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Melanie M. Langgle
University of Central Florida, me546371@ucf.edu

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ANALYSIS OF THE MORTUARY PATTERNS AT THE BURNS SITE (8BR85) AT CAPE CANAVERAL SPACE FORCE STATION AND THE STATE OF FLORIDA

by

Melanie Langgle

A thesis submitted in partial fulfillment of the requirements
for the Honors Undergraduate Thesis program in Thesis Discipline
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Thesis Chair: Dr. Sandra Wheeler

ABSTRACT

The Burns Site, located in Cape Canaveral, Florida, is an ancient burial mound that presents a unique archaeological puzzle characterized by its distinctive mortuary practice known as 'radial burials.' This paper explores the origins and significance of radial burials within the broader framework of indigenous mortuary practices in Florida, from the Late Archaic through the Malabar II period (750 – 1565 AD). The research investigates and cross-references previous studies on ancient burial mounds in the Southeastern United States using quantitative and qualitative analysis. The study aims to gain insights into the cultural, social, and historical contexts that shaped the Burns Site by comprehensively examining burial patterns across Florida and the Southeastern United States, including Louisiana, Georgia, and North and South Carolina.

The study highlights a correlation between the burial pattern and the Southeastern Ceremonial Complex, evident through physical evidence such as copious amounts of lightning whelk and other symbolism found at the radial burial sites. The research aims to prove that the radial pattern did not emulate the spoke of a wheel but the culturally significant lightning whelk shell and its fundamental counterclockwise spiral shape. Analysis based on the Attributes Table concluded that the radial burial practice is a uniquely Florida Indigenous burial practice found in mounds made from coastal elements between 500 AD - 1565 AD. The findings revealed frequent similarities between artifact assemblages in radial mound sites and Southeastern Ceremonial Complex Sites.

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CHAPTER 1: INTRODUCTION

1.1 Introduction to the Research

Located on Cape Canaveral, Florida, the Burns Site (8BR85) is an ancient burial mound containing archaeological layers dating from the Late Archaic through the Malabar II period (3000 BC-1565 AD) (Barber et al. 2023). What distinguishes this mound is a particular mortuary practice known as 'radial burials.' Indigenous human remains are arranged in a distinctive spoke wheel pattern within this prehistoric mound and others found exclusively in Florida, with heads converging towards the center and feet pointing outward.

1.2 Research Questions

1.2.1 How Radial Mounds Are Different from Traditional Mounds

Understanding the origins of the radial burial practice requires quantitative analysis and qualitative interpretation. Building upon previous studies that have emphasized discrepancies in the literature since the mound's discovery by Anglo-Americans over a century ago, this research initiative endeavors to bridge the gaps in literature through investigation and cross-referencing of archaeological reports and published data on burial mounds in the American Southeast. Distinguishing fundamental discrepancies and resemblances between radial mounds and traditional mounds will help find the origin of the radial burial pattern.

This research focuses on contextualizing the significance of radial burials within the broader framework of indigenous mortuary practices in Florida and the Southeast. By scouring published archaeological reports for sites in Florida and the Southeastern United States such as the greater Southeast, for similar burial patterns, this research aims to identify insights into the

cultural, social, and historical contexts that shaped the Burns Site while also determining how they are similar and different from traditional mounds. This methodology can also determine if there are indicators in the form of physical evidence to support the theory that the Burns mound and the other radial mounds recorded are related to a massive cultural complex previously thought to have been absent in the southern Florida peninsula.

1.2.2 How Do the Radial Mounds Correlate to the Southeastern Ceremonial Complex

The second key aspect of the research is to distinguish the potential correlation between the radial burial pattern and the Southeastern Ceremonial Complex. Finding the relationship between the Southeastern Ceremonial Complex and radial burials entails examining known Southeastern Ceremonial Complex sites and analyzing the artifacts found alongside the radial mound sites to identify similarities. The research will look at common motifs, effigies, ceramic assemblages, fauna, and evidence of the Black Drink Ceremony found in historical documentation and physical evidence.

1.3 Chapter Outline

This document will delve into the origins of the radial pattern by utilizing previous archaeological work conducted at the eleven known radial mound sites, and 43 traditional mound sites, and Southeastern Ceremonial sites (total 54 sites). The research aims to explore the possibility of connecting the indigenous cultures of Florida with the Southeast by examining the radial mound sites. By taking a holistic approach to each of these archaeological sites, we hope to uncover new information that was previously unknown.

Chapter 2 introduces the reader to the geographical, cultural, and archaeological history of the Burns Site and surrounding areas. Chapter 3 discusses the methodology behind the

research conducted. Chapter 4 states the results discerned from the Attributes Table (Fig 11) which is then analyzed the data collected in Chapter 5. The conclusion in Chapter 6 summarizes the findings and reiterates the interpretations made. The culmination of these chapters provides a holistic comprehension of the Burns Site and its significance within the broader archaeological context.

CHAPTER 2: BACKGROUND

2.1 Geography of Burns

The Burns Site (8Br85) is located on the coast of Florida in Cape Canaveral, at the Cape Canaveral Space Force Station, the Burns Site (8Br85). It is a burial mound with various active phases starting in the Late Archaic through the Malabar II period (750- 1565 AD). The Cape is a barrier island that is situated between the Indian River and the Atlantic Coastal Ridge (White 1970). The island's sediment mostly sand and is within a transitional climate zone with temperate and tropical climates interchanging there (Myers and Ewel 1990). Subsequently, the Cape Canaveral Space Force Station has the most divergent faunal and floral communities in the United States and Canada. Located off the east coast of the Banana River, the mound resides in the Cape Canaveral Indian River Cultural Area, a region centered around the St. Johns River (Barber et al. 2023).

Figure 1 Map showing the location of Burns Site on the Cape Canaveral Space Force Station, Florida (Map from Barber. et al. 2023: 5)

The Burns site holds great significance today as it serves as a location for repatriating indigenous human remains that have been discovered throughout the state of Florida (Rodrigues et al.2021). Unlike other prehistoric mounds, Burns' status as a current repatriation burial mound provides a unique site for archaeologists to research. The mound has multiple layers and dates to 1275 CE, as determined by Calib 8.10 by Stuiver and Remer's 1993 method (Barber et al. 2023).

Figure 2 Photo of Burns Mounds from Barber et al.2023 pg 18

2.2 Cultural and Historic Background of the Burns Site and Associated Regions

The East and Central culture that thrived along the St. Johns River is identified by the St. Johns pottery found in sites along the significant waterway's shoreline. Yale University archaeologist Irving Rouse determined the cultural region where the Burns site was located in 1951. The Cape Canaveral barrier island was formed around 3700 BCE; however, this project focuses on the Late Archaic and Malabar II periods (3000 BCE-1565 AD) (Barber et al. 2023). Based on ceramic assemblages from the region, the Malabar II period is situated with the St. Johns (AD 750-1565), the Late Woodland, and the Mississippian archaeological periods (Penders 2012).

Before the Seminole tribes settled in Florida, the state was home to other native groups that left their cultural footprints behind in burial mounds and habitation sites. The agriculturally dominant Timucuan tribe was a prominent group that inhabited areas from the Ocilla River, near Tampa Bay, across the state to Cape Canaveral, and into southern Georgia (Bushnell 1920). The

Cape Canaveral area was a border between the southern hunter-gatherer Aís native groups and the northern agricultural Timucuan native groups (Bushnell 1920). According to historical documentation such as those by Derrotero of Alvaro Mexia, an Aís village called the Ulumay may have existed in the regions along the Banana River (Willey 1954:79-90).

The Malabar II period coincided with the spread of Mississippian culture and the transition to the Mississippian period in the greater Southeast (AD 900-1500) (Barber et al. 2023). The Mississippian period was pre- and post-European contact, which Penders states may correlate to the origin of the radial burial pattern (Penders 2012).

The Aís were believed to have had a cultural influence as far south as the upper Florida Keys in the 16th and 17th centuries. Their chief was said to have had a close relationship with the southernmost tribe of Florida, the Calusa. The Jorobo and Mayaca tribes were said to have dwelled west of the Aís territory and were often mentioned together in Spanish documents. European shipwrecks off the Aís coastline (Cape Canaveral) in the 16th and 17th centuries influenced trade between the Aís and the Europeans (Daniels 2013). The Aís traded for sassafras, China root, a common remedy for syphilis, and French perfume in exchange for, in some cases, shipwrecked Europeans they had ransomed. (Bushnell 1996).

Natives in the Indian River Region were prominently documented by the European settler Ponce de Leon in 1513 near the Indian River Lagoon, on the East coast of the peninsula by Navarez in 1528 (Bushnell, 1920). Others theorize that the Aís resided in the area for that time based on historical documentation by Derrotero of Alvaro Mexia in the early 17th century (Stirling et al. 1954).

Woodbury (1934:9) documented that native groups known as the Aís inhabited the Cape Canaveral area. Relations were turbulent between European and indigenous tribes due to an incident regarding the Spanish accusing the tribe of murdering castaways that washed up on

shore. The altercations between the Spanish and the Aís that followed this resulted in the deaths of sixty Surruques. Between 1613 and 1617, disease spread throughout the native groups. Half of the native population died. In 1656, the Timucuan and Surruque native groups participated in a revolution against the Spanish, which was swiftly put down at the cost of more tribal casualties (Woodbury 1934).

2.3 Previous Research Conducted at the Burns Site

2.3.1 The Burns Site

The Burns Mound (8Br85) is one of the most studied and recorded radial burial mounds. Radial burials are unique mortuary parts characterized by remains arranged in a 'spoke wheel' pattern (Fig 3). The placement of the remains in this pattern involves the heads directed toward the center of the mound while the feet are pointed and extended outward. Excavations have occurred on multiple occasions in the 1940s, 60s, 90s. (Deming and Horvath 1999; Levy et al. 1984, Rouse 1951, Willey 1931; Willey 1954, Bellomo 1996; and Cantley et al. 1994, Penders, 2012). The archaeological record states several different forms of the term radial burial. Throughout the archaeological records, radial burials are also referred to as ’spoke wheel’ or ‘arc’ burials. In this research, the term radial burials will be used. Any mound that does not have the radial pattern will be referred to as traditional.

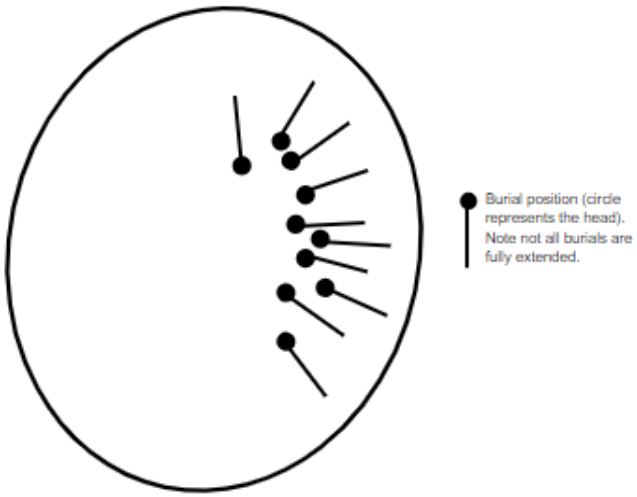

Figure 3 Representation of individuals in Burns mound orientation: radial pattern created by Dr. Sandra Wheeler

Despite their prevalent documentation throughout Florida, the true significance of the radial burial pattern remains a mystery to modern scholars. Some propose it as a direct response to the increased deaths of the local indigenous peoples of the American Southeast following European contact (Penders 2012). In contrast, others suggest it is an unrelated custom that predates colonialism (Penders 2012: 96). It could also be the result of a custom change between the Malabar I and II periods (Willey 1954: 89). This enigmatic pattern continues to intrigue and puzzle researchers.

The Burns Site, a place of historical significance, witnessed its earliest recorded lootings of Native burial mounds by Anglo-Americans in the 1850s by George Woodbury in 1933-1934. Human remains and ceramics were taken from the site to England, including 27 individual remains and ceramics that were removed by Sir Tatton Sykes (Milanich 2002). The location of these remains, a part of our shared history, is still unknown.

When George Woodbury conducted his archaeological excavation with the Bureau of American Ethnology at the Smithsonian Institution, it was documented that the mound was bisected (Fig 4) (Woodbury 1934:16). These remains were said to be found in the radial burial formation when exhumed. Woodbury was the first archaeologist to conduct a more scientific excavation at Burns's site in 1933-1934. Woodbury documented the radial pattern within the burial mound through drawings and maps. The artifacts and human remains he found during that excavation helped date the radial burials within the mound to the Malabar II period (Woodbury 1934).

The mound was split into two levels: the upper and lower levels. The upper level of fine, sandy soil and the lower level of shell, charcoal, and ceramic sherds. The individuals found on the upper level of the mound were placed on their backs, while those in the lower levels were "flexed or semi-flexed," flexed means that the body was placed in a bent position, such as crouching. Semi-flexed refers to remains placed with limbs bent towards or away from the body. (Stirling et al. 1954). The individuals were reported to be an even mix of males and females.

Along with ceramics dating from the late Malabar II period (750- 1565AD), pieces of a Spanish olive jar, a cross-etched silver pendant, a stone celt, and approximately fifty human remains were found within the Burns mound (Rouse 1951: 193). The notes Woodbury left suggest that the remaining half of the Burns mound remaining is now devoid of artifacts. The cultural materials Woodbury collected in the half he excavated them then relocated them to the Smithsonian Institution (Rouse 1951:193).

Rouse and Willey's excavations also stated that the mound's core was sand covered with ash and shell. Burials were found in the mound's ash and shell layers (Barber et al. 2023). A research project conducted by Resource Analysis Inc. (RAI) in 1982 implemented 26 shovel tests and determined that the mound was 2.5 meters high and 15 meters in diameter. The report given

by RAI stated the presence of a dense natural layer of coquina and shell from various local species, as well as historic graves around the mound that are suggested to be a part of the Burnham family's occupation on the site (Levy et al. 1984: 97-98).

In the 1960s, Irving Rouse, an archaeologist from Yale University, conducted an archaeological survey of the Burns site and theorized that the mound was in an Aís village known as the Ulumay village (Rouse 1951: 192). Other pedestrian surveys, survey collection, and shovel testing were done at the Burns mound in the 19th and 20th centuries (Barber et al. 2023).

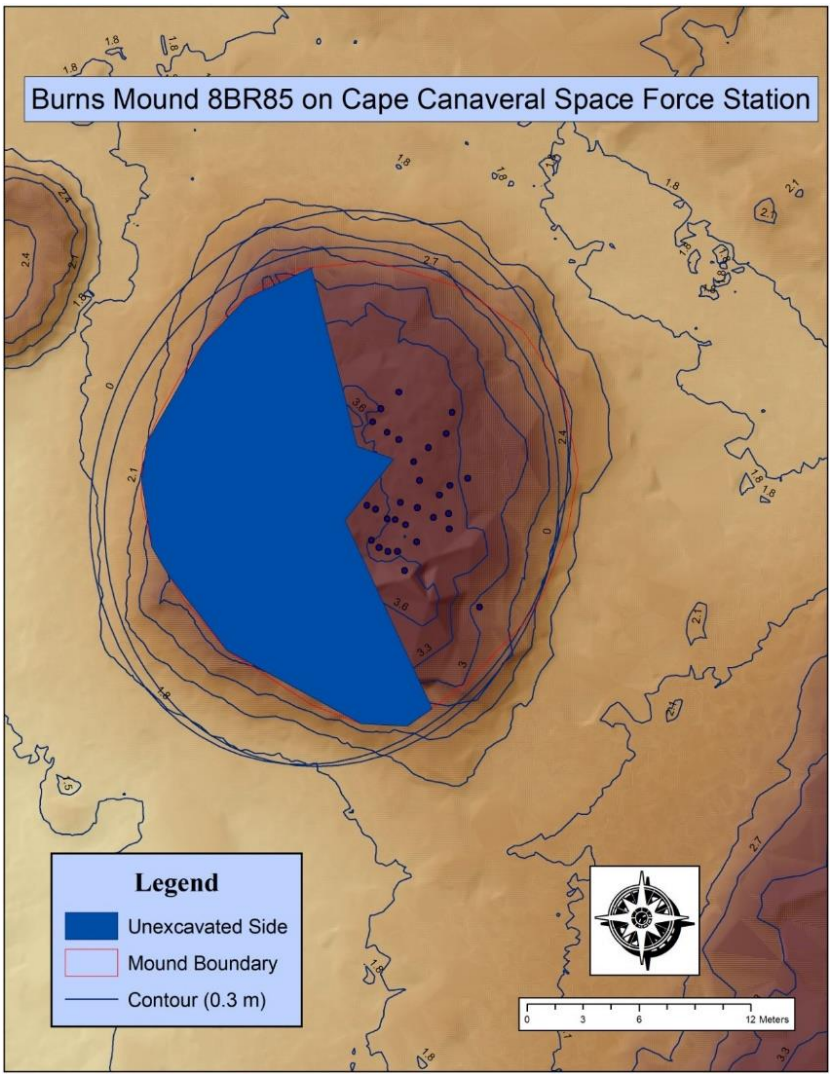

Figure 4 GIS overlay of published map (Wiley 1954) of Burns and modern imagery of the site

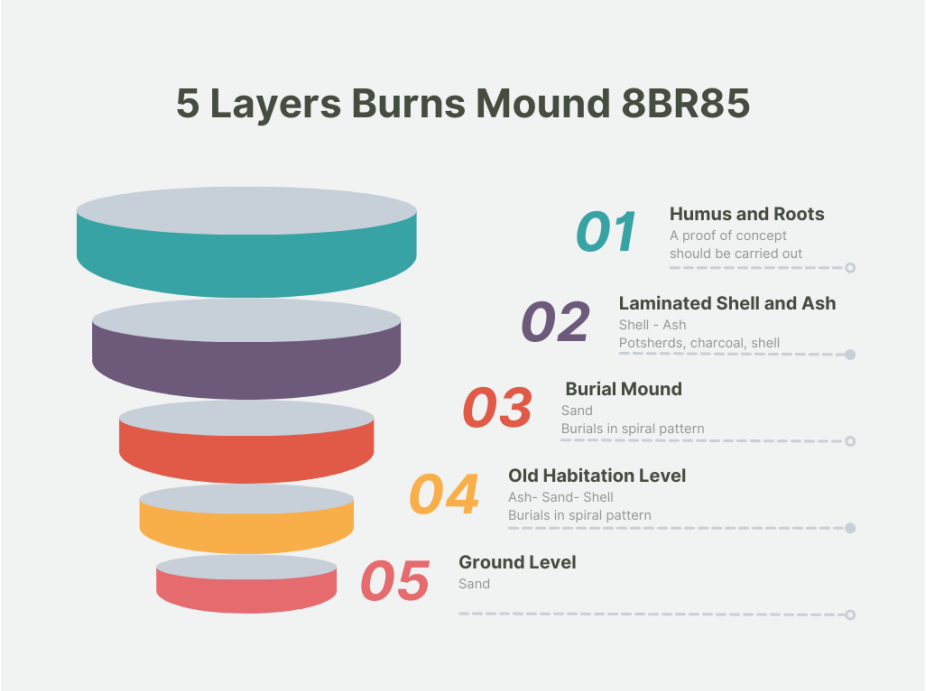

Figure 5 Stratigraphic Layers of the Burns Mound and their contents based on Willey's excavation

In the 1960s, the areas around the Burns mound were archaeologically surveyed, including pedestrian surveys, shovel test surveys, and excavations of 1 x 1 m test pits (Janus Research 1996: Demming and Horvath 1999). George Long also conducted a pedestrian survey of the Burns site and its surrounding areas with the Kennedy Space Center in the late 1960s (Long 1997). Long reported information such as a bulldozer and a resident 'reshaped the mound' (Long 1967;48). Surface collection produced pre-contact ceramics and shell tools.

In the 1990s, Janus Research and Archaeological Consultants Inc. (ACI) excavations showed that most native cultural activity was conducted near the lagoon's edge and on the mound's western side (Barber et al. 2023). Eighteen years later, the Cape Canaveral Archaeological Mitigation Project (CCAMP) researched the site (Barber et al. 2023).

The Burns site seemed to have been surrounded by an occupational site that encompassed 500 meters north-south on the Banana River (Barber et al. 2023). Due to historic settlers'

occupation of the site, cemeteries were constructed south and north of the Burns mound, and later construction in the 20th and 19th centuries damaged the site (Barber et al. 2023).

Since 2017, the Cape Canaveral Archaeological Mitigation Project (CCAMP) has been conducting extensive research on Burns and the nearby historic Anglo-American cemeteries. This research, which includes Phase I and II field testing, geospatial analysis, paleoethnobotanical and faunal analysis, ceramic analysis, and radiometric dating holds the promise of shedding new light on the significance of the radial burial pattern at the Burns Site (Barber et al. 2023). The results of these investigations are eagerly awaited by the academic community.

Excavations from CCAMP cross-referenced the report that Woodbury submitted to the Smithsonian by excavating a 2 by 6-meter trench in a field season that spanned from 2018 to 2019. (Barber et. Al. 2023). The trench revealed five stratigraphical layers that correspond to Woodbury's original report. The first layer contained a high level of artifacts and ecofacts, the remains of 19th and 20th-century occupational activity, and potential backfill remains from contact-era and prehistoric habitation. The second layer had an unclear formation with high artifact and ecofact content. Levels 3 and 4 of the mound's north contained naturally occurring formations and consisted of sand. In both layers, artifact and ecofact content was high. The 4th layer was carbon dated between 1000 and 1300 CE. The 5th stratigraphical layer of the Burns mound comprises pre-occupation soil- pale yellow sand with sparse cultural materials (Barber et al. 2023).

Faunal samples collected during the excavation were analyzed using a comparative collection in collaboration with the University of Florida Museum of Natural History. Of the 30 different animal species found, most of the fauna identified at the site were fish and shellfish. Other species found were mammals and reptiles. It was noted that compared to nearby sites'

fauna assemblages, a large population of conch and whelk shells was found at the Burns site. The indigenous population used these shells for tools such as hammers, vessels, spoons, and beads (Barber et al. 2023).

Lightning whelks were significant to Indigenous culture due to their clockwise spiral pattern. Certain native tribes interpreted the pattern as a physical representation of the daily path of the sun, which could also encompass the ideal of the transition between life and death. An intact shell would often be used as a drinking vessel for Black Drink, a beverage ingested during rituals. The Lightning whelk's pattern is believed to have been mimicked in Indigenous mound structures and placed in burial mounds (Barber et al. 2023). The assembly of the various animal species and the presence of the various whelk and conch shells led the CCAMP researchers to conclude that the Burns mound was a ritualistic site where a multitude of existential trading nexuses amongst Southeastern tribes converged (Barber et al. 2023).

Woodward (2023) chemically tested ceramic sherds found at the Burns site and the nearby Penny site (8Br158) for the caffeinated Black Drink. Using technology such as UV-vis-NIR spectroscopy and in-situ residue. Both sites produced positive samples for the Black Drink and Maize starch grains. Both samples that tested positive originated from fiber-tempered ceramics; this was significant due to the wide range of ceramics present at both sites (Woodward 2023).

Many archaeological excavations have been recorded and occasionally distorted the burial mound. The documentation of the mound and its dimensions throughout the centuries has proven the irreparable damage that archaeological research can cause to a site. In 1861, Irving Rouse reported the mound as 20 feet tall and 24.4-17.7 meters in diameter (Rouse 1951). By 2018, the mound had drastically decreased in size, with the height being reported at 1.6 meters and the diameter 25-28 meters (Barber et al. 2023). A research project conducted by Resource

Analysis Inc. (RAI) in 1982 implemented 26 shovel tests and determined that the mound was 2.5 meters high and 15 meters in diameter. This difference could also be credited to varying mapping strategies employed by different archaeological teams.

2.3.2 Florida and Southeastern American Mortuary Archaeology

In Florida, mortuary patterns in burial mounds were recorded in historical documentation as early as the 1700s. Archaeologists such as Harvard University's Clarence Bloomfield Moore and Yale University's Irving Rouse traveled specifically along the Southeast of the United States. They conducted archaeological surveys and excavations of burial mounds and shell middens (Mitchem 1999). Documentation and artifact collection relied heavily on the head archaeologist and their personal biases. Moore often sent his findings to the Peabody Museum of American Archaeology and Ethnology (Mitchem 1999). It was a frequent occurrence that artifacts were sent to the excavating archaeologists' personal friends' museums, and collections and field notes were detailed, depending on individual interests.

Before C14 dating, archaeologist Irving Rouse formulated a chronology of the Indian River Region based on the ceramic seriation, stating that St. Johns Creek Stamped pottery was formulated during the Malabar II period (1000-1763 AD) (Rouse, 1951). However, other archaeologists, such as Milanich (1994), found that St. John II ceramics were also present during the Malabar II period (3000 BCE-1565 AD). This analysis states that the Malabar II period coexisted with the Late Woodland and Mississippi periods outside the Indian River Region in the American Southeast (Penders 2012).

Malabar II period mounds are often identified by the presence of St. Johns Creek stamped, nonlocal wares or copies of European goods, St. Johns incised ceramics, and Dunns Creek Red (Rouse 1951:254). However, based on research by Brech (2004), the presence of St. Johns incised is no longer a dependable indicator because it is found in Malabar I and II

structures. Later in Brech's study, he states that the Malabar II period is determined by the collection of St. Johns Plain, sand-tempered plain, St. Johns Check Stamped, and various other ceramic types (Penders 2012).

Burials are found throughout the mounds' various layers. Human bones are also regularly found scattered throughout the mound. This could result from post-burial disturbances or cleanings from charnel activities (Milanich 1994: Penders 2012: Rouse 1951).

2.4 Malabar I-II Period Burial Mounds Characteristics

2.4.1 Common Mound and Midden Construction Methodologies

Within the boundaries of the Indian River culture area, Indigenous groups during the Malabar I-II period constructed above-ground burial mounds. The region's groups used burial mounds as a point of convergence for religious and cultural means (Penders 2012). It is also theorized as a tactic implemented by the local tribes to claim territory (Buikstra and Charles 1999: 201). North America has two types of mounds: shell and earthen. Shell is typically found along the Southeastern regions of the nation, including Georgia and Florida, while earthen mounds are in the country's center (Saunders and Russo 2011).

These burial mounds consisted of shell or black-earth middens and shell convergences. Due to the reliance on the local waterways for food, the materials needed for these mound constructions were readily available. Shell species used to assemble the burial mounds were quahog clam, whelks, crown conch, moon snail shells, and coquina (Penders 2012). These formations were typically used as mortuary spaces for Indigenous burials. Indigenous cultures constructed burial mounds on the coasts on quickly drained terrain, such as scrub oak (Luer and Almy 1987: 301).

The cultural significance behind constructing the burial mounds in the Indian River region was establishing a spiritual link between the living and dead (Buikstra and Charles

1999:201). The burial mounds served as markers of the cultural history of an area. Rather than having fences, the native groups built upon the mounds and buried their dead to assert their claim (Wallis, 2008).

In the Indian River Region in Florida, burial mounds formed during the Malabar II period are typically located along the eastern and western banks of the northern region of the Indian River Lagoon as well as the east bank of the Banana River (Bellomo 1996; Bense and Phillips 1990; Demming and Horvath 1999). This geographic pattern may be credited to rising sea levels and other ecological conditions. Burials in the Malabar II period were typically correlated with middens (Barber et al 2023). A noted settlement pattern in Florida shows shoreside temple complexes commonly surrounded by subsidiarity villages (Luer and Almy 1981: 145).

Due to Cape Canaveral's anomalous geographic attributes, the native groups territories paralleled that of the Indian River Lagoon (Penders 2012). This resulted in smaller occupational areas and middens being constructed nearby. Remains are found in different stratigraphic layers and positions, such as extended, flexed, or bundled. In the Malabar II culture, other mortuary burial practices came into effect. Certain burials were found in mounds positioned in an arch shape, with the heads touching the center of the mound and the feet facing outward; the mounds were then covered with sand (Barber et al. 2023).

The burial mounds during the Malabar period were frequently constructed with sand and shells. The mounds in the Indian River Region were commonly located near settlements (Penders 2012). Burial mounds in the Indian River region differ from other regions in Florida because their burial mounds are placed near habitation areas (Penders 2012). Artifacts found within burial mounds vary. In coastal environments, mounds can contain a variety of ceramic types. Sites located on the Cape Canaveral barrier island, such as the DeSoto Groves Mound (8Br83), Holmes Mound (8Br86), Hammock Mound A (8Br88), and the Norris Mound (8Br89), are all

Malabar II period mounds that rest near multiphase villages. Penders hypothesizes that the area's mounds were a primary area of religious importance (Penders 2012).

2.4.2 Shell Rings in the Southeast

In northeastern Florida, located on the Saint John's River, shell rings, such as The Grand Site (8DU1), were constructed similarly to the Indian River Region mounds found south of the complex. Commonly found in South Carolina, Florida, and Georgia between 3055 B.C and 1155 B.C, shell rings were the circular or semi-circular shapes of shell mounds and are theorized to be associated with ritual. Archaeologists, such as Rebecca Saunders, believe that the circular shape is a significant characteristic shared between indigenous habitual and ceremonial sites (Saunders 2002: 85). Shell rings are often associated with the native's cultural motivation for interconnection. However, deviations from the shell mound formations can be observed in the Southeast. For example, in South Florida, a U-shape is standard. In South Carolina and Georgia, a circular or C-shape is most commonly found (Russo 2004: 41).

According to the National Park Service, shell rings are "marine shells in complex arrangements of mounds, ridges, and flat areas" (Griffin 2002: 274-275). The Grand Site sand burial mound, radiocarbon (C14) dated to AD 900-1250 and near a possible habitation site, is enclosed by a 70-meter-wide ring of local marine shells that reach 40 meters high. The western side of the shell ring holds a sand burial mound (Mitchem 2021).

The trend of burial mounds placed on middens of local shells is also seen in sites such as the Mill Grove Complex (8DU12) (e.g., Russo 2004; Saunders 2004). Archaeological work conducted at the complex by the University of North Florida and Florida State University revealed that the site yielded faunal samples of local fish and mammals commonly found in middens as well as some exotic animals such as bobcats and bears which pointed towards the complex being a feasting site (McLean 2019). This led archaeologists to state that burial mounds

on middens consisting of 'common' food staples allowed indigenous peoples to "ritualize the mundane" (McNiven 2013). Some foreign artifacts, such as shell beads, quartz pebbles, worked alligator bone, a stemmed projectile point, sandstone samples, and two pieces of schist, were found within the complex (Cordell & Mitchem 2021). It is believed that the site, including the shell ring and the surrounding area (8DU627), was used for different purposes over time. Specifically, the shell ring was likely a religious site, while the surrounding area was likely used for habitation. This theory was proposed by McNiven in 2013.

2.4.3. Distribution and Variety of Artifacts Found in Coastal Mounds and Middens

Previous research done by Clarence Bloomfield Moore on Florida and American Southeast burial mounds showed no status differences in grave goods or sequestration intrusive artifacts amongst the burials in the coastal mounds (Moore 1894:15-23). Moore conducted archaeological work on the mounds throughout the late nineteenth and early twentieth centuries. His expeditions involved bisecting mounds to study their stratification, shell, fauna, and ceramic and stone tool analysis (Moore 1894:15-23). Moore's copious notes on burial mounds throughout the American Southeast region are vital due to the mounds discussed being demolished.

It is theorized that the sparse presence of nonlocal goods found in the Indian River Region's burial mounds resulted from a trade blockage from established trade routes throughout the Southeast. These routes were formed during the Woodland and Mississippian times, but the natives of the Indian River Region are theorized to have been cut out of these trades (Penders 2012). This theory goes on to state that the cultural shifts in the Indian River Region were not affiliated with the Mississippian world until European contact in the sixteenth century (Penders 2012). This cultural situation could have led to nonlocal wares being added to the burial mounds after their initial use.

Individuals of varying ages and gender are evenly distributed throughout these burial mounds. However, it is essential to note that the absence of grave goods is a defining attribute of Indian River region burial mounds (Penders 2012). Nonlocal artifacts are sparingly recovered within Indian River mounds. These nonlocal artifacts may be present due to trade routes that gave the Indian River culture groups access to goods manufactured in distant areas. These nonlocal artifacts suggest a trade route extending from Florida to Ohio (Mitchem 1999).

In other Southeastern states, such as Louisiana, Georgia, and the Carolinas, late Archaic and Malabar I-II period burial mounds were also constructed. Mounds formed within the Malabar II period in these states were sometimes cone-shaped and lacked lithic samples (Russo 1994). Their mounds' construction is comparable to ones found in Florida, with them being above ground and containing several usage layers. Grave goods are also sparsely present in the mounds and formed near occupational sites (Saunders 1994).

2.4.4 The Southeastern Ceremonial Complex & the Black Drink Ceremony

The Southeastern Ceremonial Complex was a religious complex that once stretched across the Southeastern part of the United States. It relied on horticulture that originated in the Middle Mississippi Basin and was characterized by various ceremonial practices. These practices are often represented through physical remains such as motifs and ceremonial relics found in or near platform mounds. The Complex included several variations of rituals, such as the Black Drink Ceremony. Interestingly, there is little evidence of a gradual progression of these rituals; instead, they appeared suddenly throughout the southeastern region (Waring and Holder 1945). The explosion of these ritualistic practices spread throughout most of the southeast and ended as quickly as it began (Waring and Holder 1945).

Archaeologists have demonstrated the massive religious movement throughout the indigenous era by recording artifacts from massive sites that held copious amounts of the

complex's relics. Such relics include human effigies, worked conch shells, and motifs like the Crossing Sun. Some archaeologists believe the rituals and religion associated with the Southeastern Ceremonial Complex were developed during the Hopewellian period and with Mesoamerican influence. This widespread religion is theorized to have tied the Southeastern United States indigenous groups together, with the remains of that massive cultural phenomenon lasting into modern times in the form of archaeological sites such as Mt. Royal, Macone, Hollywood Mound, Cahokia, and Moundville (Waring and Holder 1945).

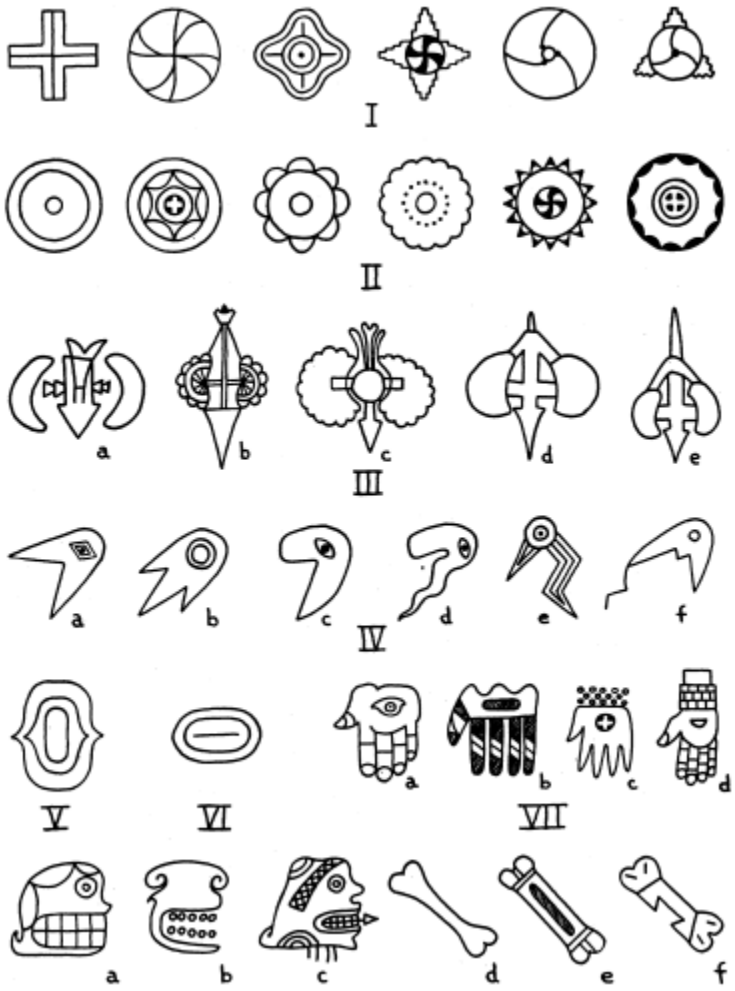

Figure 6 Displays the various motifs found throughout the Southeast that are credited to the Southeastern Ceremonial Mound Complex (Waring and Holder 1945 pp. 2)

Motifs are not the only evidence of the Southeastern Ceremonial Complex. Other elements of the vast culture include god-animal representations, such as anthropomorphic animal relics, often taking the form of rattlesnakes, birds, and cats (Fig 7). Ceremonial objects like those listed in Figure 6 also show the cultural practices of the Southeastern Culture. These objects help archeologists determine if ritualistic ceremonies occurred such as the Black Drink Ceremony. One of the key artifacts that determines such rituals is worked conch shell, which will be discussed later in this chapter.

One motif, the *Sun Circle*, (Fig 6), is frequently present at Southeastern Ceremonial Complexes. The motif has various forms of circles etched into the surface and may contain spirals, circles, the *Cross* (Fig. 6) motif or the *Open Eye* motif (Fig 6). The *Cross* resembles a Greek Cross and is typically enclosed in a *Sun Circle*. Archaeologists equate the two symbols (Fig 6) together, as they are often transposable (Waring and Holder 1945).

(1) *Gorgets*
- a. shell
- b. copper

(2) *Oblong Gorgets of copper*
(3) *Mask Gorgets*
(4) *Columnella Pendants*
(5) *Embossed Copper Plates*
- a. Head Plates
- b. Eagle Plates

(6) *Copper Symbol Badges*
(7) *Sheet Copper Hair Emblems*
- a. the Bi-lobed Arrow
- b. the Plume
- c. the Baton

(8) *Ear Spools*
- a. wood
- b. stone
- c. copper-covered wood
- d. copper-covered stone

(9) *The Hafted Celt*
(10) *The Pierced Celt*
(11) *The Monolithic Axe*
(12) *The Baton*
(13) *Effigy Pipes*
- a. squatting humans
- b. human figure with bowl
- c. cat pipes

(14) *Notched Stone Discs*
(15) *Discoidal Stones*
(16) *Conch Shell Bowls*
(17) *Ceremonial Flints*
(18) *Bottles*
- a. painted
- b. bipartite
- c. tripartite

Figure 7 List of Ceremonial objects commonly found in Southeastern Ceremonial Complex ritual sites (Waring and Holder 1945 pp. 6)

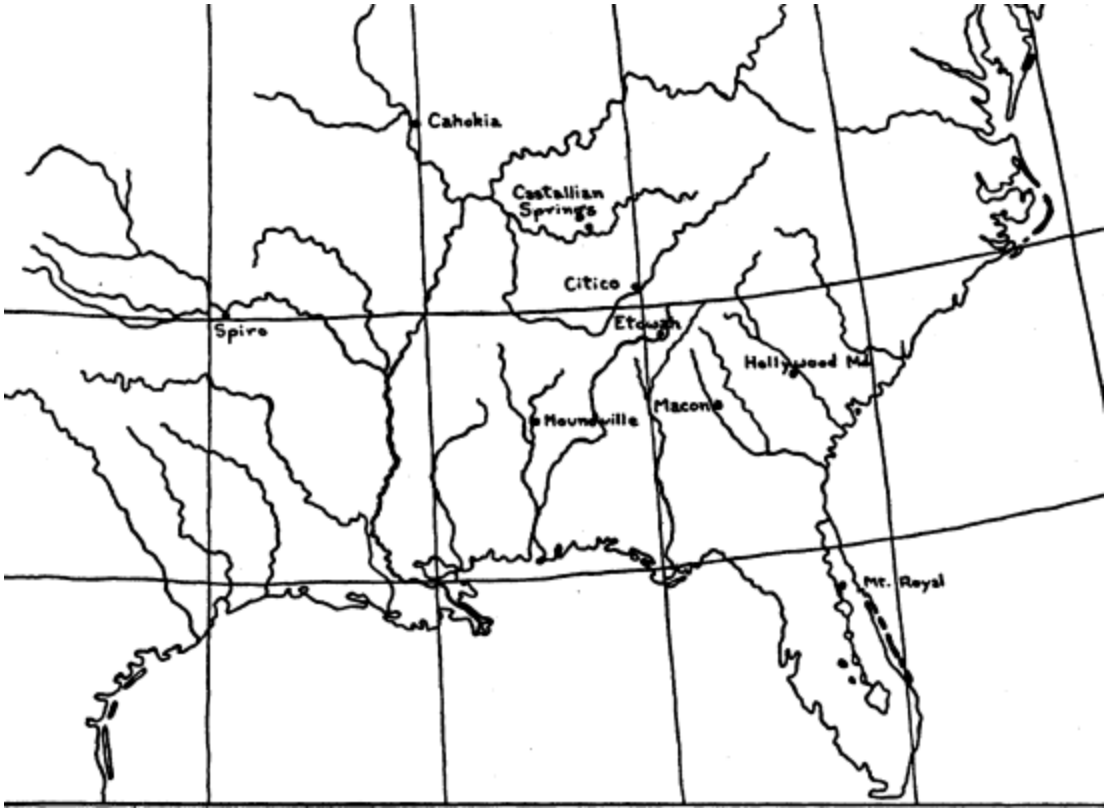

Figure 8 Map of mound complexes with credited to the Southeastern Ceremonial Complex (Waring and Holder 1945).

The Lightning whelk was a ritualistic object found throughout burial sites in the Southeast. Their significance to the Indigenous tribes of the southern United States is proven by their vast presence throughout the nation despite originating from Florida. Often associated with the Black Drink ceremony, the Lightning whelk played a crucial role in various Indigenous cultures. William Bartram, who traveled with Southeastern tribes in the 1770s, published two works pertaining to the Black Drink ceremony, describing the ceremonial beverage made of *llex vormitoria,* also known as Yaupon holly, which is native to regions spanning from southern Virginia south to Florida and westward to Oklahoma and central Texas (Hudson 2004).

The Black Drink ceremony was centered around a deliberately constructed fire and lit in a linear spiral, matching the lightning whelk's pattern. Fire was viewed by the tribes as an effigy for the sun and its journey from east to west each day. The indigenous population correlated the

sun's designated path with the ideal of mortality and one's inevitable journey towards death. The Creek people were said to have a sacred fire that was "laid in a spiral circle". An annual celebration was conducted at the end of the year where all the fires would be extinguished and then a new fire would be lit (Swanton 1928:178).

Figure 9 Depiction of the burial of a Timucuan chief with his sacred shell cup done by de Bry (Hudson 1979 pp. 91)

The concept of a spiral having a critical point with a specific direction, such as the clockwise spiral going east to west and the counterclockwise spiral going west to east, was a crucial aspect of Southeastern culture. It was believed that a person's soul would travel with the sun after death (Swanton 1928:154). Lightning whelks and their natural clockwise pattern were treasured aspects of pre-battle rituals for native warriors and purification and mortuary ceremonies (Milanich 1979).

In the Mississippian period, lightning whelks were traded for bead manufacturing purposes. Later in the period, an influx of lightning whelk cups and ceramic imitations was

present, indicating more death and purification ceremonies, most likely due to more warfare (Kozuch 2013).

Archaeologists determine the occurrence of the Black Drink Ceremony based on the presence of shell cups in associated to burials, shell cups in deposits near burials, shell cups associated to funerary objects such as mortuary pottery, shell cups associated with ceremonial structures, and shell cups associated with fire hearths. The shell cups described were constructed from three different kinds of whelk, the lightening whelk, emperor helmet, and the horse conch. Cups directly associated with a particular grave would indicate the individual was higher status (Milanich 1979).

Distribution of these shell cups throughout the Southeast began before 1000 B.C. The disbursement of horticulture, often credited to incidental contact with the Mesoamericans, in regions such as the Okeechobee Basin in Florida, and the midwestern United States led to a transition of significance of the shell cups during the Hopewellian culture period (200 B.C.- 500 A.D). This transition of religious importance led to the heavy presence of shell cups and ceramic replicas on sites in the Midwest (Milanich 1979).

By the Mississippian Period, the Southeast had transitioned from mainly hunter-gatherer societies to sedentary groups. Tribes were organized with nobles and priests at the center, living in ceremonial complexes with smaller supporting villages surrounding it yoked by common religious beliefs. The Southeastern Ceremonial Complex remained ingrained within this culture, in the form of common use of shell cups, some decorated with Southeastern Complex designs, and the common consumption of Black Drink (Milanich 1979).

Black Drink Ceremony artifacts were reported in several Florida archaeological sites. One of the major ones was Mount Royal in the St. Johns region. Excavated by C.B Moore, 1,307 Busycon Shells were recovered at the site, some of them made into cups. Ceramic vessels with

handles and bowl-shaped also indicated the brewing of the Black Drink at the site (Moore 1905 pp. 50). Several Floridian indigenous groups were historically and archaeologically recorded to have been frequent consumers of the Black Drink, those include the Timucua, Tocobaga, Calusa, and the Aís (Swanton 1928).

Some archaeologists credit the Black Drink Ceremony to a 'busk' or festival mimicking a harvest festival (Swanton 1928). In the Southeast, the men of the tribe participated in the ceremony, dancing around a pole with a representational wood carving of an animal such as a fish or bird. Another aspect of the busk ceremony is a ball game played with racquet-like cleft sticks, with the players adorning culturally significant belts and breechclouts. Black Drink was consumed before, during, and after the game for ritualistic purposes (Milanich 1979). The Apalachee tribe from the western coast of Florida were recoded to have participated in a similar sport related ritual in the mid-seventeenth century by a French priest named Father Juan de Paina. The tribe consumed copious amounts of the Black Drink before their annual ballgame against the Yustaga tribe. The brewing of the tea was noted by the priest as being an intricate ordeal, with the pot being covered so that no women could contaminate it by merely touching it (Perrot 1944).

In Georgia during the sixteenth century, historian Peter Martyer described the Chicora and Duhare tribes brewing what he believed to be the Black Drink because it induced vomiting after consumption (Swanton 1928). The coastal tribes of the Carolinas are recorded to have brewed and traded yaupon with western tribes by Europeans William Byrd and John Lawson (Byrd 1929 & Lawson 1967). The Cherokee tribe was also known to participate in the widespread use of the yaupon tea. Their societies resided in Georgia, South Carolina, North Carolina, and Tennessee (Hvidt 1736). The Yuchis, who claim to be one of the first inhabitants of the Southeast, along with the Creeks, the Alibamons of Alabama, the Chickasaws of

Tennessee, the Choctaws of Louisiana, and the Chitimacha and Natchez tribes of the Lower Mississippi Valley were all recorded to have participated in a variation of the Black Drink ceremony (Merrill 1979 pp 57-64). The Natchez tribe called their leaders 'Suns' and it was recorded that when one of their chiefs died, they carried his body along a clockwise path toward his final resting place (Swanton 1928).

The Creek Confederacy incorporated the Black Drink into their daily lives. William Bartram recorded his travels amongst the Southeastern tribes in the 1770s. His descriptions, he describes the Creeks as a tribe who incorporated the spiral pattern beyond the lightning whelk cups. Their ritual practices involved the lighting of a clockwise spiral fire, and a ritualistic dance that copied the clockwise pattern (Bartram 1928). In the Southeastern tradition, fire was a physical representation of the sun, correlating with the clockwise spiral pattern that mimics the stars course in the sky (Kozuch 2013).

The Black Drink was a vessel for Southeastern tribes to symbolize the purification of an individual or group in a ceremonial or mortuary context. Its multidisciplinary use by the various tribes residing in the Southeast allowed for its spread throughout the region. The frequent physical evidence found today by archaeologists further solidifies its monumental influence over the Southeastern indigenous culture throughout the pre and post contact periods.

Many archaeologists describe middens as a reservoir of mollusks that were a dietary staple of many indigenous groups. Items often associated with such structures include unconsumed plant remains, charcoal, broken tools, stones, and discarded animal remains (Marquart 2010: 554-555). Archaeologists look for signs of habitation and construction over time when analyzing a site. Signs of successive use of a site include shell-dense stratigraphic layers, the shape of the structure (circular or semicircular), evidence of surface fires, artifacts, and features formed near the surface (Russo 2004: 36, 40). Soil coloration of the stratigraphic

layers also plays a crucial part in determining whether a site is a mound or a midden. Darker-colored, biotic tiers indicate a habitual site (i.e. middens). On the contrary, lighter-colored earth denotes a purposeful formation (i.e. mound building. In Florida, shell mound sites often comprise of charcoal and copious amounts of fish fauna (Sassaman 2003).

Archaeologists often quote “clean shells”, or mollusk shells that have little to no evidence of organic material on them due to indigenous feasting consumption, as an indicator for intentional mound construction. This method for characterization for purposeful mound construction is often disputed, as archaeologists argue that during the Vandal Minimum climatic period, major sea levels dropped, resulting in fish populations retreating to deeper waters and sedimentary mollusk populations to remain in exposed areas ripe for accrual. Mobile, predacious species such as conchs and whelks flourished, feasting on the exposed mollusks (Walker 1992: 285-289). This chain of events is an alternative argument as to why there is shell sediment. While some archaeologists acknowledge that purposeful placement of discarded sustenance resources was apparent, they dispute the notion that “clean shells” are a calculable sign of ceremonial mound construction (Marquart 2010: 558-560).

2.4.4 Radial Burial Mortuary Practice in Florida

To date, there are eleven documented radial mounds located throughout Florida. Four of those mounds are on the coastlines of the Indian River culture region and are dated to the Malabar II period (Penders 2012).

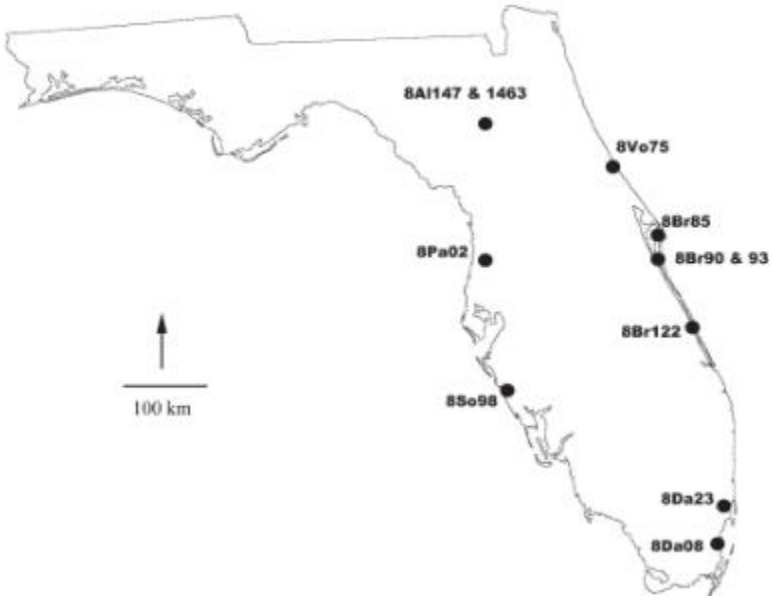

Figure 10 Map of all known radial mounds from Florida (Penders 2012) pg. 94

In 1933-1934, Dr. George Woodbury was employed by the Federal Relief Archaeological Program to excavate and document the Burns and Fuller Mounds in Brevard County, Florida. With the assistance of Dr. M.W Willey, Gordon R. Willey, and Dr. Irving Rouse, a general survey of the radial mounds was published (Stirling et al. 1954).

The Burns mound is a multi-layered burial mound, called '2A', and housed over fifty-two Indigenous individuals. They rested in various poses, some flexed and some not flexed (Stirling, 1935). A Spanish olive jar, silver pendant, stone celt, notched stone, and Malabar I-II period artifacts were discovered as well (Penders 2012).

The Fuller Mound, (8Br90-95) had similar characteristics to the Burns mound. Like the Burns mound, it was discovered along the eastern side of the Banana River. This Malabar II period mound is made up of two groupings of mounds, approximately one-hundred meters apart from one another (Stirling et al. 1954). Fuller Mounds A, D, and E make up the southern half of the site while Fuller Mounds B, C, and F make up the northern half (Penders 2012). Mounds A and D had the spoke burial pattern with the remains consciously placed with the heads near the

center of the mound. Most of the bodies were “semi-flexed” (Stirling et al. 1954) Mound B’s remains were grouped together but the feet were in the apex of the mound and the heads pointed outward.

In Mound A, (8Br90), ceramics were found, including an intact vessel that was St. Johns Plain check stamped, and ceramic sherds (18th and 19th century). Also found were European sourced materials such as a “grooved stone weight,” two etched “plummet-shaped pendants of stone,” a pierced tear drops shaped quartz pendant, and pieces of bone hairpins. Those artifacts dated to the 17th century. (Stirling et al. 1954) Along with it, bone and shell were found as well as glass beads, iron celt and multiple European-made gold and copper objects. (Penders 2012) In Fuller Mound B (8Br90), the remains of approximately twenty individuals were discovered. Due to the lack of ceramics and European materials, the mound dated to the Malabar I period. (Stirling et al. 1954) Mound D (8Br93) contained sixteen burials found along the southern edge of the mound in a radial pattern, their heads placed at the apex of the mound. Glass beads accumulated by trade were also found. (Penders 2012) Fuller Mounds E and F (8Br95-95), were reported as partially excavated but was reported to be stagnant.

The Casuarina Mound, (8Br122), consisted of over one-hundred-twenty-five burials placed in a three-tiered mound. This Malabar II mound was excavated from 1886 to 1907. Artifacts discovered in the multi-layered mound included a stone projectile point, a stone pendant, a copper bead, and a stone hone. Fauna specimens were also discovered at the site (Penders 2012).

Burns (8Br85), Fuller (8Br90 & 8Br93), Casuarina (8Br122) and Ormond (8Vo75) mounds produced similar artifacts at their sites. In Burns, Fuller, and Casuarina Mounds, a pendant was found in the mounds. Burns had the silver pendant, Fuller A had a pendant made from quartz crystal, and Casuarina Mound also had a stone pendant (Penders 2012).

The ceramics found in Fuller Mounds A and D and Burns mound date the site to the Malabar II period. The European sourced artifacts found in Fuller A and the Burns mound could be dated to the 16th-17th century. The ceramics from Fuller D mound are theorized to have been formed somewhere within those centuries. Fuller B mound's ceramic artifacts dated to the Malabar I period (Stirling et al. 1954). Such artifacts include rattlesnake metal motifs, a complete St. Johns Stamped vessel, bone and infant burials (Willey 1954).

The other radial pattern mounds in Florida include the Oelsner Mound (8Pa2), the Ormond Mound (8vo75), Woodward Mound (8A147), Cutler Mound (8Da8), Henderson Mound (8A1463), Laurel Mound (8So98, and the Arch Creek Mound (8Da23). These mounds come from the Malabar II period, the Hickory Pond period, the St. Johns period, the Glades II period, and the Safety Harbor period. The European goods found within these mounds vary. They are exclusively found in mounds formed in the Malabar II period barring the Ormond Mound which is dated to the St Johns period (Penders 2012).

The Arch Creek and Cutler Mounds (8Da23 and 8Da8) contained shell necklaces that led archaeologists to theorize that they were formed in Pre-contact times (A.D 750 – 1500) (Goggin 1954). Archaeological work done at middens associated with the Arch Creek mound further solidifies the theory that the burial mound was constructed in the Glades II period (750 – 1200 AD).

The Laural Mound (8So98), excavated by J.E. Moore is credited to the Safety Harbor cultural period. Within the mound, human and scroll motifs, bottle-shaped vessels were found. Both kinds of artifacts are credited to the Safety Harbor culture.

The Ormond Mound (8Vo75) contained various burial placements and Weeden Island and Englewood ceramics. Moore, who excavated the site in 1903, noted that the burials shifted from flexed to bundled in deeper stratigraphic levels (Moore 1903).

The presence of European goods in the Malabar II mounds also suggests post-contact. It could also indicate burials after the original mound was formed. The lack of nonlocal artifacts in the mounds also supports the hypothesis that the Indian River natives were cut off from the vast trading networks by rival native groups. This isolation would force the natives to rely heavily on the Europeans for exotic goods by means of trade or hostility, making them a rare commodity for only the elite to utilize. (Rouse 1951) Penders hypothesizes that the mortality rates of the native population due to exposure to European diseases would make some cultures seek out new rituals to help them. (Penders 2012).

CHAPTER 3: METHODOLOGY

3.1 Research Methodology

For this project, an intensive review of the published literature was undertaken to address my research questions. While investigating the origin behind the radial burial pattern, the research aimed to answer holistic cultural questions to discover the origins of this unique burial pattern. After the completion of the "Attributes Table" (outlined below), the analyzed information aided in the determination of potential associations between radial mounds and their counterparts, as well as helping to determine if the Burns mound is divergent from typical burial mounds formed within the Malabar II period (750-1565 AD).

Interpretive research was also implemented throughout the project's source selection process and table formulation phases. The focal point of both phases was to address possible origins or associations with the radial mound burial pattern and identify which characteristics make Burns different from or like other burial mounds in the Florida, Georgia, Louisiana, and Carolina regions.

3.1.1 Source Selection

Scholarly sources were initially found by searching library databases. The main criteria for source selection were based on their topical relevance to the Burns mound or, more broadly, to radial burial patterns in the American Southeast. The scholarly sources selected for this project covered various burial mounds, the Malabar I-II culture, and mortuary archaeology conducted while studying Indigenous burial mounds.

When conducting this research, I considered the dates of publication and authorship to select appropriate sources. Older archaeological reports were used cautiously, as their findings were frequently based on cultural, historical or heavily descriptive approaches to archaeology. Early works were included to identify the first archaeological work conducted at sites. More recent research, such as the archaeological report, "The Archaeological and Historical Investigation of the Burns Site (8BR85)" (Barber et al. 2023), provided a more recent report on the state of the Burns Mound and recent findings based on investigations conducted by the Anthropology Department at UCF. This report included the historical and archaeological background of the site and detailed the various methods used to collect and categorize data at the Burns site.

Early sources, such as those authored by renowned archaeologists Clarence Bloomfield Moore (1999), Irving Rouse (1951), and Michael Russo (1951), played a crucial role in providing the historical background of early archaeological work on Indigenous burial mounds in the American Southeast. Their publications, often cited in other sources used for this project, serve as invaluable records of certain mounds, some of which have been destroyed over time. These early works, therefore, are not just sources of information but also historical artifacts in their own right, preserving the memory of these mounds.

3.1.2 Criteria for Inclusion for Comparative Mound Studies

To understand the similarities and differences between the Burns mound and other mounds in the Southeastern region, it was essential to record and compare the characteristics of mounds. Additionally, it was necessary to establish a conventional mound, which refers to a burial mound that does not contain a radial burial pattern. The criteria for inclusion in this study were based on several characteristics. Mounds from Florida, Georgia, and Louisiana were

included to depict traditional mounds in the American Southeast accurately. The goal was to choose mounds with enough published information to address specific attributes' presence or absence accurately. These attributes were selected and entered into an Excel spreadsheet for easy comparison.

The mounds' archaeological site number and name were recorded and the state in which the mound was located was also cataloged. The geographic location of the mounds represented helps identify statewide and regional patterns that may occur. Whether or not the mound was located near an indigenous occupational site, and the material it was made of (i.e., shell, coquina, sand) was also recorded. The dates of the mound's use and main period affiliation are included to see if the radial mortuary pattern is a period-wide cultural movement. The early and late dates of each stratigraphic phase will help narrow down the years the radial pattern occurred. Whether or not the mounds contained radial patterns was also important, but not required in hopes to determine similarities and differences in both radial and traditional burial mounds, meaning mounds that do not include the radial burial pattern, represented. This table will allow for comparisons among the various attributes recorded help determine the characteristics of a 'traditional' indigenous burial mound.

Whether or not grave inclusions are found within the mounds are present is essential because artifacts in mounds vary heavily based on the period they were used. Whether or not the artifacts found contain pre- or post-European contact goods also helps determine the date and usage of the mound. Foreign goods are crucial to identifying a connection between the Southeastern mounds because it may suggest trade. This research uses artifacts and cultural similarities between the sites and establishes potential cultural links from trade routes.

The "Attributes Table," (Appendix 1) is composed of various characteristics, or attributes, of mounds found within Florida, Louisiana, the Carolinas, and Georgia. Both qualitative and quantitative data were included in the table, including the dates the mound was formed and in use, the presence of grave inclusions, burial mound types, and ceramics found within the mounds. These specific characteristics are most pertinent to determining outliers that may result from cultural shifts due to trade or other factors. The data for Table 1 was compiled through archival research. Sources were selected based on whether they were a part of archaeological expeditions or fieldwork. This is a vital requirement, so information acquired is tracked through copious field notes and established scientific practices.

Collecting the data acquired from the archaeological work done at the sites allows for data analysis, such as ceramic and faunal analysis, to tie the sites further together if a correlation exists. These connections provide a foundation of physical and cultural characteristics, which may establish rationality beyond the mortuary practice.

The table's results were analyzed using Microsoft Excel. The attributes were sorted to highlight patterns and trends that addressed the research questions posed at the beginning of this project. The data acquired can be used to formulate a synthesis that may be used to theorize the origin of the radial burial pattern and determine common characteristics for radial burial mounds in the Southeast.

Ceramic data was researched extensively due to the many avenues it can explore, such as foreign cultural contact and domestic information, such as feasting sites. Due to ceramics' cultural and geographic trackability, their presence was essential to the research process. Ceramic analysis included stylistic, technological, and form and functionality analysis. All these forms studied the physicality of the ceramics found in the recorded mounds and noted any typical wares and manufacturers. To understand the similarities and differences between the

Burns mound and other mounds in the Southeastern region, it was essential to record and compare the characteristics of mounds.

Additionally, it was necessary to establish a conventional mound, which refers to a burial mound that does not contain a radial burial pattern. The criteria for inclusion in this study were based on several characteristics. Mounds in all regions of Florida, Georgia, and Louisiana were included to accurately depict traditional mounds in the American Southeast. The goal was to choose mounds with enough published information to address specific attributes' presence or absence accurately. These attributes were selected and entered into an Excel spreadsheet for easy comparison.

3.1.4 Confounding Factors

Archaeological field notes collected previously may contain inaccurate data due to a lack of resources or information recorded by the archaeologist. In some cases, details such as the precise location of the mound, measurements, and all cultural materials recovered needed to be documented. Some archaeologists, such as Moore, had personal relationships with private museums like the Peabody Museum of Archaeology and Ethnography. This resulted in private institutions receiving artifacts instead of returning them to local communities (Mitchem, 1999).

In some cases, artifacts such as European goods were added to older burial mounds, making dating the mounds and the artifacts difficult. Dating using ceramic samples found within the mound can also be unreliable due to transitional period ceramic styles and tempering. Much debate has been on what ceramics were used and at which time periods (citation needed).

Because many mounds do not exist anymore due to various factors, these publications are the only remaining records of these mounds. Despite the foreseeable issues with the Attribute Table, its existence is essential to studying radial burial patterns. The table compiles data from

multiple archaeological sources. Due to many of the mounds recorded by these sources being gone today, this method is the most advantageous route to categorize and interpret the data.

CHAPTER 4: RESULTS

4.1 Attributes Table

The Attributes Table (Appendix 1) successfully visualized vital similarities and differences between Indigenous burial mounds, including the radial, arch, or circular mortuary practice, and other 'traditional' mounds formed within the same period. The table was also able to highlight common characteristics of burial mounds formed within Florida, Louisiana, the Carolinas, and Georgia. Out of 54 mounds listed, 11 of them are radial, arc, and circular mounds, general conclusions about radial mounds' attributes can be formulated.

Forty-two percent (42.3%) of the mounds were dated and presumably used during the Malabar II period (900 AD - 1565 AD). The other 57.7% consists of Malabar I (500 BC- 750 AD), Archaic (9500-3000 BC), Woodland (500 BC- 1000 AD), Glades II (750- 1200 AD), and Hickory Pond periods (550-1230 AD). Table 2 shows that 72.2% of the included mounds are in Florida. Louisiana has 16.7%, Georgia has 5.6%, and North and South Carolina have 3.7% combined.

The several body positions recorded at the various mounds were radial, flexed, semi-flexed, and cremation. In the published records, several did not record the position of the human burials, so those were recorded as 'unknown.' 33.3% of the burial mounds did not have documentation of a burial pattern. Of the remaining burial mounds in the table, 20.4% contained the radial, arc, or circular mortuary practice. 29.6% of the mounds had flexed burials, and 11.1% contained cremated remains.

Pre and post-European contact artifacts were recorded, with 85.2% being from pre-contact periods. Only 27.8% of artifacts were dated to the post-contact period. Fifty-seven percent of the mounds were listed near a Indigenous occupational site. Over half of the mounds in the Attributes Table (83.3%) were made from coastal elements.

The results of the analysis based on the Attributes Table concluded that the radial burial practice is a uniquely Florida Indigenous burial practice found in mounds made from coastal elements between 500 AD - 1565 AD. Of the 11 mounds recorded, 72.7% of burial mounds that housed the radial mortuary practice had grave inclusions. Of those grave inclusions, 63.6% were pre-European contact artifacts, while 45.5% were post-contact inclusions. 27.3% of radial and arch mounds were said to have been near an Indigenous occupational site.

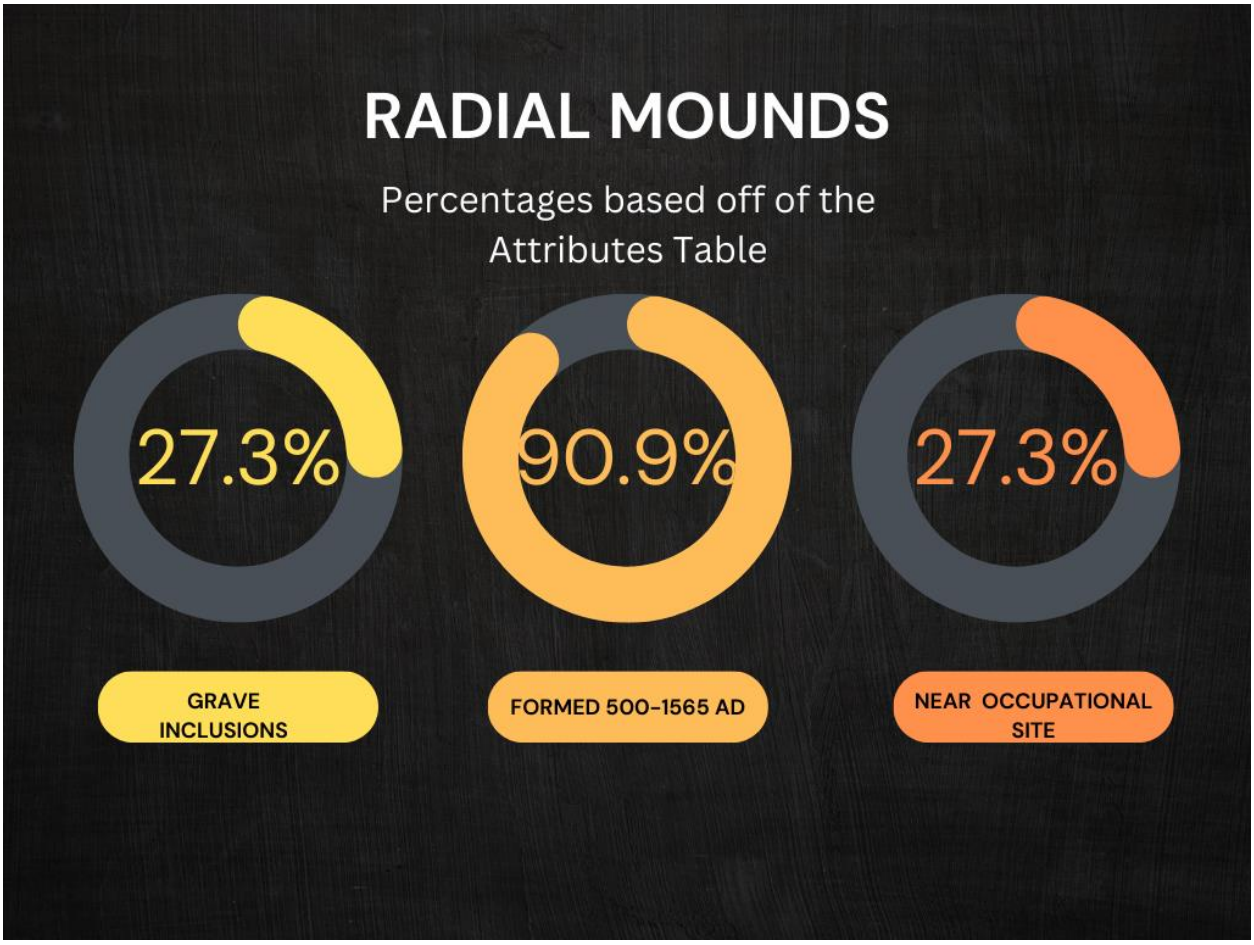

Figure 11 Results of inclusions, dates, and locations of burial mounds

4.2 Tables of Attributes Table Information

Characteristic	Radial Mounds (N=11)	Percentage
Grave Inclusions	8/11	72.7%
Dates between 500 AD- 1565 AD	10/11	90.9%
Pre-Contact Inclusions	7/11	63.6%
Post-Contact Inclusions	5/11	45.5%

Near Occupational Site	3/11	27.3%
Made from Coastal Elements	11/11	100%
Located in Florida	11/11	100%

Table 1 Data collected from the 'Attributes Table' pertaining to Radial Burials

Table 1 presents data concerning the significant characteristics of the mounds recorded in the attributes table. The data indicates that the indigenous peoples of the Southeast who built the radial mounds exhibited congruous patterns in the formation of their burial mounds and middens. One of the major takeaways is that they have significant commonalities, such as grave inclusions. The mounds date between 500 and 1565 AD, are located near water, and are in Florida.

Table 2: Data Percentages of all the Mounds from the Attributes Table

Characteristic	All Mounds (N=54)	Percentage
Post-Contact Inclusions	15/54	27.8%
Made from Coastal Elements	45/54	83.3%
Made from Other Elements	12/54	18.5%
Grave Inclusions	50/54	92.6%
Malabar II period	23/54	42.3%
Other Periods	31/54	57.4%
Flexed Burials	16/54	29.6%
Cremated Burials	6/54	11.1%
Unknown Burial Patterns	18/54	33.3%
Pre-Contact Inclusions	46/54	85.2%
Radial Burials	11/54	20.4%
Near an Occupational Site	36/54	66.7%
In Florida	39/54	72.2%
In Louisiana	9/54	16.7%
In Georgia	3/54	5.6%
In the Carolinas	2/54	3.7%
Near a Waterway	54/54	100%

Table 2 Data Collected from the 'Attributes Table' pertaining to all of the burial mounds recorded in the table

The mounds found in the Southeastern states, as depicted in Table 2, follow familiar architectural conventions. The most prevalent fact is that all the radial mounds follow similar construction patterns to the traditional ones listed. The percentages seen in Table 2 mirror the trends seen in Table 1 when describing exclusively radial mounds.

4.3 Burial Sites' Association to Occupational Sites

The data collected from the Attributes Table 2 discerned that 92.6% of the mounds recorded had grave inclusions. Most artifacts and funerary objects obtained and analyzed were pre-contact period objects (85.2%). The other 27.8% were post-contact, most theorized to be intrusive by investigators.

The strategic placement of the mounds is a testament to the practicality and foresight of the ancient inhabitants. The geographical proximity of mounds to waterways was 100%. All the mounds recorded were near a major river, lake, or ocean, a location that would have facilitated transportation and communication. Some were even found in Bays, especially mounds found on the west coast of Florida. This ties into the statistic that (83.3%) of the mounds were made from coastal elements. These elements include sand. Shell and loam materials are readily available in these coastal areas. Of the recorded mounds, 66.7% of the mounds were located near an occupational site. Occupational sites can include a temporary or permanent settlement or places such as a food processing site.

4.4 Results of Burial Site Types of Burial Placements

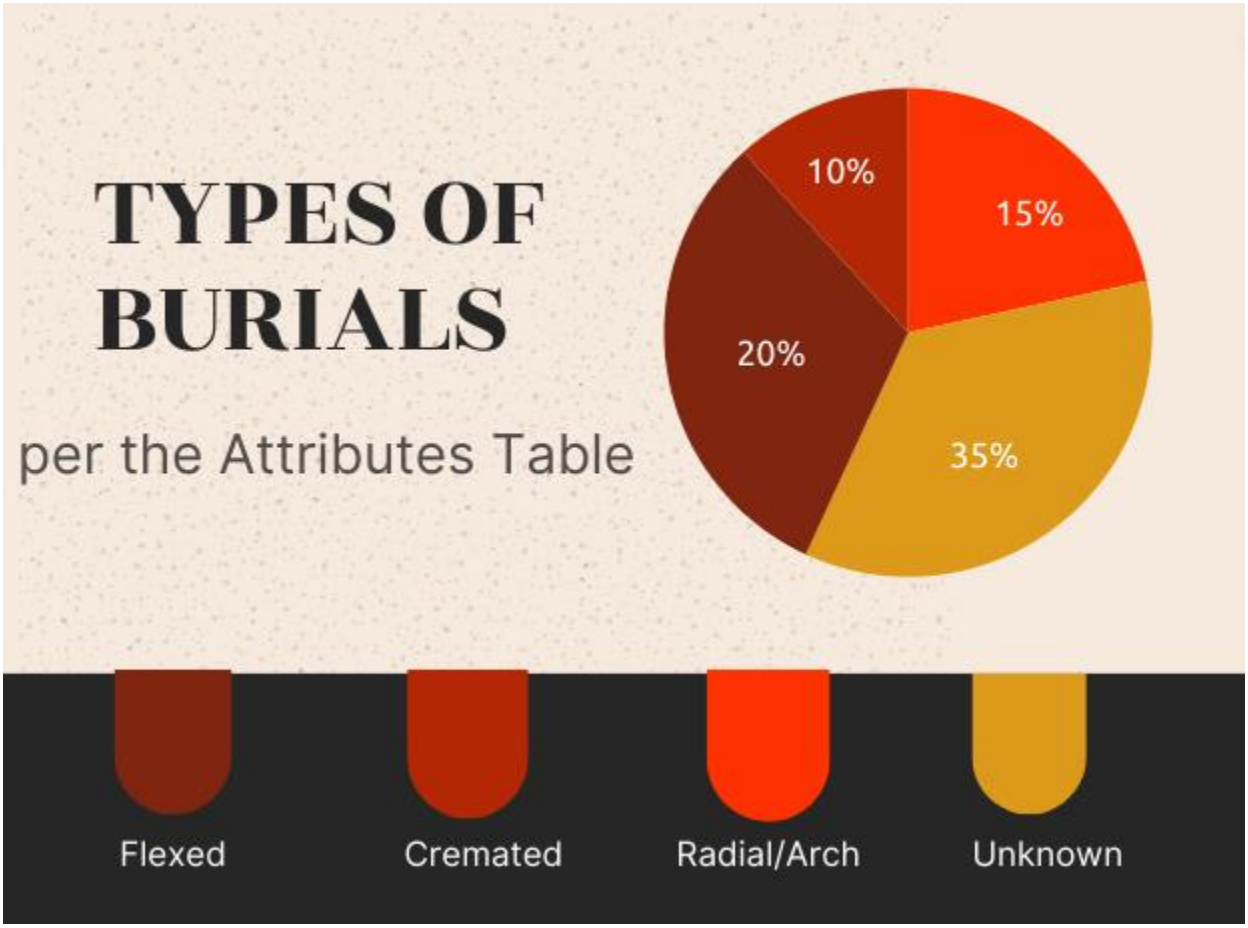

Figure 12 Data Collected from the 'Attributes Table' pertaining to all the burial mounds recorded in the table, focusing on the various types of burials found

BURIAL PATTERN	COUNT OF BURIAL PATTERN
Unknown	18
Flexed	7
Radial	4
Radial, Flexed	2
Flexed, Semi-flexed, Cremated	2
Cremated	2
Scattered	2
Scattered	2
Arc	2
Extended	1
Bunched, Extended, Flexed, Partly Flexed, Lone Skulls	1
Bundled, Scattered	1
Scattered, Flexed	1
Radial, Bundled, Scattered	1
Flexed, Semi-flexed	1
Extended, Scattered	1
Circular	1
Primary Burials, Urn Burials, Burned/Unburned Bone, Cremations	1
Arc, Flexed	1
Anatomical	1
flexed, bundled, cremations	1
Grand Total	**54**

Table 3 Count of burial patterns recorded in the Attributes Table for all mounds

The examination of data collected from the 'Attributes Table' (Appendix 1) regarding the placements of burials indicates that flex is the most common of all the body positions recorded. Appendix 3 lists out the archaeological terms used in the Attributes Table and their definitions. At 35%, this placement, with the body crouched or semi-crouched, was a common burial position in the Southeast mortuary context. The following most common was the radial arc, representing 20% of the mounds described in the table. Unknown and cremated were the lowest, with cremated being 10% of the burials listed and unknown being 15%.

4.5 Period Affiliation Assigned to Each Mound Recorded

The data collected from the 'Attributes Table' about the affiliation of recorded burial mounds is critical in providing insights into these sites' cultural and social contexts. This section aims to identify broader trends and connections within indigenous societies by analyzing patterns and variations in affiliation across different mounds. This approach is essential in understanding these sites comprehensively and their significance in the larger context of indigenous cultures. The results reveal that the Malabar II and Archaic periods provided a copious number of burial sites recorded in the archaeological records, and the Safety Harbor and St. Johns periods also had many constructed mounds and middens that have lasted through the centuries to be recorded.

This specific comparative analysis can successfully compare characteristics, offering insights into cultural interactions, migration patterns, and socio-political dynamics over time. Examining changes in affiliation across temporal periods may highlight shifts in social organization and cultural evolution in Southeastern indigenous communities.

4.6 Data Collected from the Attributes Table Concerning Ceramics Found in Each Mound

The ceramic analysis discussion focuses on the function, decoration, and archaeological period association found in the ceramics of each site recorded (Appendix 2). It also explores the cultural significance of ceramics within the broader context of indigenous societies in prehistoric Florida, shedding light on their role in trade networks, social practices, and symbolic meanings. Similarities in style, function, and origin of the ceramics from the recorded mounds can help determine potential trade and cultural exchanges amongst other indigenous groups. The Attributes Table recorded over 200 ceramic types, the most common being unknown or

unidentified ceramic sherds (5.70%), St. Johns Plain (5.26%), St. Johns Check Stamped (4.39%), and Glades Plain (3.51%).

The St. Johns Check-Stamped ceramics are identified by their shallow, square, sometimes diamond-shaped designs found exclusively on the outside of a vessel. The variation of the check shape or different ceramic decoration techniques is rarely seen on a singular vessel. The axis of a solitary check varies between 1 and 4 millimeters (about 0.16 in), primarily 2 and 2.5 millimeters (Ferguson 1951: 26).

St. Johns Plain ceramics are identified by their method of manufacture. Built by coiling the clay, the paste is chalky and has no discernable temper. The exterior coloring of the ceramics is typically light tan to grey, and the interior is grey or black (Ferguson 1951:22- 23).

The Glades Plain ware is made from quartz sand, which can be visible, and its smooth exterior is often reddish brown. Sherds discovered were flat, indicating that most of the vessels were large and bowl-shaped (Ferguson 1951: 27).

Other notable wares included Ocmuglee Cordmarked (2.19%), Orange Incised (2.19%), St. Johns Simple Stamped (2.19%), St. Johns Incised (1.76%), Weeden Island Incised (1.76%), and Orange Plain (1.75%). The analysis of data collected from the 'Attributes Table' regarding the affiliation of all recorded burial mounds provides crucial insights into these sites' cultural and social contexts. By examining patterns and variations in affiliation across different mounds, this section aims to discern broader trends and connections within indigenous societies.

The results reveal that the Malabar II and Archaic periods provided a copious number of burial sites recorded in the archaeological records, and the Safety Harbor and St. Johns periods

also had many constructed mounds and middens that have lasted through the centuries to be recorded.

This specific comparative analysis can successfully compare characteristics, offering insights into cultural interactions, migration patterns, and socio-political dynamics over time. Examining changes in affiliation across temporal periods may highlight shifts in social organization and cultural evolution in Southeastern indigenous communities.

CHAPTER 5: DISCUSSION

5.1 The Implications of the Research Results

The critical research component was determining if radial mounds had significant anomalies compared to traditional mounds to help explain the origin of the unique mortuary pattern. Based on the information gleaned from the constructed Attributes Table, some inferences about burial mounds formed between 2200 B.C.- A.D 1704. can be made. When describing the characteristics of the eleven radial mounds and 43 traditional mounds, this research has demonstrated how features of various Southeast cultures correlated with one another through mound construction and artifact inclusions. This research addressed possible origins for the radial burial pattern and pinpointed those characteristics that differentiate Burns from other burial mounds in the Florida, Georgia, Louisiana, and Carolina regions.

Analysis of the attributes table highlighted that all 54 mounds recorded were constructed near significant waterways. The radial mounds were located near major waterways such as the Atlantic Ocean, the Banana River, the Biscayne Bay, Whitewater Bay, Charlotte Bay, Tampa Bay, Waccassa Bay, and the Withlacoochee River. Additionally, 83.3% of the mounds were constructed from coastal elements such as sand and shell. This further provides an insight into the shared culture that the Southeastern region had, as uniformity in mound construction points to widespread cultural diffusion or shared cultural patterns. The location near waterways appears to have been a defining feature in the construction of the burial mounds, which have the necessary materials to combat coastal erosion and migrate the mortuary ritual around the state.

The exploration into the significance of the Southeastern Ceremonial Complex at the radial mound sites proved fruitful. By examining established Southeastern Ceremonial Complex

sites in the greater Southeast, crucial aspects of the radial mound sites now have robust theories to explain their presence. Two or more signs of the Southeastern Ceremonial Complex, such as bone and copper pins, earbobs, the incorporation of motifs such as the Crossing Sun, human effigies, particular ceramic assemblages, the presence of lightning whelk and established presence of the Black Drink, can be found at all the radial mound sites. This discovery facilitates further research into the theory that the radial mortuary pattern is a variation of the famous Southeastern Ceremonial Complex and its associated mortuary rituals.

5.2 *Sacred Rituals and Spiritual Traditions of the Southeast: Exploring the Black Drink Ceremony and Radial Burials*

The integration of historical and scientific data helps illustrate the intricacies and complexities of indigenous culture in the Southeast. While contemplating various aspects of the Florida, Georgia, Louisiana, North Carolina, and South Carolina regions, a common religious purification ceremony tied them all together. The Southeastern Ceremonial Complex left physical evidence of its presence in sites associated with it. One of the main aspects of the Southeastern Ceremonial Complex was the Black Drink Ceremony.

Based on a note by Dr. Sarah Barber on a presentation she conducted on the Burns site, the research shifted to look at the radial pattern as a spiral. This led to the discovery of the significance of the lightning whelk and the correlation between it and the radial mortuary practice. The Southeastern Ceremonial Complex and the artifacts it left behind consist mainly of imagery and physical remnants of rituals—one of the main rituals is the Black Drink Ceremony. As previously stated in Chapter Two, the Black Drink Ceremony and the various rituals that engrossed the Southeast spread due to cultural interactions amongst the Southeastern societies with standard images represented at ritualistic sites. The causes of cultural diffusion were

migration, material circulation, and missionization (Wilson 2017:2-3). Through the historical and archaeological documentation of theorized Southeastern Ceremonial Complex sites, common characteristics such as motifs, effigies, clockwise spiral shells, and designs all point to the religious movement.

The Burns mound and other radial burial sites closely mirror indigenous rituals involving the Southeastern Ceremonial Complex, specifically the Black Drink ceremony. Physical evidence such as motifs, the recent evidence of the presence of the Black Drink at Burns (Rouse 1951, Woodward 2023), and historical documentation support the theory that the Black Drink was an influential purification practice that morphed mortuary practices in Florida. It has been suggested that the 'radial' pattern mimics the cultural reverence for the lightning whelk. As explained in Chapter 2, archaeologists previously found evidence of the Southeastern Ceremonial Complex and Black Drink ceremony activity based on the presence of multiple artifacts at each mound site.

Southeastern Ceremonial Complex motifs at the Burns mound include a rattlesnake effigy, whole ceramic vases, a theorized Crossing Sun motif, and the ubiquity of lightning whelk shells (Barber et al. 2023). The burials within the Burns mound were layered, with two radial burials. A combination of flexed, semi-flexed, and extended body positioning was present, with extended burials being in the later levels of the mound (Rouse 1951).

In addition to the Black Drink and lightening whelks being found at the Burns site,

The Southeastern Ceremonial Complex can be seen in artifacts such as the silver cross found in the mound, which can be interpreted as a Southeastern Ceremonial Complex motif called the Crossing Sun. The rattlesnake effigy and bone pins found at the site also correlate to the

Southeastern Ceremonial Complex attributes listed in Chapter 2. Notable ceramics at the site include Florida West Coast wares such as Little Manatee Stamped and Sarasota Incised (Rouse 1951). his directly correlates to ceramic assemblages found at the Laural Mound. The Black Drink Ceremony was used in Jacob Woodward's chemistry analysis of ceramic samples found at Burns, where the Black Drink Ceremony was proven to be at the burial site (Woodward 2023). This is the only radial burial site tested for Black Drink residue on samples.

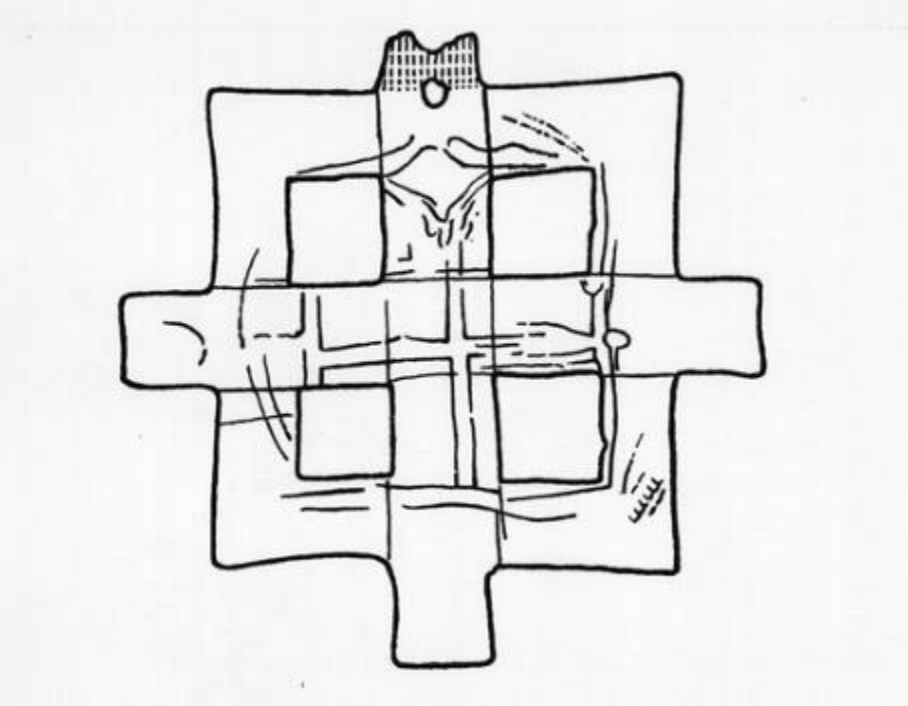

Figure 13 The Silver Pendant (3.4 cm) found at Burns (8Br85) from the Florida Anthropologist Volume 17 pp. 84

The Casuarina mound in Grant Beach, Florida, is an example of a burial mound with significant Southeastern Ceremonial Complex influence. The mound consisted of multiple layers of individuals in various orientations. In the uppermost layer, approximately 6 inches below ground level, a male skeleton, suggested to be a chief, was uncovered facing eastward with four skulls facing in the cardinal directions surrounding it. On a deeper stratigraphic level, the

remains of another male were found seated on a throne of shell. Surrounding it were eight skulls facing in all cardinal directions, similar to the ones in earlier levels (Rouse 1951:207). This body and skull orientation correlates with the Southeastern Ceremonial Complex belief that the four directions reference the journey from birth to death. When discovered, archaeologists noted that the body unearthed was facing east and was surrounded by bone pins and stone ornaments placed in direct association with the principal skeleton. At his right hand, a whelk shell cup.

Two female skeletons were buried at the chief's feet, with one of the females being buried with a shell pendant and several beads, including two bone beads carved to look like cat heads. The excavating archaeologist theorized that the beads and shell were worn on her head and neck (Rouse 1951: 207-209). A correlating fauna discovery is the presence of bears. The bone cat beads replicate the naturalistic effigies of gods-animal representations in the Southeastern Ceremonial Complex. Similar motifs were found in sites such as Key Marco (Milanich 1998:122).

Other notable artifacts at the Casuarina site include six bone pins, two bone spatula with shells, and a lightning whelk dipper. The ceramic assemblage found were St. Johns Plain, St. Johns Check Stamped, and Glades Plain. One of the ceramic vessels found was theorized to function as a bowl (Rouse 1951: 209). Ceramic bowls are often associated with the brewing of the black drink. The combination of all these artifacts significantly solidifies the theory that the Southeastern Ceremonial Complex influenced the mortuary practices at Casuarina mound.

The Laural Mound (9So98), located near Sarasota, Florida, is another radial burial site that is a strong contender for the Black Drink ceremony and the Southeastern Ceremonial Complex. The ceramic assemblage found at this site pointed to the cultural complex through the

shape and function of the pottery. J.E. Moore, the excavator of the Laural Mound, detailed the various mortuary pottery vessels found (Moore 1979).

A cylindrical beaker vessel with a scroll engraved on the side and a painted cup vessel associated with the Safety Harbor Period were uncovered at the site. The bottom of the cylinder vessel was punched out, indicating that a 'kill hole' was placed in it, marking it as a mortuary site. The cup was painted with red paint at the bottom (Moore 1979).

Another interesting ceramic find at the Laural site was a human effigy vessel near the mound's center. The specimen had three human hands, with their arms bent on all sides of the vessel. It was painted yellow, with the arms painted black and the inside painted red with a kill hole at the bottom. Other notable ceramics found were ceramics with various intricate handles, scroll incised bowls, a hypothesized vase, and a Check-stamped basket large enough to hold two gallons. The presence of these artifacts points to the site being credited to a Safety Harbor Complex with Southeastern Ceremonial Complex manifestations (Moore 1979).

The decorated vessel handles at the Laural site mirror other burial sites associated with the Southeastern Ceremonial Complex and Mississippian culture. Decorated handles are found at the Safety Harbor period site Aqui Esta (8Ch69) located near Charlotte Harbor, which also housed whelk shell dippers that were radiocarbon dated to A.D. 1000 (Luer 1980; Luer and Almy 1982: 53; Milanich et al. 1984:12).

Ceramic assemblages aside, the evidence of the Southeastern Ceremonial Complex is seen in other aspects of the site. The stratigraphy of the mound shows that the radial burials were found in separate layers, like at the Burns and Casuarina sites. The Burns and Casuarina sites have been archaeologically attributed to the Malabar II period (750- 1565 AD) while the Laural

Mound was attributed to the Safety Harbor Period. Artifacts such as bone pins, lightning whelk, and similar ceramic assemblages all point to a cohesive and purposeful ritual being performed at each site.

The Southeastern Ceremonial Complexes frequently display these characteristics in the greater Southeast and are widely recognized for their unique combination of these defining characteristics. Archaeologists often suggest that the Black Drink Ceremony and other purification and mortuary rituals were significant aspects of the culture, with various tribes adapting that ritual in multiple ways. The uniqueness of radial burials lies in their artifact assemblage, as they were formulated similarly to traditional mounds. A clear association can be distinguished by establishing a direct correlation between the radial mound sites and the Southeastern Ceremonial sites. Radial burial sites are another adaptation of the Southeastern Ceremonial Complex, which uses the sacred counterclockwise pattern in a physical representation.

5.2 Contrasting Radial Mounds with Traditional Mound Structures

As found in the Attributes Table, radial mounds often contained grave inclusions from pre- and post-contact periods. The most common inclusions are ceramics. These assemblages include St. Johns Plain, St. Johns Check Stamped, and Glades Plain. Artifacts such as the ceramic assemblages determined potential trading relationships amongst the Florida tribes and other native cultures. The ceramic assemblages revealed similarities, such as a high percentage of St. Johns Plain and St. Johns Check Stamped. Based on Milanich's ceramic chronology of Florida, the Malabar II period directly coincides with the St. John's Period (Milanich 1994: 250). These dates overlap the Safety Harbor Period which was from (900- 1725 CE) (Appendix 4).

This research aimed to answer the question of how traditional mounds that did not contain the radial burial pattern formed when the Burns mound was constructed and how they were similar and different. The recorded varying characteristics of the mounds in the Attributes Table hoped to demarcate the Burns mound from other mounds in Florida, Georgia, Louisiana, and Carolina regions. When listing the characteristics of the 11 radial mounds and the 43 traditional mounds, the research contributed to the knowledge of various cultures in the Southeast. It demonstrated how they correlated with one another through mound construction. The study addressed possible origins for the radial burial pattern and pinpointed what characteristics make Burns different from other burial mounds in Florida, Georgia, Louisiana, and Carolina's regions.

Familiar mound construction practices throughout the states listed were sites near waterways. This ties into indigenous life in the Southeast, which revolved around aquatic travel. The high percentage of coastal elements, such as sand and shell, used to make the mounds is attributed to their location.

The high number of unknown burial placements is a testament to the gaps in the literature frequently found in reports for these sites. Due to the inability to reevaluate most of these sites, that information needs to be updated. The loss of these sites leaves much room for interpretation and theory regarding mortuary questions but no way to prove them. Based on the available information, flexed, semi-flexed, and bundled were the most prominent burial formations.

The recorded mounds follow a consistent chronology, predominantly dating from 500-1565 AD, aligning with periods such as Malabar II, Hickory Pond, Safety Harbor, Mississippian, Woodland, and Glades (Appendix 4). The Attributes Table indicates significant mound construction throughout these periods across the recorded states, resulting in similar usage dates

for radial burials and traditional methods. This convergence in usage dates underscores the differences in artifact assemblages between radial mound sites and traditional ones. Additionally, the Southeastern Ceremonial Complex falls within the Mississippian timeframe (800-1600 AD), further connecting it with the radial burial pattern (Brown et al. 2001).

The Burns mound follows the general patterns of other radial mounds found in Florida. Those characteristics include grave inclusions, pre-contact and post-contact, construction during the Malabar II period, and location near a waterway. This shows that the Aís followed the standard mortuary practices in the Southeast and that the Burns mound, with its radial burial pattern, was ritually unique. The other ten radial pattern mounds can also be labeled ritual-specific sites due to the radial mortuary practice, its commonalities in construction with traditional mounds, and other physical evidence of the Southeastern Ceremonial Complex.

5.3 Unveiling the Significance of Lightning Whelk and Worked Shell Artifacts within Radial Mounds

The lightning whelk, also known as *Busycon perversum*, is recorded by archaeologists to be present in or associated with all the radial mounds recorded (Rouse 1951). Focusing on the radial mounds recorded in the Attributes Table, these whelks heavily indicate ritual behavior often associated with the Black Drink Ceremony. In chapter two, it was stated that there are three types of worked whelk shells attributed to ceremonial practice. Those include the lightening whelk, emperor helmet, and the horse conch. Based on their provenience to a grave, these shells indicate which remains belonged to individuals from a higher status within the community. This chapter previously stated that the theorized chief was buried with a shell cup near his right hand, which can be observed at the Casuarina mound.

With the archaeological and historical evidence supporting the use of Black Drink and its associated ceremonies at the radial mound sites, it is evident that the radial term is misused. While the correlation between the mortuary pattern and a spoke wheel made sense to European analysts, the term does not accurately fit the native culture of the Southeast. The study concluded that the mortuary pattern mimicked the spiral of the lightning whelk, not a wheel's spoke. This clockwise pattern held tremendous religious value for the indigenous people of the Southeast, as seen in this study. It is important to note that the spiral mounds have distinct characteristics that set them apart from other mortuary sites without a similar pattern.

5.4 Identifying Constraints in Research: Exploring Limitations and Challenges

The limitations of this project include the time and resources needed to adequately answer the research questions posed at the beginning. Due to the colonization of Florida, identifying the Southeastern Mound Complex at the radial sites requires extensive physical evidence, including funerary objects.

The time constraints for completing all the tasks I had anticipated to solidify my theory regarding the substantial influence of the Southeastern Ceremonial Complex included a more in-depth analysis of the ceramic assemblages found in the recorded mounds and having more time to delve into how each of the radial mounds had physical connections to the Southeastern Ceremonial Complex. Each of these research segments would deepen the understanding of the Southeastern Ceremonial Complex's influence on the radial Mortuary practice found in Florida today.

The need for artifacts associated with burial mounds and middens hinders the research process due to the shortage of sites available because of the effects of climate change and the

laws by NAGPRA to ensure the safety of the Seminole tribe's culture. These factors leave the research dependent on artifacts previously recovered by archaeologists.

This methodology requires the acknowledgement that theories and conclusions about the mortuary practices have the potential to be incorrect due to incorrect notions about the region and its indigenous population, a lack of note-taking, and frequent looting by either the archaeologists themselves or others who encountered the structures before they were able to conduct a scientific excavation.

5.5 Exploring Future Research Directions

Future research could include chemical testing for the Black Drink at all the radial mound sites, a more refined analysis of the artifacts discovered at each site to look for evidence of the Southeastern Ceremonial Complex, the impact of differentiating water levels, and how it may have affected indigenous travel and trade, applying an approach using GIS to compare trade routes and distances between mounds. Additional time and effort could be used to continue the search for the missing remains exhumed by Sir Tatton Sykes.

The chemical analysis of the radial mound sites for the Black Drink would require lab space and ceramic samples from each site. Technology such as UV-vis-NIR spectroscopy would be used to test samples for Black Drink residue. Special notice would then be taken to see if they produced positive samples for the Black Drink and maize starch grains. Archaeologists often equate horticulture and the Southeastern Ceremonial Complex and state that these are directly correlated (Waring & Holder 1945). If the evidence for Black Drink and its ceremony were found, this could provide additional support to the radial mortuary pattern.

Large bodies of water, such as rivers, lakes, and oceans, were the highways of the pre-Columbian world. Their existence ensured dependable travel and trade throughout the regions, interconnecting societies. The Chattahoochee-Flint-Apalachicola River system connected Alabama, Florida, and Georgia—many smaller bodies of water flow within Florida, webbing out from the swamps to the seashore. The lack of radial burial mounds in the state's center could be due to lower water levels when the purification ritual was prevalent. With the seashore environmentally cut off from the state's center, the mortuary practice could have quickly only appeared along the only significant body of water available for reliable water travel: the Atlantic Ocean and Gulf the Gulf Stream. Further analysis would be needed to determine if this hypothesis is correct. Research would need to be conducted on the water levels and other environmental factors that could have prohibited water travel.

A more targeted approach to the artifact analysis of radial and traditional mounds would benefit the study tremendously. Determining commonalities to artifacts, specifically motifs, ceremonial objects, and ceramic types, would add much-needed depth to analyzing the mortuary pattern. Potential trade routes and cultural exchanges throughout the Southeast could be identified if correlations were found among the mounds. This opens the research to a more in-depth holistic approach to the Southeast during prehistoric archaeological periods. Once a direct list of frequently discovered Southeastern Ceremonial Complex artifacts and pottery wares were determined, the study could expand and include more mounds from various regions of the Southeast and Midwest United States to determine the potential travel avenues the culture could have spread through. Constructing a radius of study around the known ports of culture throughout the Southeast, such as Mt. Royal, Moundville, Macone, Etowah, Citico, Castilian Springs, and Cahokia mound complexes. This radius would be the subject of archaeological

analysis of all the mounds constructed nearby to look for correlations between them, as was done in this study. The extension of this analysis would develop a nationwide synopsis of the cultural influence that the Southeastern Ceremonial Complex possessed. GIS could then be implemented to determine cultural 'hot spots' based on artifact density. Due to the evidence proving that mound construction depended on waterways, there could be room for variation in the radius of the mounds. The study could follow the main waterways in which these ceremonial mound complexes were built.

The use of GIS for this study could go beyond artifact hot spot maps. GIS could allow for a more detailed examination of the distance between the radial mounds and the waterways interconnecting the Southeast. While most of the mounds follow along the coasts of the Florida Peninsula, it would be prudent to correctly discover the exact milage to note the probability of the previously stated mound complexes. The information needed for this study can be found in Florida's Master Site File, a government database that records all archaeological work done within the state. Information found within the database includes the site's precise latitude and longitude location. GIS could also visualize correlations between the yaupon holly trade amongst the Southeastern indigenous tribes. Historical documentation and determining the most accessible routes tribes could have taken to exchange ideas and goods amongst themselves and Mesoamerica. Tying the two cultural influences together will solidify the theory that the Southeastern Ceremonial Complex spread beyond tribal boundaries previously theorized by archaeologists.

CHAPTER 6: CONCLUSION

The Burns Site (8BR85) is a remarkable example of prehistoric Florida's diverse and intricate indigenous mortuary traditions. Its unique radial burials, characterized by a spoke wheel pattern of human remains, offer a glimpse into the cultural, social, and historical contexts of the peoples who once inhabited this land. Answering my research questions established a comprehensive understanding of how radial mounds fundamentally compare to traditional mounds. This step revealed evidence of the Southeastern Ceremonial Complex at the radial sites through artifact assemblages. The presence of the lightening whelk, and other Southeastern Ceremonial Complex motifs, suggest that the radial pattern mimics an indigenous pattern rather than a European one.

Through a blend of quantitative analysis and qualitative interpretation, this research has endeavored to contextualize the significance of radial burials within the broader framework of indigenous mortuary practices. By scouring not only Florida but also the Southeastern United States for similar burial patterns, insights have been gained into how communities honored their deceased.

However, the journey to understanding the Burns Site and its radial burials has not been without challenges. Discrepancies in the literature, dating back to the mound's discovery over a century ago, highlight the importance of ongoing investigation and cross-referencing. Recent revelations, including the exhumation of individuals in the mid-1800s, underscore the urgency of identifying the whereabouts of these ancestral remains and addressing the ethical and legal dimensions surrounding their repatriation.

The Attributes Table proved instrumental in elucidating how the Burns burial mound exemplifies a mortuary practice potentially rooted in the Southern Ceremonial Complex, as

evidenced by the physical artifacts unearthed at the site. By systematically documenting and analyzing the characteristics of the burials, such as grave goods, burial orientation, and associated ceremonial features, patterns emerged that align with known traits of the Southeastern Ceremonial Complex. This comparative approach enhances our understanding of the Burns Site within its regional context and contributes to broader discussions surrounding the diffusion and adaptation of cultural practices across ancient societies. Through the lens of the Attributes Table, the Burns burial mound emerges as a crucial piece in the mosaic of indigenous ceremonial traditions, shedding light on the intricate interplay between local practices and more significant cultural phenomena in the prehistoric Southeast.

By questioning the idea that prehistoric indigenous cultures were holistic, all previous interpretations of the cultures that fall within the Southeastern and Midwestern regions of the United States could be reevaluated with a new anthropological lens. Once believed to be isolated, the Florida peninsula beyond the Timucuan-speaking northern regions, the peoples of the southern areas are now connected to tribes reaching as far as Illinois through ritual and religious beliefs.

In previous archaeological endeavors to interpret the prehistoric intricacies of native culture, sites such as the Burns mound were overlooked and not analyzed for what they are. With the new interpretation that the radial burials are a remnant of the Southeastern Ceremonial Complex, archaeologists can connect Florida to the rest of the Southeast and Mesoamerica. Due to the lightening whelk and its counterclockwise spiral, the indigenous culture equated it to spiritual purification and mortuary ritual. The shell's religious significance is evident in sites all throughout the southeast in mortuary contexts. The radial pattern enclosed in the eleven known mounds demonstrates the complexity and cohesion of the Southeastern population pre-contact, testifying to their once influential culture. Through trade and interlaced religious beliefs,

prehistoric Indigenous participated in a complex cultural society that altered their social, political, and spiritual beliefs. The Black Drink and other Southeastern Ceremonial Complex relics attest to the significance of Cape Canaveral and associated regions and tie it to the Southeast. Upon analyzing the Attributes Table, it becomes clear that the radial and traditional mound sites share several construction similarities. Fundamentally and chronologically, they are very similar. Through artifact assemblages, the presence of the Southeastern Ceremonial Complex is evident in radial mound sites, solidifying the radial mortuary pattern's association as another adaptation to its cultural influence. The research aims to reclassify the radial burial pattern to a spiral burial pattern, due to its homage to the culturally significant lightening whelk and its counterclockwise shape. This document shows that the indigenous presence aimed to mimic their ideologies through the counterclockwise spiral pattern rather than equating it to a European construct. This study proves that cultural relativity could have been much better in previous archaeological work, leading to crucial indigenous cultural aspects at risk of losing forever. With the rising sea levels, archaeologists now need to remove earlier notions of state-like tribal societies and look at Indigenous culture as one.

WORKS CITED

Barber, Sarah B (Editor). Contributions by Blessing, Megan E., Cannarozzi, Nicole., Duncan, Neil A., Emery, Kitty F., McAfoos, Ilana R., Park, Hannah, Penders, Thomas, Savateri, Sammi., Tyler, Emily
2023 Archaeological and Historical Investigation of the Burns Site (8BR85).: Report prepared for the Argonne National Laboratory.

Bartram William
1928 [1791] The Travels of William Bartram. Originally published 1928. Macy-Masius Publishers, Don Mills, Toronto. Denver Publications, New York.

Buikstra, Jane, E. and Douglas K. Charles
1999 Centering the Ancestors: In *Archaeologies of Landscape: Contemporary Perspectives*, edited by Wendy Ashmore and A. Bernard Knapp, 201-28. Blackwell, Oxford U.K.

Bushnell, D.I.
1920 *Native Cemeteries and Forms of Burial East of the Mississippi.* Washington: Government Printing Office: Smithsonian Institution, Bureau of American Ethnology.

Byrd William
1929 *Byrd's Histories of the Dividing Line Betwixt Virginia and North Carolina*. Raleigh: North Carolina Historical Commission pp.42.

Cordell, Ann S, Mitchem M. Jeffrey
2021 Methods, Mounds, and Missions: New Contributions to Florida Archaeology, pp. 95-117. University Press of Florida, Gainesville, Florida.

Daniels, J.
2013 Shipwrecked in the Atlantic World: Reevaluating Jonathan Dickinson's Interactions with Native Peoples along Florida's Southeastern Coast. The Florida Historical Quarterly, 91(4), 451–490. http://www.jstor.org/stable/43487529

Demming, Joan, and Elizabeth A. Horvath
1999 Phase II Test Excavation Report, Sixteen Archaeological Sites, Cape Canaveral Air Force Station, Brevard County. Report on File, Florida Division of Historical Resources. Tallahassee.

Ferguson Vera
1951 Chronology at South Indian Field Florida. Yale University Anthropology Department. London. Pp.23-27. Yale University Press.

Gibson, J. L.

2006 Navels of the Earth: Sedentism in Early Mound-Building Cultures in the Lower Mississippi Valley. World Archaeology, 38(2), 311–329. http://www.jstor.org/stable/4002450

Griffin, John W.
2002 Archaeology of the Everglades. University Press of Florida, Gainesville. Google Scholar.

Goggin, John W.
1950 The Safety Haror Site, Pinellas County, Florida. The Florida Anthropological Society Publication No. 2.

Hudson, C.M. ed.
2004 Black drink: A indigenous Tea. University of Georgia Press.

Hutchinson, D.L. and Mitchem, J.M.
1996 The Weeki Wachee Mound, An Early Contact Period Mortuary Locality in Hernando County West-Central Florida. Southeastern Archaeology, pp.47-65.

Hvidt Christian
1736 *Von Reck's Voyage to Georgia in 1736*. Savannah GA. The Beehive Press.

Lawson John
1967 *A New Voyage to Carolina*. Chapel Hill: University of North Carolina, ed. Hugh T. Lefler. Pp. 97-98.

Levy, R.S., D.F. Barton, and T. Riordan
1984 An Archaeological Survey of Cape Canaveral Air Force Station, Brevard County, Florida. Report on File, Florida Division of Historical Resources, Tallahassee.

Loucks L.J
1776 *Early Achula Tradition Burial Ceremonialism Henderson Mound,* Achula County Florida. Unpublished Master's Thesis. University of Florida Gainsville.

Marquardt, William H.
2010 *Shell Mounds in the Southeast: Middens, Monuments, Temple Mounds, Rings or Works*?: American Antiquity 75, no. 3: 551–70. http://www.jstor.org/stable/25766215.

Marquardt, William & Kozuch, Laura.
2015 The Practical and Spiritual Significance of the Lightning Whelk. Conference: 80th annual Society for American Archaeology meeting, San Francisco, California, April 16.

McNiven, I
2013 Ritualized Middening Practices. *Journal of Archaeological Method and Theory.* 20(4): 552-587

Merrill, W.L.,
1979 The beloved tree: Ilex vomitoria among the Indians of the Southeast and adjacent regions. *Black drink: An Indigenous Tea*, pp.40-82. University of Georgia Press.

Milanich, Jerald T.
1979 Origins and Prehistoric Distributions of Black Drink and the Ceremonial Shell Drinking Cup. In: *Black Drink a Indigenous Tea*. Charles M. Hudson, Editor. Pp. 83-119. University of Georgia Press.

2001 Historical notes and documents: Frolicking bears, wet vultures, and other mysteries: Amos Jay Cummings's 1873 description of mounds in East-Central Florida. *Florida Historical Quarterly* 80(3).:6. accessed May 20, 2023.

Mitchem, Jeffrey M.
1999 Clarence B. Moore's Work in Western and Central Florida, 1895-1921. In *The West and Central Florida Expeditions of Clarence Bloomfield Moore*. Edited by Jeffrey M. Mitchem, 1-48. University of Alabama Press. Tuscaloosa.

Moore , C.B
1903 Certain Aboriginal Mounds of the Central Florida West-Coast. J*ournal of the Acadamy of Natural Sciences of Philadelphia 17*.

1905 "Miscellaneous Investigations of Florida", *Journal of the Acadamy of Natural Sciences 13 (*1905):302

Penders, Thomas
2012 The Indian River Region during the Mississippi Period in Late Prehistoric Florida: *Late Prehistoric Florida Archaeology at the Edge of the Mississippian World,* Vol. 7, edited by Keith Ashley, and Nancy Marie White, pp. 82-99. University Press of Florida, Gainesville, Florida.

Perrot Emile
1943-1944 Matieres Premieres Usuelles du Regne Vegetal. Therapeutique- Hygiene- Industrie, 2 volumes. (Paris: Masson et Cie, Editeurs Librairies de L'Academie de Medicine (1943-1944).

Piatek, B. J.
1994 The Tomoka Mound Complex in Northeast Florida. Southeastern Archaeology, 3(2), 109–118. http://www.jstor.org/stable/40656500

Myers, Ronald L, and John J Ewel, editors
1990 *Ecosystems of Florida*. University of Central Florida Press, Orlando.

Rodrigues, Kathleen, Frank W Stapor, William J Rink, James S Dunbar, and Glen Doran
2021 A 5700-year-old beach ridge set at Cape Canaveral, Florida, and its implication for Holocene sea-level history in the Southeastern USA. The Holocene 32(1-2).:40-56.

Rouse, Irving.
1951 A Survey of Indian River Archaeology, Florida. Yale University Publications in Anthropology 44. Yale University Press, New Haven Connecticut.

Russo, Michael
2004 Measuring Shell Rings for Social Inequality. In Signs of Power: *The Rise of Cultural Complexity in the Southeast,* edited by J.L, Gibson and P.J Carr, pp, 26- 70. University of Alabama Press, Tuscaloosa.

Sassaman, Kenneth E.
2003 *St. Johns Archaeological Field School:* Blue Spring and Hontoon Island State Parks. Laboratory of Southeastern Archaeology, Technical Report 4. Department of Anthropology, University of Florida, Gainsville.

Sassaman, Kenneth E., Asa R. Randall
2007 The Cultural History of Bannerstones in the Savannah River. *Southeastern Archaeology* 26(2).:196–211.

Saunders, R., and M, Russo.
2011 Coastal Shell Middens in Florida: A View from the Archaic Period. Quaternary International 239 (1-2): 38-50.

Stirling, M.W., Willey, G., Woodberry, G.
1954 Burial patterns in the Burns and Fuller mounds. *Burial Patterns in the Burns and Fuller Mounds: Cape Canaveral Florida*: pp.1–9.

Stuiver, Minze, and Paula J Reimer
1993 Extended 14C database and revised CALIB 3.0 14C age calibration program. *Radiocarbon* 35(1).:215-230.

Swanton, J.R.
1928 Social Organization and Social Usages of the Indians of the Creek Confederacy. Forty-second Annual Report of the Bureau of American Ethnology, 31–726. Smithsonian Institution, Washington, D.C.

Swanton John
1928 *Religious Beliefs and Medicinal Practices of the Creek Indians*, Smithsonian Institute Forty-second Annual Report (Washington D.C., 1928). Pp. 546-614.

1954 Burial Patterns in the Burns and Fuller Mounds, Cape Canaveral, Florida. The Florida Anthropologist 7(3).:79-90.

Walker, Karen J.
1992 The Zooarchaeology of Charlotte Harbor's Prehistoric Maritime Adaptation: Spatial and Temporal Perspectives. In Culture and Environment in the Domain of the Calusa, edited by W. H. Marquardt, pp. 265-366. Institute of Archaeology and Paleoenvironmental Studies, Monograph 1. University of Florida, Gainsville.

Wallis, Niell J.
2008 Networks of History and Memory: Creating a Nexus of Social Identities in Woodland Period Mounds on the Lower St. Johns River, Florida. *Journal of Archaeology* 8: 236-71.

Waring Jr. A.J. and Holder Preston
1945 A Prehistoric Ceremonial Complex in the Southeastern United States. The American Anthropological Association. Stable pp. 1-34.

Wilson Gregory D.
2019 *Mississippian Beginnings.* University Press of Florida. Gainsville FL. Pp. 2-3.

White, William A.
1970 The geomorphology of the Florida peninsula. Florida Geological Survey Bulletin 51. Bureau of Geology, Division of Interior Resources, Florida Department of Natural Resources, Tallahassee.

Woodard, Jacob.
2023 "Chemical Analysis for Phytochemical Residues on Ceramics from Cape Canaveral Archaeological Sites". Honors Undergraduate Theses. 1473.
https://stars.library.ucf.edu/honorstheses/1473

Woodbury , G.
1934 Preliminary Report of Mortuary Mounds in Brevard County, Florida East Coast

APPENDIX

Appendix 1 Attributes Table characteristics of traditional and radial mounds from Florida, Georgia, Louisiana, North Carolina, and south Carolina

Site	Site #	State	Affiliation	Date Range	Burial Pattern	Grave Inclusions	Precontact Inclusions	Post contact Inclusions	Near Water-way	Near an Occupat-ion Site	Mound Materials	SOURCE/ REFERENCE
Burns	8BR85	FL	Malabar II	900-1565 AD	Radial, Flexed	Yes	Yes	Yes	Yes	Yes	Sand, shell	Barber et al.2023, Penders 2012, Willey 1954
Casuarina	8Br122	FL	Malabar II	1000-1565 AD	Radial, Bundled, Scattered	Yes	Yes	Yes	Yes	Unknown	Sand, shell	Penders 2012
Fuller Mound A	8Br90	FL	Malabar II	1000-1565 AD	Radial, Flexed	Yes	Yes	Yes	Yes	Yes	Sand, shell	Woodbury 1934, Penders 2012
Fuller Mound D	8Br93	FL	Malabar II	500 BC-1565 AD	Arc , Flexed	Yes	No	Yes	Yes	Yes	Sand, shell	Woodbury 1934, Penders 2012
Henderson Mound	8AI463	FL	Hickory Pond	550 - 1230 AD	Arc	No	No	No	Yes	Unknown	Sand, shell	Loucks 1976, Penders 2012
Laurel Mound	8SO98	FL	Safety Harbor	900 - 1725 AD	Radial	Yes	Yes	No	Yes	Unknown	Sand, shell	Penders 2012
Oelsner Indian Mound	8PA02	FL	Weeden Island-Safety Harbor	200 - 1000 AD	Radial	Yes	Yes	No	Yes	Unknown	Sand, shell	Penders 2012
Ormond Mound	8VO75	FL	St. Johns	500 BC-100 AD	Radial	Yes	Yes	Yes	Yes	Unknown	Sand, shell	Penders 2012
Woodward Mound	8AI47	FL	Hickory Pond	600 BC - 1250 AD	Arc	Yes	Yes	No	Yes	Unknown	Sand, shell	Penders 2012

Arch Creek	8DA23	FL	Glades II	500 BC-1530 AD	Radial	No	No	No	Yes	Unknown	Sand, shell	Penders 2012
Tick Island	GV025	FL	Malabar I-II	500 BC-1565 AD	Flexed	Yes	Yes	No	Yes	Yes	Sand, shell	Rouse 1951
Horse Landing	8PU27	FL	Malabar II	750-1565 AD	Scattered, Flexed	Yes	Yes	Yes	Yes	Unknown	Shell	Mitchem, 1999
Tomoka Mound	8V081	FL	St. Johns	500 BC – 100 AD	Flexed	Yes	Yes	No	Yes	Yes	Sand, shell	Piatik, 1994
Horr's Island	Cr201	FL	Archaic Period	9500-3000 BC	Flexed	Yes	Yes	No	Yes	Yes	Sand, shell	Russo 1951
Kolomoki Site	9ER1	GA	Woodland Period	250 - 1200 AD	Flexed, Semi-flexed, Cremated	Yes	Yes	No	Yes	Yes	Clay, soil	Rouse 1951, Pluchahn 2011
Monte SaNo Bayou	16EBR17	LA	Archaic Period	9500 – 3000 BC	Cremated	Yes	Yes	No	Yes	Yes	Sand, clay	Russo 1994
LSU Campus Mounds	16EBR6	LA	Mississippian Period	800 – 1600 AD	Unknown	No	Yes	No	Yes	No	Sand, clay	Russo 1994
Vero Beach	IR16	FL	Malabar II	1000-1600 AD	Scattered	Yes	Yes	No	Yes	Yes	Shell	Russo 1959
Micco Beach Mound	Br125	FL	Malabar I Period	500 BC-750 AD	Unknown	Yes	Yes	No	Yes	Unknown	Shell	Rouse 1951
Norris Mound	Br89	FL	Malabar II	1000-1600 AD	Flexed	Yes	Yes	No	Yes	Yes	Sand	Rouse 1951

De Soto Mound	Br83	FL	Malabar II	1000 - 1600 AD	Anatomical	Yes	Yes	Yes	Yes	Yes	Sand	Rouse 1951
Frechman's Bend Mound	160U259	LA	Archaic Period	9500-3000 BC	Unknown	Yes	Yes	No	Yes	Yes	Sand, clay	Russo 1964
Watson Brake	160U175	LA	Archaic Period	5000 - 2000 BC	Unknown	Yes	Yes	No	Yes	Yes	Sand, clay	Russo 1964
Banana Bayou Mound	16IB24	LA	Archaic Period	3000 - 2500 BC	Unknown	Yes	Yes	Yes	Yes	Yes	Sand, clay	Russo 1965
Cutler Mound	8Da8	FL	Glades II	750 BC-1500 AD	Radial	No	No	No	Yes	No	Sand	Penders 2012
Hornsby Mound	16SH21	LA	Middle Archaic	7000-3000 BC	Unknown	Yes	Yes	No	Yes	Yes	Soil	Gibson 2006
Tatham Mound	8CI200	FL	Safety Harbor	900 - 1725 AD	Flexed, Semi-flexed, Cremations	Yes	Yes	Yes	Yes	Yes	Sand	Luer 2002
Laurel Mound	8So98	FL	Safety Harbor	900 - 1725 AD	Unknown	Yes	Yes	Unknown	Yes	Unknown	Sand, shell	Luer 2002
Weeki Wachee Mound	8HE12	FL	Safety Harbor	900 - 1725 AD	Unknown	Yes	Yes	Yes	Yes	Yes	Sand, shell	Hutchinson, Mitchem 1996
Poverty Point	16WC5	LA	Archaic Period	2000 - 1000 BC	Cremations	Yes	No	No	Yes	No	Soil, clay	Saunders 2005
Watson's Break	16OU175	LA	Archaic Period	2000 - 1000 BC	Unknown	Yes	Yes	No	No	Yes	Soil, clay	Saunders 2005,
Bayshore Homes Site	8PI41	FL	Safety Harbor	900-1725 AD	Flexed, Bundled, Cremations	Yes	Yes	No	Yes	Yes	Sand, shell	Moore 1990, S.T Walker (1880), C.B Moore (1900), David Bushnell

												(1926) Robert J. Austin, Jeffrey M. Mitchem
Woodward Village Mound	8AI47	FL	Woodland - Mississippian Period	1330 AD-1440 AD	Unknown	Yes	Yes	No	Yes	Yes		Bullen 1949
Palmer Taylor Mound	Se18	FL	Malabar II	1000-1600 AD	Scattered	Yes	Yes	Yes	Yes	Yes	Sand, shell	Rouse 1951
Holmes Mound	Br86	FL	Malabar II	1000-1600 AD	Extended	Yes	Yes	No	Yes	Yes	Sand, Shell	Rouse 1951
Higgs Site	Br134	FL	Unknown	1704-1763 AD	Scattered	Yes	Yes	Yes	Yes	Unknown	Sand, shell	Rouse 1951
South Indian Field	Br23	FL	Malabar I-II	500 BC-1602 AD	Extended, Scattered	Yes	Yes	Yes	Yes	Yes	Sand, shell	Rouse 1951
Orange Mound	Or1	FL	Orange Period-Malabar II	4000 BC-1600 AD	Bundled, Scattered	Yes	Yes	No	Yes	Unknown	Sand, shell	Rouse 1951
Persimmon Mound	Br1	FL	Orange Period-Malabar II	4000 BC-1600 AD	Flexed	Yes	Yes	Yes	Yes	Unknown	Sand, shell	Rouse 1951
Etowah Mound	9Br1	GA	Mississippian Period	950-1450 AD	Flexed	Yes	Yes	Unknown	Yes	Unknown	Soil, clay	Little 2016,
Lower Jackson Mound	16WC10	LA	Archaic Period	3995-3655 BC	Unknown	Yes	Yes	No	Yes	Yes	Clay, soil	Little 2016,
Turtle Mound	8V00109	FL	Woodland Period	800-1400 AD	Unknown	Yes	Unknown	Unknown	Yes	Yes	Soil	Little 2016, Rouse 1951
Auld Mound	38CH41	SC	Archaic Period	2200-950 BC	Unknown	Yes	Yes	No	Yes	Yes	Sand, shell	Little 2016,

Callawassie Island Mounds	38Bu19	SC	Late Woodland Period	1000-1150 AD	Flexed	Yes	Yes	No	Yes	Yes	Sand, shell	Moore 1998, Little 2016,
Coe-Harrison Mound	8NA246	FL	St. Johns II	900-1250 AD	Unknown	Yes	Yes	No	Yes	Yes	Sand, shell	Cordell & Mitchem 2021
Mills Cove Complex	8DU12	FL	St. Johns	900-1250 AD	Scattered	Yes	Yes	No	Yes	Yes	Sand, shell	Cordell & Mitchem 2021
Talbot Island Midden	8DU80	FL	St. Johns II	900-1250 AD	Unknown	Yes	Yes	No	Yes	Yes	Sand, shell	Cordell & Mitchem 2021
Goodman	8DU66	FL	St. Johns	900-1250AD	Unknown	Yes	Yes	No	Yes	Yes	Sand, shell	Cordell & Mitchem 2021
Grand Site	8DU1	FL	Archaic Period	900-1250 AD	Unknown	Yes	Yes	No	Yes	Yes	Sand, shell	Cordell & Mitchem 2021
Shields	8DU12	FL	St. Johns	900-1280 AD	Unknown	Yes	Yes	No	Yes	Yes	Sand,shell	Cordell & Mitchem 2021
Sapelo Shell Ring Complex	9MC23	GA	Late Archaic	2450 BC-1700 AD	Primary Burials, Urn Burials, Burned/Unburned Bone, Cremations	Yes	Yes	No	Yes	Yes	Sand, Shell, Loam	Moore 1903
Pineland Site Complex	8LL33	FL		195-495 AD	Flexed, Semi-flexed	Yes	Yes	Yes	Yes	Yes	Sand, shell,	Walker, Stapor& Marquart, 1995
Crystal River Mound Complex	8C11	FL	Woodland - Mississippian Period	1000 BC-1000 AD	Bunched, Extended, Flexed, Partly-Flexed, Lone Skulls	Yes	No	No	Yes	Yes	Sand, Shell, Limestone	Bullen 1953

Appendix 1 lists out traditional mounds found in Florida, Georgia, Louisiana, North Carolina, and South Carolina.

Appendix 2 Ceramic Types found at Sites Recorded in the Attributes Table

Ceramic Types	Count of Ceramic Types	Percentages
Unknown	13	5.7%
St. Johns Plain	12	5.3%
St. Johns Check Stamped	10	4.4%
Glades Plain	8	3.5%
Ocmuglee Cordmarked	5	2.2%
Orange Incised	5	2.2%
St. Johns Simple Stamped	4	2.12%
St. Johns Incised	4	1.8%
Weeden Island Incised	4	1.8%
Orange Plain	4	1.8%
St. Johns	3	1.3%
St. Johns Creek Stamped	3	1.3%
St. Johns	3	1.3%
None	3	1.3%
Englewood Incised	3	1.3%
Belle Glade	3	1.3%
Unidentified	3	1.3%
Dunns Creek Red	2	0.9%
Cord Marked	2	0.9%
Glades	2	0.9%
Swift Creek	2	0.9%
Weeden Island Plain	2	0.9%
Belle Glade Plain	2	0.9%
Pinellas Plain	2	0.9%
Belle Glade Plain	2	0.9%
Safety Harbor Incised	2	0.9%
Belle Glades Plain	2	0.9%
Sand Tempered Plain	2	0.9%
Glades Tooled	2	0.9%
Savannah Complicated Stamped	2	0.9%
Pinellas Incised	2	0.9%
Pasco Plain	2	0.9%
Savannah Fine Cord	1	0.9%
Tchefuncte sherds	1	0.4%
St. Johns Mat Impressed	1	0.4%
Glades Check Stamped	1	0.4%
Sand-tempered Incised	1	0.4%

Glades Fabric Impressed	1	0.4%
St. Johns Brushed	1	0.4%
Glades Ft. Drum Puncutuated	1	0.4%
St. Johns Scored	1	0.4%
Glades Incised	1	0.4%
European Sherds	1	0.4%
Baytown Plain	1	0.4%
Sandy St. Johns Simple Stamped	1	0.4%
Glades Plain	1	0.4%
Deptford	1	0.4%
Glades Red	1	0.4%
Deptford Cross-Stamped	1	0.4%
Glades Surfside Incised	1	0.4%
St. Johns Plain, Glades Plain,	1	0.4%
Gordons Pass Incised	1	0.4%
Surfside Incised	1	0.4%
Indeterminate Stamped	1	0.4%
Tucker Ridged-Pinched	1	0.4%
Irene Complicated Stamped	1	0.4%
Tomoka Check Stamped	1	0.4%
Irene Incised	1	0.4%
Sandy St. Johns Incised	1	0.4%
Kay Largo Incised	1	0.4%
Savannah Check Stamped	1	0.4%
Late Archaic	1	0.4%
Single 'Rude' Check Stamped	1	0.4%
Little Manatee	1	0.4%
St. Johns Basketry Impressed	1	0.4%
Little Manatee Shell Stamped	1	0.4%
Deptford Check Stamped	1	0.4%
Little Manatee Zoned Stamped	1	0.4%
Dunnes Creek Red	1	0.4%
Marsh Island Incised	1	0.4%
St. Johns Pinched	1	0.4%
Matecumbe Incised	1	0.4%
St. Johns Punctated	1	0.4%
McIntosh Incised	1	0.4%
Dunn's Creek Red	1	0.4%
Miami Incised	1	0.4%
Swift Creek Complicated	1	0.4%
Middle Woodand Cade Ponds	1	0.4%

Tick Island Incised	1	0.4%
Mississippian Sherds	1	0.4%
Etowah Complicated Stamped	1	0.4%
Mississippi-Period	1	0.4%
Fiber-Tempered Sherds	1	0.4%
Belle Glade Incised	1	0.4%
Sand Tempered Simple Stamped	1	0.4%
Norwood Incised	1	0.4%
Sandy St. Johns Check Stamped	1	0.4%
Norwood Simple Stamped	1	0.4%
Sandy St. Johns Plain	1	0.4%
Ocachobe Plain	1	0.4%
Sarasote Incised	1	0.4%
Spanish Jar	1	0.4%
Dade Incised	1	0.4%
Opa Locka and Key Largo Incised (transitional)	1	0.4%
Shell Tempered Plain	1	0.4%
Opa Locka Incised	1	0.4%
Spouted St. Johns Vessel	1	0.4%
St. Johns Check Stamped	1	0.4%
Deptford Bold Creek Stamped	1	0.4%
St. Johns Check Stamped and Scored	1	0.4%
St. Johns Bold Check Stamped	1	0.4%
Orange Puncated	1	0.4%
St. Johns Burnished	1	0.4%
Papys Bayou	1	0.4%
St. Johns Checkstamped	1	0.4%
Papys Bayou Incised	1	0.4%
St. Johns Cross Simple Stamped	1	0.4%
Glades Plain	1	0.4%
St. Johns Lugged	1	0.4%
Pasco Simple Stamped	1	0.4%
St. Johns Net Impressed	1	0.4%
Perico Linear Punctated	1	0.4%
St. Johns Fabric Impressed	1	0.4%
Carrabelle Incised-like	1	0.4%
St. Johns Punctate	1	0.4%
Chinese & Japanese Porcelain	1	0.4%
St. Johns Sand Tempered	1	0.4%
Plain and Cord-Marked Sherds	1	0.4%
St. Johns Shell Marked	1	0.4%

Plantation Pinched	1	0.4%
St. Johs Check Stamped	1	0.4%
Point Washiongton Incised	1	0.4%
St. Johns Unknown Stamping	1	0.4%
Residual Plain	1	0.4%
Tampa Complicated Stamped	1	0.4%
Safety Harbor	1	0.4%
Thomas Simple Stamped	1	0.4%
Saftey Harbor	1	0.4%
Tomoka Plain	1	0.4%
Saftey Harbor Incised	1	0.4%
Unclassified Incised	1	0.4%
Colorinda	1	0.4%
Unidentified (Undecorated)	1	0.4%
San Marcos Plain	1	0.4%
Weeden Island	1	0.4%
San Marcos Stamped	1	0.4%
Ft. Drum Incised	1	0.4%
Sand Tempered Check Stamped	1	0.4%
St. Johns Creek Stamped	1	0.4%
Grand Total	**227**	

Appendix 2 lists ceramic assemblages from mounds recorded in the Attributes Table (Appendix 1)

Appendix 3 Terms and Definitions from the Attributes Table

Term	Definition
Flexed	The remains are in a fetal position.
Semi-flexed	Remains are not in a full fetal position but crouched.
Bundled	A bundle of human remains buried after the flesh has been removed
Scattered	Bones are scattered throughout, not in anatomical order.
Radial	Remains are positioned with the heads all facing the center, and the feet pointed outward.
Arc	Remains are facing positioned with the heads pointed toward the center and the feet are pointed outward, in a semi-circle. Believed to be an incomplete or disturbed radial burial.
Cremated	Remains are burned.
Extended	The remains are stretched out, and the arms are placed by its sides.
Unknown	The archaeological record did not record the orientation of the remains found.

Appendix 3 lists out body positions within burial mounds from Rouse 1951.

Appendix 4 List of Archaeological Periods

Archaeological Period	Date Ranges (BC and AD)
Early Archaic	9,500 BC
Middle Archaic	7,000 BC
Late Archaic	3,000 BC
Mount Taylor	3,000- 1,000 BC
Malabar I	500 BC- 750 AD
Malabar II	750- 1565 AD
Mississippian	800- 1600 AD
Weeden Island	500 – 1,000 AD
Safety Harbor	900- 1725 AD
St. Johns	500 BC- 100 AD
Glades I	500 BC- 750 AD
Glades II	750- 1200 AD
Woodland Period	500 BC- 1000 AD

Appendix 4 lists out archaeological periods that occurred in Florida and were recorded on the Attributes Table (Appendix 1) from Barber et al. 2023 and Rouse 1951.