Southern Florida Sites associated with the Tequesta and their Ancestors

National Historic Landmark/National Register of Historic Places Theme Study

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National Park Service

National Register of Historic Places
Multiple Property Documentation Form

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

__X__ New Submission ____ Amended Submission

A. Name of Multiple Property Listing

Southern Florida Sites Associated with the Tequesta and their Ancestors

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Archaic Origins of the Tequesta	ca. 10,000-500 B.C.
Development of Glades Pottery	500 B.C.-A.D. 1763
Settlement Patterns	2500 B.C.-A.D. 1763
Plant and Animal Use among the Tequesta	500 B.C.-A.D. 1763
Mortuary Practices	500 B.C.-A.D. 1763
Earthwork Building	500 B.C.-A.D. 1763
Exchange Networks	2500 B.C.-A.D. 1763
Tequesta Art and Aesthetics	500 B.C.-A.D. 1763
Sociopolitical Development	500 B.C.-A.D. 1763
Culture Contact	A.D. 1500-A.D. 1763

C. Form Prepared by

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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (□ See continuation sheet for additional comments.)

_____ _____
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State or Federal Agency or Tribal government

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

_____ _____
Signature of the Keeper Date of Action

Table of Contents for Written Narrative

Provide the following information on continuation sheets. Cite the letter and the title before each section of the narrative. Assign page numbers according to the instructions for continuation sheets *in How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B). Fill in page numbers for each section in the space below.

E. HISTORIC CONTEXTS

Introduction

This NHL theme study, Southern Florida Sites Associated with the Tequesta and their Ancestors, was developed to provide the archeological and historical context for the National Historic Landmark (NHL) nomination of the Miami Circle at Brickell Point site. Discussions among archeologists who worked at the site and the Florida Division of Historical Resources National Register of Historic Places survey and registration staff in mid-2003 led to the conclusion that the Miami Circle site was significant at the national level, but that it would be difficult to nominate the site since existing NHL theme studies did not reflect the unique character of the ancient Tequesta people who once occupied southeastern Florida, their role in the early history of the United States, and the potential contribution of archeological sites in the region to understanding broader patterns of American Indian architecture, exchange, and ceremonialism.

Sites of the Tequesta and their ancestors were recognized as regionally and nationally significant for several reasons. The first reason is the association between the Tequesta and the Everglades. Considerable attention has recently been focused on restoration of the Everglades ecosystem, a unique hydrological system found in large portions of Palm Beach, Broward and Miami-Dade counties. Today, the coastal portions of these counties are dominated by the urban and suburban development of West Palm Beach, Fort Lauderdale and Miami—making it difficult to visualize the estuarine lagoons; narrow, sandy beaches; and streams draining the Everglades marsh that were home to the Tequesta people. Development has pushed westward from the coast, and now the remnants of the Everglades are preserved in three major water conservation areas, the Arthur G. Marshall Loxahatchee National Wildlife Refuge and Everglades National Park. Unfortunately, recent historical and environmental perspectives on the Everglades have ignored the role of the Tequesta in shaping and controlling the Everglades system (see McCally 1999). Archeological investigation of Everglades tree island communities indicates that the Tequesta may have intentionally contributed to the formation of these islands. Better understanding of tree island formation, and the integral relationship of the Tequesta and the Everglades, may aid in developing restoration strategies.

Secondly, some sites of the Tequesta and their ancestors exhibit considerable engineering accomplishments related to the construction of long-distance canoe canals. This accomplishment is equivalent to irrigation canals built by prehistoric cultures in the American Southwest (Busch et al. 1976), raised causeways connecting some Maya sites in Mesoamerica (Coe 1987: 64, 104, 113-114; Sabloff 1989:212), or irrigation canals built by some coastal South American cultures (Moseley 1983:189-190, 234-235), representing a major element of the aquatic adaptation that developed during the Archaic. Archeologists John Griffin (1988:308) and George Luer (1989) also suggest that the construction of these long-distance canoe canals is archeological evidence for social complexity.

Thirdly, the Tequesta were one of the first American Indian groups encountered by Ponce de Leon in the early sixteenth century. Some Tequesta sites contain materials associated with this period of early European contact and exploration, as well as later evidence of settlement, missionization, and exchange. These sites are significant, since they may harbor the relatively rare patterns related to culture contact and change. Unlike many other Southeast Indian groups, the Tequesta and their neighbors preserved traditional cultural patterns well into the early eighteenth century. This makes them an important case study in comparison to native southeastern peoples that were subjected to more intensive missionization, disease, and slavery. The Miami Circle at Brickell Point site can be considered in this continuum, since it is part of a much larger village site—called Tequesta—that was the periodic focus of Spanish contact and missionization in the sixteenth century. Much of the site represents the earliest occupation of the locale, though several animal interments at the site indicate late, possibly European Contact Period, use of the site.

This document is intended as a framework for understanding sites associated with the Tequesta and their ancestors, and for evaluating significance of these sites. Of course, not all Tequesta sites are nationally significant. Many sites discussed here contain information relating to patterns of subsistence, settlement, and technology that make them

significant at the local and possibly regional level. Sites significant at the regional level include those that relate to the earliest, Archaic Period occupation of southern Florida, as well as those that relate to broader, regional patterns of earthwork building, mound construction, chronology, technology, exchange, aesthetics, nutrition and health, and mortuary activity. Nationally significant sites include those with rare evidence of architecture, materials related to patterns of long-distance exchange, and those sites harboring European Contact Period artifacts and patterns of continuity or change associated with culture contact. Sites with unique features or exceptionally preservation may be distinguished for National Historic Landmark designation.

Review of records maintained by the Florida Master Site File indicate that few sites in southeastern Florida have been nominated to the National Register of Historic Places and that no archeological sites are designated National Historic Landmarks (see discussion in Section F). Five American Indian sites in Florida have received National Historic Landmark status: Crystal River (6-21-90), Fort Walton Mound (7-19-64), Safety Harbor (7-19-64), San Luis de Talimali (10-9-60, updated in 2004), Windover (5-28-87), as well as several other sites that are associated with the more recent American Indian occupation of the state. Crystal River and the Fort Walton Mound are significant because they are outstanding and well-preserved examples of indigenous architecture and because of their association with broader cultural patterns that link some Florida cultures with those of the Southeast and Midwest. The Windover site is significant because of its early date, the unusual wet-site preservation that has allowed study of perishable artifacts like fabric and wood, and because of the preservation of human DNA in brain tissue. The Safety Harbor site is significant because of a possible association with the European Contact Period Tocobaga Indians. Mission San Luis is significant because of extensive research at this site and its importance in understanding and interpreting Spanish-Indian interactions in Florida and the Southeast. What these sites share is an association with a broader cultural tradition, often one that reaches well beyond Florida. It is possible that the low number of NRHP sites and the lack of NHL designated sites in southeastern Florida are related to the absence of an understanding of the broader cultural patterns that link sites of the Tequesta and their ancestors with neighboring parts of the Caribbean, southeastern, and Midwestern United States. The goal of this theme study is to provide a context for regional and national significance for Tequesta sites.

In addition to identifying nationally significant sites of the Tequesta and their ancestors, this study is also intended to serve archeologists and historic preservation planners working at the local and state level in assessing significance of these sites. Miami-Dade County and the City of Miami both have aggressive historic preservation ordinances, including mechanisms for designating locally significance sites. Information on locally significant sites has been incorporated into Section F of this document, along with data on sites within Everglades National Park. It is hoped that some of the sites identified here can be nominated to the National Register of Historic Places, in order to aid in site protection and interpretation of the role of the Tequesta in the history of the United States.

Modern American Indian Perspectives

This study is designed to create a scientific-archeological-anthropological context for sites built and occupied by the Tequesta Indians and their ancestors. While modern descendants of the Tequesta have not been recognized, there are clearly modern American Indian individuals and groups that harbor specific ideas, feelings, and viewpoints about these sites (for example, see Billie 2000; Cypress et al. 2002; Dayhoff and Terry 2002; Sacred Song 2000). Their statements clearly indicate that there are other values (beside scientific) associated with these sites. This study, however, focuses on sites significant under National Register of Historic Places Criterion D and National Historic Landmark Criterion 6, though it is recognized that some sites may be eligible for listing under other criteria that deal with traditional cultural properties (see Parker and King 1998). If sites are identified for nomination that qualify as traditional cultural properties, or are associated with American Indian beliefs, values, and practices, consultation with appropriate tribal groups should be initiated in the early stages of the nomination process.

Archeology, History and the Tequesta

Spanish accounts from the sixteenth century describe a powerful Florida Indian tribe, the Tequesta, whose main village was at the mouth of the Miami River, near the shore of Biscayne Bay (Griffin et al. 1982; McNicoll 1941; Parks 1982; Sturtevant 1978). Today, this area is the heart of downtown Miami and the location of several important archeological sites, including Granada and the Miami Circle.

The Tequesta were not a simple band of hunter-gatherers. Historic accounts indicate that their society was sociopolitically complex. Archeology reveals that their economy was based on fishing, hunting, and gathering, with a reliance on dugout canoes, which the Tequesta used along the coast and in the Everglades. How did this complex society evolve? When did it first appear? What can we learn about the nature of Tequesta society? These are nationally significant questions.

Archeology is beginning to yield clues about the Tequesta and their ancestors. Fish remains from middens show that the Tequesta caught diverse fishes, including large fish such as mako shark and swordfish (Wing and Loucks 1982). Caches of shell celts suggest an honored role for makers of Tequesta dugout canoes (Carr and Reiger 1980). Paleobotanical analysis indicates that the Tequesta utilized the abundant supply of semi-tropical fruits that are characteristic of southeastern Florida (Masson and Scarry 1990; Scarry and Newsom 1992:395). The Tequesta were expert wood carvers, as shown by two wooden clubs dredged from buried deposits, including one from the Miami River (Goggin 1942; Purdy 1991:236, Figures 89 and 90).

Art styles on carved bone artifacts indicate that the Tequesta participated in widespread traditions of Florida Indian art (Wheeler and Coleman 1996). Ceramic platform pipes reveal that, almost 2000 years ago (during the Middle Woodland horizon), the ancestors of the Tequesta had links to far-ranging Hopewellian influences (Luer 1995). Such influences might have led to construction of large, circular earthworks (Carr 1985). Other artifacts pointing to such extra-local connections include galena and diabase/basalt stone axes. The Tequesta also built mounds and linear ridges (Carr et al. 1995:24-25; Harrington 1909:139-140).

Historic accounts describe the importance of the Tequesta. The Tequesta were encountered by Ponce de Leon during his first voyage to Florida in 1513 (Davis 1935). In the 1560s, the Spanish established a fort and mission among the Tequesta, and they took the brother of the principal Tequesta chief to Spain, where he became a Christian. He returned to Florida and helped mediate relations between the Spanish and Indians (Lewis 1978:28; Solís de Merás 1923:232, 236, 242-243; Zubillaga 1946:322-324, 333-340, 371).

During this period, the Tequesta engaged in tributary and political relationships with neighboring tribes. The Tequesta were sometimes allied with their neighbors in the Florida Keys, and they used dugout canoes to hunt right whales, drying their meat for barter with inland groups (Goggin and Sturtevant 1964:180, 184-185, 188; Larson 1980:146-156; Worth 1995). Alliances were often cemented through marriages, and the chief of the Tequesta was a Anear relative@ of the chief of the Calusa, with whom the Tequesta were sometime allied and sometimes hostile (Goggin and Sturtevant 1964:187-189; Lewis 1978:27-29; Solís de Merás 1923:210, 222).

The theme “The Tequesta and their ancestors” encompasses a number of temporal, geographic and cultural historic contexts. The Tequesta were the American Indian group first encountered by the Spanish upon exploring the Florida coastline in the early sixteenth century. They are known only from documents written by contemporary European explorers, priests, soldiers, and scholars, as well as from archeological excavation. Study of the Tequesta, who persisted for almost 200 years after the incursion of the Spanish, is important in understanding culture contact, adaptation, and acculturation. Archeological research in the area demonstrates considerable cultural continuity extending back at least 2,000 years, and perhaps well into the Late Archaic (ca. 5,000 to 2,500 years ago). The Everglades has been recognized as a unique environment, with few parallels elsewhere in the world. The Tequesta developed an equally distinctive adaptation, which involved habitation of Everglades tree islands, as well as large and

small settlements along the Atlantic Coastal Ridge. Thus, the geographic area considered here includes portions of Broward, Miami-Dade and Monroe counties (Figures 1 and 2). Although the geographic focus is southeastern Florida, some of these sites contain information that can be used to address nationally significant questions regarding long-distance exchange, patterns of culture contact and culture change, and indigenous architecture.

In order to address the significant contribution and potential contribution of the Tequesta and their ancestors, this overview is organized into ten themes, including the Archaic origins of the Tequesta, specific aspects of their unique adaptation to the Everglades and adjacent coastline, and culture contact with Europeans. Additionally, under each of these study-specific themes, the appropriate NPS thematic framework theme is identfied (see National Park Service 1999:79-83). Each theme is followed by a series of research questions that can be addressed with existing data, or by further study of extant collections or study of particular sites or groups of sites.

Archaic Origins of the Tequesta

The theme Archaic Origins of the Tequesta has been identified as a regionally and nationally significant topic since the specific Archaic adaptations encountered in southeastern Florida may be unique and may be important in understanding Archaic traditions in neighboring parts of Florida and the broader Southeast. This theme falls under the National Park Service's Thematic Framework theme *I. Peopling Places* (NPS 1999:81).

Until recently, it appeared that there was little, if any, occupation of southern Florida prior to the Late Archaic (circa 5,000 years ago) (see Griffin 2002:144-149). In fact, Widmer (1988:201-202) argued that sites like Little Salt Springs in Sarasota County, which may have been occupied by PaleoIndians prior to 10,000 years ago, were abandoned along with much of southern Florida by the Early Archaic (circa 9,000 to 7,000 years ago). Pollen profiles for southern Florida suggest that the environment at this time was very arid, and Widmer (1988:202) hypothesizes that fresh water may have been scarce or difficult to find. The demise of the Pleistocene megafauna may be tied to these environmental conditions. Around 5,000 to 6,000 years ago increasing sea level helped raise the potentiometric surface of local water tables, helping to create modern hydrologic conditions. It is at this time that scientists believe major aquatic features of southern and eastern Florida formed, including Lake Okeechobee, the Everglades, and the St. Johns River (Brooks 1974:256; Miller 1998:64-69).

Several sites have been found in Miami-Dade County, however, that suggest human occupation of the area during the Late PaleoIndian and Early Archaic periods (Figure 3). Interestingly, these sites are associated with karstic features and landforms unlike the tree islands that formed as part of the Everglades. At the Cutler Fossil site (8DA2001) investigators found bones of animals from the late Pleistocene Rancholabrean fauna (a possible dire wolf den); burned limestone boulders—a possible hearth; limestone and chert bifaces identified as Dalton-like and Bolen Beveled Corner Notched; bone artifacts; and human remains of five individuals (Carr 1986; Emslie and Morgan 1995) (Figure 4). A radiocarbon date from the hearth level, which contained evidence of human occupation, was 9,670 +/- 120 B.P. The artifacts and radiocarbon date are consistent with late PaleoIndian/Early Archaic period occupation, though additional radiocarbon dates on the human remains suggest they may be more recent (Emslie and Morgan 1995:80-81). The Cutler site is located on the Atlantic Coastal Ridge, at about 5 m above current mean sea level. During the Early Archaic, however, the ridge would have been even more elevated above sea level, and the fauna recovered suggest a forested environment surrounded by open, savannah-like grasslands and open marshes and wetlands (Emslie and Morgan 1996:81). This suggests that water sources were available at this time in southeastern Florida and that other early sites might be associated with similar karstic features that predate the Everglades and its tree islands, which were heavily occupied by later populations.

Carr et al. (Carr et al. 1991:7; Carr, Steele and Stone 1993:3-4; Carr 2002:193-195) located a limestone ridge or series of ridges in the eastern Everglades of Broward County that also have sites dating to the Early Archaic (Figure 3). Tree islands, often occupied by the later Glades people, are present here and have formed around erosional remnants of the limestone ridges. Dalton bifaces, characteristic of the Early Archaic, were found associated with limestone

surfaces at two of the tree islands along the rock ridge (sites 8BD2150 and 8BD1873) (Carr 2002:194-195; Carr and Masson 1989). Excavations at the Weston Pond site, a 125-m wide sink hole pond flanked by Late Archaic middens (8BD2132), had faunal and floral remains preserved in peat. Radiocarbon dates indicate the pond formed around 7,000 years ago and that the bone deposit occurred around 5,000 years ago (Carr 2002:194-195). It is not clear if the deposits represent cultural activity, but at the very least it is clear that fresh water resources were available during the Early and Middle Archaic periods.

Archeological sites dating from the Middle to Late Archaic (from 5,000 to 2,500 years ago) are better known. Carr (1981:20) identified 3 sites from this time period in his archeological survey of Miami-Dade County. Similarly, other surveys in Miami-Dade and Broward counties have identified at least 11 radiocarbon dated sites from this era, located within the Everglades and on the Atlantic Coastal Ridge (Carr 2002:201; Carr et al. 1991:11-12; Masson et al. 1988:339; Mowers and Williams 1972; Newman 1993). Carr et al. (1991:11-12) describe site 8BD1119, located on the Pine Island Ridge in Broward County, that had a scatter of lithic flakes and Middle Archaic biface tools. Other sites are characterized by midden deposits, often overlying limestone bedrock, or cemetery sites (see discussion of mortuary patterns, below). Interestingly, fiber-tempered ceramics are rare or absent at many of the Late Archaic sites from the area. At Peace Camp, Mowers and Williams (1972:9) recovered 16 sherds of fiber-tempered pottery from their Strata 4 and 5, and report a date of 3,050 +/- 140 B.P. from *Strombus* shell celts found in a deeper stratum. Elsewhere in Florida, especially along the St. Johns River, fiber-tempered ceramics had appeared by 4,500 years ago, and sherds of this type are well-represented at sites in southwestern Florida (Cockrell 1970; Russo 1991; Widmer 1974) and also in coastal Martin and Palm Beach counties (see Wheeler et al. 2002). At Taylor's Head, however, no fiber-tempered ceramics were found. To explain this dichotomy between Late Archaic Everglades area sites that lack fiber-tempered pottery and large, coastal shell mounds that have abundant examples of early ceramics, Pepe and Jester (1995:19) propose that there are two, distinct Archaic traditions in southeastern Florida. In this model the fiber-tempered pottery tradition is largely a coastal phenomenon associated with shell mound building, while the aceramic Archaic or Glades Archaic is a more widespread tradition, perhaps giving rise to the distinctive regional culture of the Tequesta and their ancestors (also see Russo and Heide 2002:80 and Wheeler et al. 2002:143-144). Extending this model further into the past is possible, especially considering the new evidence for Early Archaic sites in southeastern Florida. It seems likely that the later, divergent fiber-tempered and aceramic Archaic traditions are grounded in an earlier, Early to Middle Archaic tradition. This is supported by studies of bone and shell artifact complexes of the Early Archaic and Middle to Late Archaic Mount Taylor Culture found in the upper St. Johns River basin (see Wheeler and McGee 1994 on materials from Lake Monroe) and similar tool complexes identified in southeastern Florida during the Glades periods (Richardson and Pohl 1982; Wheeler 2002a, 2002c).

Research Questions

● Despite recent advances in recognizing an Archaic occupation in the Tequesta homeland, this period needs considerable additional study. Important questions that should be addressed include:

● What is the relationship between the aceramic "Everglades Archaic" and the fiber-tempered using cultures in the nearby East Okeechobee, Ten Thousand Islands, and Caloosahatchee areas?

● What is the source of lithic raw materials at Archaic sites in southeastern Florida?

● How does the shell and bone working technology of the Everglades Archaic compare with later technologies in the area? How does it compare with the Archaic technologies is neighboring areas?

● Are Florida Transitional Period sites or site components, as defined by Ripley Bullen (1959; 1971), present in the area? If so, what role do they have in the development of later cultures?

● What is the relationship between the Cutler Fossil site (8DA2001) and the Everglades Archaic?

● What is the geographic distribution of Everglades Archaic sites in southeastern Florida? Is it possible, through radiocarbon dating, to determine that aceramic sites also date to the Everglades Archaic?

● What patterns of plant and animal use can be recognized for the Archaic Period of southeastern Florida? How do these patterns compare with those of neighboring Archaic cultures? How do they compare with patterns recognized for the later Glades culture occupation of the area?

Development of Glades Pottery

The theme Development of Glades Pottery has been identified as a regionally and nationally significant topic since the Glades series has been important in developing chronologies for the area, and because it stands in contrast to other ceramic traditions in neighboring areas that are tied more closely to broader ceramic styles of the Caribbean, Southeast and Midwest. Particularly Glades ceramic types that might be related to broader styles—like Surfside Incised and its possible affiliation with Mississippian ceramics—suggest that some types may contribute to broader understanding of ceramic patterns found across much of the southeastern United States. This theme falls under the National Park Service's Thematic Framework themes *I. Peopling Places: ethnic homelands* and *III. Expressing Cultural Values* (NPS 1999:81, 82).

Archeologist John Goggin (1939) recognized the chronological value of simple incised designs found on some ceramics of the Glades series, the dominant sand and grit-tempered pottery produced in southern Florida (see original description by Stirling 1936:353) (Figures 5 and 6). Sherds with a feather-like motif, named Gordon's Pass Incised, were the first decorated Glades pottery type recognized by Goggin to have chronological significance. Largely based on stratigraphic excavations in the homeland of the Tequesta and their ancestors, Goggin identified additional decorated types, at least three ceramic series, and development of a local chronology (Goggin 1944a, 1944b, 1947, 1950, 1952; Goggin and Sommer 1949). Subsequent excavations and collections led Goggin (1948, 1949, n.d.) to revise his Matecumbe chronology to include not only sites of southeastern Florida and the Florida Keys, but also much of the rest of southern Florida, which he termed the Glades Area. Goggin's Glades ceramic chronology, developed prior to the advent of radiocarbon dating, was a significant tool in the developing understanding of Florida archeology during the mid-twentieth century. Goggin (1940) also recognized the presence of St. Johns pottery (called Biscayne ware at that time) in southern Florida, noting its differential distribution throughout the area. This is significant, since the distribution (or relative distribution) of the decorated Glades types also is important in distinguishing the geographic subareas of the region. Archeologist John Griffin (1988, 2002:141-144), using Goggin's chronological framework, data collected by subsequent researchers, and radiocarbon dates, presented a revised Glades chronology. Tables 1 and 2 present the Glades sequence as referred to in that study and the ceramic types by period. Griffin (1988, 2002:75-93) includes descriptions of the initial types defined by Goggin as well as types recognized by other researchers.

Table 1. Glades chronological sequence.

Period	Date Range
Glades IIIc	A.D. 1513-1763
Glades IIIb	A.D. 1400-1513
Glades IIIa	A.D. 1200-1400
Glades IIc	A.D. 1100-1200
Glades IIb	A.D. 900-1100
Glades IIa	A.D. 750-900
Glades I late	A.D. 500-750
Glades I early	500 B.C.-A.D. 500

Table 2. Glades pottery types by period.

	Glades III			Glades II			Glades I	
	C	B	A	C	B	A	Late	Early
Historic Ceramics	X							
Glades Tooled	X	X						
Surfside Incised			X					
Plantation Pinched				X				
Key Largo Incised					X	X		
Matecumbe Incised					X			
Miami Incised						X		
Opa Locka Incised						X	X	
Fort Drum Incised							X	
Fort Drum Punctated							X	
Cane Patch Incised							X	
Sanibel Incised							X	
Gordons Pass Incised							X	
Glades Plain	X	X	X	X	X	X	X	X
Goodland Plain						X	X	X

Widmer (1988) presents the most useful way to understand the space and time significance of the Glades pottery sequence. Numerous other researchers have attempted to refine and subdivide the Glades Area originally proposed by Goggin, including Goggin's own definitions of subareas (n.d.), often using ceramics and other traits. Widmer (1988:78-88), however, recognizes three distinct areas in southern Florida based exclusively on ceramic trajectories: Glades, Caloosahatchee, and Belle Glade. Widmer's (1988:79) Glades or Circum-Glades area includes the territory occupied by the Tequesta and their ancestors, as well as the Ten Thousand Islands area to the west. Griffin (2002:132-133) explains that Widmer's Glades or Circum-Glades is characterized by the decorated ceramic tradition that Goggin initially identified and used to develop the broader areal chronology. Interestingly, ceramic paste and form seem to change little through time, suggesting considerable continuity within the tradition. Vessels are often shallow, open bowls, made of sand and grit tempered clays or mucky soils.

Griffin (2002:149, 154-160) discusses the development of this ceramic trajectory, which is first distinguished by the appearance of sand-tempered pottery (also called Glades Plain) around 500 B.C. Glades I late (A.D. 500-750) is characterized by the appearance of several incised and punctated ceramic types. Griffin (2002:154-155) recognizes three groups or complexes of designs at this time—Gordon's Pass, Fort Drum, and Cane Patch. Interestingly, Carr and Beriault (1984:3) argue that Gordon's Pass Incised, Sanibel Incised, and other sherds of the period are largely confined to southwestern Florida—the Ten Thousand Islands. Griffin (2002:155-156) adds that the Cane Patch Complex is mostly known from southwestern Florida, but points out that all these sherd types occur in southeastern Florida as well. Carr and Beriault (1984:3) argue that the geographic trends noted in decorated ceramics from A.D. 200 to 800 suggest the Ten Thousand Islands is a distinct area occupied by a different tribal entity. Griffin (2002:132, 156) counters that this distinction is only a brief one, and prefers to refer the Ten Thousand Islands to a district of the larger Everglades area. The Fort Drum complex, however, is more widely represented across southern Florida, and Griffin (2002:156) acknowledges that it is the first widely distributed ceramic complex of the Glades periods. Griffin (2002:156) concludes that the decorated ceramics of southern Florida originate with Gordon's Pass and Cane Patch complexes in southwestern Florida, and that Fort Drum emerges from these and spreads more widely across southern Florida. Opa Locka Incised (the motif is rows of inverted arcs) appears during Glades I late and persists into Glades IIa (A.D. 750-900), seemingly providing a base for the other incised designs of the Glades II Period. It is worth noting that extra-local sherds, likely derived through exchange networks, also appear during the Glades I Period; these include sherds of the

Deptford series, typically associated with early and middle Woodland contexts on the central and northern Gulf Coasts (see Milanich 1973; Willey 1949a; also Carr and Ricisak 2000:271, 276).

Griffin (2002:157) suggests that the appearance of Opa Locka Incised represents a significant design shift from the earlier ceramic complexes of the Glades I late Period; he speculates that this design shift may correlate with broader changes in other cultural systems that occur at this time. The continuous, open loop motif of Key Largo Incised likely evolves from Opa Locka Incised; Griffin (2002:157) notes that this widespread type is characteristic of the Glades II Period (A.D. 750-1200). Several incised types of the Glades II Period seem to have geographic implications; Dade Incised is only known from southeastern Florida, as are a number of poorly defined types including Arch Creek Incised and Natural Bridge Incised. There are likely a number of other, unnamed types present in this period; for example, both Griffin (2002:87; and Robert Carr, personal communication, 2000) recognize a "noded" ceramic type that has small appliqué or embossed nodes around the rim. Also, there is considerable variation within some of the defined types. Beiter (2001:37, 40) has recently illustrated the variation within Key Largo Incised sherds from one site. Griffin (2002:158) notes the considerable number of sites dated to the Glades II period, suggesting this is a time of technological and economic stability. Ceramics of the Glades IIc Period (A.D. 1100-1200) are characterized by the rare Plantation Pinched type; Griffin (2002:158) notes that the earlier complex of incised ceramics appears to be abandoned during the Glades IIc Period and suggests some correlation in broader cultural patterns. Griffin (2002:158-159) notes some divergence in site occupation during the Glades IIc/Glades IIIa periods, and suggests a possible correlation with a climatic event. It is of interest, too, that sherds of the chalky St. Johns series appear in Florida during the Glades II Period. By the end of the period, circa A.D. 1000-1200, St. Johns Check Stamped is found in southeastern Florida sites. Early in his research, Goggin (1940) noted the appearance of this type in southern Florida, and suggested it was a result of exchange with neighboring areas of the Atlantic Coast where this is a predominant ware. Griffin (2002:87-90) discusses the debate on the significance of St. Johns ceramics in southern Florida, noting Espenshade's (1983) research, which argued for local production of both chalky and sand-tempered wares. Both Goggin (n.d.:449-451) and Griffin (2002:88-89) suggest that the co-existence of these two ceramic trajectories, with no apparent mingling, is difficult to accept unless the St. Johns series is viewed as an extra-local import. More recent attempts to understand the origins and role of St. Johns pottery in eastern Florida have demonstrated that the chalky texture is related to an abundance of sponge spicules in the paste. Rolland and Bond (2003) have argued, based on the lack of clay sources with similar quantities of sponge spicules and ethnographic analogy, that St. Johns potters added sponge spicules to their clays. In light of Luer's (1989:119-121) argument concerning the distribution of Belle Glade ceramics and its possible role in transport of exchange items, a similar function might be argued for the St. Johns series. In either case, a connection with the neighboring area to the north is indicated.

The ceramic complex of the Glades IIIa Period (A.D. 1200-1400) is quite different from that of preceding periods. Incised motifs reappear, characterized by the type Surfside Incised. Surfside Incised, however, has parallel lines (usually in groups of two or three) encircling the rim and the addition of shelf-like rim lugs or projections. Grooves or rim ticking also is common with this type. Griffin (2002:159) notes a possibly Antillean influence in Surfside Incised, as did Goggin (n.d.:437-439), though the design motif also is similar to incised and engraved ceramics found elsewhere in the Southeast during the Mississippian Period (cf. descriptions for Fort Walton Incised, Point Washington Incised, and Pensacola Incised in Willey 1949a:460-466). The recent discovery, however, of a Surfside Incised sherd from the Old Marco Inn midden in Collier County suggests a clear connection with Point Washington Incised ceramics; I examined this sherd at the office of the Archeological and Historical Conservancy in Miami—it exhibited a Surfside Incised rim lug and attendant incising, but modeled and engraved to look like a hawk or similar large bird. Additional changes in the ceramic sequence characterize the Glades IIIb Period (A.D. 1400-1513). Surfside Incised gives way in favor of Glades Tooled ceramics. Incised decoration in absent, but Glades Tooled sherds have elaborate, thickened rims, with scalloped, crimped, or grooved lips. Griffin (2002:159) cites A. James McGregor's (1974) thesis, in which he suggests a connection between Glades Tooled and the modified lips of sherds from adjacent ceramic traditions of the Gulf Coast, like Pinellas Plain.

The decorated ceramic complex, which is primarily centered in the Ten Thousand Islands and Everglades areas, roughly coincides with the area occupied by the Tequesta and their ancestors. This ceramic tradition has been important in establishing a local and regional chronology and suggests the basic geographic distinction between the three major cultural regions or subareas of southern Florida. Griffin (1988, 2002) has very concisely summarized the major trends in the decorated ceramic trajectory, noting some possible correlations with environmental and broader cultural patterns. Additional work since Griffin's synthesis may help in refining the chronological and geographic aspects of the Glades ceramic tradition. Major questions that can be addressed include the relationship and role of the chalky St. Johns series in the area; the significance of the decorative motifs; further study of the variation within motifs and possibilities for additional types or subtypes; and testing of the model developed by Griffin regarding the shifts in decorative treatments at the Glades I late/Glades II and Glades IIc/Glades IIIa junctions.

Research Questions

● The Glades ceramic sequence, described above, has been a powerful tool for distinguishing distinct regional cultures in southern Florida and for relative dating of sites. Despite this, the sequence and its ceramic types could be studied in a number of ways. Research questions include:

● What materials were used in manufacturing Glades ceramics? What are the sources of these materials?

● What tempering agents, if any, were added to the ceramics? Are there recognizable geographic or temporal variations in tempering? Are other major or minor trace elements present in the ceramics associated with particular sites or raw material sources? Can petrographic methods (e.g., thin sections) be used to investigate manufacture of ceramics?

● What variations exist within the recognized design motifs? Do these variations have any geographic or temporal significance? Are there additional, un-named, ceramic types?

● What relationships and influences exist between the ceramics of southeastern Florida and neighboring areas? What is the origin and relationship of Surfside Incised pottery?

● What is the relationship between sand-tempered (e.g., Glades Plain and Glades decorated types) ceramics and chalky (sponge spicule bearing) ceramics (i.e., St. Johns series)? How does this compare to areas farther to the north, like the East Okeechobee Area.

● What vessel shapes are present in the area? Can vessel shape and traces of use (e.g., spalling, mending, staining, carbon residues, etc.) be used to investigate function within sites and assemblages?

● What exchange wares are present in the area?

● Are there relationships between ceramics of southeastern Florida and Cuba or other parts of the Caribbean? Can these relationships be investigated with chemical element or petrographic methods?

Settlement Patterns

The theme Settlement Patterns has been identified as a regionally and nationally significant topic since sites of the Everglades can be readily dated with relative and chronometric techniques and represent a largely intact settlement system associated with the unique Everglades ecosystem. Some sites also preserve rare examples (e.g., earthworks, mounds, as well as post hole remains of structures) of indigenous architecture that can be compared and contrasted with architecture in neighboring parts of the Caribbean, Southeast and Midwest. Both inter- and intrasite settlement patterns have been shown to reflect indigenous social, political, and cosmological patterns. This theme potentially falls

under two of the National Park Service's Thematic Framework themes: *I. Peopling Places*, and, *III. Expressing Cultural Values* (NPS 1999:81, 82).

Griffin (1988:327) notes that the sites of the Everglades are significant since they constitute "a largely intact settlement pattern over a large land area." This pattern has been preserved largely because of land conservation involving Everglades National Park and the large water conservation areas that run through western Miami-Dade, Broward, and Palm Beach counties. Extensive survey work in Everglades National Park, Miami-Dade and Broward counties has helped fill in the settlement pattern, and the chronologically sensitive ceramics of the Glades tradition have helped in tracking settlement through time. Griffin (1988:269-273), as part of his Everglades National Park archeology synthesis, created a series of maps that shows site locations through time; what emerges from this graphic analysis are 2 clear settlement systems within Everglades National Park. The first district is associated with the Shark River Slough drainage, a major aquatic system that runs diagonally from northeast to southwest, ultimately connecting with the coast. Sites within the Shark River Slough are situated on tree islands (Figure 7). The other settlement district involves a large concentration of sites in the Ten Thousand Islands, including shell works and larger shell midden sites.

Griffin (2002:278) concludes that Everglades accretionary midden sites follow a similar typology to that developed by Athens (1983) in his study of the Big Cypress Swamp. This is essentially a hierarchical model of habitation sites that recognizes 1) large, thick, complex middens with distinct mounded areas; 2) thick midden accumulations that lack distinct mounded areas; and 3) thin middens with evidence of occasional and subsequent use. These types translate into larger villages, smaller hamlets and family camps, and special use sites or resource procurement stations. Griffin (2002:279-280) notes that most of the Shark River Slough tree island sites are best described as the second and third type. But Everglades National Park only includes a small part of the area inhabited by the Tequesta and their ancestors. Several large accretionary middens occur within the coastal sector of Broward and Miami-Dade counties, and in some cases there are clusters of these sites along with sand mounds and other site types. Griffin (2002:281) notes at least three of these clusters in coastal Miami-Dade County—one at the mouth of the Miami River, a second at the north end of Biscayne Bay, and a third cluster on the very northern islands of the Florida Keys that form the southeastern border of Biscayne Bay (Elliott and Sands keys). These site complexes are usually found around the mouths of small creeks and streams that drain the Everglades interior or on the barrier island. This pattern is similar to the settlement system observed in coastal Martin and Palm Beach counties (Wheeler et al. 2002:144-145), within the area occupied by the Jeaga and Jobé peoples (the East Okeechobee Area). Sites also are clustered around these creeks where they breach the Atlantic Coastal Ridge and within the interior Everglades, especially on tree islands of the southern Everglades. Compared to the East Okeechobee Area, however, there are a much higher number of sites and an apparent greater concentration as well. Also, shell mounds are found within the East Okeechobee Area, at least as far south as Palm Beach and Riviera Beach (ca. central Lake Worth, about midway through Palm Beach County), while they are absent from the area occupied by the Tequesta and their ancestors. Interior sites typically are associated with natural drainages and also, perhaps, canoe trails. Griffin's (2002:281) map of site distribution in southern Florida demonstrates a connection between the Shark River Slough drainage and the coastal sites, likely via the Miami River, Little River and canoe trail routes (Figure 7). Interestingly, Griffin's (2002:285) mapping of site clusters within Everglades National Park parallels the broader patterns noted in Broward and Miami-Dade counties. While there are clusters of sites along interior drainages, there also are several major site complexes located well away from these clusters, usually along the coast (Figure 8). Within Everglades National Park these include the Monroe Lake and Bear Lake site groups. Examples in Broward and Miami-Dade counties include the Emerald Towers-Pompano Beach Burial Mound site group and the Surfside midden and mound group. Along with these site complexes, two closely related clusters of sites found on Long Key and Pine Island in Broward County have the potential to contribute to studies of settlement pattern. Like the sites of the Shark River Slough, the Pine Island and Long Key sites are linked by a physiographic feature; in this case, relict limestone "islands" that provided extensive, dry land for several thousand years. Since Everglades Area sites can be assigned to a chronological period rather easily (due to the decorated Glades ceramic series), the ability to evaluate temporal trends is particularly significant. The identification of sites linked by geographic parameters, like the Shark River Slough, Pine Island, and Long Key sites, provide a significant opportunity for study of a group of sites.

These sites (potential districts) can be used to model and test ideas about trends in plant and animal use, contact with the coast, mortuary patterns, and trends in technology.

The potential Pine Island-Long Key District involves at least 25 sites, including seven sites located on the distinctive Pine Island Ridge feature and twelve sites located on the Long Key island of Broward County (see Table 3 and Figure 9). Carr (1986:2) explains that prior to modern drainage the Pine Island group was a major series of upland islands in the Everglades, with some elevations near 30 ft above mean sea level. Continued archeological investigations have demonstrated long-term occupation of the Pine Island group, ranging from Middle Archaic Period sites to nineteenth century Seminole occupation (Carr et al. 1991:7, 124-127, 131). The Pine Island and Long Key island group are significant since they represent a rare opportunity to study Everglades occupation over a long period of time, represent a very dense concentration of sites (at least 25 recorded sites), and may represent a unique environmental/geological environment.

Integrity is moderate to high for sites in the potential Pine Island-Long Key Archeological District. Significant portions of both landforms have been preserved in the 101-acre Pine Island Ridge Natural Area owned by the State of Florida and managed by the Broward County Parks and Recreation Division and the 157-acre Long Key Natural Area, also managed as a county park. The integrity of these sites, their significance in understanding settlement patterns, and their unusual, if not unique, physiographic setting, suggests they could be significant at the national level. A separate study should be conducted to evaluate the district and prepare the appropriate nomination.

Table 3. Sites contributing to the potential Pine Island-Long Key Archeological District (based on a list provided by Robert S. Carr).

Site Number	Site Name
Long Key Group	
8BD12	Pine Island 1
8BD108	Spooners Ridge
8BD2117	Long Key
8BD2123	Kapok 1
8BD2124	Kapok 2
8BD2125	Kapok 3
8BD2126	Kapok 4
8BD2127	Flamingo 1
8BD2128	Flamingo 2
8BD2129	Museum Site/Flamingo 3
8BD2137	Robbins
8BD2147	Zacher
Pine Island Group	
8BD95	Pine Island 2
8BD1110	
8BD1112	Pine Island Landing
8BD1113	East Midden
8BD1114	Pine Island Ridge
8BD1115	Charlie Willey's Island
8BD1119	Ranch Ridge

Site layout and configuration has not been well studied among sites of the Tequesta and their ancestors (Griffin 2002:290-291). It is apparent, however, from the descriptions of nineteenth and early twentieth century observers that the larger site complexes—the Granada and Brickell Point sites at the mouth of the Miami River, for example—exhibited

distinct patterning, with components or precincts dedicated to different functions. These included habitation areas, sand mounds (some for burial and others, perhaps, platform mounds), cemeteries, and possibly other areas or precincts. Excavations by the Broward County Archeological Society at the Margate-Blount site (8BD41), an inland site in northern Broward County, revealed at least three distinct areas—a habitation midden, a burial mound or cemetery, and a "ceremonial precinct" that included burials of animals and several highly decorated antler and bone artifacts (Gypsy Graves, personal communication 1991; also see Felmley 1991:101-102 and Wheeler 1992:89-90).

Evidence for structures is commonly found at Tequesta sites, though often in seemingly random patterns of postmolds or in isolated postmolds. In the East Okeechobee Area, to the north of the region inhabited by the Tequesta and their ancestors, Browning (1975:17-22) uncovered an area at the Rocky Point 2 site (8MT33) that had a large number of posthole and associated features (n = 86) preserved in a midden. Despite the large number of features related to structure building, Browning (1975:20-21) concluded that only one structure could be discerned, possibly a rectangular building of 6.5 m (21 ft) in length. He attributes the large number of additional postholes in the area to the method of construction practiced in the area during the seventeenth century, when Quaker shipwreck survivor observed quick additions to structures to accommodate visitors and guests. Further north, in the Indian River Area, Handley (2001) used mechanical stripping to uncover a large portion of sheet midden at the Blue Goose site (8IR15). This allowed documentation of at least 13 structures, comprised of postmolds or posthole features. The structures ranged in size from 3.5 to 13 m in diameter, including at least three examples in the 8 to 11.25 m diameter range. Rocky Point 2 and Blue Goose are significant for comparison to structure remains found in the area occupied by the Tequesta and their ancestors. At the Miami Circle at Brickell Point site (8DA12) excavators uncovered a large number of posthole features carved into the shallow limestone bedrock (Carr and Ricisak 2000:277-278). A circular structure, 11 m in diameter, was located on a prominent part of the site, comprised of 24 large basins, many of which contained smaller holes and cobbles of limestone apparently used as wedges. The large basin features are very complex, and appear to reflect considerable planning and intentionality of design. Auger testing and additional excavations revealed that some areas of the site harbored large concentrations of cut posthole features, though in many cases no discernable pattern was identified (Wheeler 2000a:304-312; Widmer 2003). The area occupied by the Miami Circle feature has evidence of several additional structures, including two linear arrangements of paired postholes. Paired post structures are known in other Southeastern cultures, and are characteristic of some Adena structures (Clay 1998:6-9). Several American Indian visitors to the Miami Circle expressed the opinion that paired posts were related to screens or similar enclosures in which the two posts supported a woven fence or barrier (Ted Riggs, personal communication, May 2002).

Research Questions

● A basic model of Everglades area settlement is present by Griffin (2002). There are a number of additional questions that can be addressed regarding settlement in the area:

● Can distinct settlement clusters, like the Shark River Slough group identified by Griffin (2002), be identified in other parts of the area? If so, what relationship do these clusters have to major coastal sites or sites located on the Atlantic Coastal Ridge?

● Are there temporal changes in settlement pattern, as suggested by Griffin (2002)? What are these changes related to? Is it possible to use Geographic Information Systems (GIS) technology to understand geographic and temporal changes in settlement pattern?

● What is the relationship between coastal and inland sites? Is it possible to demonstrate that these sites were occupied by the same tribal group, but on a seasonal basis, or do the coastal and inland sites represent some actual division within a broader tribal entity?

● What physical forms are represented among sites of the Tequesta and their ancestors? How do these compare with site configurations in neighboring areas? Is there evidence that major sites had a bipartite form, similar to that noted in the Ten Thousand Islands and Caloosahatchee areas (see Torrence 2000)?

● What types of architecture existed among the Tequesta and their ancestors? How do structures compare in layout, size, and location to structures in neighboring areas? Do some sites harbor more evidence of structures than others? Can structure size and shape be used to distinguish rank, status, or function?

Plant and Animal Use among the Tequesta

The theme Plant and Animal Use among the Tequesta has been identified as a regionally and nationally significant topic since sites of the area often contain well-preserved zooarcheological and paleobotanical materials, including some sites that contain rare, wet site preservation that includes preserved wooden artifacts. The subtropical environment of southeastern Florida also seems to have fostered a distinct cultural use of plant foods, which is different from patterns in neighboring areas. The technological use of plants and animals in material culture also is significant, especially in understanding the origins and relationships of the Tequesta with neighboring groups. This theme falls under one or more of three National Park Service's Thematic Framework themes: *III. Expresing Cultural Values*, *V. Developing the American Economy*, and, *VII. Transforming the Environment* (NPS 1999:82, 83).

Plant and animal use among the Tequesta and their ancestors has been explored in several ways: zooarcheological analysis of animal remains used in subsistence; paleobotanical analysis of plant remains used for fuel, subsistence, and artifact construction; and studies of bone and shell artifacts. Paleobotanical and zooarcheological studies in southeastern Florida began with analysis of materials excavated in the late 1970s and early 1980s from the Granada site (8DA11); additional studies have been conducted since that initial work and several important examples will be discussed below. Regarding bone and shell artifacts, John Goggin (n.d.) recognized that southern Florida had greater artifact variability than almost any comparable area in North America. Significant studies of bone and shell technology will be discussed below.

Plant Use and Paleobotany

Sites with well-preserved plant remains in southeastern Florida are rare. Some of this may be due to alternate wetting and drying of deposits, which would damage carbonized plant materials. There are indications, however, that archeological wet sites are present in the area of the Tequesta and their ancestors. Purdy (1991:2-5) explains that archeological wet sites, due to anaerobic environmental conditions, have excellent preservation of plant remains, including nuts and seeds; wooden artifacts and wooden debitage from artifact manufacture; and cordage. Griffin (2002:271-273) notes that just such a site (8DA3451) was found in Everglades National Park near the Anhinga Trail Visitor Center. Unfortunately, the artifacts from the site were misplaced, but Griffin (2002:271-271) indicates that dredging in Taylor Slough in 1968 produced bone and shark tooth artifacts, preserved pine logs (2 to 4 of these were 10 cm in diameter), and several pottery sherds, including Glades Tooled. Carr (2002:196) found splinters and small pieces of pine wood in a wet site component of the Late Archaic Silver Lakes site (8BD1873), suggesting canoe making or other woodworking activities adjacent to the tree island. Isolated finds of wooden artifacts preserved in peat deposits include a dugout canoe (now recorded as 8DA68) reported by botanist John Kunkel Small from the George Brett estate in Coconut Grove (Florida State Archives, Photo #SMX0019; Small 1931:134-135) (Figure 10), as well as a carved wooden bowl or mortar reported by the Archeological and Historical Conservancy from a deposit near Sawgrass Mills in Broward County (Anonymous 1995). Two carved wooden artifacts recovered from boat slips excavated into 8DA11 (the Granada site), are on exhibit at the Historical Museum of Southern Florida (Figure 11). One is a club or cudgel carved from a burl, while the other resembles a horn (also see Purdy 1991:236, 244). Goggin (1942) reports on another wooden club, identified as mangrove wood, recovered in 1913 during the dredging of the Collins Canal on Miami Beach. This specimen, also on exhibit at the Historical Museum of Southern Florida, is surmounted by a crenulated crest and has a beak-like extension on one side, both features suggestive of a bird. Williams (1983:145, 147) reports that three

burials at the Margate-Blount site (8BD41) were accompanied by wooden artifacts, including a canoe paddle, a double-ended pestle, as well as the remains of a log tomb. The wooden artifacts from the site are on exhibit at the Historical Museum of Southern Florida.

Formal studies of plant remains from archeological sites have been made at the Granada (8DA11) and Honey Hill (8DA411) sites. Scarry (1982:181), in her analysis of plant use at the Granada site, notes that ethnohistoric accounts of the Tequesta mention their lack of agriculture but frequent use of native, wild plants, including collection of wild fruit and making a bread from roots. She provides a detailed reconstruction of the native environments that once surrounded the Granada site, and a review of edible and useful plants within the pineland, hammock, mangrove and other nearby plant communities. Charcoal and carbonized plant materials recovered from the Granada site excavations indicate wood types used for fuels or for structures, as well as seeds and nuts used for food. Pine was identified as the dominant wood species represented through time at the site, with red mangrove, sea grape/pigeon plum, buttonwood and other local woods represented in minor amounts (Scarry 1982:211, 221). Interestingly, the pattern of wood species present and their consistency through time led Scarry (1982:221-222) to conclude that local environments were relatively stable during site occupation and that pineland and mangrove species were preferred to coastal hammock species. Scarry (1982:221-222) offers several explanations for this pattern, including selection of wood species for combustibility and structural integrity. Regarding edible plants, Scarry (1982:222, 230) found that remains of false mastic (*Mastichodendron foetissidum*), cocoplum (*Chrysobalanus icaco*), cabbage palm (*Sabal palmetto*), saw palmetto (*Serenoa repens*), sea grape/pigeon plum (*Coccoloba* sp.), and hog plum (*Ximenia americana*), accounted for the majority of seeds recovered; acorns and red mangrove pods also were found at the Granada site. These species reflect pineland and hammock environments and Scarry's (1982:235, 244) statistical analysis of the remains suggests some pattern variability that may be due to seasonality or collection strategy. Scarry (1982:245-246) concludes that the plant remains indicate repeated fall occupation during which time a narrow spectrum of plant resources was exploited, as opposed to year-round site occupation. She specifically notes that no cultigens (e.g., corn, squash, etc.) or candidates for the "bread of roots" mentioned in Spanish accounts were found (Scarry 1982:245-246). Suzanne Fish's (1982) analysis of pollen from the Granada site provides an important complement to Scarry's work. Few sites in southern Florida have been investigated through pollen analysis, making the Granada study particularly significant. Fish (1982:250) also found considerable environmental stability through time, and suggests that the numerous weedy plant pollen grains indicate a fairly well cleared site, with pine forests some distance away. Fish (1982:252) concludes that the Granada site inhabitants may have intentionally manipulated their environment by clearing the area, perhaps with fire, and retaining some favored hammock vegetation. Like the macrobotanical remains, there were no cultigens, but one grain of gourd (*Cucurbita*) pollen was identified, and green briar (*Smilax*) pollen also was present, presenting a possible candidate for the bread of roots discussed by Scarry. Fish (1982) also found "clumps" of pollen grains that she suggests may represent remains of edible or useful plants, including water lily (*Nyphaea*), cattail (*Typha*), nightshade (*Solanum*), prickly pear cactus (*Opuntia*), and chickweed (*Stellaria*). This adds to the list of edible plants represented in the macrobotanical remains, though still supports seasonal use of the site. The first two species mentioned (*Nyphaea* and *Typha*) represent freshwater plants, which have both edible parts and parts used in mat and basket weaving.

Paleobotanical analysis of materials from the Honey Hill site (8DA411) provides a significant comparison to the Granada analysis. Like the Granada site, Honey Hill is a large midden located on the Atlantic Coastal Ridge, though in this case it is farther to the west, on the edge of the Everglades. Botanical samples from Honey Hill represent aceramic, Late Archaic, Glades I-III, and Seminole occupation (Masson and Scarry 1990:9). Interestingly, Masson and Scarry (1990:14) found that the plant species exploited did not change through time, though they describe an intensification of plant use when comparing lower and upper levels of column samples. Their analysis also indicates that the fruit, false mastic (*Mastichodendron foetissidum*), was the most common edible plant represented, and that the plant remains do not indicate a specific season of occupation for the site. False mastic also was the most important edible species identified at the Granada site, suggesting a broader, cultural preference that transcends the coastal versus interior locations of the two sites (Masson and Scarry 1990:21). Comparison to the samples from historic Seminole Indian occupation indicate a considerable change in plant use patterns, including continued use of the plants from earlier eras, the addition of maize and several fruits like *Vitis*, and decreasing importance of false mastic. This suggests that the

pattern observed for the earlier periods is not simply an artifact of preservation, but reflects the cultural utilization of plants.

Analysis of plant remains from sites within the Caloosahatchee Area of southwestern Florida helps to put the Granada and Honey Hill data in broader perspective. Comparing the two datasets, Scarry and Newsom (1992:395) note that populations living in southwestern Florida (the Calusa and their ancestors) seemed to employ an opportunistic strategy that involved gathering a wide-range of available fruits; the Calusa and their ancestors gathered many of the same fruits found in the southeastern Florida assemblages, but included many other species. This is in contrast to the people of southeastern Florida (the Tequesta and their ancestors), who seemed to target six fruit plants, with particular focus on false mastic. Scarry and Newsom (1992:395) also note that fruit seeds are more abundant in the samples from southeastern Florida. Taking these observations together, they conclude that the Tequesta and their ancestors had a more intensive, more deliberate pattern of fruit collection than the neighboring Calusa. Studies of plant remains from sites in southeastern Florida are extremely limited at this point, but existing work suggests that the area has the potential for significant contribution to paleobotanical study. This is particularly true of sites that exhibit wet site preservation, which appear to be present in the area.

Zooarcheological Studies

Zooarcheological studies, unlike paleobotanical analyses, have been conducted more regularly in southeastern Florida. These include analysis of both coastal and interior sites, as well as sites dating from the aceramic Archaic to the Glades III period, which allows for a diachronic comparison of these two major environments. The available analyses also include large coastal and interior sites, as well as smaller Everglades tree islands. Important studies include analysis of remains from the Granada site (8DA11) (Wing and Loucks 1982); Miami Circle at Brickell Point (8DA12) (Quitmyer and Kennedy 2002); Honey Hill (8DA411) (Masson and Hale 1990); Bear Lake (8MO33) (Griffin 1988, 2002); Guy Bailey (8DA4752) (Keel 1990); Sheridan Hammock (8BD191) and MacArthur #2 (8BD2591) (Fradkin 1996). Studies of materials from the Granada and Miami Circle at Brickell Point sites are particularly important, since diagnostic ceramics and radiocarbon dates indicate that the Miami Circle midden primarily dates to the Glades I Period (500 B.C.-A.D. 500), while the Glades II (A.D. 500-1200) and Glades III (A.D. 1200-1763) period assemblages dominate the Granada remains. These sites are located in close proximity to one another, and taken together represent a fairly complete chronological sequence.

Analysis of the Miami Circle at Brickell Point site (Quitmyer and Kennedy 2002) and Granada site (Wing and Loucks 1982) faunal remains represents an important benchmark in studies of subsistence in southeastern Florida. Together, these sites represent Glades I through Glades III period occupation at the mouth of the Miami River. Quitmyer and Kennedy's (2003:26-29) analysis indicates that marine bony fish, sharks, and rays are the most ubiquitous animals represented at the Glades I Period Miami Circle site; freshwater turtles, marine turtles, terrestrial turtles and snakes were the second most common group of animals represent, while mammals (including squirrel, rabbit, deer, dog, and Caribbean monk seal), birds and amphibians were occasionally present in the samples. Most of the animals identified came from brackish water habitats, like those adjacent to the site in Biscayne Bay; the lower to upper reaches of the Miami River also contributed freshwater resources, and terrestrial species likely came from pine flatwoods and maritime hammocks. Quitmyer and Kennedy (2002:28) indicate that a variety of methods were used in capturing the vertebrate fauna, including harpoons, nets, hook and line fishing, gathering, as well as fish weirs or traps. They note that watercraft would have been important in accessing both marine and freshwater environments and in moving animals once caught. In terms of human impacts to the environment, Quitmyer and Kennedy (2002:25-26, 28-29) note that a large portion of the Miami Circle aquatic species biomass came from high level predators—shark, snook, and freshwater bass—possibly indicating the first intensive use of the local environment. Comparison to the Granada site assemblage, dominated by Glades II and III period occupation, indicates a similar focus on local resources, including brackish and nearshore reef species. Wing and Loucks (1982:278-279) indicate that fish, similar to those found today in Biscayne Bay, were the most common fauna used by the Granada site residents. Interestingly, however, they conclude that the green sea turtle (*Chelonia mydas*) was the most important animal in the prehistoric economy of the site, representing 36 % of the bone

weight in the samples analyzed. Also interesting is the fact that the sea turtles represented tend to be small, juvenile individuals, suggesting that these animals (who inhabit the area year-round) were captured on the nearshore reefs and in the turtle grass beds of Biscayne Bay (Wing and Loucks 1982:318). A similar trend was noted in the Bear Lake faunal assemblage (Griffin 2002:233, 238). Comparison of the faunal composition of the site through time indicates little change in subsistence patterns. Comparison to Quitmyer and Kennedy's (2002) analysis of trophic level at the Miami Circle suggests a similar high trophic level at the Granada site based on the percentages of sharks, freshwater bass and reef predators like grouper, snapper, and jack. This suggests, however, that despite maintaining a high trophic level (subsistence on animals higher on the food chain), there may have been a shift from Glades I to Glades II and III periods; this shift may have been from brackish fauna to nearshore reef species.

Collection and analysis of mollusk remains from both the Miami Circle and Granada is, unfortunately, limited. Despite the presence of marine shells in coastal sites like Granada, the Miami Circle, and Bear Lake, it is clear that these sites are not shell mounds, which are more commonly encountered in neighboring areas to the north and west. At Bear Lake, Griffin (2002:230, 232) notes some major collecting episodes of mollusks, like oyster, but indicates that shellfish contributed far less to the diet than fishes and turtles. Quitmyer and Kennedy (2002) note the poor condition of mollusk remains from the Miami Circle site, and Griffin (note in Welsh 1982:364) notes that shell was selectively retained from excavations at the Granada site. Despite some problems with the available data, Griffin (see Welsh 1982:362, 364) concludes that the Granada inhabitants collected locally available mollusks, with particular concentration on larger gastropods like *Strombus gigas* and *Pleuroploca gigantea*. Apparently, the Granada samples indicate a decrease in size of these animals through time that is inversely proportional to their MNI (Minimum Number of Individuals). In other words, there is some indication for over-harvesting of larger specimens that seems to have resulted in even greater pressure on smaller individuals.

The analysis of faunal remains from the Honey Hill site (8DA411) is particularly important, since the aceramic Archaic and later Glades periods are represented (Masson and Hale 1990:11-13). Definite patterns of animal use were detected in the column samples studied; overall, freshwater turtles and bony fish were the main animals utilized by the site inhabitants. Masson and Hale (1990:23) indicate that the species utilized were typical of the local, Everglades environment, and do not reflect extensive utilization of coastal resources. The primary turtles represented were mud and musk turtle (Kinosternidae), softshell turtle (*Apalone* sp.), and pond turtle (*Pseudemys* spp.); important bony fish include bowfin (*Amia calva*), gar (*Lepisosteus platyrhinchus*), sunfish (*Lepomis microlophus*), catfishes (Siluriformes), and bass (*Micropterus salmoides*). Following turtles and bony fish at Honey Hill, snakes (3-4 %) and mammals (2-3 %) were represented in small quantities; snakes and mammals were more common in the lower and upper midden levels. Birds, alligators, amphibians, and sharks represented 1 % or less of most samples (Masson and Hale 1990:22). Interestingly, shark and alligator were only represented in the lowest site levels (aceramic Archaic) and upper midden levels. In the lowest levels of the site (aceramic Archaic), turtles contributed more biomass than bony fish. Lower midden levels (earlier Glades periods, presumably Glades I and II) indicate an increase in the use of bony fish, while the upper midden levels (Glades II and III) show an increase in turtle use and a decrease in the importance of bony fish. Masson and Hale (1990:21) suggest this pattern may be due to overexploitation of turtles, followed by a broader procurement strategy that included increased reliance on bony fish and other resources. The aceramic Archaic MacArthur #2 site (8BD2592) exhibited a similar pattern of resource use, with reptile remains (turtle and snake) the dominant category collected, followed closely by bony fish (Fradkin 1996). Keel's (1990) analysis of faunal remains from the Guy Bailey site (8DA4752), a small Everglades tree island dating to the Glades IIa and IIb periods, follows the pattern documented at Honey Hill as well. Keel (1990:53-56, 99) indicates that freshwater bony fish and reptiles accounted for the majority of the biomass at Guy Bailey, with fish representing 62 % of the MNI and 36 % of the biomass, followed by reptiles, representing 22 % of the MNI and 56 % of the biomass (snakes accounted for 28 % of the total estimated biomass). At the Sheridan Hammock site (8BD191), another tree island site dating to the Glades IIIa and IIIb periods, Fradkin (1996) found that freshwater fish and reptiles were the most significant classes represented, with meat weight/biomass contributions almost equal for the two groups. This pattern, evident at not only Honey Hill, but also at other Everglades sites, suggests a broader change in food procurement through time.

The presence of marine species at inland sites is rare, and often is confined to modified shell and shark tooth artifacts. In some cases, marine species (e.g., marine turtles, fish, lucine clams, oysters) are represented in such small amounts that they are not included in the samples used for faunal analysis. Shark centra (i.e., vertebrae) are rare or absent at both Honey Hill and MacArthur #2, especially when compared with coastal assemblages like the Granada site; shark teeth, however, are present. This fits Kozuch's (1993:32-35) model for exchange of shark teeth, suggesting that this pattern of coastal procurement and redistribution was already active in the Archaic in southeastern Florida. Regarding season of occupation, Masson and Hale (1990:23-24) suggest several possible scenarios, including net capture of turtles and fish during the wet season and collection of the same species from isolated water holes during the dry season. Masson and Hale (1990:23-25) conclude that Honey Hill subsistence followed an extremely localized, intensive, inland, wetland focus. Analysis of the other Everglades sites indicates a similar subsistence pattern (Fradkin 1996; Keel 1990). Masson and Hale (1990:23-25) further note that the exploitation pattern is strikingly different from that observed at coastal sites like Granada and Bear Lake, which exhibit an intensive marine focused pattern, and suggest that the inland-coastal dichotomy represents a seasonal cycle of exploitation. Alternatively, this could represent two closely related groups, occupying and exploiting the neighboring inland-freshwater and coastal-marine environments. Masson and Hale (1990:24-25) compare the Honey Hill exploitation pattern with one documented by Elizabeth Wing's (1984) analysis of resource exploitation in the Big Cypress (another interior wetland, east of the Caloosahatchee Area). They note that the heterogeneity of the Honey Hill sample, which incorporates aquatic and terrestrial species, is quite different from the Big Cypress pattern, which suggests that sites served as seasonal extraction points for one primary species (usually either aquatic or terrestrial fauna). Considering the broader patterns of resource exploitation and Masson and Hale's (1990:25) observation that the Honey Hill scenario is "the complementary inland version of seasonal exploitation in localized resources," it seems more likely that the coastal and inland subsistence systems represent two coeval traditions that may or may not involve the same groups of people. This is one question that needs further research, though other data (e.g., ceramics, Archaic origins, bone and shell technology) suggests these are closely related, Tequesta peoples.

Ethnohistoric Accounts

Several ethnohistoric accounts speak to the question of subsistence and economy. A young shipwreck survivor, Escalante Fontaneda, left a record of his captivity among the Calusa and neighboring tribes, enumerating many of the foods used in southeastern Florida and the Florida Keys, including fish, turtles, shellfish, tuna, whales, lobster, seal, trunkfish, deer, and raccoon (in True 1944a:12). Hann (2003:70, 80, 149-150) describes several independent, sixteenth century accounts of whale hunting in southeastern Florida, noting that dried whale meat was an item of exchange with groups residing inland. Several of the accounts relating to subsistence indicate that some animals, including turtles (or some types of turtles?) and seals, were reserved for chiefs, leaders or other higher-status individuals (Hann 2003:140-150), and that the bones removed from whale skulls were interred with deceased chiefs (Escalante Fontaneda in Worth 1995:344-345). Monk seal (*Monachus tropicalus*) remains are known from several southeastern Florida sites, including Granada (Wing and Loucks 1982:278) and the Miami Circle (Quitmyer and Kennedy 2002:16). Perhaps most interesting is the testimony of the Jesuit lay brother who participated in the 1567-1568 Tequesta mission; Brother Villareal indicates that the Tequesta did not occupy the principal village year-round, but moved to islands of the Florida Keys in order to collect resources from those areas for several months (Hann 2003:146). These ethnohistoric observations are consistent with the archeological record, as well as records from a later mission attempt in the area in 1743, suggesting considerable continuity in subsistence patterns.

Bone Technology

Bone artifacts are ubiquitous at most archeological sites in southeastern Florida. Artifacts carved from the long, straight bones of a deer's foreleg (metapodial bones), perforated shark teeth, and cut rectangles of turtle bone are found at the aceramic Archaic sites already mentioned (Johnson et al. 1995). This suggests that bone technology of the Tequesta and their ancestors is rooted in the widespread middle to late Archaic bone working tradition that has been studied in other parts of the Florida peninsula (Penders 2002; Wheeler and McGee 1994). Large analyzed collections of

bone and tooth artifacts from the Miami Circle and Granada sites allow for a diachronic perspective on Tequesta bone technology (see Griffin 2002:108-117; Richardson and Pohl 1982; and Wheeler 2002) (Figure 12). Analysis of these collections involved study of wear patterns and comparison to other world-wide traditions of bone tool use. Study of the Miami Circle collection also included microscope examination of wear patterns, which is infrequently conducted on bone tools from Florida. Five-hundred and twenty-one (521) bone and tooth artifacts from the Miami Circle at Brickell Point were analyzed by Wheeler (2002), while Richardson and Pohl (1982) present an analysis of 3,066 modified bone objects from the Granada site. Similar methods of categorizing modifications were used in each analysis, with 31 main categories recognized among the Miami Circle materials and 74 categories recognized among the Granada site remains.

Species Selection. Species used for bone implements and ornaments at the Miami Circle and Granada sites suggest considerable continuity between the two. Deer (*Odocoileus virginianus*) was an important animal used in bone tool making, usually contributing the long, straight metapodial or modified toe bones. In many respects, deer metapodials are at the core of prehistoric bone working throughout Florida. Other deer long bones are represented in the worked bone from both sites, helping to affirm the importance of this animal in prehistoric bone technology.

Ray (Rajiformes) tail spines augmented deer metapodials in tool making at both sites. Wear patterns demonstrate that tools made from deer bones and ray tail spines had similar uses in fiber or fabric working. Interestingly, the shark species utilized for tools are very similar at Granada and the Miami Circle. Shark teeth were a particularly important element used at both sites.

Tibias of small mammals, primarily the raccoon (*Procyon lotor*) and gray fox (*Urocyon cinereoargenteus*), were used at the Miami Circle and the Granada site to make socketed bone implements. These tools are less frequently encountered than the deer metapodial tools, but their presence at both sites points to broader trends in bone tool making.

One of the most obvious differences between Granada and the Miami Circle is the greater diversity in species used for tools at the former site. This probably reflects the larger sample size for the Granada site, and most of the additional species recognized are represented by only one or two examples. Additional species used for tools and ornaments at the Granada site include the nurse shark (*Ginglymostoma cirratum*), whale (Cetacea), bear (*Ursus americanus*), manatee (*Trichecus manatus*), with more examples of bird and turtle bone artifacts, as well as more examples of carved or utilized fish bone (see Richardson and Pohl 1982:136-139).

Technology. Bone working debitage from the Miami Circle and the Granada site is related to reduction of deer metapodials, and is consistent with bone tool manufacturing techniques documented at other sites throughout Florida, and extending temporally back to the Middle and Late Archaic, circa 6000 years ago (Mitchell 195, 1998; Wheeler and McGee 1994). Interestingly, stingray tail spines were used in large numbers at both Granada and the Miami Circle, and the wear, haft and breakage patterns indicate they were being used for many of the same tasks as the mammal long bone implements. Modified shark teeth are another large class of artifacts, representing an array of carving tools and possible weapons. Like the other bone tools, modified shark teeth are known from early sites (e.g., Windover, Republic Groves), indicating that this bone and tool technology originated in the Early to Middle Archaic, and perhaps even earlier.

Fiber Working and Weaving. The vast majority of the bone tools considered in the Miami Circle study have forms, wear patterns and breakage patterns associated with fiber processing, fabric working, weaving, and skin working (Wheeler 2002a). A similar trend is evident in the material from the Granada site, though a lot of the long bone artifacts from that site are hair and clothing pins. The prevalence of weaving tools at both sites is not surprising since the items most frequently mentioned in ethnographic accounts of Florida Indians are woven fabrics, mats, and baskets (see Sturtevant 1977). Doran and Dickel (1988:274, 276-277) report that seven different styles of woven fabrics were identified at the 7000 year old Windover site in Brevard County; a variety of fabric and mat patterns are found impressed on ceramics

throughout the state (Benson 1959; Ray M. McGee, personal communication 1999), and knot and braid motifs are known on bone and wood artifacts from southern Florida (Luer 2000:4-5; Wheeler 1992:112-113; Wheeler and Coleman 1996:49-50, 51, 54). The bone tools associated with these industries at Brickell Point show considerable variation, suggesting development of very specialized tools. For example, implements with wear patterns indicative of use as fids (tools used in fabric and net making) have a range of distinct morphological forms, including the hafted mammal long bone implements, the spatulate bone tools, as well as the socketed bone tools.

Wood and Bone Working. Bone and tooth tools associated with wood and bone working are present at the Miami Circle. A few mammal long bone gouges, probably used in finer woodcarving, are known from the site. These tools were probably hafted in wood, bone or antler handles, like most of the other long bone implements. A large collection of shark teeth is present, showing a diverse array of modification styles to facilitate hafting. Brown (1994:102-104) demonstrates the efficacy of shark tooth knives in woodcarving, and Cushing (1897:370-371) points out that many of the wood artifacts from Key Marco retain traces of shark tooth carving tools. Some of the bone artifacts from Brickell Point retain traces of shark tooth knives, which is a trace of manufacturing and finishing noted on bone tools from many sites. Barracuda teeth and sawfish rostral teeth probably were used for carving wood and bone much like the shark teeth, and may have been hafted in similar ways.

Stone Working. Antler tools with wear patterns indicative of use as chipped stone flaking tools are present at the Miami Circle, but largely absent from the Granada site. These tools are often found in small numbers at other Florida sites. Chipped stone working is usually not associated with sites in southeastern Florida, where the nearest chert and silicified corals are several hundred miles away in the Tampa Bay and Peace River areas. Despite this, a large number of chert flakes were recovered from the Miami Circle (Austin 2002). It seems likely that the antler tools discussed here were involved in the lithic reduction and retouching that occurred at the site. Chipped stone was infrequent at the Granada site, perhaps explaining the lack of antler flaking tools.

Ornaments. The paucity of decorated and ornamental bone artifacts from the Miami Circle is interesting when compared to the Granada site. Richardson and Pohl (1982:138) note an increase in carved and incised bone in the later levels (late Glades II/Glades III) of the Granada site, and a similar trend is noted for Hontoon Island in the St. Johns River basin (Wheeler 1992:33-34). Polished bone pins, however, are frequently encountered in southern Florida sites, and their almost complete absence at the Miami Circle is interesting. The lack of decorated and ornamental bone may reflect a very specialized use of the habitation areas that produced the site's black earth midden deposits. The carved and incised bone pendant found in the midden deposit near the center of the Miami Circle, however, is extremely informative. It is stylistically related to carved shell pendants from the Hopewellian Crystal River site. Similar shell pendants are known from other sites in Lee and Collier counties, suggesting that Hopewellian contacts may have been with groups along the Florida Gulf coast. The presence of other exotic materials at the site—like galena artifacts—along with the radiocarbon dates indicate some participation in the Hopewellian Yent complex as defined by Sears (1962).

Geographic and Temporal Trends. Table 4 was developed in order to quantify some of these comparative observations between the Miami Circle and the Granada site. The Old Enterprise site of the St. Johns River basin is included as a middle to late Archaic comparison, to the Glades I Period Miami Circle component and the primarily Glades II and III period Granada site.

Table 4. Comparison of modified bone categories (count/percent) at Brickell Point, Granada, and Old Enterprise sites.

Site	Unclassified	Debitage	Fiber work/ weaving	Wood & bone working	Stone working	Ornaments
Miami Circle	228 44%	23 4%	110 21%	146 28%	5 1%	9 2%

Site	Unclassified	Debitage	Fiber work/ weaving	Wood & bone working	Stone working	Ornaments
Granada	915 31%	262 9%	121 4%	551 19%		1122 38%
Old Enterprise	172 43%	82 20%	54 13%	42 10%	3 <1%	49 12%

In many respects, the proportions of the modified bone categories represent the nature of the sites. For example, the large percentage of debitage at Old Enterprise reflects the function of the deposit investigated—primary discard of midden material and debris. The absence of antler flaking tools for retouching chipped stone at Granada is not surprising, since very few chipped stone artifacts were recovered, while both Old Enterprise and Brickell Point have many small chert flakes, byproducts of reduction and tool retouching. The varying proportions of the other categories—like ornaments, wood and bone working, and fiber working and weaving—may actually represent different kinds of activities represented in the site's deposits and features.

Mitchell's (1998:235-240) study of 104 bone and tooth artifacts from the Jungle Prada site (8PI54, NR listed 2003) on the Florida Central Gulf Coast is similar to the Granada assemblage in its bias toward decorated bone, polished bone pins, and other ornaments like beads. Comparison of the Narvaez/Anderson and Granada assemblages also reveals some shared motifs on incised bone. At the very least, the Narvaez/Anderson assemblage demonstrates that some midden deposits can be almost dominated by decorative items. The Brickell Point midden is at the other end of the spectrum, with a preponderance of utilitarian tools. Since middens are complex sites, it is difficult to completely understand what the varying proportions of modified bone represent, though it is tempting to associate the polished pins, ornaments, carved and incised bones, pendants, and beads with individuals of high rank or social status, though perhaps they are merely indicators of primary habitation areas where these items would be broken, lost or discarded. The wood and bone working implements, fiber processing, weaving and fabric working implements, and bone working debitage, hint at areas or individuals involved in manufacture of tools and other products, and discard of broken tools and tool components.

Shell Technology

Shell artifacts are a distinctive technology prevalent in several parts of Florida and neighboring areas with easy access to large marine gastropods (Figure 13). Southern Florida has a particularly rich and diverse technology of shell tools and ornaments (e.g., Marquardt 1992; Patton 1994; Torrence 1999). Griffin (2002:93-108) recognized around 60 types of shell artifacts from the Everglades and neighboring areas, and Marquardt (1992) discusses at least 52 major categories of shell tools found in southwestern Florida and neighboring areas. Important studies of shell tools in southeastern Florida include Goggin's (n.d.; Goggin and Sommer 1949:53-64) initial work that identified some of the more prominent shell tool forms; Willey's (1949b:105-109) consideration of shell artifacts from the WPA excavations in Dade and Broward counties; Griffin's (1982) consideration of shell tools from the Granada site, as well as his discussion of Goggin's typology for the region (Griffin 2002:93-108); Masson's (1988) important study of *Strombus* celts; and Wheeler's (2002c) analysis of shell artifacts from the Miami Circle at Brickell Point.

Celts made from the thickened lip of the *Strombus* spp. are one of the most ubiquitous shell tool forms in southeastern Florida (Figures 14 and 15). Keegan (1982:79-80) notes several size phases of *Strombus gigas*, including an adult form with a well-developed lip and a gerontic form with a very thin lip. Both forms seem to have been targeted for making shell celts. Carr and Reiger (1980) discuss several types of shell celt and celt blank caches that are known from southern Florida, which are perhaps analogous to chipped stone tool and tool blank caches known from other parts of the state (Alexon 1988; Watson et al. 1990). These caches point to the importance of *Strombus* celts in the local culture. Wheeler (1993) notes that during the Middle through Lake Archaic *Strombus* tools were distributed widely

throughout Florida, but after the Archaic *Strombus* lip tools are largely restricted to southeastern Florida and neighboring regions that seem to have maintained exchange relationships with the source area.

Mollusk Species Selection. The mollusk species targeted for shell tool production are largely a function of their biogeographic ranges. Shell tool assemblages from the area are dominated by *Strombus gigas*, the queen or pink conch (Laxson 1964; Wheeler 2002c; Willey 1949b:105). This is consistent with the biogeographic range of this large gastropod, which is more typically a Caribbean species, but occurs frequently from the Florida Keys to Jupiter Inlet (Abbott 1974:144; Keegan 1982). This reliance on *Strombus gigas* for tool making in southeastern Florida is unlike other parts of Florida, especially the southwestern Gulf Coast and St. Johns River areas, which have a greater number of tools made from various *Busycon* species. At the Miami Circle site for example, *Busycon sinistrum* shells were most frequently used to produce plummets and two of the three shell disks, all of which may be ornamental. Only a few cutting-edge tools and adzes were made from *Busycon sinistrum*. This may be due to the more gracile nature of the *Busycon* shells available in southeastern Florida. Shell celts are occasionally produced from *Strombus costatus*, the milk conch. For example, *S. costatus* accounted for 12% of the species represented at the Miami Circle site, but among *Strombus* lip tools its occurrence was 26%. This is very high when compared to the occurrence noted in the Cheetum-Flagami collection at 3%, which probably reflects the relative frequency of this species in the local environment (Masson 1988). *Pleuroploca gigantea*, the horse conch, also is well represented in some site collections (Wheeler 2000c), and seems to have been favored for its heavy columella. Many of the columella tools from the area are produced from this shell, including plummets, hammers, and columella cutting-edge tools. The horse conch appears to have the greatest diversity of uses for shell tools and ornaments. Other shells that were used for tools and ornaments include the crown conch (*Melongena corona*), the quahog or hard clam (*Mercenaria campehiensis*), the sunray venus (*Macrocallista* spp.); as well as other species of bivalve, including *Codakia orbicularis* and *Lucina pectinata* (see Griffin 1982:77; Reiger 1979, 1981; Wheeler 2002c).

Manufacture of Shell Artifacts. The recovery of shell working debitage from some sites allows for discussion of the design and manufacture of shell tools. Unfortunately, shell working debitage is often overlooked and discarded in the field. For example, analysis of shell artifacts from the Granada site did not include a category for shell working debitage, though it seems likely that tools were made at the site. At the Miami Circle, however, a small number of shell debitage fragments indicate that shell tools were being made at the site (Wheeler 2002c). Detached columella (n=14) from *Busycon sinistrum* and *Pleuroploca gigantea* form the largest category of shell debitage. It is not clear how these detached columella fit into the sequence of shell reduction and tool making, but they may be blanks for making columella hammers or cutting-edge tools or blanks for bead making as suggested by Torrence (1999:70-71). The second major category of shell working debitage (n=12) at the Miami Circle is related to the reduction and manufacture of tools from the *Strombus* conchs. Broken body whorls and conch shells with detached lips both point to primary reduction and manufacture of the *Strombus* celts, which form one of the largest tool categories in the Miami Circle assemblage. The broken or carefully cut anterior sections of the *Strombus gigas* appear to be blanks related to production of *Strombus* gouges.

Shell Ornaments. Shell ornaments are relatively rare in southeastern Florida. Laxson (1961) reports on a carved *Busycon* shell disk from a site on the Uleta River in Miami-Dade County, and Coleman et al. (1983) report on a carved shell pendant in the form of a bird from site 8DA141. This latter specimen is probably within the tradition of animal effigies discussed below. Goggin and Sommer (1949:63-64) illustrate a cup-shaped node from Upper Matecumbe Key carved from a *Strombus* shell. More typical ornament forms include plummets and disks, though these are rather rare. For example, at the Miami Circle shell ornaments include 8 plummets and 3 shell disks (Wheeler 2002c). Interestingly, the smallest shell disk may be a shell node like the one from Upper Matecumbe, cut and carved from one of the spines or protuberances of a *Strombus gigas*. Gilliland (1975:184) interpreted these shell nodes as “shell mask eyes,” since they were found set into the eye sockets of some of the carved and painted wooden masks at Key Marco. At other sites that lack wood preservation, these shell nodes may be an indication that carved wooden masks were in use. We know from the account of the 1743 Spanish mission located near present-day Miami that the natives of this area were using

wooden masks in their religious observances, as had their neighbors in southwestern Florida (see Alaña's account translated in Hann 1991:422 and Childers 2003:76).

Unperforated shell disks remain a mysterious artifact type. The larger example from the Miami Circle has evidence of a tab-like extension on one margin that has broken away (Wheeler 2002c). Shell disks with these tab-like extensions are known from other sites in southeastern Florida and on the Florida Gulf Coast (Moore 1903:397-398, Fig. 43; 1907a:417; Sears 1962:8; Willey 1949a:Pl. 24f). Typically they have a central perforation and incised concentric circles, though plain examples are known. These appear to have some association with Hopewellian contexts. An example of the more typical form, but carved in bone, was recovered from the center of the Miami Circle (see Wheeler 2002a:28-29).

Shell plummets are occasionally encountered at sites in southeastern Florida, and Reiger argues that this is a rare artifact throughout southern Florida (Reiger 1990:228). There are two general notions about what plummets represent—one suggests they are pendants worn around the neck or suspended from clothing, while the opposing view suggests they are sinkers for hook-and-line fishing (compare arguments in Reiger 1990 and Walker 2000). At the Granada site, 41 plummets were identified among the collection of 1,918 shell artifacts, representing 2 % of the total. The eight shell plummets from the Miami Circle represent around 6 % of the shell artifact inventory. This seems to support Reiger's assertion that plummets are rare, despite Walker's (2000:30-31) assertion that grooved columella plummet-form artifacts are commonly found at coastal sites. In fact, plummets of shell and stone seem quite rare in southern Florida, though they are often better represented at larger, more complex sites. Bullen (1952:49) and Wheeler (2000:45-47, 48-57) demonstrate that plummets are often found in large numbers accompanying burials at Gulf Coast sites, suggesting a personal relationship between these objects and individuals. Examples found at habitation sites may have been lost or discarded as suspension knobs became worn down, just as broken fragments of decorated bone are found at these sites. Reiger (1999) discusses the possible use of plummets in divination as well as their symbolism. Interestingly, he concludes that certain marine shells may have been selected for plummet making because of symbolic qualities they held for the native peoples (Reiger 1999:236-237). This is largely based on ethnographic analogy with cultures in other areas, like the Santa Barbara Indians of California, where plummets were used in rainmaking, curing, and divining the future. Reiger (1999:236) suggests that in the case of shell plummets, the spiral form of the columella may have been associated with broader southeastern Indian symbolism linking spiral motifs to the underworld (cf. Dye and Wharey 1989:322).

Shell Tool Technology. Table 5 summarizes the major shell artifact categories in the Miami Circle assemblage and some possible uses. Comparison to the Granada site assemblage indicates that the Miami Circle collection is fairly representative of the area. The majority of shell artifacts are tools, designed to aid in making other articles or to be used in composite artifact forms. Study of the bone tools from the Miami Circle reveal a great number of implements involved in various types of weaving. The cut and polished shell rectangles are likely part of this weaving toolkit and probably were used in producing nets of uniform mesh (Walker 2000:32-33). The perforated bivalve shells probably served as net weights for these nets of knotted cordage. As Cushing (1897:366) notes at the Key Marco site, perforated bivalves were found tied to the bottoms of "coarse-meshed, comparatively large and long gill-nets." The three examples of this artifact type from the Miami Circle represent only a small sample of those that occur there.

The remainder of the shell tools represents woodworking tools for a variety of tasks, ranging from rough work and primary reduction to finer carving and smoothing of artifact surfaces. Many of the shell tool forms have analogies in the metal woodworking tools used in Europe and America in the seventeenth through nineteenth centuries (see Goodman 1964; Sloane 1964; Wildung 1957). The heavy *Strombus* lip celts likely represent tools used in primary reduction, for chopping away large portions of material when roughing out an architectural beam, for removing char during the manufacture of a dugout canoe, or as a froe or wedge to split blocks of wood. As Masson (1988:326) illustrates, shell celts could have been hafted in a variety of axe or adze-like fashions, or they could have been used unhafted, perhaps in concert with a wooden mallet. Some of the *Strombus* celts from the Miami Circle exhibit lateral wear that is consistent with hafting on a T or L-shaped wooden handle. These handles would have placed the celt blade perpendicular to the

axis of the handle (more like an adze than an axe) at an angle between slightly less than 90 degrees to 45 or 50 degrees (see illustrations in Goodman 1964:13, 18).

Some of the *Strombus* celts and the *Busycon* adzes were likely used for finer carving and finishing of beams or other large wooden artifacts. Sloan (1964:26-27) explains that an adze would produce a wooden beam with a smooth surface, leaving little in the way of scoring marks. It has been suggested that the Miami Circle feature was carved into the limestone in order to receive timbers for a structure or enclosure (Carr and Ricisak 2000:281-283). The *Strombus* celts and *Busycon* adzes certainly could have been used in finishing wooden architectural elements like poles or timbers that would have been involved in such a structure.

The *Strombus* gouges, columella cutting-edge tools, and hafted cutting-edge tools were likely equivalents of hand adzes, gouges, and chisels, and may have been used in carving wooden containers and vessels (see Sloan 1964:28-27). These tools, with a curvate or straight blade, would have been used to scrape away wood to create the hollowed-out bowl form. While ceramic vessels were used for cooking and storage, wooden vessels represent an even older tradition and beautifully made examples are known from across the state. Purdy (1991:238-242, 245,) illustrates and discusses a number of these wooden containers, and a variety of bowl and trough-like forms were present at Key Marco (Gilliland 1975:48-64).

Several other shell tools likely are specialized woodworking implements. One tool categorized as a “columella plane” was present in the Miami Circle collection. This tool was probably not used like a block plane, but was likely a specialized gouge or chisel (Sloan 1964:54-55). Considering the rabbetted box sides present at Key Marco it is possible that tools like this were used in such joinery, possibly in conjunction with a wooden mallet or mounted in a wooden handle (see Gilliland 1975:137, 142, Plates 90). As noted above, two broken *Strombus* celts had been reworked so that an incurvate blade was present on the distal end of the tool. These could have been used like a drawknife in finishing the ends of boards, or in making tool handles (Sloan 1964:38-39; Wildung 1957:54-55).

It is more difficult to find analogies to the gastropod hammers and columella hammers. Shell reduction, especially the removal of the columella, requires a few precise hammer blows, and the heavier gastropod hammers may have been used in this fashion. The smaller, hafted columella hammers are a mystery. It seems that for many hammering tasks a wooden mallet or maul would have been used (Wildung 1957:1). The burlwood club found across the river from the Miami Circle would have been an admirable mallet to have used in conjunction with many of the shell tools discussed above (see Purdy 1991:236, Figure 90). Torrence (1999:Figure 14) illustrates an artist’s concept of the columella hammers being use in shell tool reduction. This is one possible use, and they may have been utilized in reduction of bone for bone tool making as well. Speculation suggests they could have been used in leather and hide working or even to tenderize meat.

Table 5. Shell artifact categories and possible uses, Miami Circle at Brickell Point.

Artifact type	Count	Possible uses
Debitage	29	shell working and tool production
Plummets	8	ornaments
Disks	3	ornaments
Beads	1	ornaments
Perforated bivalve shells	3	net weights, fishing
Rectangles	3	net making, fishing
Busycon adze	2	woodworking
Strombus gouge	5	woodworking
Columella Plane or Gouge	1	woodworking
Columella cutting-edge tools	4	woodworking
Cutting-edge tools	1	woodworking

Artifact type	Count	Possible uses
Gastropod hammers	4	shell working?
Columella hammers	13	stone, shell and bone working
Strombus lip tools and celts	58	woodworking

Research Questions

● What shell tool types are characteristic of southeastern Florida? How do these types compare with those of neighboring areas? What temporal trends can be identified among shell tools? How do shell tool assemblages from coastal and inland sites compare?

● Is it possible to identify chemical residues on shell tools that may help in identifying the function of mysterious artifact types, like shell disks?

● Bone tools are fairly well studied within the area occupied by the Tequesta and their ancestors, however, it would be interesting to apply the typologies and functional categories developed for analysis of the Granada and Miami Circle assemblages to collections from inland sites. How do bone tool assemblages differ between coastal and inland sites? Are there temporal trends in bone tool technology?

● Is it possible to use isotopic signatures to identify the origins of shark teeth from coastal and inland sites?

● Analysis of the zooarcheological materials from Honey Hill and Granada suggest some distinct patterns in the use of fish and turtles. Are these trends evident at other sites?

● Is it possible to recognize human impacts to prehistoric plant and animal populations?

● How do ethnohistoric accounts complement or contradict zooarcheological and paleobotanical analysis? Is it possible to find evidence for exchange of certain food items, such as dried meat from marine mammals and fish?

● Can pollen analysis be used to study the use of plants at Everglades sites? Can phytoliths (fossil silica plant parts) be used to study plant use at these sites?

● What patterns of plant use are reflected in Everglades area sites with wetsite components? How do these patterns compare with patterns at wetsites in neighboring areas? How do these patterns compare with those recognized in non-wetsite deposits?

Mortuary Practices

The theme Mortuary Practices has been identified as a regionally and nationally significant topic since sites with human burials can answer questions regarding social and political organization, health and nutrition, and aspects of ritual behavior. Some Archaic cemetery sites in southeastern Florida are highly significant, since they can provide data on these aspects of early Florida life, and can be augment skeletal populations from other parts of Florida and the Southeast from this time period. This theme falls potentially falls under three of the National Park Service's Thematic Framework themes: *II. Creating Social Institutions and Movements, III. Expressing Cultural Values,* and, *IV. Shaping the Political Landscape* (NPS 1999:81, 82).

The burial sites of the Tequesta and their ancestors are well-known compared to neighboring areas. Of at least 71 prehistoric sites with human remains in Broward and Miami-Dade counties, 40 have been studied by physical anthropologists and archeologists (based on data from the Florida Master Site File). Human burials from sites in southeastern Florida have been studied in a variety of ways. Physical anthropologists have examined skeletal material

for evidence of disease and trauma, dietary stress, and variation in mortality. Archeologists have studied burial patterns and broader temporal changes in types of burial.

Physical anthropology

Physical anthropologists have examined skeletal material from several late Archaic cemeteries in Miami-Dade County. Carr et al. (1984) report on an assemblage of 6 individuals from the Santa Maria site (8DA2132), located about 2.5 km to the south of the mouth of the Miami River. The individuals were intentionally interred in solution holes, with limestone boulders then piled on top of the graves. Calibration of the five radiocarbon dates from the site indicate the burials date from 3885 to 1000 B.C. Physically, the population was similar to other late Archaic and Florida Indian groups. Paleopathological conditions observed include evidence for extraction of teeth during life; extreme dental wear; no evidence of caries (cavities); periodontal disease and abscesses; infectious conditions in the long bones similar to osteomyelitis; and evidence of severe degenerative joint disease. İşcan et al. (1995) report on burials from a late Archaic and Glades cemetery at the Flagami South site (8DA1053); unlike Santa Maria and the Brickell Bluff site (8DA1082), this site is located inland, about 16 km from Biscayne Bay. Artifacts and radiocarbon dates indicate burials were made during several periods. In this case 16 individuals were represented, also exhibiting extensive tooth wear and infrequent evidence for dietary stress. İşcan et al. (1993) report on 4 individuals from a late Archaic cemetery at the Brickell Bluff site, located on Biscayne Bay, about 5 km south of the mouth of the Miami River. Eight radiocarbon dates indicate occupation of the site from 2000 B.C. to A.D. 200. As with the other late Archaic mortuary assemblages, male, female, and juvenile individuals were represented. Some evidence of nutritional deficiency was noted (e.g., cribra orbitalia, iron deficiency anemia).

İşcan (1983) reports on an assemblage of 49 individuals from the burial mound and cemetery at the Margate-Blount site (8BD41) in Broward County. In contrast to the late Archaic cemeteries discussed above, the Margate-Blount site represents occupation during the Glades periods well into the time of European contact. İşcan (1983:156) reports an equal distribution of males and females, but notes a low number of juveniles represented. Apparently, the groups was physically similar to other Florida populations, though perhaps shorter and more robust (İşcan 1983:163). Ante-mortem tooth loss was evidenced, as in the late Archaic populations, though at Margate-Blount this condition was more frequent in females. Cavities were rare, and the extensive wear typically noted was less severe. Bone pathologies were limited to evidence of arthritis, osteophytosis, osteitis, and a healed fracture. At least one possible case of treponemal disease was noted.

Elgart-Berry (2003) recently utilized teeth collected from sites in Miami-Dade, Broward, and southern Palm Beach counties to assess health of these populations. The teeth came from several of the collections discussed above (Brickell Bluff or Atlantis site, and Flagami North and Flagami South), as well as the Miami Circle/Brickell sites (8DA12/8DA98), Pine Island (8BD1113), Dolphin Stadium (8DA411) and North Ridge (8DA3678), Cheetum (8DA1058) and Cheetum-Coleman (8DA141), Kendall-Coleman (8DA2131), Long Lakes Estates (8BD3283), and Highland Beach (8PB11). Elgart-Berry (2003) examined the teeth for linear enamel hypoplasia and hypoplastic pits, which are related to dietary stress; she also assessed the age at which the enamel disruptions occurred. Twenty percent of the teeth examined showed evidence of enamel disruption. The enamel disruptions occurred between 2.2 and 7 years of age, with the average age in the fourth year. Site by site comparison revealed considerable variation in frequency of enamel disruption, ranging from 9 to 31%. The greatest frequency of enamel hypoplasia occurred at Pine Island, Miami Circle/Brickell, Brickell Bluff, and Cheetum. Pine Island and Cheetum also show more severe episodes of hypoplasia; these sites also exhibit the earliest mean onset ages for hypoplasia. The cause of the hypoplasia may be due to protein deficient diets or stress associated with weaning. The study demonstrates, however, generally good dental health for the southeastern Florida populations.

Burial patterns

Felmley's (1991) Master's thesis study is unique in southern Florida. She compared data from 44 burial components at 40 burial sites in Broward and Miami-Dade counties, roughly corresponding to the ancestral homeland of the Tequesta. Variables considered include distance from coast, site type, spatial confinement of burials, associated habitation sites, chronological position, and burial form. Additional variables studied include orientation of burials, direction, sex, and presence of grave furniture. A diachronic approach allowed discussion of burial patterns in late Archaic and Glades I periods as opposed to Glades I through III periods.

Felmley's (1991:69) results indicate that primary and secondary burial forms were present in both the late Archaic and Glades I and later Glades periods. She notes, however, that grave goods are more common with primary, extended burials during the earlier period. Felmley (1991:71) suggests that high status burials of the Glades periods may be distinguished by their interment in mounds, instead of through grave goods and burial form. Secondary burials increase considerably from 33% in the late Archaic/Glades I periods to 60% in later Glades periods. Felmley (1991:71) indicates that this may be due to increased use of charnel houses of other burial programs that included storing remains prior to interment. It should be noted that perishable grave goods, including wood carvings, featherwork, textiles, and basketry, may have been included with burials, but are absent due to preservation conditions.

Late Archaic cemeteries are typically found at inland sites, though coastal and inland sites exhibit similar patterns. In most cases (85%) the cemeteries are located in habitation sites, typically within spatially confined areas, showing little preference for the part of the site they occupy. Felmley (1991:72-73) concludes that corporate lineage groups utilized these formal cemeteries, noting that there is little evidence of sociopolitical ranking. Distribution of grave goods, however, indicates some recognition of individual status and rank. In some cases these graves goods included shell bowls with food remains, turtle shells and snail shell deposits (Felmley 1991:86). The osteological analysis, discussed above, suggest's similar burial treatment of males, females, and juveniles. This typically indicates inherited status, and Felmley (1991:74-75) concludes a non-egalitarian sociopolitical organization existed during this time period, with several autonomous groups inhabiting the broader Everglades area. The presence of formal cemeteries during the early period indicates structured lineages with specific ties to land and resources. Felmley (1991:85) notes that while there are some shared patterns between the late Archaic/Glades I period cemeteries and Archaic period mortuary ponds like Bay West and Windover, the association between water and burial is absent. She suggests this may be due to increasing power of village chiefs who wanted to link religious and political power.

In the post-Archaic period, Felmley (1991:76-77) notes that burial sites are evenly distributed across the study area, but that there is a clustering of burial mounds on the coast in the northern Biscayne Bay area. The concentration of sites and mounds in this area suggests development of a local or regional center. Many of these mounds are associated with habitation middens, and in some cases, burials are found in both mounds and in adjacent cemeteries. Interior habitation sites exhibit a different pattern, with cemeteries located in the primary midden area. At least three different types of burial are recognized during the later Glades periods: primary burial within a habitation site, secondary interment within a habitation site, and interment within a constructed mound. Felmley (1991:78-79) concludes that the different coastal and inland burial patterns reflect ranking between lineages and evidence for increasing sociopolitical complexity, with coastal groups having exclusive right to the higher status burial program. She notes that this is consistent with Binford's (1971) assertion that variety in a mortuary assemblage will increase proportionately to an increase in the number of social positions symbolically recognized. Felmley (1991:88) notes that excavation of the Surfside Mound (8DA22) indicates that the mound was the continuous use type as defined by Sears (1958:277, 280-281). This indicates a less rigidly organized society. Research by other archeologists indicates that when higher status individuals are interred in mounds, lower status individuals are buried in habitation area cemeteries. This pattern seems to be the one evident in the later Glades periods (Felmley 1991:88). Interestingly, data from neighboring areas suggest some significant differences when compared to the Tequesta: data from the Florida Keys indicates that midden burials are rare or absent; both mound and midden burials appear rare in Everglades National Park; and mound burials, including deposits or caches of ceramics, are much more common in the Ten Thousand Islands. These differences are significant, since they help distinguish the Tequesta and their ancestors from neighboring groups, and in defining the boundaries of the area they occupied.

Ethnohistoric evidence

One of the best descriptions of mortuary practices in the Tequesta area comes from Jesuit Father Joseph Javier Alaña's account of the 1743 mission attempt made near the mouth of the Miami River (see Hann 1991:418-431; Sturtevant 1978). The mission settlement, called Santa Maria de Loreto, was made at an Indian village that included remnants of Keys, Calusa, and Boca Raton tribal groups. Alaña (in Hann 1991:422) describes two "idols" held by the Indians, including the principal one, "a board sheathed in deerskin with its poorly formed image of a fish that looks like the barracuda and the other a figure like tongues." The other idol is described as the god of the cemetery, "a head of a bird, sculpted in pine," which the missionaries destroyed along with a temple building (Alaña in Hann 1991:422). Sturtevant (1978:148-149) suggests that the temple destroyed by the Spanish was actually within the bounds of the cemetery, though this is not clear from translations of the account. Alaña (in Hann 1991:423-424) also notes that child sacrifice was practiced upon the death of the cacique or other leading men, and that the names of the dead were taboo. Offerings of food, tobacco, reed mats and other gifts were placed daily on graves (Note: items like tobacco, corn and precious metals were introduced via trade with passing European ships and from salvage of shipwrecks); the guarded cemetery was situated somewhat distant from the village and visited during frequent pilgrimages. Sturtevant (1978:149) notes that the Francisco Alegre version of the story indicates that the graves were decorated with "turtles, barracudas, and other animals" in order to appease the dead. A slightly different version of the same account indicates that "the skulls of stags, turtles, barracuda, and other animals" were placed around the cemetery (Alaña in Childers 2003:77).

This description is consistent in many ways with the archeological record. The evidence for differential treatment of high status individuals described by Felmley (1991) as mound interment is likely reflected in Alaña's description of child sacrifice for caciques and principal men, another mortuary practice reserved for high status individuals. The cemetery described by Alaña may very well be one of the formal cemeteries established within a midden or nearby a habitation area; it is unlikely the Jesuit was describing a mound. The food and other offerings may well be reflected archeologically in the caches of turtle carapaces or shell bowls with food remains that Felmley (1991:118, 122-124) notes for several sites. The fish and bird imagery also may be found in wood in bone carvings known from southern Florida (see discussion of art and aesthetics below).

Research Questions

● Is it possible to use biological distancing studies (based either on statistical analysis of metric and non-metric features, or through DNA or other chemical means) to evaluate relationships between individuals within and between mortuary assemblages?

● How do the mortuary patterns recognized by Felmley (1991) compare with neighboring areas?

● What is the relationship between *Stombus* celt caches and mortuary areas?

● Is it possible to locate cemeteries with wetsite preservation? Such sites occur in neighboring areas (e.g., Belle Glade Mound near Lake Okeechobee) and at the Margate-Blount site on the northern border of the area occupied by the Tequesta and their ancestors. Do these sites contain perishable grave goods not typically found at dry sites? How will wetsite assemblages change ideas about status?

● How do skeletal markers of health and nutrition, within mortuary assemblages of the Tequesta and their ancestors, compare with neighboring cultures?

● What significance do animal interments (other than dogs) have? How are they related to mortuary areas? How are they related to sacred or ritual space?

Earthwork Building

The theme Earthwork Building has been identified as a regionally and nationally significant topic since earthwork sites are rare in southeastern Florida, though share forms with earthwork sites found in neighboring areas, including circle-ditch sites and circular-linear earthworks. Circle-ditch sites are known in southeastern Florida and represent an extremely rare type of earthwork of southern and central Florida believed to be the earliest form of earthwork constructed in Florida. These sites are significant regionally and nationally since earthwork building traditions are widespread in the midwestern and eastern United States; southeast Florida earthwork examples may be able to answer broader national question regarding the origins of earthworks, why they were built, and what connections may exist between regional earthwork tradtitions. This theme falls under the National Park Service's Thematic Framework theme *III. Expressing Cultural Values* (NPS 1999:82).

Construction of earthworks in southern Florida is most closely associated with the Belle Glade or Lake Okeechobee region—the inland area around Lake Okeechobee and northward to include the Kissimmee River basin (Carr 1985; Goggin 1947:120-121; Goggin and Sturtevant 1964; Hale 1984, 1989; Johnson 1996). There are, however, a number of sites occupied by the Tequesta and their ancestors that have similar earthworks. Within the broader area of southern Florida, these earthworks occur in seven major forms: 1) circular ditches, often associated with habitation sites and located on wetland margins; 2) long-distance canoe canals, constructed to link natural bodies of water and frequently associated with major site complexes and other travel routes, like foot paths and trails; 3) borrow pits, geometric borrows and effigy borrows, which are often associated with mounds and mound complexes (see Johnson 1996:253); 4) linear embankments associated with mounds; 5) mounds and mound groups; 6) earthen embankments enclosing mounds; and 7) circular-linear earthwork complexes, which exhibit at least two subtypes (see Johnson 1996:253, Fig. 8, 9).

As noted in the previous discussion of mortuary practices, constructed earthen mounds are found in some portions of Broward, Miami-Dade and Monroe counties. Felmley (1991:75-77, Fig. 6) notes that dirt and sand mound construction increases considerably during the later Glades periods, though these features are much less frequent than in neighboring areas, including in the Florida Keys and Ten Thousand Islands. Flat-topped temple mounds also are extremely rare in the area, represented at only two sites—8DA19 and 8DA45. This disparity in constructed mound features is an important difference between the Tequesta and neighboring groups. It is, however, significant that these two sites occur within the area, especially since they are outside Everglades National Park and are therefore not addressed in Griffin's (2002) synthesis of the Everglades.

Despite the relative scarcity of constructed mounds, there are a number of other earthwork types that are found in the area. Anthropologist Mark Harrington (1909:139-140) described a site at the forks of the New River (present-day Fort Lauderdale's Sailboat Bend neighborhood) that included a shell mound and at least 6 sand mounds, the largest of which was 8 ft high and 50 ft in diameter. Numerous potsherds and shell implements were found in the area. Extending from this, or one of the other large mounds, were "low embankments." Earlier excavations in one of the large mounds had left scattered human remains, though Harrington was unable to find anything upon excavation of one of the other mounds. Research by Carr et al. (1991:24, 1995:24-25, 38-39) uncovered an 1895 map by A.P. Knowlton that depicts the configuration of this site, including the linear embankments extending from the large earthen mound (Figure 16). Components of the site are recorded as 8BD3 and 8BD203; sherds from extant portions of the midden include St. Johns Plain and St. Johns Check Stamped, suggesting Glades III period occupation. At least two other sites with linear embankments are known in the area, the Holatee Trail site (8BD104), which has two sand mounds connected by a 15 ft wide and 1.5 ft high sand causeway (Felmley 1991:106) (Figure 17) and the Coral Gables earthworks (8DA2112), which had a group of mounds and one or two paired linear embankments (Carr 1981:15, 121-123).

Carr (1985:296, 298) recorded two circle-ditch sites in Miami-Dade County. The Dade Circle was discovered during the 1979 archeological survey of Miami-Dade County (Carr 1981:15-16; 1985:298). This is one of three rare circle-ditch sites outside of the Lake Okeechobee basin. Carr (1985:298) states that the site was noted on a 1925 aerial photograph, located in an area that was once Everglades prairie near the headwaters of the Miami River. Like many of

the other circle-ditch sites, the Dade Circle does not form a complete circle. It is not clear if this represents intentional construction or disturbance from groves and fields evident on the 1925 aerial (Carr 1985:296). The diameter of the circle-ditch is estimated between 180 and 187 m. Development has since obscured the site, which was located in the vicinity of NW 7 Street and NW 42nd Avenue.

The Miami Circle-Ditch (8DA2148) was originally reported by Carr (1981:15-16; 1985:298), based on the nineteenth century survey notes of George Mackay (1845). Like the Dade Circle, it is a rare example of a circle-ditch outside of the Lake Okeechobee basin. Mackay (1845:56) encountered the site during his survey of the exterior boundaries of Township 54 S, Range 41 E. In his notes of the survey of the northern boundary line he describes the site as an "old redoubt encircled by a ditch—center embankments in form of a cross—diameter of circle 200 feet—large pines have grown since it was completed." He describes the setting on the south side of the Miami River, located on a pine ridge. Based on Mackay's chain measurements, and the mile and half-mile posts he established, the earthwork was located just over 1.5 miles from the northeast corner of Township 54 S, in what would eventually become Section 2. Today the site location would be roughly at the southwestern corner of the intersection of NW 7th Street and NW 12th Avenue, a few blocks east of the Orange Bowl Stadium.

Long distance canoe canals also are known within the area inhabited by the Tequesta and their ancestors. Wheeler (1998) summarized earlier observations on two of these canals, both located at Cape Sable in Everglades National Park (Figure 18). Information on the canals was gleaned from the work of botanist John Kunkle Small (1924:82), and archeologists John M. Goggin (n.d.:185-186), John Griffin (1988:182-183; 2002:187-189), and William Sears (1966). The 6.3 km long Mud Lake Canal (8MO32) passes near the Bear Lake mound group, and connects Mud Lake and the waters of Whitewater Bay with Florida Bay (Figure 19). Small (1924:82-83) remarked that the canal essentially made Cape Sable an island, allowing an Indian canoeist to avoid a long trip around the treacherous waters of the cape. Measurements of the canal and prior descriptions indicate the channel is 8.8 m in width and 0.3 to 0.6 m in depth, bounded on either side by sandy spoil banks. Only a small portion (about 0.85 km) of the nearby Snake Bight Canal (8MO29) can be detected on aerial photographs. Measurements and descriptions indicate it has a channel 6 m in width and similar in depth to the Mud Lake Canal. Wheeler (1998:22-23) hypothesized that the Snake Bight Canal represented an earlier construction that had been destroyed by a hurricane, and was subsequently replaced by the Mud Lake Canal. Both features served to control canoe traffic at a critical point, where travelers from the Florida Keys, Gulf Coast and Everglades regions would have ventured. These canal features are extremely significant, since they represent the only examples in North America of a long-distance canoe canal and they represent the culmination of 5,000 to 6,000 years worth of adaptation to Florida's aquatic landscape (Wheeler et al. 2003:547-548).

The presence of the circle-ditch, linear embankment, and canoe canal sites within the area occupied by the Tequesta and their ancestors is significant. Students of the area suggest that the circle-ditch sites represent the earliest earthwork form constructed in southern Florida (Carr 1985; Hale 1989:69-70; Johnson 1996:255-256, 258-259). Excavation of circle-ditch sites at Fort Center and Whitebelt 1 confirm that they date to the Florida Transitional and Glades I periods. Wheeler (2003) has argued that the circle-ditches were built to facilitate drainage and allow settlement in or adjacent to wetlands. Their presence in the homeland of the Tequesta emphasizes the shared cultural patterns of the broader Glades Tradition, especially early in the development of the regional cultures. The presence of the linear embankment earthworks is more puzzling, but seems related to influences from neighboring areas. Goggin and Sturtevant (1964:194-197) suggest all these earthworks are ceremonial, but recognize the considerable leadership effort involved in planning and organizing the labor to build the features. They further see the earthworks and canals as evidence for the development of cultural complexity (Goggin and Sturtevant 1964:207-208). Luer (1989:113) has pointed out that the canoe canals represent a significant investment of labor, and likely were important for regional and interregional exchange. He further suggests that construction and use of the canals may be tied to the development of political-military authority within southern Florida. Wheeler (1995:278, 1998:22-23), following Luer's argument, has suggested that the canals were placed at strategic locations where other travel routes, like overland trails, natural water bodies, or canoe trails, came together, giving some communities control of certain travel corridors. Luer (1989:124-125) suggests that regional centers developed after A.D. 1000 (at least along the Gulf Coast), replacing earlier, and more numerous

independent polities; he hypothesizes that the development of canals is related to increasing reliance on interregional exchange that occurred as the regional centers emerged.

Research Questions

● What types of earthworks are present in the area occupied by the Tequesta and their ancestors? How do these earthworks compare with those found in neighboring areas?

● Is it possible, through radiocarbon dating and/or relative dating techniques, to assess the age of earthwork sites?

● What is the geographic distribution of earthwork sites in the region?

● What possible functions did the earthworks serve? How do their configurations and placement on the landscape compare with similar earthworks in neighboring areas?

● Can soil science be used to better understand earthwork construction and use? Can pollen or phytolith analysis be used in studying circle-ditch earthworks, and possible changes to local hydrological and vegetation patterns?

Exchange Networks

The theme Exchange Networks has been identified as a regionally and nationally significant topic since some sites of southeastern Florida contain materials that can aid in understanding regional and long-distance exchange, as well as materials that can address questions regarding the forms of indigenous exchange networks. This theme falls under the National Park Service's Thematic Framework theme *V. Developing the American Economy* (NPS 1999:82).

The role of exchange networks among the Tequesta and their ancestors have recently been investigated in several ways. Luer (1989:113-114, 116-121; 1995) has pointed out both local and broader regional patterns of exchange in southern Florida. Notably, these have included participation in Hopewellian exchange networks best known to operate in the Lake Okeechobee/Kissimmee River basin and parts of the Florida Gulf Coast. Wheeler (1993) pointed to early exchange of *Strombus* shells likely originating in southeastern Florida and the Florida Keys. Dixon et al. (2000) conducted a sourcing study on basaltic/diabase celts recovered from the Miami Circle. Kish (2002) and Wheeler (2002b) have examined the distribution and geochemical/petrographic relationships of pumice artifacts in southern Florida. This recognition of the Tequesta and their ancestor's participation in exchange networks is in contrast to previous ideas about the inhabitants of southeastern Florida. Archeologist John Goggin (1949:28, 31, n.d.:696) considered the people of the area to be parochial, though he acknowledges influences and relationships with neighboring areas. The synthesis of archeological resources in Everglades National Park also follows Goggin's model of the Tequesta (Griffin 1988, 2002). Other students of the area, however, recognize participation in broader exchange networks. Willey (1949b:128) saw the presence of ground stone celts in Tequesta sites as evidence for contact with Hopewellian and Mississippian-influenced Weeden Island and St. Johns River area cultures to the north.

Luer (1989:113, 116-121), in his discussion of aboriginal canoe canals in southern Florida, notes the role that these structures could have played in interregional exchange. His model proposes that the labor involved in building the canals was justified by their role in transporting roots, fish, wood, and other local exchange items. Luer (1989:116-121) suggests that evidence for interregional exchange is found in the occurrence of certain materials in areas where they would not normally be found, including whelk shell drinking cups; cypress wood; deer bone; marine fish and turtle bone at inland sites, including shark teeth; shell tools; smoking pipes of a similar pattern; and Belle Glade Plain vessels, which may have been involved in transporting foods. Following Luer's model, other researchers have traced the distribution of some likely exchange goods that originated in southeastern Florida. For example, Wheeler (1993) noted that shell celts made from the queen conch *Strombus gigas* were widespread in several parts of Florida during the Late Archaic. The *Strombus gigas*, however, is more closely linked with the Caribbean biogeographic province, and only occurs in Florida

in the southeastern part of the state and in the Florida Keys (see Keegan 1982). During later periods, however, tools made from *Stombus gigas* are common only in southeastern Florida; this may be due to the introduction of ground stone tools from northern exchange sources. This does suggest, however, that (as suggested above) southeastern Florida was inhabited during the Late Archaic and perhaps earlier, and these people participated in exchange with their neighbors to the north. In contrast to this, Kozuch (1993:32-35), in her study of shark utilization in southern Florida, concludes that people of southeastern Florida were not exchanging shark teeth with inland groups, but rather teeth found at sites like Fort Center were coming from southwest Florida. The further studies discussed below indicate that exchange systems in southern Florida may have been quite sophisticated.

Dixon et al. (2000) used direct coupled plasma (DCP) and inductively-coupled plasma-mass spectrometry (ICP-MS) to assess major and trace elements in basaltic stone axes and axe fragments recovered from the Miami Circle. Similar ground stone tools are rare, but present, in many southern Florida and Atlantic Coast sites (Dixon et al. 2000:335-336; Willey 1949b). Comparison to 776 chemical analyses conducted on American basalts indicates that the axes originated in the area around Macon, Georgia. This study served to quell speculation about South or Central American origins for the stone axes, but also indicated that geochemical techniques might be useful in studying exchange systems in southern Florida.

Kish (2004) and Wheeler (2002b) recognized that a large number of pumice fragments and artifacts recovered from the Miami Circle might afford another opportunity to use geochemical and petrographic analyses to explore exchange systems in southern Florida (Figure 20). Prior to excavation of the Miami Circle, archeologists would occasionally report the occurrence of pumice abraders in southern Florida sites, believing they had been made from pumice clasts washed ashore from the Lesser Antilles (Wheeler 2002b:1-2). Specimens from the Miami Circle and museum collections from other sites were used in a sourcing study that considered index of refraction, petrography, and major and trace element analysis (Kish 2004). Results of the study indicate at least three sources for the pumice, two from the Gulf Coast of Mexico and the third from the Canary Islands. Most of the pumice seems petrographically and chemically similar. Review of the distribution of pumice artifacts indicated occurrence at 39 sites, primarily in southeastern and eastern Florida, and in the area around Lake Okeechobee. While most sites have only a few such artifacts, the Miami Circle produced 173 fragments of pumice, representing 121 artifacts. Wheeler (2002b) hypothesized that the large number of pumice artifacts from the Miami Circle is associated with either a major eruption or a major storm event. Considering the source of the pumice, the latter mechanism is the most likely, since volcanoes in the Mexican Gulf Coast area were most active before 4,000 years ago. The geographic distribution of pumice suggests a “bull’s eye” pattern, indicating that a large number of pumice clasts became available at one time and were then distributed throughout the exchange system. Unlike local materials, which could be difficult to discern in archeological contexts, the pumice acts like a tracer dye in a liquid system, showing the linkages in the exchange network. Not surprisingly, this pumice was present at sites in the Florida Keys, Everglades, and Miami-Dade and Broward county coasts. Interestingly, the study shows that pumice similar to that recovered at the Miami Circle also is present at sites like Fort Center and Whitebelt 1, which occur on the western and eastern sides of Lake Okeechobee, respectively. Examples of pumice from southwestern Florida were rare, and none could be located in museum collections. This suggests that ancestral Tequesta exchange networks were active during the Glades I period, and reached well into the interior of the neighboring Lake Okeechobee area.

Austin’s (2002) analysis of 1,431 chipped stone artifacts from the Miami Circle supports the above assertion that the Tequesta and their ancestors participated in interregional exchange networks. No outcrops of cherts or similar stone are found in southeastern Florida. Austin identified cherts from cobbles originating in the Tampa Limestone outcrops of Hillsborough and Pinellas counties; cherts from cobbles typical of the Suwannee and Ocala formations found in Polk, Pasco, extreme northeastern Hillsborough counties, and outcrops of the Ocala Arch; as well as non-cobble forms of the same formations and a few silicified corals from outcrops in Hillsborough, Polk, and Pasco counties. Artifact forms included numerous flakes (n=1,111), thermal shatter (n=179), cores and unmodified cobbles (n=43), hammerstone fragments (n=5), bifaces (n=17), unifaces (n=2), microliths (n=32), modified flakes (n=12), and utilized flakes (n=23). Austin (2002:18-19) indicates that the cobble-based chipped stone technology evident at the Miami Circle has only one

analog in southern and central Florida—the Fort Center site on Fisheating Creek. He hypothesizes that the Miami Circle cobbles were obtained through exchange with the Fort Center peoples.

Austin (2002:18-19) suggests that down-the-line or redistributional forms of exchange could have characterized the system in place in southern Florida. He explains that in down-the-line exchange, the chert cobbles would have moved from the source area to Fort Center and then on to the Miami Circle, while in the more formal redistributional system, one community would serve as a redistribution center for other communities within the exchange network. Austin's (2003:20) analysis leads him to conclude that a redistributional exchange system was in operation, with Fort Center serving as a center for redistribution of cobbles and other cherts. The Miami Circle site may well have had a similar role in the redistribution of pumice.

Research Questions

● What exotic materials were used in exchange among the Tequesta and their ancestors?

● What native materials were used in exchange among the Tequesta and their ancestors?

● Can elemental or isotopic analysis be used to source exchange goods in southeastern Florida?

● Can specific exchange networks be identified temporally and geographically? Can specific routes or corridors be identified based on the presence of materials at sites? Is it possible to identify canoe trails or foot path routes?

● What relationship exists between the Tequesta and their ancestors and Middle Woodland (Hopewellian) exchange networks?

● Is there evidence for earlier (Archaic) and later (Mississippian-era) exchange networks?

● What forms of exchange exist in southeastern and southern Florida? How do these patterns of exchange reflect socio-political development?

● Can sites be identified that served as centers for redistribution of certain goods?

Tequesta Art and Aesthetics

The theme Tequesta Art and Aesthetics has been identified as a regionally and nationally significant topic since some sites of southeastern Florida contain materials carved bone, antler, shell and wood artifacts that can be used to address questions of indigenous art and aesthetic systems. Models of local art and aesthetics suggest that there may be material expressions of behavior that relate to the way the Tequesta and their neighbors handled contact with other cultures, including the Spanish. This may be important in understanding broader patterns of acculturation, assimilation and resistance to culture contact. Decorated objects, especially those of bone and antler, indicate potential chronological changes in artistic forms that can be used in relative dating and that may reflect shifts in sociopolitical systems. This theme potentially falls under two of the National Park Service's Thematic Framework themes: *III. Expressing Cultural* Values, and, *Shaping the Political Landscape* (NPS 1999:82).

Evidence for Tequesta decorative arts has been limited, especially when compared with neighboring areas. The Key Marco site on Florida's southwestern Gulf Coast, likely related to the Muspa or a similar tribal group, produced carved and painted wooden masks, figureheads, and other utilitarian and ceremonial objects (see Cushing 1897; Gilliland 1975). The Fort Center site, located on the western side of Lake Okeechobee, and associated with the Mayaimi or other tribe of the area, had carved wooden bird and animal effigies in a mortuary context (Schwehm 1983; Sears 1982). Other neighboring tribal groups participated in traditions of decorated ceramics, like Safety Harbor and Weeden Island,

which are more typically associated with decorative arts in the southeastern United States. As discussed above, Glades series pottery remained relatively simple in form, with a series of distinctive (though simple) incised designs. Wheeler (1992, 1994; Wheeler and Coleman 1996), however, discovered several well-developed traditions of decorated bone work, several of which appear to have origins with the Tequesta and their ancestors.

Wheeler (1992, 1993) recognized a number of major chronological and geographic bone working traditions throughout the Florida peninsula. The earliest of these involve rectilinear designs usually carved on antler, followed by another tradition characterized by more flamboyant geometric designs incised on bone pins and other ornaments. The first of these is associated with the Middle to Late Archaic mortuary pond-cemetery tradition, and not surprisingly, is absent from southeastern Florida. Objects of the Late Archaic bone working tradition, however, are found occasionally in southeastern Florida. During the Late Archaic and Glades I periods, a distinctive carving style emerges that is a departure from the earlier traditions. This is when small, in-the-round and bas-relief carvings of animals begin to be made, usually ornamenting bone pins and pendants (Wheeler 1994:57-58) (Figure 21). This tradition of carving is well-developed by the Glades II Period, and the list of animals represented includes deer, opossum, duck, hawk or eagle, eel-like fish, rattlesnake, turtle, and shark (this creature is typically only depicted by very realistic, miniature versions of spinal column segments surmounting a bone pin). The carvings are very sensitive, naturalistic miniature portrayals. The tradition broadens to include neighboring areas, where bone animal carvings appear in later periods. Animals represented in southwestern Florida, the East Okeechobee region, and the St. Johns River area include turtle, rattlesnake, serpent, bottlenose dolphin, deer, bear, shark, stringray, pelican, turkey, shorebird, and other unidentified birds. By the Glades III Period, rare portrayals of the human form are added to the repertoire. Wheeler (1996:135) suggests that these animal carvings are related to Hopewellian imagery. The small, personal nature of the carvings is quite unlike the larger wooden carvings from Key Marco and Fort Center, though the same animals appear to be depicted. Wheeler (1996:371-372) suggests that the pervasive animal imagery is not linked only to clan totems, but also to broader beliefs regarding animal souls or “animal owner” spirits, and likely to shamanistic beliefs and ancestor worship.

Wheeler and Coleman (1996) recognized at least two other decorated bone traditions that seem to have their origins with the Tequesta and their ancestors. All of these are later traditions, primarily associated with the Glades II and III periods. The first of these is termed “peninsular geometric tradition,” referring to its ultimate widespread presence throughout much of Florida. Primary motifs include rectilinear and curvilinear forms that may have their origins in mat, textile, and featherwork. The earliest examples of these forms are found in southeastern Florida during the Glades IIc period, other occurrences are all associated with the European contact period (Wheeler and Coleman 1996:51). This suggests the Tequesta innovation of these designs had considerable influence on bone carvers in neighboring areas; also, these bone artifacts are a significant temporal marker as demonstrated by their subsequent recovery at other European contact period sites (see Mitchell 1998:223-224, 236-237). Comparison to similar designs elsewhere indicates that mat and featherwork designs are often associated with elite status individuals (Howard 1981, 1984; Robicsek 1975). The “Everglades tradition,” also defined by Wheeler and Coleman (1996:50-55), includes a broader array of motifs and is more closely associated with sites in Broward, Miami-Dade and Monroe counties. Motifs include knot-and-braid forms (Figure 21b-c), punctations, zoned-punctations, interlocking designs, loop and pendent loop, and zoned-hatched forms. Many examples of this tradition were recovered in Glades II and III period contexts at the Granada site (Richardson and Pohl 1982:136, 138). It is unclear what the meanings of these designs are, though their proliferation during the later Glades periods suggests possible correlation with evolving sociopolitical complexity.

One final group of decorated antler artifacts from the Margate-Blount site is difficult to classify (Figure 21a, d). Interviews with the excavators indicate that these objects were recovered from a “ceremonial precinct” associated with a village midden, burial mound and cemetery (see Felmley 1991:101-102; Wheeler 1992:89-90). This ceremonial precinct included intentional burials of an alligator, decapitated and coiled rattlesnakes, turtles, raccoons and other animals. The carved and engraved antlers depict a very stylized vulture and a rattlesnake (Wheeler and Coleman 1996:55, 57, 58, 60). Interestingly, the engraved designs on the rattlesnake carving are similar to stylized rattlesnake imagery found on the Citico and Lick Creek style shell disks known from very late protohistoric contexts elsewhere in the Southeast (Brain

and Phillips 1996:94-102; Muller 1966:123, 147-148). Besides the fascinating animal burials of Margate-Blount, the antler carvings suggest the Tequesta had gained some knowledge of artistic systems working in other parts of the Southeast, and had reinterpreted interesting designs in a local media and manner.

Research Questions

● Can art styles in bone and wood be more specifically tied to temporal and geographic trends?

● Can other sites (like the Granada site) be identified that contain large numbers of decorated bone artifacts?

● What relationships exist between art styles of the Tequesta and their ancestors and those of neighboring areas? What mechanism(s) are responsible for the rapid spread of particular art styles?

● How are the animal carvings of bone and antler related to carvings of Hopewellian and Mississippian cultures?

● Do changes in bone carving styles reflect changes in socio-political organization?

Sociopolitical Development

The theme Sociopolitical Development has been identified as a regionally and nationally significant topic since the Tequesta and their ancestors are one of several southern Florida groups that developed a chiefdom or incipient chiefdom based on hunting and gathering, primarily aquatic, freshwater and marine resources. Sites with potential environmental and cultural materials that can be compared to the southwestern Florida Calusa are highly significant, since models of the Calusa have been largely constructed in terms of the few socially complex, non-agricultural societies in other parts of the United States. This theme falls under the National Park Service's Thematic Framework theme *IV. Shaping the Political Landscape* (NPS 1999:82).

Information on sociopolitical organization is limited, but available in several of the Spanish accounts. Several scholars have reviewed the ethnohistoric record for indications of political hierarchy and sociopolitical relationships among the native groups of southern Florida (Goggin and Sturtevant 1964; Griffin 2002:313-327; Marquardt 1986, 1987, 1988; Widmer 1988). Goggin and Sturtevant (1964) recognized the Calusa of southwestern Florida as having a hierarchical, stratified, chiefdom-level society, similar to, but more elaborate and distinct from neighboring tribes. They recognized that, unlike similarly organized societies in most of the world, the economic basis of Calusa society rested on marine resources and not on agriculture. These two important ideas—that of a stratified society with a non-agricultural economic basis—would set the stage for later researchers like Widmer (1988) and Marquardt (1986, 1987, 1988), who have been interested in Calusa sociopolitical organization. Widmer (1988:261-265) pursued an environmental approach to the question of sociopolitical development in southwestern Florida, suggesting that reliable coastal, aquatic resources allowed for a population increase with attendant political control over the resources. Widmer (1988:278-279) argues that the complexity of the Calusa chiefdom emerged and grew in response to reliable food resources and a growing population. He suggests that the coastal adaptation began by 500 B.C., and that by A.D. 800 coastal carrying capacity had been reached and that the Calusa chiefdom extended its hegemony over interior groups at this time. In contrast to Widmer's environmental model, Marquardt (1987:111) emphasizes the "estate-based, tributary mode of production" in evidence among the Calusa in the sixteenth century. He suggests that the timing of the development of complexity is unclear, but that decentralizing and reconsolidating trends recognized in the ethnohistoric accounts of the Calusa between 1550 and 1763 may be responses to contact with the Spanish and the introduction of European goods.

Specific studies of Tequesta sociopolitical organization and development are lacking. The models of Calusa sociopolitical development discussed above, however, tend to marginalize neighboring groups like the Tequesta, Mayaimi, and Jeaga, suggesting that at times they are under the hegemony of the broader Calusa chiefdom (e.g., Marquardt 1985:64). McGoun (1981) suggested that the distribution of metal ceremonial tablets was related to the

expansion of the Calusa chiefdom. Luer (1994:184), however, demonstrated that these small, embossed, tablets of silver (with occasional examples in gold) were concentrated in the area around Lake Okeechobee and the Kissimmee River. Examples of tablets in other media, like stone and wood, also are known, and may be pre-contact predecessors of this artifact type. They are absent (except for one stone example from the Florida Keys) from the area occupied by the Tequesta. The distribution of tablets and other materials from shipwrecks, however, indicates that redistribution may have favored groups other than the Calusa. Wheeler (2000:16) has suggested that a model of chiefdoms in the protohistoric Southeast, advanced by David Anderson (1996:170-176), may be applicable to southern Florida. This model suggests that there is a cycling between simple and complex chiefdoms, as polities expand to encompass a number of independent chiefdoms into a large entity, with allegiances to a paramount chief. Limiting factors, like alliance through kinship and the economic burden of tribute, result in the dissolution of these complex chiefdoms back into independent or simple chiefdoms. The tribes of southern Florida may also be comparable to the early eighteenth century Cherokee of Georgia, Tennessee and the Carolinas, where a number of geographically distinct areas contained 10 to twelve independent towns (Schroedl 2000:204). Parallels between the two areas merits further study, perhaps akin to Marquardt's (1987) comparison of the Calusa and Aztec.

Research Questions

● Can changes in cultural patterns (e.g., mortuary practices, art styles, ceramic types) be associated with changes in socio-political organization?

● Is there evidence for development of a chiefdom level social organization among the Tequesta and their ancestors? How do estimates of population size (and other indicators used as evidence of complexity in neighboring areas) compare for the Tequesta and their ancestors? What is the temporal and geographic extent of the Tequesta chiefdom?

● Is it possible to develop models of developing social complexity for the Tequesta and their neighbors? Are models based on archeological and ethnohistoric evidence from other parts of the Southeast or Caribbean applicable to southern Florida?

Culture Contact

The theme Culture Contact has been identified as a regionally and nationally significant topic since the Tequesta are one of the first indigenous North American groups contacted by Ponce de Leon in 1513. Southeastern Florida was identified as strategically important to the Spanish early in their settlement of Florida when Spanish treasure ships and other vessels were routinely lost along this coast during storms. Despite repeated attempts to establish outposts and missions, the Tequesta and their neighbors were able to resist incursions and persist culturally for nearly 250 after initial contact. This makes European Contact Period sites of southeastern Florida highly significant, since they may afford the opportunity to understand the archeological aspects of Tequesta cultural persistence. This theme potentially falls under two of the National Park Service's Thematic Framework themes: *I. Peopling Places*, and, *VIII. Changing Role of the United States in the World Community* (NPS 1999:81, 83).

European contact with the Tequesta and their neighbors is recorded primarily in Spanish documents. The Tequesta are one of the earliest American Indian groups of North America mentioned by the Spanish. The historian Antonio de Herrera (see translation in Davis 1935) provides an account of Ponce de Leon's 1513 and 1521 exploratory trips to Florida, including a mention of a place called "Chequescha," which is likely Tequesta. Several writers have pointed out that the natives of the area were probably already familiar with the Spanish, due to illicit slave raids and from Indians fleeing the Caribbean. The Herrera account of Ponce de Leon's encounter with the Calusa indicates that there was "an Indian who understood the Spaniards, who, it was believed, must be from Hispaniola or from another island…" (in Davis 1935:20). Despite these early encounters, intensive contact did not begin until 1567 when Pedro Menéndez de Avilés founded a mission at Tequesta.

The 1567 mission at Tequesta was part of a broader plan formulated by Menéndez de Avilés to establish a permanent Spanish presence in Florida. Missionary and military outposts were established at four villages in southern Florida, including 1) Santa Lucia near modern-day Jupiter Inlet, 2) San Antonio at Carlos—modern day Mound Key, 3) Tocobago at modern-day Tampa Bay, and 4) Tequesta at modern-day Miami. Even before the mission outpost was officially established at Tequesta, the natives of the town played host to several groups of Spanish mutineers who had fled the Ais and Santa Lucia outposts to the north. The Tequesta mission was abandoned after hostility broke out between the Indians and the Spanish soldiers garrisoned there, and was reestablished briefly until being abandoned again in 1570 (Hann 2003:157, 161; Parks 1982:24-25, 37-41). The documents generated during these extended periods of contact between the Spanish and the Indians provide interesting insights into the daily lives, beliefs, economy, and sociopolitical organization of these southern Florida natives. While the Calusa are perhaps best represented in these accounts, the Tequesta figured prominently in the Spanish plans for Florida. Parks (1982) and Hann (2003) have used these ethnohistoric accounts to provide good ethnographic reconstructions of the Tequesta and their neighbors.

Anthropologists have also used ethnohistoric accounts to reconstruct the population of southern Florida and the individual tribes encountered by the Spanish. For example, Goggin and Sturtevant (1964:186-187, 209-210) cite royal cosmographer López de Velasco's 1570 population estimates of 10,000 Calusa, 1,000 Guarugunbe (Florida Keys group), 40 Cuchiyaga (Florida Keys group), and 80 Tequesta. Interestingly, Dobyns (1983:259-260) suggests that Florida native populations may have changed dramatically after the extensive small pox epidemics of 1519. He suggests that lower east coast tribes, including the Ais, Jeaga, Tequesta and Florida Keys groups should have numbered around 48,800 prior to 1520, with the neighboring Calusa numbering at 97,600 (Dobyns 1983:131-132). Widmer (1988:257-260) took a different approach to this question, by looking at site size and distribution in the Caloosahatchee and Ten Thousand Islands regions. His calculations indicate a collective population of 10,000, with population densities of 6.0 persons/km^2 for the Charlotte Harbor-Pine Island Sound area and 9.44 persons/km^2 for the Ten Thousand Islands area. Lack of temporal control, unfortunately, limits a diachronic approach to the problem, though Widmer's figures are more consistent with the ethnohistoric record. Wheeler et al. (2002:146) modeled population in a similar way for the Jeaga and Jobé of modern-day Palm Beach County; the result was a population estimate of 2,225 people for coastal Palm Beach, with a density of 8.9 persons/km^2. Similar attempts to model population of the Tequesta may be more sensitive to diachronic changes, since the decorated Glades pottery series allows sites to be more easily placed chronologically.

Relationships with neighboring groups also are addressed in some of the mid-sixteenth century accounts of the Tequesta. Several of the chiefs of the various southern Florida polities appear to have been related, through blood or marriage. Chiefly alliances through marriage seem to have been quite important; for example, there is a French account of the natives of the Lake Okeechobee area intercepting the daughter of Oathchaqua, an Ais Indian chief of the Atlantic coast, while she and her party were traveling to meet her intended, the Calusa chief (Bennett 1975:111-112). Likewise, the Tequesta chief appears to have been related to the Calusa chief, since after Pedro Menéndez de Avilés alliance (through marriage) to Carlos, the Tequesta protected Spanish shipwreck victims and mutineers within their territory (Barrientos 1965:120; Solís de Merás 1964:210). These alliances appear to have created a system of tribute or redistribution. Later in time, shipwreck survivor Jonathan Dickinson (in Andrews and Andrews 1945:31-32) notes an obligatory relationship between the chief of Jobé (Jupiter Inlet area) and the paramount Ais chief. These relationships, however, appear to have been very tenuous. Solís de Merás (1964:222) documents a situation in which the Calusa chief demanded that the Tequesta hand over for sacrifice several Spanish mutineers. When the Tequesta refused, the Calusa sent warriors to kill or retrieve the Spanish, but these agents were in turn killed by the Tequesta.

Considering the significance of alliances forged from marriages, it is not surprising to find that the relatives of the chief were important among the Tequesta and their neighbors. For example, Hann (2003:153-154) notes that Menéndez de Avilés, upon his first visit to the Calusa, had rescued a young daughter of the Tequesta chief who was apparently being held as a hostage of sorts. The accounts of the same time period mention the prominence of Don Diego, the brother of the Tequesta chief, who was sent for baptism and education to Spain by Menéndez de Avilés (Hann 2003:157-158). Upon his return, the Spanish priests hoped that Don Diego would help in reestablishing missions;

despite his influence among the Tequesta and other neighboring groups, this effort was unsuccessful. Interestingly, Hann (1992:194-195) notes that leadership terms among the peoples of southern Florida are significantly different from those used by Timucuan and Apalachee peoples of northern Florida.

Accounts of the Tequesta become infrequent after the flurry of contact with the Spanish in 1566-1570. Hann (2003:162-163) notes a number of cases where the Tequesta killed shipwreck victims, and others where the Spanish authorities in St. Augustine were able to ransom the captives. Hann (2001) discusses the account of Carmelite friar Andres de San Miguel, who sailed through the area in 1595. San Miguel mentions an encounter with Chief Don Luis, who Hann (2003:163) suggests may well have been the Tequesta leader of that time. Interestingly, the name "Tequesta" seems to fall into disuse in Spanish documents after 1600. Around 1600 there are a number of documents and at least one map that refer to the natives of the "Bocas of Miguel Mora," which apparently was a reference to the group occupying the Biscayne Bay area (Lyon 1967:2b; Seckinger 1965:386-387; Swanton 1922:342-343). These documents are related to Spanish Governor Ybarra's attempts to gain favor with the natives of southern Florida in order to assure the safety of shipwreck victims. The accounts mention Chief Don Luis, who apparently visited the governor in St. Augustine with a contingent of other native leaders.

Bishop Díaz Vara Calderón describes the area in 1675, and indicates that the people of southern Florida are "13 tribes of savage heathen Carib Indians, in camps, having no fixed abodes, living only on fish and roots of trees" (in Wenhold 1936:11-12). Among these he lists "Vizcaynos," apparently a reference to those natives living on Biscayne Bay. Following the collapse of the Spanish missions in north Florida, increasing attacks and slave raids by Uchise and Yamasee Indians led a large group of native Floridians to petition for evacuation to Cuba (Parks 1982:52-53). Two-hundred and seventy Indians, including the leaders of Carlos, Jove, Maimi, Concha, Muspa, and Rioseco, moved to Cuba in 1711, though many died there of disease and the remainder returned to Florida. Several accounts of natives of the Florida Keys and southeast coast of the 1720s-1730s mention the Chief Don Diego (Charlevoix 1761:326-327, 330-331; Hann 1991:394, 396-397). When the Spanish reestablish a mission in 1743 the site appears to be within the territory of the Tequesta, though the inhabitants of the mission town are described as remnants of three groups—Keys, Carlos, and Bocaraton (Hann 1991:420). Goggin (1940b:278) suggests that "Rio Ratones" may refer to the Little River of northern Miami-Dade County. The accounts of this late mission attempt are fascinating, since they demonstrate considerable historical continuity with the archeological record and earlier accounts of the sixteenth century. Final mentions of the natives of southern Florida, however, indicate that in 1763, as the territory was turned over to the British, most of the surviving Indians moved to Cuba with their Spanish allies (see Adair 1775:134; Romans 1961:194).

Recent review of the European and Indian interaction in southern Florida reveal several important trends and patterns. Unlike northern Florida, where most natives became incorporated into the mission system, missions likely had little long term impact on the Tequesta and their neighbors. Also, the trend that Hann (2003:162-163) notes regarding the decline in use of the term "Tequesta" following the close of the sixteenth century is mirrored in the area immediately to the north, where the tribal designation "Jeaga" is used almost exclusively in the sixteenth century and then is supplanted by a number of terms, including "Jobe." Wheeler and Pepe (2002:237-238) argued that this change may reflect actual changes in local tribal and village organization; the influx of materials recovered from shipwrecks, which were prevalent in the area in the seventeenth and early eighteenth century, may have been responsible for altering traditional relationships between villages, allowing some to assume more prominent roles in the local exchange systems. This may be the case with the main village of the Tequesta and other villages in the immediate vicinity. A review of cartographic sources reveals few maps that designate the village of Tequesta, though a number of settlements are shown in the modern-day Ft. Lauderdale and Miami areas (Wheeler and Pepe 2002). By the mid-seventeenth century a number of mapmakers indicate the southern part of the Florida peninsula as "Tegesta Province" (Wheeler and Pepe 2002:225). Despite some apparent changes in sociopolitical organization due to the influx of shipwreck material, the ethnohistoric record indicates patterns of considerable conservatism among the Tequesta and their neighbors (see Hann 2003:175-177). Similar patterns were detected by Wheeler (1996:364-366) in his study of artistic traditions in southern Florida; he concluded that while new mediums and designs might have been introduced to the native artists of the area, they were quickly incorporated and reinterpreted in traditional ways. Despite the strong adherence to

traditional ways and the ability to incorporate new ideas, material, and motifs, the Tequesta and their neighbors were likely doomed by the collapse of the Spanish mission system in northern Florida between 1702 and 1704. Several writers mention the impact of slave raiding by the English and their Indian allies on the populations of the Florida peninsula (for example, see Thomas Nairne's account in Moore 1988:75, and the Herman Moll map of 1720, which includes a narrative of such a raid, in Wheeler and Pepe 2002:223). Hann (1988:301-304) indicates that many of the Florida natives taken as slaves were kept in the Carolinas, while others may have been exported to British colonies in Barbados or New England. As noted above, writers like Romans (1961:194) document the departure of the last remnants of the southern Florida natives, noting that 80 families of the "Caloosa nation" left for Cuba with their Spanish allies. Adair (1775:134) is even more specific, when he states, "the Muskoghe who have been at war, time out of mind, against the Indians of Cape Florida [near present-day Miami], … at length reduced them to thirty men, who removed to the Havannah along with the Spaniards."

Despite the accounts that indicate a close to the native traditions of southern Florida, it seems likely that some descendants of the Tequesta and their neighbors persisted in southern Florida after 1763 (Goggin 1940b:22). For example, Swanton (1922:344) felt that mentions of "Spanish Indians" in southern Florida during the late eighteenth and early nineteenth centuries were likely remnants of the Calusa who remained in Florida. Both Neill (1955) and Sturtevant (1953) further investigated the link between the "Spanish Indians" and the native peoples of southern Florida (i.e., Calusa, Tequesta, etc.). Sturtevant (1953:64) concludes that the "Spanish Indians" might have been Choctaw, a Calusa remnant, or an independent Seminole band. He indicates that the latter hypothesis is the strongest, since Seminole tradition identified Chakaika and his band (considered Spanish Indians) as Mikasuki Seminole. Neill (1955:53) provides additional evidence to support the idea that the "Spanish Indians" were not remnant native groups, but rather Mikasuki Seminole who were closely involved with the Cuban fishing industry that utilized southern Florida coasts part of the year. Despite the apparent resolution of the identity of the "Spanish Indians," several sources indicate that the eighteenth century Seminole were aware of the Florida natives who preceded them. For example, William Bartram (in Waslekov and Braund 1995:255-256) interviewed an older Seminole leader during his travels through Florida (1773-1778) who recalled the "Calos ulges" of the Caloosahatchee River area, noting that they were a remnant of the original denizens of the area. Frances Densmore's (1956:59-60, 90-91, 211) study of Seminole music indicates that the Seminole and Calusa may have been well acquainted with one another, and provides several songs that the former group attributes to the Calusa. This suggests that some natives of southern Florida—like remnants of the Calusa and Tequesta—may have been closely associated with the Seminole early in their history in the state.

Research Questions

● How do the Tequesta change after contact with the Europeans early in the sixteenth century? What cultural patterns are preserved?

● Can Tequesta archeological sites be identified that have evidence of European contact? Is it possible to recognize patterns of culture change or continuity within the material assemblages of these sites?

● Are additional Spanish documents preserved in archives that can shed light on the culture and character of the Tequesta?

● What significance do European contact period place names and tribal names have? Is it possible to recognize patterns of socio-political change in terminology used to denote the natives of southeastern Florida? Are these trends evident in neighboring areas? How do these trends compare with anthropological theory on culture contact and culture change?

● What impact or influence did the introduction of European shipwreck materials have on the Tequesta? How does this compare with the introduction of shipwreck material in neighboring areas?

Summary

The ten themes, NPS thematic framework themes, and associated research questions identified and discussed above for the Tequesta and their ancestors help to form a basic understanding of this native group, their distinctiveness, significance in current and future research, and place in broader patterns of Florida and United States history. Until recently, the Archaic (and possibly earlier) origins of the Tequesta were poorly understood. The recent identification of Middle and Late Archaic sites in southeastern Florida is significant in understanding the development and origins of the Tequesta, and may have implications for research in the development of Everglades tree islands. Unlike neighboring areas, where Late Archaic sites are characterized by fiber-tempered pottery, this artifact type is rare or absent at contemporary sites in southeastern Florida. This has led to a hypothesized Everglades Archaic, which should be the subject of further study. The development of the decorated Glades series of pottery also is significant, since it has allowed for cross-dating of many sites. Future research into the design motifs and shifts in patterns of decoration may help in answering questions about the meaning of the geometric decorations and possible links to ceramic traditions in neighboring areas. Archeologist John Griffin suggested a possible link between the Glades ceramic trajectory and settlement pattern shifts. Griffin's observations should be re-evaluated with new site data collected since the 1980s and through Geographic Information Systems (GIS) models.

Other aspects of material culture that lend to the distinctiveness of the Tequesta and their ancestors are well-developed industries in bone and shell. Studies of bone artifacts have supported archeologist John Goggin's assertion that the culture of southeastern Florida demonstrates considerable continuity with earlier, Archaic traditions. Future studies should address the possible relationships between the bone working complexes of the St. Johns River Archaic (Mount Taylor culture) and that of southeastern Florida. Shell tool assemblages of the Tequesta and their ancestors are dominated by tools made from the lip of the large, queen conch (*Strombus gigas*). This is largely a biogeographic coincidence, since the Tequesta peoples occupied the one area of mainland North America where the *Strombus* conch occurs at the limits of its more tropical range. The reliance on the *Strombus* conch, however, exemplifies the Tequesta relationship with tropical species, which is not known in neighboring areas. Paleobotanical research has shown that the Tequesta and their ancestors targeted six specific subtropical fruit species, which formed an important part of their diet. This is different from neighboring groups who occasionally used some of these species.

Studies of human remains from southeastern Florida demonstrate a generally healthy population, and no evidence has been found for major shifts in nutrition or health when comparing Archaic and more recent skeletal assemblages. Burial patterns suggest a possible dichotomy between coastal and inland sites, since coastal sites typically have associated burial mounds and cemeteries, while cemeteries predominate at inland sites. Burial patterns also are distinct from neighboring areas (e.g., Ten Thousand Islands, Florida Keys), where burial mounds are more common. Despite the differences between the Tequesta and neighboring groups, there are indications of relationships through exchange networks, some shared artifact types, and the construction of earthworks and long-distance canoe canals. The Tequesta and their ancestors apparently participated in regional and long-distance exchange networks, contributing items like pumice (obtained from beach flotsam and jetsam), marine shells, shark teeth, and dried whale meat (based on ethnohistoric accounts). In return they received items like chert for chipped stone tools, basaltic ground stone celts, and galena. Archeologist Robert Austin's research into the cobble technology of chipped stone tools from the Miami Circle site indicate the exchange networks may have involved down-the line or redistributional systems. Research at the Miami Circle site indicates that the Tequesta and their ancestors participated in the Middle Woodland Hopewellian exchange network, which linked numerous cultures across the southeastern and midwestern United States.

Studies of Tequesta art and aesthetics also indicate that Hopewellian animal symbolism had parallels in small bone and antler carvings found in the area. The Tequesta may have originated several bone carving art styles later in time, which spread throughout Florida and can be used as chronological markers. Interestingly, patterns of artistic conservatism evident in southeastern Florida are detected in the ethnohistoric accounts of the native's dealings with the Europeans and each other. The Tequesta were one of the first groups of natives of mainland North America encountered by the Spanish in the early sixteenth century. Ethnohistoric accounts demonstrate considerable continuity

with data collected from pre-European Contact Period sites. Accounts also indicate that different times the Tequesta resisted and acquiesced to their neighbors the Calusa. Evidence suggests that the Tequesta were one of several groups that had developed a chiefdom-level social organization prior to European Contact. Further study is needed to explore this archeologically.

F. ASSOCIATED PROPERTY TYPES

Significance of the Tequesta and their Ancestors

The Tequesta and their ancestors represent a significant culture within the history of the United States. Not only were they recorded in one of the first accounts of North America (Davis 1935; True 1944b), their cultural patterns persisted for over 250 years following European Contact. This is unusual in Florida and the Southeast, where American Indian groups changed drastically after the introduction of European diseases and resettlement in missions. Persistence after contact seems to be a distinguishing feature of most of the native groups of southern Florida, though ethnohistorical and archeological evidence suggests that distinct cultural patterns of each group (i.e., Tequesta, Calusa, Jeaga, Ais) governed their responses to contact and their ways of dealing with new technologies and cultural patterns. Interestingly, independent studies by Hann (2003:175-177) and Wheeler (1996:364-366) have documented the cultural conservatism exhibited in southern Florida, which likely helped in this cultural persistence after contact. Wheeler's (1996:364-366) study of prehistoric art identified three important processes underlying the aesthetic and cultural systems of the American Indians of peninsular Florida—traditionalism, reinterpretation and creativity. The Tequesta may provide a particularly good case study of these processes. Archeological excavation demonstrates that the patterns of Tequesta life developed during the Archaic (perhaps even the Early Archaic) in sync with the subtropical environment of southeastern Florida and the Everglades. The relationship of the Tequesta to the Everglades is perhaps one of the most significant aspects of this group. The Everglades has been recognized as a virtually unique environmental system and archeological evidence is now demonstrating that the Tequesta and their ancestors may have had an active role in the development of tree islands, which support characteristic upland subtropical hammock ecosystems of the Everglades. While the unique adaptation of the Tequesta to subtropical southeastern Florida had long earned them a reputation for parochial and conservative ways, new evidence indicates that they participated in regional and long-distance exchange networks. Materials controlled or contributed to exchange included pumice and *Strombus* conch shells; in return they obtained chert, basaltic axes, galena, and copper. The ancestors of the Tequesta even participated in the Middle Woodland Hopewellian exchange network, as evidenced by some of the exchange goods, as well as ceramic platform pipes that are replicas of Hopewellian pipes. The Tequesta role in exchange is significant, and current and future studies of basaltic axes, chipped stone, and pumice artifacts may provide new information on routes of exchange and exchange patterns. The relationship between changes in settlement pattern and changes in Glades decorated ceramics that occurs around A.D. 1110-1200 is another significant aspect of the Tequesta and their ancestors. As John Griffin (1988:327) notes in his study of Everglades National Park, sites of southeastern Florida and the Everglades are significant since they represent a largely intact settlement system. With the advent of Geographic Information Systems (GIS) new approaches to study of settlement pattern may help elucidate cultural changes that may have occurred during the transition from Glades II to Glades III periods (ca. A.D. 1200). Study of archeological sites from this period may be particularly significant, since they may harbor evidence for development of increasing complex socio-political organization. This is particularly significant, since the Tequesta were one of several powerful, non-agricultural chiefdoms of southern Florida when the Spanish arrived in the sixteenth century. Most studies of socio-political complexity in southern Florida has focused on the Calusa of southwestern Florida, however, the Tequesta appear to have been a significant rival for power and studies of Tequesta socio-political complexity may be rewarding. Some indications for complexity among the Tequesta and their ancestors include earthwork building, temple mound construction, and the construction of the canoe canals at Cape Sable.

NHL Thematic Framework

Section E introduced ten major themes and identified appropriate NPS thematic framework themes that can be used for understanding archeological sites associated with the Tequesta and their ancestors. These themes also form the core of the NHL thematic framework used in evaluating the significance of these sites. Each theme and its appropriate NPS thematic framework theme is listed again below and each is addressed in a special sub-section of the associated property types here in Section F:

Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places*)

Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)*
Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*
Plant and Animal Use among the Tequesta (*NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VII. Transforming the Environment)*
Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institutions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*
Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)*
Exchange Networks (*NPS's Thematic Framework theme: V. Developing the American Economy)*
Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape).*
Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)*
Culture Contact *(NPS's Thematic Framework themes I. Peopling Place, and VIII. Changing Role of the United States in the World Community)*

Criteria for the Evaluation of Tequesta and their Ancestors Sites

Information contained in this theme study may be used to evaluate significance of archeological resources of the Tequesta and their ancestors for designation of National Historic Landmarks and as properties possessing National, State, and Local significance in the National Register of Historic Places. Archeological sites and districts of the Tequesta and their ancestors considered for National Register nomination must possess integrity of location, design, setting, materials, workmanship, feeling, and association at national, state or local levels of significance relating to one or more of the following criteria:

A Association with events, activities or patterns;

B Associations with important persons;

C Distinctive physical characteristics of design, construction, or form; or

D Potential to yield important information.

NRHP eligibility for archeological sites is typically determined by Criterion D, the potential of a property to yield information important to understanding the past (Grumet 1988). Properties related to the Tequesta and their ancestors theme should typically be evaluated for NRHP status under Criterion D, whether they "have yielded, or may be likely to yield, information important in prehistory or history."

National Historic Landmark criteria reflect similar but more rigorous evaluative framework appropriate for properties possessing the potential to contain information of the highest level of national significance. Guidelines for meeting these criteria are found in 36 CFR 65.4, and are as follows:

1 Are associated with events that have made a significant contribution to, and are identified with, or that outstandingly represent, the broad national patterns of United States history and from which an understanding and appreciation of those patterns may be gained; or

2 Are associated importantly with the lives of persons nationally significant in the history of the United States; or

3 Represent some great idea or ideal of the American people; or

4 Embody the distinguishing characteristics of an architectural type specimen exceptionally valuable for a study of a period, style or method of construction, or that represents a significant, distinctive and exceptional entity whose components may lack individual distinction; or

5 Are composed of integral part of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptionally historic or artistic significance, or outstandingly commemorate or illustrate a way of life or culture; or

6 Have yielded or may be likely to yield information of major scientific importance by revealing new cultures, or by shedding light upon periods of occupation over large areas of the United States. Such sites are those that have yielded, or which may be reasonably expected to yield data affecting theories, concepts, and ideas to a major degree.

Resources associated with the Tequesta and their ancestors, like all other archeological properties, in particular must address Criterion 6 in order to be nominated as National Historic Landmarks. Therefore, NHL designation additionally requires that information from such sites must be "of major scientific importance." NHL nominations must address two questions:

1. What information is the site likely to yield?

2. Is the information nationally significant?

Establishing Significance

To be considered eligible for National Historic Landmark status in this multiple property listing, a site of the Tequesta or their ancestors must demonstrate 1) location within the defined geographic boundaries, 2) research potential of national significance, 3) appropriate dating, and 4) high integrity.

1) To be considered under this multiple property listing, a site should be located within the area occupied by the Tequesta and their ancestors. This includes the Atlantic Coastal Ridge in Broward and Miami-Dade counties, as well as the adjacent Everglades in those counties as well as in Monroe County. Small portions of the Everglades are present in extreme southwestern Palm Beach County. Sites located in this area should be considered as well.

2) Archeological investigations and/or mapping should demonstrate that sites of the Tequesta and their ancestors have the potential to contribute to a better understanding of the prehistory of southeastern Florida and a better understanding of the prehistory of the United States. Research potential can be identified from the research questions provided from the Florida State Historic Context for the Glades Culture or the cultural contexts discussed in Section E. Sites that are nationally significant should contain patterns that are unique or unusual or relate to broader patterns of prehistory and American Indian history.

3) Archeological investigations should demonstrate that the Tequesta site contains appropriate diagnostic ceramic, shell, bone or stone artifacts identified with southeastern Florida (see Section E). Pottery should include sand-tempered plain and/or decorated sherds of the Glades series. Archaic sites will likely not contain ceramics, even if they are coeval with Orange Period sites in neighboring areas. Radiocarbon dates should place the site within the Archaic or Glades periods. Sites dating to post-A.D. 1763 are likely not associated with the Tequesta and their ancestors and should be nominated under other cultural contexts not included in this cover (e.g., Seminole sites should be nominated under another, appropriate cover).

4) Sites eligible for listing should exhibit high integrity. Some deterioration is likely to have occurred due to natural and anthropogenic factors, but the site configuration and contents should remain well preserved. Larger sites can endure greater disturbance and still harbor significant deposits, while smaller sites are more susceptible to damage (see Bense and Mattick 1994). Carr (2002:202) discusses the effects of fire on Everglades sites, noting that fires can destroy and deflate once thick cultural deposits. Periodic wetting and drying of deposits also is likely to degrade carbonized remains.

Carr (2002:203) also points out that wetland restoration and mitigation efforts may adversely impact Everglades archeological sites by demucking areas that potentially contain wetsite resources. To be eligible for NHL nomination, a Tequesta site must minimally exhibit, through archeological investigations and/or mapping, that deposits are intact and that a significant amount of archeological remains are undisturbed for future research investigations.

Levels of Significance

Sites of the Tequesta and their ancestors may be designated at three progressive levels of significance. Some sites are significant at the local level. These sites contain information that contribute to understanding of local patterns, but lack the artifacts, ecofacts, or features that relate to broader regional or national patterns. For example, a tree island site might be significant at the local level since it contains well-preserved faunal material, but does not appear to contain other data sets that might relate to broader regional or national patterns. Sites significant at the regional level contain information that relates to broader regional cultural patterns. For example, sites that have constructed mound features or earthworks may be significant at the regional level, since questions related to mound construction and earthwork building extend to both the regional and national levels. The differences or similarities of constructed mound or earthwork features among the Tequesta and their ancestors and other areas may be important in understanding regional traditions of earthwork construction. Sites that help in understanding regional exchange patterns also may be significant at the regional and national levels. These sites may help in testing models of exchange and/or may have evidence of long-distance exchange. Likewise, sites that contain recognizable structural features may be significant at regional and national levels of significance, especially if they contribute to understanding of aesthetic or architectural patterns that are typically difficult to discern or share attributes with neighboring or distant cultures.

F1.1 Name of Property Type: Accretionary Middens, Shell or Earth, and Black Earth Middens

F1.2 Description:

Accretionary Midden sites include features, artifacts, ecofacts, and refuse accumulated from residential and habitation activities. As such, these sites represent the archeological manifestation of daily life. Features that might be contained in a midden include storage and refuse pits, posts and postmolds from structures, burials, and artifact caches. Middens also preserve faunal and floral material and may harbor artifact concentrations related to activity areas or specific patterns of refuse disposal. Other artifacts typically found in middens of southeastern Florida include marine shell tools and ornaments; ceramic sherds; and bone tools and ornaments.

Throughout southern Florida, Accretionary Midden sites take at least two major forms: those dominated by shell (freshwater or marine species) and those composed of black, organically stained earth (black earth) that contain little to moderate amounts of shell. Interestingly, most of the Accretionary Midden sites in southeastern Florida are black earth middens, though some have large, discrete lenses of clam or oyster shell. Everglades tree island sites are typically black earth middens with dense deposits of faunal bone. Even coastal habitation sites are typically black earth middens, with lenses of marine shells. This is in contrast to neighboring areas occupied by non-Tequesta peoples, where shell middens and shell mounds are well represented. Shell middens are quite common in the Ten Thousand Islands and in southwestern Florida, and are common in the East Okeechobee Area.

Athens (1983; also see Griffin 2002:277-278), in his analysis of Big Cypress Swamp settlement patterns, recognized three types of Accretionary Midden site: 1) Primary habitation sites are middens that contain one or more refuse mounds produced through extensive accumulation of midden or refuse material; 2) Secondary habitation sites are midden accumulations more than 20 cm thick, but lack refuse mounds; and 3) Resource procurement and processing stations are middens less than 20 cm in thickness, exhibiting occasional and subsequent periods of use. Griffin (2002:277-278) compares this typology to one developed by Widmer (1988:256-257) for analysis of settlement patterns in southwestern Florida, which recognized large nucleated villages, smaller villages, and hamlets or collecting stations. Griffin (2002:278) concludes that Everglades sites follow a similar typology.

F1.3 Significance

Accretionary Midden sites may be significant under National Register Criterion D and under National Historic Landmark Criterion 6. These sites are significant because they contain information on chronology, subsistence, settlement patterns, mortuary patterns (in some cases, see Cemetery sites below), economy, technology, structure and house pattern/type, refuse disposal, and sociopolitical organization. Sites with preservation of pollen and floral material may be especially important, since paleobotanical investigations have revealed some definite patterns and trends in this area. Sites with data on architecture also are especially significant, since this aspect of Tequesta life is not well known or studied. Sites that have evidence of European contact (Glades IIIc Period) also are significant, since they may allow for study of the interaction between the two groups and any changes that may have occurred.

F1.4 NHL Thematic Framework Elements

Accretionary Midden sites have the potential to answer questions related to many of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Some middens may preserve evidence associated with the Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places)* —this is a nationally significant theme, since the Everglades seems to have harbored one or more distinct expressions of the Archaic, including an aceramic Archaic that is quite different from the fiber-tempered pottery tradition expressed in Archaic cultures in neighboring parts of the Southeast. The relationship between the aceramic and ceramic Archaic cultures may help in addressing broader questions of the origins of pottery and differences in social organization among coeval Archaic peoples.
2) The theme Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)* may be addressed through ceramic assemblages from Accretionary Middens. In general, this theme is most associated with sites evaluated at local and regional significance, however, some of the ceramic styles associated with the Tequesta and their ancestors, like Surfside Incised, may be related to broader Mississippian ceramic traditions. Sites with large assemblages of Surfside Incised may be nationally significant because of this possible association.
3) Individual Accretionary Middens may be associated with the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*, especially if they contain evidence of American Indian dwellings or other structures, if they exhibit a distinctive or intentional site plan, or if they are related to other sites and can be understood in terms of a settlement group or settlement system. This latter element is exemplified in the potential Pine Island-Long Key Archeological District, where a large number of sites are concentrated on a unique and unusual landform. Sites with evidence of American Indian architecture are extremely rare in southeastern Florida (and in much of the state), suggesting national significance for these sites. The Miami Circle at Brickell Point is a unique example of such a site, where post holes are preserved in limestone bedrock. Sites with evidence for architecture can be compared with other such sites in adjacent areas of the Caribbean, and southeastern and midwestern United States. Ethnographic studies indicate that dwellings often contain clues to broader patterns of cosmology and social organization, making all examples highly significant.
4) Plant and Animal Use among the Tequesta (*NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VII. Transforming the Environment)* is another theme associated with Accretionary Midden sites where preservation of paleobotanical and zooarcheological specimens usually occurs. This theme is most likely to be associated with local and regional significance.
5) Accretionary Middens may contain materials associated with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institutions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*, but this theme is best addressed through Burial Mound sites and Cemetery sites discussed below.
6) Accretionary Middens may be associated with earthwork sites, but the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)* is best addressed through Temple Mound sites, Prehistoric Earthwork sites, and Constructed Habitation Mound sites discussed below.
7) The theme Exchange Networks (*NPS's Thematic Framework theme: V. Developing the American Economy)*

is also associated with Accretionary Middens where materials associated with local, regional and long-distance exchange may be preserved. In many cases, this theme may be associated with sites significant at the local and regional level, but in some cases may contribute to a site's national significance. For example, sites that contain materials like copper or galena are associated with patterns of long-distance exchange. These sites are significant in understanding broader patterns of exchange throughout the Southeast and Midwest. Some Accretionary Midden sites may harbor exchange materials that allow further theoretical discussion of the types of exchange that occurred amongst the Tequesta and their neighbors. These sites are highly significant, because they allow for modeling of regional exchange networks and may contribute to a broader understanding of American Indian exchange systems in the United States.

8) Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)* is another theme tied closely to Accretionary Middens, where carved bone and shell artifacts are typically encountered. Sites producing large numbers of decorated artifacts may be significant at the regional or national level, especially if design motifs can be linked to broader patterns of artistic expression, chronology, exchange, or demographics.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Accretionary Middens, in order to address questions of demography, changes in settlement patterns, interaction with the environment, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States.
9) Some Accretionary Middens contain the rare evidence of Indian-European contact. While several of the sites listed in Table 6 have produced artifacts from this time period, little study has been devoted to questions of contact and the resulting changes. Sites associated with the theme Culture Contact *(NPS's Thematic Framework themes I. Peopling Place, and VIII. Changing Role of the United States in the World Community)* may be nationally significant, especially if they contain features or artifacts that can be used to address broader questions of Indian-European contact in adjacent parts of the Southeast. Initial documentary research shows that the Tequesta may have adopted specific strategies, related to deeper cultural patterns, to deal with incursions by the Spanish. This may bring an important perspective to studies of contact and culture change in other parts of the Southeast, where natives had to deal with changes brought by the Spanish mission system.

F1.5 Registration Requirements

For Accretionary Midden sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible. Bense and Mattick (1994:12-13) note that larger midden sites within the upper St. Johns River area may exhibit considerable disturbance, yet still harbor significant deposits. The same is clearly true of Accretionary Midden sites in southeastern Florida: at the time of excavation, both the Granada and Miami Circle at Brickell Point sites had been reduced from their original extent, and yet produced significant information. As Bense and Mattick (1994:13) note, smaller sites may be more vulnerable to disturbance, since they are thinner and smaller in extent. Some Accretionary Midden sites may be burned or have evidence of extensive burning, which can significantly reduce the potential to produce important information. Accretionary Midden sites need to have intact, uncontaminated materials that can be dated via a variety of methods in order to demonstrate their age. Nominations of Accretionary Midden sites should be accompanied by a topographic map documenting the size and shape of the site (including plan and elevation), data on stratification (if excavations have been made or old profiles are available for study), data on burial patterns within the site (if available), groups (at least 3) of radiocarbon dates demonstrating site antiquity, and analysis of cultural remains (if any have been recovered or are available for study).

Despite the ability to contribute significant information to many of the ten theme study specific NHL themes and the NPS thematic framework themes discussed above, only a few Accretionary Midden sites will be considered significant at the national level. These nationally significant Accretionary Midden sites should have materials that can answer or address

questions associated with three or more of the NHL study specific themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Accretionary Midden site type, have unique or unusual features or components, and exhibit a high level of integrity.

F2.1 Name of Property Type: Knoll sites

F2.2 Description:

Carr et al. (1991:125-126) identified Knoll sites during their survey of western Broward County in 1990-1991. They explain that Knoll sites are small, natural elevations found in some parts of the eastern Everglades; they provided dry ground during the Late Archaic (circa 3000-1000 B.C.), but were ultimately covered by rising water levels. The Knoll sites were used by Late Archaic peoples for habitation, subsistence activities, and in some cases, burials. Most of these sites are only 50 to 70 cm above the surrounding land, with a thin mantle of soil between 10 and 75 cm thick. Carr et al. (1991:91) describe the Cleveland Clinic site (8BD2122) as an example of a Knoll site. This site is located on a rocky knoll and is roughly peanut-shaped, approximately 30 m at its narrowest point and approximately 1 m above the surrounding terrain. Faunal remains of bone (fresh water and marine species) and fresh water snail shells were recovered from shovel tests along with limestone pebbles. Like other sites with similar assemblages, Carr et al. (1991:91,114) suggest a Late Archaic temporal assignment.

F2.3 Significance

Knoll sites are extremely significant and represent a type of site only recently recognized within the eastern Everglades Knoll sites may be significant under NRHP Criterion D and/or under National Historic Landmark Criterion 6. These sites represent occupation dating to the Late Archaic, which has been poorly known within the area historically occupied by the Tequesta and their ancestors. Knoll sites will likely be very important in understanding the earliest widespread occupation of the area. The lack of fiber-tempered pottery at Knoll sites needs to be further investigated as well. The lack of this pottery type, one of the main indicators of Late Archaic occupation, may be related to the co-existence of several Archaic traditions within southern Florida.

F2.4 NHL Thematic Framework Elements

Knoll sites have the potential to answer questions related to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Knoll sites are closely associated with the Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places*) —this is a nationally significant theme, since the Everglades seems to have harbored one or more distinct expressions of the Archaic, including an aceramic Archaic that is quite different from the fiber-tempered pottery tradition expressed in Archaic cultures in neighboring parts of the Southeast. The relationship between the aceramic and ceramic Archaic cultures may help in addressing broader questions of the origins of pottery and differences in social organization among coeval Archaic peoples.
2) Knoll sites rarely have ceramic artifacts, so are nominally related to the Development of Glades Pottery theme *(NPS's Thematic Framework theme III. Expressing Cultural Values).*
3) Knoll sites may be significant, at least locally and regionally, in understanding early aspects of the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*. Archaic Period settlement in southern Florida is poorly known, so Knoll sites may be significant in modeling settlement during this time period.
4) Plant and Animal Use among the Tequesta *(NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VIII. Transforming the Environment)* is another theme associated with Knoll sites where preservation of paleobotanical and zooarcheological specimens may occur. This theme is most likely to be associated with local and regional significance.

5) Knoll sites may contain materials associated with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institituions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*, but this theme is best addressed through Burial Mound sites and Cemetery sites discussed below.
6) Knoll sites do not seem to be closely associated with earthwork sites, therefore, the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)* is best addressed through Temple Mound sites, Prehistoric Earthwork sites, and Constructed Habitation Mound sites discussed below.
7) Knoll sites do not seem closely associated with the theme Exchange Networks *(NPS's Thematic Framework theme V. Developing the American Economy)*, though some Knoll sites may produce chipped stone materials that could be important in understanding earlier exchange networks and chronology.
8) Knoll sites do not seem closely associated with the theme Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Knoll sites, in order to address questions of demography, changes in settlement patterns, interaction with the environment, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States.
10) Knoll sites do not seem closely allied to the theme Culture Contact *(NPS's Thematic Framework themes: I. Peopling Places and VIII. Changing Role of the United States in the World Community)*.

F2.5 Registration Requirements

For Knoll sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible. Some Knoll sites may be burned or have evidence of extensive burning, which can significantly reduce the potential to produce important information. Knoll sites need to have intact, uncontaminated materials that can be dated via a variety of methods in order to demonstrate their Archaic age. Nominations of Knoll sites should be accompanied by a topographic map documenting the size and shape of the site (including plan and elevation), data on stratification (if excavations have been made or old profiles are available for study), data on burial patterns within the site (if available), groups (at least 3) of radiocarbon dates demonstrating site antiquity, and analysis of cultural remains (if any have been recovered or are available for study). Additional information on the geological origins of the limestone knolls would be significant, as well.

Despite the ability to contribute significant information to some of the ten theme study specific NHL themes and their appropriate NPS thematic framework themes discussed above, only a few Knoll sites will be considered significant at the national level. These nationally significant Knoll sites should have materials that can answer or address questions associated with three or more of the NHL themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Knoll site type, have unique or unusual features or components, and exhibit a high level of integrity.

F3.1 Name of Property Type: Burial Mound

F3.2 Description:

Carr (1981:8, 15) recognizes three types of constructed mounds in southeastern Florida: sand mounds, rock mounds, and mounds constructed of midden soil or dirt (also see Felmley 1991:54). Burial Mound sites of each type are extremely rare within the area occupied by the Tequesta and their ancestors. Carr (1981:15) notes that of 10 Burial Mound sites recorded in Miami-Dade County, only 4 remain. Felmley (1991) documented 23 Burial Mound site components among the 42 sites considered in her study of mortuary patterns in Broward and Miami-Dade counties. Only two of these were constructed from black, midden-like soil, while the others were sand. The sand and earth Burial

Mounds range in size from 8 to 100 ft (2.4 to 30.5 m) in diameter, and 2 to 8 ft (0.6 to 2.4 m) in height. Most are described as round or oval, though two much larger, rectangular, platform mounds are described (Felmley 1991:114, 119-120). The rock mound features of the area have been the subject of some controversy; early investigators discovered historic period interments in both the rock mounds at the mouth of the Miami River and at Key West, and speculated a more recent construction (see Eck 2000). Test excavations in the Key Largo Rock Mound, however, demonstrate construction by Native peoples and recovered artifacts similar to those from a nearby habitation site (Newman and Tesar 1996). This supports Carr's (1981:15) suggestion that the rock mounds are analogous to sand and dirt mounds, but are built of limestone cobbles in those areas where this material was common at or near the ground surface. Preservation of human remains within Burial Mound sites varies considerably; in some cases skeletal material is well preserved, other sites have very fragmentary long bones and teeth preserved, and some sites have only teeth and occasional bone fragments. Grave goods are rare, but some Burial Mound interments are covered with limestone slabs (Williams 1983:144). Williams (1983:145) notes that three burials at the Margate-Blount site (8BD41) were accompanied by wooden artifacts, including a canoe paddle, a double-ended pestle, and a log tomb or burial enclosure. 8DA14, a large sand mound on the north side of the mouth of the Miami River, included burials with European-derived material—glass beads, as well as small silver and gold ornaments (Eck 2000:291).

F3.3 Significance

Burial Mound sites may be significant under National Register Criterion D and/or National Historic Landmark Criterion 6. Burial Mound sites are significant within the area of the Tequesta and their ancestors since the appearance of constructed mounds may be related to a significant shift in sociopolitical organization during the Glades II Period. Geographically, Burial Mound sites are significant since they appear to be rare within those portions of Broward, Miami-Dade and Monroe counties considered here and more numerous in the neighboring Florida Keys and Ten Thousand Islands regions. Burial Mound sites also are significant since they have provided, and may provide, information on the health and mortality of prehistoric populations, beliefs about death and the afterlife, marriage and residency patterns (based on biological distance of interred individuals) and social rank and status. Future studies may be able to isolate DNA from human bone to allow for detailed inter- and intra-site comparison of the biological relationships between those interred in Burial Mound sites.

F3.4 NHL Thematic Framework Elements

Burial Mound sites have the potential to answer questions related to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Burial Mound sites have nominal association with the theme Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places)*.
2) Burial Mound sites may have some limited association with the theme Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
3) Burial Mound sites may be locally and regionally significant in answering questions related to the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*. Some Burial Mound sites may be nationally significant if they are involved in models of Settlement Patterns that can be compared and contrasted with those of other parts of the Southeast and Midwest. At issue may be site integrity, since very few extant Burial Mound sites are known in southeastern Florida.
4) Burial Mound sites may have some limited association with the theme Plant and Animal Use among the Tequesta *(NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VIII. Transforming the Environment)* since preserved wooden artifacts may be found in burial contexts. This theme is most likely to be associated with local and regional significance.
5) Burial Mound sites are closely associated with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institituions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*. This theme is most likely to be associated with local and regional significance.

6) Burial Mound sites may be associated with earthwork sites, indicating some association with the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)*. If these associations exist, a particular site may be regionally or even nationally significant, since earthworks are rare in southeastern Florida, but may be related to broader patterns of earthwork building in the Southeast and Midwest.
7) Burial Mound sites have nominal association with the theme Exchange Networks *(NPS's Thematic Framework theme V. Developing the American Economy)*.
8) Burial Mound sites have nominal association with the theme Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Burial Mounds sites, in order to address questions of demography, changes in settlement patterns, interaction with the environment, changes in health and nutrition, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States.
10) Burial Mound sites may be associated with the theme Culture Contact *(NPS's Thematic Framework themes: I. Peopling Places and VIII. Changing Role of the United States in the World Community)* if they contain European artifacts or other evidence for contact. These sites may be nationally significant, since they may contain evidence of patterns of acculturation, assimilation or resistance, as well as evidence for changes in health and nutrition before and after contact.

F3.5 Registration Requirements

For Burial Mound sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible and a significant percent of the burials and associated grave goods should be undisturbed. Nominations of Burial Mound sites should be accompanied by a topographic map documenting the size and shape of the mound feature (including plan and elevation), data on stratification or construction sequence (if excavations have been made or old profiles are available for study), data on burial patterns within the mound (if available), and osteological analysis of human remains (if any have been recovered or are available for study).

Despite the ability to contribute significant information to some of the ten theme study specific NHL themes and their appropriate NPS thematic framework themes discussed above, only a few Burial Mound sites will be considered significant at the national level. These nationally significant Burial Mound sites should have materials that can answer or address questions associated with three or more of the NHL themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Burial Mound site type, have unique or unusual features or components, and exhibit a high level of integrity.

F4.1 Name of Property Type: Cemetery

F4.2 Description:

Cemetery sites appear during the Archaic in southeastern Florida and represent formal interment within habitation sites. Felmley (1991:72) notes that there is little patterning within sites related to the placement of cemeteries, though they appear to be located at lower elevations near the water line. In some cases, like Margate-Blount, this placement has facilitated preservation of wooden artifacts (Williams 1983). Felmley (1991:78) notes that of four habitation sites with contiguous cemeteries considered in her study, three occurred on the south to southwest part of the site, while the fourth was centrally placed. Cemetery sites persist in southeastern Florida in the post-Archaic, and in some cases are located near or adjacent to constructed Burial Mound sites. Felmley (1991:72) notes a strong correlation between Cemetery sites and habitation sites. Ethnohistoric accounts of mortuary practices in the area indicate that traditions of cemetery

burial persisted into the eighteenth century and involved a carved bird image as well as pilgrimages to leave offerings to the deceased.

F4.3 Significance

Cemetery sites may be significant under National Register Criterion D and/or National Historic Landmark Criterion 6. Cemetery sites, like Burial Mound sites, are significant within the area of the Tequesta and their ancestors since they have provided, and may provide, information on the health and mortality of prehistoric populations, beliefs about death and the afterlife, marriage and residency patterns (based on biological distance of interred individuals) and social rank and status. Cemetery burials appear to represent an earlier pattern of burial that relates to broader mortuary patterns of the Archaic. Geographically, Cemetery sites are significant since they appear to be more numerous within those portions of Broward, Miami-Dade and Monroe counties considered here, especially when compared to Burial Mound sites. Neighboring areas have fewer examples of Cemetery sites. Cemetery sites also are significant since future studies may be able to isolate DNA from human bone to allow for detailed inter- and intra-site comparison of the biological relationships between those interred in Cemetery sites.

F4.4 NHL Thematic Framework Elements

Cemetery sites have the potential to answer questions related to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Cemetery sites may be locally, regionally or nationally significant in association with the theme Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places)*. A number of Archaic Period Cemetery sites already have been identified in southeastern Florida. These early cemeteries can answer questions about Archaic Period health and nutrition, early adaptation to the Everglades area, as well as questions related to broader patterns of Archaic settlement, demographics, and sociopolitical organization.
2) Cemetery sites have nominal association with the theme Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
3) Cemetery sites may be locally and regionally significant in answering questions related to the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*. Some Burial Mound sites may be nationally significant if they are involved in models of Settlement Patterns that can be compared and contrasted with those of other parts of the Southeast and Midwest.
4) Cemetery sites may have some limited association with the theme Plant and Animal Use among the Tequesta *(NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VIII. Transforming the Environment)* since preserved wooden artifacts may be found in burial contexts. This theme is most likely to be associated with local and regional significance.
5) Cemetery sites are closely associated with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institituions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*. This theme is most likely to be associated with local and regional significance.
6) Cemetery sites have nominal association with the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
7) Cemetery sites have nominal association with the theme Exchange Networks *(NPS's Thematic Framework theme V. Developing the American Economy)*.
8) Cemetery sites have nominal association with the theme Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Cemetery sites, in order to address questions of demography, changes in settlement patterns, interaction with the environment, changes in health and nutrition, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States.

10) Cemetery sites may be associated with the theme Culture Contact *(NPS's Thematic Framework themes: I. Peopling Places and VIII. Changing Role of the United States in the World Community)* if they contain European artifacts or other evidence for contact. These sites may be nationally significant, since they may contain evidence of patterns of acculturation, assimilation or resistance, as well as evidence for changes in health and nutrition before and after contact.

F4.5 Registration Requirements

For Cemetery sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible and a significant percent of the burials and associated grave goods should be undisturbed. Nominations of Cemetery sites should be accompanied by a topographic map documenting the size and configuration of the cemetery feature (including plan and elevation), data on stratification or construction sequence (if excavations have been made or old profiles are available for study), data on burial patterns within the cemetery (if available), and osteological analysis of human remains (if any have been recovered or are available for study).

Despite the ability to contribute significant information to some of the ten theme study specific NHL themes and their appropriate NPS thematic framework themes discussed above, only a few Cemetery sites will be considered significant at the national level. These nationally significant Cemetery sites should have materials that can answer or address questions associated with three or more of the NHL themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Cemetery site type, have unique or unusual features or components, and exhibit a high level of integrity. Cemetery sites dating to the Archaic Period may always be nationally significant, since they can contribute substantially to limited skeletal populations from this period.

F5.1 Name of Property Type: Temple Mound

F5.2 Description:

Temple Mound sites are composed of sand, and based on descriptions of similar sites in other areas, may include layers of shell or midden soil. Laxson (1957:1-2) describes the mound feature at Maddens Hammock (8DA45) as "a natural sand hillock, the top of which is nineteen feet above sea level. This sand mound is shaped somewhat like a truncated pyramid with the top fifty feet wide and one hundred and fifty feet long (15.2 by 45.7 m) (also see topographic maps in Gifford 1989). Sides slope gently at an angle of from eight to ten degrees for a distance of eighty-five to one hundred feet." The total height is from 17 to 19 ft (5.1 to 5.8 m). He notes two caches of turtle bone, primarily carapaces of gopher tortoise, terrapin, and soft shell turtle, on the sides of the mound (Laxson 1957:4). Goggin (n.d.:123-124) suggests that the sand mound is a constructed feature—an alteration of the natural ridge. Laxson's excavations at the site and adjacent midden indicated a strong Glades IIIb and IIIc occupation. Carr (1981:47-49) notes that human bones have been found in the mound. Miami Sand Mound #3 (8DA19), unfortunately destroyed by development, also is described as a truncated sand mound, 150 feet long by 50 feet wide (15.2 by 45.7 m), with two levels—the primary platform at 4 ft (1.2 m) in height and a more elevated area at 11 ft (5.8 m) in height (Felmley 1991:114; Goggin n.d.:123-124). Goggin (n.d.:123-124) notes that the elevated summit is around 10 ft (3 m) wide, points out the similarity to the Madden site, and suggests the mound may be part of a broader ceremonial tradition. Comparison to the Temple Mound site typology created by Luer and Almy (1981) for sites of the Tampa Bay area, the two Miami-Dade County mounds are most similar to their Class C, Group III mounds, which have a low height, relatively narrow platforms, and small volumes. The Weeden Island mound is most comparable, with dimensions of 1.4 m high, 14 m wide, and 46 m long.

F5.3 Significance

Temple Mound sites may be significant under National Register Criterion D and/or National Historic Landmark Criterion 6. Temple Mound sites are significant within the area of the Tequesta and their ancestors since the appearance of constructed mounds may be related to a significant shift in sociopolitical organization during the Glades II Period. Temple Mound sites are extremely rare within the study area—only two are known; Miami Sand Mound #3 (8DA19) and Maddens Hammock (8DA45). Temple Mound sites are more typically known from adjacent areas, especially the Gulf Coast. For example, Luer and Almy (1981) describe size, form, and location of 15 Temple Mound sites within the Tampa Bay region. Temple Mounds are typically associated with Mississippian era ceremonialism, serving as platforms for important political or religious structures, or as precursors of the ritual space "square-grounds" of historic period Southeastern Indians (Luer and Almy 1981:143-145). Typically, researchers have noted a lack of Mississippian artifacts and cultural patterns in southern Florida (Mitchem 1996:234-235). The presence of Temple Mound sites in the homeland of the Tequesta and their ancestors suggests they may have more actively participated in this broader cultural horizon. Documentation and research at Temple Mound sites in this area would be important in answering questions about possible participation in the Mississippian horizon.

F5.4 NHL Thematic Framework Elements

Temple Mound sites have the potential to answer questions related to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Temple Mound sites are nominally associated with the theme Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places).*
2) Temple Mound sites are nominally associated with the theme Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
3) Temple Mound sites may be locally and regionally significant in answering questions related to the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*. Some Temple Mound sites may be nationally significant if they are involved in models of Settlement Patterns that can be compared and contrasted with those of other parts of the Southeast and Midwest.
4) Temple Mound sites are nominally associated with the theme Plant and Animal Use among the Tequesta *(NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VIII. Transforming the Environment)*.
5) Temple Mound sites may have some association with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institituions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*. These sites are poorly known in southeastern Florida, but in neighboring areas Temple Mounds may contain human burials.
6) Temple Mound sites have nominal association with the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
7) Temple Mound sites have nominal association with the theme Exchange Networks *(NPS's Thematic Framework theme V. Developing the American Economy)*.
8) Temple Mound sites have nominal association with the theme Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Temple Mound sites, in order to address questions of demography, changes in settlement patterns, interaction with the environment, social organization, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States. Since Temple Mound sites are so rare in southeastern Florida they may always be nationally significant, especially if they have high integrity.
10) Temple Mound sites have nominal association with the theme Culture Contact *(NPS's Thematic Framework themes: I. Peopling Places and VIII. Changing Role of the United States in the World Community)*.

F5.5 Registration Requirements

For Temple Mound sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible. Nominations of Burial Mound sites should be accompanied by a topographic map documenting the size and shape of the mound feature (including plan and elevation), data on stratification or construction sequence (if excavations have been made or old profiles are available for study), data on artifact caches or burials within the mound (if available), and data on features (e.g., postmolds, postholes) (if available).

Despite the ability to contribute significant information to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes discussed above, only a few Temple Mound sites will be considered significant at the national level. These nationally significant Temple Mound sites should have materials that can answer or address questions associated with three or more of the NHL themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Temple Mound site type, have unique or unusual features or components, and exhibit a high level of integrity. Temple Mound sites may always be regionally or nationally significant since they occur so rarely in southeastern Florida.

F6.1 Name of Property Type: Prehistoric Earthwork

F6.2 Description:

Two forms of Prehistoric Earthwork are known in the area occupied by the Tequesta and their ancestors: 1) Circle-ditch sites, and 2) Linear embankments. Circle-ditch sites consist of a large, circular (or semi-circular) ditch, often excavated adjacent to a natural water body (e.g., lake, marsh, slough). Some examples have distinctive berms bordering either side of the ditch channel, though most examples lack berms. Diameters range from 60 to 380 m. Habitation middens are usually in close association, and some circle-ditch sites have associated mound and borrow pit features as well (Carr 1985). While typically associated with the area around Lake Okeechobee, circle-ditch sites are one of the most widespread Prehistoric Earthwork sites known in southern Florida, with examples in southeastern and southwestern Florida, as well as in the Kissimmee River basin. Johnson's (1996) earthwork typology suggests that circle-ditch sites represent one of the earliest earthwork types constructed in southern Florida, probably during the Late Archaic and Glades I early periods (ca. 500 B.C. through A.D. 500), while linear embankment sites may be late sites, perhaps dating to the Glades III Period (A.D. 1200-1763). Linear embankment sites, like circle-ditch sites, are widely distributed. The typical configuration involves a sand mound partially enclosed by a crescent-shaped earthwork and paired linear embankments emanating from the sand mound.

F6.3 Significance

Prehistoric Earthwork sites may be significant under National Register Criterion D and/or National Historic Landmark Criterion 6. In southeastern Florida they are significant since this site type is more commonly found in the area around Lake Okeechobee and in the Kissimmee River basin (see Hale 1989; Johnson 1996). Despite the fact that these earthworks have been known to archeologists since the 1940s, there has been little systematic mapping and excavation at these sites. Work at Ortona (Carr et al. 1995) and Fort Center (Sears 1982) indicates some connection with the Hopewellian Middle Woodland horizon. Some Prehistoric Earthworks, like the circle-ditches, may be the earliest type of earthwork built in southern Florida and may relate to the early development of regional cultures in the area. The presence of Prehistoric Earthworks in the area inhabited by the Tequesta and their ancestors suggests some relationship with broader cultural patterns of southern Florida. Investigation of these sites, outside of the area of their typical occurrence, may help in better understanding the phenomenon of earthwork building in southern Florida.

F6.4 NHL Thematic Framework Elements

Prehistoric Earthwork sites have the potential to answer questions related to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Prehistoric Earthwork sites are associated with the theme Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places)*, since circle-ditch earthworks occur in southeastern Florida and are thought to be the some of the earliest constructed earthworks in Florida. Circle-ditch sites with moderate to high integrity may be regionally and nationally significant, especially if examples contain well-preserved cultural materials that can be dated through chronometric and relative dating techniques.
2) Prehistoric Earthwork sites are nominally associated with the theme Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
3) Prehistoric Earthwork sites may be locally and regionally significant in answering questions related to the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*. Some Prehistoric Earthwork sites may be nationally significant if they are involved in models of Settlement Patterns that can be compared and contrasted with those of other parts of the Southeast and Midwest.
4) Prehistoric Earthwork sites are nominally associated with the theme Plant and Animal Use among the Tequesta *(NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VIII. Transforming the Environment)*.
5) Prehistoric Earthwork sites are nominally associated with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institituions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
6) Prehistoric Earthwork sites are closely associated with the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)*. Prehistoric Earthwork sites are rare in southeastern Florida, but share forms with earthworks in neighboring parts of the state. These sites may be significant at the local and regional level, especially if they contain materials that explain the link between earthwork builders in different areas.
7) Prehistoric Earthwork sites have nominal association with the theme Exchange Networks *(NPS's Thematic Framework theme V. Developing the American Economy)*.
8) Prehistoric Earthwork sites have nominal association with the theme Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Prehistoric Earthwork sites, in order to address questions of demography, changes in settlement patterns, interaction with the environment, social organization, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States. Since Prehistoric Earthwork sites are so rare in southeastern Florida they may always be nationally significant, especially if they have high integrity.
10) Prehistoric Earthwork sites have nominal association with the theme Culture Contact *(NPS's Thematic Framework themes: I. Peopling Places and VIII. Changing Role of the United States in the World Community)*.

F6.5 Registration Requirements

For Prehistoric Earthwork sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible. The earthworks should be visible in aerial photographs and on the ground. Nominations of Prehistoric Earthwork sites should be accompanied by a topographic map documenting the size and shape of the earthwork features (including plan and elevation), historic (if available) and contemporary aerial photographs that help document the antiquity and configuration of the earthworks, data on stratification or construction sequence (if excavations have been made or old profiles are available for study), and data on associated sites (if available).

Despite the ability to contribute significant information to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes discussed above, only a few Prehistoric Earthwork sites will be

considered significant at the national level. These nationally significant Prehistoric Earthwork sites should have materials or forms that can answer or address questions associated with three or more of the NHL themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Prehistoric Earthwork site type, have unique or unusual features or components, and exhibit a high level of integrity. Prehistoric Earthwork sites may always be regionally or nationally significant, since they are so rare in southeastern Florida and may substantially contribute to understanding of earthwork building in neighboring areas or to broader patterns of earthwork building in the eastern United States.

F7.1 Name of Property Type: Constructed Habitation Mound

F7.2 Description:

Initial models of Everglades habitation suggested that people camped on tree islands that form naturally within the Everglades hydrologic system. As additional survey and evaluation work has been conducted, the variety of site types located in the Everglades has increased. This includes the traditional tree island site, as well as knoll sites, sites located on larger sand and limestone ridges, as well as intentionally Constructed Habitation Mounds or artificial tree islands. Constructed Habitation Mound sites are described in the eastern Everglades in both Miami-Dade and Broward counties. At the Refugee Island site (8DA2102), Beiter (2003) found that fresh water marl had been excavated from the surrounding marsh to construct a mound and ramp, apparently augmenting a developing tree island. Artifacts and radiocarbon dates suggest this site was constructed and occupied from Glades I late (A.D. 500-750) through Glades IIb (A.D. 900-1100) periods. The Cibi site (8DA1068) also has evidence for a constructed ramp and mound with associated borrow pits (New World Research Inc. 1988), as does the Bear Lake Mound (8MO33) (Griffin 2002:192, 207, 211-212,240). At the Sheridan Hammock site (8BD191) in Broward County, Carr et al. (1994:22-24) documented a circular mound of muck soil and associated borrow pit; the constructed muck mound was overlain by a deposit of faunal bone and pottery likely dating to the Glades II-III periods.

F7.3 Significance

Constructed Habitation Mound sites may be significant under National Register Criterion D and/or National Historic Landmark Criterion 6. These sites suggest that significant labor may have been involved in the construction of habitation sites in the interior Everglades. Carr et al. (1994:29) suggest that Constructed Habitation Mound sites, like the Sheridan Hammock site, may have been constructed in proximity to canoe trails where no natural islands were present. This also has been suggested for the Refugee Island site in Miami-Dade County (Beiter 2003). If this association is true, Constructed Habitation Mound sites may be important in identifying canoe trails through the Everglades and in reconstructing broader travel routes and patterns.

F7.4 NHL Thematic Framework Elements

Constructed Habitation Mound sites have the potential to answer questions related to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Constructed Habitation Mound sites are associated with the theme Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places)*, since circle-ditch earthworks occur in southeastern Florida and are thought to be the some of the earliest constructed earthworks in Florida. Circle-ditch sites with moderate to high integrity may be regionally and nationally significant, especially if examples contain well-preserved cultural materials that can be dated through chronometric and relative dating techniques.
2) Constructed Habitation Mound sites are nominally associated with the theme Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
3) Constructed Habitation Mound sites may be locally and regionally significant in answering questions related to the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural*

Values). Some Constructed Habitation Mound sites may be nationally significant if they are involved in models of Settlement Patterns that can be compared and contrasted with those of other parts of the Southeast and Midwest. These sites also may be significant in understanding the relationship between the Tequesta and the Everglades ecosystem, since the builders of these sites may have significantly contributed to the formation of some tree islands.

4) Constructed Habitation Mound sites are nominally associated with the theme Plant and Animal Use among the Tequesta *(NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VIII. Transforming the Environment)*.
5) Constructed Habitation Mound sites are nominally associated with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institituions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
6) Constructed Habitation Mound sites are closely associated with the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)*. Constructed Habitation Mound sites are rare in southeastern Florida, but share forms with platform mounds in neighboring parts of the state. These sites may be significant at the local and regional level, especially if they contain materials that explain the link between mound builders in different areas.
7) Constructed Habitation Mound sites have nominal association with the theme Exchange Networks *(NPS's Thematic Framework theme V. Developing the American Economy)*.
8) Constructed Habitation Mound sites have nominal association with the theme Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Constructed Habitation Mound sites, in order to address questions of demography, changes in settlement patterns, interaction with the environment, social organization, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States. Since Constructed Habitation Mound sites are so rare in southeastern Florida they may always be nationally significant, especially if they have high integrity.
10) Constructed Habitation Mound sites have nominal association with the theme Culture Contact *(NPS's Thematic Framework themes: I. Peopling Places and VIII. Changing Role of the United States in the World Community)*.

F7.5 Registration Requirements

For Constructed Habitation Mound sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible. Nominations of Constructed Habitation Mound sites should be accompanied by a topographic map documenting the size and shape of the mound feature (including plan and elevation), data on stratification or construction sequence (if excavations have been made or old profiles are available for study), data on radiocarbon date and relative date (if available), and data on features (e.g., postmolds, postholes) (if available).

Despite the ability to contribute significant information to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes discussed above, only a few Constructed Habitation Mound sites will be considered significant at the national level. These nationally significant Constructed Habitation Mound sites should have materials that can answer or address questions associated with three or more of the NHL themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Constructed Habitation Mound site type, have unique or unusual features or components, and exhibit a high level of integrity. Since Constructed Habitation Mound sites are rare in southeastern Florida, they may always be significant at the regional or national level, especially if they can contribute to understanding of the relationship between the Tequesta and the Everglades tree island communities.

F8.1 Name of Property Type: Aboriginal Water Course or Canal

F8.2 Description:

Aboriginal Water Course or Canal sites have been documented primarily in southern Florida, with one known example in the Florida panhandle (Luer 1989; Wheeler 1998). These sites consist of an excavated channel with spoil banks on either side. Dimensions are variable, ranging from 0.3 to 2.4 m in depth, and 3 to 9 m in maximum width. Lengths range from 1.26 to 6.3 km. The ancient builders often curved or bowed channel courses to avoid low or high spots that would interfere with functioning of the canals. Profiles of the canals suggest a trapezoidal cross-section for the channel. Studies of topography and engineering characteristics indicate that some canals were fed by water from natural drainages, while others relied on ground water (Luer and Wheeler 1997; Wheeler 1995). Aboriginal Water Course or Canal sites often link natural bodies of water and are often associated with major habitation centers. No examples of simple, sea-level canals have been found, suggesting that considerable knowledge of local topography and hydrology went into the planning and construction of these features. Wheeler (1995:278) suggests that canals were constructed in areas that lacked natural water routes, and that construction of canals allowed for local or regional centers to control access along important transportation routes. Canals are largely absent in areas where numerous natural water bodies occur, although these areas probably harbor more transient and difficult to detect canoe trails (see Williams and Mowers 1979:26, 29-30 on identification of historic Everglades canoe trails).

F8.3 Significance

Aboriginal Water Course or Canal sites may be significant under NRHP Criterion D and/or National Historic Landmark Criterion 6. Long-distance canoe canals also may be significant under NRHP Criterion C and/or NHL Criterion 4, which deal with distinctive physical characteristics of design, construction, or form, and distinguishing characteristics of an architectural type specimen exceptionally valuable for a study of a period, style or method of construction. Review of literature suggests that Florida is the only place that long-distance canoe canals were constructed in North America during pre-Columbian times. Luer (1989:124-125) has indicated that a significant amount of labor is involved in planning and constructing functioning canoe canals. He also suggests that canals were important in exchange networks that relied on movement of goods primarily along aquatic routes, and that the construction of the canals may have relied on labor provided as tribute to political leaders (Luer 1989:116-121). The canals also represent an engineering feat, since they involve a detailed and complex understanding of local topographic and hydrologic conditions.

F8.4 NHL Thematic Framework Elements

Aboriginal Water Course or Canal sites have the potential to answer questions related to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes identified and discussed in Section E:

1) Aboriginal Water Course or Canal sites are nominally associated with the theme Archaic Origins of the Tequesta *(NPS's Thematic Framework theme I. Peopling Places)*, since none of the known canal sites seem to date to this early period. Additional research may change this, especially if canals or other waterways dating to the Archaic Period are identified.
2) Aboriginal Water Course or Canal sites are nominally associated with the theme Development of Glades Pottery *(NPS's Thematic Framework theme III. Expressing Cultural Values)*.
3) Aboriginal Water Course or Canal sites may be locally and regionally significant in answering questions related to the theme Settlement Patterns *(NPS's Thematic Framework themes: I. Peopling Places and III. Expressing Cultural Values)*. Some Aboriginal Water Course or Canal sites may be nationally significant if they are involved in models of Settlement Patterns that can be compared and contrasted with those of other parts of the Southeast and Midwest.
4) Aboriginal Water Course or Canal sites are nominally associated with the theme Plant and Animal Use among the Tequesta *(NPS's Thematic Framework themes: III. Expressing Cultural Values, V. Developing the American Economy and VIII. Transforming the Environment)* though dugout canoes used in canoe canals could be considered under this theme.

5) Aboriginal Water Course or Canal sites are nominally associated with the theme Mortuary Practices *(NPS's Thematic Framework themes: II. Creating Social Institituions and Movements, III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
6) Aboriginal Water Course or Canal sites are closely associated with the theme Earthwork Building *(NPS's Thematic Framework theme III. Expressing Cultural Values)*. Aboriginal Water Course or Canal sites represent one form of prehistoric earthworks and are extremely rare in southeastern Florida, but share forms with canals in neighboring parts of the state. These sites may be significant at the regional and national level, especially if they contain materials or share forms that explain the link between earthwork builders in different areas.
7) Aboriginal Water Course or Canal sites are closely associated with the theme Exchange Networks *(NPS's Thematic Framework theme V. Developing the American Economy)*. Archeologists have argued that such canals may have been important in local and regional exchange.
8) Aboriginal Water Course or Canal sites have nominal association with the theme Tequesta Art and Aesthetics *(NPS's Thematic Framework themes: III. Expressing Cultural Values and IV. Shaping the Political Landscape)*.
9) The theme Sociopolitical Development *(NPS's Thematic Framework theme IV. Shaping the Political Landscape)* requires integration of data from many types of sites, including Aboriginal Water Course or Canal sites, in order to address questions of demography, changes in settlement patterns, interaction with the environment, social organization, and relationships to neighboring groups. This theme is most associated with sites significant regionally, but may be related to sites at the national level, especially if they are important in models of sociopolitical development that can be compared and contrasted to groups in other parts of the United States. Since Aboriginal Water Course or Canal sites are so rare they may always be nationally significant, especially if they have high integrity.
10) Aboriginal Water Course or Canal sites have nominal association with the theme Culture Contact *(NPS's Thematic Framework themes: I. Peopling Places and VIII. Changing Role of the United States in the World Community)*.

F8.5 Registration Requirements

For Aboriginal Water Course or Canal sites to be eligible for nomination they must demonstrate site integrity, with considerable portions of the site intact. Some past disturbance from ancient human activity, erosion or other natural processes, or more recent human activity (e.g., land clearing, site vandalism or looting) may be in evidence, but the site form should be discernible. Nominations of Aboriginal Water Course or Canal sites should be accompanied by a map documenting the size and shape of the feature, aerial photographs documenting the course of the canal and local environmental conditions, profiles or cross-section diagrams, models or hypotheses describing the supposed functioning of the canal, data on radiocarbon date and relative date (if available), and data on associated sites or other cultural features (e.g., canoe trails, footpaths) (if present).

Despite the ability to contribute significant information to some of the ten theme study specific NHL themes and their appropriate NPS Thematic Framework themes discussed above, only a few Aboriginal Water Course or Canal sites will be considered significant at the national level. These nationally significant Aboriginal Water Course or Canal sites should have materials that can answer or address questions associated with three or more of the NHL themes and exhibit moderate to high integrity. Sites that are nationally significant and eligible for NHL status should be outstanding examples of the Aboriginal Water Course or Canal site type, have unique or unusual features or components, and exhibit a high level of integrity. Since Aboriginal Water Course or Canal sites are rare in southeastern Florida (and do not occur in other parts of North America), they may always be significant at the regional or national level.

Table 6. Listing of Known Significant Sites of the Tequesta and their ancestors (also see Figure 22).

Site Name	Site Type	Periods Represented	Site No.	Register Status	NRHP Level of Significance*	Potential NHL?
Pompano Beach Mound	Burial mound; cemetery	Glades III	8BD7	Not evaluated	local, regional	
Rio Vista/ Rivermount	Accretionary midden	Glades	8BD38	Not evaluated	local, regional	
Margate-Blount	Accretionary	Glades I, II, III	8BD41	Not evaluated	local, regional	

Site Name	Site Type	Periods Represented	Site No.	Register Status	NRHP Level of Significance*	Potential NHL?
	midden; burial mound; cemetery					
Peace Camp	Accretionary midden	Late Archaic; Glades I, II, III	8BD52	Eligible for Listing	regional, national	Yes
Emerald Tower	Cemetery; accretionary midden	Glades II	8BD57	Not evaluated	local, regional	
Holatee Trail	Constructed habitation mound; earthwork	Glades	8BD104	Not evaluated	local, regional	
Clam Shell (Sunrise Stadium)	Accretionary midden	Glades	8BD186	Not evaluated	local	
DCA (Sunrise Stadium)	Accretionary midden	Glades II, III	8BD187	Not evaluated	local	
Plantation Golf	Accretionary midden	Glades	8BD190	Not evaluated	local	
Sheridan Hammock	Accretionary midden	Glades	8BD191	Potentially eligible	local, regional, national	
Everglades Corporate Park	Accretionary midden; cemetery	Glades I, II, III	8BD1453	Eligible for Listing	local, regional	
Weston Pond	Accretionary midden	Archaic	8BD2131	Eligible for Listing	local, regional, national	
Blue Cow		Archaic; Glades II	8BD2150	Eligible for Listing	local, regional	
Monarch Lakes 1	Cemetery; accretionary midden	Archaic	8BD2570	Eligible for Listing	local, regional	
Monarch Lakes 4	Accretionary midden	Archaic	8BD2573	Eligible for Listing	local, regional	
Sands Key sites	Accretionary midden	Glades; Glades III	8DA2, 8DA4582	Not evaluated	local, regional	
Cutler Key	Accretionary midden	Glades I, II, III	8DA7	Not evaluated	local, regional	
Cutler Mound	Burial mound	Glades II, III	8DA8	Not evaluated	local, regional	
Snapper Creek	Accretionary midden	Glades I, II, III	8DA9	Not evaluated	local, regional	
Granada Site	Accretionary midden; cemetery	Glades I, II, III	8DA11	Eligible for Listing	local, regional	
Miami Circle at Brickell Point	Accretionary midden	Glades I	8DA12	Listed 2/5/02	regional, national	Yes
Little River/El Portal Burial Mound & Midden	Accretionary midden; burial mound	Glades II	8DA20	Not evaluated	local, regional	
Arch Creek South	Accretionary midden	Glades I, II, III	8DA23	Listed 7/15/86	local, regional, national	
Oleta River 3	Accretionary midden	Glades I, II, III	8DA25	Not evaluated	local, regional	
Oleta River Mound	Burial mound	Glades	8DA24	Eligible for Listing	local, regional	
Chakika Park	Accretionary midden	Glades II, III	8DA28	Not evaluated	local, regional	
Trail Site	Accretionary midden	Glades	8DA33	Eligible for Listing	local, regional	
Trail Site	Accretionary midden; burial mound	Glades I, II, III	8DA34	Not evaluated	local, regional	
Madden Site	Accretionary midden;	Glades I, II, III	8DA45	Not evaluated	regional, national	Yes

Site Name	Site Type	Periods Represented	Site No.	Register Status	NRHP Level of Significance*	Potential NHL?
	temple mound					
Lehigh Portland	Accretionary midden	Glades	8DA93	Not evaluated	local, regional	
Bamboo Mound	Accretionary midden	Glades II, III	8DA94	Not evaluated	local, regional	
Turtle Mound	Accretionary midden	Glades II, III	8DA140	Eligible for Listing	local, regional	
Arch Creek North Site	Accretionary midden; cemetery	Glades I, II, III	8DA398	Listed 7/15/86	local, regional, national	
Honey Hill	Accretionary midden	Glades I, II, III	8DA411	Eligible for Listing	local, regional	
Oleta River 2	Accretionary midden	Glades I	8DA1024	Eligible for Listing	local, regional	
Greynolds Park	Accretionary midden	Glades	8DA1028	Not evaluated	local, regional	
Black Creek 2	Accretionary midden	Glades I, II, III	8DA1031	Not evaluated	local, regional	
Sutton	Accretionary midden	Glades I, II, III	8DA1034	Not evaluated	local, regional	
Long Hammock	Accretionary midden	Glades	8DA1042	Not evaluated	local, regional	
Beale Smith	Accretionary midden	Glades II, III	8DA1043	Not evaluated	local, regional	
Prasado	Accretionary midden	Glades I, II	8DA1052	Not evaluated	local, regional	
Flagami South	Accretionary midden; cemetery	Archaic; Glades	8DA1053	Not evaluated	local, regional	
Cook's Hammock	Accretionary midden; cemetery	Glades I, II	8DA1054	Potentially eligible	local, regional	
Pig Island	Accretionary midden	Glades I, II, III	8DA1057	Not evaluated	local, regional	
Cibi Site	Constructed habitation mound; accretionary midden	Glades I, II, III	8DA1068	Not evaluated	local, regional, national	
Donna	Accretionary midden	Glades	8DA1075	Not evaluated	local, regional	
Jane Gray	Accretionary midden	Glades II, III	8DA1651	Not evaluated	local, regional	
Cutler Fossil Site	Accretionary midden; cemetery	Archaic; Early Archaic	8DA2001	Not evaluated	regional, national	Yes
Refugee Island	Constructed habitation mound; accretionary midden	Glades I, II	8DA2102	Eligible for Listing	local, regional, national	
Levee Cut	Accretionary midden	Glades II, III	8DA2104	Not evaluated	local, regional	
El Portal		Glades	8DA3214	Not evaluated	local, regional	
Double Island		Glades	8DA3221	Not evaluated	local, regional	
Anhinga Trail	Accretionary midden; archeological wetsite	Glades	8DA3451	Listed 11/5/96	local, regional, national	
Lyons-Lord Site	Accretionary midden; cemetery	Glades I, II, III	8DA5128	Not evaluated	local, regional	
North Arch Creek	Accretionary midden	Glades	8DA5130	Not evaluated	local, regional	
Bear Cut	Accretionary midden	Glades III	8DA5247	Not evaluated	local, regional	
Key Biscayne		Glades	8DA5249	Not evaluated	local, regional	
Indian Hammock		Glades	8DA6239	Not evaluated	local, regional	

Site Name	Site Type	Periods Represented	Site No.	Register Status	NRHP Level of Significance*	Potential NHL?
Deering Estate Midden	Accretionary midden	Glades III; Spanish	8DA6519	Not evaluated	regional, national	Yes
Snake Bight Canal	Aboriginal water course	Glades	8MO29	Not evaluated	regional, national	Yes
Mud Lake Canal	Aboriginal water course	Glades	8MO32	Not evaluated	regional, national	Yes
Cane Patch	Constructed habitation mound	Glades I, II, III	8MO42	Listed 11/5/96	regional, national	
Rookery Mound	Accretionary midden	Glades II, III	8MO118	Listed 11/5/96	regional, national	
Monroe Lake Archeological District				Listed 11/5/96		
Bear Lake Mounds Archeological District				Listed 11/5/96		
Shark River Slough Archeological District				Listed 11/5/96		
Pine Island-Long Key Archeological District						

* NRHP level of significance based on review of sites made during this study.

Significant Sites of the Tequesta and their Ancestors/Potential NHL Sites

Seven archeological sites were identified during this study that could be nominated as National Historic Landmark sites under the criteria developed for the Southern Florida Sites Associated with the Tequesta and their Ancestors theme. Each site is discussed briefly below:

Peace Camp (8BD52)

Peace Camp site is a nationally significant example of an accretionary midden as defined in this study. Peace Camp is nationally significant under NHL Criterion 6 and National Register of Historic Places (NRHP) Criterion D for its demonstrated and potential archeological significance. The site, once part of an island within the Everglades, is located in Broward County and a large portion of the site is preserved in a park within the Weston community (Archaeological and Historical Conservancy, Inc. 1988, 1989). Mowers and Williams (1972:1) describe Peace Camp as a low mound, about 4 ft (1.2 m) high, with maximum horizontal dimensions of 170 ft (52 m) by 190 ft (58 m). Material culture is dominated by ceramics, faunal material, bone and shell tools, with post mold and hearth features present as well. Excavations documented six strata, including one extensive layer of concreted midden, sand and marl. Palmer and Williams (1977) discuss the phenomenon of concretion in southern Florida sites, explaining that these layers are related to changes in water levels and leaching/precipitation of carbonate materials from the midden deposits. Pottery was infrequent below the concreted stratum and includes examples of fiber-tempered pottery, indicating an early occupation dating to the Late Archaic and Glades I periods. Radiocarbon dates on shell celts from the deeper deposits confirm occupation around 3,000 years ago (Mowers and Williams 1972; Williams 1978). Decorated Glades ware ceramics from the upper part of the site demonstrates occupation during the Glades II and III periods. Peace Camp is significant since it preserves a ceramic sequence incorporating the Late Archaic through Glades III periods. It has the potential to contribute to understanding the Archaic in southeastern Florida, the development and evolution of the Glades ceramic sequence, and the formation processes involved in the genesis of archeological sites in the region.

Miami Circle at Brickell Point (8DA12)

The Miami Circle at Brickell Point site is a nationally significant example of an accretionary midden as defined in this study. The Miami Circle at Brickell Point is nationally significant under NHL Criterion 6 and National Register of Historic Places (NRHP) Criterion D for its demonstrated and potential archeological significance. Research at the site has produced an impressive body of data, which will likely make it one of the most intensively studies sites in southern Florida. Some of the studies have been significant in their use of raw material sourcing, and in using advanced 3D laser scanning and modeling technology. The Miami Circle at Brickell Point can be considered under "Peopling Places" within the National Park Service's thematic framework for history and prehistory, especially within the "ethnic homelands" sub-theme. The site contains early and late components of the primary village of the Tequesta people, who were one of the first Native North American groups encountered by Juan Ponce de Leon in 1513 (Davis 1935). Considerable research has been conducted at the site since the discovery of intact deposits and features in 1998. The site's significance lies in well-preserved evidence of American Indian architecture, considerable materials related to patterns of regional and long-distance exchange, elements of ceremonialism involving animal interments, and association with the Tequesta people, who are significant because of their cultural persistence following European Contact and their association with the unique environment of the Everglades.

The Miami Circle was discovered during archeological salvage excavations at the Brickell Point site (8DA12) in 1998 (Carr and Ricisak 2000). The Miami Circle is comprised of holes and basins carved into the shallow Miami Oolite limestone formation. Stratified accretionary midden deposits occur over and in the holes that make up the Circle. The midden is comprised of organically stained soil, dense deposits of faunal bone, and occasional lenses of marine bivalve shells. Artifacts found during excavations are typical of the Glades Area, including sand-tempered ceramics and some early decorated Glades series sherds, as well as bone and shell implements. Exotic items, like basaltic stone celts, galena, pumice, and chipped stone artifacts, also have been recovered. Public outcry over the impending destruction of the Miami Circle and development of the property led to additional research at the site, which documented the limestone formation with cut holes on about 70% of the property and intact accretionary midden deposits on at least 35% of the property. Research suggests that the Miami Circle represents the "footprint" of a prehistoric structure, and further analysis of the site and associated cultural materials should help broaden our understanding of American Indian architecture, long-distance exchange networks, and patterns of animal interment in Mesoamerica and the Caribbean basin. A cooperative effort between the State of Florida, Miami-Dade County, and many other public and private organizations and individuals led to the state's acquisition of the Brickell Point site and Miami Circle feature in 1999 (Levinson 2000; Miami-Dade County Historic Preservation Division 1999; Stroup and Brown 2000).

Madden Site (8DA45)

The Madden site is a nationally significant example of a temple mound and accretionary midden as defined in this study. The Madden site, or Madden's Hammock, is nationally significant under NHL Criterion 6 and National Register of Historic Places (NRHP) Criterion D for its demonstrated and potential archeological significance. Archeologist John Goggin (n.d.:159-160) recognized the unusual relict sand dune formation within the Everglades that provides a substrate for the Madden site; he notes that "islands like this are not common in the Everglades, but it probably represents a dune remnant formed in a low water period of late Wisconsin times of the Pleistocene epoch," and further compares the island to the Pine Island group in Broward County (see discussion of the potential Pine Island-Long Key NRHP Archeological District in this study). The most notable and unusual feature of the Madden site is a sand mound constructed on the western end of the sandy ridge. Avocational archeologist Dan Laxson (1957:1) describes the mound a truncated pyramid, with a platform 50 ft wide and 150 ft long; the sides have a gentle slope of 8 to 10 degrees. Laxson suggests that the mound at the Madden site may be a temple mound, similar to those of the Mississippian period sites of the Tampa Bay area. Midden deposits are located near the mound, and excavators have documented accretionary midden deposits, with artifacts typical of the Everglades Area, including marine shell tools, Glades ceramics, and faunal remains. Glades Tooled and St. Johns Check Stamped sherds date the site to the Glades II and III period, and Spanish majolica sherds indicate a European Contact Period component. Laxson (1957:11) notes that the site is more than a mere midden, but "literally a Glades III metropolis." Recoveries of human remains from the accretionary midden suggest the presence of a cemetery in the southeastern part of the site (Gifford 1989:10). The Madden site is significant because of the rare occurrence of a temple mound in the area occupied by the Tequesta. The extensive deposits, the

presence of the cemetery, and the occurrence of Spanish artifacts also contribute to the site's significance. The temporal assignment to the Glades IIIc Period is significant because of a direct association with the historic Tequesta people. The 5.4 acre hammock is a passive park in the city of Miami Lakes.

Cutler Fossil Site (8DA2001)

The Cutler Fossil Site is a nationally significant example of a cemetery and an accretionary midden as defined in this study. The Cutler Fossil Site is nationally significant under NHL Criterion 6 and National Register of Historic Places (NRHP) Criterion D for its demonstrated and potential archeological significance. The Cutler Fossil Site was discovered in 1985 by amateur fossil collectors when they climbed into a 5 by 6 m sinkhole on the Charles Deering Estate in Miami-Dade County (the site and the Deering Estate are now owned by the State of Florida) (Carr 1986, 1987). Excavation of 22 square meters of the site by archeologists and study by paleontologists documented a late Pleistocene Rancholabrean fossil deposit, including remains of extinct vertebrates like the dire wolf, cave bear, sabertooth cat, horse, mastodont and mammoth (Emslie and Morgan 1995). Interestingly, paleoecological analysis, based on the species present, suggest that a hardwood hammock and/or pinelands existed near the sinkhole around 15,000 years ago, similar to modern conditions. Carr (1986) describes three areas of human activity at the site, including a deposit of burned limestone boulders and faunal bone; a deeper deposit with some human remains in association with extinct animal bones; and one area that may contain the intentional burials of several individuals. Emslie and Morgan (1995) describe this burial area, noting that human remains, representing three adults and two children were recovered from the deposit, about 1 m below the surface. The area of burned limestone and faunal bone produced one radiocarbon date of 9,670 +/- 120 years B.P. and stone tools reminiscent of the Early Archaic Dalton complex. Emslie and Morgan (1995:81) suggest the human remains found even lower in the deposits, in associated with the remains of extinct animals like the dire wolf, may be mixed from upper strata. The Cutler Fossil Site is very significant in its contribution to our understanding of early environments in southeastern Florida and remains as the only site with evidence for occupation of the area during the Early Archaic. Further analysis of the human remains and the archeological deposits from the site may aid in refining the early chronology of southeastern Florida and in understanding the possible relationship between humans and extinct animals in the area.

Deering Estate Midden (8DA6519)

The Deering Estate Midden is a nationally significant example of an accretionary midden as defined in this study. The Deering Estate Midden is nationally significant under NHL Criterion 6 and National Register of Historic Places (NRHP) Criterion D for its demonstrated and potential archeological significance. The site was recorded in 2001 by archeologist Richard Haiduven (2001:21) and is likely associated with a number of other mound and midden sites in close proximity, including the Cutler Burial Mound (8DA8), the Cutler Midden (8DA7). The Deering Estate Midden represents occupation of Brickell Hammock, bordering Biscayne Bay, about 12 miles (19 km) south of the Miami Circle at Brickell Point site. Monitoring at the site documented intact deposits of black earth midden, Glades ceramic sherds, marine shell and bone artifacts, as well as Spanish artifacts, including green-glazed olive jar sherds, San Luis Polychrome majolica sherds, a faceted carnelian bead and two heavy iron spikes. Haiduven (2001:27) suggests the Spanish materials (faceted carnelian beads have typically only been found in Florida in Spanish contexts in St. Augustine or from the 1733 Spanish plate fleet wrecks of the Florida Keys [Deagan 1987:181-182]) may have been acquired by the Tequesta via exchange with the Spanish, from shipwreck salvage, or from the Spanish mission outposts in the area. Two radiocarbon dates on charcoal and shell corroborate occupation of the Deering Estate Midden in the fifteenth through seventeenth centuries. Haiduven's preliminary work at the site suggests it is a horizontally and vertically extensive midden deposit, and may be particularly important in understanding the Tequesta people during the period of European Contact. Some of the Spanish artifacts suggest a very late occupation, perhaps between A.D. 1650 and 1750. This late occupation is extremely rare in southern Florida, though is suggested by the ethnohistoric and historic documents, and may be significant in understanding the terminal period of Tequesta culture. The Deering Estate Midden is located on the 420 acre Charles Deering Estate Park, which is owned by the State of Florida and is managed by the Miami-Dade County Parks and Recreation Division.

Mud Lake Canal (8MO32) and Snake Bight Canal (8MO29)

The Mud Lake Canal (8MO32) and Snake Bight Canal are nationally significant examples of aboriginal canals or watercourses as described in Section F8.1 of this study. The Mud Lake and Snake Bight canals are nationally significant under NHL Criterion 6 and National Register of Historic Places (NRHP) Criterion D for its demonstrated and potential archeological significance. The canal is located on Cape Sable, at the southernmost extremity of mainland Florida (Wheeler 1998a). The canal was first recognized by several early twentieth century visitors to the Cape Sable area, including eminent physical anthropologist Aleš Hrdlička (1922:47) and botanist John Kunkle Small (1924:82, 1929:54-55). Archeologist John Goggin (n.d.:185-186) described the canal in 1950, noting that it is 20 to 30-ft wide and 1 to 2-ft deep. Like other long distance canoe canals in Florida, the Mud Lake Canal was dug by American Indians—likely the Tequesta or their ancestors—and may have been designed to provide safe passage, easy access to aquatic resources, and courses for exchange or tribute (see Luer 1989; Wheeler 1995). The Mud Lake Canal stretches 6.3 km (3.9 miles) across Cape Sable, linking Bear Lake and the waters of Whitewater Bay with Florida Bay; the course of the canal bends and curves to avoid high and low areas, indicating the canal builders understood conditions of local topography and hydrology. A remnant of another prehistoric canal—the Snake Bight Canal (8MO29)—is located nearby. Accelerator Mass Spectrometer (AMS) radiocarbon dates made on samples collected from cores in both the Mud Lake and Snake Bight Canals indicate that both features had begun to fill with detritus and had likely fallen into disuse by the Glades IIIa Period (A.D. 1200-1400) (Ferik 2003:59-60). The placement of canals on the landscape provides clues about the significance of natural and artificial watercourses in the world view of southern Florida Indians. The Mud Lake Canal appears to be associated with the Bear Lake Mound group (8MO33, 8MO34, and 8MO35), and may have allowed the site inhabitants to control travel through the Cape Sable area. Also, the association of canal features with archeological sites may be related to broader patterns of site layout and planning.

Research into the placement and size of the Mud Lake Canal reveals that, like other long-distance canoe canals, this feature was a major undertaking in terms of planning and construction (and possibly maintenance). The Mud Lake Canal was not a simple ditch connecting two sea level bodies of water. Like the other Florida canoe canals, the Mud Lake Canal traversed several different environments and crosses areas of differing elevation. The Mud Lake Canal also is the longest of the Florida canoe canals at 6.3 km (3.9 mi). This suggests that the canoe canal builders possessed a detailed knowledge of the local hydrological and topographical conditions and were able to create an engineering feature that dealt effectively with changes in elevation, differences in soil conditions, details of local hydrology, and other important changes in environment. This accomplishment is equivalent to irrigation canals built by prehistoric cultures in the American Southwest, raised causeways connecting some Maya sites in Mesoamerica, or irrigation canals built by some coastal South American cultures.

G. GEOGRAPHICAL DATA

The geographic extent for the Tequesta and their ancestors National Historic Landmark nomination is derived from the distribution of sites with attributes discussed above, as well as major physiographic and environmental zones. Therefore, this area encompasses Broward and Miami-Dade counties, as well as portions of Monroe, Palm Beach and Hendry counties. This includes the lower Everglades marsh and portions of the adjacent Atlantic Coastal Ridge. The Florida Keys (part of Monroe County), northern Everglades (primarily in Palm Beach County), Immokalee Rise (in Hendry County), and Big Cypress Swamp (in Collier and Hendry counties) are outside the territorial limits considered here. This geographic boundary is consistent with previous considerations of the "Everglades Area," which is typically linked with the contact-period Tequesta (see Carr and Beriault 1984:5-6, 12; Griffin et al. 1979:24-25, 30-37; Griffin 2002:123-134). [Griffin et al. 1979:24-25 note that tree islands of the northern Everglades formed in a different manner than those of the southern Everglades and appear to be "younger," perhaps explaining the different settlement pattern for the two areas]. Notable exceptions include the exclusion of the Ten Thousand Islands and the Florida Keys, which seem, based on ceramic types, site type frequencies, and ethnohistoric accounts, to have been occupied by distinct groups. Consensus is difficult to find on both areas—Carr and Beriault (1984:4-5) argue convincingly for a distinct Ten Thousand Islands Area, Griffin (2002:123-135) seems to subsume all three areas into an Everglades Area, while Hann (2003:140) recognizes distinct tribal groups in both the Ten Thousand Islands and Florida Keys. The boundaries of the Tequesta and their ancestors NHL are the best approximation of the cultural and natural features that coincide with this American Indian group. The area is not the broadest interpretation possible of the geographical limits of the Tequesta people, but rather the "best fit" regarding all cultural traits and associated environmental features. The boundary, as shown on maps accompanying this study, is a Geographic Information Systems (GIS) shapefile (tequestanhlboun.shp) that is stored electronically at the Bureau of Archaeological Research, Florida Division of Historical Resources. The shapefile can be overlain on any map at any scale, including United States Geological Survey 1:24,000 scale quadrangle maps (see Figure 23). The shapefile can be used in geographic analysis of southern Florida sites, in planning and land management, and in preparation of NHL and NRHP nominations.

H. SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The Tequesta and their ancestors National Historic Landmark cover document was prepared based on an extensive list of previous investigations, excavations and analyses. John Griffin's synthesis of the archeology of Everglades National Park, first published in a limited distribution report format in 1988 and more recently as a book (2002) served as a benchmark in this study. Griffin (1988, 2002) provides an overview of early observation and investigations in southern Florida, and also provides a synthesis and updating of archeologist John Goggin's unpublished manuscript on the "Glades Area." Griffin's work also incorporates data gleaned from other investigations of the 1940s-1980s, including avocational archeologist Dan Laxson's numerous reports on archeological sites of Dade and Broward counties published in *The Florida Anthropologist*; excavations conducted by members of local archeological societies, like the Broward County Archaeological Society and the Miami-West India Archaeological Society; surveys of Everglades National Park conducted by the National Park Service; Griffin's own studies of Everglades sites; and some of the initial cultural resource management surveys conducted in the area in the 1980s.

John Griffin's work with the data recovered from the Granada site (8DA11), located on the north bank of the Miami River, not far from where the river meets Biscayne Bay has been extremely important in preparation of this document as well. Documentary and archeological evidence suggests this was the site of "Tequesta," one of the main villages occupied in the sixteenth century when Europeans first ventured to Florida. Two volumes dealing with the site were produced in the early 1980s after the excavation and analysis was complete. The analyses include discussion of ceramics, bone artifacts (Richardson and Pohl 1982), zooarcheology (Wing and Loucks 1982), plant remains (Fish 1982; Scarry 1982), as well as historian Arva Moore Parks's (1982) synthetic discussion of the contact-period Tequesta.

The 1980s through 1990s saw considerable addition to our knowledge of the Tequesta and their ancestors as archeological sites were identified, evaluated, and excavated under mandates from local, state, and federal laws. This phenomenon created a large "gray" literature of unpublished reports, many of which are available in the manuscript collection of the Florida Master Site File. Important studies include archeologist Robert Carr's (1981) survey of Miami-Dade County, as well as a number of surveys of Broward County conducted by the Archaeological and Historical Conservancy (Carr et al. 1991; Carr et al. 1993). One of the most important studies conducted during this time was the excavation and analyses of the Honey Hill site (8DA411), which exhibited a subsistence economy based on the aquatic resources of the Everglades, rather than the ocean (Carr 1990). As a complement to the studies available for the Granada site, the zooarcheological (Masson and Hale 1990) and paleobotanical (Masson and Scarry 1990) studies of Honey Hill are significant in establishing the distinct plant and animal use patterns of the Tequesta and their ancestors.

Other significant surveys and studies of the 1980s through present include the identification of Archaic occupation in southeastern Florida, including analysis of human burials (Carr et al. 1984; İşcan et al. 1993, 1995), and identification of occupation sites producing artifacts and dates from the Middle through Late Archaic (Carr 2002; Masson et al. 1988). Pepe and Jester (1995) designate this aceramic Archaic culture as the "Glades Archaic."

Analyses related to the excavation of the Miami Circle site also have been extremely important in completing this study. Representing another large excavation project, the site has included analyses of chipped stone (Austin 2002); basaltic celts (Dixon et al.); zooarcheological material (Quitmyer and Kennedy 2002); bone and shell artifacts (Wheeler 2002a, 2002c); and geochemical sourcing and analysis of pumice artifacts (Kish 2002; Wheeler 2002b). Since the site primarily dates to the Glades I Period (500 B.C.-A.D. 750), it provides an important contrast to the nearby, later Granada site (with components primarily of the Glades II-III periods, ca. A.D. 750-1763).

Ethnohistoric documents relating to the Tequesta have been presented and synthesized in a number of important studies. Zubillaga (1946) presents a number of important transcriptions of primary documents related to the initial sixteenth century mission attempt to the Tequesta, while Hann (1991) and Childers (2003) provide translations of documents dealing with the 1743 mission attempt, which was located within the territory historically occupied by the

Tequesta. Parks (1982) and Hann (2003) provide overviews of the contact-era Tequesta, and both studies were important in developing the discussion of the contact period included here. The pioneering analysis of the Calusa and their neighbors presented by Goggin and Sturtevant (1964) also was important in discussing the relationship between the Tequesta and their neighbors.

Important collections of archeological materials relating to the Tequesta and their ancestors can be found at the Bureau of Archaeological Research, Tallahassee (including the Granada site collection); the Historical Museum of Southern Florida, Miami (includes the largest collection of materials from sites in Miami-Dade and Broward counties); the Southeast Archeological Center, National Park Service, Tallahassee (includes collections from surveys and excavations in Everglades National Park); the Florida Museum of Natural History, Gainesville (includes collections of documents and artifacts by John Goggin, as well as some materials collected by Dan Laxson); the Graves Museum of Archaeology and Natural History, Dania Beach (houses many of the collections made by the Broward County Archaeological Society, including materials from Margate-Blount); and Florida Atlantic University (most collections relate to Palm Beach County sites, though some materials from Broward County sites can be found here as well). Most of these collections have been utilized in preparation of this document.

The cultural contexts developed for Florida's Draft Historic Preservation Comprehensive Plan (see Milanich and Payne 1993) also were used in determining some of the research questions for this National Historic Landmark and National Register Multiple Property submission. Christopher Eck, Broward County Historic Preservation Officer and Gary Beiter, Archeologist for the Miami-Dade County Office of Historic Preservation provided information on significant sites within Broward and Miami-Dade counties. Robert S. Carr, Director of the Archaeological and Historical Conservancy, Inc. also provided a list of significant sites. The form was prepared by Panamerican Consultants, Inc. in conjunction with the Florida State Historic Preservation Office.

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Figures

Figure 21. Decorated bone artifacts from southeastern Florida: a) phallic/rattlesnake carving, antler, Margate-Blount site (8BD41); b) pendant with eye and braid motif, 8DA140; c) plume holder with knot motif; 8DA140; d) stylized vulture carving, antler, Margate-Blount (8BD41); e) bas relief carving of opossum, Lyons-Lord site (8DA5128); f) hawk or peregrine falcon carving, antler, Florida Portland/Bamboo Mound (8DA94) (see McKinley 1977:6, 10); g) carving of freshwater eel, Margate-Blount (8BD41); h) deer head carved to ornament a bone pin, Onion Key (8MO49); and i) dabbler duck, antler, Margate-Blount (8BD41).

Figure 22. Location map of significant sites in the area inhabited by the Tequesta and their ancestors, including NHL boundary as defined in this study (also see Table 6).

Figure 23. NHL boundary for Southern Florida Sites Associated with the Tequesta and their ancestors projected on United States Geological Survey 1:250,000 scale maps of southern Florida (base maps include West Palm Beach and Miami 1 x 2 degree 1:250,000 scale maps).

Properties Included in the Tequesta and their Ancestors
Multiple Property National Historic Landmark Nomination

1. Miami Circle at Brickell Point (8DA12)

2. Mud Lake Canal (8MO32)

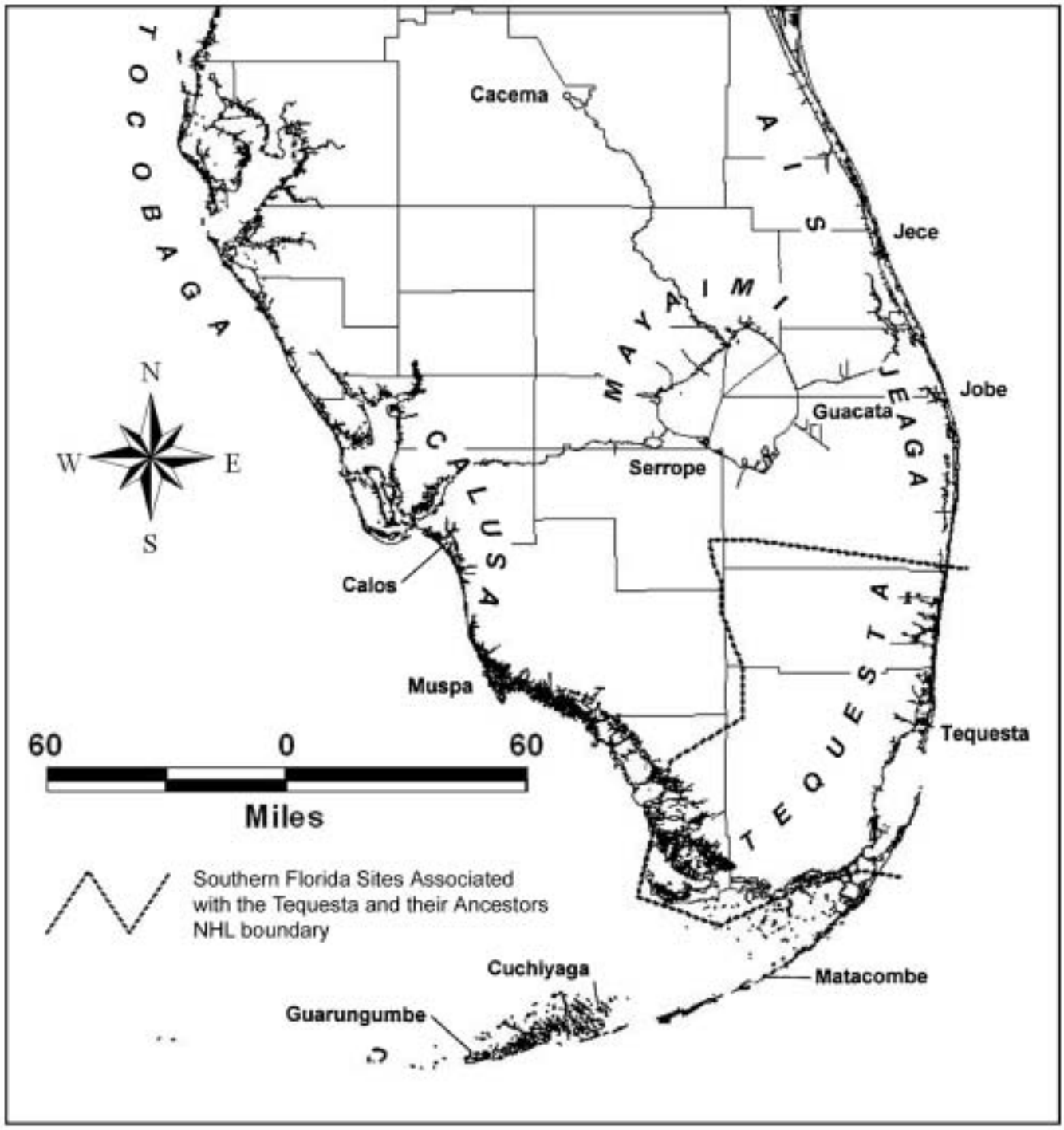

Figure 1. Territory occupied by the Tequesta and their ancestors.

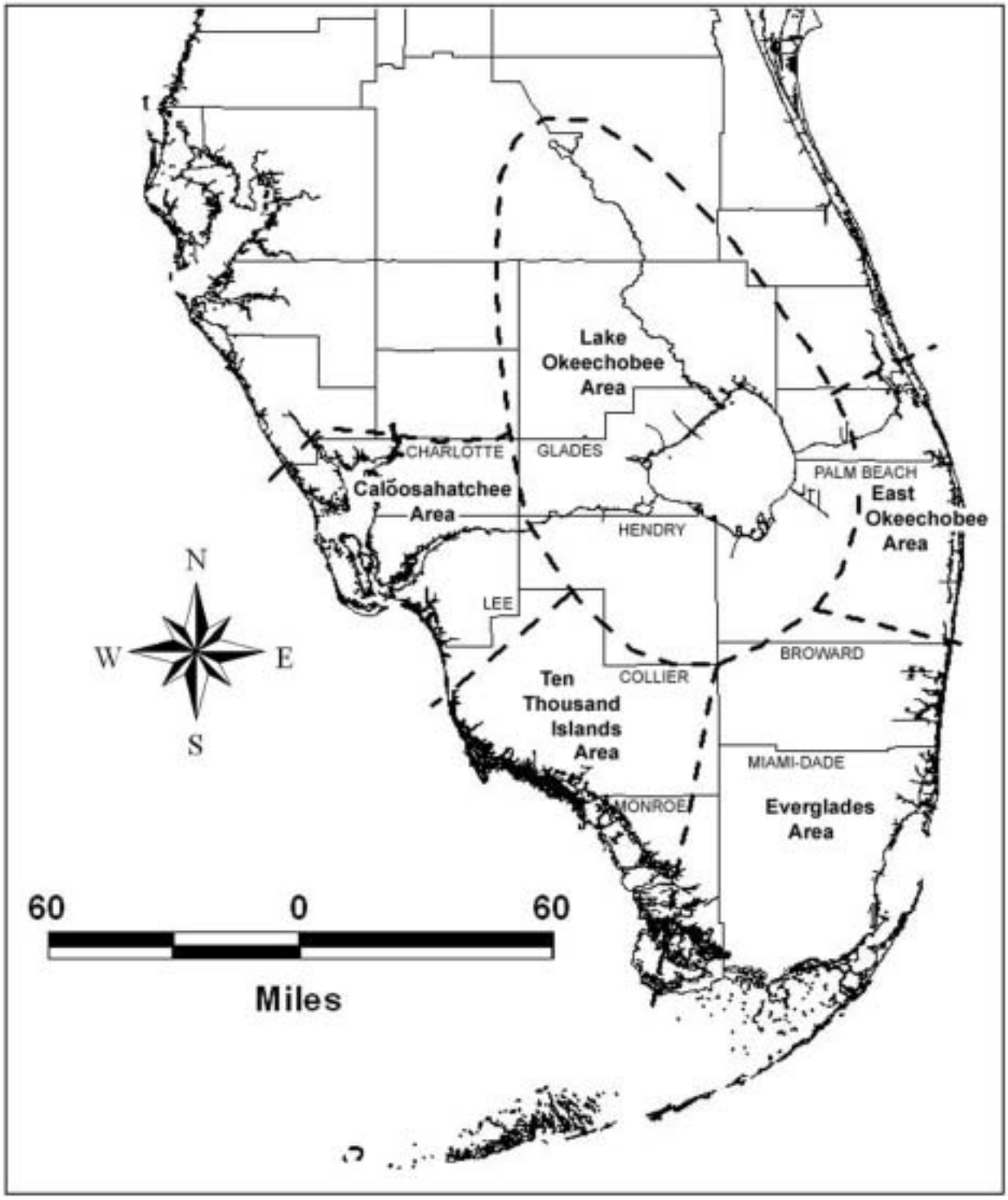

Figure 2. Archaeological areas of southern Florida (after Carr and Beriault 1984:12).

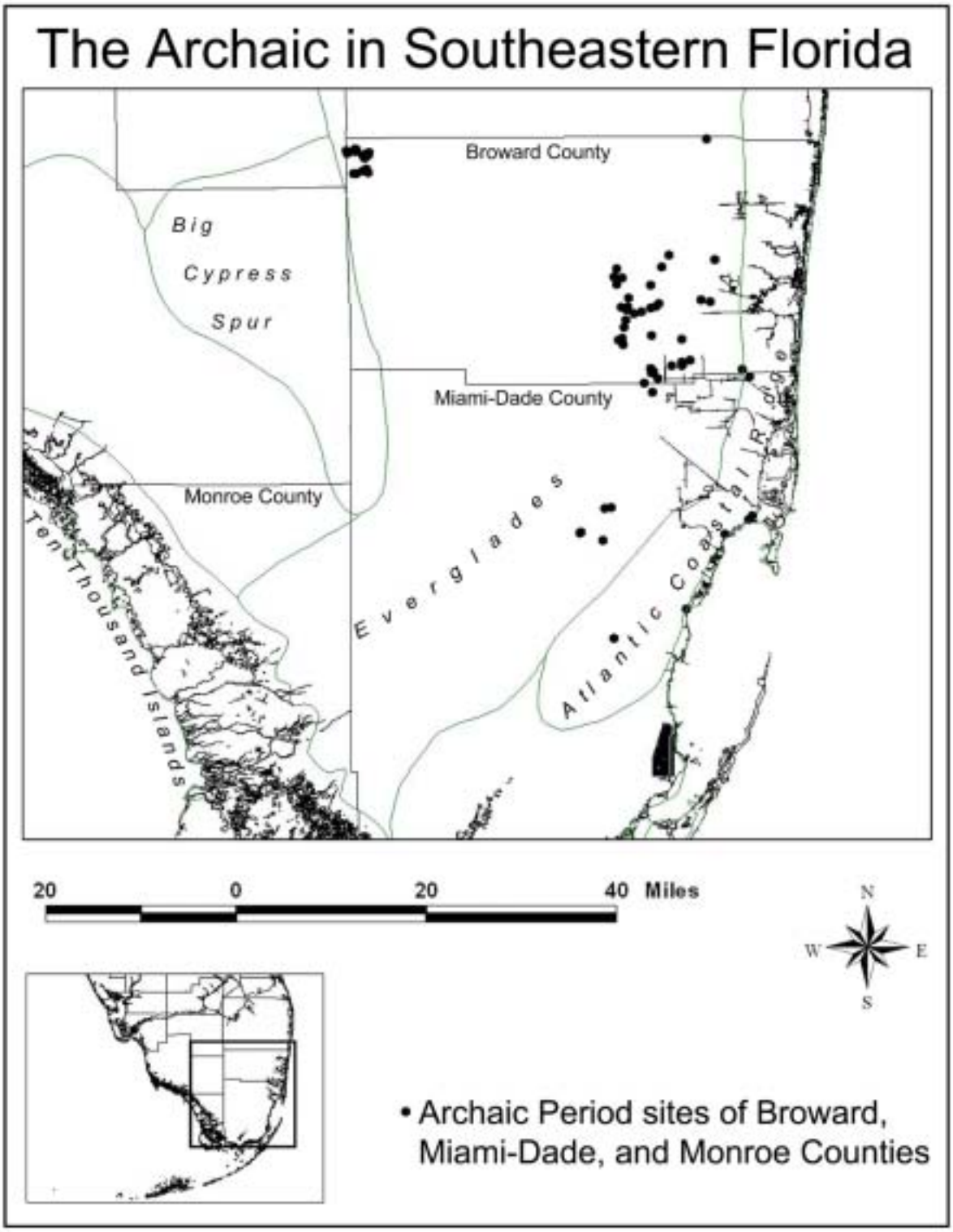

Figure 3. Archaic period sites in southeastern Florida (based on data from the Florida Master Site File, September 2003).

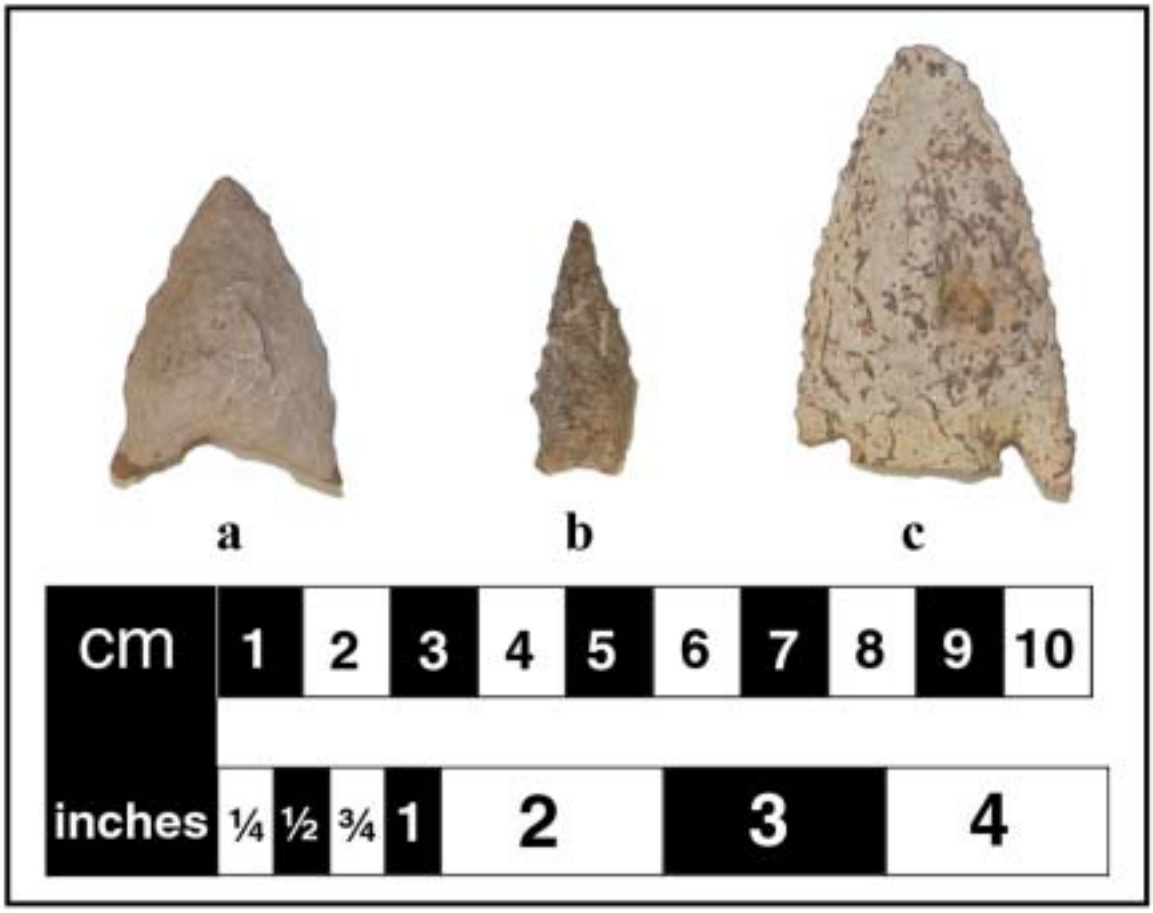

Figure 4. Paleoindian and Archaic stone tools from the Cutler Fossil site: a) Suwannee-like biface; b) Dalton Colbert-like biface; c) Bolen Beveled Corner-Notched.

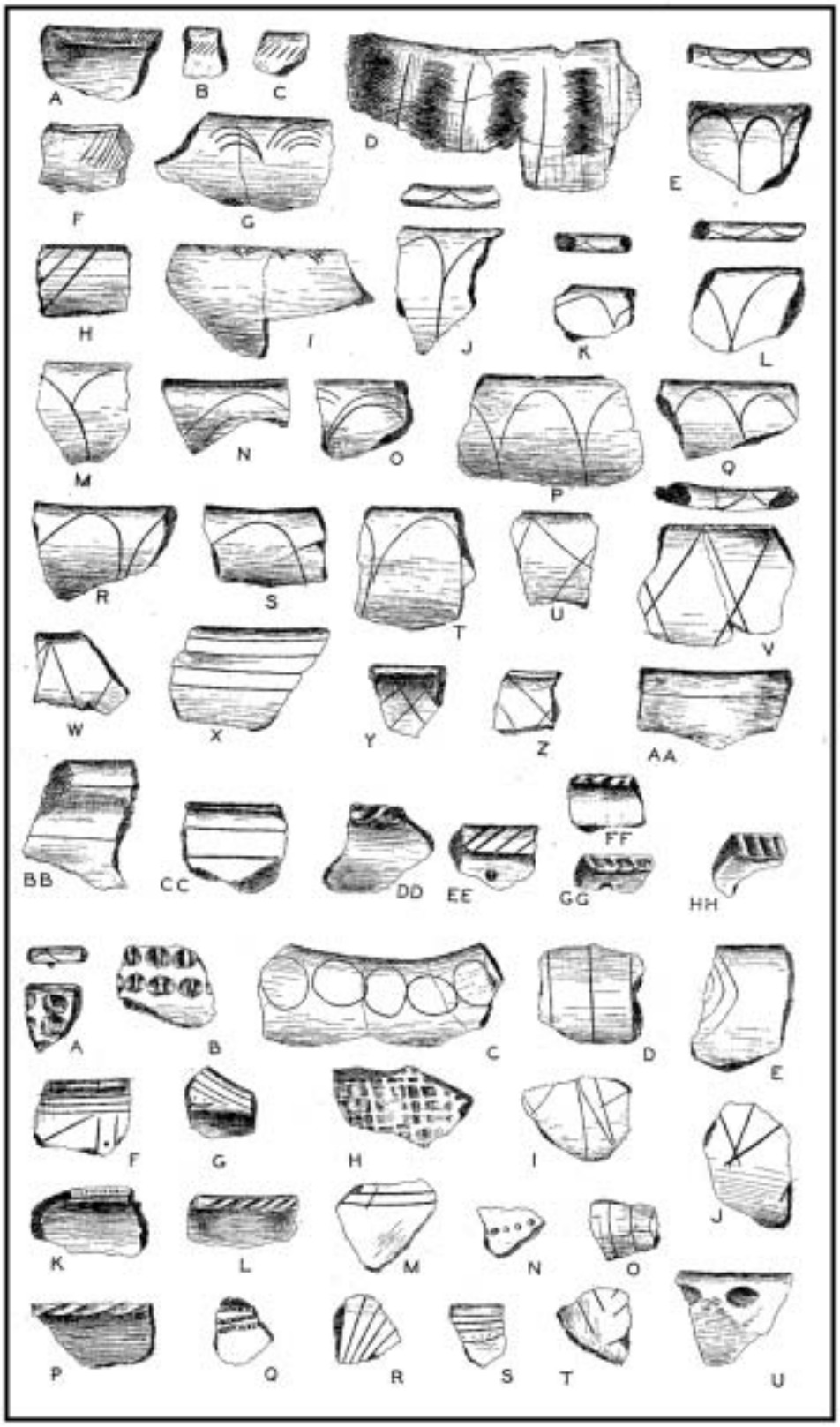

Figure 5. Glades decorated ceramic types (after Goggin 1950).

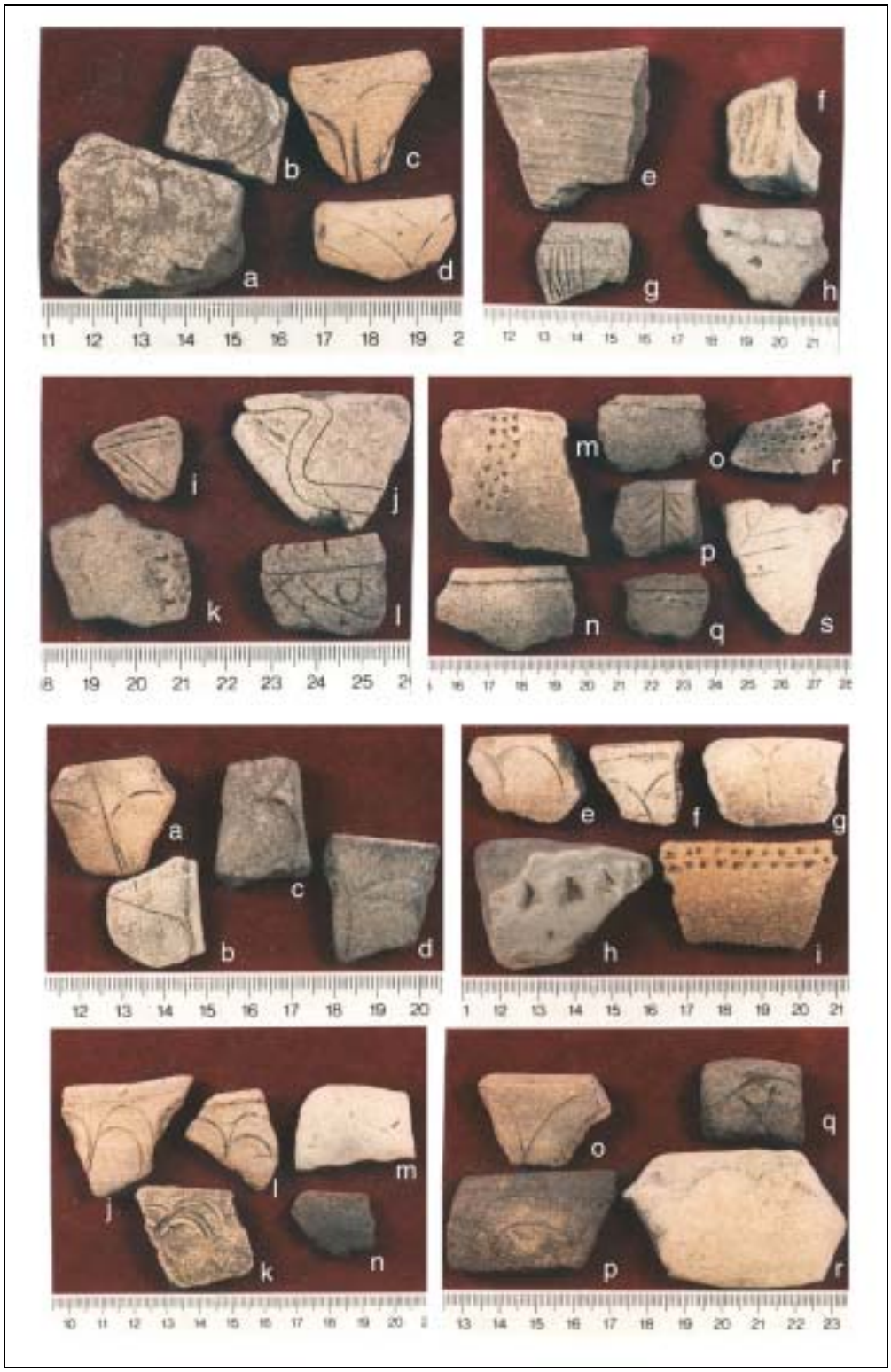

Figure 6. Photograph of Glades ceramics from Bamboo Mound (8DA94) (courtesy Gary Beiter).

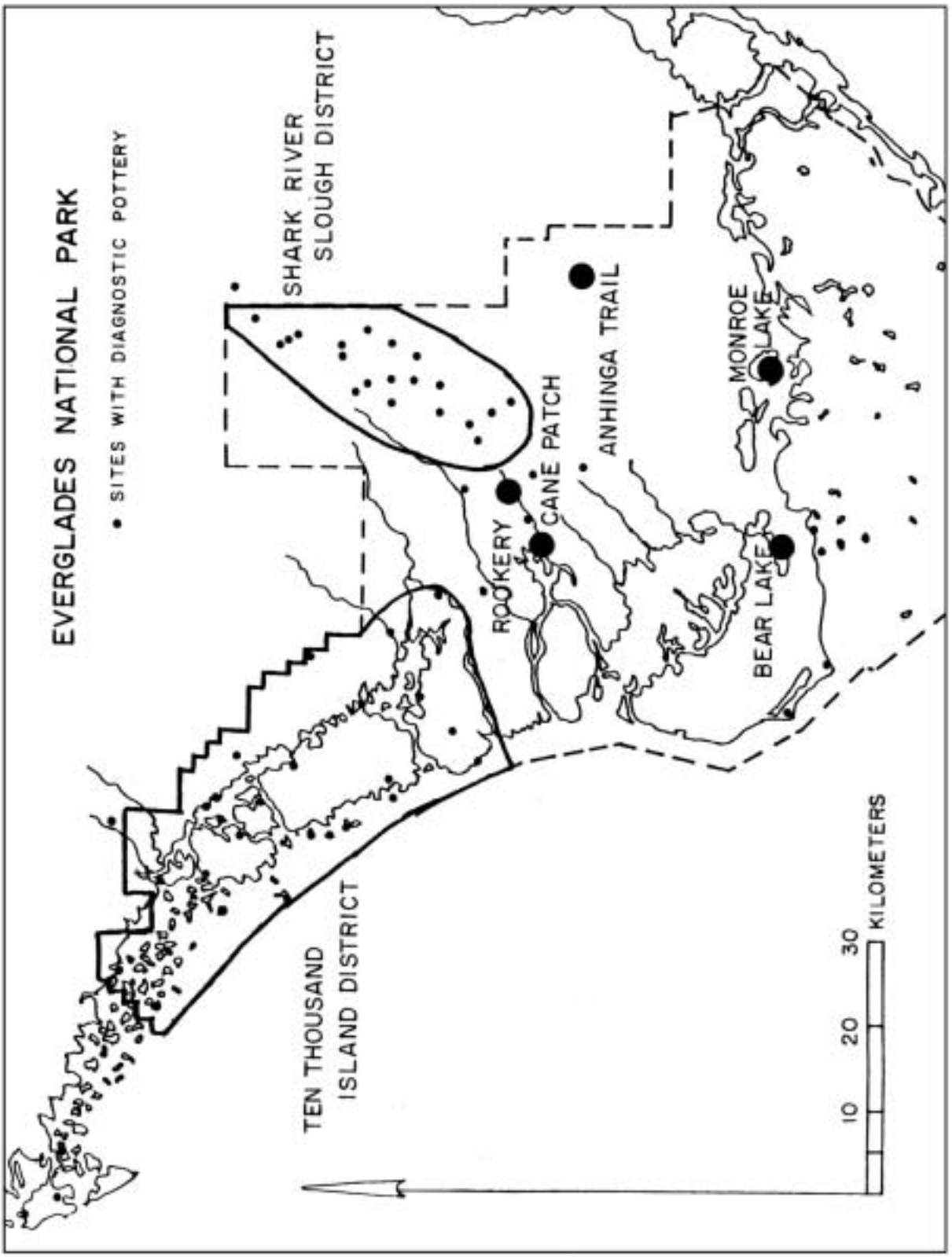

Figure 7. John Griffin's (1988:329) map showing settlement clusters in the Shark River Slough and Ten Thousand Islands and other major sites.

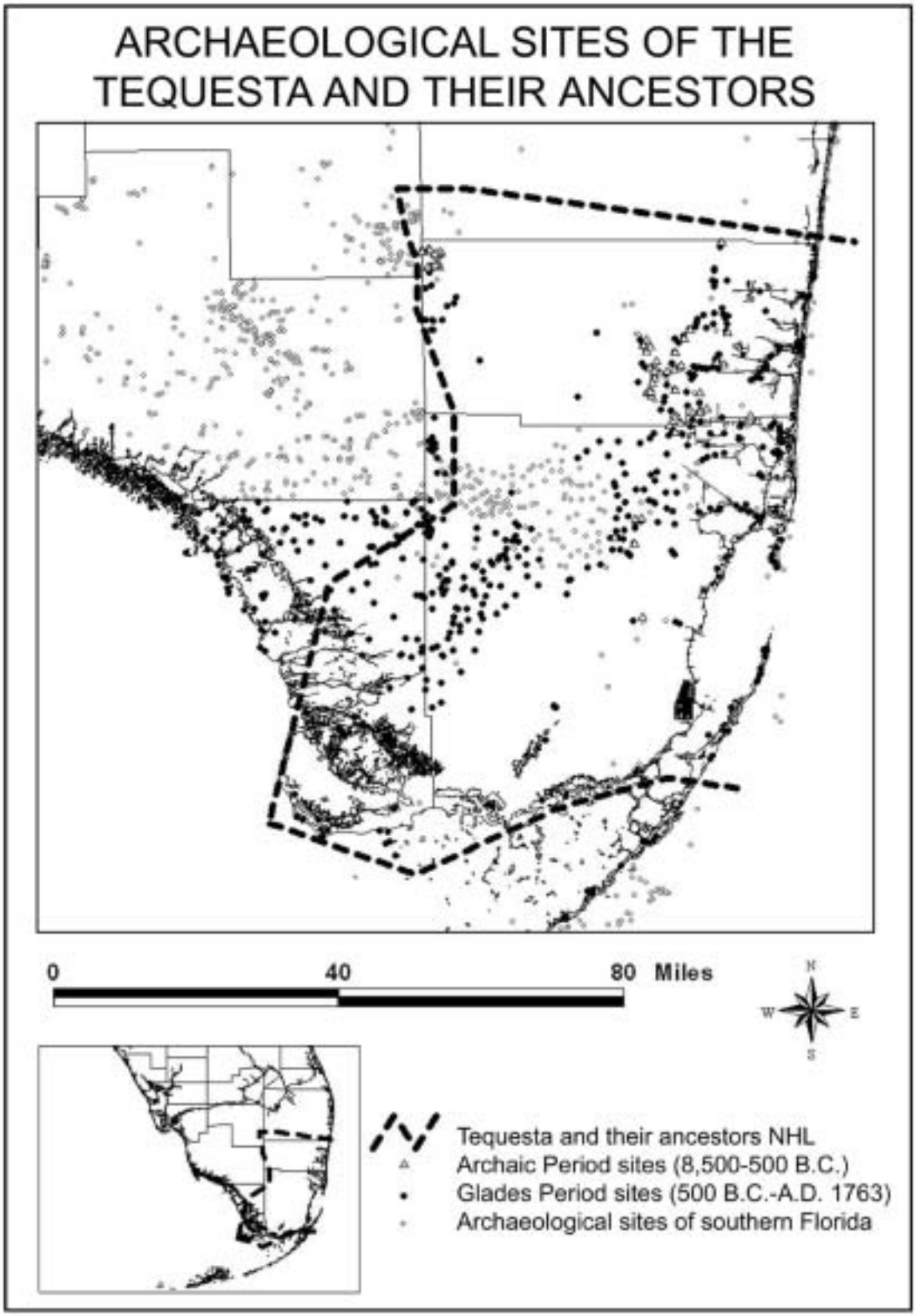

Figure 8. Distribution of Glades sites in southeastern Florida (based on data from the Florida Master Site File, September 2003).

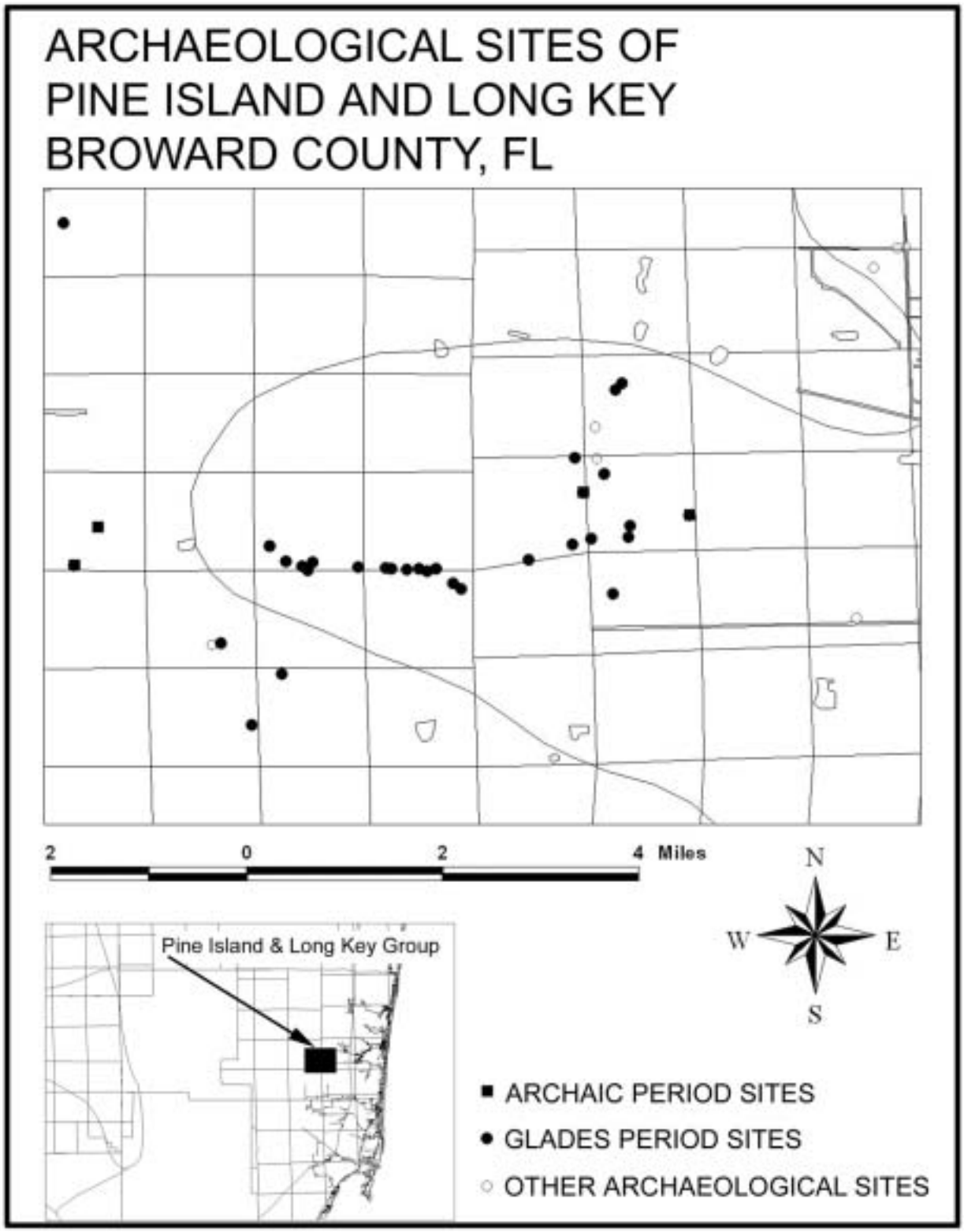

Figure 9. Potential Pine Island-Long Key Archaeological District in Broward County (based on data from the Florida Master Site File, September 2003).

Figure 10. John Kunkle Small's photograph of a large, dugout canoe from the Brett Estate in Miami-Dade County (Florida State Archives, Catalog # SMX0019).

Figure 11. Wooden clubs from Miami-Dade County (photograph courtesy the Historical Museum of Southern Florida).

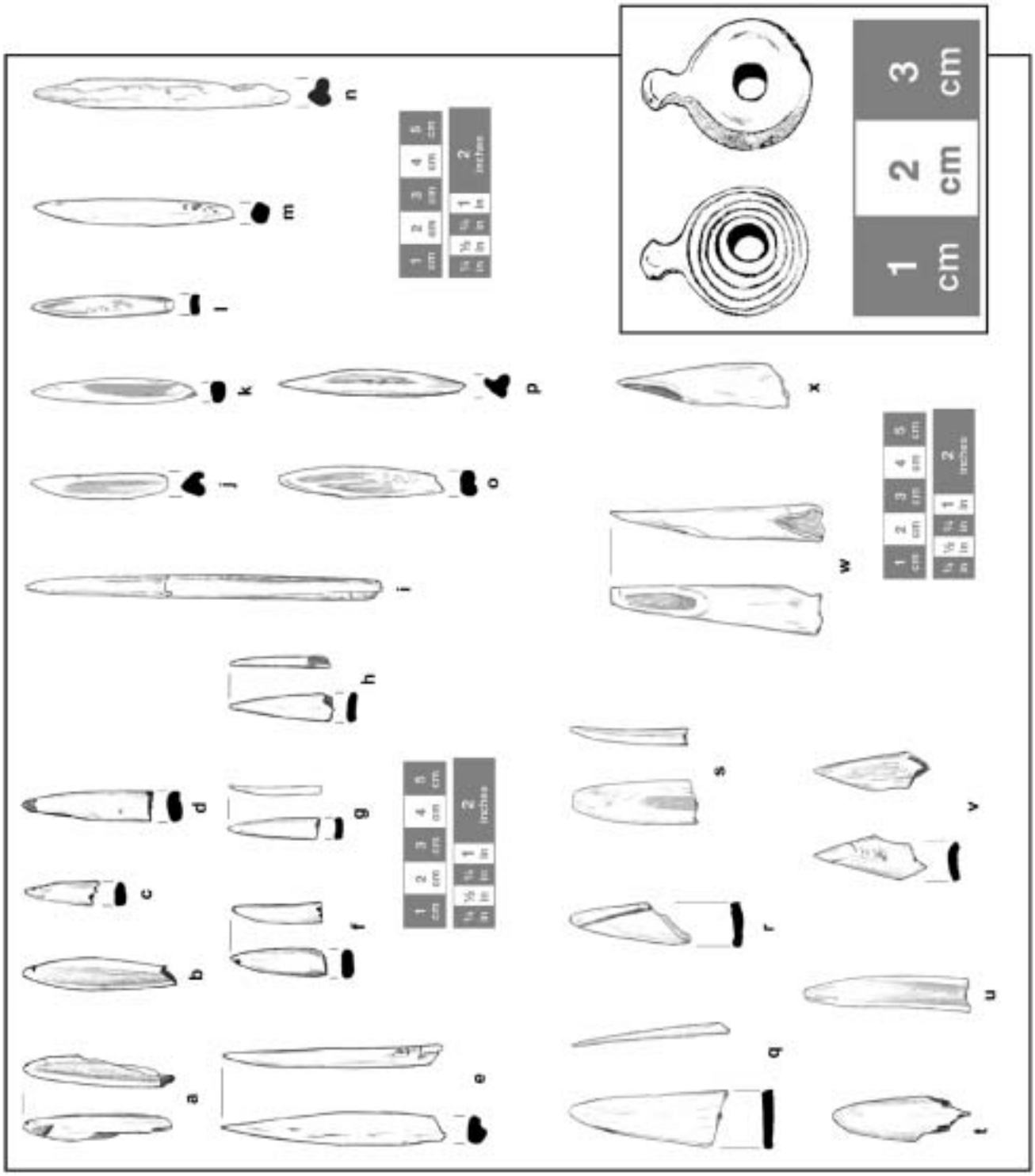

Figure 12. Representative Tequesta bone artifacts from the Miami Circle: a-d) pointed bone tool fragments with notching wear, possible "splitting knives;" e-h) pointed bone tool fragments with fid-like morphology and wear; i-p) hafted bone tools with awl-like wear; q-v) spatulate bone tools; w-x) socketed bone tools; inset) circular bone pendant, obverse and reverse.

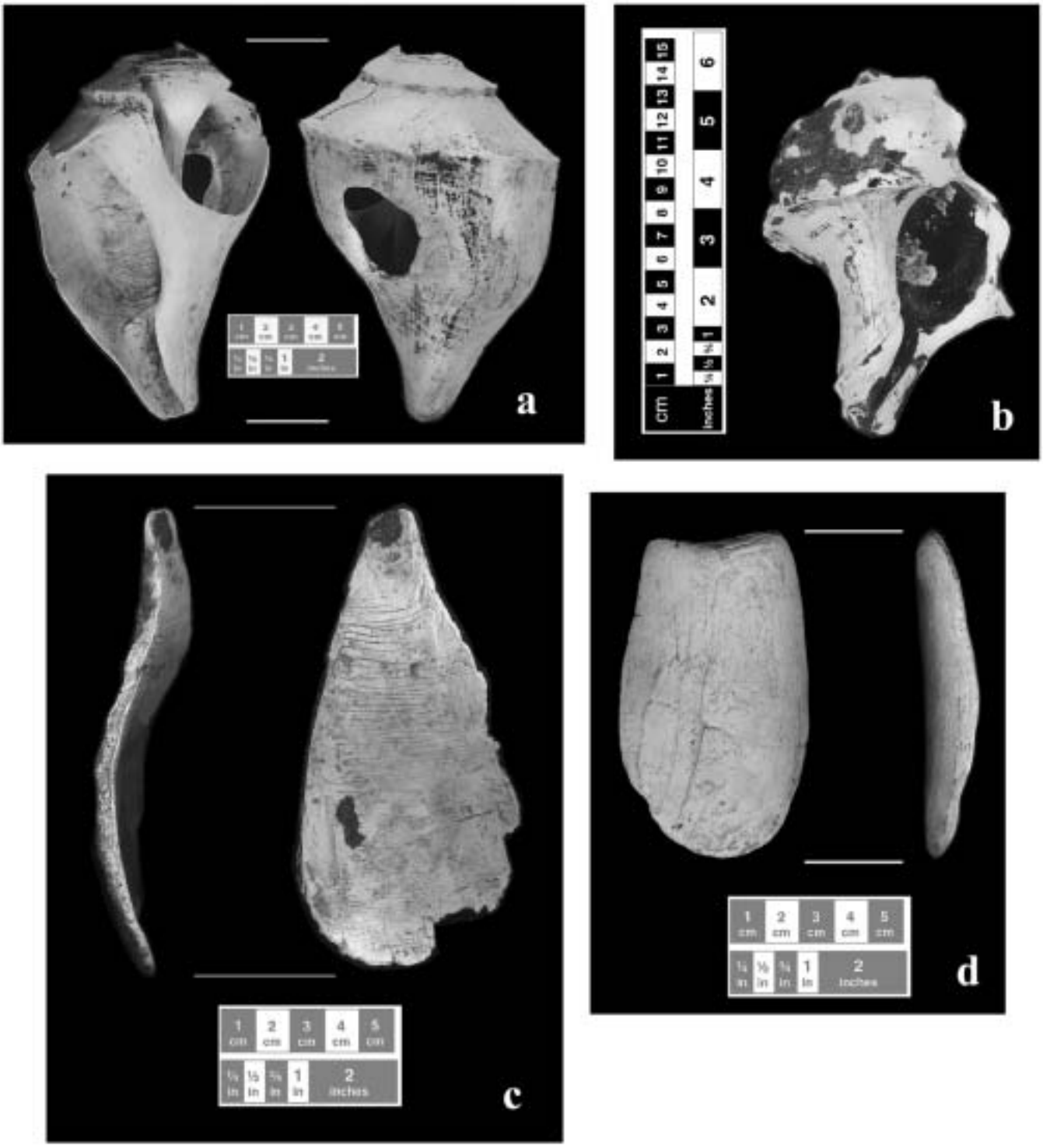

Figure 13. Representative Tequesta shell artifacts from the Miami Circle: a) hafted cutting-edge tool, *Busycon sinistrum*; b) gastropod hammer, *Pleuroploca gigantea*; c) adze, *Busycon sinistrum*; d) reworked *Strombus gigas* celt, possibly a drawknife.

Figure 14. Photograph of *Strombus gigas* celts from the Ft. Lauderdale area (collection of Florida Atlantic University, Boca Raton).

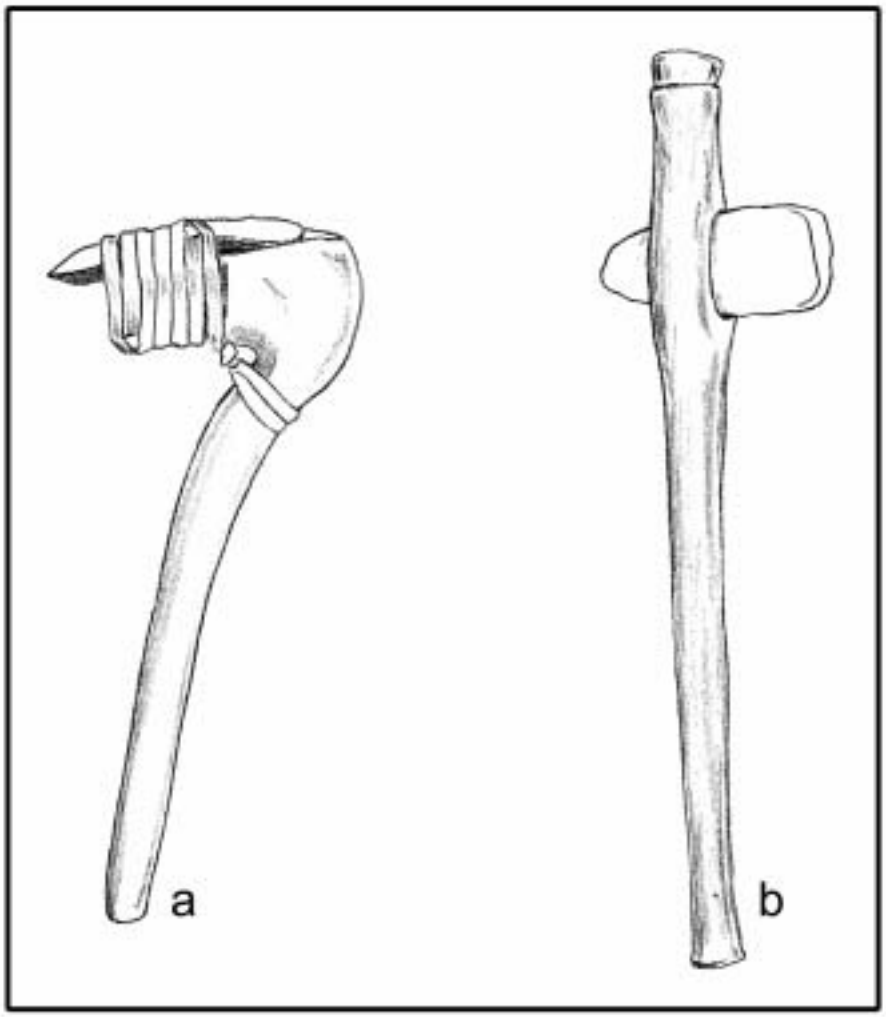

Figure 15. Two hypothetical methods of hafting *Strombus gigas* celts, based on wear patterns, wooden handles from archaeological sites, and analogy with nineteenth century carving tools (from Wheeler 2002c).

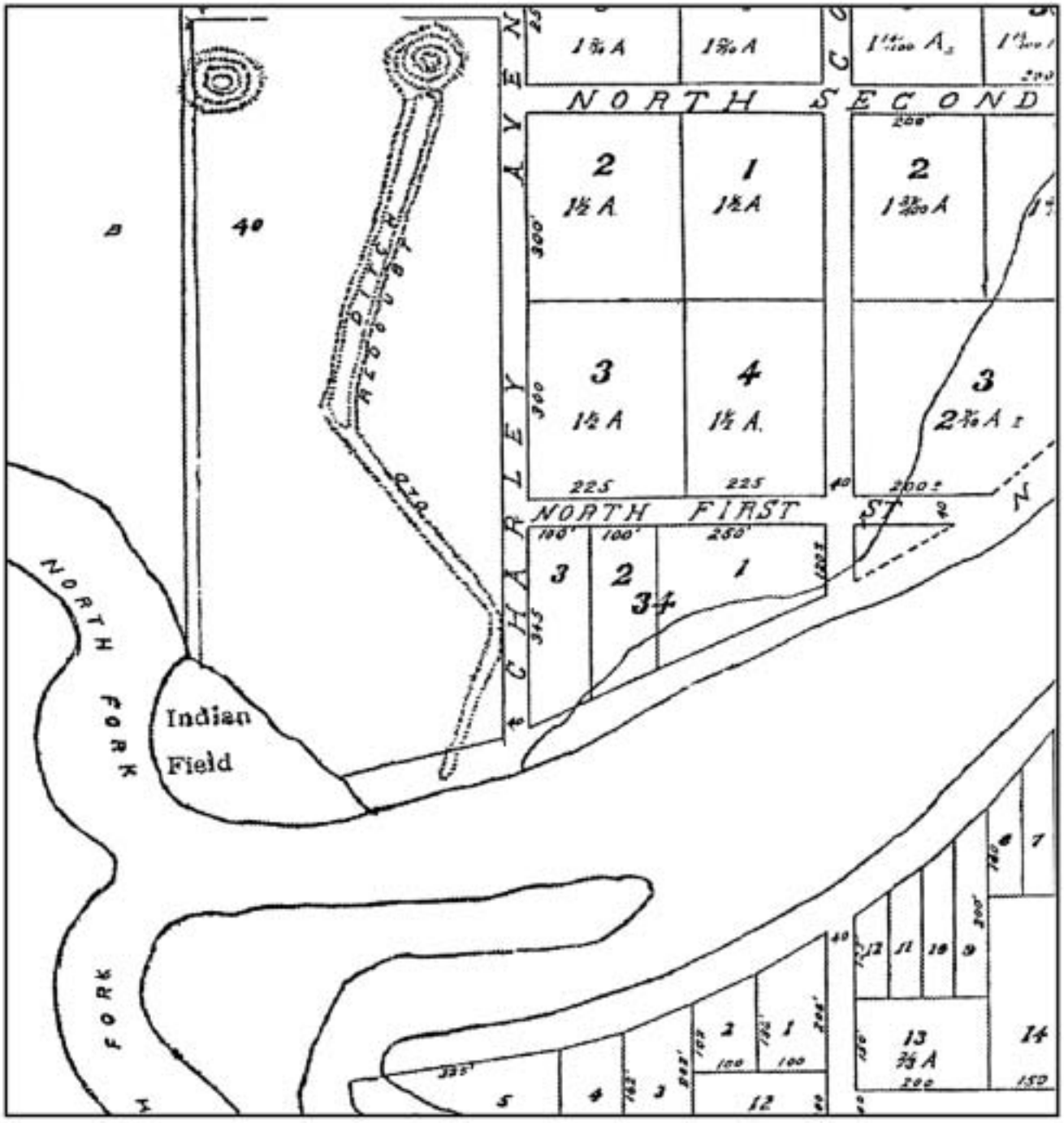

Figure 16. Knowlton's map of the New River Earthworks (from Carr et al. 1995:25).

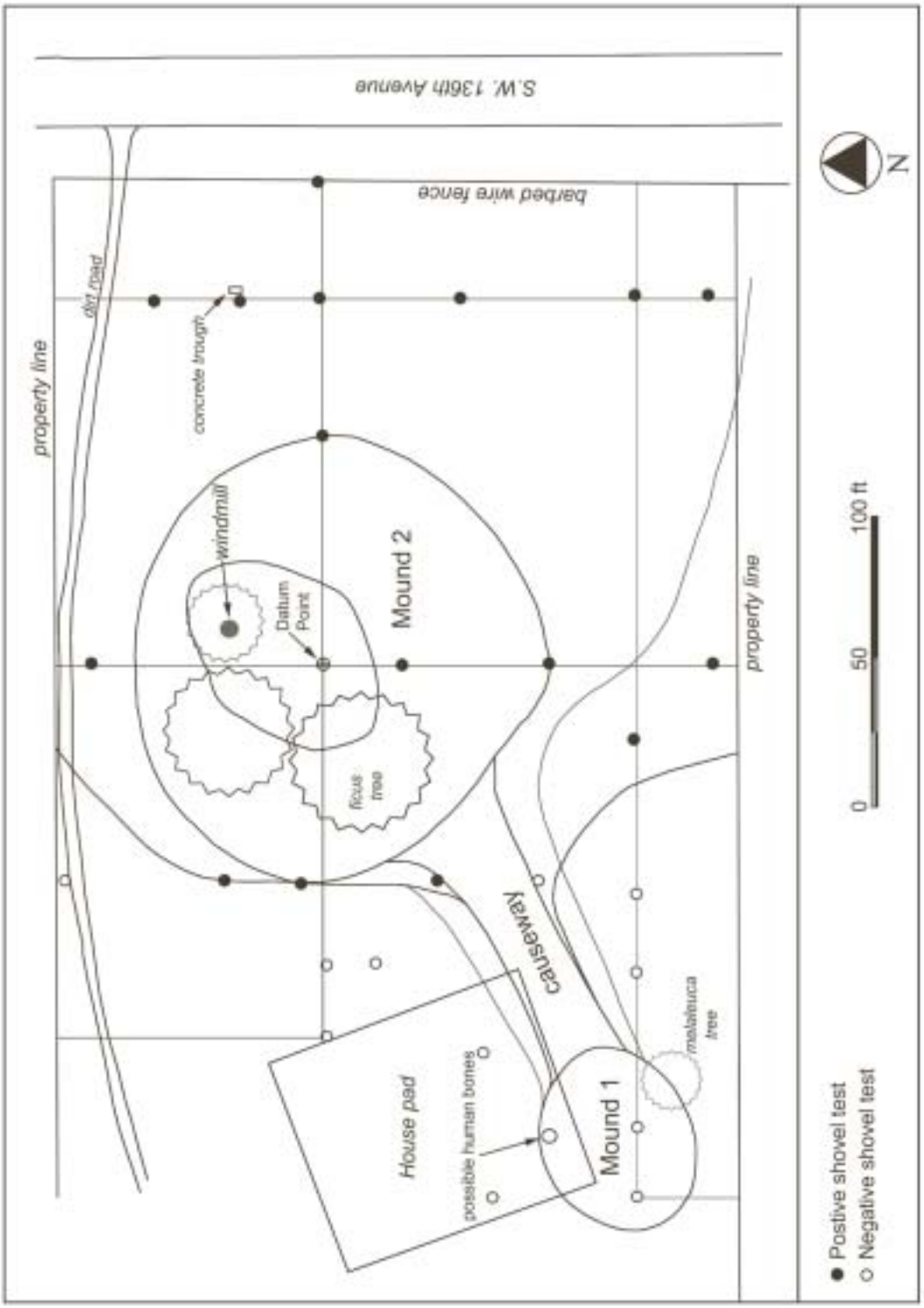

Figure 17. Plan map of the Holatee Trail Earthworks (8BD104) (after a plan map prepared by the Archaeological and Historical Conservancy, 1991).

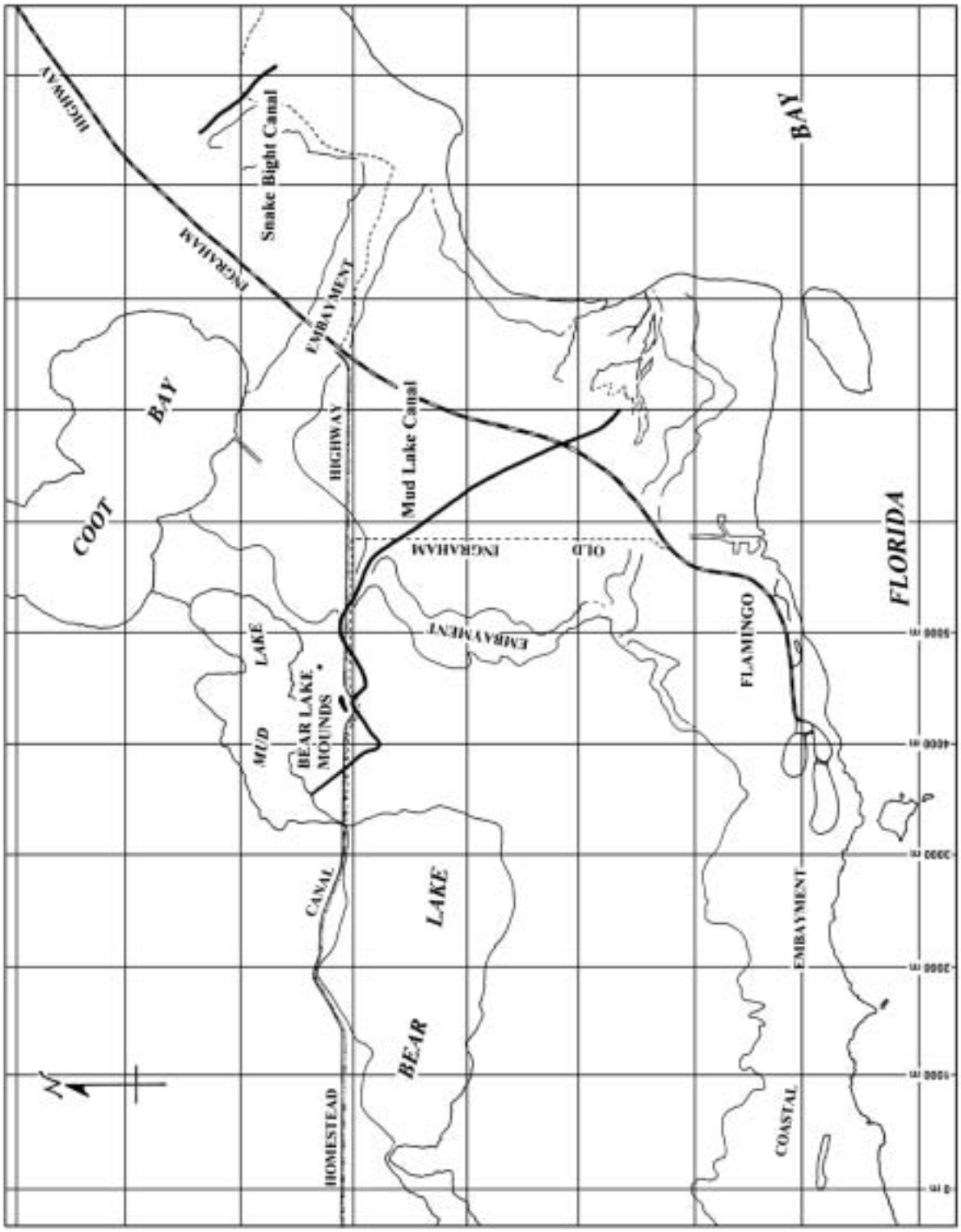

Figure 18. Plan of the Cape Sable Canals (after Wheeler 1998a:17).

Figure 19. Oblique aerial photograph of the Mud Lake Canal (from Wheeler 1998a:18).

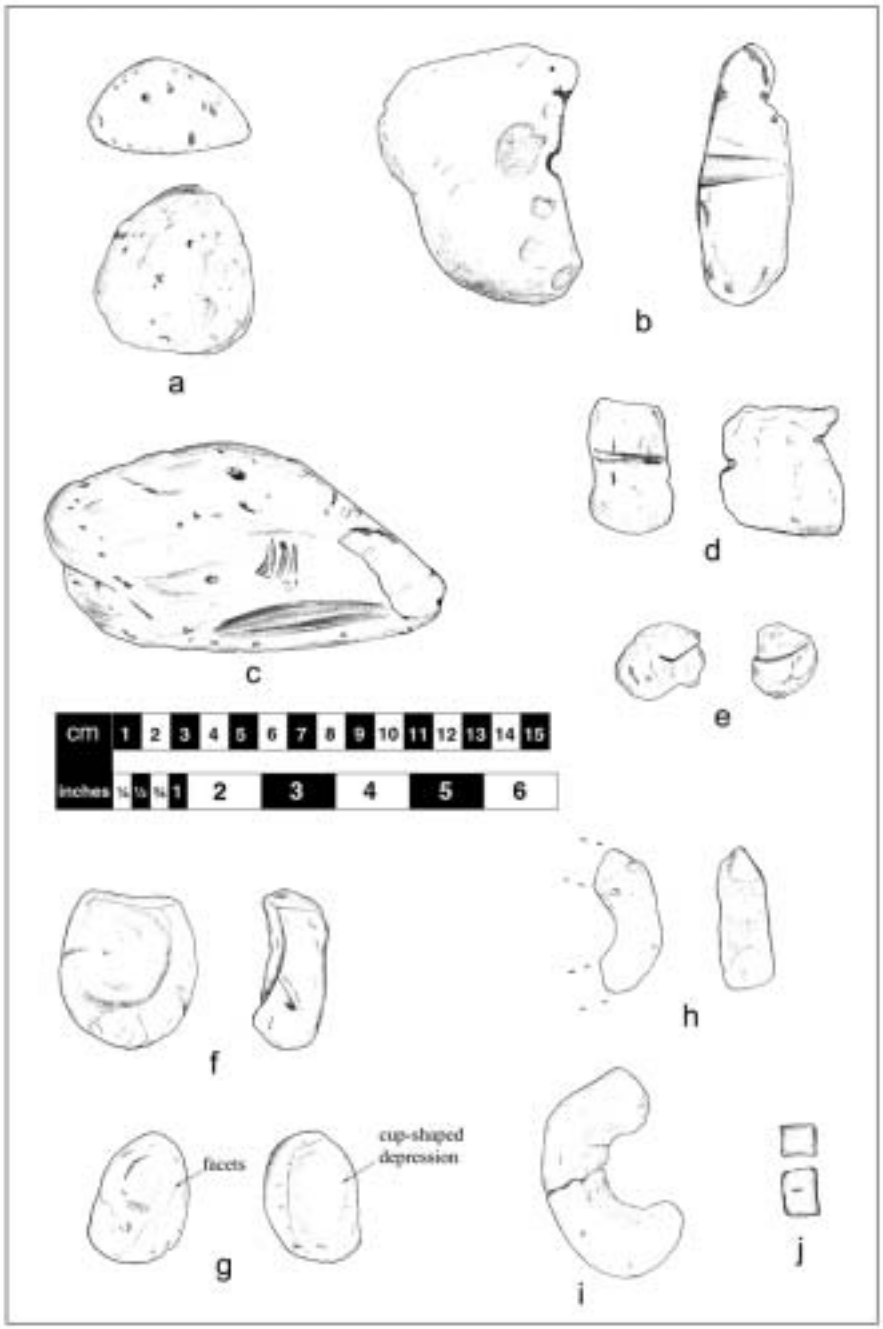

Figure 20. Pumice artifacts.

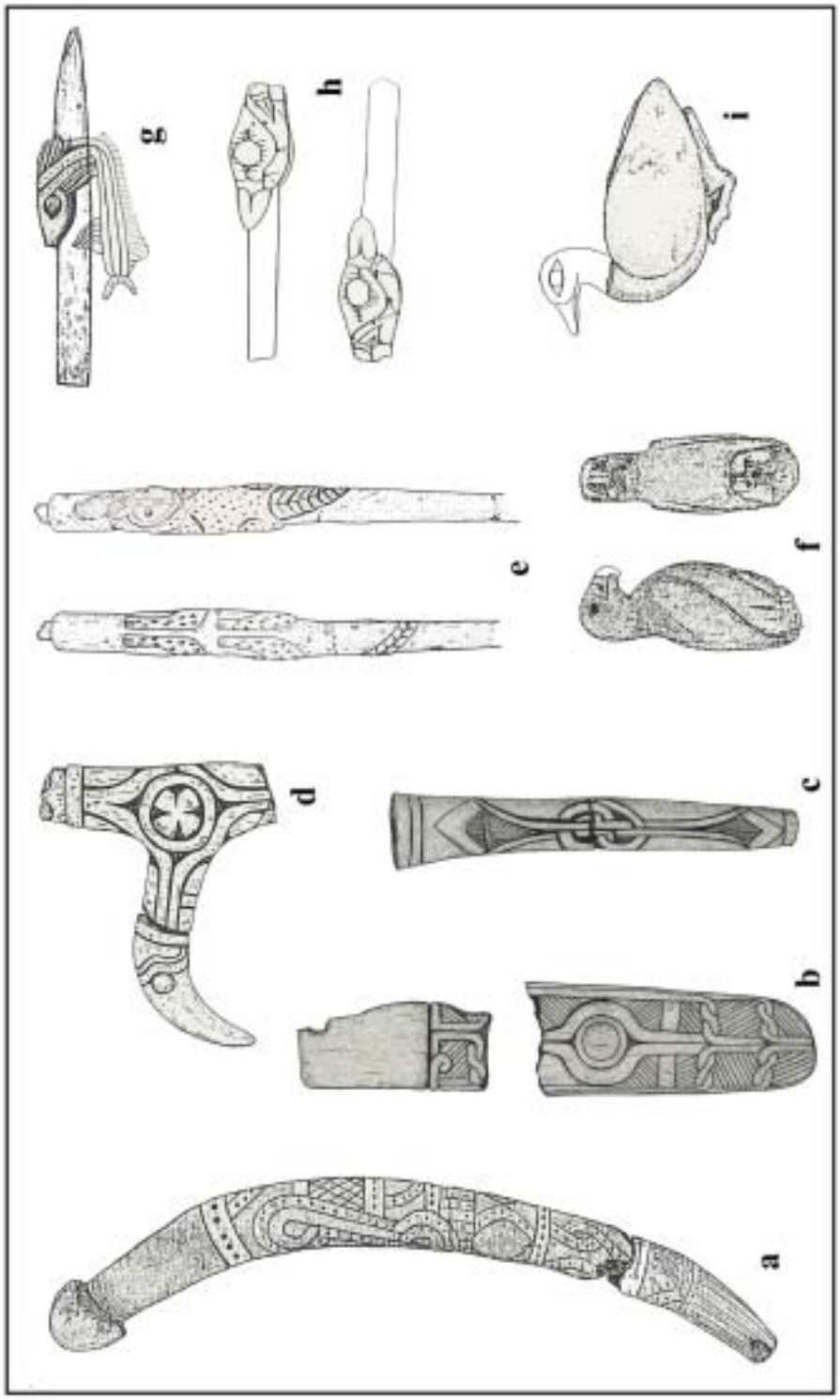

Figure 21. Decorated bone artifacts from southeastern Florida: a) phallic/rattlesnake carving, antler, Margate-Blount site (8BD41); b) pendant with eye and braid motif, 8DA140; c) plume holder with knot motif; 8DA140; d) stylized vulture carving, antler, Margate-Blount (8BD41); e) bas relief carving of opossum, Lyons-Lord site (8DA5128); f) hawk or peregrine falcon carving, antler, Florida Portland/Bamboo Mound (8DA94) (see McKinley 1977:6, 10); g) carving of freshwater eel, Margate-Blount (8BD41); h) deer head carved to ornament a bone pin, Onion Key (8MO49); and i) dabbler duck, antler, Margate-Blount (8BD41).

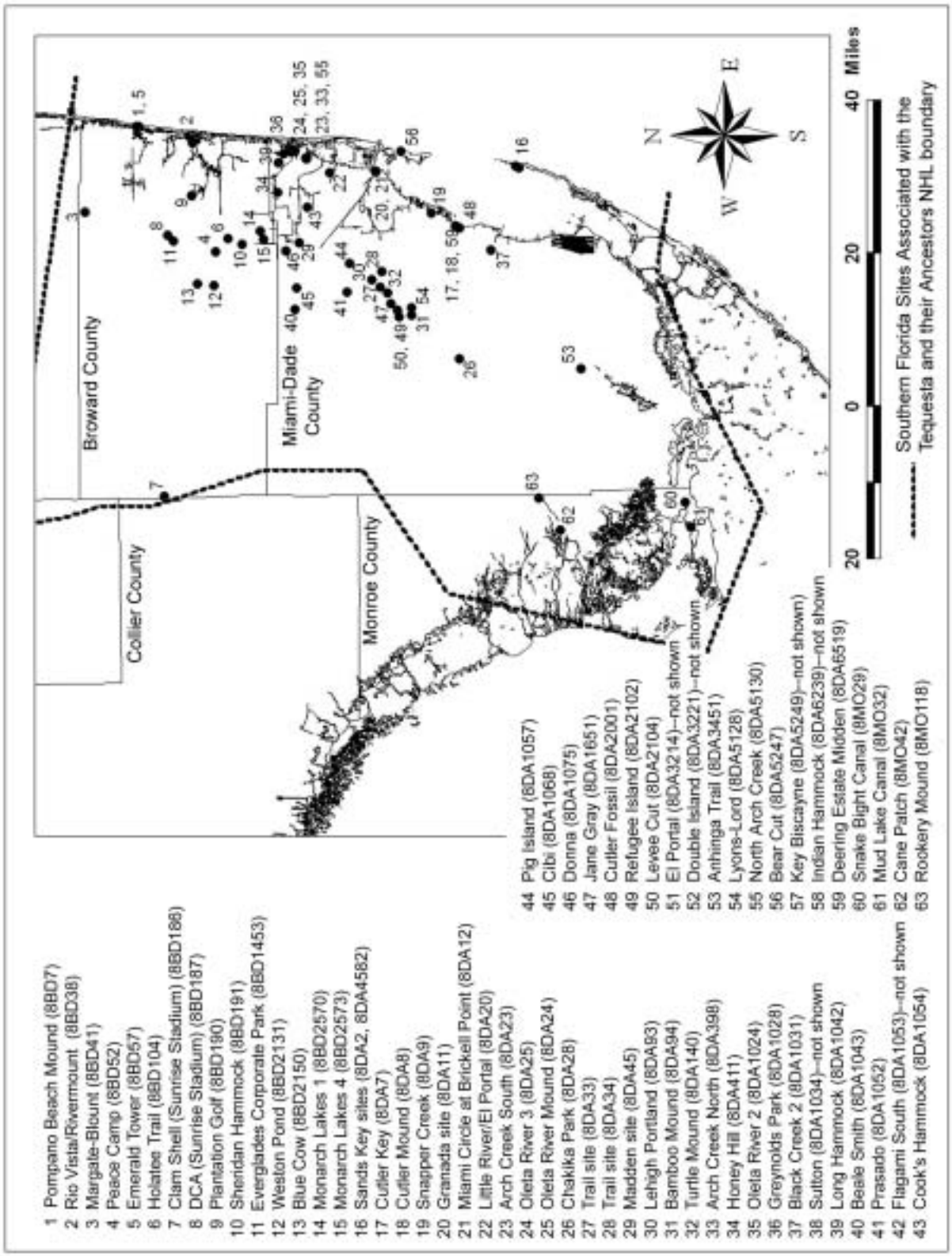

Figure 22. Location map of significant sites in the area inhabited by the Tequesta and their ancestors (also see Table 6).

Figure 23. Southern Florida Sites Associated with the Tequesta and their Ancestors NHL boundary plotted on U.S.G.S topographic maps.