | CHARCOAL | | | | | | 0.3 | | TRACE |
| 15 | TU | 1 | II | | BULK | COLUMN | 0.125 | CONCRETIONS | | | | | | 42.9 | | |
| 19 | TU | 1 | II | | BULK | COLUMN | 0.25 | CONCRETIONS | | | | | | 4.0 | | |
| 20 | TU | 1 | II | | BULK | COLUMN | 0.125 | LITHIC | CHERT | FLAKE | | | 2 | 0.2 | | 1 HIGHLY WEATHERED CORTICAL MATERIAL |
| 14 | TU | 1 | II | | BULK | COLUMN | 0.125 | LITHIC | MISC ROCK | | | | | 0.2 | | TRACE |
| 10 | TU | 1 | II | | BULK | COLUMN | 0.125 | MARINE SHELL | BARNACLE | | | | | 0.6 | | |
| 3 | TU | 1 | II | | BULK | COLUMN | 25 | MARINE SHELL | CROWN CONCH | | | | | 41.3 | | |
| 4 | TU | 1 | II | | BULK | COLUMN | 25 | MARINE SHELL | MISC GASTROPOD | | | | | 18.8 | | |
| 11 | TU | 1 | II | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC GASTROPOD | | | | | 0.4 | | TRACE |
| 28 | TU | 1 | II | | BULK | COLUMN | 0.25 | MARINE SHELL | MUSSEL | | | | | 0.6 | | |
| 2 | TU | 1 | II | | BULK | COLUMN | 25 | MARINE SHELL | OYSTER | | | | | 5787.8 | | |
| 9 | TU | 1 | II | | BULK | COLUMN | .125 | MARINE SHELL | OYSTER | | | | | 6.0 | | |
| 23 | TU | 1 | II | | BULK | COLUMN | 0.25 | MARINE SHELL | PERIWINKLE | | | | | 1.7 | | |
| 21 | TU | 1 | II | | BULK | COLUMN | 0.125 | MARINE SHELL | SCALLOP | | | | | 0.2 | | |
| 27 | TU | 1 | II | | BULK | COLUMN | 0.25 | MARINE SHELL | SCALLOP | | | | | 0.3 | | |
| 6 | TU | 1 | II | | BULK | COLUMN | 25 | MARINE SHELL | UID | | | | | 1228.0 | | |
| 16 | TU | 1 | II | | BULK | COLUMN | 0.125 | MARINE SHELL | UID | | | | | 594.2 | | |
| 7 | TU | 1 | II | | BULK | COLUMN | 25 | MUDSTONE | | | | | 1 | 88.1 | | |
| 1 | TU | 1 | II | | BULK | COLUMN | 25 | POTTERY | SAND TEMP | RIM | UID | | 1 | 3.4 | | |
| 24 | TU | 1 | II | | BULK | COLUMN | 0.25 | POTTERY | SAND TEMP | RIM | PUNCTATED | | 1 | 12.5 | | |
| 25 | TU | 1 | II | | BULK | COLUMN | 0.25 | POTTERY | SAND TEMP | BODY | UID | | 1 | 2.6 | | |
| 13 | TU | 1 | II | | BULK | COLUMN | 0.125 | POTTERY | | CRUMB | | | 2 | 0.3 | | |
| 26 | TU | 1 | II | | BULK | COLUMN | 0.25 | POTTERY | | CRUMB | | | 5 | 2.3 | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | TU | 1 | II | | BULK | COLUMN | .25 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 1.0 | | |
| 12 | TU | 1 | II | | BULK | COLUMN | 0.125 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 0.0 | | TRACE |
| 18 | TU | 1 | II | | BULK | COLUMN | | UNSORTED | | | | | | 723.5 | | LESS THAN 1/8TH INCH |
| 8 | TU | 1 | II | | BULK | COLUMN | .25 | VERT FAUNA | | | | | | 93.0 | | |
| 17 | TU | 1 | II | | BULK | COLUMN | 0.125 | VERT FAUNA | | | | | | 167.6 | | |
| 13 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | CHARCOAL | | | | | | 0.1 | | TRACE |
| 17 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | CHARCOAL | | | | | | 0.0 | | TRACE |
| 6 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | CONCRETIONS | | | | | | 6.3 | | |
| 14 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | CONCRETIONS | | | | | | 31.5 | | |
| 8 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | MARINE SHELL | BARNACLE | | | | | 0.1 | | |
| 3 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | MARINE SHELL | MISC GASTROPOD | | | | | 22.9 | | |
| 10 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC GASTROPOD | | | | | 0.4 | | TRACE |
| 9 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | MARINE SHELL | MUSSEL | | | | | 0.1 | | |
| 2 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | MARINE SHELL | OYSTER | | | | | 1747.9 | | |
| 7 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | MARINE SHELL | OYSTER | | | | | 3.5 | | |
| 19 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | MARINE SHELL | PERIWINKLE | | | | | 0.4 | | |
| 4 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | MARINE SHELL | UID | | | | | 576.1 | | |
| 11 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | MARINE SHELL | UID | | | | | 249.1 | | |
| 1 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | POTTERY | SAND TEMP | BODY | PLAIN | | 1 | 6.1 | | |
| 16 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | POTTERY | SAND TEMP | BODY | PUNCTATEDICA | | 1 | 9.8 | CARRABELLE PUNCTATED/WI | |
| 18 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 0.0 | | TRACE |
| 15 | TU | 1 | IIB | | BULK | COLUMN | | UNSORTED | | | | | | 548.0 | | LESS THAN 1/8TH INCH |
| 5 | TU | 1 | IIB | | BULK | COLUMN | 0.25 | VERT FAUNA | | | | | | 46.2 | | |
| 12 | TU | 1 | IIB | | BULK | COLUMN | 0.125 | VERT FAUNA | | | | | | 166.1 | | |
| 18 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | CHARCOAL | | | | | | 0.3 | | TRACE |
| 23 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | CHARCOAL | | | | | | 0.3 | | |
| 14 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | CONCRETIONS | | | | | | 36.9 | | |
| 17 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | CONCRETIONS | | | | | | 0.0 | | TRACE |
| 9 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | MARINE SHELL | BARNACLE | | | | | 2.0 | | |
| 16 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | BARNACLE | | | | | 0.6 | | |
| 2 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | CLAM | | | | | 13.3 | | CAROLINA MARSH CLAM |
| 3 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | CROWN CONCH | | | | | 98.2 | | |
| 10 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC BIVALVE | | | | | 0.2 | | |
| 4 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | MISC GASTROPOD | | | | | 80.1 | | |
| 8 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC GASTROPOD | | | | | 2.9 | | |
| 20 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | MISC GASTROPOD | COLUMELLA | | MODIFIED-WEAR AT BASE | 1 | 3.7 | | |
| 1 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | OYSTER | | | | | 7798.4 | | |
| 7 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | MARINE SHELL | OYSTER | | | | | 9.9 | | |
| 22 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | PERIWINKLE | | | | | 3.8 | | |
| 24 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | MARINE SHELL | PERIWINKLE | | | | | 0.3 | | |
| 21 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | SCALLOP | | | | | 0.2 | | |
| 5 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | MARINE SHELL | UID | | | | | 1252.0 | | |
| 12 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | MARINE SHELL | UID | | | | | 739.3 | | |
| 11 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 0.8 | | |
| 19 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 0.1 | | |
| 15 | TU | 1 | IIIA | | BULK | COLUMN | | UNSORTED | | | | | | 792.9 | | LESS THAN 1.8TH INCH |
| 6 | TU | 1 | IIIA | | BULK | COLUMN | 0.25 | VERT FAUNA | | | | | | 49.0 | | |
| 13 | TU | 1 | IIIA | | BULK | COLUMN | 0.125 | VERT FAUNA | | | | | | 86.9 | | |
| 16 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | CHARCOAL | | | | | | 0.2 | | |
| 12 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | CONCRETIONS | | | | | | 25.6 | | |
| 6 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | MARINE SHELL | BARNACLE | | | | | 1.5 | | |
| 17 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | MARINE SHELL | BARNACLE | | | | | 0.3 | | |
| 15 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | MARINE SHELL | CROWN CONCH | | | | | 110.7 | | |
| 2 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | MARINE SHELL | MISC GASTROPOD | | | | | 32.5 | | |
| 8 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC GASTROPOD | | | | | 2.0 | | |
| 19 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | MARINE SHELL | MOON SNAIL | | | | | 7.0 | | |
| 1 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | MARINE SHELL | OYSTER | | | | | 8510.4 | | |
| 7 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | MARINE SHELL | OYSTER | | | | | 6.9 | | |

| CAT | PROVTYPE | PROV | STRAT | SUBSTRAT | SAMPLE | RECOVERY | SIZEGRADE | MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | MODIFICATION | KOUNT | WEIGHT | CULTURE TYPE/TRADITION | NOTE/OBSERVATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | MARINE SHELL | PERIWINKLE | | | | | 3.2 | | |
| 4 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | MARINE SHELL | UID | | | | | 991.0 | | |
| 9 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | MARINE SHELL | UID | | | | | 496.7 | | |
| 14 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | POTTERY | | CRUMB | | | 1 | 0.9 | | |
| 3 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 0.8 | | |
| 10 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 1.1 | | |
| 20 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | TERRESTRIAL SHELL | WOLF SNAIL | | | | | 0.2 | | |
| 13 | TU | 1 | IIIB | | BULK | COLUMN | | UNSORTED | | | | | | 639.9 | | LESS THAN 1/8TH INCH |
| 6 | TU | 1 | IIIB | | BULK | COLUMN | 0.25 | VERT FAUNA | | | | | | 17.4 | | |
| 11 | TU | 1 | IIIB | | BULK | COLUMN | 0.125 | VERT FAUNA | | | | | | 30.4 | | |
| 14 | TU | 1 | IV | | BULK | COLUMN | 0.125 | CHARCOAL | | | | | | 0.2 | | |
| 7 | TU | 1 | IV | | BULK | COLUMN | 0.25 | CONCRETIONS | | | | | | 0.3 | | |
| 13 | TU | 1 | IV | | BULK | COLUMN | 0.125 | CONCRETIONS | | | | | | 1.7 | | |
| 2 | TU | 1 | IV | | BULK | COLUMN | 0.25 | MARINE SHELL | CROWN CONCH | | | | | 10.2 | | |
| 4 | TU | 1 | IV | | BULK | COLUMN | 0.25 | MARINE SHELL | MISC GASTROPOD | | | | | 35.1 | | |
| 10 | TU | 1 | IV | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC GASTROPOD | | | | | 0.6 | | |
| 1 | TU | 1 | IV | | BULK | COLUMN | 0.25 | MARINE SHELL | OYSTER | | | | | 511.5 | | |
| 8 | TU | 1 | IV | | BULK | COLUMN | 0.125 | MARINE SHELL | OYSTER | | | | | 1.5 | | |
| 3 | TU | 1 | IV | | BULK | COLUMN | 0.25 | MARINE SHELL | PERIWINKLE | | | | | 2.3 | | |
| 9 | TU | 1 | IV | | BULK | COLUMN | 0.125 | MARINE SHELL | PERIWINKLE | | | | | 1.3 | | |
| 5 | TU | 1 | IV | | BULK | COLUMN | 0.25 | MARINE SHELL | UID | | | | | 162.4 | | |
| 11 | TU | 1 | IV | | BULK | COLUMN | 0.125 | MARINE SHELL | UID | | | | | 94.7 | | |
| 15 | TU | 1 | IV | | BULK | COLUMN | | UNSORTED | | | | | | 121.2 | | LESS THAN 1/8TH INCH |
| 6 | TU | 1 | IV | | BULK | COLUMN | 0.25 | VERT FAUNA | | | | | | 3.9 | | |
| 12 | TU | 1 | IV | | BULK | COLUMN | 0.125 | VERT FAUNA | | | | | | 19.9 | | |
| 14 | TU | 1 | VA | | BULK | COLUMN | 0.125 | CHARCOAL | | | | | | 0.2 | | |
| 13 | TU | 1 | VA | | BULK | COLUMN | 0.125 | CONCRETIONS | | | | | | 4.8 | | |
| 17 | TU | 1 | VA | | BULK | COLUMN | 0.125 | MARINE SHELL | BARNACLE | | | | | 0.1 | | |
| 2 | TU | 1 | VA | | BULK | COLUMN | 0.25 | MARINE SHELL | CROWN CONCH | | | | | 490.9 | | |
| 5 | TU | 1 | VA | | BULK | COLUMN | 0.25 | MARINE SHELL | MISC GASTROPOD | | | | | 226.0 | | |
| 10 | TU | 1 | VA | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC GASTROPOD | | | | | 6.3 | | |
| 4 | TU | 1 | VA | | BULK | COLUMN | 0.25 | MARINE SHELL | MOON SNAIL | | | | | 9.2 | | |
| 1 | TU | 1 | VA | | BULK | COLUMN | 0.25 | MARINE SHELL | OYSTER | | | | | 3687.6 | | |
| 8 | TU | 1 | VA | | BULK | COLUMN | 0.125 | MARINE SHELL | OYSTER | | | | | 7.5 | | |
| 3 | TU | 1 | VA | | BULK | COLUMN | 0.25 | MARINE SHELL | PERIWINKLE | | | | | 103.3 | | |
| 9 | TU | 1 | VA | | BULK | COLUMN | 0.125 | MARINE SHELL | PERIWINKLE | | | | | 30.3 | | |
| 19 | TU | 1 | VA | | BULK | COLUMN | 0.25 | MARINE SHELL | SCALLOP | | | | | 0.4 | | |
| 20 | TU | 1 | VA | | BULK | COLUMN | 0.125 | MARINE SHELL | SCALLOP | | | | | 0.0 | | TRACE |
| 6 | TU | 1 | VA | | BULK | COLUMN | 0.25 | MARINE SHELL | UID | | | | | 1046.6 | | |
| 11 | TU | 1 | VA | | BULK | COLUMN | 0.125 | MARINE SHELL | UID | | | | | 703.2 | | |
| 16 | TU | 1 | VA | | BULK | COLUMN | 0.25 | METAL | FRAG | | | | 1 | 1.0 | | |
| 18 | TU | 1 | VA | | BULK | COLUMN | 0.125 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 0.1 | | |
| 15 | TU | 1 | VA | | BULK | COLUMN | | UNSORTED | | | | | | 605.2 | | LESS THAN 1/8TH INCH |
| 7 | TU | 1 | VA | | BULK | COLUMN | 0.25 | VERT FAUNA | | | | | | 9.1 | | |
| 12 | TU | 1 | VA | | BULK | COLUMN | 0.125 | VERT FAUNA | | | | | | 62.6 | | |
| 8 | TU | 1 | VB | | BULK | COLUMN | 0.25 | CHARCOAL | | | | | | 0.0 | | TRACE |
| 16 | TU | 1 | VB | | BULK | COLUMN | 0.125 | CHARCOAL | | | | | | 0.1 | | TRACE |
| 15 | TU | 1 | VB | | BULK | COLUMN | 0.125 | CONCRETIONS | | | | | | 3.1 | | |
| 9 | TU | 1 | VB | | BULK | COLUMN | 0.125 | MARINE SHELL | BARNACLE | | | | | 0.7 | | |
| 20 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MARINE SHELL | BARNACLE | | | | | 0.0 | | TRACE |
| 2 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MARINE SHELL | CROWN CONCH | | | | | 416.8 | | |
| 4 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MARINE SHELL | MISC GASTROPOD | | | | | 78.5 | | |
| 11 | TU | 1 | VB | | BULK | COLUMN | 0.125 | MARINE SHELL | MISC GASTROPOD | | | | | 6.4 | | |
| 1 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MARINE SHELL | OYSTER | | | | | 1476.6 | | |
| 10 | TU | 1 | VB | | BULK | COLUMN | 0.125 | MARINE SHELL | OYSTER | | | | | 1.1 | | |
| 18 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MARINE SHELL | PERIWINKLE | | | | | 45.6 | | |
| 19 | TU | 1 | VB | | BULK | COLUMN | 0.125 | MARINE SHELL | PERIWINKLE | | | | | 3.2 | | |
| 3 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MARINE SHELL | SCALLOP | | | | | 1.0 | | |

| CAT | PROVTYPE | PROV | STRAT | SUBSTRAT | SAMPLE | RECOVERY | SIZEGRADE | MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | MODIFICATION | KOUNT | WEIGHT | CULTURE TYPE/TRADITION | NOTE/OBSERVATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MARINE SHELL | UID | | | | | 463.0 | | |
| 13 | TU | 1 | VB | | BULK | COLUMN | 0.125 | MARINE SHELL | UID | | | | | 258.4 | | |
| 6 | TU | 1 | VB | | BULK | COLUMN | 0.25 | MUDSTONE | | | | | | 53.1 | | |
| 21 | TU | 1 | VB | | BULK | COLUMN | 0.125 | MUDSTONE | | | | | | 0.3 | | |
| 12 | TU | 1 | VB | | BULK | COLUMN | 0.125 | TERRESTRIAL SHELL | LAND SNAIL | | | | | 0.1 | | TRACE |
| 17 | TU | 1 | VB | | BULK | COLUMN | | UNSORTED | | | | | | 322.9 | | LESS THAN 1/8TH INCH |
| 7 | TU | 1 | VB | | BULK | COLUMN | 0.25 | VERT FAUNA | | | | | | 9.4 | | |
| 14 | TU | 1 | VB | | BULK | COLUMN | 0.125 | VERT FAUNA | | | | | | 31.6 | | |
| 7 | TU | 2 | A | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 2 | 7.6 | | |
| 12 | TU | 2 | A | | GEN | LEVEL | .25 | LITHIC | CHERT | CHUNK | | | 1 | 59.9 | | |
| 13 | TU | 2 | A | | GEN | LEVEL | .25 | LITHIC | LIMESTONE | CHUNK | | | 1 | 8.9 | | |
| 10 | TU | 2 | A | | GEN | LEVEL | .25 | LITHIC | PEBBLE | | | | 4 | 2.0 | | POSSIBLE GASTROLITHS |
| 14 | TU | 2 | A | | GEN | LEVEL | .25 | MUDSTONE | | | | | 3 | 13.2 | | |
| 3 | TU | 2 | A | | GEN | LEVEL | .25 | POTTERY | LIMESTONE TEMP | BODY | PLAIN | | 2 | 19.8 | PA | |
| 1 | TU | 2 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | LCS | | 4 | 20.8 | DEPTFORD | 2 SHERDS CROSSMEND ON FRESH BREAK (COUNTED AS 1 SHERD). 2 OTHER SHERDS CROSSMEND ON OLD BREAK (COUNTED AS 2 SHERDS) |
| 2 | TU | 2 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | CHECK | | 2 | 12.6 | | |
| 5 | TU | 2 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 13 | 132.1 | | 1 BURNISHED ON INSIDE |
| 6 | TU | 2 | A | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | UID | | 10 | 58.6 | | 1 BURNISHED ON INSIDE |
| 4 | TU | 2 | A | | GEN | LEVEL | .25 | POTTERY | SPICULATE | BODY | PLAIN | | 1 | 17.5 | ST. JOHNS | |
| 11 | TU | 2 | A | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 19 | 23.3 | | |
| 8 | TU | 2 | A | | GEN | LEVEL | .25 | VERT FAUNA | BONE | | | MODIFIED | 1 | 1.2 | | |
| 9 | TU | 2 | A | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 205.8 | | |
| 7 | TU | 2 | B | | GEN | LEVEL | .25 | LITHIC | CHERT | CHUNK | | | 1 | 62.2 | | |
| 8 | TU | 2 | B | | GEN | LEVEL | .25 | LITHIC | PEBBLE | | | | 1 | 0.2 | | |
| 5 | TU | 2 | B | | GEN | LEVEL | .25 | LITHIC | UID | ABRADER | | | 1 | 6.6 | | |
| 3 | TU | 2 | B | | GEN | LEVEL | .25 | POTTERY | FIBER TEMP | BODY | UID | | 1 | 1.3 | | |
| 1 | TU | 2 | B | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 3 | 22.7 | | |
| 2 | TU | 2 | B | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | LCS | | 1 | 2.1 | DEPTFORD | |
| 4 | TU | 2 | B | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | UID | | 4 | 8.8 | | |
| 6 | TU | 2 | B | | GEN | LEVEL | .25 | VERT FAUNA | BONE | | | | 1 | 1.3 | | POSSIBLY MODIFIED |
| 9 | TU | 2 | B | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 126.7 | | |
| 4 | TU | 2 | C | | GEN | LEVEL | .25 | LITHIC | CHERT | CHUNK | | | 1 | 8.3 | | |
| 1 | TU | 2 | C | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 1 | 5.3 | | |
| 2 | TU | 2 | C | | GEN | LEVEL | .25 | POTTERY | SPICULATE | BODY | PLAIN | | 1 | 3.9 | ST. JOHNS | |
| 3 | TU | 2 | C | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 1 | 0.9 | | |
| 5 | TU | 2 | C | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 90.7 | | |
| 1 | TU | 2 | D | | GEN | LEVEL | .25 | LITHIC | CHERT | BIFACE | | | 1 | 14.3 | | LANCOLET SHAPED WITH THINNED CONCAVE BASE AND WEAK SHOULDERS. IMPACT FLUTE AT TIP |
| 3 | TU | 2 | D | | GEN | LEVEL | .25 | LITHIC | PEBBLE | | | | 1 | 0.3 | | POSSIBLE GASTROLITH |
| 2 | TU | 2 | D | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 2.1 | | |
| 4 | TU | 2 | E | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 2 | 3.4 | | 1 CROSSMENDS WITH THE IMPACT FLUTE ON THE POINT FROM LEVEL D. |
| 6 | TU | 2 | E | | GEN | LEVEL | .25 | METAL | | FRAG | | | 4 | 5.8 | | |
| 2 | TU | 2 | E | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | UID | | 1 | 18.2 | | |
| 1 | TU | 2 | E | | GEN | LEVEL | .25 | POTTERY | SPICULATE | RIM | CHECK | | 1 | 20.3 | ST. JOHNS | 2 PCS CROSSMEND ON FRESH BREAK (COUNTED AS 1 SHERD). THIS SHERD CROSSMENDS WITH A SHERD FROM LEVEL F. SOOTED! |
| 3 | TU | 2 | E | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 1 | 1.5 | | |
| 5 | TU | 2 | E | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 1.3 | | |
| 1 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | DENTATE | | 1 | 100.5 | RUSKIN | SOOTED |
| 3 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | LCS | | 1 | 51.3 | DEPTFORD | |
| 4 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PUNCTATED | | 1 | 15.7 | | |

| CAT | PROVTYPE | PROV | STRAT | SUBSTRAT | SAMPLE | RECOVERY | SIZEGRADE | MATERIAL | MATTYPE | FORM | SURFACE TREATMENT | MODIFICATION | KOUNT | WEIGHT | CULTURE TYPE/TRADITION | NOTE/OBSERVATIONS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | UID | | 1 | 12.4 | | |
| 8 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 3 | 33.5 | | |
| 2 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SPICULATE | RIM | CHECK | | 1 | 30.5 | ST. JOHNS | SOOTED. CROSSMENDS WITH A SHERD FROM LEVEL E |
| 6 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SPICULATE | RIM | CHECK | | 1 | 6.9 | ST. JOHNS | |
| 7 | TU | 2 | F | | GEN | LEVEL | .25 | POTTERY | SPICULATE | BODY | CHECK | | 1 | 1.9 | ST. JOHNS | |
| 6 | TU | 2 | G | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 9 | 7.9 | | |
| 8 | TU | 2 | G | | GEN | LEVEL | .25 | LITHIC | PEBBLE | | | | 2 | 2.8 | | |
| 1 | TU | 2 | G | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | CHECK | | 1 | 9.4 | | |
| 2 | TU | 2 | G | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | PUNCTATED/CA | | 1 | 3.6 | CARRABELLE PUNCTATED/WI | |
| 3 | TU | 2 | G | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | RIM | PLAIN | | 1 | 25.0 | | |
| 4 | TU | 2 | G | | GEN | LEVEL | .25 | POTTERY | SAND TEMP | BODY | PLAIN | | 3 | 28.0 | | |
| 5 | TU | 2 | G | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 3 | 2.2 | | |
| 7 | TU | 2 | G | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 3.6 | | |
| 3 | TU | 2 | H | | GEN | LEVEL | .25 | LITHIC | CHERT | BIFACE FRAG | | BIFACIAL | 1 | 1.4 | | HAFTED BIFACE STEM FRAGMENT |
| 4 | TU | 2 | H | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 9 | 10.3 | | |
| 5 | TU | 2 | H | | GEN | LEVEL | .25 | LITHIC | UID | FLAKE | | | 1 | 2.2 | | |
| 1 | TU | 2 | H | | GEN | LEVEL | .25 | POTTERY | SPICULATE | BODY | UID | | 2 | 4.4 | ST. JOHNS | |
| 2 | TU | 2 | H | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 6 | 2.9 | | |
| 6 | TU | 2 | H | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 1.5 | | |
| 1 | TU | 2 | I | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 19 | 5.1 | | |
| 2 | TU | 2 | I | | GEN | LEVEL | .25 | POTTERY | | CRUMB | | | 3 | 0.8 | | |
| 3 | TU | 2 | I | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 0.6 | | |
| 1 | TU | 2 | J | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 12 | 3.9 | | |
| 3 | TU | 2 | J | | GEN | LEVEL | .25 | MUDSTONE | | | | | 1 | 91.6 | | |
| 2 | TU | 2 | J | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 0.1 | | |
| 1 | TU | 2 | K | | GEN | LEVEL | .25 | LITHIC | CHERT | FLAKE | | | 6 | 7.2 | | |
| 3 | TU | 2 | K | | GEN | LEVEL | .25 | MUDSTONE | | | | | 1 | 29.2 | | FRESH BREAK CROSSMEND |
| 2 | TU | 2 | K | | GEN | LEVEL | .25 | VERT FAUNA | | | | | | 0.3 | | |

# APPENDIX B:

# RADIOCARBON DATA

| Provenience | Material | Beta Lab Number | Measured 14C Age BP | 13C/12 C Ratio | Conventional 14C Age BP | 2-sigma Cal AD/BC | 1-sigma Cal BP |
|---|---|---|---|---|---|---|---|
| TU1 Str VB | Charcoal | 301596 | 3930 ± 40 | -26.3 | 3910 ± 40 | BC 2480-2290 | 4430-4240 |
| TU1 Str IIIB | Charcoal | 301595 | 2170 ± 30 | -24.5 | 2180 ± 30 | BC 360-170 | 2310-2120 |
| TU1 Str. IIB | Charcoal | 301594 | 1150 ± 30 | -25.7 | 1140 ± 30 | AD 810-980 | 1140-970 |

## APPENDIX C:

## POTTERY SORTING AND CODING PROCEDURES FOR SURFACE COLLECTION

## BIRD ISLAND POTTERY – SURFACE COLLECTION

Sorting and Coding Procedures (as of June 16, 2011)

Rims were sorted out of the surface collection that is housed at Bird Island to establish a subset for analysis. Rims were then sorted into vessel lots, after which the following attributes were recorded for each vessel lot.

## Attributes

**Ves#** Assigned vessel lot number to each vessel lot; coded in sequence from 1 to n.

**Shds** Recorded total number of sherds in each vessel lot (excluding fresh breaks).

**Temp**

| | |
|---|---|
| FS | Fine Sand |
| MS | Medium Sand |
| CS | Coarse Sand |
| FSA | Fiber with Sand |
| FSP | Fiber with Spicules |
| LI | Limestone |
| SP | Spicules |

**Exterior Surface Treatment**

| | |
|---|---|
| BU | Burnished |
| CS | Check Stamp |
| CCS | Check with Comp Stamp |
| CPL | Check with Plain |
| LCS | Linear Check Stamp |
| LCP | Linear Check Stamp with Plain |
| LCPC | Linear Check Stamp with Punctations |
| COM | Complicated Stamped |
| DE | Dentate |
| ER | Eroded (UID) |
| FP | Finger Pinched |
| FAB | Fabric Impressed |
| INC | Incised curvilinear |
| INP | Incised and Punctated |
| INR | Incised rectilinear |
| PL | Plain |
| PU | Punctated |
| PUZ | Punctated Zoned |
| SL | Slip |
| SS | Simple Stamp |

**Interior Surface Treatment**

BU Burnished
ER Eroded
SM Smoothed

**Use Alteration (UseAlt)**

AB Abrader
RH Repair Hole
SO Sooted

**RimForm**

EX Excurvate
IN Incurvate
RE Recurvate
ST Straight

**Rim Thickness (RimThk)**

Measured to nearest tenth of millimeter thickness of rim wall 3 cm below the lip.

**LipForm**

BU Bulbous
FL Flat
FO Folded
GR Grooved
IN Incised
IR Irregular
RO Rounded
TA Tapered

/T add suffix if thickened
/D add suffix if decorated

**Lip Thickness (LipThk)**

Measured to nearest tenth of millimeter thickness of lip at terminus.

**Orifice Diameter (OrifDiam)**

Using the rim chart, estimated orifice diameter for rim portions consisting of at least 5% of orifice circumference.

**Percent of Orifice Diameter (%Orif)**

Recorded the percent of the orifice diameter represented by the rim portion.

**Profiles**

On graph paper, recorded profiles using form gauge for all rim portions with at least 3 cm of rim portion intact. Indicated direction of interior. Attached provenience information and catalog number to each profile. For vessels with irregular orifice shapes, traced the outer edge of the rim/lip on graph paper.

**Photographs**

Photographed all vessel lots individually with scale and recorded photograph number in catalog.

**Culture/Horizon designation**

A subjective category that uses descriptions of types from Willey. For example, Linear Check Stamping would be Deptford, complicated stamping would be Swift Creek, limestone temper with plain surface treatment would be Pasco, etc.

**Notes**

Any additional observations and/or information that were not covered in the above attributes.

## APPENDIX D:

## POTTERY SURFACE COLLECTION RECORDED ATTRIBUTES

| Ves # | # shds | Temp | Ext | Int | Use Alt | Rim Form | Rim Thk (mm) | Lip Form | Lip Thk (mm) | Orif Diam (cm) | %Orif | Culture/Horizon | Vessel Form | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | FSP | INP | SM | | EX | 10.8 | FL | 11.1 | 40.0 | 6 | ORANGE | Open Rim Vessel | |
| 2 | 3 | FSA | INP | SM | | ST | 7.9 | RO | 7.3 | 34.0 | 5 | TICK ISLAND | Open Rim Vessel | |
| 3 | 4 | FSA | PL | SM | | ST | 13.6 | RO | 11.4 | 42.0 | 6 | ORANGE | Open Rim Vessel | |
| 4 | 2 | FSA | INR | SM | | IN | 11.9 | FL | 8.2 | 14.0 | 9 | ORANGE | Open Rim Vessel | |
| 5 | 1 | FSA | INR | SM | | ST | 11.8 | RO | 11.0 | 24.0 | 15 | ORANGE | Open Rim Vessel | |
| 6 | 1 | FSA | INR | SM | | IN | 10.3 | RO | 7.8 | 30.0 | 7 | ORANGE | Open Rim Vessel | |
| 7 | 1 | SA | DE | SM | | ST | 10.5 | RO | 8.7 | 22.0 | 9 | RUSKIN | Jar | |
| 8 | 1 | SA | DE | SM | | ST | 8.1 | RO | 6.1 | 24.0 | 5 | RUSKIN | Open Rim Vessel | |
| 9 | 1 | SA | COM | SM | | EX | 7.7 | RO | 5.8 | 18.0 | 9 | SWIFT CREEK | Open Rim Vessel | |
| 10 | 1 | SA | IN | SM | | RE | 9.9 | IN/RO | 10.0 | 12.0 | 13 | WI INCISED | Jar | |
| 11 | 1 | SA | INP | SM | | ST | 6.6 | RO | 6.3 | 18.0 | 8 | SAFETY HARBOR | Open Rim Vessel | |
| 12 | 1 | LI | IN | SM | | ST | 7.8 | RO | 8.2 | 18.0 | 10 | PERICO | Open Rim Vessel | |
| 13 | 1 | SA | PU | SM | | IN | 7.5 | RO | 5.2 | 16.0 | 5 | WI CARRABELLE PUNC. | Open Rim Vessel | |
| 14 | 1 | SA | PU | SM | | IN | 6.6 | RO | 6.3 | 16.0 | 10 | WI CARRABELLE PUNC. | Restricted Rim Vessel | |
| 15 | 1 | SA | PU | SM | | IN | 8.6 | RO | 6.1 | 17.0 | 5 | WI CARRABELLE PUNC. | Restricted Rim Vessel | |
| 16 | 1 | SA | SS | SM | SO | ST | 6.3 | RO | 6.6 | 23.0 | 6 | | Open Rim Vessel | |
| 17 | 1 | SA | UID | SM | | ST | 5.8 | FL | 3.6 | 29.0 | 5 | | Open Rim Vessel | |
| 18 | 1 | SA | UID | SM | | ST | 7.6 | FL | 7.2 | 20.0 | 7 | | Open Rim Vessel | |
| 19 | 4 | SA | CS | SM | SO/RH | ST | 6.4 | RO | 5.4 | 40.0 | 5 | | Open Rim Vessel | |
| 20 | 1 | SA | CS | SM | | ST | 6.0 | RO | 4.5 | 19.0 | 8 | | Open Rim Vessel | |
| 21 | 4 | SA | CS | SM | SO/RH | ST | 7.5 | RO | 4.9 | 26.0 | 6 | | Open Rim Vessel | |
| 22 | 3 | SA | CS | SM | | ST | 6.7 | RO | 4.4 | 18.0 | 9 | | Open Rim Vessel | |
| 23 | 9 | SA | CS | SM | SO | ST | 7.8 | RO | 5.9 | 50.0 | 6 | | Open Rim Vessel | |
| 24 | 3 | SA | CS | SM | | ST | 6.2 | RO | 5.5 | 46.0 | 7 | | Open Rim Vessel | |
| 25 | 2 | SA | CS | SM | | ST | 5.0 | FL | 4.8 | 31.0 | 7 | | Open Rim Vessel | |
| 26 | 1 | SA | CS | SM | SO | ST | 6.0 | RO | 4.4 | 25.0 | 9 | | Open Rim Vessel | |
| 27 | 1 | SA | CS | SM | | EX | 7.0 | RO | 5.2 | 9.0 | 10 | | Small Vessels | |
| 28 | 1 | SA | CS | SM | | ST | 5.9 | RO | 4.9 | 12.0 | 7 | | Small Vessels | |
| 29 | 1 | SA | CS | SM | | ST | 6.0 | RO | 4.0 | 14.0 | 13 | | Restricted Rim Vessel | |
| 30 | 1 | SA | CS | SM | SO | ST | 8.1 | RO/IR | 5.5 | 27.0 | 11 | | Open Rim Vessel | |
| 31 | 1 | SA | CS | SM | | ST | 5.7 | RO | 4.3 | 20.0 | 13 | | Flared Rim Vessel | |
| 32 | 1 | SA | CS | SM | SO | ST | 6.7 | RO | 5.1 | 22.0 | 5 | | Open Rim Vessel | |
| 33 | 2 | SP | CS | SM | | ST | 6.7 | RO | 4.4 | 26.0 | 7 | ST. JOHNS | Open Rim Vessel | |
| 34 | 1 | SP | CS | SM | | ST | 6.8 | IR | 8.2 | 36.0 | 8 | ST. JOHNS | Open Rim Vessel | |
| 35 | 1 | SP | CS | SM | SO | IN | 6.5 | RO | 6.7 | 30.0 | 10 | ST. JOHNS | Open Rim Vessel | |
| 36 | 1 | SP | CS | SM | | IN | 7.2 | RO | 5.8 | 16.0 | 11 | ST. JOHNS | Open Rim Vessel | |
| 37 | 1 | SP | CS | SM | | ST | 6.8 | RO | 5.9 | 26.0 | 9 | ST. JOHNS | Open Rim Vessel | |
| 38 | 1 | SP | CS | SM | | ST | 6.5 | RO | 4.9 | 28.0 | 5 | ST. JOHNS | Open Rim Vessel | |
| 39 | 1 | LI | PL | SM | | ST | 8.2 | IR | 5.1 | 18.0 | 10 | PASCO | Restricted Rim Vessel | |
| 40 | 1 | LI | PL | SM | SO | ST | 8.3 | RO | 6.1 | 34.0 | 5 | PASCO | Open Rim Vessel | almost folded on rim |
| 41 | 1 | LI | PL | SM | | IN | 8.8 | RO | 7.2 | 20.0 | 10 | PASCO | Open Rim Vessel | |
| 42 | 1 | LI | PL | SM | | ST | 9.0 | IR | 5.3 | 34.0 | 5 | PASCO | Open Rim Vessel | |

| Ves # | # shds | Temp | Ext | Int | Use Alt | Rim Form | Rim Thk (mm) | Lip Form | Lip Thk (mm) | Orif Diam (cm) | %Orif | Culture/Horizon | Vessel Form | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 43 | 1 | SP | IN | SM | | ST | 9.5 | IR | 5.9 | 36.0 | 7 | ST. JOHNS | Open Rim Vessel | |
| 44 | 1 | SP | IN | SM | | ST | 9.1 | RO | 6.0 | 32.0 | 5 | ST. JOHNS | Open Rim Vessel | |
| 45 | 1 | FSP | PL | SM | | ST | 8.9 | IR | 7.7 | 46.0 | 5 | ORANGE | Open Rim Vessel | |
| 46 | 1 | FSP | PL | SM | | ST | 13.5 | RO | 8.1 | 24.0 | 8 | ORANGE | Open Rim Vessel | |
| 47 | 1 | FSP | PL | SM | | IN | 9.7 | RO | 8.1 | 12.0 | 13 | ORANGE | Jar | |
| 48 | 2 | FSP | PL | SM | | IN | 8.4 | RO | 6.5 | 14.0 | 14 | ORANGE | Open Rim Vessel | |
| 49 | 2 | FSP | PL | SM | | ST | 12.2 | IR | 6.1 | 24.0 | 10 | ORANGE | Open Rim Vessel | |
| 50 | 3 | FSP | PL | SM | | ST | 13.3 | IR | 7.9 | 44.0 | 10 | ORANGE | Open Rim Vessel | |
| 51 | 1 | SA | LCS | SM | SO | ST | 6.1 | RO | 4.9 | 44.0 | 4 | DEPTFORD | Open Rim Vessel | sooted on inside |
| 52 | 3 | SA | LCS | SM | RH | ST | 5.8 | FL | 4.1 | 30.0 | 5 | DEPTFORD | Open Rim Vessel | 2 repair holes |
| 53 | 2 | SA | LCS | SM | SO | ST | 9.4 | RO | 6.9 | 22.0 | 5 | DEPTFORD | Open Rim Vessel | |
| 54 | 1 | SA | LCS | SM | SO | ST | 8.6 | RO | 6.1 | 26.0 | 8 | DEPTFORD | Open Rim Vessel | |
| 55 | 1 | SA | LCS | SM | SO | IN | 7.0 | FL | 4.2 | 18.0 | 9 | DEPTFORD | Restricted Rim Vessel | |
| 56 | 1 | SA | LCS | SM | | ST | 7.5 | BE | 5.3 | 26.0 | 6 | DEPTFORD | Open Rim Vessel | possible red slip |
| 57 | 1 | SA | LCS | BU | | EX | 6.5 | IR | 4.6 | 26.0 | 6 | DEPTFORD | Flared Rim Vessel | |
| 58 | 1 | SA | LCS | SM | | IN | 8.0 | FL | 5.7 | 34.0 | 8 | DEPTFORD | Restricted Rim Vessel | |
| 59 | 1 | SA | LCS | SM | | ST | 6.6 | FL | 6.1 | 20.0 | 6 | DEPTFORD | Open Rim Vessel | |
| 60 | 1 | SA | LCS | SM | | EX | 6.7 | TA | 2.6 | 28.0 | 5 | DEPTFORD | Open Rim Vessel | |
| 61 | 1 | SP | PL | SM | | IN | 6.5 | RO | 5.6 | 22.0 | 8 | ST. JOHNS | Restricted Bowl | |
| 62 | 1 | SP | PL | SM | | EX | 6.2 | RO | 7.9 | 32.0 | 6 | ST. JOHNS | Flared Rim Vessel | |
| 63 | 1 | SP | PL | SM | | IN | 7.3 | RO | 5.9 | 24.0 | 5 | ST. JOHNS | Open Rim Vessel | |
| 64 | 1 | SP | PL | SM | | IN | 6.4 | RO | 4.2 | 24.0 | 7 | ST. JOHNS | Open Rim Vessel | |
| 65 | 2 | SP | PL | SM | | IN | 6.9 | RO | 6.9 | 40.0 | 8 | ST. JOHNS | Open Rim Vessel | |
| 66 | 2 | SP | PL | SM | | ST | 7.0 | BE | 5.4 | 40.0 | 5 | ST. JOHNS | Flared Rim Vessel | |
| 67 | 3 | SP | PL | SM | | IN | 7.9 | BU | 9.2 | 48.0 | 5 | ST. JOHNS | Open Rim Vessel | |
| 68 | 1 | SA | PL | SM | | RE | 6.8 | FL | 5.1 | 24.0 | 8 | | Flared Rim Vessel | Burnished on outside |
| 69 | 1 | SA | PL | SM | | IN | 8.2 | FL | 7.5 | 16.0 | 8 | | Open Rim Vessel | |
| 70 | 1 | SA | PL | SM | | ST | 7.8 | RO | 6.4 | 26.0 | 8 | | Open Rim Vessel | |
| 71 | 1 | SA | PL | SM | | EX | 4.4 | RO | 4.3 | 20.0 | 17 | | Flared Rim Vessel | Grog temp. w/sand |
| 72 | 1 | SA | PL | SM | | ST | 9.0 | IR | 7.3 | 26.0 | 10 | | Open Rim Vessel | |
| 73 | 1 | SA | PL | SM | | ST | 8.9 | TA | 3.3 | 16.0 | 9 | | Open Rim Vessel | |
| 74 | 1 | SA | PL | SM | | ST | 7.2 | RO | 7.5 | 38.0 | 7 | | Shallow Bowl | |
| 75 | 1 | SA | PL | SM | | IN | 5.0 | RO | 4.2 | 24.0 | 8 | | Shallow Bowl | |
| 76 | 1 | SA | PL | SM | | EX | 6.8 | RO | 5.6 | 26.0 | 6 | | Flared Rim Vessel | |
| 77 | 2 | SA | PL | SM | | IN | 10.0 | RO | 5.7 | 18.0 | 6 | | Restricted Rim Vessel | |
| 78 | | SA | CS | SM | | EX | 6.9 | RO | 4.3 | 24.0 | 6 | | Flared Rim Vessel | |
| 79 | 3 | SA | PL | BU | | EX | 6.9 | RO | 6.3 | 22.0 | 6 | | Flared Rim Vessel | |
| 80 | 2 | SA | PL | SM | | IN | 7.7 | FL | 5.6 | 18.0 | 5 | | Open Rim Vessel | Red Slip on Inside |
| 81 | 3 | SA | PL | SM | | IN | 6.9 | RO | 5.7 | 26.0 | 6 | | Open Rim Vessel | |