Chapter 10. THE CALOOSAHATCHEE REGION

Delineation of the southwest Florida Caloosahatchee culture area, along with other areas of southern Florida, has drawn differing opinions that have produced variously drawn boundaries (e.g., Bullen 1969; Carr and Beriault 1984; Goggin 1947, 1949a; Griffin 1988, 1989; McGoun 1984; Milanich and Fairbanks 1980; Sears 1967; Widmer 1988). Because the spatial configuration of any culture area surely underwent constant change over time, it is not crucial to establish rigid demarcations. Yet even a rough definition is useful for organizational purposes (Griffin 1988:119). John Griffin's updated approximation of south Florida culture areas places the Caloosahatchee region northern boundary slightly north of the mouths of the Peace and Myakka rivers and the southern boundary just south of Estero Bay (1988:121). An eastern boundary is arbitrarily drawn half way between Charlotte Harbor and Lake Okeechobee. Carr and Beriault (1984:12) and Widmer (1988:79) concur. These artificial boundaries encompass all of Charlotte and Lee counties.

Ethnohistoric Perspective

Spanish explorers entering Estero Bay and Charlotte Harbor in the sixteenth century encountered the populous and sedentary maritime Calusa Indians governed by a paramount chief named "Carlos." Written accounts of these meetings record first-hand observations of Calusa life. Principal archival sources include the documents of Solís de Merás (1923), Vargas Ugarte (1935), True (1945), Zubillaga (1946), Laudonnière (1975), and Hann (1991). The chronicles frequently focus on the Calusa capital, "Calos," believed to have been located at Mound Key in Estero Bay (Goggin and Sturtevant 1964:182-183; Lewis 1978:19, 40-41) and consistently depict the area of Estero Bay/Charlotte Harbor as the heartland of the Calusa people whose political influence extended over all of south Florida. The densest population in south Florida occurred at this coastal "center" (Goggin and Sturtevant 1964:186; Milanich and Fairbanks 1980:246).

The Calusa have been variously identified by researchers as a society at the level of complex hunter-gatherer, chiefdom, and state. Anthropologists, using Spanish descriptions, characterize an elaborate level of cultural complexity for the Calusa based on a fishing economy (Goggin and Sturtevant 1964; Lewis 1978; Marquardt 1986, 1987, 1988; Widmer 1988). To date, archaeologists have not demonstrated conclusively whether or not this historic Calusa society originated in the coastal region (Luer 1986a:154-155; Widmer 1988:97).

Environmental Perspective

The southwest Florida coastal area of the Charlotte Harbor estuarine system, encompassing Charlotte Harbor proper south to San Carlos Bay and Estero Bay, represents a culmination of biotic productivity resulting from the climatic, physiographic, and hydrographic nature of the lower half of the Florida peninsula. Located between 26° and 27.5° north latitude, the Caloosahatchee Area lies at the northern limit (thus, often referred to as "subtropical") of the tropical wet/dry savannah as classified in the Köppen system (Oliver and Hidore 1984:186-189). The barrier effect of the Atlantic coastal ridge, plus the general southwesterly slope of the peninsula, creates a great nutrient flow that eventually concentrates in the shallow inshore marine waters of the Charlotte Harbor system (e.g., Estevez 1981; Taylor 1974:205-209; White 1970). Three major rivers, the Myakka, Peace, and Caloosahatchee, drain interior lands to the north and east, emptying into Charlotte Harbor and San Carlos Bay. Combined with the circumscribing nature of sand barrier islands and ocean to the west, relatively unproductive savannah environments to the north and east, and swamps to the south and southeast, the Charlotte Harbor locale can be viewed as an optimal center for natural food production. The high biotic productivity of the Charlotte Harbor ecosystem locally results from the existence of expansive mangrove and seagrass biological communities (Harris et al. 1983; Odum et al. 1982; Taylor 1974; Zieman 1982).

History of Archaeological Research

The early period of archaeological interest in southwest Florida spanned the latter half of the nineteenth century and the first three decades of the twentieth. It was marked by visits and explorations by such figures as Kenworthy (1883), Simons (1884), Douglass (1885), Durnford (1895), Cushing (1897), Moore (e.g., 1900, 1905, 1919), Hrdlicka (e.g., 1917), Collins (1929), and Stirling (e.g., 1931, 1935). By far, the most significant event of this period was the discovery and excavation of the well-preserved Key Marco site (8CR48) (Cushing 1897; Gilliland 1975, 1988). This site is now thought to lie outside the Caloosahatchee area proper (Carr and Beriault 1984:4-5; Griffin 1988:135, 137).

John Goggin's work of the 1940s and 1950s (e.g., 1939, 1940, 1947, 1949a, 1949b, 1950b, n.d.a, n.d.b) was vastly important in that it focused on establishing archaeological spatial and temporal relationships in south Florida. His contributions to south Florida chronology remain a "bedrock" for subsequent amendments, refinements, and comparative study. Although Goggin's chronological work focused on areas other than the Caloosahatchee, one of his most influential papers, co-authored with William Sturtevant, spotlighted the Calusa as a complex society that existed without the benefits of agriculture (Goggin and Sturtevant 1964).

A new era of archaeological investigation emphasizing evolutionary concerns is underway. Randolph Widmer's published dissertation (1988) offers a testable cultural materialist model for the Caloosahatchee region. Most recently, a large interdisciplinary research project, aimed at understanding the emergence of Calusa complexity through the consideration of both material and sociohistorical forces, operates under the direction of William Marquardt at the Florida Museum of Natural History (Marquardt 1984, 1986, 1987, 1988, 1989).

Chronology

To date, only one Early Archaic site has been discovered in the Caloosahatchee region (Hazeltine 1983:98-100). Isolated Early and Middle Archaic projectile points are occasionally found along the shoreline (e.g., Hazletine 1983). Small lithic scatters have been found in the interior of the region (Almy and Deming 1987), and several researchers have speculated about an Archaic period affiliation for these sites (Beriault 1973; Austin 1987a:49). By 2700 B.P. (750 B.C.) Gulf coastal estuaries were "fully established" due to the slowing of a transgressing sea (Griffin 1988:47; Widmer 1988:213). Zooarchaeological evidence from Useppa Island, however, indicates that a rich estuarine environment was already intensively exploited at Charlotte Harbor as early as 5625 B.P. (3675 B.C.) (Milanich et al. 1984:270, 273-275). This finding demonstrates the potential of these sites to answer questions of when modern estuarine areas were first occupied permanently and how extensive were such populations. Ongoing paleoenvironmental investigation of site seasonality, based on the quahog clam, can aid in this endeavor (e.g., Quitmyer and Jones in prep.).

Sand-tempered plain pottery came into use around 2700-2500 B.P., marking the beginning of the Glades Tradition in south Florida (Goggin 1949a:28; Widmer 1988:73). Widmer proposes that by A.D. 500 the Caloosahatchee Area was characterized by a ceramic "trajectory," the Caloosahatchee sequence, distinct from the rest of south Florida (Widmer 1988:78), and that as early as A.D. 700/800 the basic economic, social, and demographic pattern of the prehistoric Calusa was established as evidenced in part by the construction of large non-mortuary ceremonial mounds (Widmer 1988:94, 97, 216, 223).

Widmer hypothesizes that sometime after A.D. 800, when village fissioning could no longer relieve the population stress, a regional (greater south Florida) system of Calusa hegemony came into existence that lasted into the historic period. Marquardt (1986:67), however, challenges this viewpoint, presenting the possibilities that late prehistoric climatic conditions or the protohistoric introduction of European artifacts may have triggered the complex Calusa sociopolitical developments.

Sixteenth and seventeenth century Spanish activity in southwest Florida was minimal compared to more northern parts of Florida. Although the predominant view is that the de Soto expedition entered *La Florida* at Tampa Bay

(e.g., Milanich 1987), Williams (1986) recently published an argument for Charlotte Harbor as the landing location. The 1566 to 1570 encounters between the Calusa of Charlotte Harbor and Pedro Menéndez de Avilés are well-documented from the Spanish perspective and have been discussed in considerable detail (Goggin and Sturtevant 1964; Lewis 1978; Marquardt 1987, 1988, 1989; Hann 1991). Although Carlos was killed in 1567 and Felipe (his successor) in 1568 by the Spanish, and Calos was abandoned temporarily in 1569, Calusa ideology and political hegemony in south Florida was still firmly rooted during the seventeenth century, indicating the system's resilience (Lewis 1978:30; Marquardt 1987:108-109, 1989:185). As late as 1743 traditional ideological elements were evident even though only a few Calusa remained as part of a remnant native group in the Miami area (Marquardt 1987:110). The last Calusa families departed the Florida keys for Cuba in 1763 (Sturtevant 1978:141).

Building a ceramic chronology for the Caloosahatchee region is a difficult task because its prehistory is dominated by undecorated sand-tempered pottery. Recent studies by Luer and Almy (1980) and Milanich et al. (1984), nevertheless, demonstrate the chronological potential of southwest Florida ceramics. As more excavation takes place, the applicability of Goggin's Glades ceramic sequence to the Caloosahatchee region is being scrutinized thoroughly. Widmer (1988:83-87) outlines what he calls a "Caloosahatchee Sequence" that now serves as an initial ceramic synthesis for the culture area.

Widmer's Caloosahatchee I (2450 B.P. to A.D. 700) is characterized by sand-tempered and laminated sand-tempered plain pottery, and perhaps most importantly, an absence of Belle Glade ceramics. The appearance and increase of Belle Glade ceramics among the sand-tempered plain wares distinguishes Caloosahatchee II (A.D. 700-1200). Caloosahatchee III (A.D. 1200-1400) is represented by the addition of occasional St. Johns and Englewood ceramics, the former thought to be a tradeware, while the latter is believed to have belonged to a specialized ritual-mortuary context. Caloosahatchee IV (A.D. 1400-1513) is identified by the addition of sporadic occurrences of Glades Tooled (generally associated with areas to the south), Safety Harbor Incised, and Pinellas Plain (both generally associated with the central Gulf coast to the north). Safety Harbor ceramics, widely thought to be associated with more northerly cultures, are increasingly found in the Caloosahatchee region, indicating that they should no longer be conceptually confined solely to the greater Tampa Bay region (Widmer 1988:86). Mitchem (1989:304), upon extensive examination of Charlotte County and Lee County artifact collections, concurs with this thesis.

Widmer's Caloosahatchee V (A.D. 1513 to A.D. 1750) consists of period IV pottery but is marked with European artifacts and, during latest times, with Leon-Jefferson ceramics (e.g., Bullen and Bullen 1956). Current research by Cordell (in prep.) is resulting in significant refinements of Widmer's Caloosahatchee Sequence based on extensive study of characteristics of paste and decoration, as well as technological and formal variability.

Subsistence

With the development of estuaries, semi-enclosed shallow-water mangrove and seagrass environments provided rich marine "gardens" allowing the growth of sedentary human populations. An essential element of aboriginal coastal life was a near-shore maritime fishing-gathering-hunting subsistence base. Ethnohistoric accounts depict the Calusa as a fisher folk above all else and explicitly note the absence of agricultural foodstuffs.

The quiet, near-shore marine tropical waters of the Charlotte Harbor/Estero Bay area produce a remarkable abundance and diversity of fish and shellfish (Estevez 1981; Harris et al. 1983; Taylor 1974; Wang and Raney 1971). Fishing with nets, hook and line, spear, and probably tidal traps accounted for the largest nutritional portion, roughly 80 to 90% meat biomass, of the Indian animal diet (Walker in prep.). Analysis of faunal samples from five variously located sites indicates that the species, size, abundance, and diversity of fishes procured varied according to village location, targeted micro-environment, and spawning cycles (Walker in prep.). Although seemingly unimportant from the perspective of meat, shellfish-gathering (including crabs) was extremely significant in the aboriginal diet as evidenced by the abundance and diversity of species in the massive middens (Walker in prep.). Spatial studies of archaeological mollusks indicate that shellfish were collected on a very local scale (Walker in prep.). Supplementary animal foods included the white-tailed deer, small and medium-sized

mammals, ducks and other fowl, alligator, turtles, siren, and sea urchin (Fradkin 1976; Milanich et al. 1984; Walker in prep.).

Wild plant foods reported either ethnohistorically (e.g., Fontaneda 1944; Zubillaga 1946) or archaeologically (Scarry and Newsom in prep.) include various wild roots (Hann 1986:91-93; Widmer 1988:232-233), mastic fruit, prickly pear cactus fruit, palm fruits, sea grapes, hogplum, and cocoplum. Additionally, there is the possibility that *Chenopodium* (goosefoot) and other starchy grasses archaeologically identified in the Caloosahatchee region were used as food resources (Scarry and Newsom in prep.).

The role of horticulture in prehistoric southwest Florida is presently contested among anthropologists (Dobyns 1983:126-130; Gilliland 1975:35; Lathrap 1987:349-350; Keegan 1987:334-335; Milanich 1987; Widmer 1988:229-234). Identification of the coontie plant (*Zamia* sp.) as the bread root of Fontaneda's memoir now has fallen out of favor. Hann (1986:91-93), Widmer (1988:233), and Griffin (1988:298) suggest other possible identifications. In any event, there is no indication that roots were cultivated, only that they were collected as food items (Marquardt 1986:66). Most recently Scarry and Newsom's research (in prep.) would seem to support the prevailing view that plant foods overall played a minor role in the native subsistence system, yet these authors acknowledge the potential gap in the archaeobotanical record due to the non-preservability of root foods.

Settlement patterns

Little is known about interior sites of the Caloosahatchee region, due to a paucity of systematic survey and excavation. A number do exist, though, as evidenced by Austin's (1987a) Lee County site inventory. Most concentrate along the banks of the Caloosahatchee River, occurring above the river's mouth. These approximately 27 sites are described as sand burial mounds and shell/dirt middens (Austin 1987a:17). Examples include River's Edge Shell Midden (8LL129), Moody's Mound (8LL758), and Beautiful Island Burial Mound (8LL73). Another interior site type in Lee County is the small dirt midden occurring in "oak/palm hammocks or palm islands associated with freshwater marshes" (Austin 1987a:17). Austin's inventory locates roughly fourteen of these sites including the Sentinela Site (8LL746), Maranda's Site (8LL731), and Halfway Pond Site (8LL743). A third site type, of which there is presently only one recorded for the interior areas, is the canal (8LL756) that cuts through present-day Cape Coral (Luer 1989:105-108). Unfortunately, only one site, Oil Well Road Site (8CH66), has been recorded for the interior areas of Charlotte County. It is located in freshwater marshlands.

Another interior site type is shell scatters. These small, shallow sites are common in the sandhill scrub from Collier County north to Sarasota County (Beriault 1973; Deming and Almy 1987, 1988; Almy 1988; Estabrook and Austin 1989). In the Caloosahatchee region they are most often found near shallow ponds or bayheads. Contents consist primarily of shell refuse (principally oyster and quahog clam), occasionally shell tools (left-hand notched quahog clam shells are common), and sherds of sand-tempered plain or St. Johns Plain ceramics. Excavations of shell scatter sites in other regions (e.g., Austin and Russo 1989) have provided important information on site structure, shell tool technology, and technological organization (Estabrook and Austin 1989).

Coastal middens containing shell, bone, and other culturally-deposited debris are distributed along Pine Island and the estuarine perimeter and dot many mangrove-fringed islands in Pine Island Sound and Charlotte Harbor proper (Austin 1987:17; Edic 1987; Kennedy 1978; Luer 1988; Wilson 1982:3). Approximately 90 coastal sites are recorded for Charlotte County while 146 are recorded for Lee County. A continuum of site types is found beginning with small amorphous middens and ending with elaborate village complexes comprising platform mounds, plazas, "water courts," causeways, and canals. A few sites have been mapped, some very recently (Luer 1988; Marquardt in prep.).

Shell middens are by far the major coastal site type, with 100 recorded for Lee County. Examples include Buck Key Shell Midden 1 and 2 (8LL721 and 8LL722), Cabbage Key (8LL71), and Calusa Island (8LL45). At the larger village complex sites, mounds seem to be of two types. Many mounds represent undisturbed accumulations of debris over time, while others show stratigraphic evidence for mound-building using midden materials

previously deposited elsewhere. These extensive planned shellworks concentrate along the estuarine fringe. A few of the larger, better-known midden/mound complexes include Big Mound Key (8CH10) (Luer et al. 1986; Marquardt in prep.), and Boggess Ridge (8CH16) (Luer and Archibald 1988), Cash Mound (8CH38) (Bullen and Bullen 1956; Marquardt in prep.), Pineland, (8LL33, 8LL34, 8LL36, 8LL37) (Luer 1986b; Marquardt in prep.), Josslyn Island (8LL32) (Marquardt 1984, in prep.), Galt Island (8LL27, 8LL81) (Marquardt and Beriault 1988), Useppa Island (8LL51) (Griffin 1949; Marquardt in prep.; Milanich et al. 1984), Wightman (8LL54) (Fradkin 1976; Wilson 1982), and Mound Key (8LL2, 8LL3) (Lewis 1978).

Intra-site settlement information is scant. What is known comes from two ethnohistoric sources and one archaeological excavation. In a 1566 meeting, the paramount Carlos received Menéndez in his own house, a building large enough to hold 2,000 people (Solís de Merás 1923:145). A priest in 1697 described a Calusa temple called a "mahoma" as a long, wide, and tall building with only one door (Marquardt 1987:109). The only known archaeological evidence for a structure was excavated at the Solana site (8CH67) on the Peace River and has been interpreted as a possible dwelling built on pilings (Widmer 1986:41).

The abundance and enormity of sites in the Caloosahatchee coastal area denote a large population, probably the densest of prehistoric south Florida. The middens, some in the form of mounds, are at times overwhelming in their depth, height, and extent. Mound Key, for example, covers roughly 70 to 80 acres reaching an elevation of 31 feet (Goggin and Sturtevant 1964:183). Widmer uses late prehistoric site size and frequency to estimate a contact-period Calusa (including the Ten Thousand Islands area) total population of 10,250 and only 4,800 for the Charlotte Harbor estuarine area (Widmer 1988:260). Other total estimates for the Charlotte Harbor and Ten Thousand Island areas at contact include 4,000 to 7,000 (Goggin and Sturtevant 1964:186-187), 10,000 to 15,000 (Milanich and Fairbanks 1980:246), and 97,600 (Dobyns 1983:131). Such estimates remain in the realm of speculation.

Material Culture and Technology

Study of temporal variation in bone, shell, and stone artifacts in the Caloosahatchee region has been very limited. Additionally, little intra-regional spatial variation has been detected and so these artifact classes have been treated largely on a south Florida regional basis. Goggin (n.d.a), noted some intra-regional differences in artifact classes as did Bullen and Bullen (1956). These observations need to be tested with increased sample sizes.

Bone and marine shell are prominent media in south Florida for a great variety of utilitarian and decorative items. The major sources for shell artifact typologies are Goggin's unpublished manuscript (n.d.a) and Griffin's recent synthesis (1988). Complementing these are research papers focusing on specific shell tool types (e.g., Luer et al. 1986; Luer 1986a; Masson 1988; Estabrook and Austin 1989). Vessels such as dippers, cups, and spoons varying in size were fashioned from a number of different marine gastropod species. Cutting-edge tools and hammers are common tools generally made from thick-walled gastropods. Perforated bivalves, notched clam fragment weights, gorgets, beads, and "pendants/plummets" are also found. Goggin also presents a descriptive typology for bone artifacts (n.d.a) and most recently, a large collection from the Granada site near Miami has been studied (Richardson and Pohl 1982). Awls, beads, pendants, pins, gorges, barbs, and points are just a few of the many forms. The functions of several of these shell and bone artifacts are being reinterpreted as more is learned about Florida's prehistoric fishing technology (Walker 1989).

The most common stone artifacts are perforated rocks (sometimes shaped) of limestone, thought to have been weights, and limestone plummets (Goggin n.d.a; Griffin 1988:98-100, 110). A third important group is the incised stone (non-native material) ceremonial tablets, most of which are from Collier and Monroe counties (Allerton et al. 1984; Luer 1985). Unfortunately, chronological context is unknown for the tablets but a late prehistoric time is suspected.

Artifacts of wood and cordage are known from the Key Marco site located south of the Caloosahatchee region (Cushing 1897; Gilliland 1975, 1988). The degree of material technology exhibited by the well-preserved artifacts

nevertheless can be extrapolated for northern neighbors and may be closely associated with the Calusa, especially if the Key Marco site dates to late prehistoric times as argued by Milanich (1978a). Artifacts document a diverse and sophisticated use of woods, including a knowledge of functional properties and an elaborate artistic expression. Additionally, toy wooden canoes suggest the construction and use of water-going vessels for different purposes (Cushing 1897:364-365). The most extensive use of cordage (probably of palm fiber) was in the manufacture of fishing nets of varying mesh sizes and shapes. Remains of gourds of a type similar to modern ornamental specimens have been identified from Key Marco (Cutler 1975:255-256) and more recently from Buck Key (Scarry and Newsom in prep.). These gourds are thought to have been used for net floats or containers (e.g., Gilliland 1975).

Little systematic study of post-contact European or European-influenced native artifacts has been undertaken. This is largely because many if not most burial mounds of this period have been looted and artifacts are scattered among private collectors or were melted down years ago (Goggin n.d.a). Goggin (n.d.a) describes various artifact classes and discusses their distribution as they were understood around 1949 and Mitchem (1989a) provides an updated survey of known contact-period European artifacts for southwest Florida.

Of importance is work exemplified by Allerton et al. (1984) who provide an excellent descriptive and illustrative inventory of all known contact-period metal ceremonial tablets with a subsequent addition by Luer (1985). Their research resulted in an important study of pattern and variation in an artifact type that is unique to south Florida. The incised tablets, based upon their chronological and geographical contexts, surely signify high status positions closely associated with the spread and maintenance of the historic-period Calusa hegemony (Griffin 1988:311-312; McGoun 1981).

Belief System and Mortuary Behavior

A ranked set of three dieties representing rule in the realms of the celestial, the earthly terrestrial polities, and war were most important to the Calusa (Goggin and Sturtevant 1964:197). Religious specialists who had the power to summon the winds (Sturtevant 1978:147) and who controlled the idols were a prominent element of Calusa society. Human sacrifice, usually with Spanish victims, was related to the needs of various idols. One type of idol was a painted, flat board depicting an animal figure. Beautifully carved and painted wooden masks such as those found at Key Marco (Cushing 1897; Gilliland 1975, 1988) were used in complex ceremonies that were religious in nature. At Calos, the paramount chief's town, wooden masks and other religious paraphernalia were kept in a temple on top of a mound. There are also ethnohistoric suggestions of charnel houses and burial mounds that were feared but closely guarded and located away from the main village complex. Rogel notes that the Calusa believed that each person had three souls, one of which was in the pupil of the eye and remained in the body after death (Zubillaga 1946:278-281). For this reason, people visited the burial grounds to gain counsel from the dead.

Knowledge of prehistoric mortuary practices is limited, but Widmer (1988:94-97) has sketched an initial chronology based on early excavations. Sand burial mounds excavated at Captiva Mound (8LL57) (Collins 1929:151-153) and the Pine Island 8 site (8LL40) (Moore 1900:363) have components tentatively assigned to the Caloosahatchee II period (A.D. 700-1200), characterized by continuous use over time, flexed primary with secondary burials, associated charnel houses, and no grave artifacts except for the placement of pottery sherds around the skull (Goggin n.d.a:296-298, 307-308; Widmer 1988:94-95). Burials of the Caloosahatchee III and IV periods (A.D. 1200-1513) differ only in that they contain ceramics such as Safety Harbor and Englewood styles as grave offerings. Mounds with these components are near Punta Rassa (8LL8), the Pine Island 8 site (8LL40), and the Aquí Está Burial Mound (Widmer 1988:96). A single burial excavated from the sand mound on Buck Key (8LL55) (Hutchinson in prep.), dates early in this period but does not contain artifacts (Marquardt in prep.). Caloosahatchee V (A.D. 1513-1750) burials follow a similar pattern except for the addition of European artifacts. The Mound Key (Moore 1905) and Pine Island (Moore 1900, 1905) sites contained aboriginal burials with European grave goods (Goggin n.d.a; Luer 1985; Widmer 1988). The most striking feature of the Caloosahatchee mortuary pattern, to the extent that it is known, is its continuity through time and general lack of grave goods.

Sociopolitical Organization

That the sixteenth century Calusa sociopolitical formation was highly complex has been clearly demonstrated (Goggin and Sturtevant 1964; Lewis 1978; Marquardt 1986, 1987, 1988, 1989; Widmer 1988). Marquardt (1987:99) notes that although most researchers consider the level of Calusa cultural complexity to have been that of a chiefdom (e.g., Widmer 1988), the society falls into an "early state" category under one anthropologist's typology and a "weak tribute-based state" under another. Almost all that is known about the sociopolitical realm of the Caloosahatchee region is due to ethnohistoric documentation; thus, we are largely limited to the protohistoric and early historic periods. These documents have been used in depth by Goggin and Sturtevant (1964), Lewis (1978), and Marquardt (1987, 1988, 1989) to characterize sociopolitical organization.

Calusa status differentiation was well developed as described by the sixteenth-century Spanish. Chroniclers perceived a rigid social hierarchy that operated under the paramount chief's authority. Close to the paramount were two powerful advisory figures, the chief priest and the *capitán general*. The paramount's principal wife was normally his full or classificatory sister. Royal succession to the paramountcy was maintained through this practice of sibling marriage. A supported nobility and military elite were not required to work. Noble women participated in public ceremonies along with the men. Commoners, denied access to certain privileges and material surpluses, constituted the bulk of the population. Captives were made to work, at least in historic times.

The political authority of Carlos was ideologically melded with his spiritual authority (Marquardt 1988:174-175). There existed a tight link between his absolute power and the insurances of environmental productivity, intra- and inter-regional sociopolitical order, and spiritual order. Ceremonies performed in secret by the paramount and his associates maintained the availability of food in abundance. Alliances with other south Florida polities were cemented by the taking of a noblewoman to be Carlos' bride and by engagement in a system of tribute extraction (e.g., food, hides, mats, feathers, captives, salvaged European materials) Luer (1989) discusses the probable role of artificial canals in the Calusa hegemony. The paramount chief could call on the armies of any subservient town to take part in the frequent warfare conducted with his rivals, the Tocobaga. One of three principal gods described by Rogel (Zubillaga 1946:280) was said to help gain victory in these wars.

Important Sites

There are approximately 279 recorded prehistoric, protohistoric, and early historic aboriginal sites in the Caloosahatchee region. Six of these, four in Lee County and two in Charlotte County, have been placed on the National Register: Mound Key (8LL2), Demere Key (8LL31), Josslyn Island (8LL32), the Pineland site (8LL33), Big Mound Key (8CH10) and Boggess Ridge (8CH16). Many others are important, including extensive midden and mound complexes such as Cash Mound (8CH38), John Quiet Mound (8CH45), Galt Island (8LL27, 8LL81), Useppa Island (8LL51), Indian Field (8LL39), and Hooker Key (8LL30). Other significant coastal shell midden sites include Catfish Point (8CH9), Coral Creek (8CH15), Buck Key (8LL721 and 8LL722), Fisherman's Key (8LL10), Howard Mound (8LL44), Pineland Midden (8LL37), Calusa Island Midden (8LL45), and Mondongo Island (8LL52). Important sand burial mounds include Boggess Ridge (8CH16), Mound Key (8LL3), Buck Key (8LL55), Galt Island (8LL81), Beautiful Island (8LL73), Pine Island 8 (8LL40), and Pineland (8LL36). The Pineland (8LL34) and Cape Coral (8LL756) canals are of great significance. Examples of important riverine or interior marshland sites are Solana Site (8CH67), Cape Haze Mound (8CH347), Hickey's Creek 1 (8LL22), and Hickey's Creek 2 (8LL23), River's Edge (8LL129), and Halfway Pond site (8LL743).

Research Questions

Mechanisms underlying the emergence of complex social formations in aboriginal populations are currently an important anthropological concern for the Caloosahatchee region. In the past, archaeologists themselves have been a great source of bias in understanding the evolution of south Florida cultures. Scholars have begun to recognize that theoretical mindsets originating from long-held cultural trajectories based on southeastern U. S. prehistory or Caribbean migrations are not appropriate for the southern half of Florida. The common core of these evolutionary mindsets is a prerequisite of food surpluses in the form of aboriginal cultivation of plant foods, whether they be corn or root crops, for the rise of cultural complexity. South Florida extends southward from the North American continent into the tropical latitudes, immediately distinguishing it environmentally from its northern neighbors. It differs from the Caribbean islands in that it is part of a large peninsula giving rise to productive estuarine and interior wetland environments. The notion that south Florida stands on its own environmentally and culturally as a region characterizes the present direction of research (Griffin 1974, 1988; Marquardt 1986, 1987, 1988; Widmer 1988).

At the heart of this matter, then, is whether or not the rich, inshore marine resource "gardens" of the Calusa coastal center of power were analogous to the agricultural fields and horticultural gardens of interior complex chiefdoms, as Goggin and Sturtevant have suggested (1964:207). Goggin and Sturtevant (1964) and Widmer (1988) argue that this was the case. The Calusa example is part of a growing list of non-agricultural, complex societies that habitually have been dismissed as anomalies because they do not fit traditional unilinear evolutionary schemes. Populous, sedentary prehistoric coastal groups are increasingly recognized in a variety of climatic and geologic settings around the world (e.g., Moseley 1975; Renouf 1984; Suttles 1968; Yesner 1980). Viewing the Calusa from a maritime south Florida perspective as opposed to a terrestrial one is a major turning point in understanding the evolution of south Florida cultural systems.

A second major shift in south Florida research is recent attention given to sociohistorical as well as environmental factors in the emergence of social complexity (Marquardt 1986, 1987, 1988). Marquardt believes that environmental richness may indeed be the base for a complex Calusa chiefdom, but suggests that the Calusa's atypical, state-like, tributary power witnessed by the Spanish at the time of their brief encounters might not have been attained until the early sixteenth century. The protohistoric infusion of exotic European goods salvaged from early shipwrecks into native economies may have provided the impetus for change in the Calusa power structure (Marquardt 1986:67). On the other hand, Widmer (1988) sees this power structure emerging much earlier. Luer (1989) also sees it emerging earlier and suggests that canoe canals may be evidence of it. With these new perspectives taking form within the past five years, a new directional course has been set for future field research in the Caloosahatchee region of south Florida.

Chronology. Widmer (1988) has provided the most comprehensive cultural evolutionary model for the Caloosahatchee region to date. Marquardt (1986 and ongoing research) is testing various assumptions of Widmer's model, as well as creating a data base for general refinement of the Caloosahatchee chronological framework. In addition to traditional study of ceramic and settlement pattern seriation, archaeologists now recognize that environmental chronologies on a local scale also must be constructed. For example, recent geological advances allow the construction of localized sea level curves for the Holocene Epoch. Fluctuations in sea level, such as have been documented by Stapor and his associates (1988) for Charlotte Harbor, translate into significant changes in estuarine resources during the Late Holocene. Archaeologists have begun investigating the effects of subtle sea level fluctuations on aboriginal south Florida (e.g., Griffin 1988; Hale 1985; Walker in prep.; Widmer 1986, 1988).

How should paleoenvironmental continuity and change over time be investigated?

How do the paleoclimatic and paleoecologic records relate to patterns of settlement, subsistence, and ultimately political organization?

How can ceramic, bone, shell, and stone artifact types be refined to permit their use in chronological studies?

Subsistence. Despite significant advances in zooarchaeological and archaeobotanical analytic procedures and considerable recent work in the area, our understanding of subsistence practices is incomplete. The presence of agriculture of any sort, for example, is still unsupported.

Were domesticated crops grown? If so, which crops and to what extent were they important?

To what extent were wild plant foods, especially roots, utilized?

Can techniques be developed and applied to detect the presence of wild or cultivated roots in the prehistoric diet?

Were the maritime Calusa subsisting at the environmental carrying capacity by around A.D. 800, as Widmer contends?

How does subsistence at riverine and marshland sites differ from that at coastal or estuarine sites?

How do subsistence patterns in each of these environments change through time?

Are subsistence patterns affected by overexploitation of resources?

Are interior and coastal subsistence patterns affected by long-term climatic or sea level fluctuations?

To what extent were white-tailed deer important to both interior and coastal inhabitants?

Can differences in social status be detected in archaeological food remains?

How early were residents exploiting estuarine resources on a year-round basis?

Is there any evidence for offshore fishing? Where? When?

What was the nature of estuarine fishing strategies?

Can we detect territorial rights in estuarine fishing practices?

What role did shellfish play in the aboriginal diet? Were molluscs more important at certain times of the year?

Why are there so few mullet bones in the shell middens, when we know that this is a common fish today and the Spanish mention a Calusa mullet fishery?

Were anchovy, the most abundant fish in Charlotte Harbor, not utilized, or are their skeletal parts not preserved?

Settlement patterns. Extensive field research and radiocarbon dating of stratigraphic deposits are critical before reliable diachronic patterns of settlement can be determined. Widmer, for example, points out that the common assumption that the extensive midden/mound complexes represent a late prehistoric adaptation influenced by Mississipian culture is an invalid one (1988:88). It is now known that large complexes such as the Wightman and Pineland sites were operating in earlier times as well. Few Archaic site components such as Useppa Island (Griffin 1949; Marquardt in prep.; Milanich et al. 1984) and Horr's Island (Russo 1990) have been inventoried (e.g., Austin 1987a:33; Edic 1987), largely because only surface collection or limited excavation has taken place at the massive mounds. We know surprisingly little about the large, coastal midden and mound complexes. Additionally, little is known about sites that occur in various interior environmental locales. Investigation of these would contribute much to an understanding of site function and intra- and inter-regional relationships.

Are differing settlement patterns typical of coastal and inland areas?

Do settlement patterns change through time? Are they affected by long-term climatic change and sea level fluctuations?

Do interior sites concentrate along major streams as is indicated, or is this a product of our unsystematic site records?

Were interior sites occupied seasonally or year-round?

How do community patterns vary through time? For example, how far back in time do the coastal midden and mound complexes extend?

What is the nature of public architecture (e.g., mounds, plazas, etc.) at the large coastal complexes and how does it change through time?

What functional purpose existed for the features commonly referred to as "water courts" found at a number of the coastal village sites?

What mound formation processes took place to create the large shell mounds?

Can we detect evidence for domestic and other structures at the shell middens and mounds or elsewhere?

What was the nature and probable function of the numerous, small to moderately-sized shell middens that are found on the mangrove islands and along the estuarine fringe?

Eighteenth-century Cuban fishing ranchos should be located and studied. What are the archaeological assemblages associated with such sites and their associated aboriginal villages?

Material culture and technology. All existing typologies, ceramic and non-ceramic, should be revised and refined with the study of larger sample sizes.

Where are the source clays for pottery manufacture located?

Why was there so little interest in pottery decoration compared to culture areas to the north and south of the Caloosahatchee region?

Why do Safety Harbor and Englewood pottery assemblages occur in this region? Are they imported or locally produced?

What artifacts are related to the sophisticated fishing industry?

How are they distributed spatially and temporally?

What spatial and temporal variation at both intra-areal and intra-regional scales occurs in shell tool manufacture and use?

Mortuary practices and bioarchaeology. Testing and refinement are needed of Widmer's mortuary sequence with larger samples. Additionally, bioarchaeological studies are generally lacking in the Caloosahatchee region. This lack should be remedied, because such studies can provide us with useful information that may aid in answering questions of diet, status, mechanical stress, and epidemic disease. The need for research in these areas is especially critical because almost every burial mound in the region has been damaged by looters.

Are there differences in health status between coastal and inland groups?

Are there differences in health and nutritional status after contact with Europeans?

Does health status vary through time?

Can differential access to resources be documented in Caloosahatchee region burial populations? If so, when did it begin?

Social and political organization. Little archaeological information exists to complement the ethnohistoric documents or give us a diachronic understanding of sociopolitical organization in the Caloosahatchee region. Widmer offers a testable environmental model of cultural development, while Marquardt takes issue with various features of that model and proposes that sociohistorical factors were equally important. There is a great need for large-scale excavation to generate significant data sets before such issues can be resolved.

What is the form of prehistoric political organization? For example, is the historic Calusa complex political organization a prehistoric feature as well?

How does political organization change through time?

What are the archaeological correlates of complex sociopolitical organization? Do they include metal artifacts and canoe canals, as has been hypothesized?

Can social status be detected through dietary and dress preferences?

How early and at what frequency do large construction projects, such as non-mortuary platform mounds built of secondary fill and canals, appear in the coastal area?

What is the extent and nature of Calusa political alliances? How far back in time do these alliances extend?

What is the significance of the comparatively late appearance of Belle Glade pottery in the Caloosahatchee region?

Is there a prehistoric trade network comparable to that of the historic Calusa?

How do the nature and boundaries of prehistoric networks shift through time?

What roles do coastal and inland sites play in the trade networks?

Does the presence of Safety Harbor pottery in some sites reflect shifting sociopolitical boundaries between groups north of Charlotte Harbor and the prehistoric ancestors of the Calusa? Or were the latter only using these ceramics in mortuary contexts?

Preservation Goals

Locate unrecorded sites, especially inland sites and sites in all areas endangered by development, erosion, or vandalism.

Encourage and assist county governments in the development of preservation ordinances.

Excavate various types of sites, e.g., sand burial mounds, shell/dirt middens, inland dirt middens, coastal shell middens, shell mounds, stratified mounds, and mound complexes.

Assess the National Register eligibility of sites of various types.

Nominate to the National Register coastal archaeological sites as a thematic group, and individual sites as appropriate.