# PREHISTORIC MAN IN SOUTHERN FLORIDA

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## ABSTRACT

Man has lived within southern Florida for as long as 10,000 years. Although evidence of the earliest occupation is elusive, data reflecting man's most recent 7,000 years in South Florida has increased dramatically in recent years. This paper provides a synthesis of significant research in the region, as well as discussion of the area's basic subsistence and settlement patterns. Also presented is a revised definition of the South Florida cultural areas as suggested by recent archaeological research.

## Paleo-Indian Period (14,000 B.P. - 8500 B.P.)

It is fairly obvious that the Florida peninsula is one of the farthest areas from the Bering Strait in North American that Early Man would have reached during his migrations southward. Despite this sizable geographic distance, the archaeological evidence indicates that the Paleo-Indian arrived in Florida at least 10,000 years ago. Although most of the evidence from South Florida has been confined to a limited area of southwestern Florida, particularly from Little Salt Springs (Clausen et al., 1979) and from Warm Mineral Springs (Cockrell and Murphy, 1978), other less accessible sites of Early Man are a strong possibility. Cockrell and Murphy (1978) provide an excellent site location model for Early Man sites throughout Florida, and present a convincing case for the existence of submerged sites off Florida's coastline. These submerged sites are evidence of extensive sea level changes estimated as ranging from between 30 m to 100 m below the present level (Fairbridge, 1974). This would have greatly expanded the area of the Florida peninsula.

A growing body of paleoecological data indicates that during the Late Pleistocene, Florida would have been drier with cooler summers and relatively warm winters (Carbone, 1983). Reduced cyclonic activity, because of the cooler temperatures, would have made southern Florida more hospitable, but a scarcity of fresh water may have reduced areas selected for habitation. Carbone (1983) presents data indicating that Florida and all of the Southeast was an environmental mosaic of diverse microhabitats. Delcourt and Delcourt (1981) hypothesize that 18,000 years B.P., southern Florida was covered with scrub vegetation consisting of xeric herbs and shrubs such as rosemary and sandhill polygonella, etc., with interspersed scrub oak. By 10,000 B.P., forests of oaks and pines were expanding with scrub vegetation being replaced by oak savannah (Delcourt and Delcourt, 1981).

The Paleo-Indian lived in southern Florida in association with mammoths, bison, and other types of megafauna. Deposits of fossilized Pleistocene bone have been uncovered by dredging operations from several locations in southwestern Florida, and on the southeast coast, from solution holes in south Dade County. Martin and Webb (1974) note the wide range of grazing ungulates and sloths indicating more extensive grasslands than present. With the extinction of the megafauna by about 6500 B.C., the Paleo-Indian apparently made an effective adaptation to the emerging wetlands of southern Florida, and began to establish the patterns of subsistence that were to provide the basis of resource procurement for the subsequent 8000 years.

## Archaic Period (8500 B.P. - 2500 B.P.)

During the Post Glacial, the sea level rose and greatly diminished Florida's land size. It has been calculated that the rate of sea level rise was approximately 8.3 cm per 100 years from 6000 to 3000 B.P. That rate has decreased to about 3.5 cm per 100 years from 3000 B.P. to present (Scholl, et al., 1967). By 5000 B.P., cypress swamps and hardwood forests characteristic of the sub-tropics began to develop in southern Florida (Carbone, 1983; Delcourt and Delcourt, 1981). The Archaic Period was characterized by an increased reliance by the native populations on the shellfish and marine resources on the coast, and a generally expanded hunting, fishing, and plant gathering base throughout southern Florida.

Archeologists were not aware until recently of the extent and nature of Archaic Period sites in southern Florida. The earliest dated archeological materials are from the Bay West site, a cypress pond mortuary situated in Collier County northeast of Naples (Beriault et al., 1981). It is likely that the Bay West site was a hydric sinkhole that provided an "oasis" and water during the much drier mid-Archaic period. Radiocarbon dates recovered there indicate a temporal range of 5500 B.P. - 7000 B.P. This chronology and the cultural material, particularly the preservation of organic materials, are very similar to those recovered from Little Salt Springs 110 km to the north (Clausen et al., 1979). The mortuary pond is undoubtedly one of the characteristic types of cemeteries of the Archaic Period peoples throughout central and southern Florida. Archaic Period "camp sites" and lithic tool chipping sites occur in southwestern Florida upon the top of sand hills. Beriault (1973) has recorded a significant number of these sites in Collier County and has likewise recorded a large number of chert artifacts that were recovered from Southwest Florida beaches indicating that inundated Archaic period sites probably exist within the Gulf of Mexico. The fact that exposed deposits of chert or flint do not occur in southern Florida is important. Most of the chert apparently was quarried from the Tampa Bay region, suggesting considerable contact between the two areas. The subsequent scarcity of chert in southwestern Florida by the time of the Late Archaic period may indicate a shift in adaption to marine resources, and/or a more efficient use of bone and wood for projectile points. Another possible explanation is that chert outcrops existed in southwest Florida, but have been submerged because of the rise in sea level.

Extensive shell middens were formed throughout southwestern Florida from 5000-4000 B.P. Horseshoe-shaped ridges recalling the archaic shell rings of the Georgia and South Carolina coasts have been reported along the southern Gulf coast, specifically on Horrs Island (McMichael, 1979) and at Bonita Springs (Goggin, N.D.). Even more similar is a shell ring that has been reported on the east coast near Jupiter (Miller, personal communication). Preceramic cultural horizons beneath tree-island sites have been reported within the eastern Everglades (Mowers and Williams, 1972). Radiocarbon samples dating peat strata that were intermixed with cultural material suggest that occupation may have begun on certain tree islands while they were still unundated (Carr et al., 1979). If this proves to be the case, then the Indian occupation of these "wet" tree islands may have been an important contribution toward their physiographic and floristic development.

Sites dating from as early as 4000 B.P. - 3500 B.P. have been located along Biscayne Bay (Carr, 1981a). These sites include cemeteries that contain important data regarding the physical anthropology and mortuary practices of Late Archaic peoples.

The Late Archaic Period is distinguished by the development of fiber-tempered pottery, the precursor of a ceramic tradition that provides chronological markers for the subsequent three millennia. The Late Archaic Orange series of fiber-tempered pottery is well documented by Cockrell on Marco Island (1970), and undecorated fiber-tempered pottery has been recovered on the southeast coast at the Atlantis site (Carr, 1981a), and by Eyster on Key Largo (Fonte et al., 1982). Sites containing fiber-tempered pottery have been dated from as early as 3400 ± 100 B.P. on Marco Island, and dates of ca. 2500 B.P. at the Firebreak site (Beriault et al., N.D.), and 3000-4000 B.P. along Biscayne Bay (Carr, 1981a).

## The Formative Period (500 BC - 1500 AD)

Goggin (1947) defined three time periods for south Florida's prehistory. Using decorated pottery types that have subsequently proven to be effective time markers, he created the Glades I, II, and III periods. These divisions have proven most useful in extreme southern Florida. The Glades I Early period (500 B.C. - ca. A.D. 200) is characterized by the use of undecorated sand tempered pottery. Ceramic decorations in extreme southern Florida were developed between A.D. 200 - 500 with the inception of the Ft. Drum decorated series. While decorated types begin during the Late Glades I period, future revisions of the Glades period may simply make the first appearance of decorated wares coincide with the inception of the Glades II Period.

During the Glades II period (A.D. 750 - A.D. 1200), there are shifts in ceramic styles that allow the archeologist to accurately divide the period into three subperiods based on the relative frequency of certain decorative styles (i.e., Key Largo Incised, Miami Incised, Sanibel Incised, etc.). Mound construction was also initiated during this period, reflecting the rise of a stratified society with a select ruling and/or priest class.

During the Glades III period (A.D. 1200 - A.D. 1500), there is a shift in ceramic decorations and vessel shape in extreme southern Florida. Griffin reports the near absence of decorated pottery between A.D. 1000 - A.D. 1200 (1974). Occurrences of St. Johns tradeware increase along the east coast, and in general, a thriving trade network that brought a variety of exotic resources, such as lithic tools and ornaments, is evident. There is also a possibility that the Arawaks arrived in south Florida from eastern Cuba and/or the Bahamas about A.D. 1200 - A.D. 1500. This contact may have influenced the use of the root of white coontie, *Zamia floridana*, by the Indians. The plant produces a starch that is similar to the Caribbean manioc cultivated by the Arawaks for the manufacture of a bread.

## European Contact Period (Ca. A.D. 1500 - A.D. 1763)

When the Europeans arrived in the sixteenth century they encountered a thriving population, with at least five separate tribes in southern Florida: the Tequesta in southeast Florida, the Calusa in southwest Florida, and the Jeaga and Ais along the east coast north of the Tequesta, and the Mayaimi near Lake Okeechobee. The Calusas maintained political dominance over these other tribes. It has been estimated that there were about 20,000 Indians in south Florida when the Spanish arrived (Milanich and Fairbanks, 1980). By 1763, when the English gained control of Florida, that population had been reduced to several hundred. These tribal remnants were reported to have migrated to Cuba with the Spanish (Romans, 1775), however, it is likely that the so-called "Spanish Indians" (Sturtevant, 1953) who raided Indian Key in 1840, were the mixed-blood descendents of the Calusas and/or refugees from northern Florida from missions raided by the English in the early eighteenth century. The Spanish-Indians became part of the Seminoles, who had fled into south Florida during the early 1800's. The European contact period coincides with Goggin's Glades IIIC period and is distinguished in extreme southeastern Florida by the appearance of Glades Tooled pottery and a general introduction of European materials.

## The Culture Areas

The Glades area was originally defined as a distinctive cultural area to include all of southern Florida by M.W. Stirling (1936). John M. Goggin defined more specific boundaries for the area and identified three inclusive sub-areas (1947). These were the Calusa sub-area in southwest Florida, the Tekesta sub-area for southeast Florida and the Florida Keys, and the Okeechobee sub-area around Lake Okeechobee. Goggin classified these sub-areas on the basis of his recognition of their distinctive natural environments, the different tribes in those regions during historic times, and differences in the archeological record. Since Goggin's work, there have been several amendments to these definitions, perhaps the most important being the recognition of the Okeechobee sub-area as a distinctive cultural area apart from the Glades area. Research there by William Sears at the Fort Center site on Fisheating Creek uncovered maize pollen in association with a major complex of mounds and earthworks, indicating some major differences between the material culture and subsistence patterns of the Lake Okeechobee Basin as compared to those of other parts of southern Florida (Sears, 1971, 1974, 1982; Sears and Sears, 1976). Intensive agriculture is not recognized as part of the Glades tradition of hunting, fishing and gathering subsistence that is considered typical of southern Florida (Goggin, 1949a).

Further revisions to the regional sub-areas were proposed by John Griffin who noted Goggin's error in utilizing the names of historic tribes to name two of the sub-areas (Griffin, 1974). Griffin saw no significant differences in the material culture of southern Florida that could not be accounted for by variations in coastal environments or different frequencies of trade pottery. Further, Griffin believes that the occupation of southern Florida was generally coastal with the Everglades being considerably less significant and containing only small midden sites which indicate many short term occupations through the centuries (1974). Based on this belief, he suggests that the term Circum-Glades Area be applied to that area from the Ten Thousand Islands eastward through southeast Florida and then northward to St. Lucie County. Unfortunately, this reclassification of the Glades area has been used in an important new book on Florida archeology and the error compounded by the statement that sites are distributed "around the Everglades (with only a few sites actually in the Everglades proper)" (Milanich and Fairbanks, 1980). The contention that sites are concentrated on the coast and are scarce in the Everglades is partially incorrect. Recent archeological surveys in the Everglades (Carr et al., 1979, Carr, 1981b) and within the Big Cypress Swamp (Ehrenhard et al., 1978, 1979, 1980) indicate that there are at least several hundred sites situated within the south Florida interior, many of them being large substantial sites that suggest more than just marginal or short-term use.

The area north of Naples to Cape Haze has been reclassified as the Caloosahatchee Area (Sears, 1967; Griffin, 1974), and Milanich and Fairbanks (1980) extended this area southward to near Cape Sable. We have no difficulties with the area as described by Sears and Griffin. However, research in the Ten Thousand Islands that includes test excavations at the Turner River site (Ehrenhard et al., 1979) and a recent test excavation at Addison Key (Beriault et al., N.D.) indicates a distinctive ceramic tradition for the Ten Thousand Islands area. Preliminary analysis indicates that during the period of ca. A.D. 200 - A.D. 800, the predominant decorated types of pottery in the Ten Thousand Islands were Gordon's Pass Incised, Sanibel Incised, and another unclassified type of linear-punctate pottery (Figure 2). These decorated ceramic types are found infrequently, at best, in southeast Florida. This distinctive ceramic tradition undoubtedly reflects a separate tribal group than those using the plain, undecorated pottery typical of the Caloosahatchee Area to the north or the decorated pottery types of Opa-locka Incised and Dade Incised of southeast Florida (Figure 2). The lack of awareness by archeologists of this area's distinctive traits reflects the minimal amount of stratigraphic research that had been conducted there. Furthermore, because the area's ceramic types become very similar to those of southeast Florida by ca. A.D. 800, there is the appearance of uniformity by the middle of the Glades II period and through part of the Glades III period that would easily mislead investigators using surface collections or limited excavation samples.

References to archaeological sites and areas in the Ten Thousand Islands area can be found as early as 1775 (Romans, 1775). However, the first archeological investigations originate with Kenworthy's description in 1883 of a prehistoric canal north of Gordon's Pass in present-day Naples. Another investigator (Durnford, 1895) made a brief though important mention of findings that prompted Frank Hamilton Cushing to visit the area in 1895. Cushing's recovery of preserved wooden masks, implements, cordage, stone and shell tools, pottery, and gourd fragments at Key Marco in 1896 astounded the archaeological community of his day. Cushing's discoveries inspired him to write an elaborate and somewhat fanciful report (Cushing, 1897). His conclusions and the still-extant artifacts from his effort have been recently reexamined (Gilliland, 1975). Cushing's phenomenal success attracted the notice and presence of other investigators, chief among these being Clarence B. Moore who made abundant, though less spectacular investigations in the area (Moore, 1900, 1905, 1907). Moore did correct several exaggerations and distortions of Cushing's and helped establish the uniqueness of the area's archaeology.

Other investigators included Ales Hrdlicka, of the Smithsonian Institution, who passed through the region in 1918 (Hrdlicka, 1922) conducting an extensive and still valuable site survey while collecting human skeletal remains and comparative physical measurements from living Seminole Indians. Matthew W. Stirling, chief of the Bureau of American Ethnology, was especially active in the Marco Island area during his five years of Florida excavations for the W.P.A. (Stirling, 1931, 1933). In 1939, John M. Goggin developed a ceramic sequence for the Gordon Pass shell mound (Goggin, 1939).

The next two decades saw little formal scientific work. In 1963, a stratigraphic dig was performed in a shell midden not far from Cushing's Key Marco discoveries (Van Beck and Van Beck, 1965). The Florida State Division of Archives and History excavated extensively at Marco Island from 1967 through 1969 (Cockrell, 1970). The State also conducted a thorough survey of sites in the Marco Island area (Widmer, 1974), followed by a summation of settlement and subsistence patterns (Widmer, 1978). The most recent work in the area has been an intensive survey and investigation of Horrs Island by the University of Florida (McMichael, 1979) and projects by avocational archaeologists (Beriault et al., N.D.). An inventory of sites in the Big Cypress National Preserve was conducted from 1977-1980 (Ehrenhard et al., 1978, 1979, 1980).

Prehistoric settlement in the Ten Thousand Islands area was most intensive along the coast. Shell middens and shellworks of various sizes and complexity typify this zone. These shell middens contain abundant layering and deposits of black midden soil and ash (Figure 2). Site size can vary from less than a quarter of an acre to well over a hundred acres. Larger shellworks consist of intentionally created and shaped island complexes in back bays or semi-detached headland or river-mouth sites. The sites display a high relief topography of apparent canals, benches, house and temple mounds, causeways, and breakwaters. Site depth can vary from 10 cm or less at small sites to as much as 10 m or more at large coastal mounds.

The interior pineland areas contain small, sporadically occupied sites usually found in oak/cabbage palm hammocks. These sites may have been stopping-off places in corridors between the coast and areas further inland. Interior sites in the Big Cypress include moderate-sized villages and burial mounds. Another site type is the rockworks in the form of walls, probably of Seminole origin which have been observed by the authors.

## Everglades Area

This area occupies southeastern Florida and the Florida Keys (Figure 1). It is difficult to determine an exact western boundary, but we would suggest one somewhere west of the Shark River and east of Turner River, probably near the eastern boundary of Big Cypress Swamp. A northern boundary would be somewhere near the Broward-Palm Beach County line.

This area includes much of the Everglades and the Atlantic Coastal Ridge, an elevated land form that previous to the dredging of drainage canals acted as a barrier to the Everglades-Lake Okeechobee drainage basin. A number of rivers and transverse glades drained eastward from the Everglades into bays and tidal estuaries along the coast. High energy barrier islands, most of them with littoral stabilizing mangrove forests along the bayside, paralleled the coast.

Archeólogists visited sites within this area as early as the 1860s (Wyman, 1870). Both Jeffries Wyman and Andrew Douglass (1885) described the rock mounds at the mouth of the Miami River. Serious excavations were not conducted in the area until the Federal Relief Project provided funds for work there in 1933-36 (Stirling, 1936). John Goggin started his archeological investigations with several small collections he made in the Miami area in 1931-32. Goggin conducted surveys and excavations from the 1930s through about 1950 that generated a wealth of publications that were to become the major source of scientific data on the area's prehistory (Goggin, N.D.). Other contributions, particularly about sites in the Everglades, were made by avocational archeologists and archeological societies in the 1950s - 1970s (i.e. Dan D. Laxson, Wesley Coleman, Wilma Williams and Bert Mowers). In 1979, the first systematic archeological survey of Dade County was initiated (Carr, 1981b). Other important surveys include one within a portion of the eastern Everglades (Carr et al., 1979), and another of the south fork of the New River (Carr, 1981c). Currently, a systematic archeological survey is under way within Everglades National Park by the park's Southeast Archeological Center. Recent significant excavations in the area have included work at Bear Lake (Griffin, report in progress), the mouth of the Miami River (Griffin, report in progress; Carr et al., report in progress), Arch Creek (Carr, 1975),

and the Flagami site (Carr et al., report in progress).

Prehistoric settlement occurred along the banks and mouths of the rivers, creeks, and tidal estuaries and upon the Everglades tree islands, with the largest sites being situated on the Miami River and the New River in Ft. Lauderdale. Other significant sites occur along Biscayne Bay and throughout the Florida Keys near the interface of the upland hardwood hammocks and the adjacent mangrove forest. Sites occur on both the Atlantic side and bayside of the Keys and islands of Biscayne Bay.

Site types most often encountered are the black dirt and shell middens along the coast, and the black dirt middens of the Everglades tree islands. These habitation sites vary in size from areas of tens of acres at the mouth of the Miami River, to some only ten meters in diameter. Site depth on both the coast and within the Everglades varies from superficial remains of less than 20 cm in depth to sites with as much as two meters of deposition.

Other site types include sand burial mounds (only four still exist), rock mounds (only one remains), and rockworks. The rocks mounds may have been used for burials and/or platforms for temples. Rockworks of unknown function have been observed in the Florida Keys (Romans, 1775; Goggin, N.D.), but they are now destroyed. Human burials are sometimes found within black dirt/shell middens, or within isolated solution holes within the oolitic limestone (Carr et al., 1983). Earthworks, similar to those of Lake Okeechobee, are known on at least three sites in the Everglades area. These include two mound complexes with linear sand embankments, one on the New River (Carr, 1981c), and another along Biscayne Bay south of Miami, and a circular earthwork along the Miami River (Carr, 1981b). All of these earthworks either have been destroyed or are currently under fill.

Lake Okeechobee Area

This area surrounds Lake Okeechobee and includes at least a portion of the Kissimmee River Basin (Figure 1). The southern boundaries are uncertain, but probably overlap the Everglades, Caloosahatchee, and East Okeechobee areas. It is particularly difficult to set exact eastern and western boundaries here because of the paucity of research within the interior areas between the lake and adjacent coastal regions.

The Lake Okeechobee region encompasses a concentration of distinctive earthwork complexes unparalleled in any other area of Florida. In addition, the recent evidence of maize pollen (Sears and Sears, 1976) offers the possibility of a mixed subsistence base for this region rather than the overall fishing-hunting-gathering patterns typical of other parts of southern Florida. The predominance of the Belle Glade ceramic series and the general scarcity of decorated wares also distinguishes this area from other south Florida areas.

A diversity of environments, predominately wetlands, is encompassed within the area. The lake is the most conspicuous natural feature in the area, and provided access to the Everglades and other drainage systems such as the Kissimmee River, the Caloosahatchee River, Taylor Creek, and several other sloughs. The headwaters of the Caloosahatchee drained westward through Lake Hicpochee and the former Lake Flirt.

Generally, the area's archeological sites are not well known. Although some of the larger earthworks and canals have been described as early as the nineteenth century (Thomas, 1894), subsequent scientific surveys and excavations have been limited with a few notable exceptions, such as the work at Big Mound City and the Belle Glade Mound (Willey, 1949). Other noteworthy works are those by Allen (1948) and Goggin's excavations at Fisheating Creek (1952). It was not until Sears' excavations at Ft. Center (1971, 1982), that a quantity of data has been made available that provides a chronological interpretation of a large earthworks complex. His work has demonstrated the existence of a sequence of circular ditches, up to 1200 feet in diameter, dating back to as early as ca. 750 B.C. Sears believes the circular ditches were constructed as drain fields for maize cultivation. He also believes that subsequently constructed earthworks, such as Tony's Mound (Figure 4), were used for maize cultivation, but this remains to be proven.

Sites include a variety of earthwork types such as the Period I (ca. 750 B.C. - 0 A.D.) circular ditches typical of those at Ft. Center. Carr has identified six additional "circular ditches" in the Lake Okeechobee area (Carr, manuscript in progress). Other earthworks include the Period II "Big Circles", semi-circular embankments with radiating benches, linear earthworks canals, and other types of earthwork sites (Figure 3). Most of these earthworks are associated with disproportionately small midden areas suggesting relatively small populations. Possibly, these large earthwork sites were regional ceremonial and religious centers that served a wider settlement area than the immediate site. Isolated middens, mounds, and camp sites without any associated earthworks are located throughout the area.

Period I (450 B.C. - A.D. 200), for the Okeechobee area was defined by Sears. It is characterized by some semi-fiber tempered and St. Johns pottery traded from the north. Period II (A.D. 200 - ca. A.D. 700) was when the Ft. Center cerimonial center was constructed (Sears, 1982). From ca. A.D. 700 - A.D. 1300 (Period III), is an interim period at the site with no major mound construction. Finally, Period IV (ca. A.D. 1300 - A.D. 1700) is when the earthwork complex with its mounds and adjoining linear embankments were built.

East Okeechobee Area

This area is perhaps the least known region of southern Florida because of the minimal amount of archeological research that has been conducted there. A review of the available data suggests that the area has a strong similarity to the Okeechobee area to the west. A southern boundary for the East Okeechobee area would be in the vicinity of the Palm Beach/Broward county line, probably somewhere south of Boca Raton. We would suggest a northern boundary at the St. Lucie Inlet, although Milanich and Fairbanks indicate a northern boundary in the vicinity of San Sebastian (1980). Even more difficult is determining the western boundary which would extend along a north-south axis within the inland areas of Palm Beach, Martin, and St. Lucie counties. Future research will probably provide additional data to define this area better.

The environment of this area includes a dynamic coastal zone encompassing barrier islands such as Hutchinson, with major inlets at St. Lucie, Jupiter and at Boca Raton. The St. Lucie and the Loxahatchee are major estuaries that drain eastward into the Atlantic. Interior environments include vast pine flatlands interspersed with ponds, cypress domes, occasional oak hammocks, and various sloughs draining westward towards Lake Okeechobee.

Very few archeological projects have been conducted within this area, and most of these have been along the coast (Browning, 1975; Furey, 1972). At least one systematic archeological survey has been done within the interior of St. Lucie County (Chance, 1980). These studies generally suggest the overall influences from the Lake Okeechobee area. Furey's work at the Spanish River site in Palm Beach County (1972) indicates that Belle Glade plain pottery represents up to 50% of the ceramics present. The remaining pottery types are dominated by sand-tempered plain, and a varying amount of St. Johns pottery (Ibid).

Site types are characterized by shell middens along the coast and black-dirt middens within the interior. Sand mounds are located within the area and scattered earthworks that are reported at a few locations. These are probably the result of influences from the Lake Okeechobee area.

## Adaptation and Subsistence

The prehistoric material culture of south Florida reflects an efficient adaptation to local resources and to the environment. Lacking usable local stone, the Indians used marine shell, bone, and wood to construct a wide variety of tools and ornaments. Pottery was commonly used, and items manufactured from organic materials, such as basketry, nets, wooden bowls, pestles, clubs and canoes were commonplace. The infrequent preservation of organic material has made them a minimal component of the known archeological record. Undoubtedly, future excavations better directed towards "wet" sites will greatly enrich our knowledge of this aspect of the archeological record.

Variations in contemporaneous tools types between one region and another within south Florida often reflect the natural occurrence or absence of certain resources. For example, the *Strombus* celt, so common in the Everglades area, is rarely encountered in the Ten Thousand Islands or Caloosahatchee areas.

Likewise, the various clam (*Mercenaria campechiensis*) artifacts uncovered in southwest Florida are rarely found in southeast Florida (Reiger, 1981) In both cases, these shellfish are restricted in habitat and do not live in both the southeast and southwest coastal waters.

Reconstructions of prehistoric subsistence patterns have gained increased clarity because of the large amount of data that has been analysed in recent years, although the samples analysed are still relatively small. Analysis of 37,719 verterbrate remains from the Granada site at the mouth of the Miami River indicate the exploitation of 99 different species with 72.4% being represented by bony fishes, 10.8% by reptiles (mostly turtle), 8.1% being cartilaginous fishes, 6.0% mammals, 1.2% amphibians, and 1.1% birds (Wing and Loucks, N.D.). A comparison with 64,132 faunal remains from an interior fresh water site, DaI057, in the Everglades indicates the presence of 37.7% reptiles (24,000 specimens with snake and turtle predominant), and 21% bony fishes (dominated by three species: gar, bass and bowfin). All other classes represented less than 2%, (Personal communication with Robert C. Taylor, April, 1979), Similar faunal use is reported from interior sites in St. Lucie County by Taylor (Chance, 1980). Griffin's work at the Bear Lake site in the Everglades area suggests some potentially significant subsistence shifts through time (1974), but further research, particularly regarding seasonality and scheduling is needed.

Although prehistoric subsistence in southern Florida focused on fishing, hunting, and gathering, the degree and nature of plant use is barely understood. Sears makes a case for maize cultivation in the Lake Okeechobee area (Sears and Sears 1967; Sears 1982), but the evidence is hardly conclusive. The recovery of gourd fragments from the Key Marco site by Cushing (Gilliland, 1975) suggests that limited horticulture may have been practiced. Generally, the overall botantical component of prehistoric subsistence may be more substantial than the archeological evidence presents. The historical record certainly suggests the Indian's familarity with local plants (Austin, 1980).

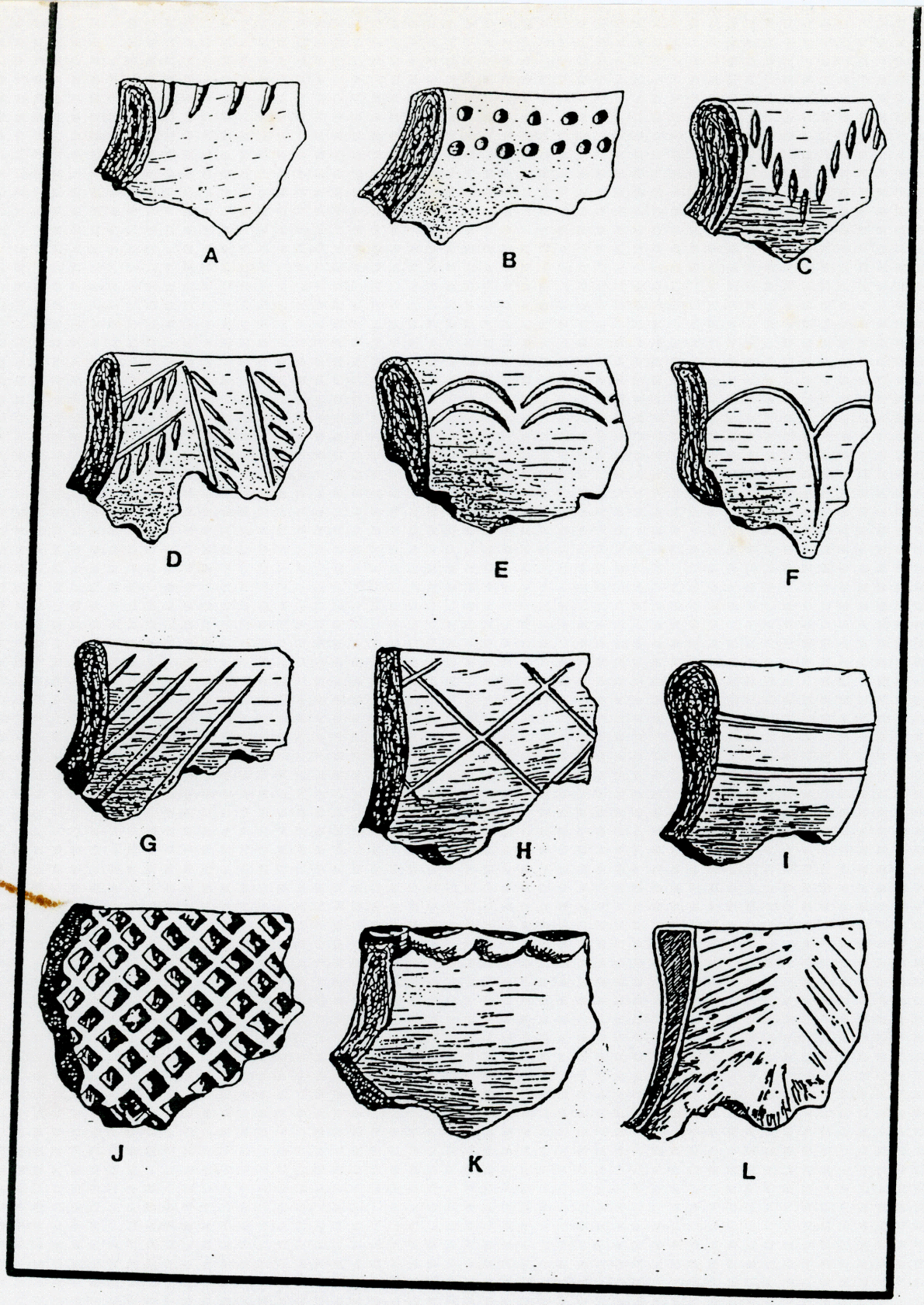


Figure 4. Prehistoric Pottery Types of South Florida

A. Ft. Drum Incised, B. Ft. Drum Punctate, C. Sanibel Incised,

D. Gordon's Pass Incised, E. Opa Locka Incised, F. Key Largo Incised,

G. Miami Incised, H. Matecumbe Incised, I. Surfside Incised,

J. St. Johns Check Stamped, K. Glades Tooled, L. Belle Glade Plain