Investigation of the Coosaw Island Shell Ring Complex (38BU1866)

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Chapter 1. Introduction

The Coosaw Island Shell Ring (38BU1866) was first noted in March of 2000 when Chester DePratter, of South Carolina Institute of Archaeology and Anthropology (SCIAA), visited the site to investigate what a local informant described as a "Mississippian mound." While DePratter did not find a Mississippian mound he did find a shell ring and informed Bill Green, of the South Carolina Department of Archives and History, about the site. Green conducted a walkover survey of the ring, drew a sketch map, and completed a state site form. Recording a newly discovered shell ring was a rare and welcome addition to the inventory in South Carolina, the state with the most recorded shell ring sites in the Southeast (Figure 1). Green told Chris Judge of the South Carolina Department of Natural Resources (DNR) about the site and suggested that DNR try to purchase the ring as part of its Heritage Trust Program. Judge worked with land owners, Bruce and Cynthia Eason to purchase the property, and in 2001 the property became the state-managed South Bluff Heritage Preserve.

During a visit to the site in 2001, Judge noted a surface expression of shell to the north of the main ring. A shovel test drew Judge to conclude that the shell was actually another ring (Figure 2, Ring 3). Judge also noted the base of a historic tabby chimney to the west of the rings and a Woodland period site to the north. In the summer of 2001 Judge suggested to the staff at the National Park Service's Southeast Archeological Center (SEAC) that the Coosaw Island shell rings should be further explored and documented.

In April of 2002 Gregory Heide and Michael Russo of SEAC visited the site in order to document the shell rings. Work consisted of topographically mapping the rings as well as recording shell thickness using probes. Three 1 x 1 m units were dug to collect artifact and radiocarbon samples. Archeological work focused exclusively on investigating the shell rings with the exception of photographing and recording the location of the historic tabby chimney with a Global Positioning System (GPS).

Heide and Russo's investigations at the site revealed that there were actually three, and possibly four, rings in the area (Figure 2, Ring 2; note the fourth ring lies east of Ring 2, off map). Based on the excavations the rings were composed of oyster shell with occasional periwinkle shell, fish and mammal bones, a variety of Stallings ceramics, and a small number of lithics. Radiocarbon assays on shell recovered from controlled contexts within the excavation units yielded a conventional age range of 3560–3810 B.P.

This report documents the archeological investigations undertaken by Heide and Russo in 2002. The discussion is focused on the shell rings with only a brief mention of the historic tabby structure. Chapter 2 presents a brief environmental overview of Coosaw Island. Chapter 3 discusses the history of shell ring excavations in South Carolina. Chapter 4 describes the topographic and shell thickness mapping of the site. Chapter 5 discusses the results of the excavations, while Chapter 6 presents the artifacts found at the site. Chapter 7 makes recommendations for future work at the site.

Figure 1. Location of Archaic period shell rings in South Carolina.

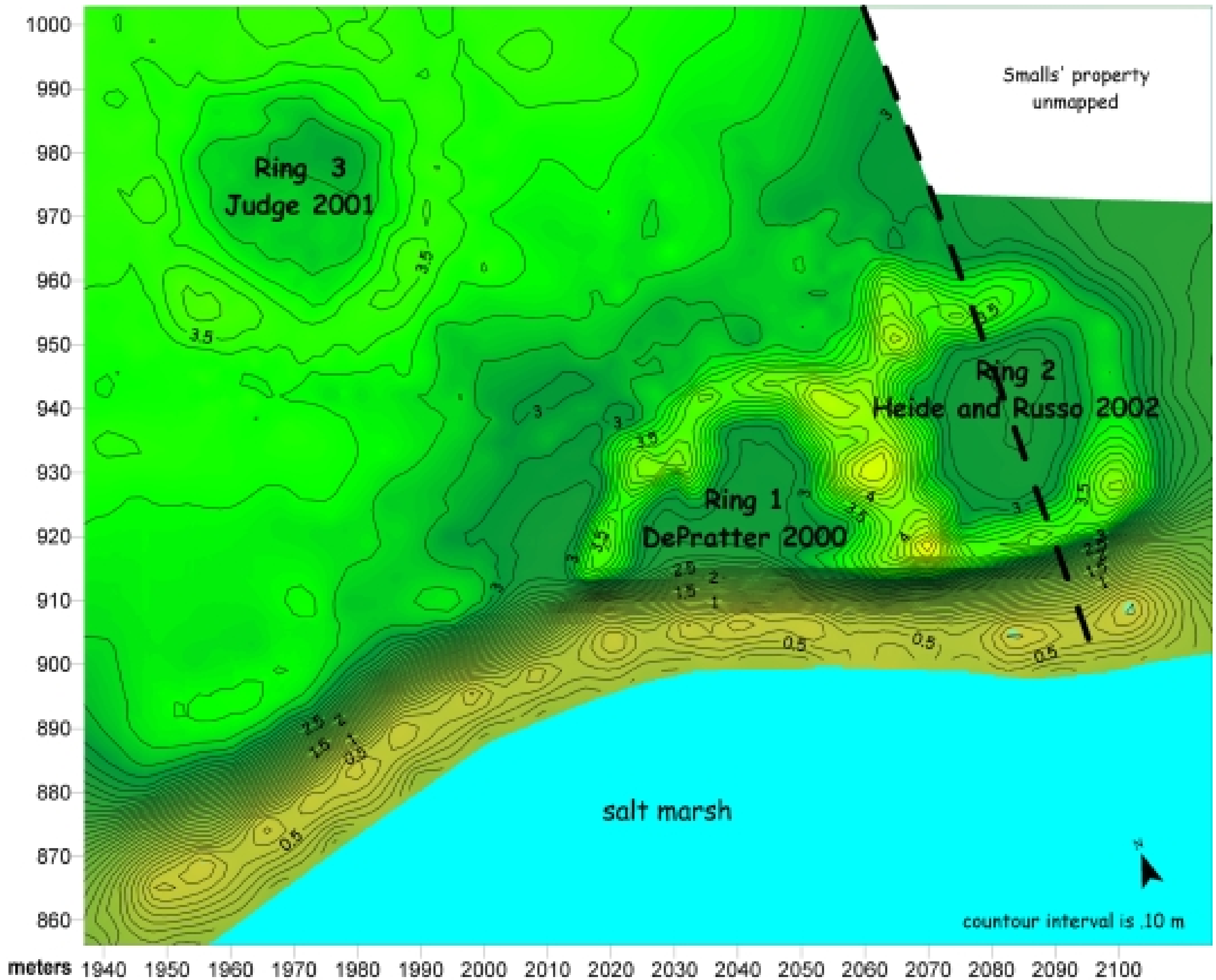


Figure 2. Coosaw Island Shell Ring Complex, ring discoveries, and dates of discovery.

Chapter 2. Environmental Overview

The Coosaw Island Shell Rings are located on the southern portion of Coosaw Island, Beaufort County, South Carolina. Coosaw Island is an erosional remnant island bordered on the south by the Morgan River; to the east by the confluence of Parrot Creek, Bass Creek and the Morgan River; to the North by the Coosaw River; and to the west by Lucy Point Creek. The site is located on the south central side of the island on a bluff overlooking a side channel of the Morgan River (Figure 3).

Soil Type

The rings lie on Wando fine sands with slopes ranging from 0–6 percent. Wando fine sands are excessively drained and nearly level with rapid permeability, and low water capacity. The soil is easily and deeply penetrated by roots. After Stuck (1980:42, 85), the solum is as follows:

- 9 inches (0–23 cm) dark brown fine sand
- 9–19 inches (23–48 cm) brown fine sand
- 19–52 inches (48–132 cm) strong brown fine sand
- 52–60 inches (132–152 cm) pale yellow fine sand
- 60–85 inches (152–216 cm) pale yellow fine sand with a few red and brown mottles

Physiography

Coosaw Island is one of the "sea islands," erosional remnants of coastal Pleistocene sand bodies. The long axes of these types of islands typically lie parallel to the shoreline, are gently sloping, and contain wide, poorly defined ridges and troughs (Mathews et al. 1980:65). Sea islands range in elevation from 5–35 ft (1.6–11.5 m) amsl. Coosaw Island elevations are between 10–25 ft (3.3–8.2 m) amsl and the shell rings lie on elevations of approximately 10 ft (3.3 m) amsl.

Vegetation Type

The vegetative community on Coosaw Island is maritime forest. Maritime forests contain a variety of plant species including saw palmetto, cabbage palmetto, red cedar, pignut hickory, yaupon, white holly, greenbriar, Spanish bayonet, magnolia, and live oak. At Coosaw, planted pine trees are also abundant. The site itself contains mostly open hardwood and pine forest with small woody underbrush and palmetto trees. The area around rings 1 and 2 contains occasional dense patches of small woody plants, poison ivy, and occasional large trees. In 2002, the previous property owner had recently cleared the site of what was once very dense shrubby vegetation and left portions of the rings thinly vegetated.

Faunal Communities

Fauna found naturally on the island includes deer, raccoon, opossum, rabbit, fox and gray squirrels, and a variety of song birds. Snakes and skinks are abundant, and freshwater turtles are found in small ponds and other freshwater habitats on the island. The site lies adjacent to a salt marsh, which contains oyster, clams (quahog), periwinkle, ribbed mussel, crabs, and a variety of bird and fish species.

Climate

The climate in the area is subtropical, with an average rainfall of 49 inches (13 cm) per year (Janiskee 1980:1). Summer temperatures average highs in the 90s (degrees Fahrenheit) to lows in the 70s with frequent afternoon thunderstorms. Winters are mild with average highs in the 60s and lows in the upper 30s. Tropical storm season runs from July to August with tropical storms occurring every couple years and hurricanes more rarely (Janiskee 1980:2).

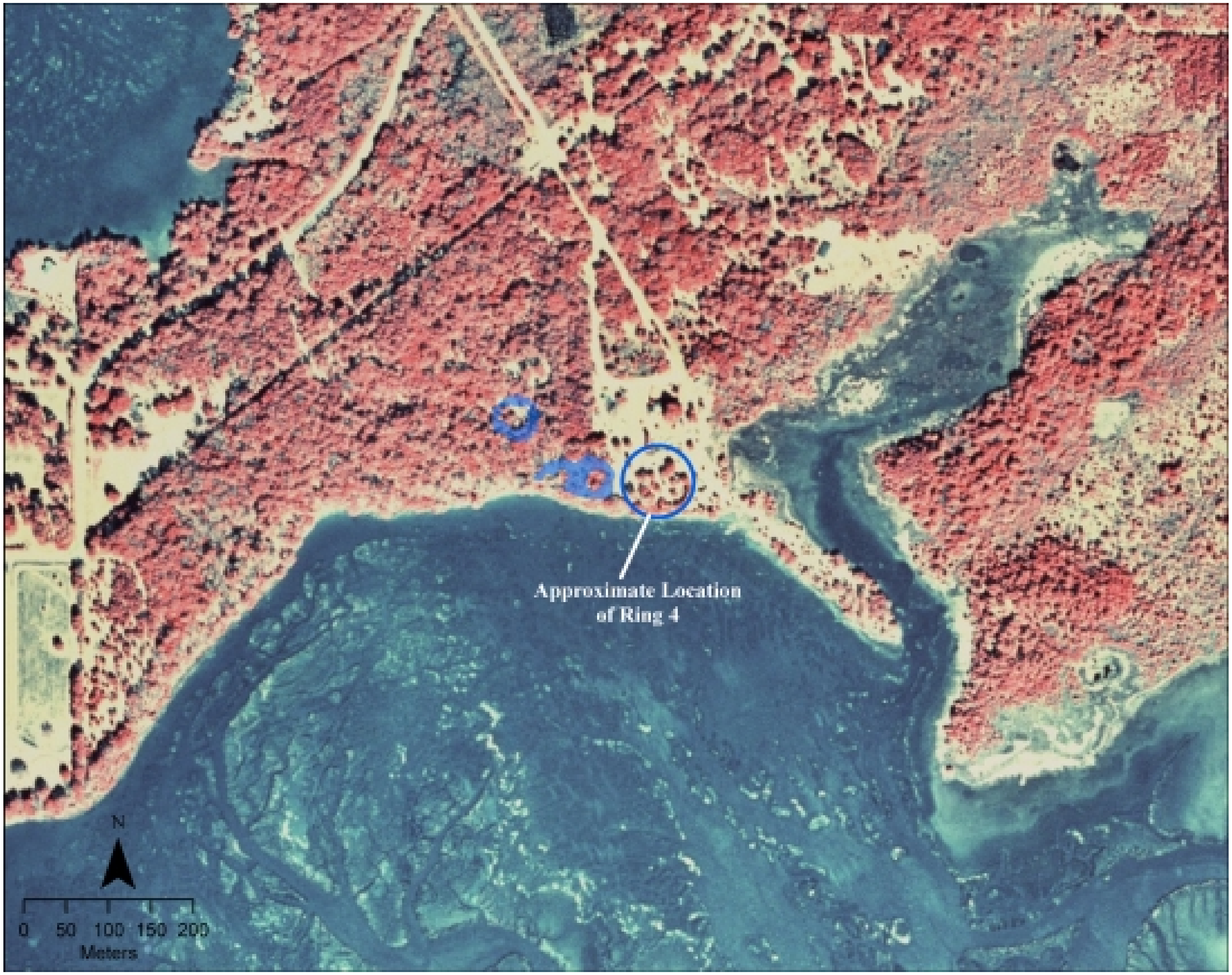


Figure 3. Digital Orthoquad of Coosaw Island showing the location of Coosaw Rings 1–3.

Chapter 3. Shell Rings in South Carolina

Previous Investigations on South Carolina Shell Rings

Moore 1897

While shell rings were first recorded in the 1800s (Drayton 1908; McKinley 1873), Moore (1898) provided the first report acknowledging that a shell ring in South Carolina was definitely a known type of archeological site. Moore, whose 1897–1898 field season focused on Beaufort County, noted the aboriginal enclosure, Guerard Point. While Moore did not excavate in the ring he did note its shape (roughly circular), size (65 ft or 21 m) and thickness (28 inches or .77 m) and that is was "of the same class as that on Bull Island, S.C., and the great one on Sapelo Island, Ga." (Moore 1898:151).

Moorehead 1933

The first reported excavations of a shell ring in South Carolina can be attributed to work at the Chester Field ring undertaken by Moorehead, Ritter, and Lake in 1933 and reported by Flannery (1943). The site on Port Royal Island is a horseshoe-shaped ring that fronts a bluff line near the saltwater marsh on the Broad River. The ring is reported as being about 135 x 80 ft (41 x 24 m), varying in height from 3–5 ft (1–1.7 m). It is composed mostly of oyster, with periwinkle, other shell, and bone also present. A large amount of effort went into excavations at the site: a trench 10 x 25 ft (3 x 7.6 m) was placed in the northern portion of the ring near the marsh edge, and was run east through the ring (Flannery 1943, Figure 35). Seven excavation units of varying size were dug within the ring plaza, as well as what appear to be three additional units in the ring itself (Flannery 1943). A trench dug by Ritter and Lake earlier in 1932, apparently placed transversely across the central portion of the ring, was expanded in 1933. In both the 1933 trench and the 1932 expanded trench, profiles were composed of "largely oyster shell and other shells, interspersed occasionally with irregular layers of dark earth several inches thick and containing a few shells and some debris"(Flannery 1943:150). A test dug by Ritter and Lake in 1932 in the center of the plaza encountered a large fire pit about 2 ft (.6 m) below ground surface.

A large collection of material was collected during excavations including a number of incised bone pins, antler tools, small lithic flakes and a large flint nodule, as well over 1,000 Stallings pottery sherds, some of which were discussed by Griffin (1943). Unfortunately, no detailed report of the 1933 excavations has been produced.

Jury 1941

A surface collection was done at the Horse Island site by a Mr. A. E. Jury of Winnsboro South Carolina in 1941. The collection was sent to a museum along with the description of the Horse Island Shell Ring. The ring is described as being 200 ft (61 m) in diameter and eight to ten ft (2.4-3 m) high with pottery from the site being of the Thom's Creek series (Anonymous 1969). Little more can be said about the site due to the limited nature of work there.

Trinkley (1980:33) reports that Caldwell conducted "minor" excavations at this site, however, no report of the excavations has been written. Trinkley feels that the Anonymous 1969 report is by Caldwell. The report however, clearly states that the ceramics were from the Jury collection. It might be the Caldwell's "minor excavations" at Horse Island were just the analyzing of Jury's sherd collection.

Edwards 1965

In 1965 Edwards conducted excavations at the Sewee Shell Ring in Charleston County. Edwards topographically mapped the site (the first shell ring to be mapped in this way in South Carolina) and excavated a number of units. Edwards' mapped showed the site to be 100 ft (30 m) in length and 8.5 ft (2.6 m) deep. Excavations showed dense deposits of oysters with occasional other shells. Thin bands of soil were apparently noted in the soil profiles, although no image of what this looked like is available. The ceramic assemblage from the site is Awendaw series, a type which is later subsumed under the Thom's Creek name (Trinkley 1980). A number of lithic tools, and bone and shell tools were also recovered in excavations. A date on oyster shell from just off the ring (from Unit C-1) dated to 3675 B.P. (Russo and Heide 2003:14). Edwards spends considerable efforts to suggest that the ring served as a fish weir—a theory that has since been challenged (Cable 1995, Russo and Heide 2003).

Calmes 1967

In 1967, Calmes reported on his work on two shell rings—Sea Pines and Ford's Skull Creek — on Hilton Head Island. Work at both sites consisted of documenting the rough shape and size of the rings with limited excavations undertaken at Sea Pines and slightly more intensive excavations at Ford Skull Creek. Calmes reported the large Ford's Skull Shell Ring as about 200 ft (61 m) in diameter and averaging 6 ft (1.8 m) high while the small ring is reported as being "only two feet (.61 m) high at the apex and encloses a smaller area." (Calmes 1968:45) Four units were dug at Ford's Skull Creek, one unit in each of the rings and one unit in each of the plazas. Calmes noted that the ring itself was made in successive dumps with intermittent bands of soil at various orientations (from horizontal to almost vertical). In the center of the plaza of the larger ring, Calmes noted a circular pit 5 ft (1.5 m) in diameter. While charcoal was lacking from this feature—it was mostly concretions—he suggests that this was a fire pit (Calmes 1967:11). A shell filled pit was also noted in the excavations of the smaller shell ring, however no function was assigned to this feature. Ceramics from the site included both Stallings and Thom's Creek ceramics; however, Thom's Creek sherds vastly outnumber Stallings sherds (1 Stallings sherd to every 6 Thom's Creek sherds). The small Ford's Skull Creek shell ring contained only Thom's Creek pottery, suggesting to Calmes that it was built later in time (Calmes 1968:219).

Calmes describes Sea Pines not as a ring, but as "oyster shells piled up in the shape of a ridge…to form and irregular circle" which was approximately 120 ft (36.6 m) in diameter and only 1 to 3 ft (.3 – .9 m) high (Calmes 1968:45). A previously excavated trench showed bands of shell separated by lenses of "crushed shell and humus"(Calmes 1967: Figure 5). Calmes recorded the old trench profile and placed an excavation unit next to the trench. The unit was dug in natural strata and was only 26 inches (.66 m) deep.

Hemmings and Waddell 1970

In the early 1970s Hemmings and Waddell conducted an archeological survey of 150 miles of coastal Georgia and South Carolina in search of shell rings. A total of 18 rings were examined and documented and Hemmings felt that four other rings were in his survey area that he did not visit. No complete report is available from this survey, although field notes are on file at the South Carolina Institute of Archaeology and Anthropology (SCIAA).

After the initial survey, Hemmings chose to return to the Fig Island shell ring complex to conduct excavations at Fig Island 2 — a circular ring 250 ft (76 m) in diameter and 3–5 ft (.9 – 1.5 m) above the surrounding salt marsh. Two 5 ft (1.5 m) wide trenches were dug through the southern and eastern edges of the shell ring. The southern trench was 40 ft (12.2 m) long while the eastern trench was 125 ft (38 m) long and extended through the ring into the center of the plaza. Artifacts recovered from the two trenches included bone, antler, and shell tools, and 2400 pot sherds. Although no report on types of ceramics recovered was presented, Hemmings (1970:10) does describe the pottery as "simple … deep, straight-sided, wide-mouthed vessels … most often decorated on the exterior with rows of punctations made by a sharp tool on wet clay."

Trinkley 1975–1980

Shell Rings revisited the literature in the late 1970s and early 1980s in writings by Trinkley (1980a, 1985). Trinkley's work on two shell rings—Lighthouse Point and Stratton Place—used large, broad, excavation areas to explore ring construction and function. Trinkley's field map of Lighthouse Point estimates the ring to be 240 ft (73.2 m) in diameter. No maximum height could be obtained because mining had removed much of the shell. Trinkley excavated 2,250 sq ft (209 sq m) uncovering a number of features directly below the ring. Stratton Place is a much smaller and more ephemeral ring approximately 120 ft (36.6 m) in diameter. Like Lighthouse Point, much of the upper parts of the ring were disturbed, but Trinkley was able to excavate the original ground surface on which the ring was placed. A total of 1,300 sq ft (121 sq m) was excavated recording a large number of features.

Artifacts from both sites included a small number of lithics, faunal and botanical remains, and Thom's Creek ceramics. No Stallings ceramics are reported from either ring. Radiocarbon dates from Lighthouse Point indicate construction between 3345–2885 B.P. Stratton Place was not dated.

Saunders and Russo 2001

In the spring of 2001 Rebecca Saunders of Louisiana State University and Michael Russo (SEAC) conducted topographic mapping, shell thickness probing, and excavations at Fig Island 1, 2, and 3 (Saunders 2002a). The site consists of three shell rings, two of average size and shape— (Fig Island 2 is circular and 77 m in diameter and 2.05 m high while Fig Island 3 is a crescent and approximately 49 meters in diameter and 1.85 m high)—and one of enormous size. Fig Island 1 is the largest ring in South Carolina at 157 m long and 111 m wide and the tallest ring (5.5 m high) of all recorded Archaic period shell rings. The main ring is circular in shape with at least two and perhaps up to five attached rings.

Excavations at the site included a 2 x 2 m unit placed at the top of Fig Island 1 main ring and a 1 x 2 m unit placed on an attached ring; cleaning up and profiling Hemmings' 1970s excavation trenches at Fig Island 2; and a 8 x 1 m trench placed through the Fig Island 3 ring.

Artifacts from the site include shell and bone tools, 1,788 Late Archaic Thom's Creek and Stallings period sherds (note that this does not include residual [<½"] sherds) and a few lithic tools and flakes (Saunders 2002b). The ceramics were mostly from the Thom's Creek series (n=1657) with a few Stallings sherds (n=131). Radiocarbon dates from the site range between 4112–3709 B.P. making the Fig Island Shell Ring Complex one of the older shell ring sites in South Carolina.

Russo and Heide 2003

In 2003, The Francis Marion National Forest contacted the SEAC to see if they could remap the Sewee shell ring. In April of 2003, mapping and limited excavations were conducted by Russo and Heide (2003). Mapping showed that the ring was 75 m in diameter and up to 3.15 m thick. Probing for shell indicated that the eastern portion of the ring, which appeared to be an opening in the ring, was actually—under the ground surface in this area (Russo and Heide 2003 Figure 10).

A 1 x 1 m unit was excavated in the southeastern portion of the ring. Ceramics recovered from the unit were all from the Thom's Creek series. Two radiocarbon dates from the unit showed that the ring was likely constructed between 4120–4010 B.P.

Summary

What are shell rings? Scholars have been pondering this question since the early twentieth century. In the 1980s archeologists viewed rings as being the result of "gradual accumulation." The small, circular shell pilings were seen as villages where people had incidentally discarded their refuse underfoot forming the rings of shell and elevating the inhabitants homesteads above the ground. The interior of the ring, in contrast, was kept relatively free of shell and used as public space for a variety of purposes (Trinkley 1980). Archeological work at a number of sites in South Carolina had shown rings to be made up of large piles of unconsolidated oyster shell with occasional bands of crushed shell and shell/soil separating the piles (Calmes 1968; Edwards 1965; Waring and Larson 1968). These bands were thought to represent living surfaces.

In contrast, the "ceremonial theory" posited that the rings were used as ceremonial centers that were constructed or added to rather infrequently, every 10 to 20 years. At times other than during the ceremonies that accompanied these building episodes, most people lived away from the rings. Rather than viewing the bands of crushed shell and shell and soil as living surfaces, the bands are seen as building, or "capping" episodes attendant with each ceremonial construction activity (Cable 1996).

Yet another theory, the "monumental theory" postulated that the rings did indeed function as ceremonial centers, but that their shape, size and asymmetrical distribution of shell served to identify the ceremonial centers as places where the display of unequal social status was tolerated. As such, shell rings provide the first evidence in the region of the rise of complex, or transegalitarian, social organization. Attendant to the ceremonies, whatever they may have been, is evidence of large scale feasting as seen in the great piles of shell that make up the rings. Other than feasting, however, the precise nature of the ceremonies is not known, although dancing, marriage, trade, public oratory, and games are likely possibilities (Russo n.d.; Russo and Heide 2003). In contrast to the *ceremonial theory*, no evidence of "capping" is seen in ring construction. Rather, the rings are seen as being built as the result of large and small scale feasts with shell intentionally placed in piles around the central plaza where ceremonies are held. They functioned, at least in part, as monuments to the feast hosts (Russo n.d.; Russo and Saunders 1999). Domestic settlement may occur in whole or part on the ring, inside the ring or distant from the ring during the ceremonies as well as outside the time of the ceremonies. But no clear pattern of domestic settlement has yet to emerge at and around ring sites.

Chapter 4. Topographic and Shell Thickness Mapping

The primary project goal was to map the surface topography and thickness of shell deposits of the Coosaw Island shell rings. Methods followed those used at other ring sites (Russo and Saunders 1999; Russo et al. 2002; Saunders 2002a; Russo and Heide 2003).

Site Grid

Because no USGS marker lay near the site, a judgmentally selected datum and grid were established. The coordinates for the datum were arbitrarily chosen as 940N, 2000E. The elevation for the datum was estimated from a USGS quad to be 3.048 m (or 10 ft amsl). Two posthole tests were dug and then two, two inch, Polyvinyl chloride (PVC) pipe, with a quarter inch piece of rebar inside, were used to mark both the site datum and backsight datum. Quickrete was poured into the PVC to hold the rebar in place. A single notch was made on the edge of the PVC to identify the site datum. Two notches were cut into the PVC of the backsight datum, which was ten meters north of the site datum. The site grid was run 20° off magnetic north from the site datum.

A Trimble Pathfinder Pro XR was used to record the locations of both datums (Table 1). The Trimble data was differentially corrected in the field and the data was post-processed in the lab. Still, using the UTMs provided by the GPS readings, the distance between the two datums, which should have been 10 meter apart, was only nine meters apart, reminding us that GPS accuracy is not always as precise as one would like. The readings should, however, allow future researchers to relocate the site datum.

Once the datums were in place, a five meter grid marked with pin flags was laid in over the estimated boundaries of each ring. With the 5 meter flags serving as guides, we probed the soil for the presence of shell at 2.5 meter intervals along the grid lines.

Shell Probing

Systematic probing of shell deposits to identify the vertical and horizontal extents of shell rings started with Russo and Saunders' (1999) work at the Oxeye Shell Ring in Duvall County, Florida. At Oxeye, probes were placed along transects radiating from transit stations across the site. The probing was successful in defining the horizontal extent and depth of deposits of the shell, much of which lay buried beneath an encroaching salt marsh. One problem with this approach, however, was that the distance between transects widen with increasing distance from the stations. Consequently probe locations were dense around the stations, with fewer at the outer ends of the transects. The probing strategy was refined during work at Guana River Shell Ring in order to provide more uniform coverage (Russo et al. 2002). The more systematic approach was also used at Fig Island Shell Ring (Heide 2002). At these rings the probing was undertaken systematically within a square grid over the entire ring. This same systematic probing technique was applied at Coosaw.

Two meter-long stainless steel probes were used to probe every 2.5 meters within the grid. Identification of the shell using a probe is based on auditory and tactile signatures. Where shell begins and ends vertically in the ground can be assessed with great

Table 1. UTM Location of Datums and Tabby Chimney at Coosaw Island

Site Datum Location					
UTM* NAD 27	Easting	Northing	UTM NAD 83	Easting	Northing
datum1	538285.51	3592466.10	datum1	538303.59	3592674.54
datum2	538287.59	3592474.50	datum2	538305.51	3592682.80
chimney	538199.99	3592495.23	chimney	538218.05	3592703.18

* UTM Zone 17

accuracy (see Russo et. al. 2002 and Russo and Heide 2003 for case studies supporting the statistical reliability of the method). The absence of shell, or the uppermost and lowermost encounters with shell, were recorded on pin flags at each probe point. Later, these measures were converted to shell thickness Z values. If, for example, shell was encountered at 10 cm and ended at 50 cm, a thickness of 40 cm was recorded. The thickness data provided Z values for shell thickness maps. If shell was not present at the grid point of the probe, the shell thickness value equaled zero.

Topographic and Shell Thickness Mapping

Once an entire grid was probed and pin flags had been marked, a total station was used to record each probes' X, Y, and Z values. Two sets of Z values were recorded—surface elevation and shell thickness.

Due to time constraints, each ring was assigned its own grid. With few exceptions, probing ceased when two consecutive negative probes for shell were attained outside each ring in each grid. This left spaces between Rings 1 and 3 unprobed. In these and other areas lacking probing data, less systematic, surface elevation data was obtained with the laser transit to facilitate the completion of the surface topography map (Figure 4 and 5).

Probe data also gave us the first clue that a third ring, Ring 2 existed. East of the fence the ground was covered in dense underbrush, and a visual view of the ring was not apparent. The fact that we were still identifying dense shell at the fence line with our probes suggested that the shell on the east side of Ring 1 was not simply disturbed, or ramps leading to the ring, but rather that another ring was attached to Ring 1 and extended beyond the east side of the fence. Once this was realized, we obtained permission from the land owner, Ben Smalls, to map (but not probe) and based on a limited number of surface topographic points, the extent and shape of Ring 2 quickly became visible to us.

Using Surfer, we created surface topography and shell distribution maps of the site with the topographic and shell thickness data (Figures 5 and 6).

Results

In addition to providing data to produce maps, probing provides data to determine the volume of shell in rings. Shell volume is an important statistic for shell ring studies for it provides a single number from which the labor involved in construction can be compared among rings. Probing also provides more precise data on the horizontal extent of shell in rings, which is often obscured in surface topography by erosion, alluviation, and other geomorphic processes.

Ring Form and Size

Both surface topography and probing revealed that the Coosaw shell rings were either circular (Rings 2 and 3) or crescent (Ring 1) in shape. The probing data better-defined the shape of each ring, particularly Ring 3 whose expression in the field was only a slight depression in the ground, and whose shape on the surface topography map was ambiguous (cf. Figures 5 and 6).

Presence/absence maps for shell have allowed for accurate estimates of ring size (Table 2). The three rings at Coosaw are actually quite close in size. The rings measure in diameter as follows: Ring 1, 57 m in diameter; Ring 2, 51 m; and Ring 3, 59 m. Ring 1, the first discovered, is, of course, not a complete circle, but is crescent-shaped. The diameter readings were taken from the longest distance between outside edges along the bluff. Efforts were made to identify whether or not the ring was formerly a complete circle, but had been reduced in size by erosion along the bluff. Probes placed within the colluvium along the bluff did reveal shell, suggesting that the ring was larger in the

Table 2. Ring Statistics for Coosaw Island Shell Rings

Ring Statistics	Rings 1& 2 [1]	Ring 3
Diameter (outside edges)	45 (43)	55
Average Basal Width	12.5 (12.5)	12.5
Maximum Thickness	1.73	0.64
Average Thickness	0.7	0.24
Volume [2]	1483	460
Probing Statistics		
Probes without Shell	309	346
Probes with Shell	323	304
Total Probes	632	650

[1] Values in paranthesis are for Ring 2; [2] calculated with Surfer

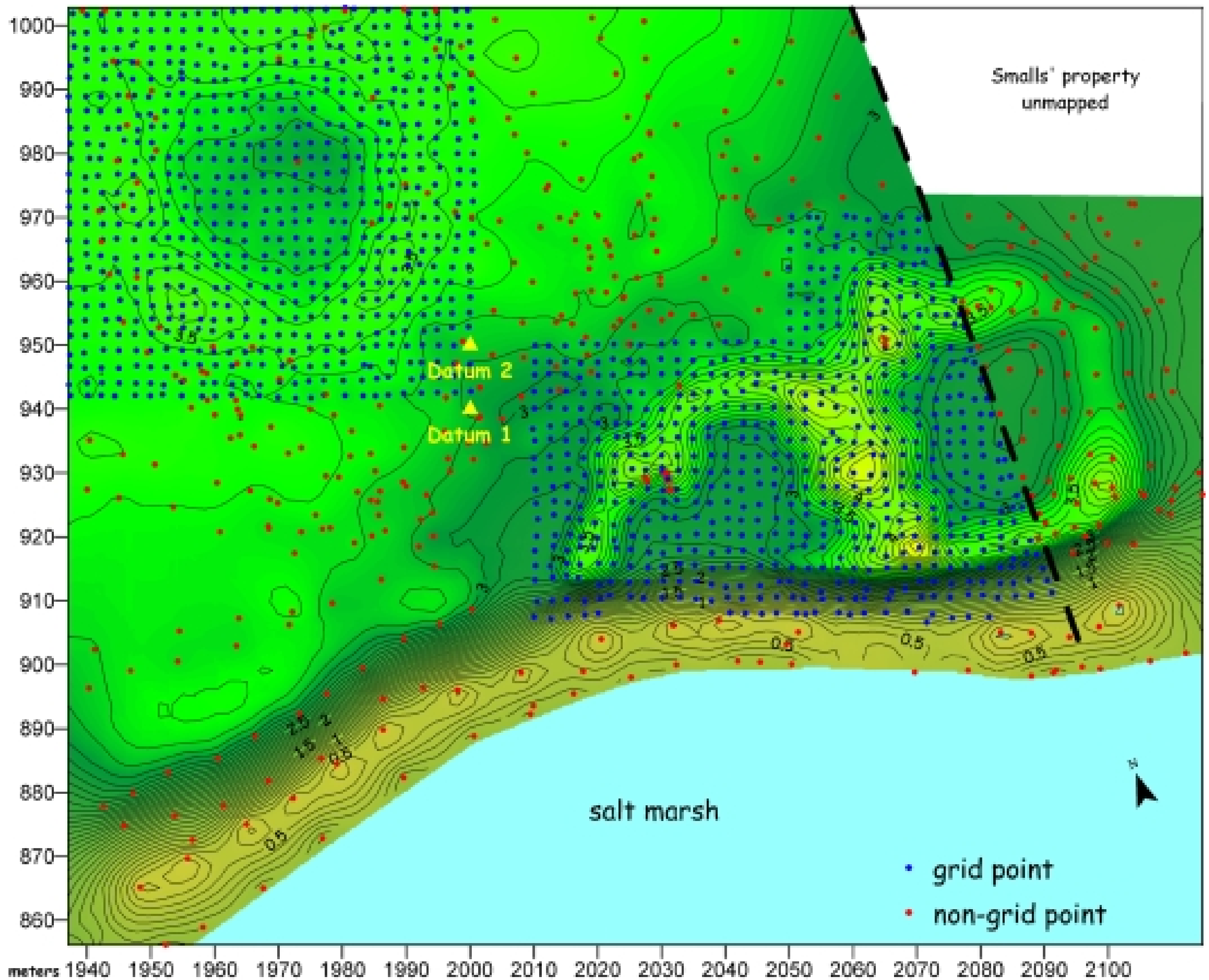


Figure 4. Location of topographic mapping points at Coosaw Island Shell Ring Complex. Contour interval is .10 m.

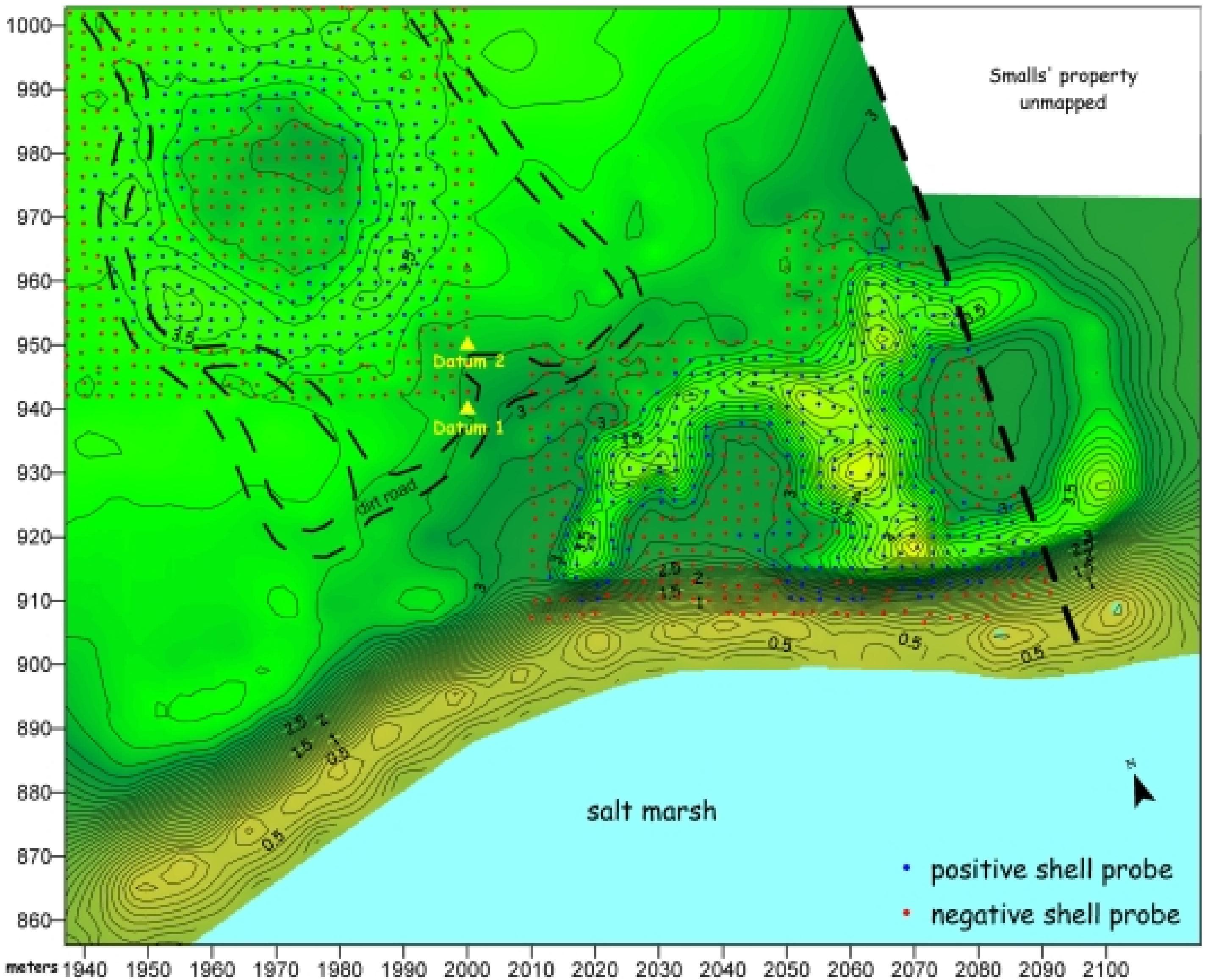


Figure 5. Surface topography and shell probe locations at Coosaw Island Shell Ring Complex. Contour interval is .10 m.

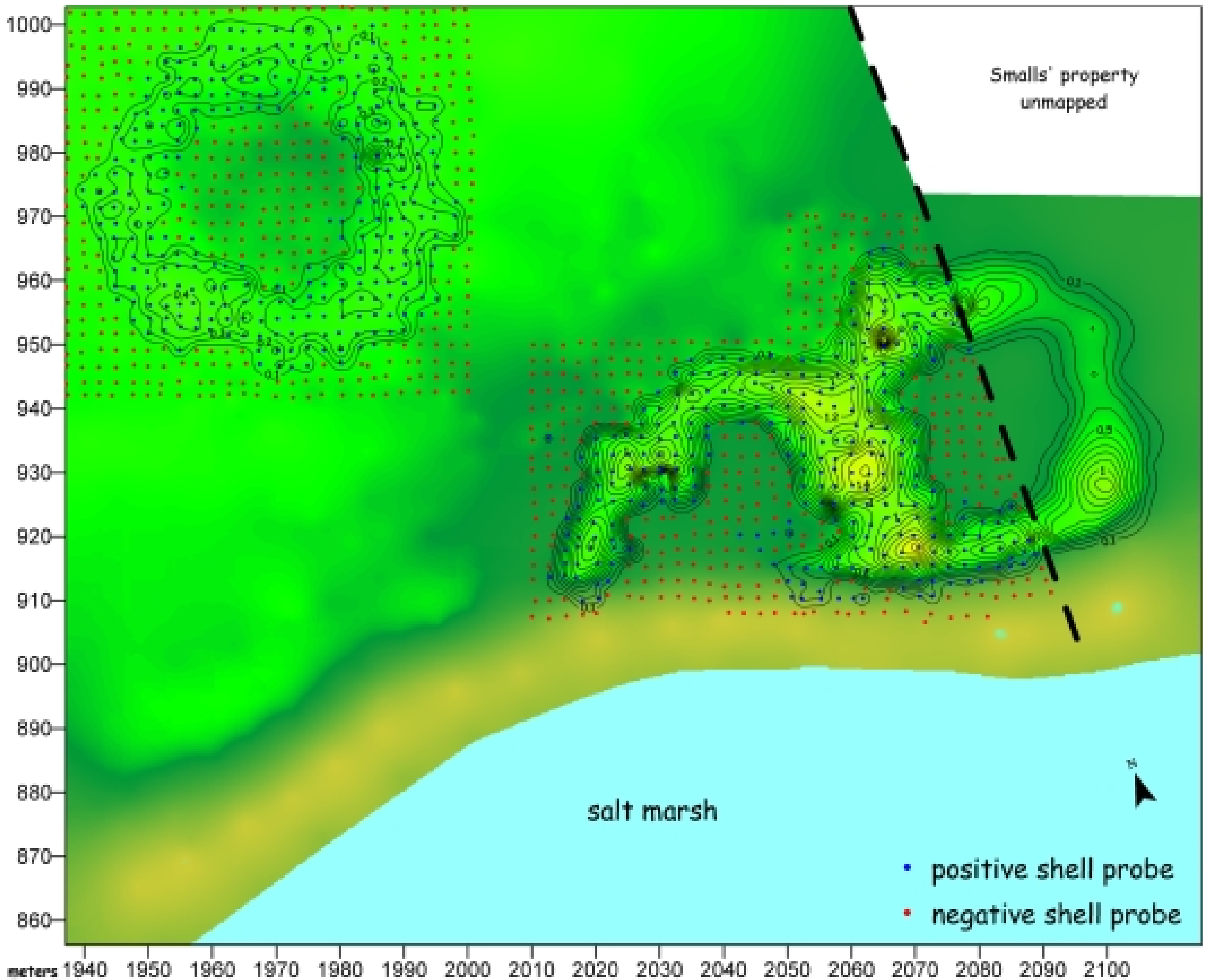


Figure 6. Shell thickness map of Coosaw Island Shell Ring Complex. Note that Ring 2 thicknesshas been estimated. Shell thickness interval is .10 m.

past (cf. Figures 5 and 6). But its exact shape, of course, cannot be ascertained.

Probes also revealed that Ring 2 has suffered size reduction somewhat along its southwestern edge. But the damage does not seem severe. The size of the ring does remain in question, however. Half of Ring 2 is on private property, which precluded probing. Consequently, the size of the ring is based, in part, only on surface topography. A more accurate assessment can be made in the future with more probe data.

The size of Ring 3 reflects its current status. Prehistorically it may have been slightly smaller. A road cuts through the western edge of the ring dispersing the shell somewhat, and periodic plowing from previous use of the area as a tomato farm has likely spread at least some of the shell beyond its original place of deposit. But the generally circular nature of the site suggests that the shell has not been spread too far.

Ring Thickness and Volume

Ring 1 and 2 had a maximum shell thickness (the thickest positive probe) of 1.73 m and an average shell thickness (all positive probe data summed and divided by the number of positive probe points) of 0.7 m, while Ring 3 averaged 0.25 m in thickness with a maximum thickness of .65 m.[1] The shell volume estimate for Ring 3 was 460 m^3. The volume estimate for Ring 1 and 2 had to be combined and the portion of Ring 2 on private property had to be estimated. In order to estimate the shell thickness, the maximum surface elevation was subtracted from an estimated shell ring base elevation. The estimated shell ring base elevation was based on Ring 1 and 2 probe data from the DNR owned portion of the ring. Rings 1 and 2 have an estimated combined volume of 1,483 m^3.

In terms of volume, Rings 1 and 2 seem to average 40% more shell than Ring 3 even though Ring 3 is horizontally as larger or larger than either Ring 1 or Ring 2. This suggests that either Ring 3 has had some of its shell removed, possibly as the resulting of modern farming; or that it never reached the heights of the other two rings.

[1] One probe in Ring 3 identified shell to 0.96 m. This depth may have been a pit feature or modern disturbance from the nearby waterline that had been installed in the area. Regardless, this probe was not used in determining maximum ring thickness, nor was it used in averaging ring thickness.

Chapter 5. Excavation Results

Three 1 x 1 meter units were excavated during the April 2002 field season. One unit was placed in each ring. The goal of the excavations was to obtain a sample of the material culture as well as organics suitable for radiocarbon dating. All units were dug in arbitrary 10 cm levels, with the elevations being measured from a datum in the highest corner of each unit. All materials were screened through ¼″ hardware cloth. All ceramics, lithics, and bone tools were kept for analysis and curation. Faunal remains, including representative shell samples, were collected judgmentally from each unit. These remains were often kept only to remind the excavators as to what oddities had been found (that is a unique shell may have been pulled to show that it was present). Small soil samples were collected from a number of assumed features and from the base of the rings. However, no studies have been undertaken on any of these samples. Upon completion of the units, representative profiles (Unit 2) or profiles of all four walls (Units 1 and 3) were drawn, and the units were backfilled. Below is a description of each unit's stratigraphy, as well as the radiocarbon dates assayed from oyster shell taken from each unit.

Ring 1, Unit 1

Unit 1 was placed in the north-central portion of Ring 1 (Figure 7). The location was chosen for practical reasons—the shell deposits in this location were of sufficient depth to obtain a representative sample, but not too deep as to extend our allotted time for excavation; and the area had enough unvegetated space to accommodate screening. Excavations went to 1.4 mbd with the shell deposits ending at about 1 mbd (Figure 8). Below the shell ring was a brownish yellow sand (Stratum C). Also noted in the subsoil

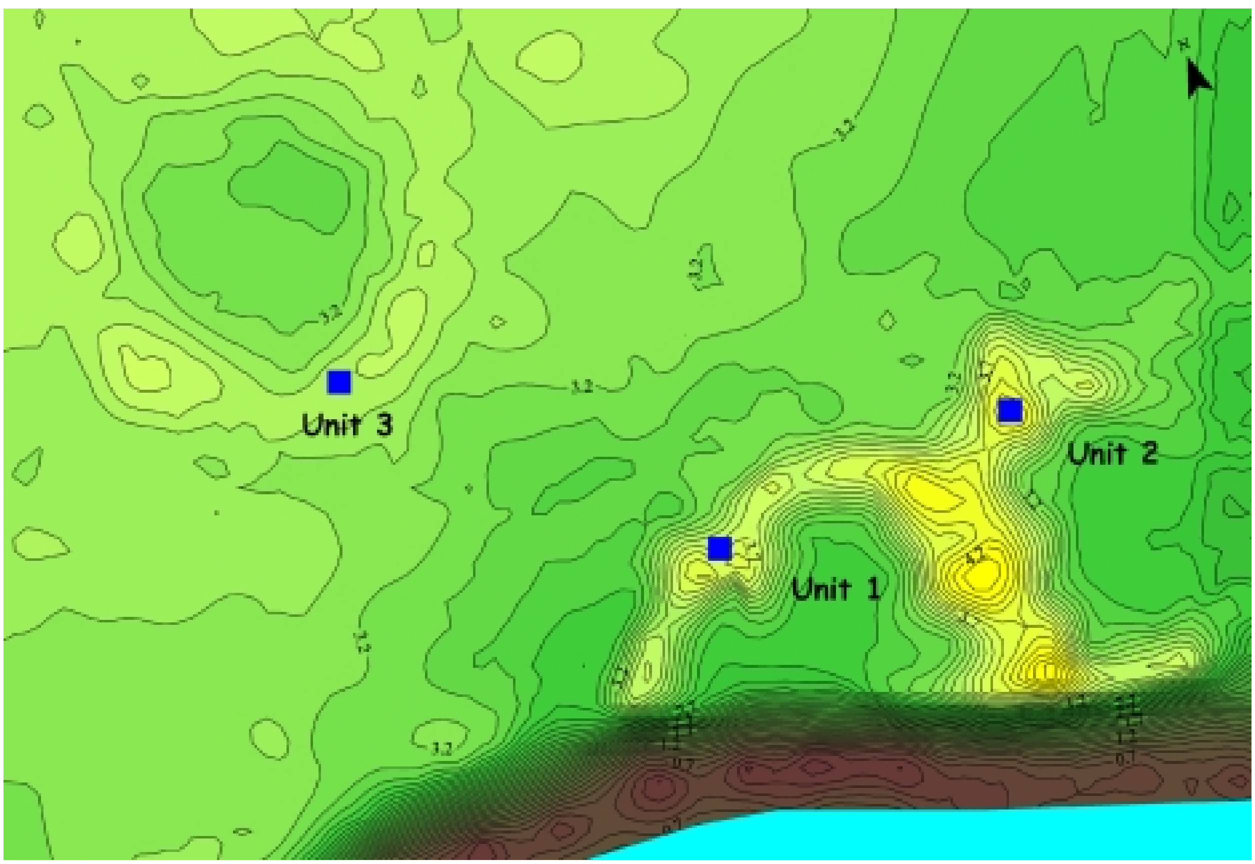


Figure 7. 2002 unit locations at Coosaw Island Shell Ring Complex.

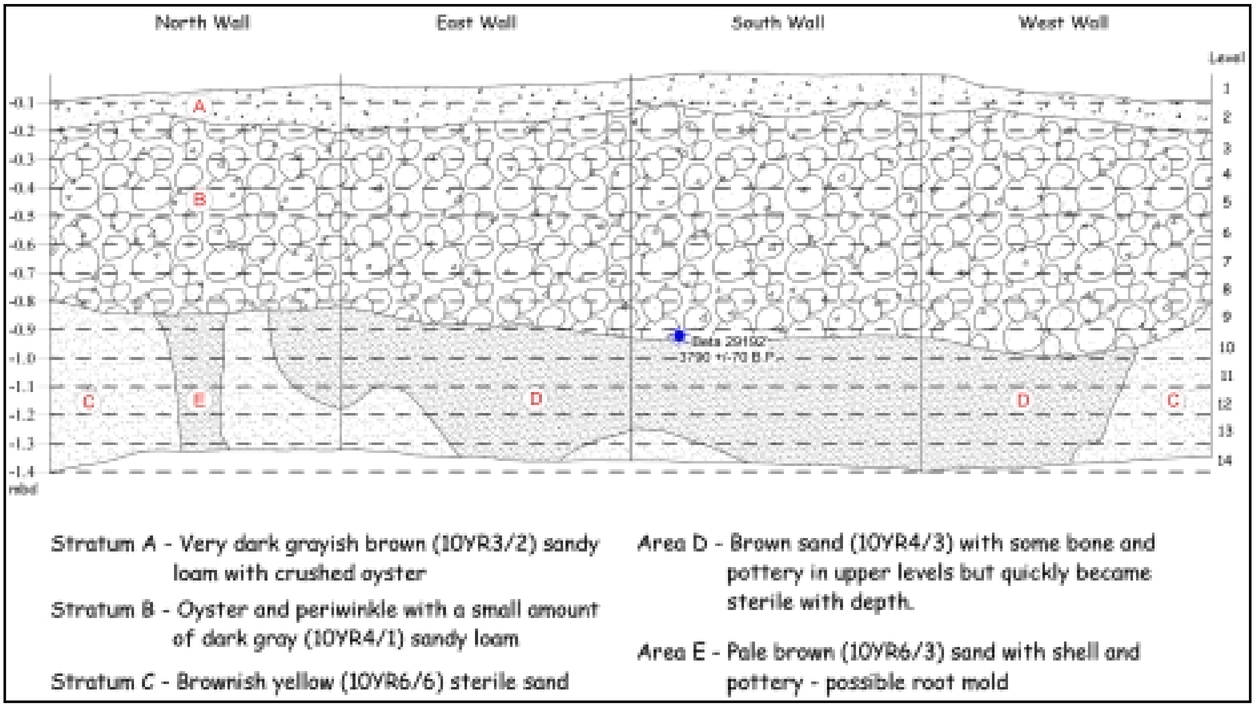


Figure 8. Coosaw Island Shell Ring 1, Excavation Unit 1 profiles.

were two stained areas. Area D was brown sand with some artifacts. The area extended over much of the unit, but whether it was a human made feature, tree root, or other disturbance remains unclear. Our limited excavations were not able to reveal the full extent of Area D. Dark-stained soils with artifacts are common features of sub-ring contexts (e.g., Russo and Saunders 1999; Trinkley 1980) and have been suggested to represent pre-ring human activity. Area E appeared to be a tree root stain. It contained pale brown sand with a circular shape in plan view. A few artifacts were found in the fill of Area E.

The shell ring deposits themselves showed only two strata in Unit 1. Stratum A was a grayish brown sand mixed with lots of crushed oyster and occasional whole oyster. This top layer was about 20 cm thick and is thought to be the result of post-depositional pedogenesis. That is, the sand is likely wind-deposited, having migrated down due to gravity and bioturbation. The crushed shell is assumed to have been derived from post-depositional pedestrian traffic rather than primary deposition of shell in a crushed state. Stratum B is composed mostly of whole shell and some periwinkle mixed with a very small amount of dark gray sandy loam. No evidence of crushed shell or shell piles, as is often reported at other sites (see Cable 1997; Calmes 1967; Edwards 1965), were seen in the profile of this unit. Instead, the Stratum B ring deposits are very homogenous suggesting rapid accumulation with no “capping” episodes, as has been postulated for Sea Pines Shell Ring (Cable 1997).

One radiocarbon assay was obtained from Unit 1. The sample was oyster shell, which came from the south wall of the unit at approximately .9–.95 mbd. The date was 3790±70 B.P. (GX 29192). In addition to shell and bone fragments, artifacts associated with this date include 351 residual sherds, 169 Stallings series sherds, 3 Thom’s Creek series sherds, and 1 biface tip made of coastal plain chert (Table 3).

Ring 2, Unit 2

Unit 2 was placed in the northwest portion of Ring 2 on the highest shell deposit (barring the ridge of shell shared with Ring 1) (Figure 7). Excavations revealed more complex stratigraphy than in Unit 1 (Figure 9). Like Unit 1, Unit 2 had a top lens of mostly crushed oyster and soil with occasional whole oysters and was designated Stratum A. Below this was Stratum B, a mixture of whole oyster, periwinkle, and a small amount of dark gray, sandy loam. Stratum C consisted of oyster and periwinkle with moderate amounts of dark gray sandy loam. A pocket of oyster intermixed

Table 3. Artifacts and Ecofacts Recovered From Excavation Unit 1

Unit 1

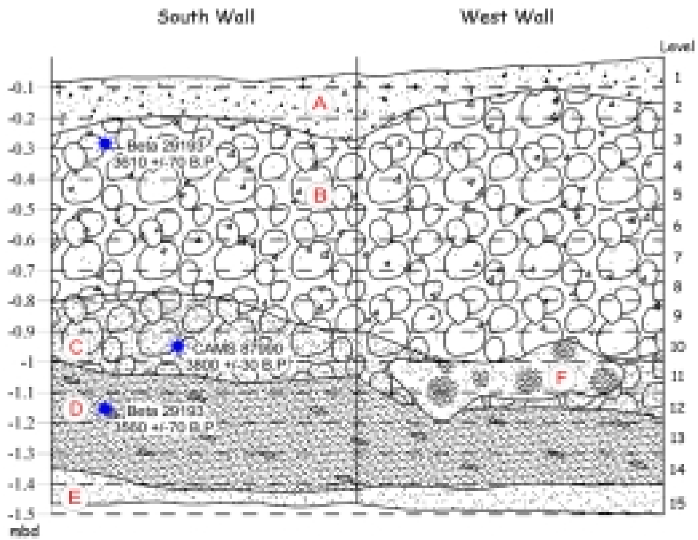
Level	mbd	Type	n	w (g)
1	0-.12	Stallings Plain	14	89.19
		Stallings Punctate	2	30.2
		Thom's Creek Plain	2	5.42
		Thom's Creek Punctate	1	2.21
		Residual	27	27.53
		Littorina irrorata	2	2.28
		Testudines	9	2
		Osteichthyes	1	0.13
		Ariidae	11	14.27
		Vertebrata	24	9.98
2	.12-.23	Stallings Drag and Jab	1	11.65
		Stallings Incised	1	2.84
		Stallings Plain	31	213.97
		Stallings Punctate	1	2.29
		Residual	99	82.62
		Human molar	1	1.77
		Mammalia	10	11.32
		Odocoileus virginianus	4	3.68
		Testudines	24	6.47
		Osteichthyes	70	11.03
		Ariidae	19	20.08
		Vertebrata	122	20.55
3	.23-.32	Stallings Drag and Jab	2	25.6
		Stallings Plain	35	249.74
		Stallings Punctate	3	35.04
		Residual	136	96.33
		Littorina irrorata	3	2.87
		Mammalia	22	26.15
		Odocoileus virginianus	2	2.66
		Testudines	12	2.92
		Osteichthyes	77	8.44
		Ariidae	39	31.82
		Vertebrata	143	22.4
4	.32-.42	Stallings Plain	15	78.03
		Stallings Punctate	4	45.46
		Residual	48	36.51
		Busycon sp., poss. tool	1	206.7
		Mammalia	12	9.85
		Odocoileus virginianus	1	7.58
		Testudines	7	1.59
		Osteichthyes	115	19.18
		Ariidae	58	37.05
		Vertebrata	178	21.06
		Ariidae	16	16.54
5	.42-.52	Stallings Drag and Jab	1	2.68
		Stallings Incised	1	13.56
		Stallings Plain	10	82.81
		Stallings Punctate	1	3.22

Level	mbd	Type	n	w (g)
5	.42-.52	Residual	18	14.22
		Busycon sp.	1	31.96
		Testudines	18	5.95
		Osteichthyes	58	11.41
		Vertebrata	72	16.76
6	.52-.62	Stallings Drag and Jab	1	16.18
		Stallings Incised	2	29.97
		Stallings Plain	11	114.33
		Stallings Punctate	4	52.6
		Residual (plain)	6	10.16
		Odocoileus virginianus	9	34.64
		Testudines	5	3.68
		Osteichthyes	7	2.29
		Ariidae	1	0.49
		Vertebrata	12	10.12
		Charcoal	1	0.63
7	.62-.72	Stallings Plain	5	31.46
		Residual	3	4.5
		Biface tip, coastal plain chert, thermally altered	1	1.72
		Littorina irrorata	2	2.35
		Odocoileus virginianus	4	17.7
		Cynoscion nebulosus	1	0.34
8	.72-.80	Stallings Plain	5	37.76
		Stallings Punctate	1	143.91
		Residual	2	2.23
		Mammalia	1	0.26
9	.80-.90	Stallings Plain	5	22.62
		Stallings Punctate	1	295.3
		Residual (plain)	3	5.28
		Mammalia	2	1.68
10	.90-1	Stallings Drag and Jab	1	16.07
		Stallings Plain	2	8.7
		Odocoileus virginianus	1	15.95
11	1-1.3	Stallings Plain	1	5.28
		Stallings Punctate	1	2.84
		Residual (plain)	4	4.95
		Odocoileus virginianus	1	11.86
		Burnt clay fragments	1	1
11 Area D*	1-1.1	Stallings Decorated	1	36.46
		Stallings Drag and Jab	1	15.3
		Stallings Punctate	1	5.48
		Residual (plain)	4	3.53
		Testudines	8	57.9
11, Area D*	1.1-1.3	Stallings Drag and Jab	1	4.3
		Stallings Plain	1	2.6
		Stallings Punctate	2	57.53
		Residual (plain)	1	2.09
		Charcoal	1	0.47

* Note that Level 11, Area D was dug in two separate provienences and has been kept separated for analysis.

with a matrix of white sand mottled with dark grayish brown sand (Area F) was noted in this stratum. Below Stratum C and Area F was Stratum D, consisting of mostly very dark gray, sandy loam, abundant pottery, and few oysters. The large amount of pottery associated with this stratum may have resulted from use of the area as living floor or dump site for pottery and other non-shell organics prior to ring construction. Stratum E below it is a dark grayish brown loamy sand devoid of artifacts.

Three radiocarbon assays on shell were obtained from this unit—one from the top of the relatively soil-free shell deposits in Stratum B; one from the more soil-laden shell from Stratum C; and one from the dark earth and pottery deposits of Stratum D. Stratum D oyster yielded the youngest assay, which dated to 3560±70 B.P. (GX29193). The oldest assay came from the quahog recovered from Stratum C (.9–1 mbd), 3800±30 B.P. (CAMS 87990). The third date (from oyster) from the top of Stratum B (.30–.35 mbd) was



Stratum A - Very dark brown (10YR2/2) sandy loam with crushed oyster

Stratum B - Oyster and periwinkle with a small amount of dark gray (10YR4/1) sandy loam

Stratum C - Oyster and periwinkle with moderate amounts of very dark gray (10YR3/1) sandy loam

Stratum D - Very dark gray (10YR3/1) loamy sand with occasional oyster

Stratum E - Very dark grayish brown (10YR3/2) loamy sand. Soil was sterile

Area F - Oyster with white (10YR8/1) sand mottled with very dark grayish brown (10YR3/2) sand

Figure 9. Coosaw Island Shell Ring 2, Excavation Unit 2, selected profiles.

3610±70 B.P. (GX 29527). At first glance, the dates appear out of chronological order in the profile. One possibility is that Ring 2 construction started later than Ring 1 and during its construction shell from older rings (Ring 1 or 3) was borrowed and used to build Ring 2. A similar suggestion has been offered for the shell used in the construction of the Fig Island 1 shell ring (Saunders 2002:102). Cable (1993) has also suggested borrowing of older middens to build shell rings. To date, however, there is no unequivocal proof that shell was borrowed from older middens to build rings. The pottery seriation that is suggested by Cable (1993, 1995), and was used as evidence for borrowing at Spanish Mount, has not been found at any shell ring site (Russo and Heide 2003:34). Pottery in this unit appears to have been of a similar series from top to bottom, as well as is found in other rings.

Material remains from the unit included bone and shell fragments, as well as pottery sherds. A total of 277 residual sherds, 472 Stallings series sherds, and 18 Thom's Creek sherds were recovered (Table 4).

Ring 3, Unit 3

Unit 3 was placed in the southeast section of Ring 3 (Figure 7). The unit location was chosen to encounter the thickest deposits of this ephemeral ring to increase chances of recovering undisturbed material. The unit was excavated to approximately .45 mbd, however, the base of the shell ring was identified at .3 mbd (Figure 10). Stratum A was a very dark grayish brown sandy loam with crushed oyster. Whole oysters were rare in this stratum. This was followed by Stratum B a dark grayish brown sandy loam with crushed and compacted oyster. The compaction noted in this level was only about 7 cm thick, but served to differentiate the upper layers of crushed oysters from those found in the other two ring units. This additional compacted layer is likely the product of years of tractors and other agricultural equipment associated with farming. Stratum C was a dark grayish brown sandy loam with whole oyster, periwinkle, and some crushed shell. This stratum was similar in content (whole oyster, little to moderate soil) to the Stratum B shell ring deposits found in Units 1 and 2. This stratum also marked the base of the ring. Stratum D was a dark grayish brown

Table 4. Artifacts and Ecofacts Recovered From Excavation Unit 2

Unit 2

Level	mbd	Type	n	w (g)
1	0-.12	Stallings Plain	3	22.8
		Thom's Creek Punctate	1	4.7
		Residual	7	23.9
		Littorina irrorata	3	5.02
2	.12-.20	Stallings Indeterminate	1	8.78
		Thom's Creek Plain	1	4.07
		Residual	5	3.65
		Vertebrata	1	0.64
3	.20-.30	Stallings Drag and Jab	1	2.92
		Stallings Plain	6	64.77
		Stallings Punctate	1	7.8
		Thom's Creek Plain	3	24.41
		Residual	4	3.88
		Mammalia	6	17.08
		Odocoileus virginianus	2	12.29
4	.30-.40	Stallings Drag and Jab	3	80.84
		Stallings Indeterminate	2	127.6
		Stallings Plain	6	134.4
		Stallings Punctate	2	10.6
		Residual	13	27.4
		Mammalia	3	6.64
		Odocoileus virginianus	1	14.98
		Osteichthyes	1	1.49
		Ariidae	1	0.84
5	.40-.50	Stallings Drag and Jab	1	16.76
		Stallings Grooved	2	25.37
		Stallings Plain	14	111.05
		Stallings Punctate	1	20.61
		Thom's Creek Plain	1	8.99
		Residual	15	16.09
		Burnt clay fragments	1	2.86
		Mammalia	1	1.25
		Odocoileus virginianus	1	5.39
		Charcoal	2	0.89
6	.50-.60	Stallings Drag and Jab	3	37.08
		Stallings Plain	13	129.1
		Thom's Creek Plain	2	7.8
		Residual	14	14.34
		Mammalia	1	1.23
		Odocoileus virginianus	1	17.3
		Testudines	2	1.94
7	.60-.70	Stallings Drag and Jab	1	16
		Stallings Grooved	1	9.72
		Stallings Indeterminate	1	21.61
		Stallings Plain	15	86.79
		Stallings Punctate	1	11.14
		Residual	20	21.41
		Littorina irrorata	2	3.67
		Odocoileus virginianus	1	6.45
		Pseudemys spp.	3	10.56
8	.70-.80	Stallings Drag and Jab	3	37.64
		Stallings Plain	16	187.92
		Residual (plain)	10	9.01
		Incised bone pin fragment	1	1.16
		Mammalia	9	18.06
		Charcoal	1	0.3
9	.80-.90	Stallings Drag and Jab	5	78.84
		Stallings Plain	20	145.01
		Residual	8	8.27
		Littorina irrorata	1	1.68
		Busycon sp.	1	142.41
		Mammalia	2	3.04
		Odocoileus virginianus	1	2.62
10	.9-1	Stallings Drag and Jab	3	16.02
		Stallings Indeterminate	5	32.21
		Stallings Plain	62	565.44
		Stallings Punctate	16	236.62
		Thom's Creek Plain	2	4.96
		Thom's Creek Punctate	3	10.7
		Residual	38	41.67
		Dinocardium robustum	1	8.54
		Ilyanassa obsoleta	1	1.16
		Mercenaria spp.	3	83.3
		Kinosternidae	4	2.1
		Littorina irrorata	5	6.86
		Malaclemys	3	3.74
		Mammalia	18	32.02
		Odocoileus virginianus	1	51.35
		Osteichthyes	2	1.75
		Ariidae	1	0.69
		Charcoal	2	0.45
11	1-1.1	Stallings Decorated	6	93.12
		Stallings Drag and Jab	15	201.42
		Stallings Grooved	3	101.7
		Stallings Plain	130	1087.32
		Stallings Punctate	30	380.56
		Residual	103	105.2
		Ilyanassa obsoleta	1	0.28
		Littorina irrorata	2	2.57
		Mercenaria spp.	1	9.25
		Testudines	0	12.9
		Kinosternidae	8	4.52
		Malaclemys	4	9.79
		Aves	1	0.9
		Mammalia	43	70.44
		Odocoileus virginianus	5	48.25
		Osteichthyes	1	0.07
		Ariidae	1	0.71
12	1.1-1.2	Stallings Drag and Jab	3	27.08
		Stallings Plain	29	184.83
		Stallings Punctate	3	26.92
		Thom's Creek Drag and Jab	1	10.69
		Thom's Creek Punctated	1	4.73
		Residual	21	24.68
		Mercenaria spp.	2	44.05
		Mammalia	0	8.08
		Odocoileus virginianus	3	7.52
		Pseudemys spp.	2	3.88
		Burnt clay fragments	3	7.44
		Charcoal	2	0.77
13	1.2-1.3	Stallings Decorated	2	24.42
		Stallings Drag and Jab	6	75.4
		Stallings Indeterminate	1	2.8
		Stallings Plain	23	96.68
		Stallings Punctate	7	43.73
		Thom's Creek Plain	1	4.09
		Thom's Creek Punctate	2	50.62
		Residual	20	31.06
		Kinosternidae	1	0.33
		Malaclemys	4	4.02
		Mammalia	7	7.78
		Odocoileus virginianus	1	4.01
14	1.3-1.4	Stallings Drag and Jab	1	21.58
		Stallings Plain	2	7.81
		Stallings Punctate	3	29.7
		Burnt clay fragments	1	1.72

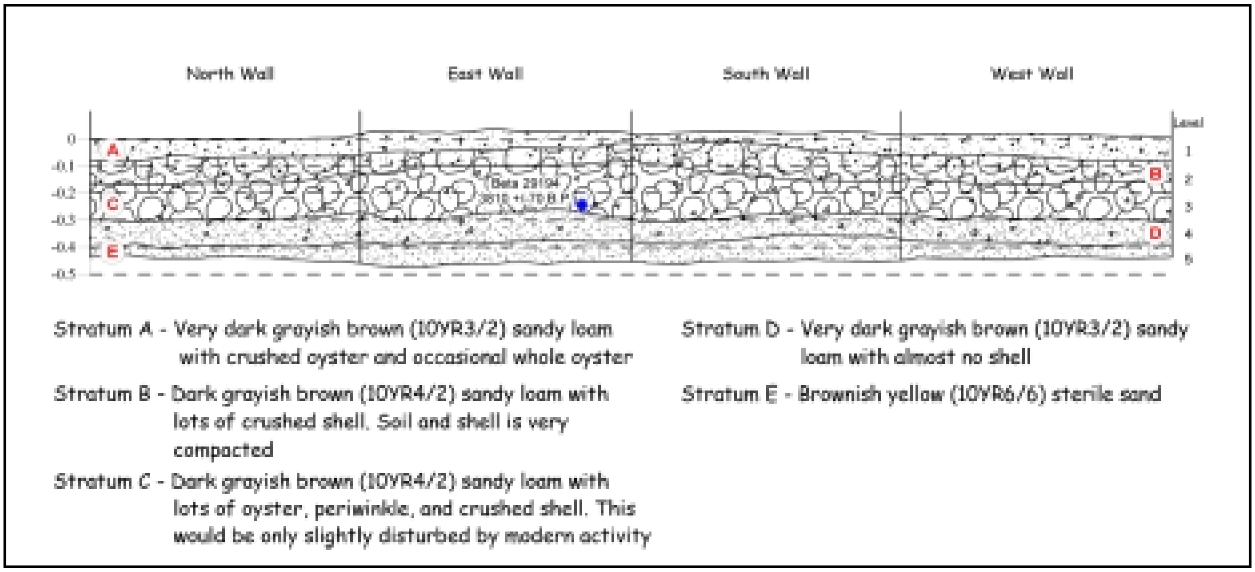


Figure 10. Coosaw Island Shell Ring 3, Excavation Unit 3 profiles.

sandy loam with almost no shell. This was followed by brownish yellow sterile sand (Stratum E).

One date was obtained on oyster from Ring 3. The date came from the east wall at the base of the ring (.25–.30 mbd) and was the oldest date from the shell ring complex at 3810±70 B.P. (GX29194).

Material recovered from the unit included bone and shell fragments as well as 57 residual sherds, 54 Stallings series sherds, and 1 piece of lithic debris (Table 5).

Summary

Excavations at all three rings at the Coosaw Island Shell Ring Complex indicate that the rings were built over a period of up to 400 years (Table 6 and Figure 11). The rings themselves where mostly homogenous oyster deposits with only slight amounts of soil, most significantly seen in the upper 20 cm of each ring. Except for the upper strata where crushing is assumed to have resulted, at least in part, from modern activities, no layers of crushed shell were noted in the profiles. Thus, the limited excavations indicate rapid accumulation of shell and not the slow gradual accumulation as postulated for ring construction by other researchers (Cable 1997; Trinkley 1980, 1985).

Table 5. Artifacts and Ecofacts Recovered From Excavation Unit 3

Unit 3				
Level	mbd	Type	n	w (g)
1	0-.10	Stallings Plain	3	14.92
		Residual	6	7.94
		Mammalia	1	0.63
		Mercenaria sp.	1	40.68
2	.10-.20	Stallings Drag and Jab	3	22.4
		Stallings Indeterminate	1	4.34
		Stallings Plain	16	85.66
		Stallings Punctate	5	56.97
		Residual	30	38.06
		Littorina irrorata	3	5.14
		Odocoileus virginianus	5	25.09
		Testudines	1	0.39
3	.20-.33	Stallings Drag and Jab	1	3.68
		Stallings Incised	1	8.41
		Stallings Plain	12	58.96
		Stallings Punctate	2	12.54
		Residual	17	24.4
		Debitage (coastal plain chert)	1	6.9
		Mammalia	2	0.78
		Odocoileus virginianus	6	28.06
		Charcoal	2	0.39
4	.33-.40	Stallings Plain	5	13.84
		Stallings Punctate	4	48.45
		Residual	4	3.77
		Odocoileus virginianus	1	2.92
5	.40-.50	Stallings Plain	1	3.66

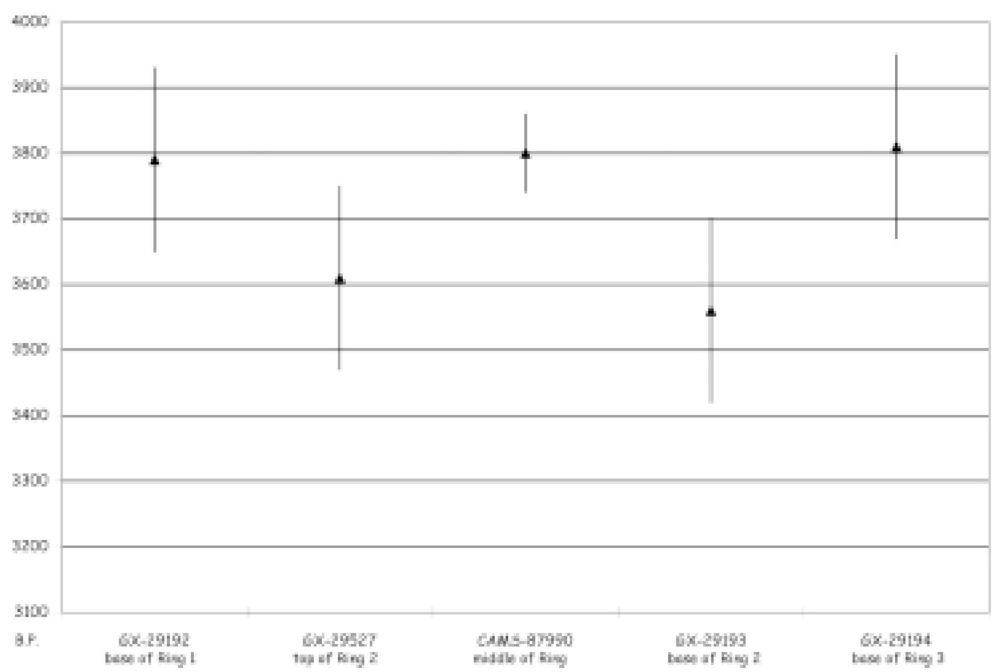


Figure 11. Radiocarbon dates from Coosaw Island Shell Ring Complex. The triangle is the conventional age and the line represents the age to two standard deviations.

Table 6. Radiocarbon Dates From Coosaw Island Shell Ring Complex

Provenience	Lab #*	Material	^{13}C	Conventional Age	SD	Maximum of Calibrated Age Ranges B.P.: (intercept) 1 sigma [2 sigma]**
Ring 1, Unit 1 .90-.95 mbd base of ring	GX-29192	oyster	-2.0 ‰	3790	70	[3551] 3633 (3714) 3827 [3916]
Ring 2, Unit 2 .30-.35 mbd top of ring	GX-29527	oyster	-1.8 ‰	3610	70	[3347] 3421 (3487) 3601 [3683]
Ring 2, Unit 2 .90-1 mbd	CAMS-87990	quahog	0	3800	30	[3636] 3685 (3725) 3810 [3835]
Ring 2, Unit 2 1.1-1.15 mbd base of ring	GX-29193	oyster	-2.1 ‰	3560	70	[3309] 3364 (3446) 3543 [3628]
Ring 3, Unit 3 .25-.30 mbd base of ring	GX-29194	oyster	-2.5 ‰	3810	70	[3569] 3658 (3755) 3874 [3954]

* GX is Geochron Laboratories and CAMS is Center for Accelerator Mass Spectrometry; ** dates calibrated with Calib 4.3. Reservoir correction data obtained from the Marine Reservoir Correction Database by P. Riemer found on the web at http://www.qub.ac.uk/arcpal/marine

Chapter 6. Material Culture

Cultural remains recovered in the field were bagged and assigned a unique Field Specimen number (FS#). Upon returning to the lab the artifacts were washed, air-dried, and sorted into basic categories (ceramics, lithic, bone, shell, etc.). All ceramics and lithics were identified to formal type. Basic identifications were completed for bone and shell.

Lithics

Two lithics fragments were recovered, a biface tip from Unit 1, Level 7 (.62–.72 mbd) and a piece of debris (see Sullivan and Rozen 1985 for debitage typology) from Unit 3, Level 3 (Figure 12). Both lithic fragments were coastal plain chert and both have been thermally altered.

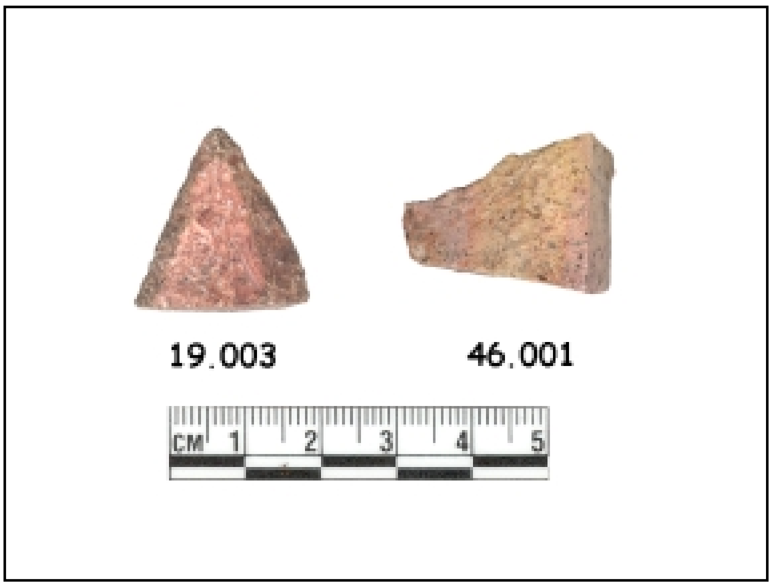


Figure 12. Lithics recovered from Coosaw Island Shell Ring Complex.

Ceramics

Ceramic analysis was undertaken following Saunders (2002b) with slight modification in the paste analysis method, but still using the design analysis put forth in that study. All ceramics were first screened to separate out the sherds smaller than ½″. The smaller sherds were coded as residual[2], counted, and weighed. Sherds larger than ½″ were then typed.

To analyze paste, both the interior and exterior surfaces of body sherds were examined. If surface examinations were inconclusive, a fresh break was made along an edge of the sherd and a hand lens at 7x magnification was used to examine the paste for fiber vermiculations—indicative of fiber-tempering—and other tempering agents. More detailed paste and temper observations were conducted on rim sherds. For rim sherds fresh breaks were always made and 20x magnification was used to search for tempering agents. Paste inclusions were quantified following Rice (1987).

The biggest differences between our analytic techniques and those of Saunders (2002b) was distinguishing between fiber-tempering in the core and fiber-tempering on the exterior and interior surfaces of sherds. Saunders (2002b) noted that the exterior and interior surfaces of a number of sherds from Fig Island had fiber vermiculations, but the sherd cores lacked them. While Saunders originally typed these sherds as Stallings, she later re-analyzed the paste of the Stallings sherds and decided that if the fibers were not present in the core, the sherds were Thom's Creek. This affected only about 75 sherds from the Fig Island collection (Saunders 2002b:133). However, at Coosaw Island, almost every sherd had vermiculations on either or both of the interior or exterior surfaces. Lacking time to do in-depth analysis on fresh breaks from each sherd, and because we felt that any significant amount of fiber in the paste, whether on the surface or in the core, indicates fiber-tempering, we typed most sherds as Stallings. This allowed for correlation with past researchers who also conducted macroscopic analysis and would have most likely typed these sherds as Stallings.

[2] Distinctions between decorated and plain residual sherds were made in the artifact database but not in this report.

After rough sorting by paste, the sherds were then typed by decoration. The types included Thom's Creek Plain, Thom's Creek Drag and Jab, Thom's Creek Punctate, Stallings Plain, Stallings Punctate, Stallings Incised, Stallings Drag and Jab, Stallings Grooved, Stallings decorated, and Stallings indeterminate (Figures 13–14). Most of these are formal types described in the literature. Stallings indeterminate and

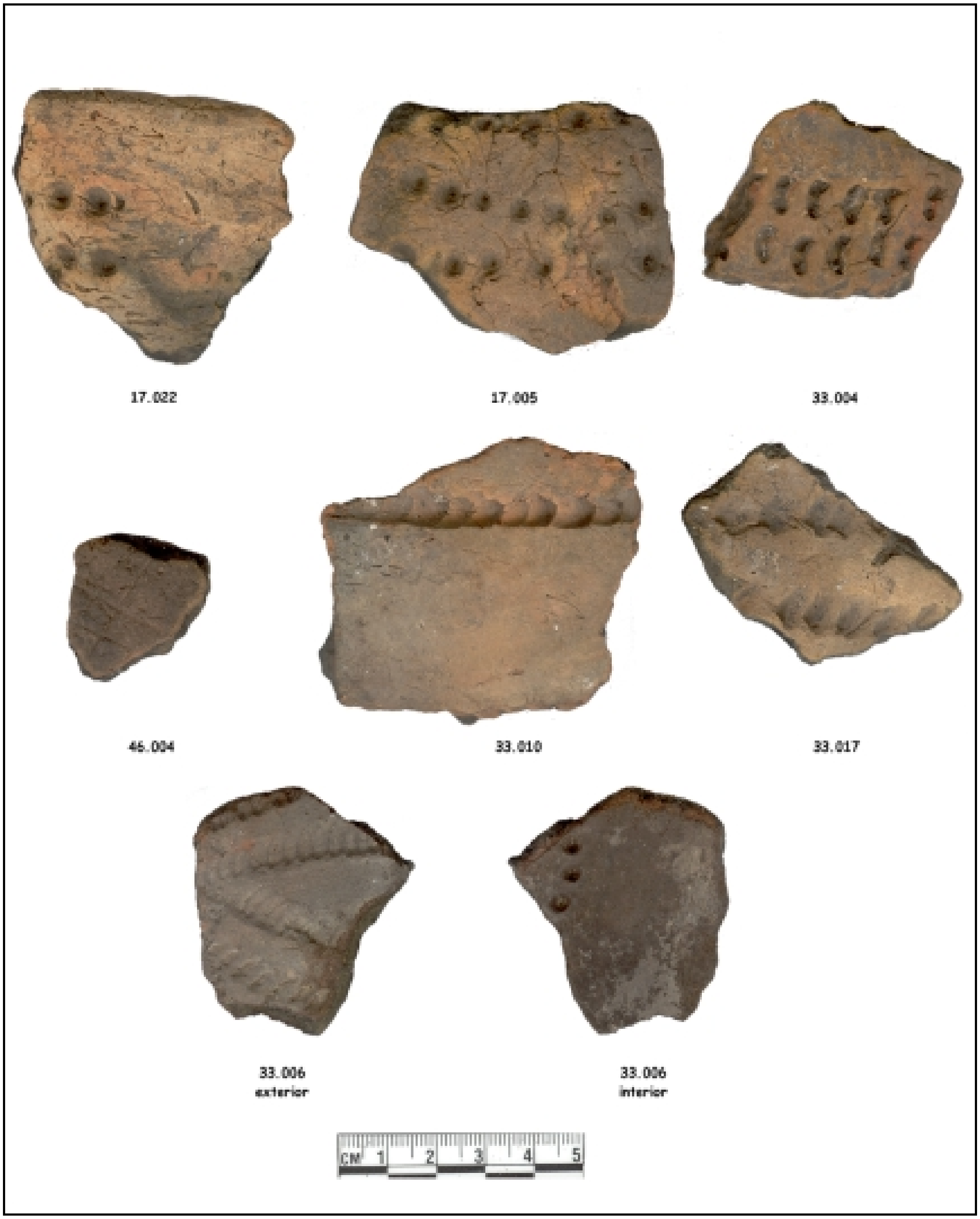


Figure 13. Stallings pottery from Coosaw Island Shell Ring Complex. 17.022 Stallings Zone Punctate; 17.005 Stallings Curvilinear Punctate; 33.004 Stallings Split Reed Punctate; 46.004 Stallings Incised; 33.010 and 33.017 Stallings Drag and Jab; 33.006 Stallings Drag and Jab on exterior and punctate on the interior

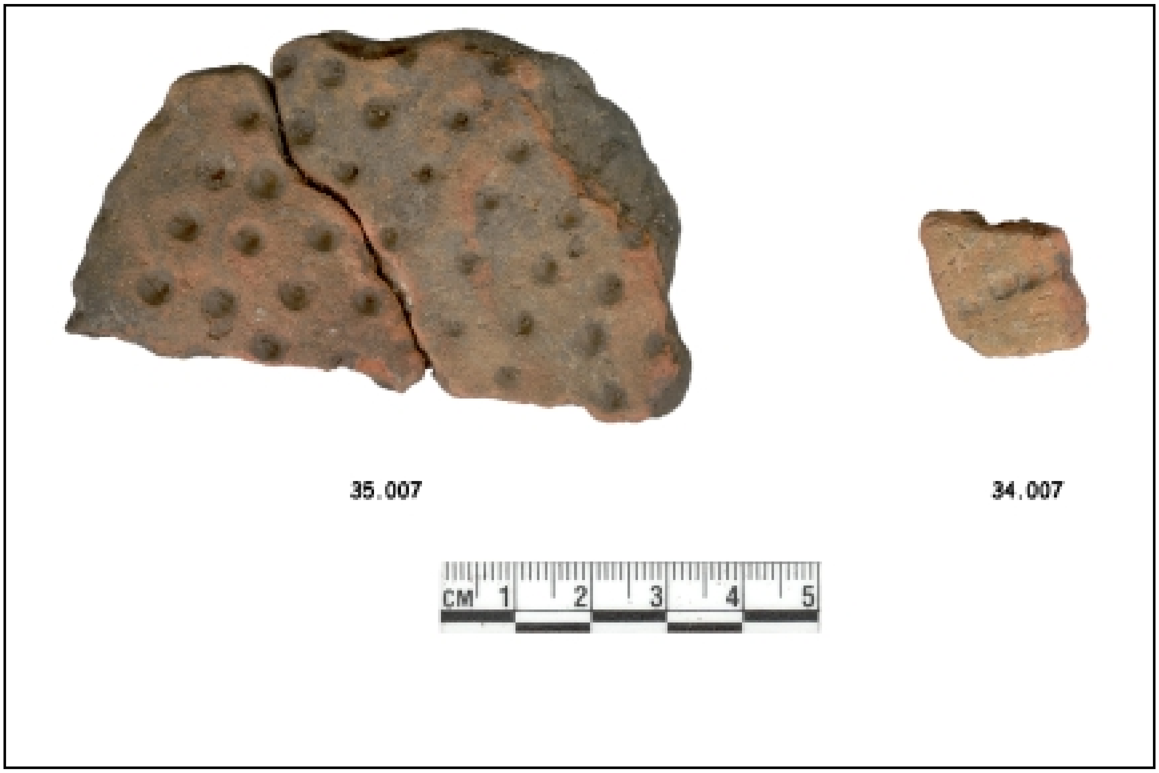


Figure 14. Thom's Creek Punctate ceramics from Coosaw Island Shell Ring Complex.

Stallings decorated, however, require discussion.

The Stallings indeterminate sherds are those sherds that had surfaces so eroded that it was unclear if they were plain or decorated. Stallings decorated are those sherds, which clearly had some decoration present, but it was unclear as to what it was or how it was made. These two types made up about 3% of the collection.

A total of 1,443 sherds were recovered from the excavations at Coosaw Island (Table 7 and 8). Of these sherds almost half (n=696) were residual. The non-residual sherds (n=747) were analyzed to series and type. The most common ceramic series was Stallings, representing 97% of the typed sherds. The Stallings sherds were either plain (72%), punctate (13%), drag and jab (7.5%), incised (.5%), or grooved (1%), or the decoration was worn or not present (3%). Thom's Creek pottery represented only (3%) of the typable collection, with plain sherds equaling 1.5%; punctate sherds, 1%; and drag and jab, 0.5%.

Faunal Remains

Faunal remains were arbitrarily collected by excavators. Oftentimes bone or shell was kept to facilitate its identification in the report as being present in the midden. The faunal remains in the collection are not representative of the entire spectrum of species utilized by the shell ring builders. However the remains do indicate some of the species being exploited. Table 9 lists all of the faunal remains recovered from the three excavation units, while Table 7 presents them with their provenience.

Bone Tools

A bone pin fragment was found in Unit 2, Level 8 (.70–.80 mbd). The bone pin had incised designs (see Figure 15) similar to other bone pins recovered in Late Archaic period contexts (Saunders 2002b:126; Waring 1968).

Shell Tools

Only one possible shell tool was recovered during the 2002 excavations. The tool was a damaged whelk. While no obvious signs of use were present, the whorl had been damaged and snapped at the base. It is unclear if this represented a tool. The whelk was

Table 7. Ceramics by Series and Types Recovered at Coosaw Island Shell Ring Complex

Series	Type	n*	% of type	% of collection
Stallings	Stallings Decorated	9	1.24	0.62
	Stallings Drag and Jab	57	7.86	3.95
	Stallings Grooved	7	0.97	0.49
	Stallings Incised	5	0.69	0.35
	Stallings Indeterminate	14	1.93	0.97
	Stallings Plain	536	73.93	37.14
	Stallings Punctate	97	13.38	6.72
Total Stallings		**725**	-	**50.24**
Thom's Creek	Thom's Creek Drag and Jab	1	4.55	0.07
	Thom's Creek Plain	13	59.09	0.90
	Thom's Creek Punctate	8	36.36	0.55
Total Thom's Creek		**22**	-	**1.52**
Residual		696	-	48.23
Total Collection		**1443**	-	**100**

*Includes pottery recovered from posthole tests, shovel tests, excavation units, and surface collections.

Table 8. Ceramics Recovered by Unit

Type	Unit 1	%	Unit 2	%	Unit 3	%	Total*	%
Stallings Decorated	1	0.19	8	1.04	0	0.00	**9**	0.64
Stallings Drag and Jab	8	1.53	45	5.87	4	3.60	**57**	4.07
Stallings Grooved	0	0.00	6	0.78	0	0.00	**6**	0.43
Stallings Incised	4	0.76	0	0.00	1	0.90	**5**	0.36
Stallings Indeterminate	0	0.00	10	1.30	1	0.90	**11**	0.79
Stallings Plain	135	25.81	339	44.20	37	33.33	**511**	36.47
Stallings Punctate	21	4.02	64	8.34	11	9.91	**96**	6.85
Thom's Creek Drag and Jab	0	0.00	1	0.13	0	0.00	**1**	0.07
Thom's Creek Plain	2	0.38	10	1.30	0	0.00	**12**	0.86
Thom's Creek Punctate	1	0.19	7	0.91	0	0.00	**8**	0.57
Residual	351	67.11	277	36.11	57	51.35	**685**	48.89
Total	***523***	-	***767***	-	***111***	-	**1401**	-

*Only ceramics recovered from units were used in this table. Ceramics from posthole tests, shovel tests, and surface collections are not included.

found in Unit 1, Level 4 (.32–.42 mbd).

Summary

Artifact analysis from Coosaw Island revealed a Stallings occupation for all three rings with only a small amount of Thom's Creek pottery present. This is similar to the nearby Chester Field ring but contrasts with the rings to the north such as those at Fig Island, which yielded mostly Thom's Creek pottery with only small amounts of Stallings. As at most ring sites, lithics, bone tools, and shell tools were comparatively rare.

Figure 15. Incised bone pin fragment from Ring 2, Unit 2, Level 8.

Table 9. Faunal Remains Recovered from Coosaw Island Shell Ring Complex

Taxon	n	w (g)
Vertebrata	552	101.51
Mammalia	140	216.29
Odocoileus virginianus (whitetail deer, 1 bone pin fragment)	61	347.14
Aves (Bird)	1	0.9
Testudines (Turtle)	86	95.74
Kinosternidae (Mud Turtle)	13	6.95
Pseudemys spp. (Pond Turtle)	5	14.44
Malaclemys terrapin (Diamondback terrapin)	11	17.55
Osteichthyes (Fish)	332	55.79
Ariidae (Saltwater Catfish)	147	122.49
Cynoscion nebulosus (Spotted Sea Trout)	1	0.34
Total	**1349**	**979.14**
Dinocardium robustum (Giant cockle)	1	8.54
Ilyanassa obsoleta (Eastern mud snail)	2	1.44
Littorina irrorata (Periwinkle)	23	32.44
Mercenaria spp. (Quahog)	7	177.28
Busycon spp. (Whelk, 1 poss. tool)	3	381.07
Total	**36**	**600.77**

Chapter 7. Discussion and Recommendations

The Coosaw Island Shell Ring complex consists of four of the twenty-seven shell rings recorded in South Carolina (Tables 10 and 11, also see Figure 1). All the rings in the complex are similar to other shell rings in South Carolina—built in the Late Archaic, circular or crescent in shape, composed of oyster shell with occasional periwinkle, and containing some of the earliest pottery in North America. Unlike most other South Carolina shell rings, Coosaw is one of only three conjoined rings or ringlets (Ford's Skull Creek and Fig Island 1 are the other two) and it is one of only two rings sites in which four rings are closely spaced (<100 meters apart) together. The Daws Island Shell Ring Complex (Barrow's, Broad River, Medicine, Patent Point) is the other site. While the true function of shell rings has not been determined, recent studies into the phenomenon (Russo n.d.; Russo and Heide 2001, 2002, 2003; Russo and Saunders 1999; Saunders 2002a) have shown that the rings are likely monumental architecture built up during intermittent periods of feasting (Russo n.d.; Russo and Heide 2002).

The Coosaw Island Shell Ring Complex is a unique site, which is currently under the protection of the DNR. Ceramics from the site show that people who made fiber-tempered Stallings pottery created and used the site. Limited amounts of sand-tempered Thom's Creek pottery suggests interaction with nearby Thom's Creek ceramic-making peoples. Radiocarbon dates indicate occupation between 3810 and 3560 B.P. While limited in nature, excavations revealed the rings to be largely dumps of oyster, which were completed over a short period of time that did not allow for the accumulation, either natural or human-made, of other mounded materials. No crushed shell lenses, which have been noted at other rings (Edwards 1965; Calmes 1967; Trinkley 1980), were noted in the 2002 excavations.

The dark strata (Stratum D) beneath Units 2 and 3 differed from that in Unit 1 (Area D), which was lighter in color, less uniform in distribution, and absent in portions of the unit where sterile sand (Stratum C) lay directly beneath the shell ring. Some shell rings have been identified as being placed directly on sterile sand (Russo 1991; Saunders 2002b:106), while others have been placed directly on stained or darkened soils replete with pit features, post molds and artifacts (e.g., Trinkley 1985; Russo and Heide 2002; Russo and Saunders 1999, Russo et al. 2002). Such darkened soils have been interpreted as living floors or activity areas occupied prior to ring construction, while the pits and posts in the strata are seen as intrusions from the ring building activities above. While no definitive evidence of posts or pits was identified in any of the Coosaw Island units, this may be due to the small size of the excavations and our limited view. The single probe in Unit 3 that extended to 96 cmbs, for example, may have encountered a shell filled pit intruding below the shell ring. Areas E and D in Unit 1, for another example, could be post and pit features beneath the shell ring. If they are not, then we lack an explanation for their presence—pedogenic staining from above seems dubious since the staining is not uniform across the unit. Tree root stains remain a distinct possible interpretation for Area E. Ultimately, to answer questions concerning how the rings were constructed, larger excavations are needed.

With the data we do have from Coosaw, however, we can say that Strata D in Units 2 and 3 contain every characteristic other archeologists have identified with pre-ring living floors—broken pottery, organically darkened/enriched soils, few to no large shell remains, and a level, uniform distribution. The puzzle of why so much pottery was found in the darkened layer beneath Unit 2 and so little beneath Unit 3 can be resolved by looking at the broader picture. Elsewhere it has been suggested that not all people using shell rings collected shellfish and employed pottery and other cultural items of wealth equally. At single ring sites, more pottery is associated with more shellfish at particular, high status positions in a ring (Russo et al. 2002). A similar situation may be working at the Coosaw rings. Here, however, high status may be related to specific rings rather than positions in rings. Ring 2 has by far more pottery than Ring 3. Even

Table 10. Summary Information for South Carolina Shell Rings

Shell Ring	Site Number	Shape	Size (m)	Greatest Thickness (m)	Radiocarbon Dated	Selected References*
Auld/Yough Hall	38CH41	circular	56 dia.	3.04	Yes	Gregorie 1925:16 (M), Waddell 1965:82 (D), Waddell 1966:3 (MO), Dorrah 1971:36 (OM)
Barrow's	38BU301	n/r	n/r	n/r	No	
Broad River	38BU302	n/r	n/r	n/r	No	
Bulls Island	38BU475	n/r	n/r	n/r	No	Moore 1898 (R), Hemmings and Waddell 1970 (R), Marrinan 1975 (R)
Buzzards Island	38CH23	circular	61 dia	0.91	No	Waddell 1966:1 (M), Dorrah 1971:38 (OM),Trinkley 1980:246 (R)
Chester Field	38BU29	crescent	44x26	1.60	No	Flannery 1943 (E), Waddell 1966:6 (M), Hemmings and Waddell 1970 (OM), Dorrah 1971:47 (OM), Trinkley 1980:23-25 (OM,E), Saunders 2002a:52 (D)
Coosaw Island 1	38BU1866	crescent	45 dia.	1.73	Yes	Heide 2003 (TM,E,D)
Coosaw Island 2	38BU1866	circular	43 dia.	1.73	Yes	Heide 2003 (TM,E,D)
Coosaw Island 3	38BU1866	circular	55 dia.	0.64	Yes	Heide 2003 (TM,E,D)
Coosaw Island 4	38BU1866	crescent	n/r	n/r	No	Heide 2003 (TM,E,D)
Crows Island	38CH60	circular	n/r	n/r	No	Trinkley 1980:246 (R)
Fig Island 1	38CH42	circular	157x111	5.5	Yes	Saunders 2002a (TM,E,D)
Fig Island 2	38CH42	circular	77 dia.	2.05	Yes	Hemmings 1970 (TM,E), Dorrah 1971:26 (OM), Saunders 2002a (TM,E,D)
Fig Island 3	38CH42	crescent	44 dia.	1.85	Yes	Hemmings 1970 (TM,E), Dorrah 1971:26 (OM), Saunders 2002a (TM,E,D)
Guerard Point	38BU21	circular	21 dia	0.77	No	Moore 1898 (M)
Hankel Mound	38CH7	crescent	n/r	n/r	No	Waddell 1966:5 (R)
Hobcaw	38CH46	n/r	n/r	n/r	No	Gregorie 1925:18 (R)
Horse Island	38CH14	circular	51x43	3.04	No	Caldwell 1952:315 (R), Waddell 1966:5 (M), Anonymous 1969 (M,V); Dorrah 1971:47 (OM), Trinkley 1980:33 (R)
Lighthouse Point	38CH12	circular	73 dia.	n/a	Yes	Hinson 1888 (M), Waddell 1966 (M); Trinkley 1975 (OM,E), Trinkley 1980 (OM,E,D), Trinkley 1985 (OM,E)
Medicine	38BU303	n/r	n/r	n/r	No	
Murray's Island	38CH61	n/r	n/r	n/r	No	Marrinan 1975, Table 1 (R)
Pohert Point	38BU300	n/r	n/r	n/r	No	
Sea Pines	38BU7	circular	37 dia.	0.91	Yes	Waddell 1966:7 (M), Calmes 1967(E,D), Hemmings and Waddell 1970 (OM), Dorrah 1971:42 (OM), Trinkley 1980:39 (TM)
Sewee	38CH45	circular	75 dia.	3.15	Yes	Edwards 1965 (TM,E), Dorrah 1971:69 (OM), Russo and Heide 2003 (TM,E,D)
Ford's Skull Creek/ Large Ring	38BU8	circular	61 dia	1.83	Yes	Calmes 1967 (OM,E,D), Buckley and Willis 1969 (D), Hemmings and Waddell 1970 (OM), Dorrah 1971:42 (OM) Trinkley 1980:40 (OM)
Ford's Skull Creek/ Small Ring	38BU8	circular	46 dia.	0.61	Yes	Calmes 1967 (OM,E,D), Buckley and Willis 1969 (D), Hemmings and Waddell 1970 (OM), Dorrah 1971:42 (OM) Trinkley 1980:40 (OM)
Stratton Place	38CH24	crescent	37 dia.	n/a	No	Trinkley 1980 (TM,E,D); Trinkley 1985 (TM,E)

n/r = Not recorded. This means that information could not be found in the selected sources.

n/a = Not applicable.

dia = Diameter

* Selected references are not inclusive but provide some baseline information. Letters in parenthesis next to reference stand for the following: D - a radiocarbon date is reported; E - excavations of any type (e.g., shovel tests, units, trenches) are reported; M - ring measurements are reported; OM - and outline/silhouette map is in the report; R - a reference to a site being a ring is made; S - a surface collection is reported; TM - a topographic map is in the report.

Table 11. Radiocarbon Dates from South Carolina Shell Rings

Sample #	Provenience	Material	$^{13}\delta$	Conventional[2]	SD[3]	Reference
Auld Shell Ring (38CH41)						
M-1209	Upper Level	Oyster	**0**[1]	**4180**	130/**148**	Williams 1968:330-331
Chester Field (38BU29)						
B-116284		Soot	**-25**[1]	**3660**	50/**86**	SCIAA Site files - cited in Saunders 2002a
Coosaw Island (38BU1866) Ring 1						
GX 29192	EU1 Base	Oyster	-2	3790	70	Heide 2003
Coosaw Island (38BU1866) Ring 2						
GX 29527	EU2 Top	Oyster	-1.8	3610	70	Heide 2003
CAMS87990	EU 2, 90-100 cmbd	Clam	**0**[1]	3800	30	Elliot 2003
GX 29193	EU2 Base	Oyster	-2.1	3560	70	Heide 2003
Coosaw Island (38BU1866) Ring 3						
GX 29194	EU3 Base	Oyster	-2.5	3810	70	Heide 2003
Fig Island (38CH42) Ring 1						
Wk-10103	Fig Island 1, TU 2	Oyster	-0.9	3816	54	Saunders 2002a
Wk-9746	Fig Island 1, TU 2	Oyster	-1.1	3861	46	Saunders 2002a
Wk-10105	Fig Island 1, TU 1	Oyster	-0.5	3953	47	Saunders 2002a
Fig Island (38CH42) Ring 2						
Wk-9762	Fig Island 2, ST 4	Oyster	-0.9	4112	50	Saunders 2002a
Wk-10102	Fig Island 2, ST 4	Oyster	-0.3	4009	55	Saunders 2002a
Fig Island (38CH42) Ring 3						
Wk-9747	Fig Island 3, TU 5	Oyster	-0.8	3993	49	Saunders 2002a
Wk-9763	Fig Island 3, TU 5	Oyster	-0.6	4030	50	Saunders 2002a
Wk-10104	Fig Island 3, TU 1	Oyster	-0.4	4074	48	Saunders 2002a
Lighthouse Point (38CH12)						
UGA 2904	Feature 33, N½ , base level 2	Charcoal	**-25**[1]	**2885**	175/**188**	Trinkley 1980
UGA 2903	Feature 33, S ½, base level 2	Charcoal	**-25**[1]	**3180**	65/**95**	Trinkley 1980
UGA 2901	230R60, Level 2	Charcoal	**-25**[1]	**3190**	70/**99**	Trinkley 1980
UGA 2902	230R70, Level 2	Charcoal	**-25**[1]	**3275**	55/**89**	Trinkley 1980
UGA 2905	Feature 37, north half, ash zone, base of level 2	Charcoal	**-25**[1]	**3345**	70/**95**	Trinkley 1980
Sea Pines (38BU7)						
I-2847	0-6 inches	Conch	**0**[1]	**3520**	110/**130**	Calmes 1968; Buckley and Willis 1969
I-2848	20-26 inches	Clam	**0**[1]	**3810**	110/**130**	Calmes 1968; Buckley and Willis 1969
Ford's Skull Creek 1/ Large Ring (38BU8-1)						
I-2849	30" above charcoal (I-2850) in periwinkle layer and 27" bs	Oyster	**0**[1]	**3530**	110/**130**	Buckley and Willis 1969
I-2850	level 9, 56-57" bs, bottom half of shell deposits	Charcoal	**-25**[1]	**3585**	115/**135**	Buckley and Willis 1969
Ford's Skull Creek 2/ Small Ring (38BU8-2)						
I-3047	Base of midden, level 4, 18-24"	Charcoal	**-25**[1]	**3890**	110/**130**	Buckley and Willis 1969
Sewee (38CH45)						
GX 2279	NE Quadrant, C-1, 2' bs	Oyster	**0**[1]	3675	110/**130**	Russo and Heide 2003
GX 30186	EU1, 33-48 cmbd	Oyster	-1.8	4010	70	Russo and Heide 2003
GX 30187	EU1, 150 cmbd, ring base	Oyster	-2.3	4120	70	Russo and Heide 2003

[1] $^{13}\delta$ estimated based on Stuiver and Polach 1977:358.

[2] dates in bold are measured dates corrected for $^{13}\delta$. To correct for shell 410 years was added for charcoal dates 0 years were added (see Stuiver and Polach 1977:358).

[3] The first number refers to the standard error for the measured age and the second number to the standard error for the conventional age based on formula from Stuiver and Polach (1977:358). Single number refers to standard deviation (sd) for conventional ages provided by the laboratory.

taken into account that Ring 3 may have been truncated by farming activities, the remaining undisturbed strata above the pre-ring deposits are far less abundant in pottery than those found in Ring 2. Future work at the site might focus on artifact distribution among the rings to determine if this pattern of inequality can be confirmed.

Coastal Ring Distribution

One of the most interesting aspects of Coosaw is its placement along the coast. The site sits between two large clusters of shell ring sites. Pottery from rings to the North is mostly Thom's Creek with a little Stallings pottery, while rings to the South have mostly Thom's Creek with limited Stallings (Table 12, Figure 16). The closest site to Coosaw Island—Chester Field—is the only other ring site in South Carolina that has such a large percentage of Stallings ceramics (in fact no Thom's Creek sherds have been reported from the site although analysis of the collection has been limited in nature).

The two Stallings-dominated ring sites surrounded by Thom's Creek dominated ring sites runs counter to expectations. We thought that the southern most ring sites in South Carolina might have had mostly Stallings pottery, with a little Thom's Creek, while those to the north would be mostly Thom's Creek with little Stallings. This pattern has been noted by both Anderson 1975 and Sassaman and Anderson (1995:111). While Coosaw and Chester Field seem to meet the expected distribution, Ford's Skull Creek and Sea Pines, rings located to the south of them, do not. The dates for Sea Pines and Skull Creek mirror the nearby Chester Field and Coosaw Rings, which contained mostly Stallings ceramics, so it is not an period-related issue (Figure 17). It might be that Thom's Creek ring builders did not settle the major drainages and instead stayed strictly in the coastal strand. Could there be a dichotomy between Sea Island shell ring builders (Thom's Creek) and Riverine shell ring builders (Stallings)? Why would this one type seem to dominate the Coastal Strand?

Alternatively, the identification of Thom's Creek pottery at Sea Pines and Ford's Skull Creek may be in error, with the pottery actually belonging to the Georgia "Refuge" series, but found in slightly earlier contexts. This alternative is unlikely, however, because the drag and jab design motif found at the Sea Pines and Skull Creek is not found in Refuge series, (although the punctate designs from the sites are typical of both Thom's Creek and Refuge). More intensive study of the region is needed to solve this ceramic type distribution puzzle at shell rings in South Carolina.

Summary and Recommendations

Coosaw Island Shell Ring Complex is unique in a number of ways.

- Four rings make up the complex
- Two of the rings share a conjoined wall
- The site is protected and easily accessible
- The presence of both Woodland and Late Nineteenth/Early Twentieth century components allow for diachronic land use studies

Below are recommendations for future work at Coosaw Island Shell Ring Complex.

1 Gain permission from Mr. Smalls to finish probing and mapping Ring 2. Also, try to gain similar access to Ring 4 to confirm that it is indeed a ring.

2 Radiocarbon date Ring 4. If permission is received to probe and map Ring 4, researchers should also try to get permission to dig a small unit in the ring to obtain ceramics and shell for relative and absolute dating.

3 Conduct a remote sensing survey on the DNR owned rings. After clearing the site of vegetation, remote sensing using both ground penetrating radar and electrical resistivity could prove useful in identifying features within the rings plaza. These techniques might also allow for the quick discovery of features outside the rings that are related to ring occupation.

4 Undertake an artifact distribution study. Systematic shovel testing at 5 meters or 2.5 meters over Ring 3 would allow for artifact distribution studies of the ring. Equal or coequal distribution data at the ring, or among the rings may provide insight into the social make up of the ring builders.

Table 12. Ceramics By Series and Type from Reported South Carolina Shell Ring Excavations

		Coosaw		Chester Field (Griffin 1943)[2]		Sea Pines (Calmes 1967)[1]		Ford's Skull Creek (Calmes 1967)[1]		Lighthouse Point (Trinkley 1975)[1]		Lighthouse Point (Trinkley 1979)[1]/[3]		Stratton Place (Trinkley 1980)[1]		Fig Island (Saunders 2002b)[1]		Sewee (Russo and Heide 2003)[1]	
Series	Type	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		%
Stallings (ST)	ST Decorated	9	1.20	3	1.90	5	3.94	1	0.17	0	0	0	0	0	0	0	0	0	0
	ST Drag and Jab	57	7.63	0	0	5	3.94	28	4.78	0	0	0	0	0	0	2	0.11	0	0
	ST Grooved	7	0.94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ST Incised	5	0.67	3	1.90	4	3.15	3	0.51	0	0	0	0	0	0	3	0.17	0	0
	ST Indeterminate	14	1.87	0	0	13	10.24	16	2.73	0	0	0	0	0	0	0	0	0	0
	ST Plain	536	71.75	28	17.72	12	9.45	28	4.78	0	0	0	0	0	0	112	6.26	0	0
	ST Punctate	97	12.99	122	77.22	1	0.79	3	0.51	0	0	0	0	0	0	14	0.78	0	0
	ST Finger Pinched	0	0	1	0.63	4	3.15	8	1.37	0	0	0	0	0	0	0	0	0	0
	ST Heavy Cord Marked	0	0	1	0.63	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Stallings		**725**	**97.05**	**158**	**100**	**44**	**34.65**	**87**	**14.85**	**0**	**0**	**0**	**0**	**0**	**0**	**131**	**7.33**	**0**	**0**
Thom's Creek (TC)	TC Drag and Jab	1	0.13	0	0	46	36.22	96	16.38	43	1.14	52	0.75	22	1.45	108	6.04	0	0
	TC Plain	13	1.74	0	0	7	5.51	197	33.62	2958	78.36	5595	80.90	1171	76.99	820	45.86	144	91.72
	TC Punctated	8	1.07	0	0	7	5.51	127	21.67	426	11.28	594	8.59	56	3.68	608	34.00	1	0.64
	TC Finger Pinched	0	0	0	0	11	8.66	51	8.70	305	8.08	572	8.27	251	16.50	25	1.40	3	1.91
	TC Incised	0	0	0	0	3	2.36	7	1.19	21	0.56	29	0.42	3	0.20	26	1.45	0	0
	TC Mixed Designs	0	0	0	0	0	0	0	0	0	0	28	0.40	2	0.13	10	0.56	0	0
	TC Brushed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.17	0	0
	TC Unidentifiable	0	0	0	0	9	7.09	21	3.58	22	0.58	43	0.62	0	0	57	3.19	2	1.27
	TC Simple Stamped	0	0	0	0	0	0	0	0	0	0	3	0.04	1	0.07	0	0	0	0
	TC Finger Impressed[4]	0	0	0	0	0	0	0	0	0	0	0	0	15	0.99	0	0	7	4.46
Total Thom's Creek		**22**	**2.95**	**0**	**0**	**83**	**65.35**	**499**	**85.15**	**3775**	**100**	**6916**	**100**	**1521**	**100**	**1657**	**92.67**	**157**	**100**
Total		**747**		**158**		**127**		**586**		**3775**		**6916**		**1521**		**1788**		**157**	

[1] Residual sherds were not included in these counts.

[2] The ceramics from this report are only a representative sample of the entire collection.

[3] The values reported in text had copied poorly and may be incorrect.

[4] Also known as Awendaw Finger Impressed.

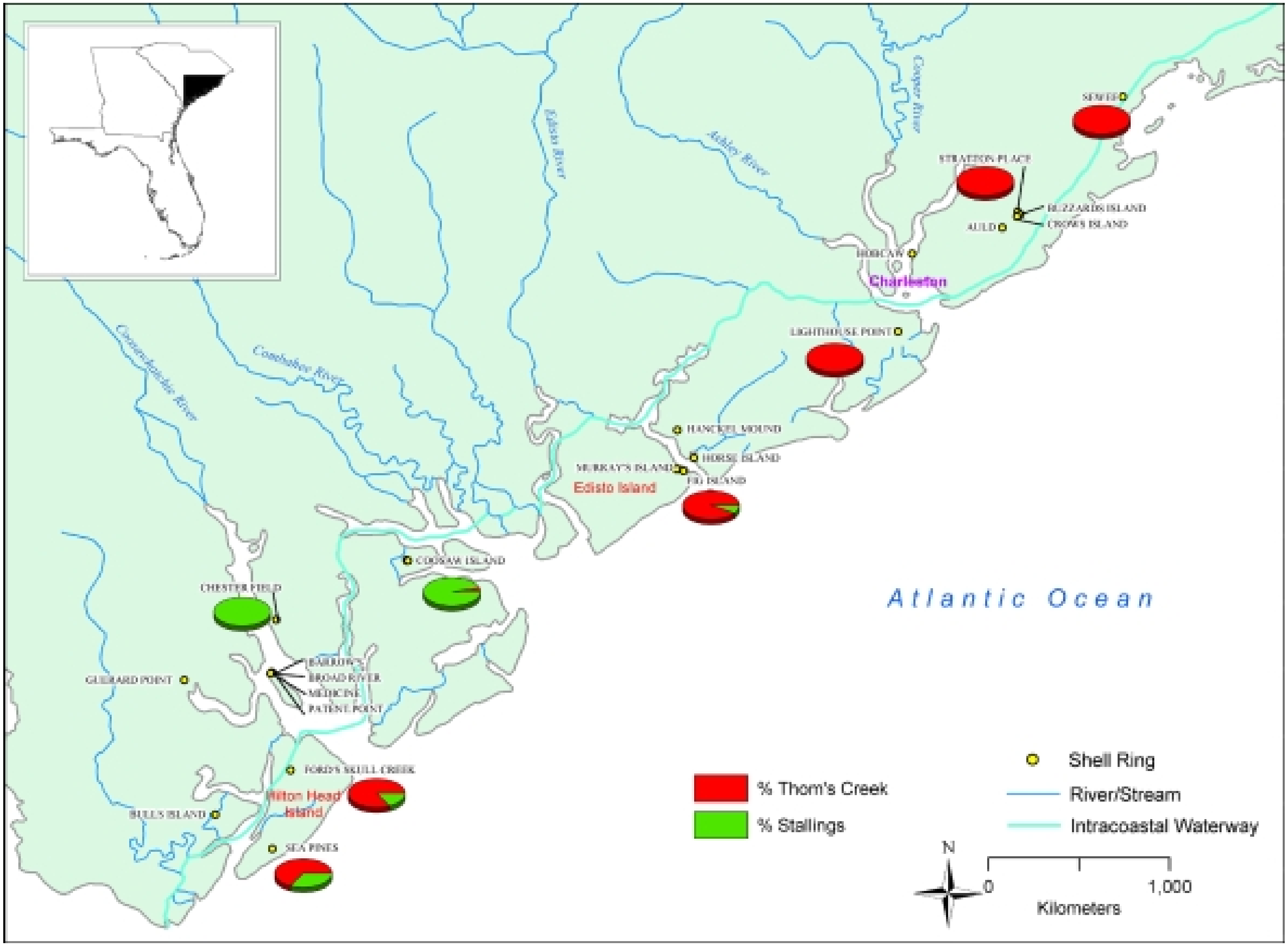


Figure 16. Percentage of Thom's Creek or Stallings ceramics recovered from excavations.

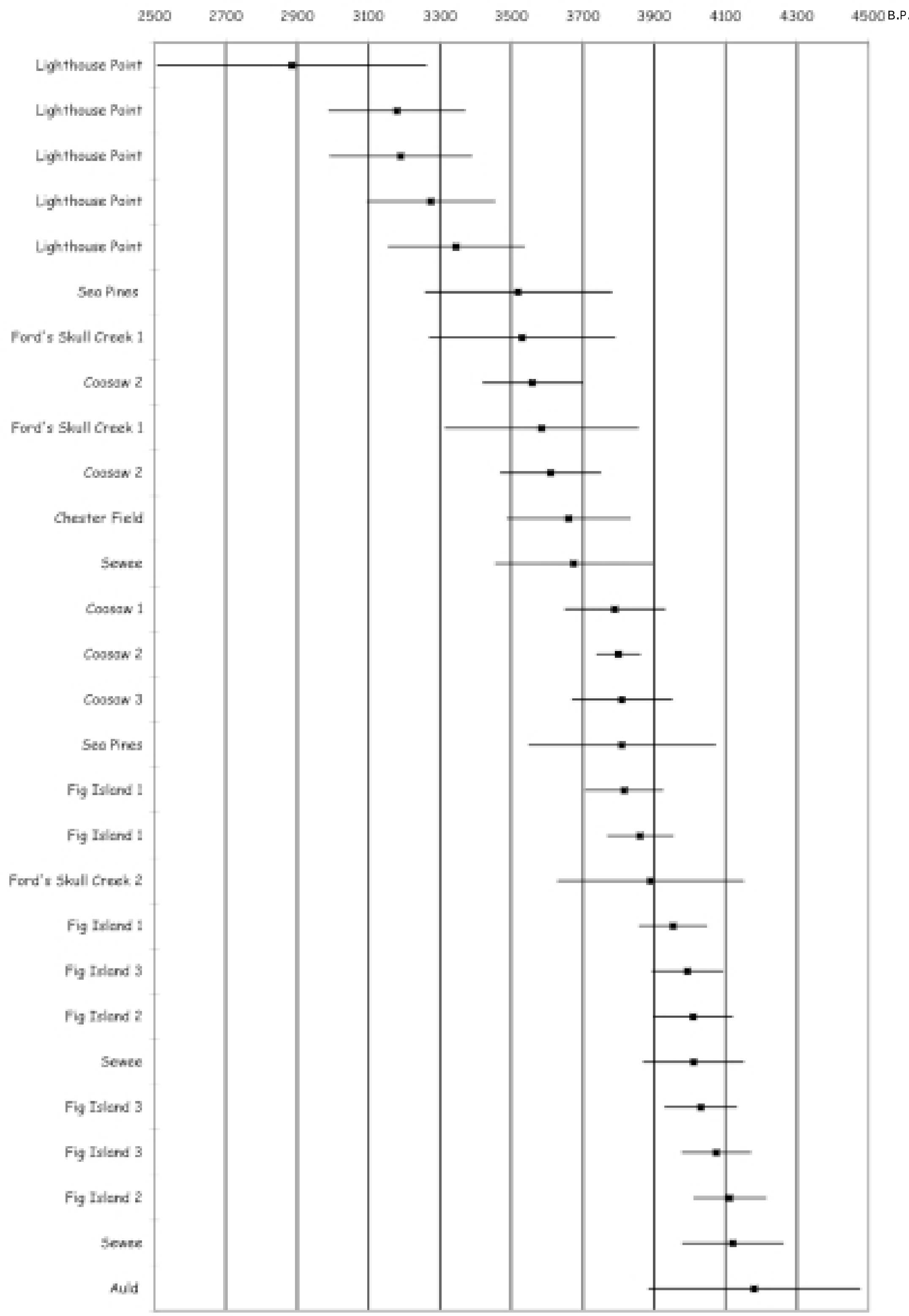


Figure 17. Radiocarbon dates of South Carolina Shell Rings. Black square is the conventional age and line represents two standard deviations.

5 Explore the construction of the conjoined rings. A trench through the shared wall of the Rings 1 and 2 would provide data for questions related to site construction. There are a limited number of shell rings, which are actually conjoined (Ford's Skull Creek, Fig Island 1, and Rollins Shell Ring) and none of these rings has explored how, in what sequence, or why the rings were joined. Careful, large scale excavations and multiple radiocarbon dates might solve this problem.

6 Undertake faunal collection for seasonality studies. Seasonality studies have been conducted on a limited number of rings in Florida and South Carolina. These sorts of studies give indications about periods of site use. Seasonally distinct results might show when or if the ring was abandoned periodically. Alternatively, year-round collection of fauna would indicate that at least part of the populations were permanent residents. Faunal studies could provide insight into the settlement patterns of the ring builders.

7 Excavating large blocks in the plaza and interior edges of the rings. Large block excavations in the plaza and the ring edges might allow us to interpret the pre-ring and ring period activities at the site without the often obfuscating effects encountered in ring excavations proper.

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