
February 1997



MacDill Air Force Base

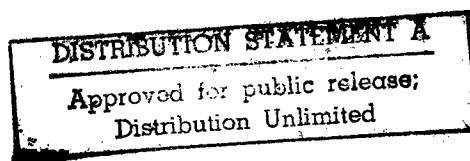
**National Register Eligibility Recommendations
for Sites 8HI50 and 8HI5656**

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**United States Air Force
Air Combat Command**

Global Power for America



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MacDILL AIR FORCE BASE

NATIONAL REGISTER ELIGIBILITY RECOMMENDATIONS FOR SITES 8HI50 AND 8HI5656



**HEADQUARTERS AIR COMBAT COMMAND
FEBRUARY 1997**

EXECUTIVE SUMMARY

This report presents the results of archeological test excavations conducted at two prehistoric sites (8HI50 and 8HI5656) located within MacDill Air Force Base (AFB), Tampa, Florida. These investigations were conducted by Geo-Marine, Inc., under contract with the U.S. Army Corps of Engineers, Fort Worth District. The purpose of the investigations was to assess the eligibility of each site for inclusion in the National Register of Historic Places (NRHP).

The excavation methodology involved the hand excavation of systematically placed 50-x-50-cm shovel tests and 1-x-1-m excavation units to determine the horizontal and vertical dimensions of the site deposits. The recovered artifacts from site 8HI50 reveal that site occupation occurred between 500 B.C. and A.D. 900 and suggest a Manasota/Weeden Island-related cultural affiliation. Site 8HI5656, on the other hand, was likely occupied during the Late Preceramic Archaic period.

Results of the test excavations at site 8HI50 indicate that the portion of the site containing concentrated shell deposits offers very little research potential; therefore, that portion of the site is recommended as ineligible for inclusion in the NRHP. However, that portion of site 8HI50 which exists along the shoreline, beach, and duneline may contain sufficient contextual integrity for inclusion in the NRHP. The recovery of human remains and possible funerary objects during preceding and present investigations may answer pertinent research questions relating to burial practices and other sacred or secular manifestations. It is recommended that the beach portion of site 8HI50 be considered eligible for inclusion in the NRHP. The human remains recovered from the site were reinterred at two separate locations within the site area at the request of the Seminole Nation. Although an inventory of the remains and osteological analyses were recommended by Geo-Marine, Inc., the Seminole requested that no analyses be conducted. To protect the human remains and site from further disturbance by natural or man-made elements, a program of revegetation or other stabilization in consultation with Native American tribal representatives should be agreed upon and implemented.

Site 8HI5656 is recommended as ineligible for inclusion in the NRHP. The site lacks contextual integrity and exhibits no potential to provide subsistence or artifactual data pertinent to a single recognizable time period.

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ABSTRACT

Archeological test excavations were conducted at two prehistoric sites (8HI50 and 8HI5656) located on MacDill AFB, Tampa, Florida. The testing was initiated to assess the eligibility of each site for inclusion in the NRHP. These investigations were conducted for the U.S. Army Corps of Engineers, Fort Worth District, under Delivery Order No. 0203, Contract DACA63-93-D-0014.

Site 8HI50 was found to cover approximately 4,950 m² and contains prehistoric remains associated with cultural periods dating to the Late Archaic (ca. 3000–1200 B.C.), the Manasota/Weeden Island (500 B.C.–A.D. 900), and possibly the Safety Harbor (ca. A.D. 700–1200) eras. Testing indicates a moderately to heavily disturbed area of shell deposits. Prehistoric artifact densities are low to nonexistent in all excavation units. One natural feature was identified in Excavation Unit 1 at 50 cm below surface (cmbs). Shellfish species varied in each unit, but oyster (*Crassostrea virginica*) dominated the assemblage from the surface to 100 cmbs in all units. In addition to the shell deposit area, a surface survey of the site along the beach, shoreline, and dune line adjacent to the Waste Water Treatment Plant was conducted to assess the cultural resources potential of that area. Human remains, lithic materials, and one bone tool were located along a section of the shoreline extending from the sewer pipe on the north to a point 130 m to the south.

The area of site 8HI50 that contains the concentration of consolidated shell deposits does not appear to retain research potential; therefore, it is considered as ineligible for inclusion in the NRHP. However, as a result of Native American Graves Protection and Repatriation Act (NAGPRA) compliance consultations, some of the human remains were reinterred in this previously ineligible area. This area, the second reburial site, and that portion of 8HI50 located along the shoreline where human remains were found exposed will need to be treated in accordance with NAGPRA regulations (43 CFR Part 10). In addition, the portion of 8HI50 along the existing shoreline, beach, and dune line of Hillsborough Bay may contain important research data concerning burial practices during the Manasota/Weeden Island period. This area is considered potentially eligible for inclusion in the NRHP.

Site 8HI5656 (EOD) covers a total area of approximately 27,225 m². Occupation of the site appears to have taken place during the Late Archaic (3000–1200 B.C.) period. The site has been divided into two areas (designated A and B) for management and evaluation purposes. Area A is situated in the active EOD Range and Area B is located west of the largest berm surrounding the EOD Range and just east of the mangrove wetland. Area A contains soils that have been heavily disturbed by range maintenance activities. Artifacts have been displaced from their original context and distributed unevenly across the area. All cultural materials were recovered within the first 45 cmbs, and all test units exposed the water table by that same depth. No features or midden deposits were identified and no ¹⁴C samples were obtained. Soil stratigraphy of Area B was fairly consistent between the shovel tests and the excavation units, and indicated less

disturbance to the soil matrix. The recovery of cultural materials in Area B began at a deeper level (30–40 cmbs) than in Area A (0–10 cmbs). However, no features or midden deposits were identified, and no diagnostic specimens or ¹⁴C samples were obtained.

Area A of site 8HI5656 (EOD) has been adversely impacted by year-round range maintenance activities. Cultural materials are displaced from their original context, and the area offers little research potential. Area A is not considered eligible for inclusion in the NRHP. Area B is confined to a small area on the periphery of the active EOD Range. Soils appear to be less disturbed than in Area A, but lack any evidence of supportive data (i.e., midden deposits, features, ¹⁴C samples). In addition, unit excavation did not produce sufficient quantities or quality of lithic materials from which defining statements on site activities or occupation can be made. Area B is therefore also considered ineligible for inclusion in the NRHP.

ACKNOWLEDGMENTS

The author of this report would like to express his appreciation to the many individuals and organizations who contributed to the successful completion of this project. Mr. Jay Newman of the U.S. Army Corps of Engineers, Fort Worth District, provided both administrative support and guidance throughout the project. Ms. Shelley Urbinek, Environmental Program Manager, and Mr. Robert Hoffman, Natural and Cultural Resources Manager of MacDill AFB, contributed to the successful completion of the field investigations by coordinating the various departments on base and providing helpful suggestions during our stay. To Dr. Nancy White and Dr. Brent Weisman, Professors of Anthropology at the University of South Florida, and their fine staff of students is extended a debt of gratitude for the information, knowledge, and personal encouragement they provided to the successful completion of the project.

The author expresses sincerest thanks to the able crew members who provided the dedication and hard work necessary to complete the field investigations. The crew included Ms. Kellie A. Krapf, Field Supervisor, and crew members, Mr. Charles Branham, Mr. Mark Holderby, and Mr. Jeff Weinberger.

The vertebrate faunal remains were analyzed by Mr. Brian Shaffer of the University of North Texas. Dr. Richard Fullington identified the molluscan remains, and the macrobotanical specimens were analyzed by Dr. Elisabeth Sheldon. Dr. Brent Weisman conducted the analysis of the artifactual materials curated at the University of South Florida.

At the Geo-Marine, Inc., headquarters in Plano, Texas, numerous individuals contributed to the analysis and report. Ms. Marianne Marek supervised and directed the basic artifact/shell inventory, catalog process, and flotation of soil samples; generated tables for the report; and prepared artifacts and other materials for curation. Mr. Floyd Largent conducted the basic lithic analysis and provided additional comments on flake debris analysis. In addition to her field supervisory duties, Ms. Krapf also produced the plan view maps of the sites. Dr. Rebecca Procter provided the ceramic analysis for site 8HI50. Ms. Melissa Green conducted the historic artifact analysis. Ms. Julianne Gadsden is responsible for the fine pen-and-ink artifact illustrations. Report preparation and production were handled by Ms. Denise Pemberton and Ms. Sharlene Allday, who also graciously provided the author with many constructive comments on the report text.

CHAPTER 1

INTRODUCTION

The following report presents the results of Phase II test excavations at two prehistoric sites within MacDill AFB, Florida (Figure 1). The two sites, 8HI50 and 8HI5656 (EOD), were evaluated for their eligibility for inclusion in the NRHP. Geo-Marine, Inc. (GMI), conducted these investigations under contract with the Fort Worth District of the U.S. Army Corps of Engineers in accordance with and in partial fulfillment of the U.S. Air Force Air Combat Command (ACC) obligations under the National Historic Preservation Act (PL96-515) of 1966, as amended; the Archeological and Historical Preservation Act (PL93-291) of 1974, as amended; the National Environmental Policy Act (PL90-190) of 1969; Air Force Instruction 32-7065; and Executive Order 11593 (Protection and Enhancement of the Cultural Environment), as well as the Native American Graves Protection and Repatriation Act (PL101-601) of 1990 and the American Indian Religious Freedom Act (PL95-341) of 1979.

Previous archeological work at site 8HI50 was conducted by Dr. Simon D. Messing, anthropologist from the University of South Florida, Tampa, in 1960 and by Piper Archaeological Research, Inc. (Piper), in 1983 (Figure 2). Messing recovered human remains consisting of one subadult male and one adult male. Artifacts possibly associated with the burials included ceramics, shell tools, and lithic materials. Piper, reviewing Messing's recovered ceramic assemblage, indicated site utilization occurred during the Manasota/Weeden Island period (ca. 500 B.C.-A.D. 900). The diagnostic bifaces, however, indicate utilization during the Late Archaic and Transitional periods (ca. 2,500-5,000 B.P.). Piper conducted minimal testing of the concentrated shell midden and concluded that the general area of the dispersed shell and/or natural shell deposits outside the concentrated shell midden area did not contribute significantly to knowledge of the prehistory of the region and is, therefore, not considered eligible for inclusion in the NRHP (Brooks et al. 1983).

Site 8HI5656 (EOD) was recently reported to the base Chief, Natural and Cultural Resources Element, CES, by Air Force EOD personnel (Figure 3). Numerous artifacts, including chert flakes and projectile points, were collected from the surface. The artifacts were turned over to cultural resources personnel of ACC. ACC concurred with MacDill AFB personnel that further investigations were warranted at both 8HI50 and 8HI5656 (EOD) to assess their potential eligibility for inclusion in the NRHP. As a result, test excavations were conducted at these sites to determine their eligibility and, if eligible, how best to minimize or avoid any adverse impacts to the sites. The work was performed by GMI for the U.S. Army Corps of Engineers, Fort Worth District, under Delivery Order No. 0203 of Contract No. DACA63-93-D-0014. Duane E. Peter served as Principal Investigator; field work was conducted from January 22 to February 1, 1996, by GMI personnel under the direction and supervision of Mr. Philip R. Gerrell (Project Archeologist) and Ms. Kellie Krapf (Field Supervisor).

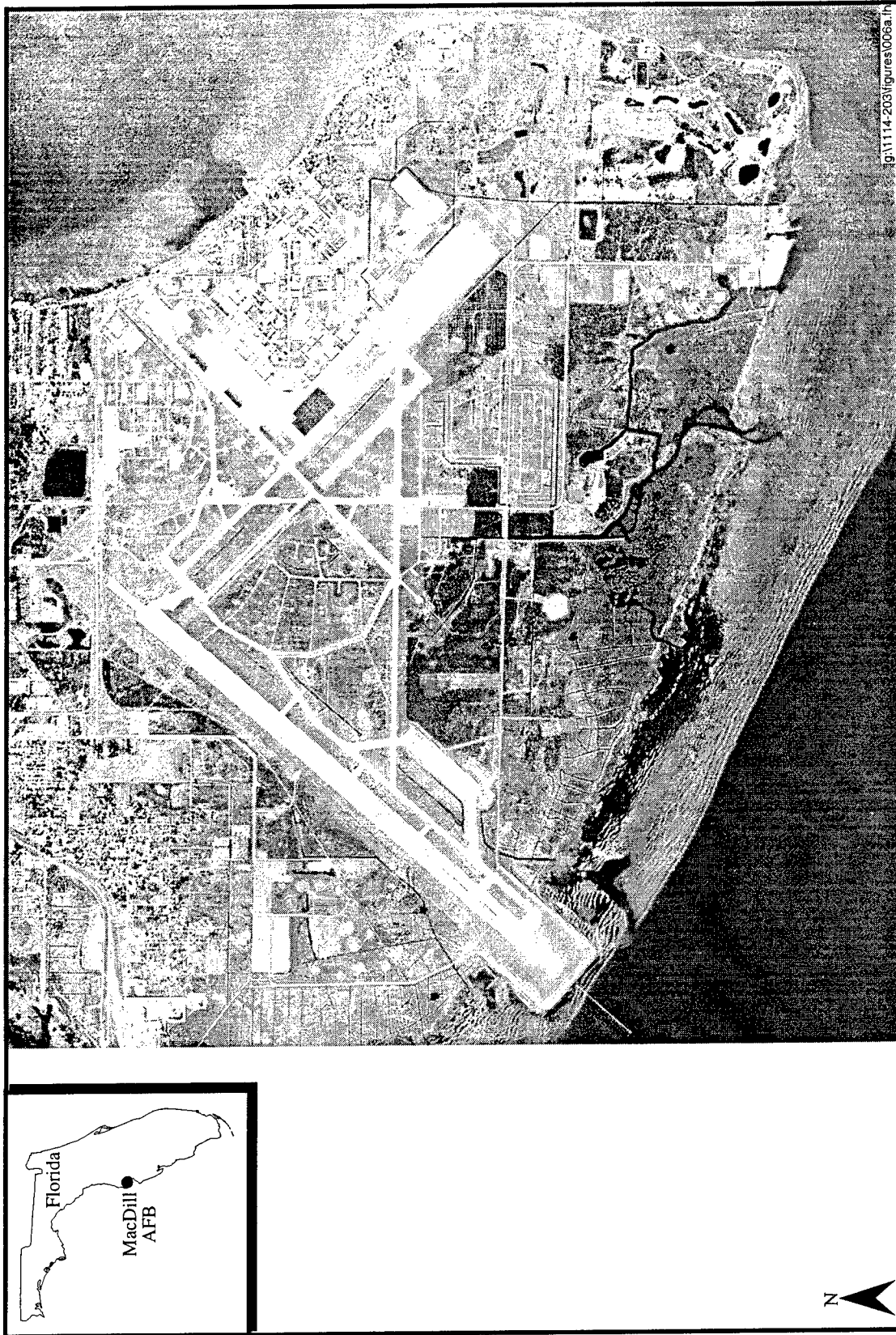


Figure 1. Aerial photograph of MacDill AFB, 1994.

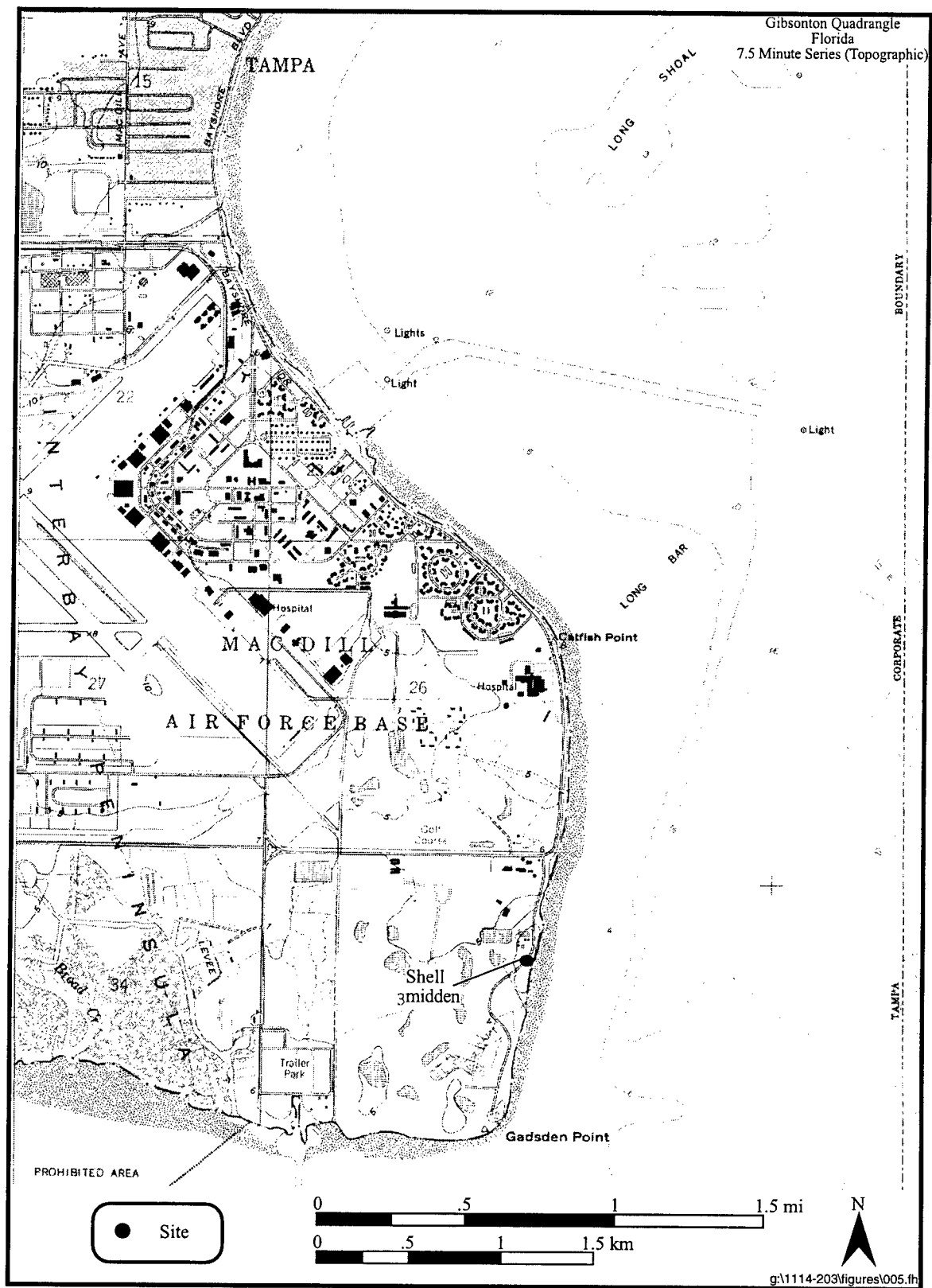


Figure 2. Location of site 8HI50.

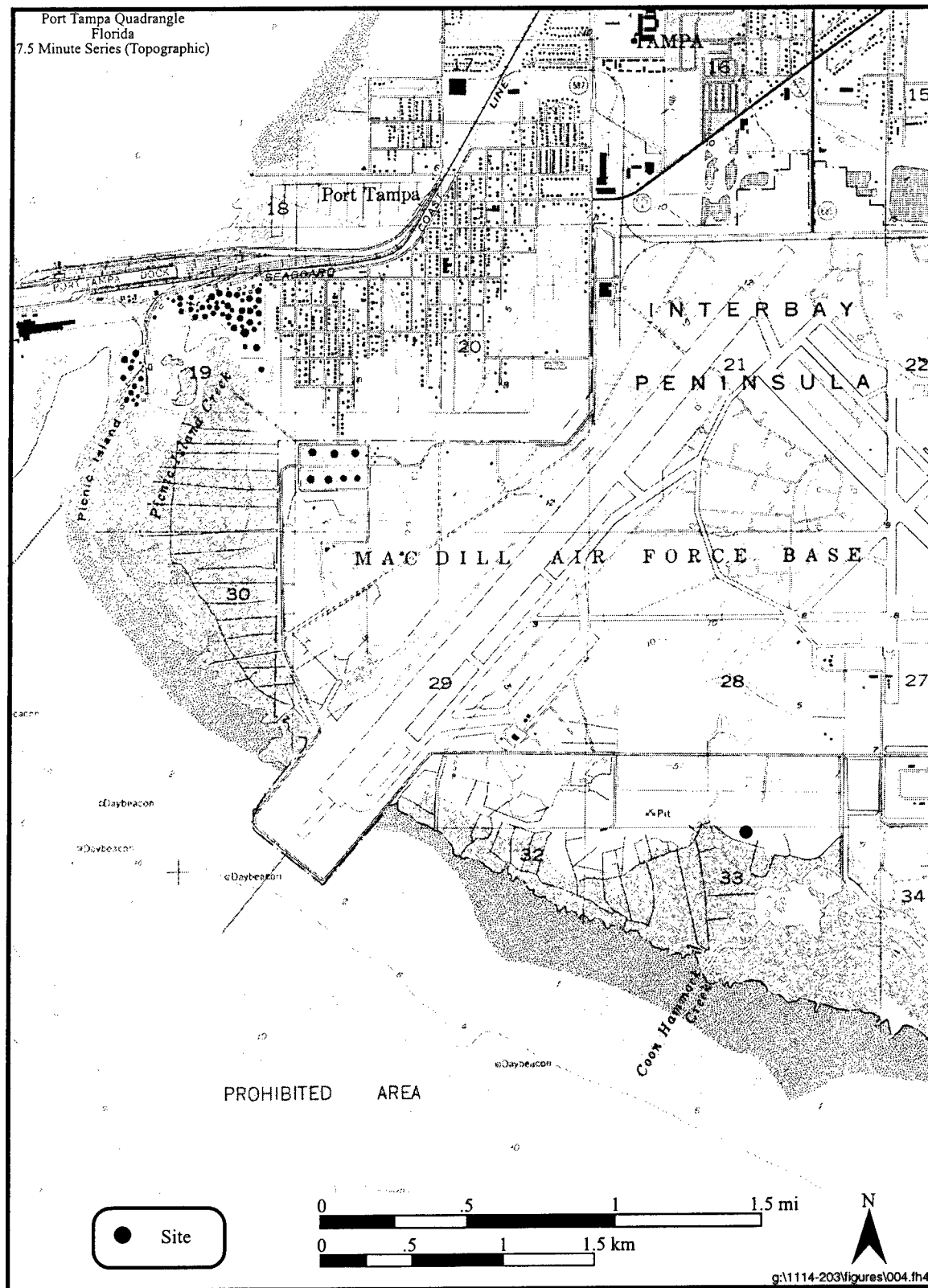


Figure 3. Location of site 8HI5656.

The present report consists of seven chapters. Chapters 2 and 3 include the natural and cultural backgrounds of the region, respectively. Research goals and field and laboratory methods are presented in Chapter 4. The results of the excavations at sites 8HI50 and 8HI5656 (EOD) are provided in Chapters 5 and 6, respectively. A summary of the research potential of each site and recommendations concerning NRHP eligibility and treatment are presented in Chapter 7. Following the main body of the report are references cited in the text and appendices with additional information. Definitions of the prehistoric lithic artifact classes used in the analysis are presented in Appendix A; Appendices B and C present tabular summaries of the artifacts recovered from each site. Descriptions of the vertebrate faunal specimens recovered from site 8HI50 are provided in Appendix D; the analysis of the macrobotanical samples from site 8HI50 are presented in Appendix E; and descriptions of the molluscan remains recovered from site 8HI50 comprise Appendix F. Appendix G consists of the analysis of artifacts from site 8HI50 that are presently curated at the University of South Florida. Appendix H presents a brief discussion of the human remains recovered from site 8HI50. Copies of Native American Graves Protection and Repatriation Act (NAGPRA) correspondence with Native American tribes are presented in Appendix I; and Appendix J provides a list of the curated materials resulting from the investigations at the two sites.

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CHAPTER 2

ENVIRONMENTAL BACKGROUND

INTRODUCTION

The two prehistoric archeological sites, 8HI50 and 8HI5656 (EOD), are located on MacDill AFB, Tampa, Florida. MacDill AFB is located at the southern tip of the Interbay Peninsula in Hillsborough County. Tampa Bay is to the south and west; the city of Tampa is to the north; and Hillsborough Bay is to the east (see Figure 1). The base occupies 5,638 acres of nearly level land with elevations ranging from between 0 and 10 feet above sea level. Site 8HI50 is located on the southeast edge of the base, just south of the Waste Water Treatment Plant and east of the golf course, and approximately one-half mile north of Gadsden Point. Site 8HI5656 (EOD) is situated on the active EOD Range, located south of South Shore Road and northeast of a mangrove wetland.

GEOLOGY

MacDill AFB is situated in the Gulf Coastal Lowlands physiographic region. There are three principal lithologic sequences in the area: the Hawthorne Formation, the Tampa and Suwannee Limestones, and the Ocala Group (Puri and Vernon 1964). The uppermost Hawthorne unit consists of unconsolidated sand, clay, and marl. This unit may include remnants of the Hawthorne Formation with thin lenses of limestone. Sands range from 5–20 feet thick with clay layers up to 40 feet thick. This surficial layer is very thin or even absent on the eastern side of the base, and underlying limestone formations sometimes outcrop in this area (MacDill AFB 1995). These limestones were an important source of lithic raw material for prehistoric stone tool manufacture. The second deepest layer is composed of Tampa and Suwannee Limestones, which range from 250–500 feet thick. Below this layer are the Ocala Group: Avon Park, Lake City, and Oldsmar limestones; and Cedar Keys Limestone. These formations are about 2,300 feet deep. Although sinkholes are common to this type of geology, sinkhole activity at MacDill AFB is minimal, with only one sinkhole identified during a 1985 study (Beck et al. 1985).

LITHIC RESOURCES

Two kinds of lithic raw materials were available to the prehistoric inhabitants of MacDill AFB: silicified limestone and silicified coral. Silicified limestone is the product of the replacement of carbonates in limestone by silicates. This replacement usually retains both the fabric and the fossils contained within the limestone. Silicified coral is the product of the replacement of the original coral aragonite skeletal material

with silicates. Such replacement often preserves the fabric of the coral resulting in a distinctive "star" pattern in the stone. The fossil genus most commonly found silicified is *Siderastraea*, a fossil found in Oligocene and Miocene formations in Florida and south Georgia (Upchurch et al. 1982). The distribution of this material is widespread in Florida.

Dr. Sam Upchurch, retired University of South Florida geologist, and associates have identified sources of silicified limestone materials based on the original geological strata and occurrences of fossils. Nineteen quarry clusters have been identified for Florida (Figure 4). Each contains from one to several specific quarry locations, which in turn contain silicified limestone with similar fabric and fossils. The quarry clusters nearest MacDill AFB are the Hillsborough River, Caladesi, and Turtlecraw Point.

MacDill AFB is located within the Hillsborough River Quarry cluster which extends along the Hillsborough River and its many tributaries west to Hillsborough Bay. This cluster provided a significant source of Tampa Formation silicified limestone. Several chert outcrops around the mouth of the Hillsborough River are known to have been exploited by prehistoric inhabitants (Goodyear et al. 1983), including some that have become inundated by rising sea levels. Cherts from the Hillsborough River Quarry cluster vary widely in color and fabric and contain few diagnostic fossils. The Caladesi cluster is located along the Gulf Coast in Pasco and northern Pinellas counties (Upchurch et al. 1982). It is one of the few known coastal quarry clusters, and several prehistoric quarries have been recorded in this area (Upchurch 1980; Warren 1968). All known quarry sites in this cluster have become inundated as the sea level has risen during the Holocene. The Turtlecraw Point cluster is located in the Boca Ciega region of western Pinellas County. The importance of this cluster to prehistoric procurement activities is unclear because the two known outcrops are submerged beneath the bay.

Type 4 chert, first described by Goodyear et al. (1983), outcrops in four places: Rocky Point, Rocky Creek, Ballast Point, and in isolated locations on the Hillsborough River. Type 4 cherts are often white to buff in color and may contain abundant quantities of *Peneroplid foraminifera* common to the Tampa/St. Marks Formation (Upchurch et al. 1982). Because of the greater amounts of inclusive fossil molds and a much grainier rock fabric, type 4 chert is considered a lower-grade chert than other Hillsborough River materials.

Type 5 chert, also known as "Bay Bottom" chert, is a material of limited distribution in central Florida. It is light gray to tan in color, and the rock fabric and fossil inclusions often give it the appearance of "clotted pudding" (Goodyear et al. 1983). These cherts have their origins in opaline sediments of Miocene age. Type 5 cherts outcrop in three places: at the northern end of Old Tampa Bay and at two suspected locations beneath Tampa Bay. Since many early tools are made from this stone, type 5 chert evidently was sought after and extensively exploited by aboriginal groups during the Paleo-Indian and Early Archaic periods (Goodyear et al. 1983).

Artifacts made from silicified coral can not, as yet, be assigned to any of the known quarry clusters. Known coral quarry sources close to MacDill AFB are located within the Wesley Chapel/Green Swamp area of Hillsborough and Pasco counties and on the northern end of Honeymoon Island in Pinellas County (Goodyear et al. 1983; Upchurch et al. 1982). As silicified coral is difficult to flake in its unaltered state, it was often heated to enhance its flaking qualities.

SOILS

Soils associated with MacDill AFB include Myakka, St. Augustine, Wabasso, Malabar, Urban Lands, and others (Arents, Pomello, Quartzipsammments, and Tavares). These soils are nearly level, poorly drained to very poorly drained, and occur on mangrove areas in tidal flats and flatwoods. Urban Lands account for 33 percent of the acreage on the base. The Fine Sands associated with the Myakka and Malabar soil types are

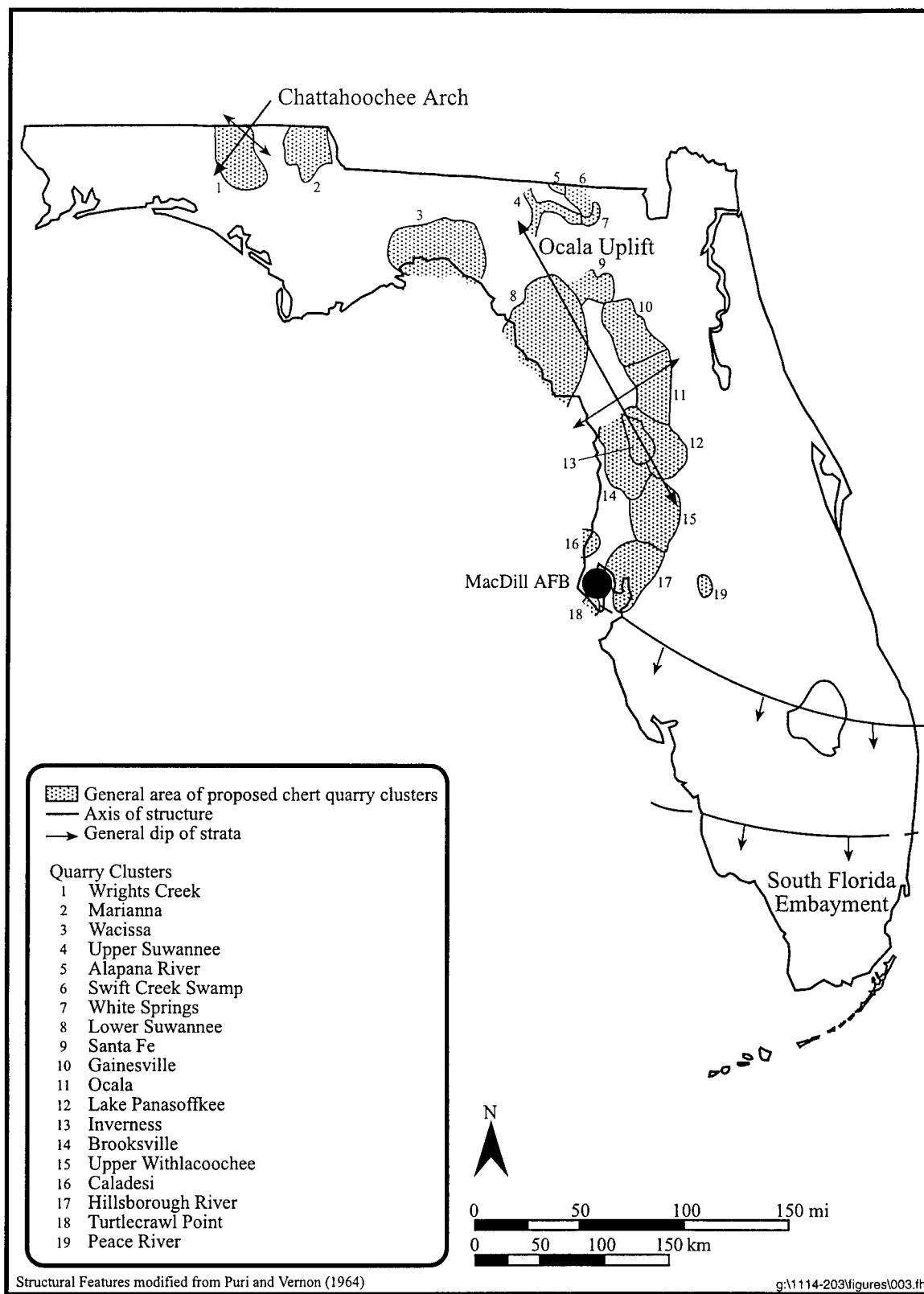


Figure 4. Relationship of proposed quarry clusters and chert exposure belts to structure of Tertiary rocks in Florida.

hydric and thus have jurisdictional wetland implications (MacDill AFB 1995; U.S. Department of Agriculture, Soil Conservation Service [USDA, SCS] 1989).

HYDROLOGY

MacDill AFB is an independent drainage area with no surface waters entering or leaving the base prior to discharge into Tampa Bay (MacDill AFB 1995). The drainage system at the base is greatly affected by ditches and pipes, primarily constructed to drain the developed portion. Virtually all drainage flowing from the base is to the east or south. Surface water flows at MacDill AFB primarily result from storm water runoff. Impervious soils (about 25 percent of the base) increase surface runoff. The main natural drainage features on the base are Coon Hammock and Broad creeks to the south. Most of MacDill AFB is within the 100-year floodplain.

The 1846 Plat Map of Florida indicates that no fresh-water sources existed within the project area. An 1885 map (Coastal Chart No. 177, 1885) indicates the existence of two ponds in the project area west of Gadsden Point. These ponds are no longer in existence, and whether they contained fresh water is unknown. Although numerous drainage ditches and retention ponds exist on the base today, there are no known sources of fresh water that existed during the prehistoric and early historic periods (CH2M Hill 1981).

FLORA AND FAUNA

Current vegetative cover on MacDill AFB consists of natural areas of salt-tolerant species such as wax myrtle, salt bush, Brazilian pepper, sea grape, and various grasses. Open bahia fields are found in various locations around the base. The primary forested areas on base are pine plantations consisting of slash pine (*Pinus elliottii*), and remnant natural stands dominated by long-leaf pine (*Pinus palustris*). Mixed hardwood species commonly include oaks (*Quercus* spp.), maples (*Acer* spp.), cabbage palm (*Sabal palmetto*), and southern magnolia (*Magnolia grandiflora*). Understory contains a mixture of shrubs dominated by wax myrtle (*Myrica cerifera*), salt bush (*Baccharis halimifolia*), saw palmetto (*Serenoa repens*), and gallberry (*Ilex glabra*). Brazilian pepper (*Schinus tetebinthefolius*), an exotic, is replacing understory in many places.

The shrub-scrub wetland is the other major vegetative community at MacDill AFB. This community is dominated by black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*). Red mangrove (*Rhizophora mangle*) is commonly found in association with these two dominants, but exists closer to the open water environment (MacDill AFB 1995).

MacDill AFB is isolated at the tip of a peninsula in a largely urban area with relatively small tracts of wild lands. These circumstances reduce species migration by animals that require larger home ranges. Overall native wildlife habitat has been declining due to fire protection and exotic plant invasion. Wildlife surveys conducted by J. W. Beever in 1992 and by W. E. Meshaka, Jr., in 1994 identified 19 reptile, 10 mammal, nine amphibian, and 109 bird species. Of these species, four are considered to be threatened or endangered: the West Indian manatee (*Trichechus manatus*), the wood stork (*Mycteria americana*), the bald eagle (*Haliaeetus leucocephalus*), and the piping plover (*Charadrius melodus*). One species of special concern, the river otter (*Lutra canadensis*), is also located on base.

During prehistoric and early historic times, faunal resources in the Interbay/Tampa Bay area were abundant and consisted of small mammals, fish, shellfish, and fowl, as well as white-tailed deer, which also represented an important dietary contribution (Forbes 1964; Larson 1980; Romans 1962).

PALEOENVIRONMENTAL RECONSTRUCTION

MacDill AFB is located on the Interbay Peninsula which extends approximately 12 km (7.5 mi) into Tampa Bay. Perhaps the major factor affecting the environment of this peninsula and the surrounding Tampa Bay area has been the rise in sea level associated with the retreat of the glaciers. Milliman and Emery (1968) have suggested that this rise was rather rapid, occurring between 14,000 and 7,000 years ago. Recent studies (Missimer 1980), however, support an earlier theory by Fairbridge (1961) in which he proposed that the sea rose to its present level about 5,000 to 6,000 years ago but has undergone oscillations both above and below the present level since that time.

During the Late Pleistocene, Florida may have resembled the savannas of Africa. The climate was drier and cooler, and surface water was limited to perched ponds or solution sinkholes. Although some localized water catchment areas existed which could support moist vegetation, most of Florida was covered by xerophytic (dry) species of plants, with scrub oaks, pine, open grassy prairies, and savannas (Watts 1971). Around 5,000 years ago, the dominant oak-herb vegetation was replaced by the long-leaf pine forests, hammocks, marshes, and cypress swamps typical of Florida today.

When dealing with archeological sites on or near the Florida Gulf Coast, it is necessary to consider the changes in sea level that have taken place. These sea level changes have drowned some archeological sites and caused many inland sites to now appear closer to the coast than they were when they were occupied (Goodyear and Warren 1972; Goodyear et al. 1980; Grange et al. 1977; Lazarus 1965; Ruppe 1980; Wolf 1975). As a consequence, archeological sites such as 8HI50 on the southeast shore of the Interbay Peninsula may have been subjected to either partial drowning or substantial erosion by these fluctuations in sea level (Brooks et al. 1983).

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CHAPTER 3

CULTURAL SETTING

INTRODUCTION

This chapter presents the research background and cultural setting for the archeological investigations conducted at sites 8HI50 and 8HI5656 (EOD) located on MacDill AFB, Tampa, Florida. A review of previous archeological research undertaken in the Tampa Bay area in general is presented first, while the second part of the chapter documents previous archeological investigations conducted on the base itself. The third section of this chapter presents an overview of the cultural history of the region. MacDill AFB is located in the Central Peninsula Gulf Coast archeological region as defined by Milanich and Fairbanks (1980). This region extends from just north of Tampa Bay southward to the northern portion of Charlotte Harbor (Figure 5).

PREVIOUS RESEARCH

Early archeological research conducted in the region focused on the recovery of unique specimens for museums and private collectors. Many of these projects were hastily done and incompletely reported. One of the first of these early investigators was Daniel Brinton, who visited numerous shell middens and sand mounds along the central Gulf Coast in 1856 (Brinton 1859). He was followed by R. E. C. Stearns (1870, 1872), S. T. Walker (1880a, 1880b, 1885), and F. H. Cushing (1896). The culmination of work in the nineteenth century reached its height with the expeditions of C. B. Moore (1900), who sailed along the Florida Gulf Coast from Perdido Bay to the Florida Keys. Moore recovered large quantities of artifacts from burial mounds for the Philadelphia Academy of Natural Sciences.

By the turn of the century, it was obvious that a synthesis was critically needed to order these materials in time and space. Consequently, some archeologists in the early 1900s began to employ greater care in recording the spatial integrity of site components. This new research perspective began in 1903 with the work of W. H. Holmes. Holmes examined the similarities and differences among ceramics from various parts of the state and was able to define a number of discrete archeological regions and pottery styles (Holmes 1903). In the early 1920s a series of federally funded programs sponsored by the Smithsonian Institution and the Federal Works Progress Administration (WPA) were begun. The first large-scale excavations were conducted by J. W. Fewkes and M. W. Stirling in 1923 and 1924 at the Weeden Island site in Tampa Bay (Fewkes 1924). This site became the type-site that was later used to define one of the major Gulf Coast ceramic traditions, the Weeden Island pottery style. Additional archeological projects were

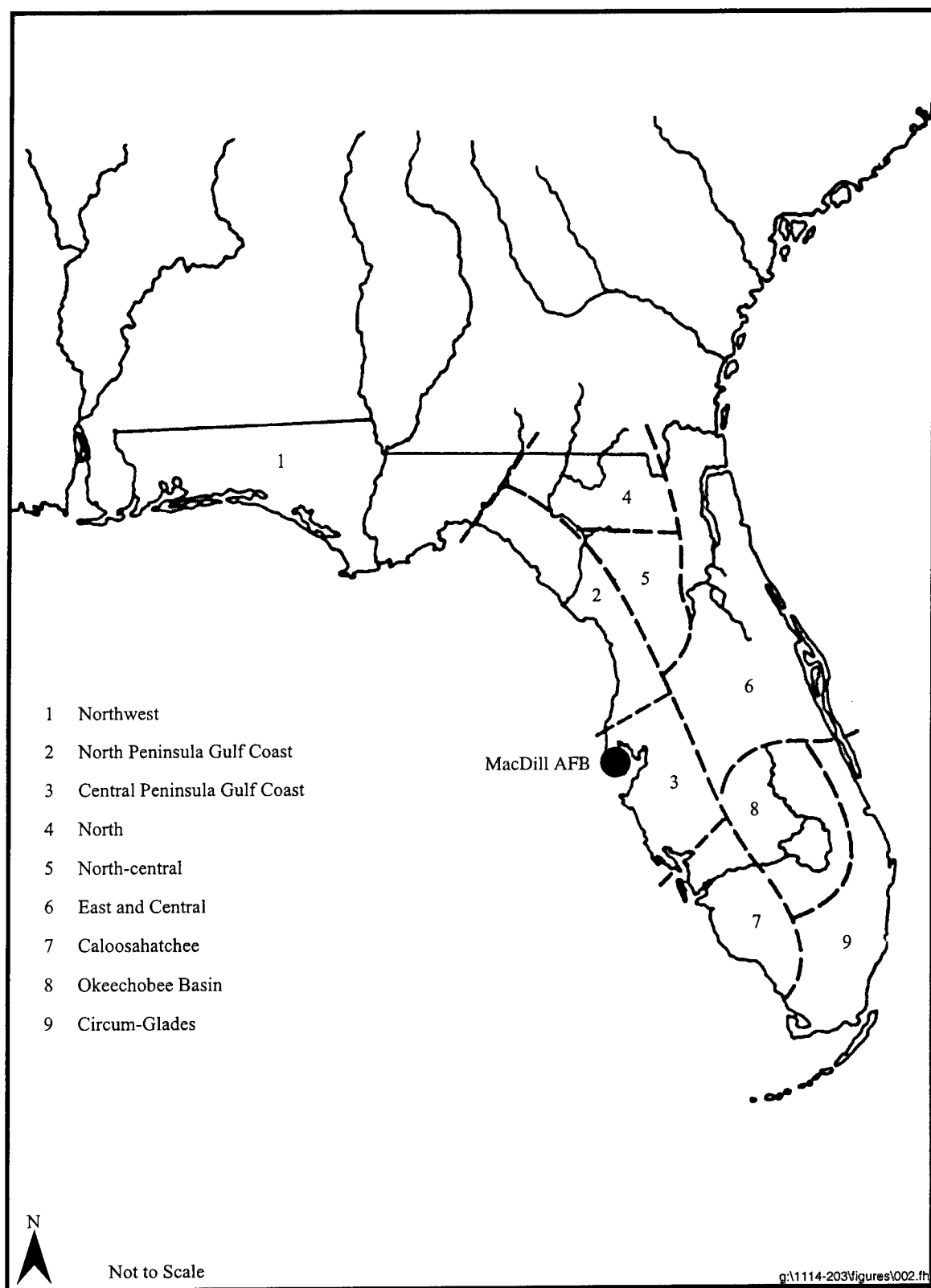


Figure 5. Florida culture areas (from Milanich and Fairbanks 1980:22).

undertaken in the 1930s by J. Clarence Simpson, who investigated many sites in the Tampa Bay region (Simpson 1937, 1941).

The publication of Gordon R. Willey's monumental work, the *Archeology of the Florida Gulf Coast*, in 1949 provided for the first time a clearly defined, coherent order of artifacts through time and space. New suggestions were offered concerning major trends in social, political, religious, and economic behavior during certain prehistoric periods. The 1940s also resulted in a shift of theoretical orientation and marked the inception of the present period of archeological history, the scientific period (Gagel 1981). Prior to the past three decades, this scientific period was not apparent in the archeology of the central Gulf Coast. From 1949 until 1970, major work concentrated on refining and strengthening the cultural seriation studies of particular geographical regions. In the Tampa Bay area, for example, the Safety Harbor and Perico Island sites were re-excavated (Bullen 1950; Griffin and Bullen 1950) and new ceramic period sites such as Maximo Point and the Terra Ceia site were examined (Bullen 1951; Bushnell 1962; Sears 1958). In addition, preceramic sites such as Culbreath Bayou, Caladesi Causeway, and Apollo Beach provided new empirical data.

Subsequent to 1970, however, a number of surveys and a few excavations have focused on providing explanations of the archeological record. Survey data from projects conducted in the interior of Hillsborough County have provided a correlation between site location and certain environmental features. These new data contributed to the development of a model of "hinterland" adaptation (Hemmings 1975). This model is based on the hypothesis that the interior regions of the central Gulf Coast represent an area used sporadically by coastal groups to acquire specific resources and not as an area of intensive habitation.

By the beginning of the 1980s, it was evident that at least an overview of Florida's archeological prehistory was needed. In that year, Jerald T. Milanich and Charles H. Fairbanks, professors of anthropology at the University of Florida, published *Florida Archaeology*. That publication provided not only an update and revision of Willey's Gulf Coast archeological synthesis, it also introduced the new archeological data reported during the past three decades. After more than a decade, *Florida Archaeology* became dated as a result of the large number of reports, manuscripts, and research projects undertaken in Florida subsequent to 1980. It was clear that a new book was needed to recount what had been learned. In response to that need, Milanich published *Archaeology of Precolumbian Florida* in 1994.

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS AT MACDILL AFB

Archeological investigations at MacDill AFB date to 1952 with the recording of two sites (8HI49 and 8HI50) by Mr. W. Plowden. Site 8HI49 is described as a sand mound located between Catfish and Gadsden points, 100 feet north of a turn in Bayshore Boulevard. This description corresponds to the approximate area of the present paved parking lot of the golf course clubhouse. No recovery of cultural materials is reported. Site 8HI50 is identified as a large shell mound located on the southern end of Gadsden Point. This position does not accurately correspond to the area of concentrated shell deposits investigated as part of this project. Mr. Plowden does not indicate whether or not cultural materials were recovered.

In 1960, Dr. Simon Messing and his anthropology class from the University of South Florida excavated a portion of exposed shoreline adjacent to the Waste Water Treatment Plant. This location is approximately 40 m east of the area of concentrated shell deposits. Dr. Messing recovered human bone as well as lithic, shell, ceramic, and faunal materials. The human remains consist of two individuals—one juvenile male and one adult male. Cultural materials possibly associated with the burials consist of shell and ceramic fragments identified as Weeden Island and St. Johns (Brooks et al. 1983). Unfortunately, no documentation exists to provide contextual associations between the burials and the recovered materials.

The first extensive archeological survey of the base was conducted in 1983 by Piper Archaeological Research, Inc. (Brooks et al. 1983). The survey of the proposed golf course did not identify any new sites but did evaluate sites 8HI49 and 8HI50 for NRHP eligibility. A determination was made that site 8HI49 was not eligible and that the portion of site 8HI50 that extended from just north of Gadsden Point to a point 500–700 feet south of the Waste Water Treatment Plant was also not eligible. The remaining portion of site 8HI50, the area of concentrated shell deposits and the portion of beach and shoreline where the human remains were recovered in 1960, was not evaluated for NRHP status.

In 1986, the National Park Service (NPS) conducted a survey of all areas of the base deemed capable of containing significant archeological sites (Ehrenhard 1987a). A windshield survey was initiated throughout the installation to confirm which areas might contain cultural resources. The NPS study determined that 59 percent of the base had been developed to the “maximum.” Another 10 percent had been completely disturbed as recreational areas and 16 percent—including the EOD ranges—had been subjected to periodic disturbance. Only the remaining 15 percent was considered suitable for a comprehensive Phase I investigation. The survey consisted of pedestrian, windshield, and boat reconnaissance of wetland areas, shorelines, canal banks, “green” areas (open lawns and fields), and high ground associated with Broad Creek and Coon Hammock Creek. Shovel testing was conducted where deemed necessary, although no record was made of frequency or location of the tests. Seventy-two shovel test pits were excavated along “the entire rim of the mangrove area between the southwestern tip of the northeast-southwest runway to the west and the marina to the east” (Ehrenhard 1987b; MacDill AFB 1996). The survey identified one site, the Coon Hammock site (8HI3280), and determined the site to be ineligible for inclusion in the NRHP. The Florida State Historic Preservation Officer (SHPO) concurred with the findings and found the survey to constitute “a complete and sufficient Phase I survey of the installation” (Percy 1988).

The Florida Gas Transmission Company initiated an archeological investigation on the installation in response to a proposed new natural gas line that would skirt the base boundary north of the runway. A portion of the installation was surveyed as part of *The Phase I Archeological Assessment of a Florida Gas Transmission Company Proposed Corridor Expansion Project* (Chance 1988). The survey recorded one new site, 8HI3382, which was considered potentially eligible for inclusion in the NRHP. The same contractor conducted a follow-up Phase II investigation in 1991 and determined the site to be eligible for inclusion in the NRHP (Chance 1991).

Historic buildings and structures on MacDill AFB were first investigated in 1993 by Engineering-Science, Inc. The study was initiated as part of compliance requirements with NEPA and NHPA in preparation for the proposed Defense Base Closure and Realignment Act (BRAC) recommendations. The investigation focused on 25 structures of more than 50 years in age. The investigation determined that five hangars, designated 8HI5388 through HI5392, were eligible for inclusion in the NRHP (Engineering-Science, Inc., 1993).

In October 1993, Hardlines Design and Delineation completed a Historic American Buildings Survey (HABS) of structures located in the nonclosure portion of the base not covered by the Engineering-Science, Inc., study. Fifty-one structures were investigated and evaluated: 46 were found eligible for inclusion in the NRHP as part of two historic districts. Ten of these were determined to be also eligible individually (Wang et al. 1994).

Between May 31 and June 5, 1994, Mariah Associates, Inc., conducted a historical resources inventory of Cold War-related structures. The study was initiated for ACC as part of a general evaluation of such structures on ACC installations nationwide. A draft report, *MacDill Air Force Base Cold War Material Cultural Inventory* (Patterson et al. 1994), was completed in September 1994. Preliminary evaluations indicate that two Command Headquarters buildings (501 and 540) were deemed potentially eligible for inclusion in the NRHP.

An inventory of curated artifacts at the University of South Florida was undertaken by Janus Research (1995). These artifacts were collected from site 8HI50 between 1952 and 1965 and consisted of approximately 1.5 cubic feet of materials. The composition of the collection is as follows:

- human skeletal remains, 85 percent;
- faunal remains, 10 percent; and
- lithics (stone), 5 percent.

Documentation related to these materials is incomplete and the scientific research value is limited.

OVERVIEW OF REGIONAL PREHISTORY AND HISTORY

Prehistory

The two prehistoric sites, 8HI50 and 8HI5656 (EOD), located on MacDill AFB are situated in the Central Peninsula Gulf Coast archeological region, as previously defined by Milanich and Fairbanks (1980). Within this zone, Milanich and Fairbanks have presented a sequence of cultural periods that includes Paleo-Indian, Archaic (Early, Middle, Late), Transitional, Manasota, Weeden Island, and Safety Harbor (Table 1).

Paleo-Indian Period

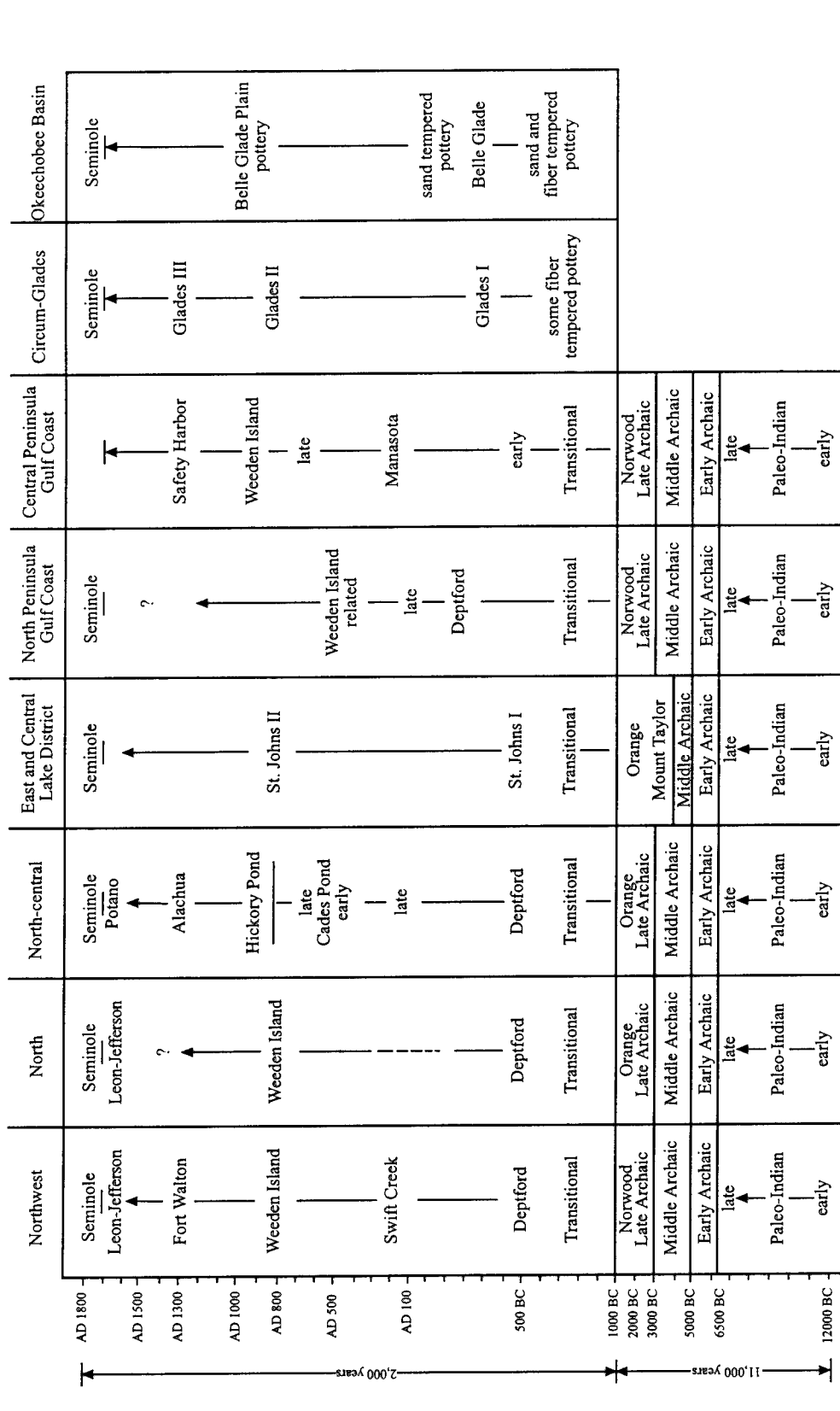
The Paleo-Indian period is generally believed to represent the time when humans first arrived in the Americas—as well as in parts of Florida—at approximately 12,000–10,000 B.C. near the end of the Pleistocene. This cultural period lasted until approximately 6500 B.C. (Milanich 1994). The timing of the migration of populations from the Asian continent is vigorously debated, as is the question of whether or not there were multiple migrations (Fagan 1987).

During the terminal Pleistocene, the peninsula of Florida was considerably different from that found today. Climatic conditions in Florida at the end of the Pleistocene epoch were cooler and drier with savanna-like landscapes. Sea levels may have been as much as 50 meters below present levels, and the existing coastline was miles beyond present-day shorelines (Gagliano 1984; Milliman and Emery 1968; Milanich and Fairbanks 1980). Rising sea levels have probably inundated coastal and inland Paleo-Indian-period sites on both the Gulf and Atlantic continental shelves (Clausen et al. 1979; Goodyear et al. 1980; Ruppe 1980). The present-day extensive surface water features such as lakes, ponds, rivers, springs, marshes, and wet prairies were virtually nonexistent when humans first occupied Florida (Dunbar 1991). Water resources were isolated in those areas of the state characterized by Tertiary limestone deposits. Such catchment areas are identified as sinkholes and perched ponds. These karstic conditions are found from Tampa Bay north through the western half of the Florida peninsula and westward into the panhandle to the Chipola River.

Research into Paleo-Indian lifeways is derived from a small number of terrestrial and inundated sites. Two inland spring sites in Sarasota County, Little Salt Spring and Warm Mineral Spring, produced evidence of human remains and artifacts with radiocarbon dates in the 10,000 B.C. range. The Harney Flats site located in Hillsborough County has provided a sizeable body of data concerning Paleo-Indian settlement patterns. Daniel and Wisenbaker (1987) suggest that Paleo-Indian movement was related to the “replenishment of the tool-kit, availability of potable water and the social needs of the people, rather than the seasonal changes postulated for the succeeding Archaic period.”

Paleo-Indian sites are identified by the presence of lanceolate-shaped, fluted and unfluted projectile points occasionally associated with now-extinct Pleistocene megafauna. Recovery of ivory foreshafts, bone pins,

Table 1
Florida Culture Periods



Source: Milanich and Fairbanks 1980:23

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bola stones, and unifacial scrapers have also been reported in contexts associated with megafauna and diagnostic Paleo-Indian artifacts (Dunbar and Waller 1983). Paleo-Indian artifacts have been identified in dredge materials from Boca Ciega and Tampa Bay as well (Goodyear et al. 1983; Goodyear and Warren 1972).

Archaic Period

The Archaic stage of cultural development represents a shift in adaptive strategies stimulated by the onset of climatic changes at the end of the Pleistocene epoch. The climatic changes signaled the demise of the megafauna and resulted in a change in the floral and faunal species available for exploitation. Archeological evidence suggests a slow shift from a nomadic existence based on hunting and gathering to a more sedentary lifestyle.

In Florida, the Archaic period began around 6500 B.C. (Milanich 1994). This period has been further divided into three sequential periods: the Early Archaic (6500–5000 B.C.), the Middle Archaic (5000–3000 B.C.), and the Late Archaic (3000–1200 B.C.). The Early Archaic period is generally recognized by the occurrence of Dalton and/or Bolen projectile point types (Bullen 1975). Recent discoveries at Little Salt Spring in Sarasota County and at the Windover site in Brevard County suggest that tool assemblages were more diverse than the preceding Paleo-Indian tool kits and included specialized bone, wood, and stone implements (Clausen et al. 1979; Purdy 1981, 1988). Most Early Archaic sites are small and diffuse; yet, they exhibit a well-scheduled pattern of exploiting both coastal and interior resources (Archaeological Consultants, Inc., and Janus Research 1994).

A shift in settlement patterns has been recognized in a number of Middle Archaic inland sites associated with the I-75 archeological project in the late 1970s and early 1980s (Chance 1982; Daniel 1982; Daniel and Wisenbaker 1981). These patterns may indicate that larger bands of people were living together part of the year, then dispersing to smaller campsites to exploit forest and coastal resources. Artifacts associated with this period include broad-bladed, stemmed projectile points such as the Newnan, Marion, and Putnam types. Specialized tools such as microliths, burins, and large chopping implements have been recovered at Middle Archaic sites. The first evidence of Archaic period cemeteries has been associated with wet bogs, ponds, or sloughs (Beriault et al. 1981; Clausen et al. 1979; Doran and Dickel 1988a, 1988b).

The Late Archaic is characterized by lifestyles that suggest a greater reliance on coastal resources. For example, it is during this period that coastal and riverine shell middens begin to appear in the archeological record. Perhaps the greatest technological change during this period, however, is the appearance of ceramics. By about 2000 B.C. or slightly earlier, the manufacture of clay pottery was either invented in Florida or diffused into the region from coastal Georgia and South Carolina (Milanich 1994). This pottery type is easily recognized by its fiber-tempered composition and serves as a convenient marker across the state. The earliest (2000–1650 B.C.) fiber-tempered pottery was undecorated. After 1650 B.C., punctations and geometric designs were introduced as surface decoration, providing an important means of differentiating earlier and later sites of the 2000–1000 B.C. period. In the greater Tampa Bay area, ceramics of fiber-tempered composition have been assigned to the Orange series (Bullen 1958; Daniel 1982). The series consists of two types, Norwood Plain and Norwood Simple Stamped or stick impressed. Stick-impressed ceramics appear along the Gulf Coast from the panhandle to Tampa Bay. Projectile points such as the Culbreath, Lafayette, Hernando, Clay, and Citrus join Middle Archaic point types in the artifact assemblage. Other tools were hafted scrapers, end scrapers, and ovate and trianguloid knives. Aside from the appearance of fiber-tempered pottery, few if any changes in Late Archaic lifeways are apparent, and with the exception of a few regional cultural adaptations, the general subsistence patterns of the Late Archaic continued largely unchanged into the Historic period (Milanich 1994).

Late Archaic manifestations in the Tampa Bay region include the Culbreath Bayou (Warren et al. 1967), the Hill Cottage midden (Bullen and Bullen 1976), the Apollo Beach (Warren 1968), the Canton Street (Bullen et al. 1978), the Maximo Point (Bushnell 1962; Sears 1958), and the Perico Island (Bullen 1950) sites.

Transitional Period

Bullen (1959, 1971, 1978) has identified a transitional period (1200–500 B.C.) in Florida prehistory. This period is characterized by the continued exploitation of shellfish, fish, and wild plants, as well as continued reliance on hunting. Bullen suggests that a diffusion of new cultural traits resulting from the movements of people between cultural areas led to the spread of several ceramic and tool traditions. Fiber-tempered ceramics were gradually replaced by sand-tempered, limestone-tempered, and temperless chalky wares. In addition, basally notched, corner-notched, and stemmed projectile point types occur in contemporaneous deposits. By the end of the Transitional period, ceramic traditions are clearly regionalized throughout most of Florida. In the central Gulf Coast region, sand-tempered wares became the dominant pottery type.

Formative Period

In the Central Peninsula Gulf Coast archeological region, the first of the post-transitional cultures to appear was the Formative period (500 B.C.–A.D. 800). It was composed of the Manasota and Weeden Island-related cultures. Luer and Almy (1982) suggest that Manasota peoples were primarily coastal dwellers with probable forays into the interior to gather plants, to hunt, or to obtain other resources. Their material culture consisted of shell and bone tools and sand-tempered ceramics, with few stone implements.

Most Manasota sites are shell middens found on or near the shore where accessibility to marine resources was foremost. Zooarcheological studies of coastal Manasota sites have identified 15 species of fish, 10 species of shark and rays, and 15 species of shellfish—of which oyster predominate (Austin and Russo 1989; Brooks 1974; Fraser 1980; Luer 1977a, 1977b). Both large and small middens are known, and many are multicomponent, for some were reoccupied during later periods. The coastal shell middens, usually linear deposits parallel to shorelines, sometimes form undulating ridges. Several have shell ramps constructed to provide access to the tops of the middens. Not all Manasota sites are located on the coast. Short-term villages (without middens) and special-use camps are found in the interior pine flatwoods on higher ground adjacent to water sources and wetland areas (Austin and Russo 1989). Manasota burial practices indicate that early interments (500 B.C.–A.D. 100) were in midden debris located near living areas. Early burials were generally primary flexed and occasionally extended or semiflexed, while later burials were usually secondary bundles indicating that they may have been placed in charnel houses before being interred (Austin et al. 1992). These later burials are often accompanied by exotic Weeden Island ceramics. After A.D. 100, burials are often found in intentionally constructed burial mounds, including sand mounds (sand burial mounds are present at some of the coastal sites [Milanich 1994]), a reflection of Weeden Island influence.

The later stages of the Manasota culture from A.D. 100–800 were influenced by the extensive Weeden Island socio-political complex of north Florida, southern Georgia, and Alabama (Milanich and Fairbanks 1980) and are referred to as Weeden Island-related. The type site for the Weeden Island culture, located in St. Petersburg, Florida, was partially excavated by Fewkes (1924) and Sears (1971). Today it is understood that this site represents a Manasota occupation containing exotic Weeden Island ceramics that were used for ceremonial purposes and as grave goods for the dead (Austin et al. 1992).

The subsistence pattern continued to be based on the hunting and collecting of terrestrial and marine resources. Possible reliance on horticulture may have increased population densities, although this has not been adequately demonstrated in the archeological record. These populations seem to have led a fairly sedentary lifestyle, with villages located along the coast as well as in inland areas. Usually sites of this time

period are identified by the presence of shell middens or habitation areas and a sand burial mound (Milanich 1994). Burial mound customs, artifactual evidence of an extensive trade network, and settlement pattern data suggest a complex socio-political-religious organization (Milanich and Fairbanks 1980).

Safety Harbor Period

The final prehistoric cultural period along the Central Peninsula Gulf Coast was the Safety Harbor culture (named for the type site in Pinellas County) which was centered geographically around Tampa Bay. Jeffrey Mitchem (1989) has recently proposed a subdivision of the Safety Harbor period based on his work with burial mounds and ceramic sequences. The four temporal phases are the transitional Englewood phase (A.D. 900-1100), the Pinellas phase (A.D. 1100-1500), the Tatham phase (A.D. 1500-1567), and the Bayview phase (A.D. 1567-1725). The Safety Harbor regional variant in Hillsborough, Pinellas, and southern Pasco counties is identified as the circum-Tampa Bay regional variant.

The fact that many Safety Harbor sites are found in the same locations as earlier Manasota/Weeden Island-related sites indicates an evolutionary relationship between the two cultures. Major Safety Harbor sites located along the shoreline of Tampa Bay represent ceremonial centers with truncated temple mounds and open village plazas surrounded by middens (Milanich and Fairbanks 1980), traits which are characteristic of Mississippian cultures to the north. Research by Luer and Almy (1981) supports earlier suggestions that some maize agriculture may have been practiced by the Safety Harbor peoples as they continued terrestrial and marine exploitation of regional resources. Large population centers datable to the Safety Harbor period were located at Safety Harbor (Griffin and Bullen 1950), Maximo Point (Bushnell 1962; Sears 1958), Narvaez midden (Bushnell 1966), and Tierra Verde (Sears 1967), all in Pinellas County. Inland sites include Picnic Mound (Willey 1949) and Buck Island (Bullen 1952) in Hillsborough County; and Parrish Mounds 1, 2, and 3 in Manatee County (Willey 1949).

The historic Tocobago (a subdivision of the Timucuan tribe) continued the same social, political, and economic lifeways as did their prehistoric Safety Harbor ancestors. The Spanish accounts describe the Tocobago society as highly ranked with a noble class, warriors, slaves, and peasants (Milanich 1995). The Tocobago, as well as most of the native inhabitants of Florida during this period, are believed to have been decimated, enslaved, and dispersed by European diseases and conflicts. By the first half of the eighteenth century, the native populations had all but vanished in the Tampa Bay area and vicinity (Neill 1968), and groups of Creek Indians, who came to be known as Seminoles, moved into Florida (Tebeau 1971).

History

The first European exploration of the Tampa Bay region was conducted by Narvaez in 1528. Further Spanish interest in Florida resulted in Hernando de Soto landing in the Tampa Bay area in 1539. Both of these early expeditions ended in failure, however, and resulted in death for most of the men. Twenty-seven years later Pedro Menendez de Aviles voyaged to the area and provided accounts on a number of native groups. The project area was largely ignored until 1757 when Don Francisco Maria Celi charted the coastline for the Spanish government. In 1769, Bernard Romans, a British navigator, came to Tampa Bay and recommended that a colony be established there (Jahoda 1973). When the French and Indian War began in the mid-1700s, pitting the British against the French, Spain sided with France. Following the French defeat, Spain ceded Florida to the British in exchange for Cuba. With the British defeat in the Revolutionary War, Florida was once again ceded to Spain and remained in Spanish possession until 1819 when the United States bought Florida for \$5,000,000.

The first U.S. citizen to settle in the Tampa Bay area was Robert J. Hackley of New York City. He moved to the area in 1819 and started a small plantation at the mouth of the Hillsborough River. In 1824, the

military established Fort Brooke to oversee the newly established Indian reservation near present-day Tampa. Military maps of 1846 and 1856 describe the area around MacDill AFB as hammock and wet hammock, respectively. A map of Hillsborough County drawn in 1882 places a road along the eastern shore of the Interbay Peninsula, terminating at Gadsden Point. By 1883, the town of Citronia had been established north of MacDill in the middle of the peninsula. The town is now known as Port Tampa and was the terminus for the railroad from Tampa (Associated Railway Land Department of Florida 1900). With the establishment of the rail line, Port Tampa became an important area for marine commerce, and, by World War I, it served as an important ship-building center. A 1919 plat map shows the area of MacDill divided into lots but indicates no settlement.

In response to the passage of the Wilcox Defense Act in 1935, the Army acquired the southern portion of the Interbay Peninsula for an air base. Construction of the Army air field (AAF) began on November 28, 1939. In March 1940, the first troops began to arrive from New York and Louisiana. By August 1940, the new air field became a center for the training of Black troops, who were trained under a segregated policy of "separate but equal." Black troops were usually assigned to aviation squadrons, engineering companies, and ordnance units. On April 16, 1941, the air field was officially activated and named in honor of Colonel Leslie MacDill, who was killed in a plane crash near Washington, D.C., on November 9, 1938.

The first mission of MacDill AAF was transitional training of air crews in the B-17 Flying Fortress long-range bomber and in the B-26 Marauder medium-range bomber. Resident units at the base from 1941 to 1943 consisted of the 29th, 44th, and 21st Bombardment Groups (Patterson et al. 1994). In 1941, MacDill AAF became the headquarters for the III Bomber Command and the III Fighter Command. MacDill AAF served as a staging point for ferrying combat aircraft to the Far East in response to the attack on Pearl Harbor. Project X, as the initiative was called, involved servicing aircraft and briefing crews for the flight to Australia in support of the Philippines. Combat Command quickly realized the impact of Project X on MacDill's training mission and moved Project X to Morrison Field, Florida (Wang et al. 1994).

In January 1946, the Strategic Air Command (SAC) assumed command of MacDill AAF and major SAC units, including the 6th Air Division, the 311th Reconnaissance Wing, the 55th Reconnaissance Group, and the 307th Bombardment Wing, were transferred there. In 1948, the base's official name was changed to MacDill Air Force Base (MacDill AFB 1996).

MacDill's mission as a SAC base changed little in the 1950s, and in June 1962 the Air Force announced that a portion of the base would be closed. The Cuban Missile Crisis halted that closure and reiterated MacDill AFB's value to U.S. interests in the region. The newly activated United States Strike Command (USSTRIKCOM) was added to the existing SAC force at MacDill AFB in October 1961. On July 1, 1962, MacDill AFB was transferred from SAC to the Tactical Air Command (TAC). In 1963, MacDill AFB became the first base to receive the F-4C Phantom, which replaced the F-84s of the 12th and 15th Tactical Fighter wings (Wang et al. 1994). During the Vietnam War, MacDill AFB transferred its 12th Tactical Fighter Wing to Cam Ranh Bay AFB in Vietnam, and the 15th Tactical Fighter Wing became a replacement unit for pilots lost in combat.

Between 1970 and 1990, the base's command and tactical missions changed several times, and newly developed aircraft were introduced to replace older planes. During the 1980s, MacDill AFB was the largest training center in the world for F-16 pilots (Patterson et al. 1994). MacDill AFB served as a command center for Desert Shield and Desert Storm in the early 1990s. In 1991 and 1993, the BRAC Commission recommended that MacDill AFB cease flight operations. Training of F-16 pilots by the 56th Tactical Fighter Wing ceased on September 23, 1993 (MacDill AFB 1996). In October 1992, the National Oceanic and Atmospheric Administration (NOAA) became a tenant organization. In 1992, TAC was inactivated and MacDill AFB was reassigned to the ACC. In 1995, MacDill AFB was removed from the BRAC list.

CHAPTER 4

RESEARCH GOALS AND METHODOLOGY

RESEARCH GOALS

Test excavations conducted at sites 8HI50 and 8HI5656 (EOD) were initiated to collect sufficient data to allow an evaluation of each site's research potential and its eligibility for inclusion in the NRHP. Eligibility for inclusion in the NRHP is dependent on one or more specific criteria, designated Criteria (a), (b), (c), and (d), as defined in 36 CFR 60. These four criteria are applied following the identification of relevant historic themes or patterns. A site may possess significance under Criteria (a) and (b) for its prehistoric or historic association with events or persons; under Criterion (c) for its illustration of a period, type, or method of construction, or for aesthetic values; or under Criterion (d) for its potential for yielding information important for prehistory or history. In view of the nature of the sites under investigation here, they can only be evaluated under Criterion (d). Any consideration of a site under this criterion must address whether the site contains information that can contribute to our understanding of history or prehistory, and whether that information is important.

The first step in the evaluation process should be to define the significance of the site by identifying the particular aspect of history or prehistory to be addressed and why information on that topic is important. The second step is to define the kinds of evidence or data requirements that the site must exhibit to provide significant information. These data requirements in turn indicate the kind of integrity that the site must possess to be significant. This concept of integrity relates both to the contextual integrity of the archeological deposits and to the applicability of the potential data base to pertinent research questions. Without such integrity, the significance of a site is very limited.

A series of research questions was devised in order to test the significance of each prehistoric site in terms of Criterion (d).

- (1) Were prehistoric occupations associated with a particular period in prehistory?
- (2) Do these occupations represent more than temporary occupations?
- (3) What principal activity(s) were associated with these sites?
- (4) Is the contextual integrity of components adequate to provide sufficient data on subsistence and/or recognition of activity areas?

In order to successfully answer these research questions, three specific points of inquiry must be addressed. They are:

- (1) a definition of the date ranges for the prehistoric occupations in regard to prehistoric cultural periods or phases as well as the identification of potential diagnostic artifacts for each period or phase;
- (2) the recovery and identification of features and/or artifacts (such as house patterns, ceramics, special tools, etc.) that might indicate whether or not these occupations were temporary; and
- (3) the ability to recognize patterning of artifacts and/or features (both horizontal and vertical) that might define particular activities.

The failure to derive these specific points of inquiry from any of these archeological sites would render that particular site insignificant in terms of answering the three research questions, which would in turn lead to site disqualification for inclusion in the NRHP as stipulated through Criterion (d).

The potential for any of the archeological sites to yield data relevant to the three research goals is believed to be largely dependent upon the contextual integrity of each site. In order to be relevant to these goals, the sites would at a minimum have to contain significant amounts of cultural deposits with at least moderate densities of artifactual material. Additionally, these deposits would have to contain relatively large amounts of unmixed or minimally mixed material, either vertically or horizontally, that would allow the isolation of components that could be reliably dated. Beyond this, it is felt that the recovery of subsistence data, such as faunal remains or macrobotanical material, and of postholes or features would increase site integrity and NRHP potential; however, the failure to find this level of preservation would not automatically indicate a lack of research potential. The determination of eligibility, therefore, depends upon an assessment of site integrity, the types of data present at each, and the applicability of those data to important regional research themes. The data collection procedures outlined below were designed to accomplish these goals.

METHODOLOGY

Field Methods

The determination of NRHP eligibility for the two archeological sites tested at MacDill AFB was dependent upon the retrieval of information concerning: (1) the presence of features; (2) the depth and contextual integrity of the deposit; (3) the density of cultural remains; and (4) the nature of the artifact assemblage. To accomplish this goal, shovel tests (50-x-50-cm) and excavation units (1-x-1-m) were hand-excavated along transects established across each site (Figure 6).

Work at site 8HI50 began by establishing two transects (A and B) 25 m apart. Transect A was placed between the lagoon and the existing tree line, extending into the northern part of the site. Transect B was established through the main NE/SW axis of the concentrated shell deposits. Shovel test units were marked with stakes at 25-m intervals. Shovel test C-10 was arbitrarily placed in an area of surface disturbance. Transect D was placed on the portion of the dune line between the paved road and the beach. The main site datum was established at the center of the concentrated shell deposits. The datum consists of a 45-cm-long iron rebar topped by an aluminum cap marked with the site number. The datum was driven down to ground level.

No hand excavation was initiated on the beach or shoreline where burials were removed in the 1960s. However, a surface survey was implemented in this area to assess the research potential. Human remains, faunal remains, and lithic materials were located along a section of shoreline extending from the sewer pipe on the north to a point 130 m to the south. The human remains and other materials were flagged, mapped, and collected to reduce the chance of further damage from natural elements or unauthorized collection.

Soil from all shovel test units and excavation units was removed in 10-cm arbitrary levels with shovel and/or hand trowel, and all sediments (with the exception of flotation samples) were processed through 6.35 mm

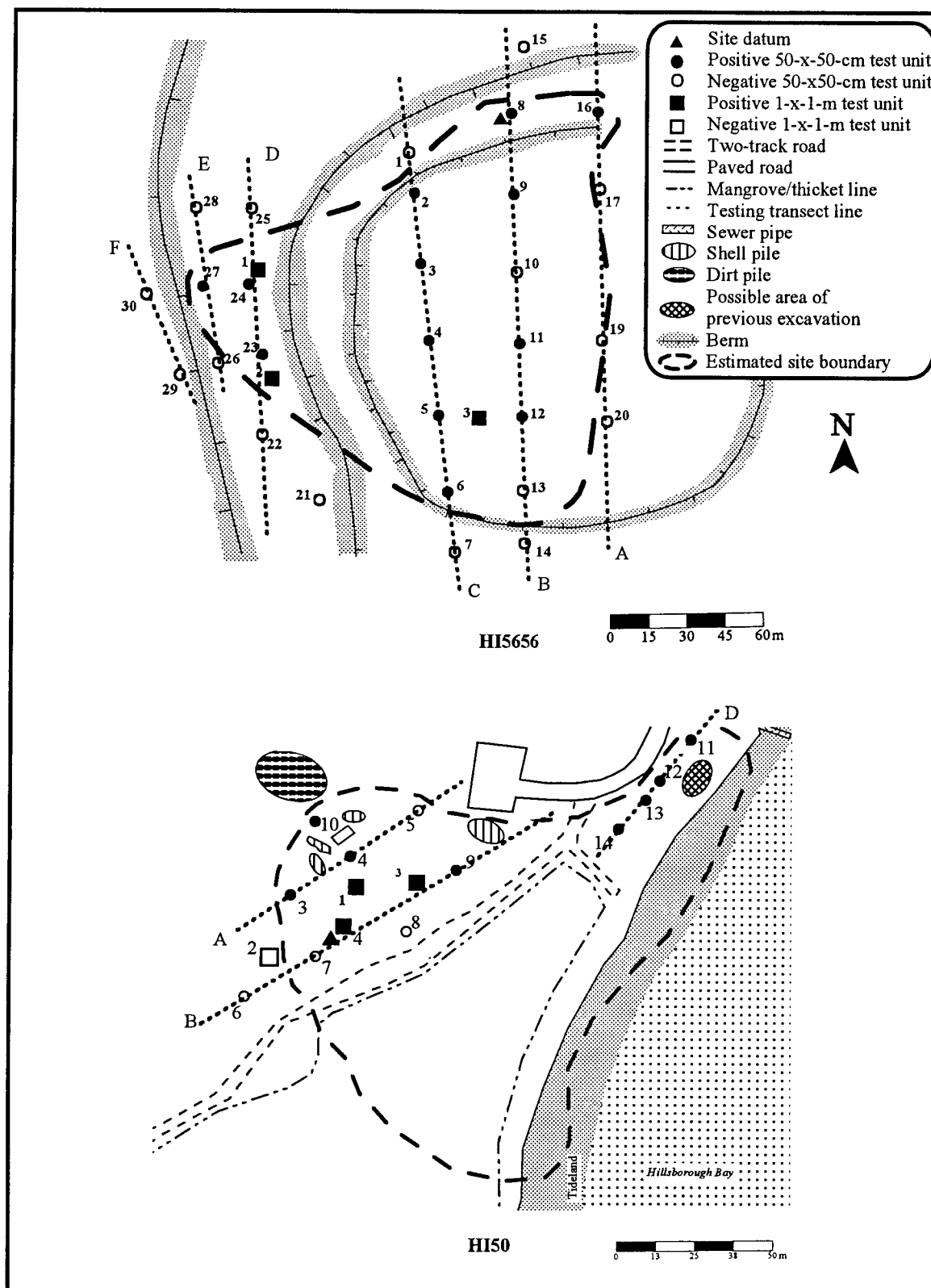


Figure 6. Transects established for placement of shovel tests and excavation units at sites 8HI50 and 8HI566.

(1/4 in) screens. Flotation samples (7 lt) were recovered from each 10-cm arbitrary level in the NE quarter of the excavation unit. All units were excavated to 1 m or to the depth of the water table, whichever was first encountered. Unit 1 was hand-augered an additional 40 cm in the northwest corner. A unit level form was completed for each 10-cm arbitrary level excavated in shovel tests or excavation units. When features were identified, a feature form was completed and, at a minimum, a plan view was drawn of the feature and photographs were taken. Following the completion of excavation, the profiles of all test units were recorded and photographed.

Work at site 8HI5656 (EOD) was initiated by establishing two transects (A and B) 30 m apart, through the main concentration of cultural materials observed on the surface of the active EOD Range. These transects were aligned to magnetic north. Transect C was later placed 30 m east of Transect B to further bound the eastern margin of the site. Shovel test units were marked with stakes every 30 m along each transect. Transects A, B, and C are located in a portion of the site designated Area A. A second portion of the site was established west of the largest berm and just east of the mangrove wetland. This portion of the site was designated Area B. Transects D, E, and F were placed in this area. Shovel test units were marked at intervals of 30 m or less.

Soil from all shovel test units and excavation units was removed in 10-cm arbitrary levels, and all removed sediments were processed through 6.35 mm (1/4 in) screens. All units were excavated using shovel and/or hand trowel. All units were excavated to 1 m or less depending on the depth of the water table. A unit level form was completed for each 10-cm level. Following the completion of excavation, the profiles of all test units were recorded and photographed.

A surface survey of the active EOD Range was implemented and a selective collection of lithic tools and diagnostic artifacts was made. Recovered material locations were flagged and mapped. The main site datum was established on the northern edge of the active EOD Range just beyond the first berm. The datum consists of an 45-cm-long iron rebar topped by an aluminum cap marked with the site number.

Both sites were mapped at 25-cm contour intervals using a Topcon GTS-304 Total Station. All relevant natural and cultural features as well as all investigative efforts and observations were noted.

Laboratory Methods

Following the completion of all field work, all artifacts were returned to the GMI, Plano, Texas, office for processing and analysis. The analysis of the artifact assemblages recovered by the current project was designed to characterize as fully as possible the range of activities conducted there. A total of 506 artifacts was recovered as a result of the testing: 494 prehistoric and 12 historic specimens. During the analysis of this material, each specimen was examined in sufficient detail to allow the identification of specific attributes and its placement into a specific artifact class.

All flotation samples were floated by froth technique using a SMAPS-STYLE machine. The samples were separated into heavy and light fractions, with the light fraction being diverted off of the surface into a flotation basket containing chiffon cloth. The heavy fraction consisted of the nonfloating residue that was left behind in a washtub with window screen (158.75 microns) covering the bottom. Both fractions were subsequently sorted and all identified ceramics, lithics, bone, and shell removed. The bone, shell, and macrobotanical remains were all analyzed separately by GMI consultants.

Following completion of the analysis, all artifacts were catalogued, labeled, and bagged in compliance with the requirements of the Florida SHPO for the preparation of archeological material collections. Computer printouts of all data were compiled and included with the project files for permanent curation. The photographic records compiled during the investigation were also catalogued in accordance with Florida

SHPO standards. The final repository of the artifacts and records compiled as a result of this testing program is expected to be MacDill AFB.

Prehistoric Artifact Analysis

The major prehistoric artifact classes utilized in this analysis include finished bifacial tools, unfinished bifaces, unifaces, utilized flakes, cores, unmodified lithic debitage, and prehistoric ceramics. The ceramic material was analyzed separately from the lithics. Other cultural remains, including bone, shell, and macrobotanical remains, were counted and weighed and separated out for specialized analysis.

Ceramic Analysis

All prehistoric ceramic sherds were individually examined and a series of attributes recorded. The attributes recorded for analysis were intended to fit a technological/production model and relate to paste and temper, forming and shaping, surface finishing, decorating, firing, and style. Additional attributes define location on vessel, weight, and specific type name (if applicable). These attributes were chosen with the intention of providing a data base comparable to previous ceramic analysis carried out in the Tampa Bay region.

Lithic Analysis

As noted above, the major classes of lithic artifacts recognized by this analysis consist of finished bifacial tools, unfinished bifaces, unifaces, utilized flakes, cores, and unmodified lithic debitage (see Appendix A). Artifacts identified as finished bifacial tools included projectile points, thinned bifaces or knives, marginal retouched biface pieces, and bifaces of indeterminate function. Raw material type for each artifact was identified (where possible), and metric attributes (length, width, thickness, and weight) were measured.

Historic Artifact Analysis

Historic artifacts recovered from sites 8HI50 and 8HI5656 (EOD) were also returned to GMI's Plano office for analysis. The materials were washed and then sorted by artifact type within each unit on the site. Trained laboratory staff examined the materials for particular attributes and diagnostic traits, using morphological and/or functional classification systems. Two primary categories were used for the assignment of recovered artifacts: Domestic and Architectural. The domestic category designation was used for items related to food service (tableware), bottle glass, and lamp glass. The architectural category included all items related to building construction, such as brick, nails, and window glass.

Faunal and Macrobotanical Analysis

Two types of faunal remains were recovered from the testing of site 8HI50, vertebrate remains (i.e., bone) and molluscan remains (i.e., shell). Bone and shell were recovered from both hand-screened and floated contexts at the site. The bone was analyzed by Brian Shaffer of the University of North Texas (UNT; see Appendix D), while the mollusks were analyzed by Dr. Richard Fullington (see Appendix F). Neither bone nor shell was recovered from site 8HI5656 (EOD).

The Zooarcheological Collection housed at the Institute of Applied Sciences, UNT, was used for comparison and identification of the archeological faunal materials recovered from site 8HI50. Identifications were based on direct comparisons to the type collection and were made to the most specific category possible, given the

condition of the material. Each element was assessed for taxon, type and portion of element, side, and taphonomic factors. The latter including weathering, breakage, burning, and gnawing. Degree of fragmentation was assessed as being (1) unfragmented, (2) spiral fracture, or (3) angular fracture. Burning was addressed as being (1) charred (i.e., burned black) or (2) calcined (i.e., burned white) for larger and identifiable specimens. Minuscule specimens from flotation were simply identified as being burned or unburned.

Macrobotanical remains were recovered from the floated contexts of site 8HI50 only. This material underwent preliminary sorting in the GMI laboratory and was then sent out for analysis and identification. Analysis of the macrobotanical remains was undertaken by Dr. Elisabeth Sheldon, of Site, Inc., Montgomery, Alabama (see Appendix E). Comparative botanical collections from South Florida, housed in the Archaeology Laboratory at Auburn University, were utilized in the analysis.

CHAPTER 5

SITE 8HI50

INTRODUCTION

Site 8HI50 occupies a small, slightly elevated area, approximately 40 m west of Hillsborough Bay (Figure 7). The site currently measures 90 m (NE-SW) x 55 m (N-S) and covers an area of about 4,950 m². The site is bound on the north by the Waste Water Treatment Plant, on the east and south by a mangrove wetland and dirt road, and on the west by a lagoon. The elevation is approximately 1 m above mean sea level (amsl). At the time of testing the site area was covered by saw palmetto, sand live oak, cabbage palm, bahia grass, gallberry, and a small amount of Brazilian pepper. Although oyster shell is visible on the surface, it is not represented in large quantities and does not appear as a mound.

Soils plotted for the site consist of the St. Augustine fine sands. This soil complex is characterized as deep, nearly level and somewhat poorly drained. These soils are located on flats and ridges bordering Tampa Bay and are subject to flooding for very brief periods during the hurricane season. The slope is 0 to 2 percent. A typical pedon of St. Augustine fine sand is composed of a surface layer of dark gray fine sand about three inches (7.5 cm) thick. The upper part of the subsoil, to a depth of about 20 inches (50.75 cm), is brown fine sand. The middle part, to a depth of 37 inches (94 cm), is light brownish gray, mottled fine sand. The lower part, to a depth of about 80 inches (203 cm), is gray, mottled fine sand. The permeability of St. Augustine soil is moderately rapid to rapid, and water capacity is low.

The northern portion of the site contained several areas of surface and subsurface disturbance including push piles (dirt and shell mixed), an excavation trench (probably made by a small bulldozer), and one large dirt pile (probably deposited during the removal of Brazilian pepper trees from the site).

PREVIOUS RESEARCH

Site 8HI50 was originally recorded by W. Plowden in 1952; however, his observations provided little information about the site. In 1960, Dr. Simon D. Messing, anthropologist at the University of South Florida, recovered human remains consisting of one subadult male and one adult male in flexed burials from the beach area approximately 40 m east of the concentrated shell deposits (see Figures 7 and H-2). Possible associated artifacts included Weeden Island and St. Johns series ceramics, shell tools, and diagnostic bifaces. Piper, Inc., examined the ceramic assemblage and assigned a site occupation during the Manasota/Weeden Island period (ca. 500 B.C.-A.D. 800); however, the temporally diagnostic bifaces indicated utilization during the Late Archaic and Transitional periods ca. 3000-500 B.C. (Brooks et al. 1983). Brooks et al.

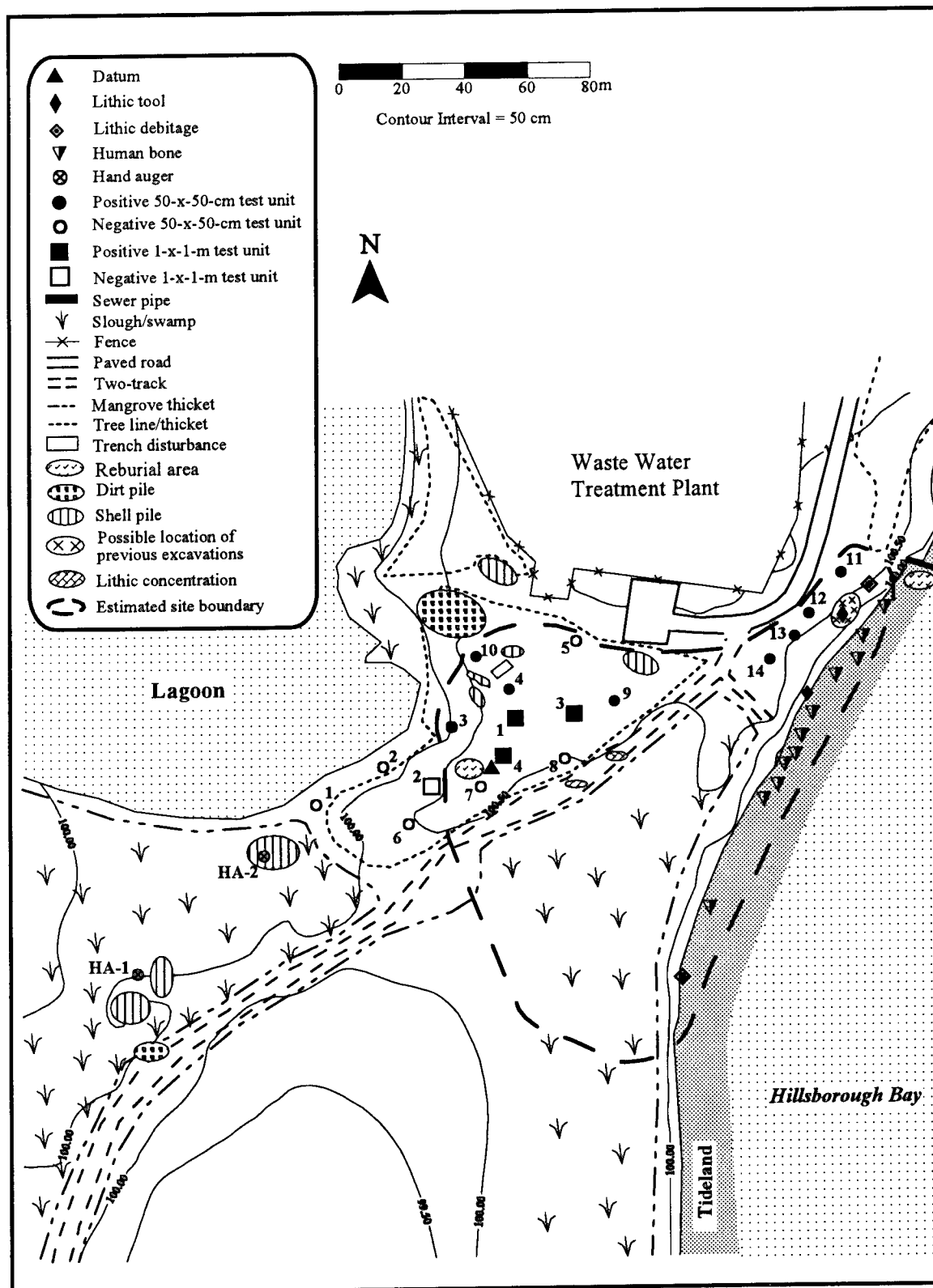


Figure 7. Plan map of site 8HI50.

(1983) indicate that the site (shell scatter) extended almost a mile down to Gadsden point. From limited testing on the concentrated shell deposit area and in the general area of dispersed shell and/or natural shell deposits, Brooks et al. (1983) indicate that the general area of dispersed shell represented a natural deposit rather than one of cultural origin. Subsequent construction of the base golf course resulted in the removal or burial of shell deposits originally located more than 100 m south of the present site boundary. The burial areas were not investigated by Brooks et al. Neither area was evaluated for NRHP status. In 1995, ACC examined the area of concentrated shell deposits and concluded that further evaluation was necessary to determine the site's significance (MacDill AFB 1996).

CURRENT FIELD INVESTIGATIONS

Site 8HI50 (Figure 8) was tested by GMI between January 27 and February 2, 1996. Fourteen shovel tests and four 1-x-1-m excavation units were excavated. Work began by establishing the main site datum at the center of the concentrated shell deposits. Shovel tests were then excavated along transects A and B which were established 25 m apart. Transect A was placed between the lagoon and the existing tree line, extending into the northern part of the site. Transect B was established through the main NE/SW axis of the shell deposits. Shovel test C-10 was arbitrarily placed in the area of surface disturbance. Since site 8HI50 had never been systematically shovel tested, the goal of the testing was to define the horizontal and vertical dimensions of the site, as well as to identify intrasite patterning of cultural materials and features. These data were then used to select specific areas for unit excavation. All shovel tests were 50-x-50 cm and excavated to a depth of 1 m or more, depending on the water table. Four of the 10 shovel tests excavated within the area of the concentrated shell deposits were positive.

Based on the results of systematic shovel testing, four areas within site 8HI50 were selected for unit excavation. Excavation unit locations were chosen to provide a cross section of site characteristics and contents. At a minimum, the goals of excavation were to elucidate site function, internal site structure, and temporal/cultural affiliation. The original excavation plan included backhoe investigations and test excavation units extending from the beach westward. Unfortunately, the wetlands environment and the mangrove thicket prevented such investigations.



Figure 8. Site 8HI50, view looking NE along Transect A, with a lagoon just to the left of the photograph.

Excavation Unit 1

A 1-x-1-m unit was placed near the shovel test unit that had yielded the highest density of lithic material. The unit was excavated in 10-cm arbitrary levels, with the upper 30 cm exhibiting both prehistoric and historic materials. Historic materials recovered in the upper 30 cm consist of domestic bottle glass (1910-1940) and architectural items such as wire nails (post-1880), window glass, a screw, and brick (1876-1903). Prehistoric ceramics evident in the upper 30 cm continued to be recovered to a depth of 70 cmbs. Lithic artifacts, consisting of a Late Archaic corner-notched point (Lafayette-like) recovered from Level 5, one dart preform fragment, and unmodified debitage, were also obtained. Shell densities were greatest in the upper 50 cm of the unit and consisted primarily of whole or large pieces of oyster. Below 50 cmbs, quantities diminished significantly, although small quantities were observed to 90 cmbs. Seven small fragments of faunal material were recovered from the upper 30 cmbs and one fragment from the 70-80-cm level. A total of five soil strata was observed in the unit profile (Figure 9).

A single feature was identified between 50 and 70 cmbs and measured 60 cm NS by 80 cm EW (Figure 10). The feature was of natural origin and contained a mixture of limestone and shell concreted together. To assess the possibility that shell or cultural deposits existed below the water table (encountered at 98 cmbs), a hand auger unit was placed in the NW corner of the unit at 100 cmbs and excavated to 140 cmbs. No shell deposits or cultural materials were recovered and no ¹⁴C samples were obtained from the unit.

Excavation Unit 2

A 1-x-1-m unit was excavated in 10-cm arbitrary levels, with four soil strata observed in the unit profile (Figure 11). The unit was placed in the southwestern area of the site which had yielded only negative results from shovel testing. Heavy shell densities were observed in the upper 50 cm of the unit; however, between 50 and 60 cmbs shell content diminished significantly, and by 65 cmbs it was nonexistent. The unit produced no cultural or faunal vertebrate materials, no features were identified, and no ¹⁴C samples were obtained. The water table was encountered at 98 cmbs.

Excavation Unit 3

A 1-x-1-m unit was placed in an area where shell and modern trash were observed on the surface. The unit was excavated in 10-cm arbitrary levels, and three soil strata were observed in the unit profile (Figure 12). Disturbed soil strata were identified to a depth of 50 cmbs, with prehistoric and historic materials being mixed to a depth of 40 cmbs. Historic material consisted of domestic bottle glass (post-1910). No cultural materials were recovered below 45 cmbs and only six small pieces of vertebrate faunal material were recovered in the upper 30 cm of the unit. Loosely packed oyster shell was observed to a depth of 80 cmbs. The unit contained no features and no ¹⁴C samples were recovered. The water table was encountered at a depth of 98 cmbs.

Excavation Unit 4

A 1-x-1-m unit was positioned in an area of the site where shell deposits were concentrated on the surface but where no modern debris was observed. Unit excavation was by 10-cm arbitrary levels. Soil strata appeared to be mixed in the upper 30 cm with prehistoric and historic materials being present. Historic material consisted of domestic bottle glass (post-1910). A total of five soil horizons was observed in the unit profile (Figure 13). Although cultural material was recovered to a depth of 100 cmbs, the overall density was extremely low (n=2 per level). Densely packed shell was observed to a depth of 40 cmbs, although by 50 cmbs it was all but nonexistent. Vertebrate faunal material, consisting of one small charred fragment and three small pieces of bone, was recovered between 0 and 50 cmbs. No features were identified and no ¹⁴C samples were obtained. The water table was encountered at 110 cmbs.

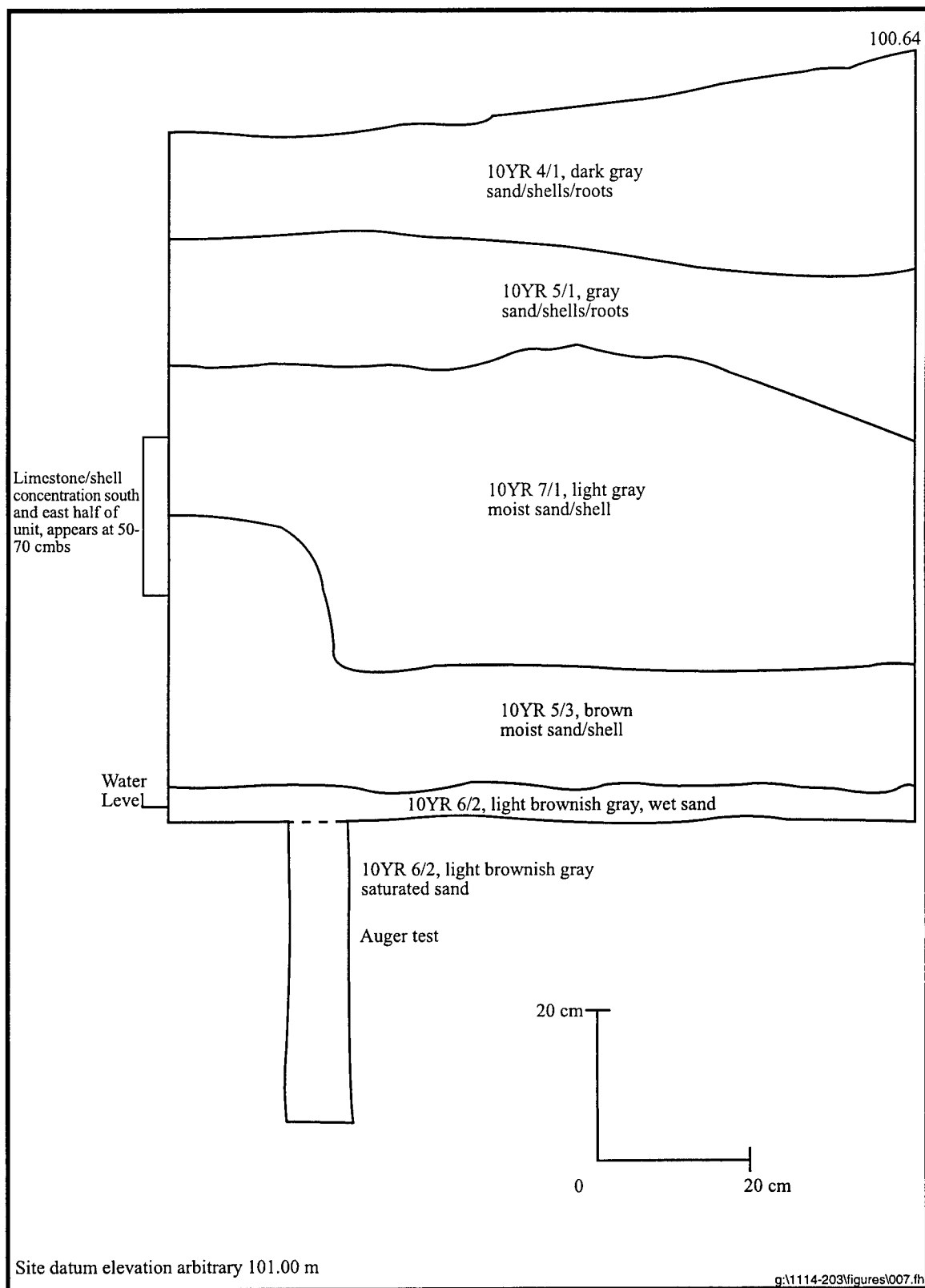


Figure 9. North wall profile of Unit 1, site 8HI50.

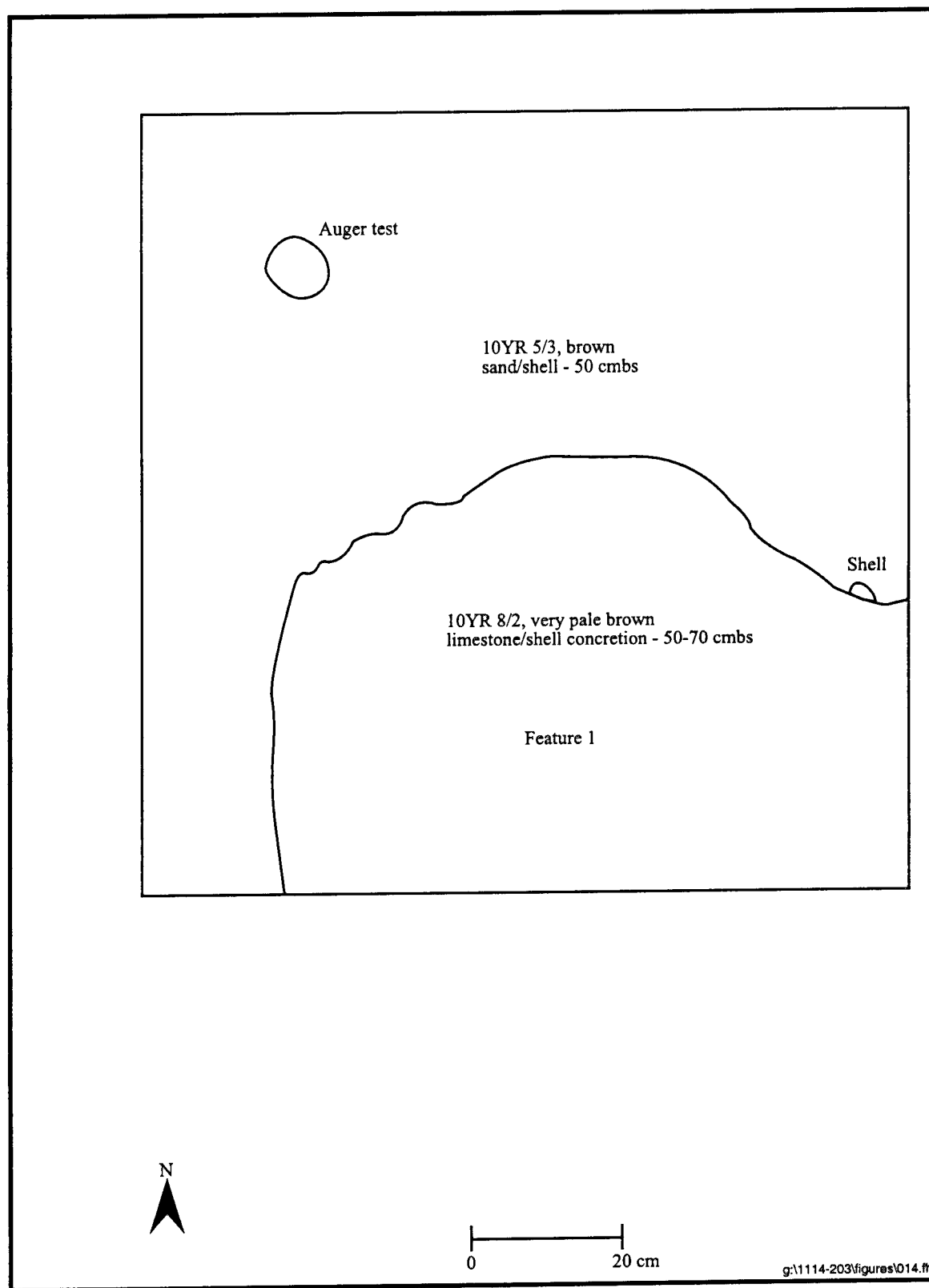


Figure 10. Floor plan of Unit 1, Feature 1, site 8HI50.

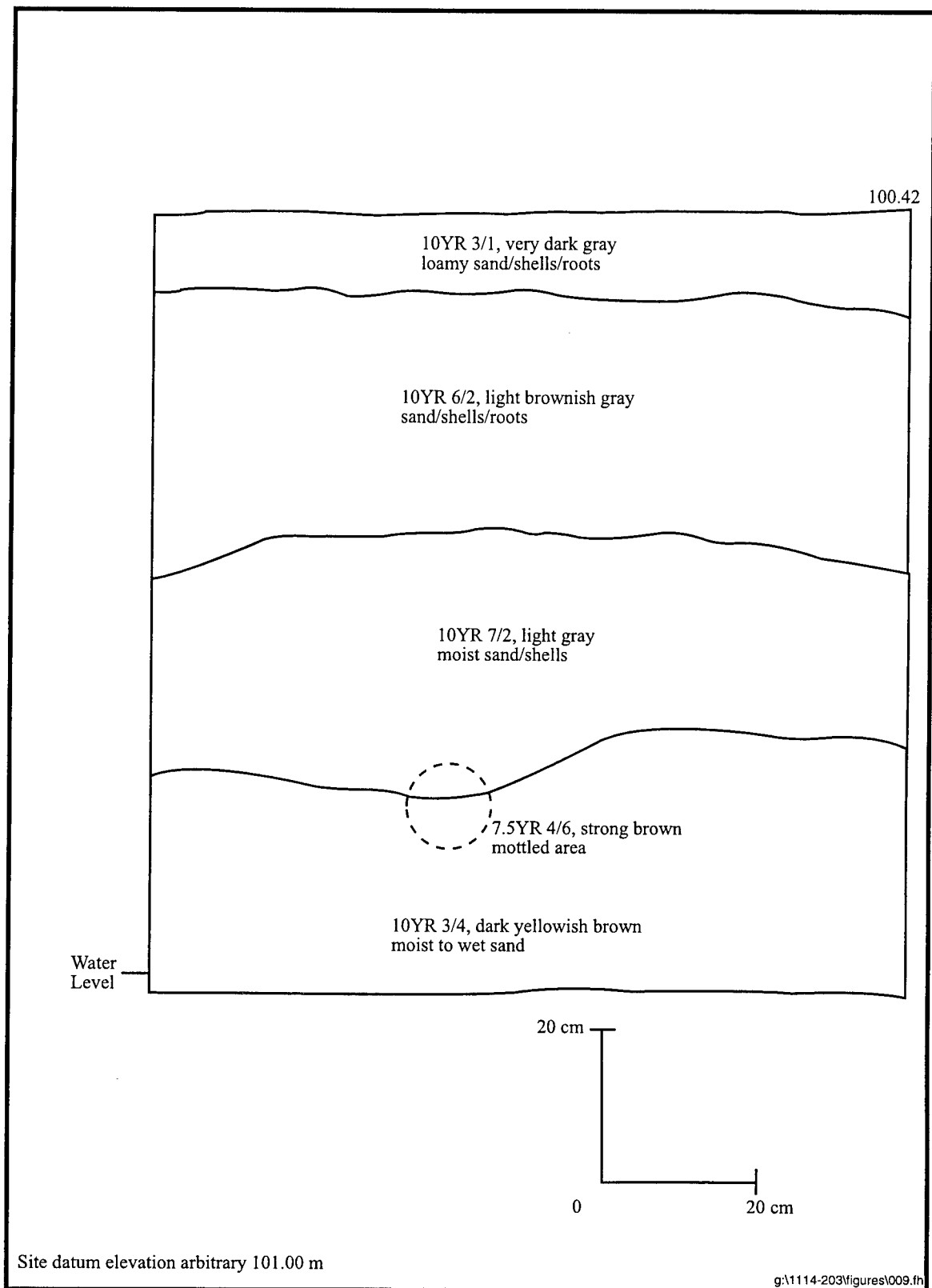


Figure 11. North wall profile of Unit 2, site 8HI50.

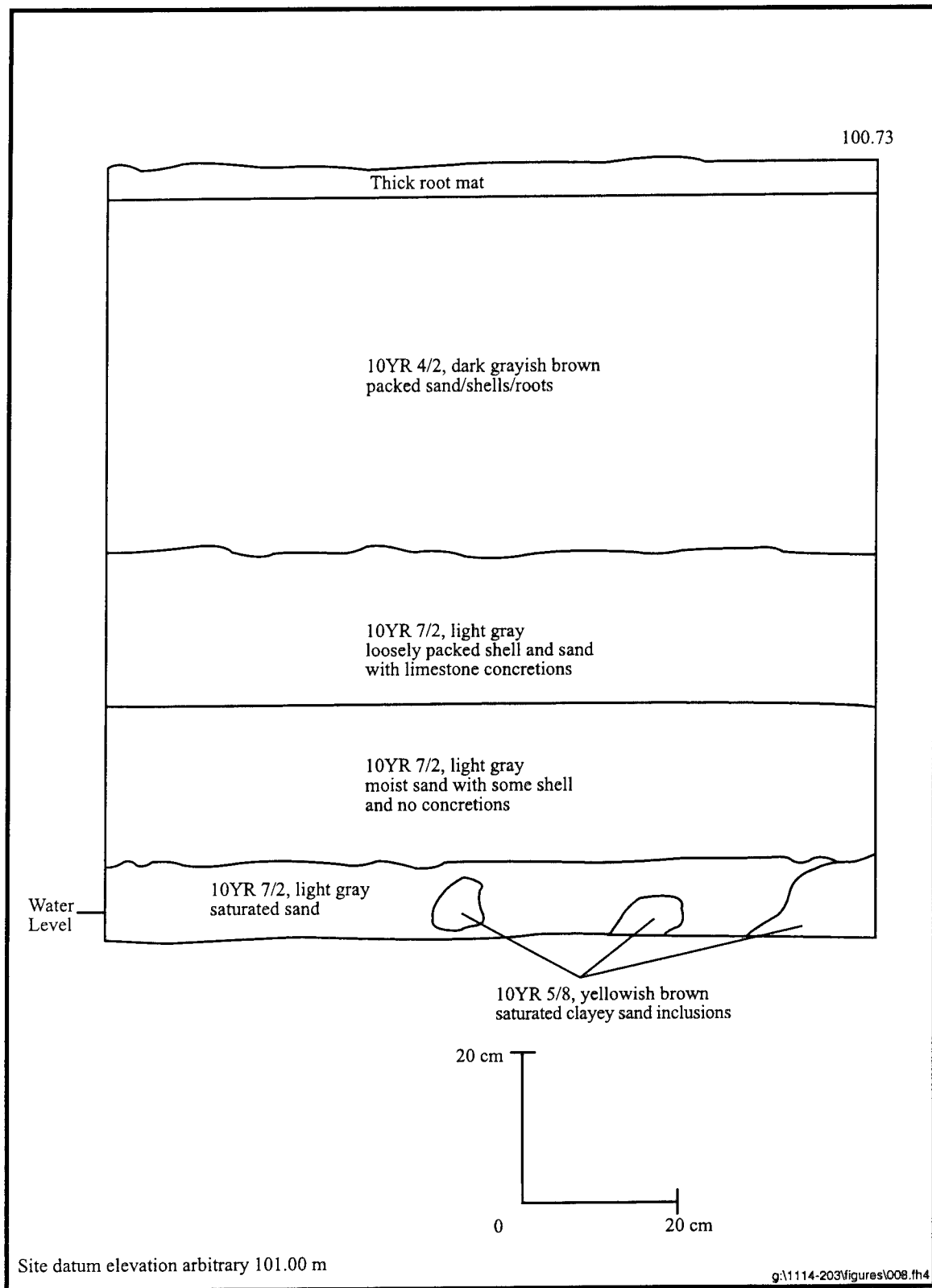


Figure 12. North wall profile of Unit 3, site 8HI50.

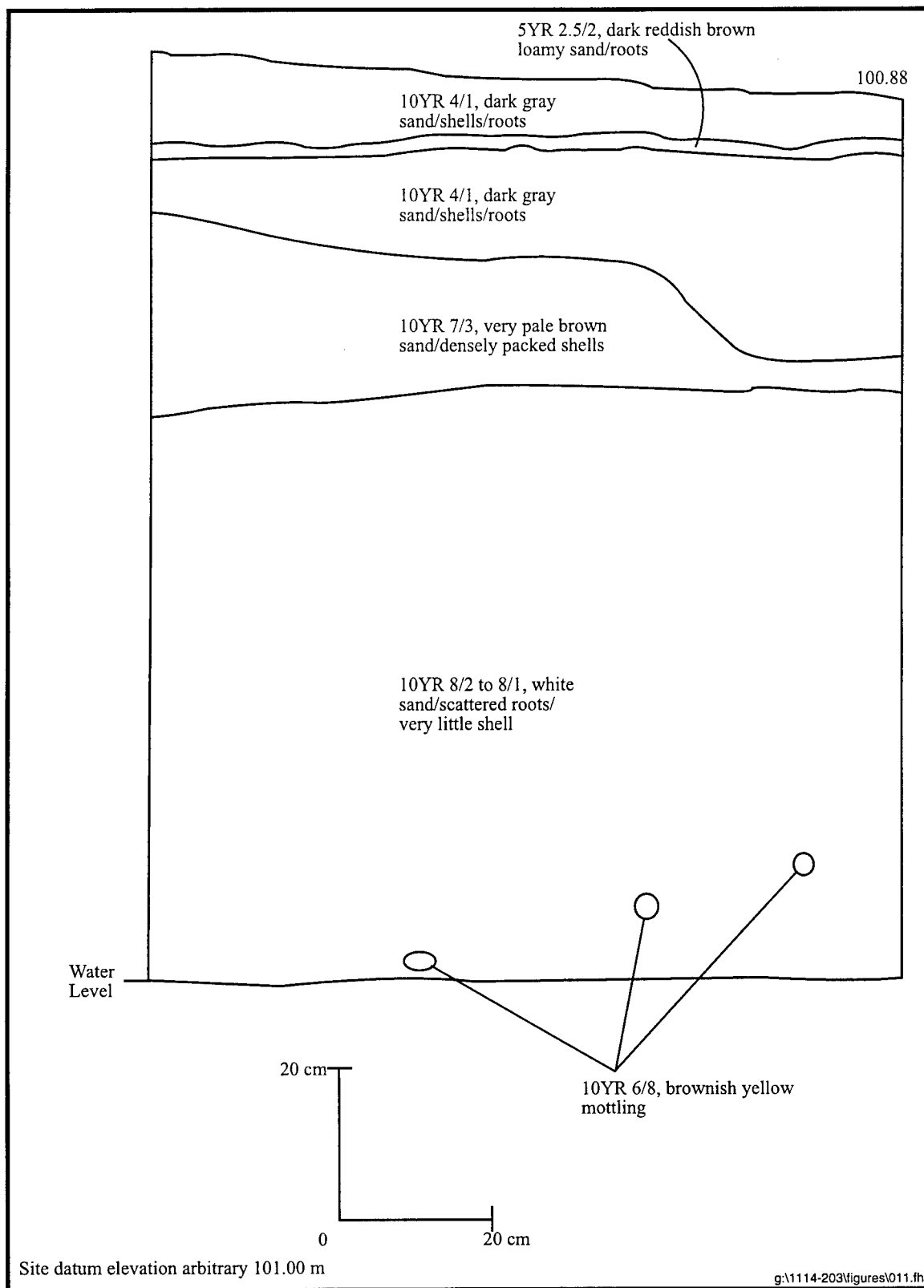


Figure 13. North wall profile of Unit 4, 8HI50.

Transect D was placed between the paved road adjacent to the Waste Water Treatment Plant and the dune line. The placement of this transect was initiated to ascertain whether undisturbed cultural deposits existed between the area of concentrated shell deposits and the beach area. Shovel test intervals were 10 m. Shovel tests indicated that the soil matrix is very disturbed to a depth of 75 cmbs in unit D-11, and 50 cmbs in units D-12 and D-13. Prehistoric and historic materials were mixed, and shell content was very low. Shovel test D-14 exhibited mixing to 30 cmbs, then a hiatus occurred between 30 cmbs and 60 cmbs with no evidence of mixing. At 60 cmbs, the soil changed to a very dark grayish brown (10YR 3/2) which continued to a depth of 75 cmbs before the shovel test excavation was halted due to the water table. Cultural material was recovered from this layer, although no ^{14}C samples were obtained. Whether this soil color change is part of a midden deposit or natural organic materials is presently unknown. However, its location adjacent to the area from which human remains and cultural material were previously recovered may argue for the former.

A surface reconnaissance of shell deposit areas and mangrove wetlands (southwest of site) and the dirt road was undertaken. Hand augering and surface inspection of two shell deposit areas were completed and produced no evidence of cultural activity. These areas were examined by Piper in 1983 (Brooks et al. 1983), and they concluded that the shell deposits were of natural origin. Current investigations identified two small areas of deposits on the road, one area contained a small amount of fossil proboscidian ivory and the other produced a small quantity of lithics (see Appendix B), including an untyped dart point. The ivory did not exhibit any evidence of cultural modification. These areas were flagged, mapped and collected. This road may be the same one outlined on a map of Hillsborough County drawn in 1882 (University of South Florida Library 1882).

A surface survey of the beach, shoreline, and dune line adjacent to and south of the Waste Water Treatment Plant was initiated to assess the cultural resources potential of the area. Human remains, lithic materials, and one bone point were located along a section of the shoreline extending from the sewer line on the north to a point 130 m to the south. The human remains and artifacts observed there were collected to reduce the chance of further damage from natural elements or unauthorized collection. The locations of all human remains and artifacts were flagged and mapped before removal. During consultations with Native American tribal representatives, all remains collected from the site (1960s and 1996) were temporarily housed in the Office of the Chief, Natural and Cultural Resources Element, MacDill AFB (see Appendix H). On 3 October 1996 reburial took place with Mr. Bobby C. Billie (representing the Seminole Nation of Oklahoma), Shannon Larson, Col. Gene R. Hickman, and Mr. Robert J. Hoffman in attendance. Two separate reburial locations were chosen by Mr. Billie (see Figure 7).

ARTIFACTUAL REMAINS

Archeological test excavations conducted at site 8HI50 resulted in the recovery of 145 artifacts (see Appendix B), not including vertebrate and invertebrate faunal remains nor macrobotanical remains. This collection consists of 134 prehistoric and 11 historic artifacts. The prehistoric artifacts include two finished bifacial tools (dart points); one uniface; two unfinished bifaces; two cores; 79 pieces of unmodified lithic debitage; 57 ceramic sherds; one bone point; and 11 possible shell tools. The historic material consists of a very small assemblage which includes brick, nails, ceramics, and glass. Both the prehistoric and historic artifacts recovered from the site are discussed below. Analysis of artifacts recovered in 1960 and presently curated at the University of South Florida are presented in Appendix G.

Ceramics

Ceramic Analysis

The small sample of ceramic material collected during the current MacDill AFB testing project was analyzed using a form for the recording of attributes considered potentially diagnostic for the area. The analysis of

the sherds was deemed to be more productive when focused on characteristics of paste and nonplastic inclusions for identifying traditional ceramic types because of the small size of the sample, the lack of diagnostic surface treatments, and the generally eroded condition of the sample. Attributes recorded include surface treatment, type of primary and secondary nonplastic inclusions, frequency of primary inclusions, and weight. This initial inspection of sherds recovered from 8HI50, the only site to yield ceramics, allows the preliminary assignment of two type names, but does not provide enough information to refine the chronological placement of the site. Most of the sherds appear to belong to either Pinellas Plain or Pasco Plain, which have long time spans and little variation through time.

Pottery recovered from 8HI50 consists entirely of plain or unidentified sandy-paste vessels, most with fine sand primary inclusions and secondary inclusions of grog and/or burned-out calcareous material. Fifty-seven sherds were recovered from three units, but the overwhelming majority (55 sherds or 96.5 percent) came from Excavation Unit 1. Fifty-one of these sherds were body sherds and six were rims. One sherd came from Test Unit B9 and one sherd from Excavation Unit 3. Almost half of the sherds were not formally analyzed because of their extremely small size; 29 sherds were submitted to full analysis, while those less than 1 cm² were inspected for general paste characteristics. These very small sherds appear to conform universally to the sandy paste and granular texture of the sherds subjected to fuller analysis.

Generally, this ceramic material can be characterized as having a soft, friable paste and a relatively high proportion of fine sand inclusions. Sand makes up from 10 to 20 percent of the paste in all the sherds from this sample. As noted above, a small amount of grog is also present in most sherds. Table 2 presents full information on the 29 sherds subjected to complete analysis. The concentration of sherds from a single excavation unit raises the possibility that most represent only two or three vessels. The eroded condition of the sherds makes it very difficult to identify those that fit together, so this observation must remain tentative. Sherds exhibiting sand and grog inclusions with plain surfaces and granular texture were assigned to Pinellas Plain (see Table 2). Sherds with sand and grog inclusions that also possessed vacuoles of varying size within the paste, possibly indicating inclusions that had burned out during firing, were tentatively assigned to the Pasco Plain type (see Table 2). Several sherds contained sand and grog and appeared to have some vacuoles that could indicate burned-out inclusions; however, this characteristic was not as clear on these sherds as on those sherds assigned to Pasco Plain. Therefore, these specimens have not been assigned to a ceramic type (see Table 2). Descriptions for the two assigned types are presented below.

Pinellas Plain

Willey (1949) defined Pinellas Plain for the central Gulf Coast of Florida and the Manatee region. The type contains fine sand inclusions, with a variety of paste characteristics that range from granular to contorted or laminated. Surfaces are poorly smoothed and may show tool marks or "crackling." Willey (1949:482) describes vessel forms as large open bowls with slightly incurved rims, casuela bowls, collared globular ollas, and other "pot forms." He suggests that the vessels have rounded bases and describes the use of nodes, looped handles, pinched punctations, and crude effigy handles below rims. Rims are sometimes folded on the exteriors (Willey 1949:482). Pinellas Plain is usually associated with the Safety Harbor culture, but can also be found in late Weeden Island contexts (Luer and Almy 1980:211). Thus, the temporal range for Pinellas Plain is quite long, beginning as early as A.D. 800-1000 and continuing into the early sixteenth century (Luer and Almy 1980:211).

Pasco Plain

Pasco Plain was defined by Goggin (1948) for sites in central Florida. Willey paraphrases Goggin's description of a form that was probably coiled and heavily tempered with limestone inclusions of variable size. Willey (1949:446-447) indicates that these may "leach" out, leaving holes in the paste. The distinction

Table 2
Ceramic Data

Specimen #	Sherd Type	Provenience ¹	Primary Inclusions	Secondary Inclusions	Type Name
1	body	TU B9, L1	sand	grog	Pinellas Plain
2	body	EU 1, L1	sand	N/A	Pinellas Plain
3	body	EU 1, L1	sand	N/A	Pinellas Plain
4	body	EU 1, L1	sand	grog	Pinellas Plain
5	body	EU 1, L2	sand	grog	Pinellas Plain
6	rim	EU 1, L5	sand	grog/limestone?	Pasco Plain
7	body	EU 1, L5	sand	grog/limestone?	Pasco Plain
8	body	EU 1, L5	sand	grog/limestone?	Pasco Plain
9	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
10	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
11	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
12	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
13	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
14	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
15	body	EU 1, L7	sand	grog	unidentified
16	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
17	body	EU 1, L7	sand	grog/limestone?	Pasco Plain
18	rim	EU 1, L7	sand	grog/limestone?	Pasco Plain
19	rim	EU 1, L7	sand	grog/limestone?	Pasco Plain
20	body	EU 1, L7	sand	N/A	unidentified
21	body	EU 3, L1	sand	N/A	unidentified
22	rim	EU 1, L6	sand	grog	unidentified
23	body	EU 1, L6	sand	grog	unidentified
24	body	EU 1, L6	sand	grog	unidentified
25	body	EU 1, L6	sand	grog	unidentified
26	body	EU 1, L6	sand	grog	unidentified
27	body	EU 1, L6	sand	grog	unidentified
28	rim	EU 1, L6	sand	grog	unidentified
29	rim	EU 1, L6	sand	grog	unidentified

¹ TU = 50-x-50-cm Test Unit
EU = 1-x-1-m Excavation Unit
L = Level

between "leaching" and burning out during firing is not made in the original description, although it appears likely that these inclusions are burned away rather than leached away. Texture is described as coarse, with color ranging from gray to tan to black; fire-clouding is common. Vessels are poorly smoothed and often uneven on the surfaces. Open bowls and slightly constricted bowls with unmodified rims are typical (Willey 1949:446-447). Pasco Plain, along with other sand-tempered plain forms, dominates Weeden Island period sites after the Deptford period, i.e., after A.D. 100 (Milanich 1994:210-211). Milanich suggests that Pasco is related to the earlier limestone-tempered type, Perico Plain. Pasco Plain is most common in sites of the northern Safety Harbor area, in Pasco, Hernando, and Citrus counties, but is also found farther south (Milanich 1994:392).

Chipped Stone

Finished Bifacial Tools

The sample of finished bifacial tools collected from site 8HI50 is very small and includes two dart points. Table 3 describes the attributes of the dart points and other bifacial and unifacial tools recovered from site 8HI50.

Table 3
Attributes of Bifacial and Unifacial Tools Recovered from Site 8HI50

Class	Type	Other	Color	Material	Heat Treatment	Quantity	Size (mm) (LxWxT)	Weight (g)
<i>Surface</i>								
Unfinished biface	aborted, late	complete	10YR 7/3	Tampa limestone chert	no	1	57x52x1	35.60
Core	complete	multidirectional	10YR 7/3	Tampa limestone chert	no	1	91x62x33	128.30
Unfinished biface	dart point preform	fragment	10YR 7/1	Fossiliferous type 4 chert	no	1	46x38x9	14.50
Finished biface tool	dart point	complete	10YR 6/2	chalcedonic chert	no	1	41x26x11	8.40
Uniface	marginal modification/retouch	complete	10YR 7/4	Tampa limestone chert	no	1	48x63x17	46.20
Core	tested nodule/pebble	multidirectional	10YR 6/2	chalcedonic chert	no	1	69x60x30	125.60
<i>Unit 1, Level 5</i>								
Finished biface tool	dart point	complete Lafayette	10YR 7/1	Suwannee formation chert	no	1	67x34x7	12.10
<i>Unit 1, Level 7</i>								
Unfinished biface	dart point preform	fragment	10YR 7/1	Fossiliferous type 4 chert	no	1	29x31x9	4.60

Dart Points

Of the two dart points recovered from site 8HI50, one is a possible Lafayette point, 1000 B.C.-A.D. 1250. The point was recovered from the middle of Excavation Unit 1 (Level 5). The second point is also untyped and has a poorly defined stem; its outer cortex is highly patinated. This specimen was recovered from the surface of the road.

Lafayette Point

The possible Lafayette point was manufactured from Suwannee formation chert, possibly from the Brooksville Quarry cluster (Figure 14). The point is a relatively thin (7 mm), corner-notched point with a slightly drooping barb (one barb is fractured) and an expanding base. Alternate bifacial flaking has produced a serrated-like appearance on the lateral edges. Workmanship is very good. The length is 67 mm, the width is 34 mm, and the weight is 12.1 g. Bullen (1975:26) describes Lafayette points as "broad, medium to large sized, corner notched points with a straight, sometimes excurvate, base. The lateral edges are not intentionally serrated or beveled." A date of approximately 1000 B.C. is suggested for Lafayette points.

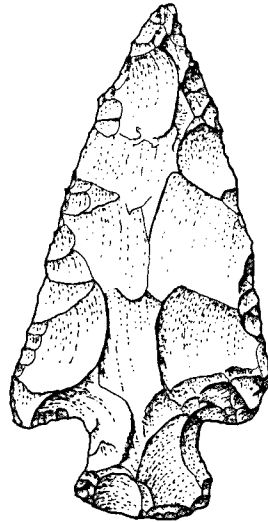


Figure 14. Lafayette point recovered from site 8HI50 (Scale 1:1).

Untyped Point

The untyped point is manufactured from chalcedonic chert. It is 41 mm in length, 26 mm in width, and 11 mm in thickness; it weighs 8.4 g. The workmanship is crude, and its overall condition is poor (Figure 15).

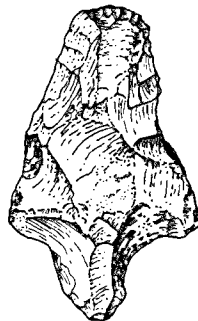


Figure 15. Untyped dart point recovered from site 8HI50 (Scale 1:1).

Unfinished Bifaces

Three unfinished bifaces or bifaces in manufacture were recovered from site 8HI50. Two were recovered from the surface of the road and one from Excavation Unit 1 (Level 7). Of the specimens recovered from surface contexts, one is classified as a late aborted biface made from Tampa Limestone chert and the other is a dart point preform fragment made from fossiliferous type 4 chert. The specimen recovered from Excavation Unit 1 is also a dart point preform fragment made from fossiliferous type 4 chert.

Uniface

One unifacial tool was recovered from the surface of the road and is a complete marginal modified/retouched flake. It measures 48 mm in length, 63 mm in width, and is 17 mm thick; it weighs 46.2 g. This tool is made of Tampa Limestone chert. The proximal edge indicates a minor amount of reworking.

Cores

Two cores were recovered from the surface of the road; one specimen is a complete multidirectional core of Tampa Limestone chert, and the other is a multidirectional tested nodule/pebble of chalcedonic chert. Both cores exhibit multiple directional platforms from which flakes were struck using the angular facets of the cortex-covered exterior. Thus, initial reduction appears to have been a random removal of flakes from favorable surfaces rather than any planned flake removal pattern.

Unmodified Lithic Debitage

The sample of 77 pieces of unmodified lithic debitage recovered from site 8HI50 consists of flakes, flake remnants, or angular shatter weighing a total of 270.2 g (Table 4). Disregarding flake remnants and shatter, tertiary interior flakes were most abundant overall, followed by secondary flakes. The size distribution of the debitage is generally divided evenly throughout the scale, with a slightly greater number on the smaller end. Fossiliferous type 4 chert is the most common raw material type present in the sample, measured either by frequency of pieces ($n=61$; 79.2 percent) or by weight (234.4 g; 86.8 percent). Outcrops of this chert type are relatively abundant around Tampa Bay (Goodyear et al. 1983), and its common occurrence at this site indicates that a source was located nearby. Silicified coral is the second most abundant raw material type, both by frequency ($n=7$; 9.1 percent) and by weight (29.1 g; 11.0 percent). The remaining types include, Tampa Limestone, chalcedonic chert, and unidentifiable. One notable absence within this assemblage is that of Bay Bottom chert. This absence may be an indicator that sources of this material were no longer available, due in part to rising sea levels.

Shell Tools

Introduction

Previous research on shell tools recovered from archeological sites in Florida focused primarily on development of typologies that could be used in chronological or regional comparisons between cultures (Goggin n.d.; Goggin and Sommer 1949). Since that time, the emphasis has shifted to understanding the technology and function of these artifacts through replication and experimentation (Beriault 1986; Estabrook and Austin 1989; Keegan 1984; Masson 1988; Ste. Claire 1982). This later research has introduced the need to view shell tools as part of the overall artifact assemblage and not segmented from stone, wood, or bone implements. Thus, to fully understand the role of shell tools in prehistory it is necessary to view these tools within the social and economic contexts.

Table 4
Unmodified Debitage Attributes by Raw Material Type, Site 8HI50

	<u>Chalcedonic</u>		<u>Fossiliferous Type 4</u>		<u>Silicified Coral</u>		<u>Tampa Limestone</u>		<u>Unidentified</u>	
	n	%	n	%	n	%	n	%	n	%
<i>Debitage Type:</i>										
Tertiary flake	1	50	29	47.5	6	85.7	1	25	1	33.3
Secondary flake			4	6.5						
Flake fragment	1	50	10	16.5			2	50	2	66.7
Shatter	<u>1</u>		<u>18</u>	29.5	<u>1</u>	14.3	<u>1</u>	25	<u>1</u>	
	2		61		7		4		3	
<i>Size:</i>										
> 25 mm			3	5	1	14.1				
19-25 mm			9	14.8	1	14.1				
12.5-19 mm	1	50	13	21.3	2	28.8				
9.5-12.5 mm			14	22.8	3	43.0	1	25	2	66.7
6.3-9.5			19	31.1			3	75	1	33.3
<6.3 mm	<u>1</u>	50	<u>3</u>	5	<u>1</u>		<u>1</u>		<u>1</u>	
	2		61		7		4		3	
<i>Weight:</i>										
Total by material	.9 g		234.4 g		29.1 g		2.3 g		3.5 g	

Shell Typology

The use of standardized shell typologies can provide archeologists a means by which comparisons can be made on both a regional scale as well as between intrasite temporal and spatial components. The typology used to classify the shell artifacts recovered from site 8HI50 follows that developed by William Marquardt (1992) from his work in southwest Florida. Marquardt's typology provides the most recent and comprehensive synthesis, drawing on the work of early investigators as well as his own and those of his colleagues.

Artifact Descriptions

A list of shell artifact types recovered from site 8HI50 is presented in Table 5. Basic typologies recovered from the site are described below.

Columella Hammers

These tools are gastropod columellae (primarily *Busycon* but also *Strombus*) that exhibit battering, spalling, or smooth rounded anterior ends indicating that they were used as hammers (Figure 16). All specimens of

Table 5
Shell Tools Recovered from Site 8HI50

Provenience	Shell Type	Species	Length (mm)	Width/Thickness (mm)	Weight (g)
Surface	columella hammer	<i>Strombus gigas</i>	120.0	30.0	112.0
Unit 1, Level 1	quahog scraper ?	<i>Mercenaria campechiensis</i>	56.9	75.2	55.7
Unit 1, Level 2	columella hammer	<i>Busycon contrarium</i>	78.5	18.5	18.6
Unit 1, Level 4	quahog scraper ?	<i>Mercenaria campechiensis</i>	65.0	81.3	67.8
Unit 1, Level 4	columella pick/drill	<i>Busycon contrarium</i>	44.4	5.2	1.2
Unit 3, Level 1	columella hammer	<i>Busycon contrarium</i>	116.3	20.2	39.6
Unit 3, Level 4	columella hammer	<i>Busycon contrarium</i>	75.5	21.1	35.0
Unit 4, Level 4	columella hammer	<i>Busycon contrarium</i>	112.2	24.4	40.1
Unit 4, Level 4	columella hammer	<i>Busycon contrarium</i>	75.0	23.0	29.7
Unit 4, Level 4	columella hammer	<i>Busycon contrarium</i>	66.0	17.0	17.1
Unit 4, Level 5	columella pick/drill	<i>Busycon contrarium</i>	53.5	12.4	8.0

this type have the whorl and spire completely removed. Although there is no evidence of hafting, it is possible that they were set in a socketed handle (Austin 1995). Recent research (Russo 1991) indicates that columella hammers were numerous in Late Archaic deposits at Horr's Island; however, Marquardt (1992) suggests that hafted gastropod tools were not used during the Late Archaic.

Worked Columella

Artifacts of this class are represented by gastropod columella that have been tapered at both the anterior and posterior ends, possibly indicating that they were intentionally manufactured (see Figure 16). Previous investigators (Gilliland 1975:197; Goggin n.d.:514; Marquardt 1992:204) have referred to them as "awls" or "perforators."

Expedient/Indeterminate

This type of artifact class is represented by the southern quahog (*Mercenaria campechiensis*), although not formally listed as such by Marquardt (1992) or discussed by Luer (1986). Two specimens of left valves were recovered with fracture lines at right angles to the umbo or hinge line; under normal breakage this fracture is more parallel to the hinge line (Fullington, personal communication 1996). The fracture line produces a wedge-shaped specimen that has been further utilized on the newly exposed edge. Replication of this type of artifact has been produced from modern populations (Austin, personal communication 1996). The function of this tool is presently unknown but may have been utilized as an expedient scraper or as a percussion implement (Figure 17).

Vertebrate Specimens

Analysis of vertebrate specimens was conducted by Mr. Brian S. Shaffer at UNT, Denton (see Appendix D). The taphonomic information included weathering, breakage, burning, and etching. Unique observations,

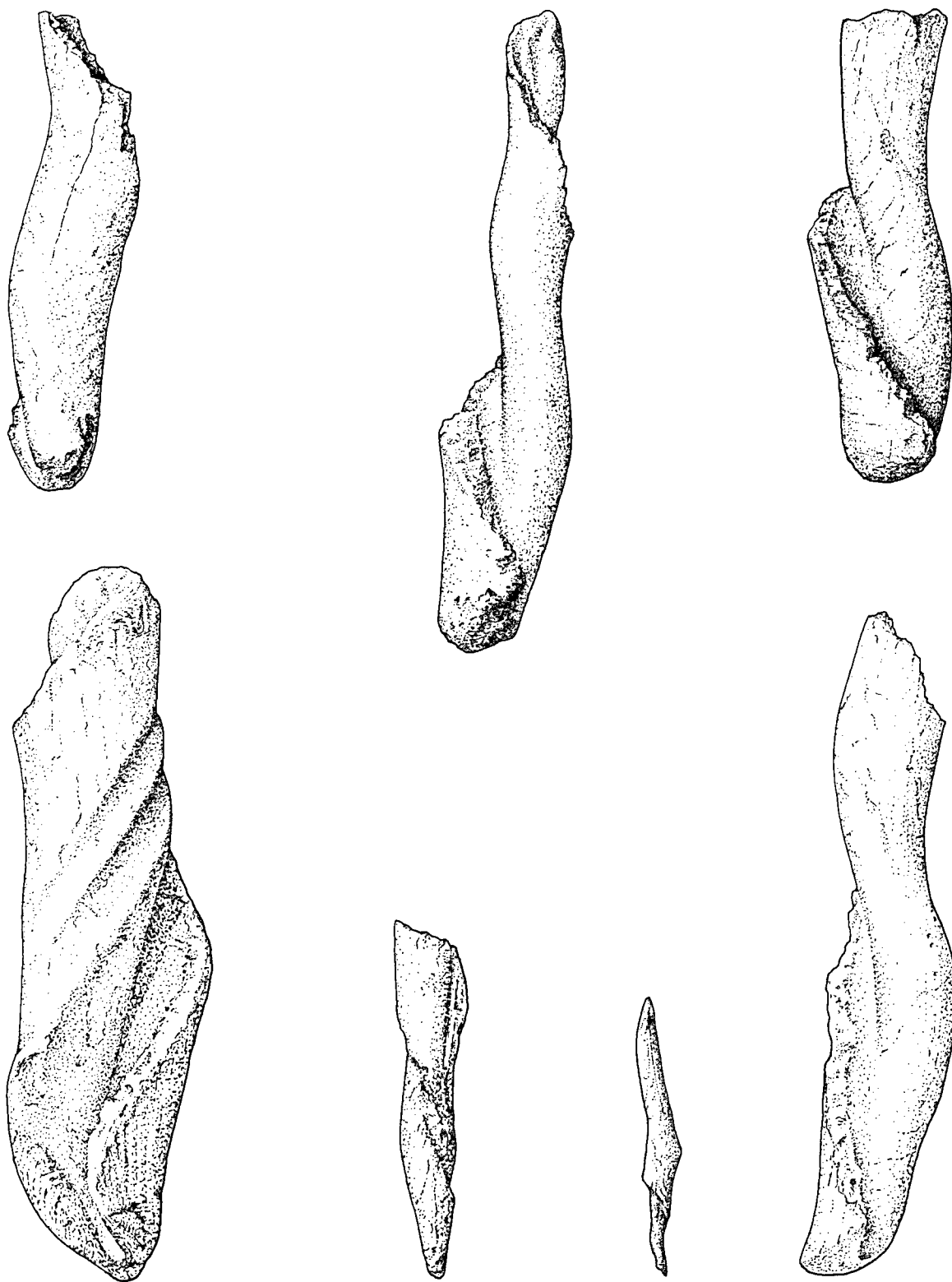


Figure 16. Shell tools recovered from site 8HI50 (Scale 1:1).

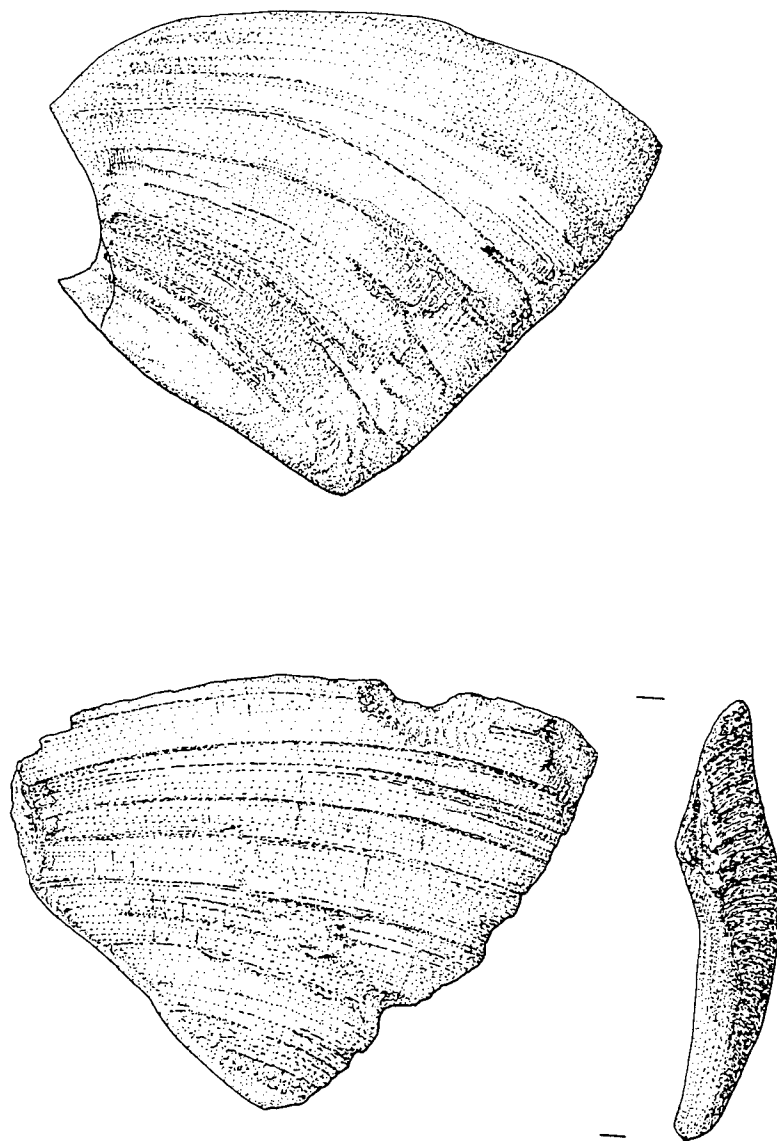


Figure 17. Shell tools recovered from site 8HI50 (Scale 1:1).

such as pathological disorders, were also recorded. The vertebrate remains consist of 29 specimens representing 12 levels from Units 1, 3, and 4 (Unit 2 was sterile). Unfortunately, many of the specimens were too fragmented for further identification.

The analysis provided little additional information about site activities or subsistence. Identified vertebrate remains included fish (drum), turtle (species unknown), and mammalian (deer). All identified taxa were present both in prehistoric and historic populations. The bone point fragment was manufactured from the metatarsal of a large mammal, probably a white-tailed deer (*Odocoileus virginianus*).

Archeobotanical Samples

A total of 29 samples representing 24 levels from Units 1, 3, and 4 (Unit 2 was sterile) was analyzed for macrobotanical remains at site 8HI50. The seven-liter samples were obtained from the NE quarter of each 10-cm arbitrary level excavated. As with remains recovered from most column samples not from features, little additional information on site subsistence or activities was provided from the analysis. Remains of edible plants were identified from three levels only and consisted of two hickory shell fragments and a single poke seed. No evidence of domesticated plants was found. Plant species are representative of those found in coastal mixed forests and include fern spores, hard woods, and conifers (see Appendix E).

Molluscan Remains

Molluscan remains consisting of 1,652 specimens representing 43 levels (from excavation units 1, 2, 3, and 4, and shovel test 14) were identified from site 8HI50. Of this sample, 1,601 specimens (97.0 percent) are oyster (*Crassostrea virginica*). The remaining 51 specimens (3.0 percent) represent four species of marine bivalves, nine species of marine gastropods, and one species of terrestrial gastropod (see Appendix F).

Fourteen specimens that exhibited possible cultural modification were also examined. Analysis of these samples revealed that only a few "tool" specimens (n=11) actually displayed evidence of possible usage or modification. Factors used to determine possible usage/modification included: smoothed, ground, flaked, or rubbed edges; smooth holes; unnatural fractures; and beveled, tapered, or battered ends.

The analysis of the molluscan assemblage presents data from which several observations can be made:

1. The presence of the large barnacle *Balanus* in Unit 2 and the appearance of the marine gastropod *Crepidula fornicata* in Unit 4 suggest that portions of the site were underwater or adjacent to the shoreline at various periods (Britton and Morton 1989).
2. The shell tools identified from both the surface of the site and from excavation units appear to be older than the recovered assemblage.
3. Nonoyster species (bivalve and gastropod) and the epifauna suggest salinity changes at the site.

SITE INTERPRETATION

The Phase II investigations did not produce any evidence of post molds, features, or midden deposits within the area of concentrated shell deposits. In addition, the minimal recovery of supporting data such as faunal specimens and macrobotanical samples makes site interpretation difficult. Site 8HI50 appears to have been occupied sporadically between approximately 500 B.C. and A.D. 900, based primarily on the ceramic assemblage (i.e., Pasco Plain and Pinellas Plain). The other diagnostic marker (i.e., possible Lafayette point) is inconclusive as to its temporal placement.

Several environmental factors may have contributed to the alternating periods of site utilization. Prehistoric human adaptation to any geographical location was contingent on a number of important factors, including the availability of fresh water. Without this resource within easy walking distance of a site, prolonged existence was difficult, if not impossible. The hydrology of the southern portion of the Interbay Peninsula, including the area surrounding site 8HI50, contains no known prehistoric or historic fresh-water resources (CH2M Hill 1981). In addition, soils associated with the site and surrounding terrain are poorly suited for cultigen development. However, soils containing a high shell content are highly alkaline, which retards deterioration of organic material. Consequently, conditions are ideal for the development and preservation of organic deposits (Austin 1995). Soils present onsite produced no evidence of these deposits and only very minimal faunal and macrobotanical remains. Detailed analysis of these types of remains, if present, would

yield information regarding the importance of different species to the diet, patterns of subsistence, and season(s) of exploitation. Thus, the lack of supporting data may indicate that site occupation was very sporadic and of limited duration.

Such conclusions would appear to be contradicted by the apparent use of the adjoining beach area for burial purposes during the Manasota/Weeden Island period (ca. 500 B.C.-A.D. 800). Nevertheless, the diagnostic artifacts also indicate use of the site area during the Late Archaic and Transitional periods ca. 3000-500 B.C. Given that the site area was likely visited intermittently by groups during a period of 3,000 to 5,000 years minimally, it is quite likely that the deaths of individuals occurred near this location purely by chance. Consequently, the presence of human burials is not necessarily evidence of a long term occupation; they merely indicate that the site was used intermittently as a habitation site or that it was a favorite spot for burials when the band was within the Tampa Bay region.

Analysis of the molluscan remains suggests that portions of the site may have been inundated or were once part of the Interbay shoreline. Oscillations of sea level over the past 5,000 years may have affected site formation processes, although this is not supported by stratigraphic evidence. However, short-term sea level fluctuations for southwest Florida (Walker 1992) would have affected shellfish habitats. If these habitats were decreased by changes in the salinity of bay water, then the site may have been exploited only for brief periods. Recent excavations at Yat Kitischee (Austin 1995), located on the southern shore of Old Tampa Bay, indicate that these salinity changes affected an occupation hiatus from approximately A.D. 400 to 800 at the site. These changes may also have affected site 8HI50.

The minimal recovery of artifacts from unit excavations does not present sufficient data regarding site activities. Of the four units excavated, only two (Units 1 and 4) contained materials from possibly undisturbed contexts (i.e., below 30 cm). Unit 2 was sterile and Unit 3 exhibited the cultural mixing of prehistoric and historic specimens evident in the aforementioned units. The majority of ceramic materials (96.5 percent) was recovered from Unit 1 (n=55), only 27 of which could be analyzed. The entire assemblage lacked diagnostic surface treatments and sherd surfaces were in a generally eroded condition. The sample size and condition of materials does not provide enough information to refine the chronological placement of the site. The vertical distribution of artifacts in Units 1 and 4 (Figure 18) provides little substantial data concerning lithic reduction activities, although evidence of tool manufacture and maintenance is suggested from the surface recovery of cores, unfinished bifaces, and a finished bifacial tool.

Shell tools and other gastropod remains recovered from the site appear to be older than the general shell assemblage. The raw material used in the production of shell implements can be derived from both live and dead specimens, although older specimens tend to be more malleable. Why tool specimens from the site appear older is unknown; perhaps prehistoric populations recovered them from earlier Pleistocene contexts. Molluscan remains of Pleistocene age are known to occur in coastal and inland locations along the Florida Gulf Coast (Dall 1890; Moore 1969).

Human skeletal fragments (see Appendix H) were recovered from a section of beach extending from near the sewer line on the north to a point 130 m to the south. Unfortunately, the beach environment precluded any viable test excavations that would have clarified the point of origin of these remains and their original context. Given the proximity of many of these elements to the area of the original discovery of human remains in a primary context in the 1960s, it is possible that additional human remains are buried beneath the present beach deposits. Unit D-14 revealed a distinct stratigraphic zone at 60 cm below the surface which may represent a buried surface or midden zone that could contain human remains and is likely being eroded by wave action.

The western portion of site 8HI50 containing the area of concentrated shell deposits produced limited supportive data and failed to demonstrate adequate contextual integrity; however, the eastern portion of the site along the shoreline, beach, and dune line, adjacent to and south of the Waste Water Treatment Plant,

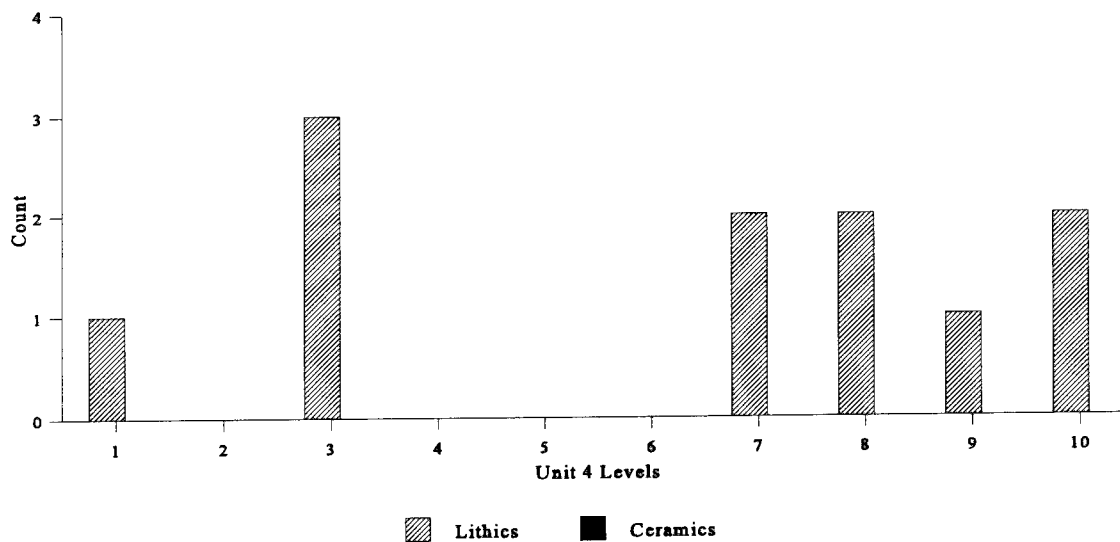
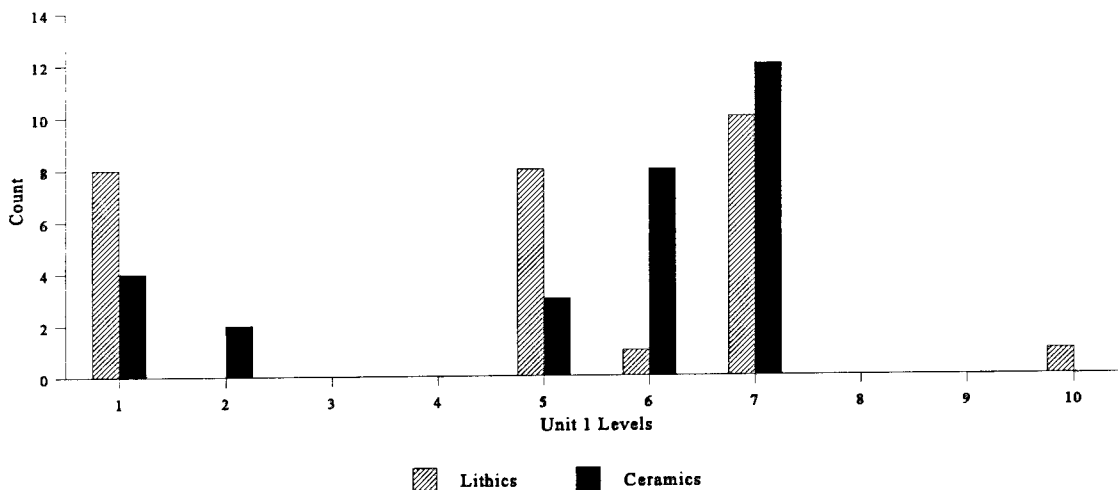


Figure 18. Vertical distribution of lithics and ceramics recovered from Units 1 and 4, site 8HI50.

may contain important information concerning burial practices and secular activities associated with Manasota/Weeden Island-related cultures (Figure 19). It is therefore recommended that this portion of site 8HI50 be considered potentially eligible for inclusion in the NRHP. It is also recommended that the two reburial areas within the site be treated in accordance with NAGPRA (43CFR10).

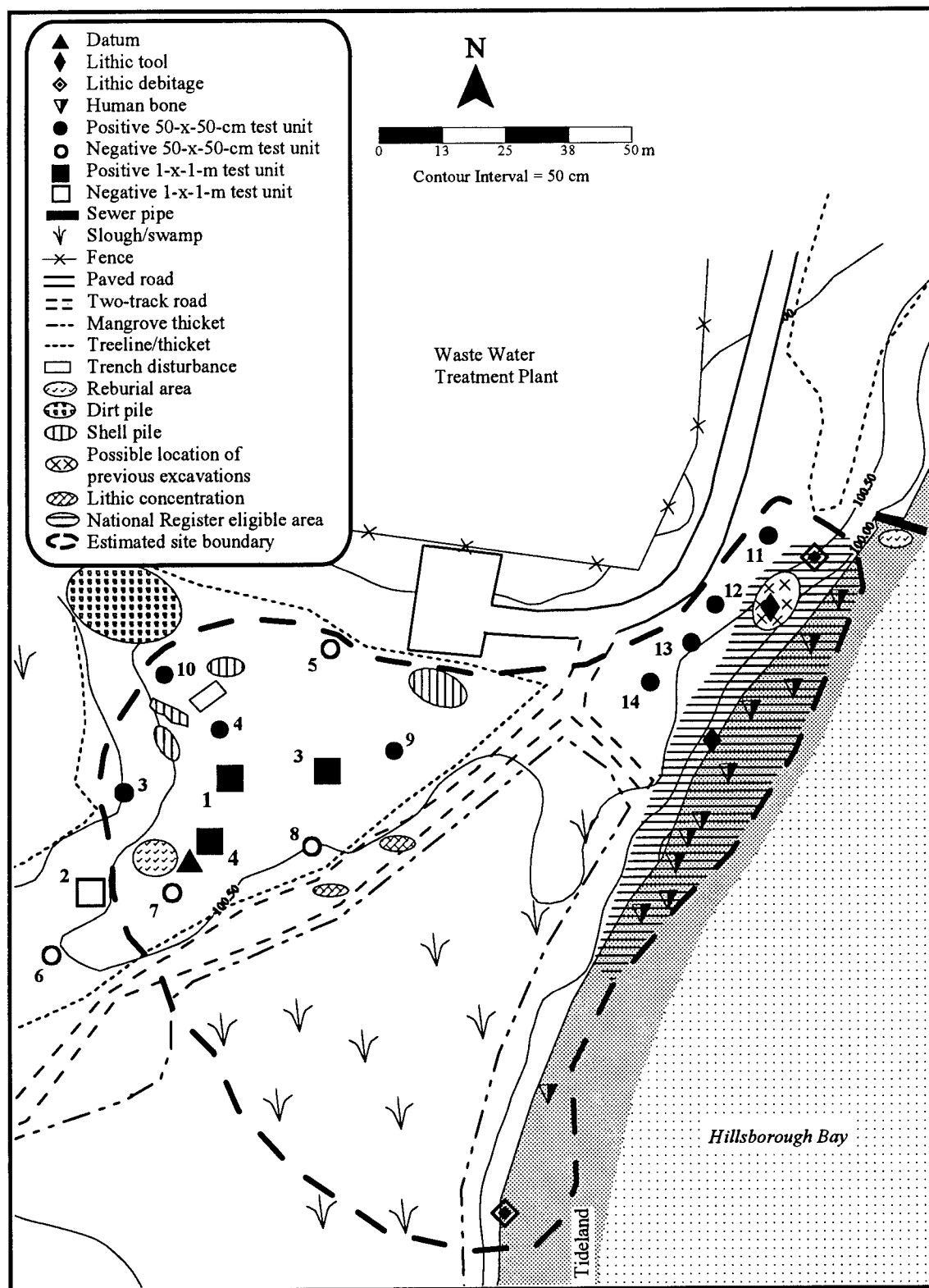


Figure 19. Detail map of site 8HI50 showing area of limited data recovery within the shell deposits at the western edge of the site, and the area along the shoreline from which human remains and cultural materials were recovered.

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CHAPTER 6

SITE 8HI5656

INTRODUCTION

Site 8HI5656 (EOD) occupies a nearly level landform north and east of a mangrove wetland. The site was divided into two areas (A and B) based on the recovery of cultural materials outside of the active EOD Range (Area A). Area B is positioned just west of this location, beyond the largest berm. The total site area currently measures 165 m NS by 165 m EW and covers an area of approximately 27,225 m² (Figure 20). The elevation is one meter amsl. No vegetation currently covers Area A due to tri-annual disking of the area. Area B is presently covered by pine plantation with shrub vegetation consisting of saw palmetto and grapevine.

Soil identified in the vicinity of the site is composed of Myakka fine sand. This soil is characterized as a nearly level, poorly drained soil formed in sandy marine sediment and located on broad plains on the flatwoods and in tidal areas. The slope is 0 to 2 percent. A typical pedon of this soil is composed of a surface layer of very dark gray fine sands about five inches (12.5 cm) thick. The subsurface layer, to a depth of approximately 22 inches (56 cm), is grayish brown fine sand. The subsoil, to a depth of about 40 inches (115 cm), is very dark grayish brown fine sand. In most years, a seasonal high water table fluctuates from the soil surface to a depth of 10 inches (25.5 cm) for one to four months and recedes to a depth of 40 inches (115 cm) during prolonged dry periods.

PREVIOUS RESEARCH

No previous work has been undertaken at this site, except for a surface collection by EOD personnel. The artifacts—which consist of projectile points, bifaces, and chert flakes (Figure 21)—were submitted to cultural resources personnel of ACC. In 1995, ACC concurred with MacDill AFB personnel that a site existed at this location and that further investigations of the area were warranted (MacDill AFB 1996).

CURRENT FIELD INVESTIGATIONS

Site 8HI5656 (EOD) was tested by GMI between January 23 and January 27, 1996 (Figure 22). Thirty shovel tests and three 1-x-1-m units were excavated. Two transects (A and B) were established at a 30-m interval through the main concentration of cultural materials observed on the surface of the active EOD Range. Transect C was placed 30 m east of transect B near the eastern margin of the site. Transects A, B,

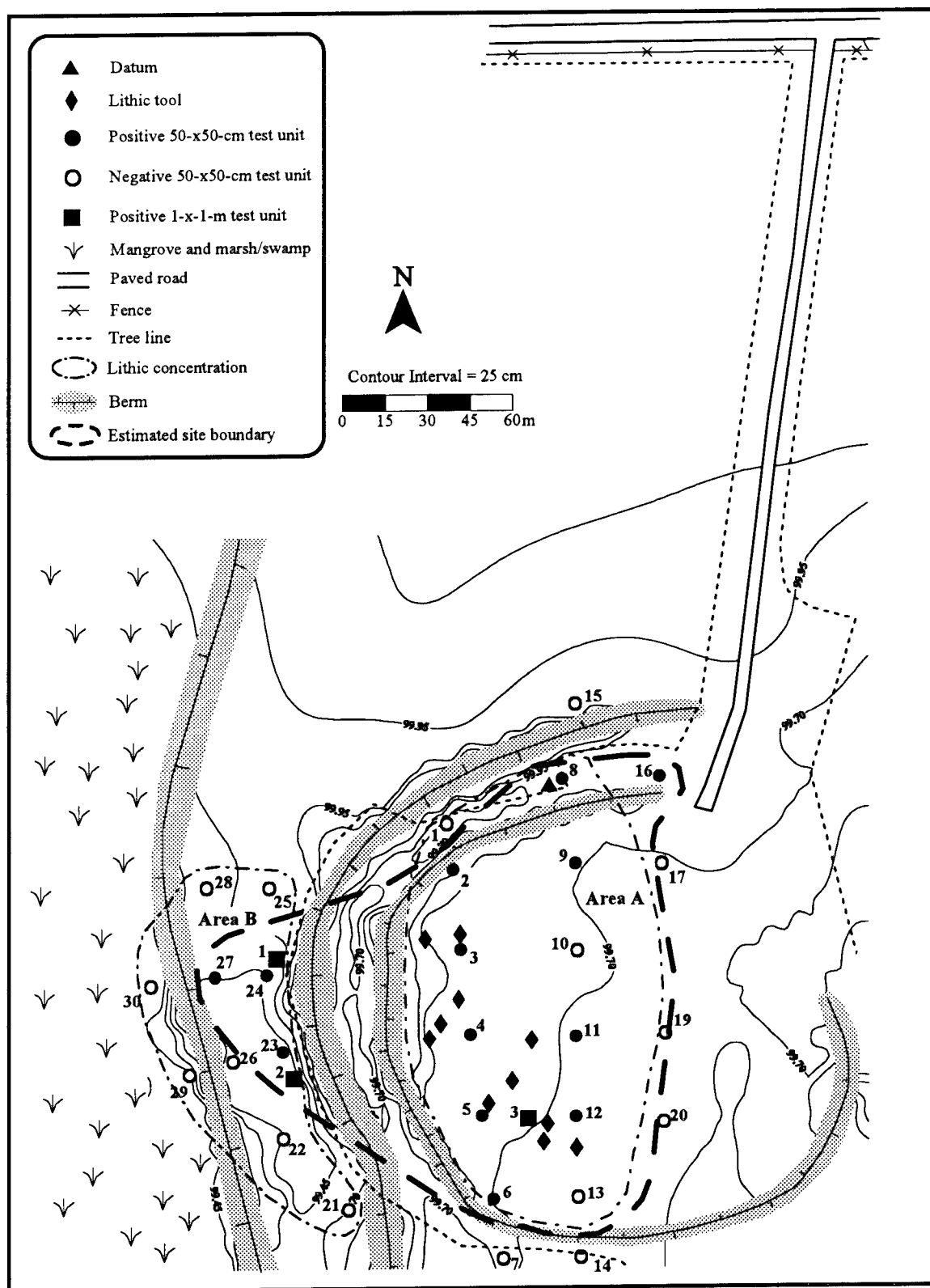


Figure 20. Plan map of site 8HI5656.

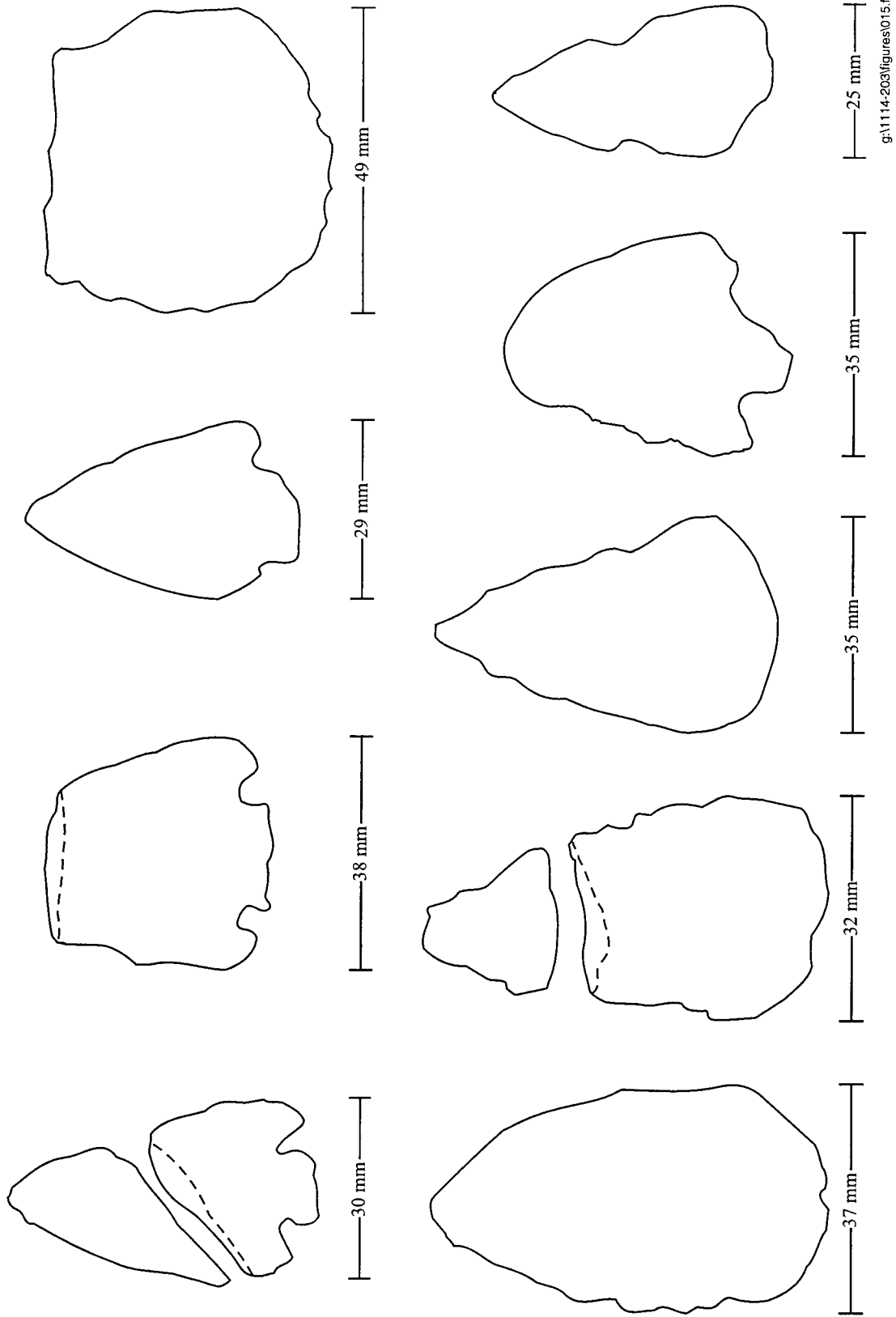


Figure 21. Artifacts previously collected by EOD personnel from the surface of site 8HI5656.

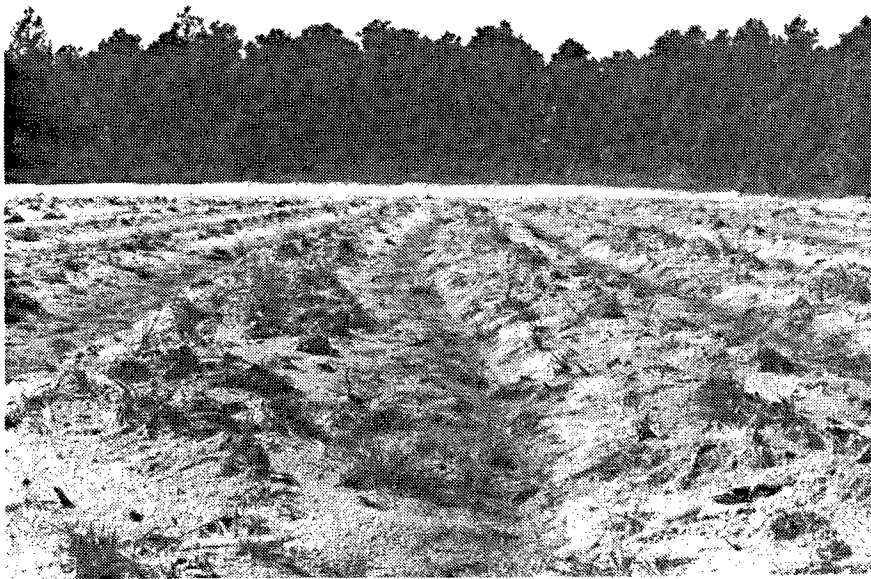


Figure 22. Site 8HI5656 (EOD), view looking west across active EOD Range.

and C are located in the portion of the site designated Area A. A second portion of the site was established west of the largest berm and designated Area B. Shovel test units were marked at 30-m intervals or less. The main site datum was placed just beyond the first small berm on the northern edge of the active EOD Range. Site 8HI5656 (EOD) had not been systematically shovel tested prior to the current investigations. As a result, the goal of the systematic shovel testing was to define the horizontal and vertical dimensions of the site, as well as to identify intrasite patterning of cultural materials and features. These data were then used to select specific areas for unit excavation. All shovel tests were 50-x-50 cm and excavated to less than one meter due to rapid inundation. Thirteen of the 30 shovel tests excavated within Areas A and B were positive.

Based on the results of the systematic shovel testing, three specific areas within site 8HI5656 (EOD) were selected for unit excavation. The locations of the excavation units were chosen in order to provide a cross section of site characteristics and contents. At a minimum, the goals of excavation were to define site function, internal site structure, and temporal/cultural affiliation.

Excavation Unit 1 (Area B)

A 1-x-1-m unit was placed adjacent to the shovel test that had yielded two possible cores and associated debitage. The unit was excavated at 10-cm arbitrary levels until soils became moist (45 cmbs); then, excavation proceeded at 5-cm arbitrary levels. Two soil strata were identified in the unit profile (Figure 23), and plow scars were observed in the upper 20 cm of the soil profile. Prehistoric cultural materials were first recovered in the soil strata just below this disturbed area (between 30–40 cmbs) and continued to a depth below the level at which inundation occurred (approximately 65 cmbs). No evidence of features or midden deposits was found, and neither faunal materials nor ^{14}C samples were obtained. In addition, no tools or other diagnostic materials were recovered.

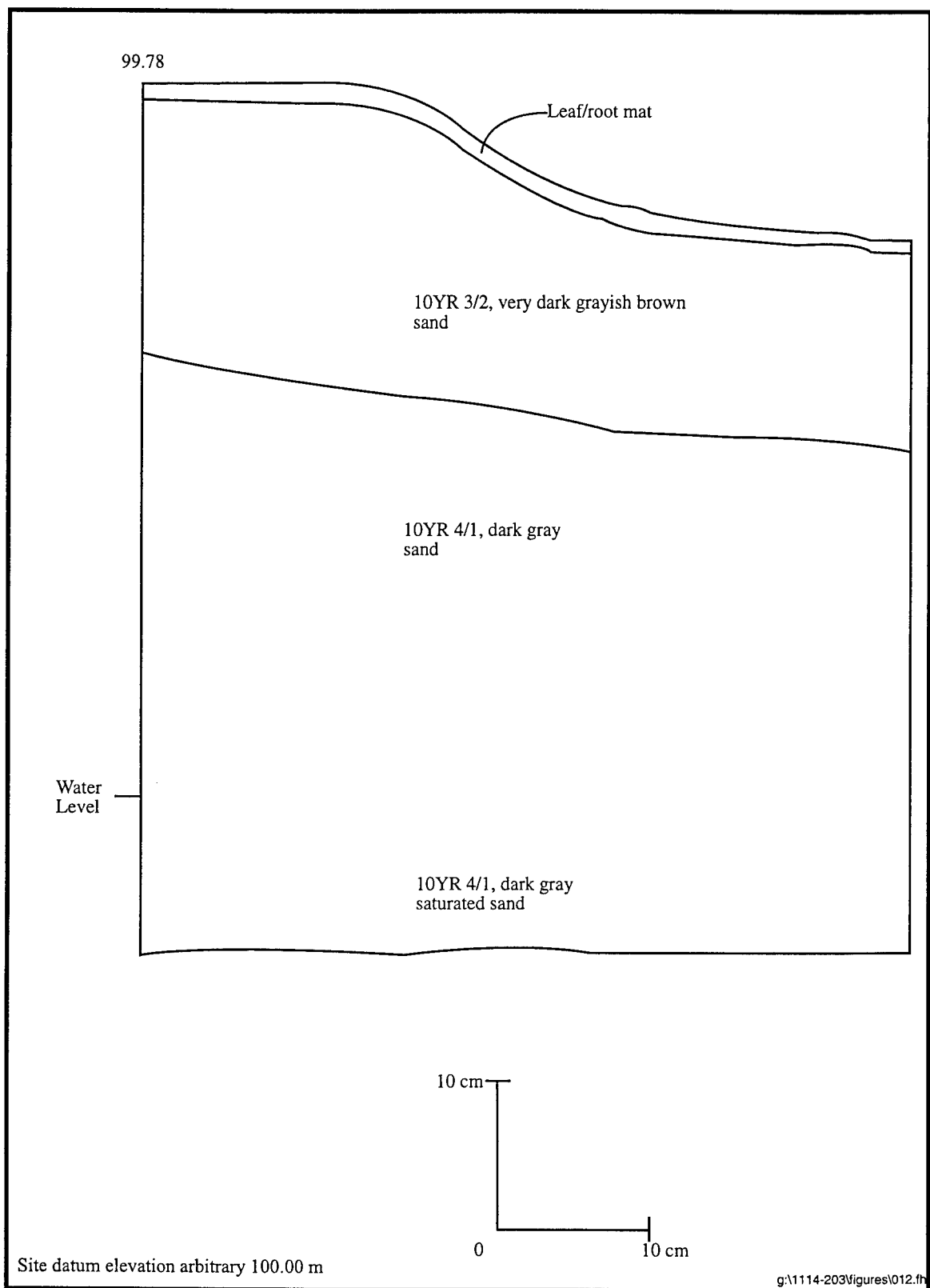


Figure 23. West wall profile of Unit 1, Area B, site 8HI5656.

Excavation Unit 2 (Area B)

A 1-x-1-m unit was placed in an area adjacent to the shovel test that had produced the highest density of lithic material. Excavation strategy was consistent with that of Unit 1. Three soil strata were observed in the unit profile (Figure 24), but no plow scars were identified. Although inundation occurred at 50 cmbs, the rate was reduced from that of Unit 1, and the unit was removed to a depth of 75 cmbs. Prehistoric cultural material was recovered between 40 and 70 cmbs and consisted primarily of nonutilized flakes and shatter. There was no evidence of features nor midden deposits, and neither faunal materials nor ¹⁴C samples were recovered.

Excavation Unit 3 (Area A)

A 1-x-1-m unit was arbitrarily placed in Area A to assess the level of disturbance to the soil matrix from range maintenance activities (i.e., disking three times a year for the past 20 years). Although placement of the unit was arbitrary, a number of lithic tools (n=8) were recovered from the surface within 15 m of the unit. The unit soil profiles (Figure 25) were consistent with the shovel tests conducted throughout Area A, and revealed a heavily disturbed soil strata to a depth of at least 40 cmbs (plow scars and prehistoric materials were evident in shovel tests to that level). Prehistoric material was recovered to a depth of 45 cmbs in the unit, but inundation was fairly rapid by that level and the excavation was halted. The highest density of lithics was within the upper 20 cm of the unit (n=109) compared to the next three levels (n=6). There were no features or midden deposits identified in any shovel test or excavation unit, and no faunal or ¹⁴C samples were obtained. Diagnostic artifacts and tools recovered from the surface were not obtained from unit excavation.

ARTIFACTUAL REMAINS

Archeological test excavations conducted at site 8HI5656 (EOD) resulted in the recovery of 361 prehistoric artifacts. The prehistoric artifacts include two finished bifacial tools, three unifaces, four unfinished bifaces, seven cores, and 346 pieces of unmodified lithic debitage (see Appendix C). The prehistoric artifacts recovered from the site are discussed below. Table 6 describes the attributes of the dart point and other bifacial and unifacial tools recovered during this project.

Chipped Stone

Finished Bifacial Tools

The sample of finished bifacial tools recovered from site 8HI5656 (EOD) as part of this investigation is very small and includes one complete dart point and one dart point midsection. Previously, collections of additional diagnostic dart points and biface preforms were made by EOD personnel (see Figure 21).

Dart Point

The one dart point recovered from site 8HI5656 (EOD) is complete and has been typed as a Culbreath, which has a temporal range of 3000-1000 B.C. (Bullen 1975:28). Bullen (1975:28) describes this point type as "a medium-sized, stemmed point with excurvate blade and drooping barbs. Tangs are usually straight based but may be rounded. The tang is parallel sided or contracting, never expanding. Extreme examples may

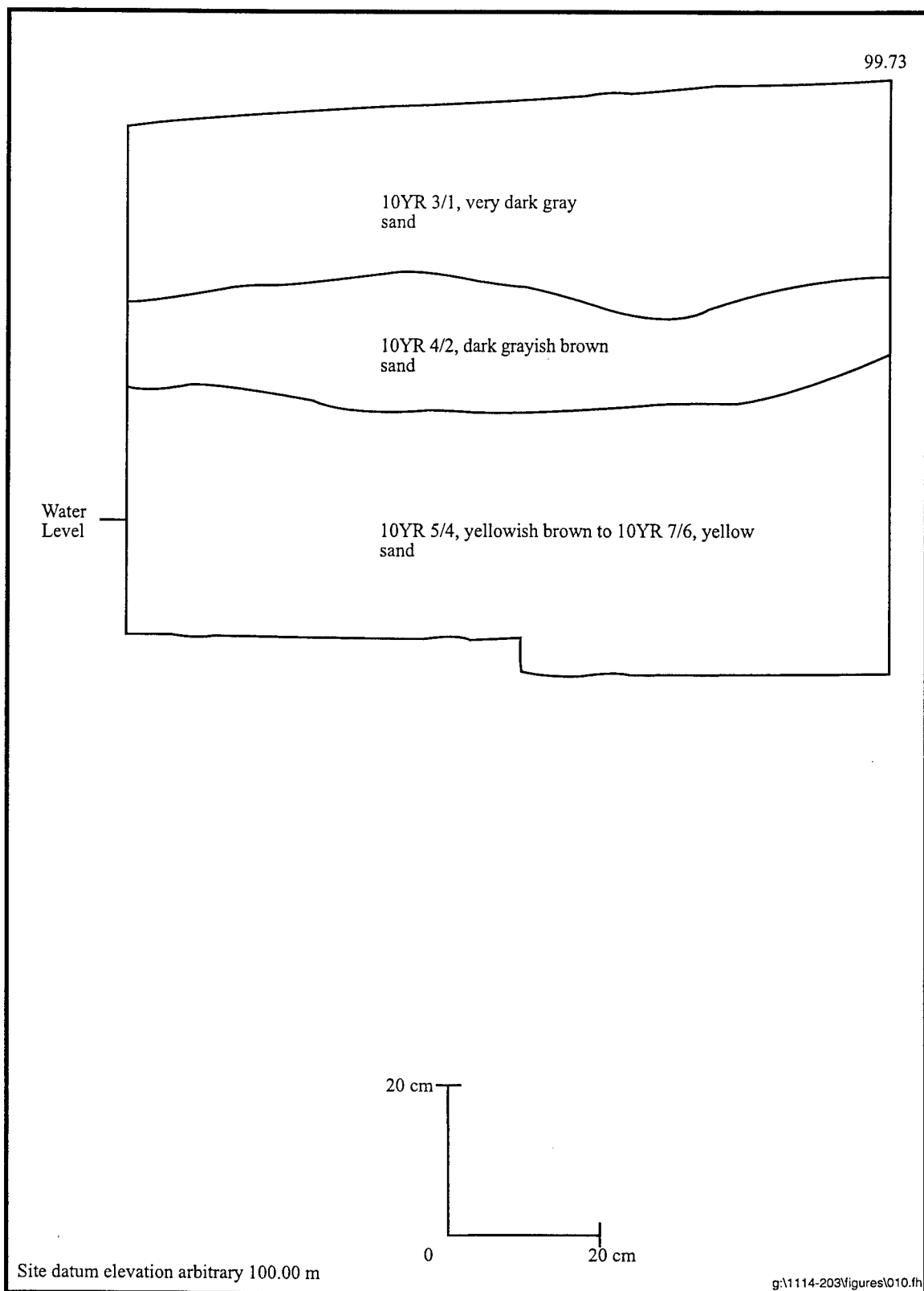


Figure 24. North wall profile of Unit 2, Area B, site 8HI5656.

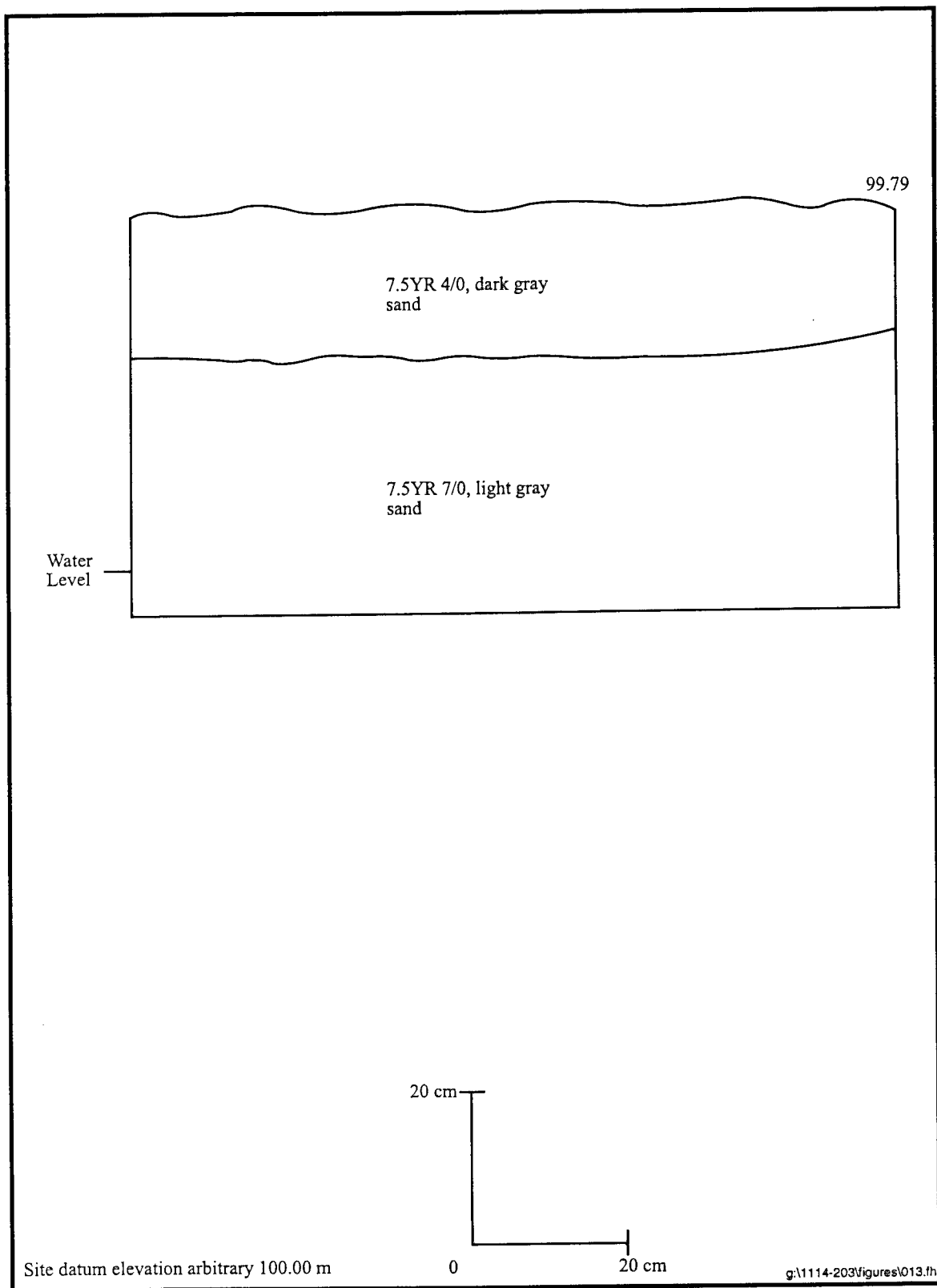


Figure 25. North wall profile of Unit 3, Area A, site 8HI5656.

Table 6
Attributes of Bifacial and Unifacial Tools Recovered from Site 8HI5656

Class	Type	Other	Color	Material ¹	Heat Treatment	Quantity	Size (mm) (LxWxT)	Weight (g)
<i>Area A, Surface</i>								
Core	complete	unidirectional	10YR 7/1	BBC	no	1	66x70x29	132.90
Finished biface tool	dart point	midsection	—	SC	yes	1	19x30x6	3.10
Unfinished biface	aborted, early	fragment	10YR 6/1	CC	no	1	55x38x13	23.30
Unfinished biface	dart point preform	fragment	10YR 7/1	CC	no	1	43x48x12	24.10
Unfinished biface	aborted, late	fragment	10YR 7/1	FT4	no	1	66x64x9	35.60
Unfinished biface	aborted, early	fragment	10YR 6/1	CC	no	1	75x62x22	96.90
Finished biface tool	Culbreath dart point	complete	10YR 7/1	CC	no	1	55x41x8	16.80
Uniface	end scraper	complete	10YR 7/1	BBC	no	1	52x28x6	8.00
Core	fragment/ indeterminate	N/A	10YR 7/1	BBC	no	1	42x52x26	50.20
Core	complete	multidirectional	10YR 7/1	BBC	no	1	83x72x41	237.70
Uniface	marginal modification/ retouch	complete	10YR 6/1	CC	no	1	80x53x19	85.40
Core	complete	multidirectional	10YR 6/3	CC	no	1	85x72x36	206.50
Core	complete	multidirectional	10YR 6/1	CC	no	1	76x59x33	124.20
<i>Area B, Shovel Test 24, Level 5</i>								
Core	complete	multidirectional	10YR 7/1	BBC	no	1	136x96x84	907.00
Core	tested nodule/ pebble	multidirectional	10YR 7/1	BBC	no	1	120x107x42	455.00
<i>Area B, Unit 2, Level 5</i>								
Uniface	marginal modification/ retouch	complete	10YR 7/4	TLC	no	1	66x56x20	67.90

¹ Material: BBC = Bay Bottom chert
CC = chalcedonic chert
FT4 = fossiliferous type 4 chert
SC = silicified coral
TLC = Tampa Limestone chert

exhibit barbs which extend below the bottom of the tang.” This specimen measures 55 mm in length, 41 mm in width, and 8 mm in thickness; it weighs 16.8 g. The point was manufactured from chalcedonic chert and was recovered from the surface of the active EOD Range (Area A). The point exhibits a slightly rounded tang with drooping barbs and excurvate blade (Figure 26).

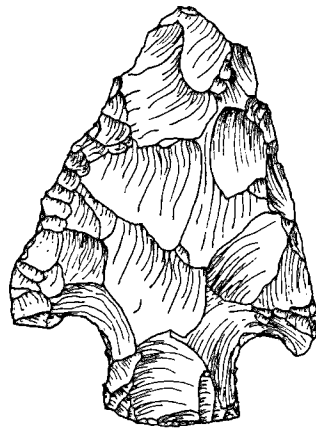


Figure 26. Culbreath point recovered from site 8HI5656 (Scale 1:1).

The second dart point is fragmented and consists only of the midsection of a finished tool. The specimen measures 19 mm in length, 30 mm in width, and 6 mm in thickness, and has a weight of 3.1 g. The midsection was manufactured from silicified coral and exhibits the luster and color change associated with thermal alteration.

Unfinished Bifaces

Four unfinished bifaces or bifaces in manufacture were recovered from the site. All specimens were recovered from the surface of the active EOD Range (Area A). Two specimens are classified as early aborted, one is late aborted, and one is a dart point preform fragment. Three of the bifaces were manufactured from chalcedonic chert, and one was fashioned from fossiliferous type 4 chert.

Unifaces

Site 8HI5656 yielded three unifacial tools. Two were recovered from the surface of the active EOD Range (Area A), and one was recovered from Unit 2, Level 5, Area B. The specimen recovered from Unit 2 is a complete marginal modified/retouched flake, measuring 66 mm long, 56 mm wide, 20 mm thick, and weighing 67.90 g. The specimen was manufactured from Tampa Limestone chert. One of the surficially recovered specimens is a complete end scraper. It measures 52 mm long, 28 mm wide, 6 mm thick, and weighs 8 g. The biface was manufactured from Bay Bottom chert. The dorsal face of the distal edge of the end scraper shows a finely retouched working edge of about 21 mm in length. The second specimen from the surface is a complete marginal modified/retouched flake, which is 80 mm long, 53 mm wide, 19 mm thick, weighing 85.40 g. This specimen was manufactured from chalcedonic chert.

Cores

Five cores were recovered from the surface of the active EOD Range (Area A), and two were recovered from Shovel Test 24, Level 5, Area B. Of the two cores recovered in Area B, both are of Bay Bottom chert; one specimen is a complete core, but the second specimen is classified as a tested nodule/pebble. Of the five

cores recovered from the surface of the active EOD Range (Area A), four are complete and one is a fragment/indeterminate. Three are of Bay Bottom chert and two are of chalcedonic chert. One is identified as unidirectional, and the other three are multidirectional. The two cores recovered from Area B and three of the five recovered from Area A exhibit multiple directional platforms from which flakes were struck using the angular facets of the cortex-covered exterior. Thus, initial reduction appears to have been a random removal of flakes from favorable surfaces rather than any planned flake removal pattern. These cores probably would have become early stage bifaces had reduction proceeded far enough. Unsuitability or coarseness of the raw material may have contributed to the discard of these specimens. Outcrops of limestone have been reported at or near the surface on the Interbay Peninsula (Knapp 1980), and Piper identified several low-grade limestone chert deposits exposed near the surface in the drainage canals in the west-central portion of the base (Brooks et al. 1983).

Unmodified Lithic Debitage

All debitage was size-graded through a series of five geologic sieves that included one inch (25 mm), three-quarters inch (19 mm), one-half inch (12.5 mm), three-eighths inch (9.5 mm), and one-quarter inch (6.3 mm). The sample of 346 unmodified lithic debitage pieces from site 8HI5656 (EOD) consists of flakes, flake remnants, or angular shatter that has a total weight of 496.4 g. Disregarding flake remnants and shatter, tertiary interior flakes are most abundant overall, followed by secondary flakes and primary flakes (Table 7). The size distribution of the debitage is greater at the small end of the range, with over two-thirds of the debitage falling between <6.3 mm and 12.5 mm. Bay Bottom chert accounts for over 70 percent by weight of the raw material type and over 84 percent by frequency. The second most abundant raw material type is chalcedonic chert which accounts for 23.5 percent by weight and 9 percent by frequency (Figure 27). The remaining types include silicified coral, fossiliferous type 4 chert, Tampa Limestone chert, and unidentified. The preponderance of Bay Bottom chert as a raw material type suggests that this material was available either from the outcrops located at Rocky Creek (12 km), recently identified resource locations on base, or was extracted from the suspected locations beneath Tampa Bay (4 km). If the temporal placement of the site is correct, then the only known source locations would be Rocky Creek or on base; source locations beneath Tampa Bay may have been inundated by the Late Archaic period.

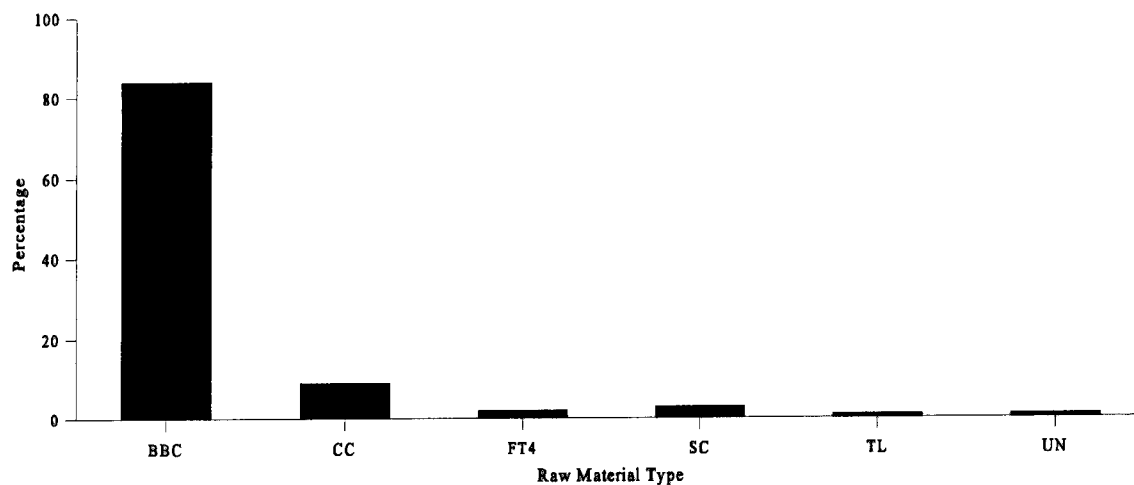
SITE INTERPRETATION

Site 8HI5656 (EOD) appears to have been occupied in the Late Archaic period (3000–1200 B.C.) based primarily on the recovery of diagnostic projectile points, i.e., Culbreath (from the current project) and Citrus and Lafayette (previously collected specimens) and the absence of ceramics. Preceramic Late Archaic period sites occupying wetland margins have been reported in numerous locations throughout the central Gulf Coast, including Tampa Bay (Milanich 1994:100). Many of these sites are associated with midden deposits or have been inundated by rising sea levels. Unfortunately, both areas of site 8HI5656 (EOD) failed to produce any evidence of midden deposits or other supportive data (i.e., faunal specimens, features, or ¹⁴C samples). Thus, the assignment to a temporal period is tentative.

Although the Phase II investigations indicate that the vertical and horizontal distributions of lithic materials in Area A have been severely impacted by man-made activities, a few inferences regarding prehistoric cultural behavior may be presented. The graphs presented in Figures 28 and 29 provide a very generalized analysis concerning site activities.

Table 7
Unmodified Debitage Attributes by Raw Material Type, Site 8HI5656

	<u>Bay Bottom</u>		<u>Chalcedonic</u>		<u>Fossiliferous Type 4</u>		<u>Silicified Coral</u>		<u>Tampa Limestone</u>		<u>Unidentified</u>	
	n	%	n	%	n	%	n	%	n	%	n	%
<i>Debitage Type</i>												
Primary flake	5	1.7										
Secondary flake	4	1.4	5	16.1	1	16.7	2	18.2				
Tertiary flake	161	55.0	19	61.3	3	50.0	6	54.5	2	66.7	1	50
Bifacial thinning	4	1.4	1	3.2								
Thin flake frag	1	.2	1	3.2							1	50
Flake frag	97	33.1	3	9.7	2	33.3	1	9.1	1	33.3		
Shatter	<u>21</u>	<u>7.2</u>	<u>2</u>	<u>6.5</u>	<u>—</u>	<u>—</u>	<u>2</u>	<u>18.2</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
	293		31		6		11		3		2	
<i>Size</i>												
> 25 mm	5	1.7	4	12.9	2	33.2	—	—	—	—	—	—
19- 25 mm	17	5.8	2	6.5	1	16.7	—	—	2	66.7	—	—
12.5-19 mm	51	17.4	8	25.8	1	16.7	4	36.3	—	—	—	—
9.5-12.5 mm	45	15.4	4	12.9	—	—	1	9.1	—	—	—	—
6.3-9.5 mm	87	29.7	10	32.2	1	16.7	5	45.5	—	—	1	50
< 6.3 mm	<u>88</u>	<u>30.0</u>	<u>3</u>	<u>9.7</u>	<u>1</u>	<u>16.7</u>	<u>1</u>	<u>9.1</u>	<u>1</u>	<u>33.3</u>	<u>1</u>	<u>50</u>
	293		31		6		11		3		2	
<i>Weight</i>												
Total by material	348.3 g		116.7 g		9.2 g		9.9 g		11.6 g		.4 g	



Key: BBC = Bay Bottom chert; CC = chalcedonic chert; FT4 = fossiliferous type 4 chert; SC = silicified coral;
TL = Tampa Limestone chert; UN = unidentified

Figure 27. Raw material frequency at site 8HI5656.

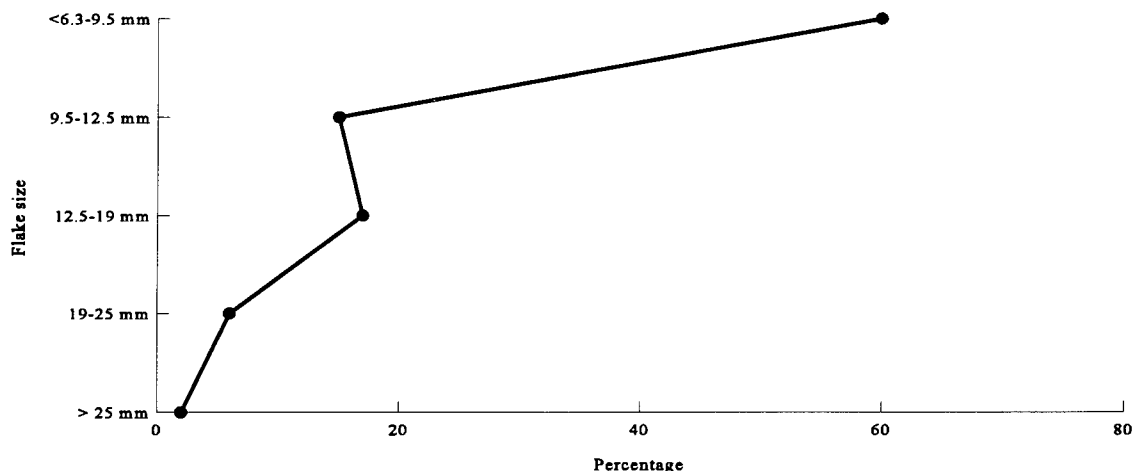


Figure 28. Debitage profile for site 8HI5656 showing flake size distribution.

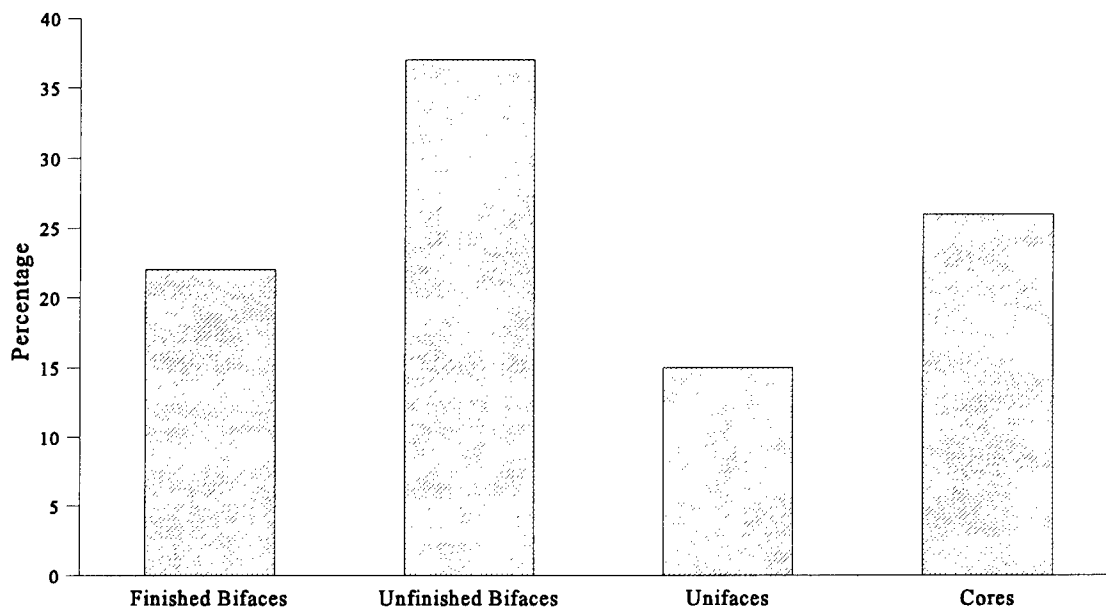


Figure 29. Assemblage of cores and tools recovered from site 8HI5656.

Patterson (1982; 1990) has produced graphs based on experimental knapping data which allow the recognition of biface manufacture and core reduction. By plotting the percentages of each size grade and tool type, patterns are created according to the type of lithic reduction activity.

The debitage profile for site 8HI5656 depicts a gradual continuous curve which begins with a few flakes falling into the >25-mm and 19-25-mm range, a slight bulge in 12.5-19-mm size range followed by a leveling out of flakes in the 9.5-12.5-mm size, then a sharp increase in flakes falling within the <6.3-9.5-

mm size (see Figure 28). This graph closely matches those graphs produced by Patterson (1990) for his bifacial reduction experiments. The main difference is the increase in 12.5–19-mm flakes that may indicate core reduction activities. The graph presented in Figure 29 generally supports this assumption based on the greater percentages of finished and unfinished bifacial tools recovered during both the present project as well as previous surveys (see Figure 21).

Raw material for the production of stone tools may have been localized (on base) or obtained from resource locations in the Hillsborough River area or Rocky Creek. Since Bay Bottom chert comprises more than 70 percent by weight of the raw material type and more than 85 percent by frequency (see Table 7 and Figure 27), source locations may have been localized. Outcrops of chert deposits were not observed at the site, but several larger limestone pieces were identified on the surface of the EOD Range.

Area B appears to be confined to a small expanse of land on the periphery of the main site. Data recovered from unit excavation suggest that soils in Area B may be less disturbed than those in Area A. Site activities associated with this area can not be ascertained from the recovered artifact assemblage. Although shovel test 24 did produce cores and possible associated debitage, adjacent unit excavation and shovel tests did not uncover similar materials nor other diagnostic artifacts. The lack of additional supportive data (i.e., features, midden deposits, diagnostic specimens, or ^{14}C samples) indicates that the area contains limited subsequent research potential.

CHAPTER 7

SUMMARY AND RECOMMENDATIONS

INTRODUCTION

This chapter summarizes the results of the testing conducted at two archeological sites, 8HI50 and 8HI5656 (EOD), located on MacDill AFB, Florida. The significance of each site is discussed and recommendations for their future treatment is presented. The first section consists of a research summary of each of the two sites in terms of age, spatial organization, artifact content, and potential function. The second section discusses the nature of site significance in the Tampa Bay region in general and concludes with recommendations for treatment of the cultural resources on MacDill AFB.

SUMMARY OF RESEARCH RESULTS

The archeological testing conducted at sites 8HI50 and 8HI5656 (EOD) involved the hand excavation of 44 50-x-50-cm shovel tests and seven 1-x-1-m excavation units.

Site 8HI50 occupies a slightly elevated area 40 m west of Hillsborough Bay and contains one cultural component. The archeological deposits at site 8HI50 cover approximately 4,950 m² and extend to a depth of 100 cm in the south/south-central portions of the site. Portions of the site have been adversely affected by both natural degradation and modern intrusive activities. One natural feature was observed in Unit 1 and consists of a concretion of shell and limestone. Human remains, lithic material, and one bone tool were recovered from the shoreline and beach adjacent to and south of the Waste Water Treatment Plant, approximately 40 m east of the area of concentrated shell deposits. No midden deposits or cultural features were identified in any portion of the concentrated shell deposits, and no ¹⁴C samples were obtained.

Occupation of site 8HI50 is believed to have occurred between 500 B.C. and A.D. 900, suggesting a Manasota/Weeden Island-related cultural affiliation. This tenuous assignment is based on the recovery of a small sample of ceramics. Utilitarian pottery of Manasota/Weeden Island-related cultures of the central and northern peninsula Gulf Coasts is largely undecorated or decorated with motifs not temporally sensitive. Recognizing and differentiating between a site dating to 500 B.C. and a site dating to A.D. 900 can be difficult without supportive evidence from excavations that produces ¹⁴C dates or large samples of ceramics. It is nearly impossible to assign a definitive cultural affiliation to a small sample of ceramics that may contain all undecorated specimens with a variety of paste types.

Milanich (1994:207) states that:

“ . . . the geographical distribution of utilitarian ceramic assemblages along the Gulf coast from the panhandle in the northwest, with its well-defined ceramic sequence, to Charlotte Harbor represents a continuum. Village sites on the Gulf coasts are characterized by distributions of undecorated pottery containing limestone, quartz sand, or Fuller's earth as temper, paste inclusions, or both. Because the geographical and temporal distributions of these ceramic paste categories overlap, it has been almost impossible to do much more than focus on specific sites.”

The single diagnostic lithic artifact (the Lafayette-like dart point) recovered during the current investigation only added to the uncertainty of the assigned occupation(s). This point type may have been simply found elsewhere and brought to the site for utilization.

Of the four units excavated onsite, only two produced artifacts from possibly undisturbed contexts (of the remaining two, one unit was sterile and the other produced material from mixed contexts). The paucity of recovered materials from the two units did not provide sufficient data from which reliable comparisons can be made. The recovery of cores, unfinished bifaces, and a finished biface from the surface does suggest that some tool manufacture and maintenance was taking place. The overall lack of data (midden deposits, features, or ¹⁴C samples) and the minimal recovery of artifacts suggest that occupation was sporadic and of limited duration. In addition, the analysis of faunal specimens, macrobotanical samples, and molluscan remains provided little additional supportive data concerning site occupation or utilization. Molluscan remains did provide observations concerning environmental changes in the Tampa Bay area, and the presence of specific nonoyster species (bivalve and gastropod) and epifauna suggests that portions of the site may have been periodically inundated or were part of the shoreline. In response to environmental changes and resource availability, site utilization may have been intermittent.

The historic artifact assemblage from site 8HI50 is very small and appears to represent a variety of materials ranging from the turn-of-the-century through the 1950s. These artifacts probably represent a modern intrusion of trash collected elsewhere and deposited on the site. All materials were recovered between 0-40 cmbs in Units 3 and 4 and were intermixed with prehistoric artifact assemblages. No evidence of structures, foundations, or other building components exists onsite.

Site 8HI5656 (EOD) covers an area of approximately 27,225 m² and contains only one cultural component. In Area A, archeological deposits were identified between 0-45 cmbs. However, no isolable components could be ascertained in Area A due to the severely disturbed soil matrix. In Area B, artifact densities were concentrated between 30-70 cmbs in a small portion of the site on the western periphery of the active EOD Range. Artifacts were recovered in contexts which appear to retain some contextual integrity, although no features or midden deposits were observed nor ¹⁴C samples obtained from this portion of the site. Diagnostic artifacts and tools recovered in Area A were not recovered from unit excavation in Area B. Reliable data comparisons of site activities between these areas are difficult due to the extreme disturbance of the soil matrix in Area A; however, a general assessment of data may be postulated concerning site activities. When tool types and percentages are compared to flake size distribution, the data suggest that activities included bifacial reduction and initial core reduction, as indicated by the recovery of five cores from Area A and two from Area B.

Occupation of site 8HI5656 (EOD) is presently believed to have occurred during the Late Preceramic Archaic period. This temporal assignment is based on the recovery of a Culbreath point which Bullen (1975) assigns a date of 3000-1000 B.C. Although not recovered as part of this project, additional dart points, bifaces, and biface fragments were previously recovered from the surface of the active EOD Range by base personnel. Those dart points are typed as Citrus and Lafayette which also represent corner-notched points associated with Late Archaic period assemblages. Further evidence to support this temporal range is reflected in the lack of recovered ceramics from the site. Site 8HI5656 (EOD) was probably an extractive camp that was

occupied intermittently or for short periods rather than a village or base camp. The lack of a large, dense, and diverse tool assemblage reflecting the kinds of site maintenance activities associated with long-term occupation, as well as the absence of any features such as midden deposits, house floors, hearths, post molds and/or storage pits, argues against the site being used for permanent or semipermanent habitation. Site-specific activities were probably related to the procurement of local plant and estuarine resources, as well as to the manufacture of stone tools from locally available raw materials.

ASSESSMENT OF SITE SIGNIFICANCE AND RECOMMENDATIONS

Assessment of the significance of cultural resources in general is determined by the criteria for eligibility for inclusion in the NRHP as set forth in 36 CFR 60.4 (see Chapter 4). Sites 8HI50 and 8HI5656 (EOD) can be evaluated only under Criterion (d). Any consideration of a site under this criterion must address whether the site contains information that may contribute to our understanding of history or prehistory within the Tampa Bay region and whether that information is important.

The first criteria of significance for any archeological site on MacDill AFB is its capability to yield information relevant to one of the research themes discussed in Chapter 4. In addition, the following criteria may also be applied to facilitate the evaluation of cultural resources within MacDill AFB:

- (1) potential for interpretation of cultural history or local sequences;
- (2) potential for interpretation of intersite or intrasite patterning;
- (3) potential for interpretation of technology or primitive industries; and/or
- (4) existence as an example of a unique or rare site type.

Whether or not specific properties exhibit such potential or contain data relevant to any particular research theme is dependent upon a precondition of contextual integrity of the archeological deposits. In addition to contextual integrity, the sites must exhibit particular kinds of evidence in order to be regarded as significant properties. First, isolable components, whether identified vertically or horizontally, are essential to the documentation of changing site functions or subsistence patterns through time. Second, such components must yield datable materials or diagnostic artifacts that permit the assignment of the component to particular time periods. Third, the recovery of features or middens, with preserved flora and fauna remains, is desirable if subsistence patterns are to be reconstructed. Any archeological site must, therefore, exhibit a high degree of contextual integrity if such data requirements are to be met.

The testing program conducted at these two sites was designed to provide a full assessment of:

- (1) the content of the cultural deposits at each site (i.e., the range of artifactual and feature information available);
- (2) the integrity of the deposits at each site (i.e., the degree of disturbance, mixing, bioturbation, deflation, etc.); and
- (3) the context of the cultural deposits at each site, in relation to both the natural and cultural environment of the appropriate time period.

The fundamental data derived from the testing program were used to evaluate each site and its potential for increasing our knowledge of past lifeways, contributing to the resolution of pertinent regional research questions, or containing information relevant to any of the above research themes or problems.

The evaluation of the research potential and the National Register eligibility of site 8HI50 indicates that the area of concentrated shell deposits located within the site does not contain sufficient contextual integrity to warrant inclusion in the NRHP. The results of the testing program indicate that evidence of in situ cultural features such as prehistoric midden deposits, post molds, or hearths is not present. In addition, the relative

lack of identifiable prehistoric ceramics as well as insufficient quantities of faunal material, cultigens, or ^{14}C samples from the site suggest little additional research potential. However, that portion of site 8HI50 which exists along the shoreline, beach, and dune line from the existing outfall pipe to 100 m south may contain sufficient contextual integrity for inclusion in the NRHP. The recovery of human remains and possible funerary objects during preceding and current investigations may yield answers to pertinent research questions related to burial practices and other sacred or secular manifestations. It is recommended that this portion of site 8HI50 be considered potentially eligible for inclusion in the NRHP. This area as well as the two reburial locations should also be treated in accordance with NAGPRA (43 CFR 10).

Treatment and management of the human remains located at site 8HI50 were determined in consultation with Native American tribes as per NAGPRA (see Appendix I). In this case, the Seminole Nation of Oklahoma and their designee, Mr. Bobby C. Billie (Independent Traditional Seminole Nation of Florida), have taken responsibility. Although an inventory of the remains and osteological analyses were recommended by Geo-Marine, Inc., the Seminole requested that no photographs, measurements, or scientific examination of any kind be conducted (see Appendix I). To protect the human remains, associated artifacts, and the site from further disturbance by natural or man-made elements, Geo-Marine, Inc., recommends a program of revegetation or other stabilization be implemented. These programs may involve construction of a structure(s) or replanting natural flora. If a program is initiated that may temporarily disturb the surface or subsurface of the site, it is recommended that a professional archeologist be present during the activity.

On the basis of the investigations conducted at site 8HI5656 (EOD), it is considered that neither Area A nor Area B retains sufficient supportive data, artifactual materials, or contextual integrity. Thus, the potential for interpretation of technology or primitive industries and/or intrasite patterning is negligible. The basis for this evaluation resides in the apparent disturbed soil matrix as well as the lack of identifiable midden deposits or other cultural features and the lack of ^{14}C samples. This paucity of research material fails to provide a substantial data base for answering research questions concerning Late Preceramic Archaic period sites in the Tampa Bay area. Therefore, site 8HI5656 (EOD) is recommended as ineligible for inclusion in the NRHP.

REFERENCES CITED

Archaeological Consultants, Inc., and Janus Research

- 1994 *Phase III Mitigative Salvage Excavation at the Muck Pond East Site (8HI515) Located within the Proposed SR 574 Improvement Area, Hillsborough County, Florida.* Conducted for the Florida Department of Transportation, District Seven, Tampa.

Associated Railway Land Department of Florida

- 1900 Map. Located in the Special Collections Department, University of South Florida Library, Tampa.

Austin, R. J.

- 1995 *Yat Kitischee: A Prehistoric Coastal Hamlet; 100 B.C.-A.D. 1200.* Ms. on file, Janus Research, St. Petersburg.

Austin, R. J., K. W. Hardin, H. M. Piper, and J. G. Piper

- 1992 *Archaeological Investigations at the Site of the Tampa Convention Center, Tampa, Florida.* Janus Research/Piper Archaeology, St. Petersburg. Conducted for the City of Tampa Public Works Department.

Austin, R. J., and M. Russo

- 1989 *Limited Excavations at the Catfish Creek Site (8So608), Sarasota County, Florida.* Ms. on file, Janus Research/Piper Archaeology, St. Petersburg.

Beck, B., D. Jenkins, and J. Parker

- 1985 *Cause of Localized Land Subsidence at MacDill AFB, Tampa, Florida.* Report No. 84-85-4. Florida Sinkhole Research Institute.

Beever, J. W.

- 1992 MacDill AFB Wildlife Survey, Hillsborough County. Letter to National Audubon Society with species listing, February 6.

Beriault, J. G.

- 1986 Observations Concerning Shell Mounds and a System for Classifying Shell Material. *The Florida Anthropologist* 39:160-163.

- Beriault, J. G., R. Carr, J. Stipp, R. Johnson, and J. Meeder
1981 The Archeological Salvage of the Baw West Site, Collier County, Florida. *The Florida Anthropologist* 34:39-58.
- Brinton, D. P.
1859 *Notes on the Florida peninsula, its literary history, Indian tribes and antiquities*. Philadelphia.
- Britton, J. C., and B. Morton
1989 *Shore Ecology of the Gulf of Mexico*. University of Texas Press, Austin.
- Brooks, M.
1974 *Two Weeden Island Archaeological Sites: Sacred vs. Secular Levels of Culture*. Honors thesis, University of Florida, Gainesville.
- Brooks, M. J., H. M. Piper, and C. B. Slusser
1983 *An Archaeological Survey of Designated Areas within the Proposed MacDill Air Force Base 18 Hole Golf Course Hillsborough County, Florida*. Piper Archaeological Research, Inc., St. Petersburg.
- Bullen, A. K., and R. P. Bullen
1976 *The Palmer Site*. Publication No. 8. Florida Anthropological Society, Gainesville.
- Bullen, R. P.
1950 Perico Island: 1950. *The Florida Anthropologist* 3:40-44.
1951 *The Terra Ceia Site, Manatee County, Florida*. Publication No. 3. Florida Anthropological Society, Gainesville.
1952 *Eleven Archaeological Sites in Hillsborough County, Florida*. Report of Investigations No. 8. Florida Geological Survey, Tallahassee.
1958 Six Sites near the Chattahoochee River in the Jim Woodruff Reservoir Area, Florida. In *River Basin Survey Papers*, edited by F. H. H. Roberts, Jr., pp. 315-357. Bulletin 169. Bureau of American Ethnology, Smithsonian Institution, Washington, D. C.
1959 The Transitional Period in Florida. *Southeastern Archaeological Conference Newsletter* 6:43-53.
1971 The Sarasota County Mound, Englewood, Florida. *The Florida Anthropologist* 24:1-30.
1975 *A Guide to the Identification of Florida Projectile Points* 2nd edition. Kendall Press, Gainesville.
1978 Tocobaga Indians and the Safety Harbor Culture. In *Tacachale: Essays on the Indians of Florida and Southeastern Georgia During the Historic Period*, edited by J. T. Milanich and S. Proctor, pp. 50-58. Ripley P. Bullen Monographs in Anthropology and History 1. University Presses of Florida, Gainesville.
- Bullen, R. P., W. Askew, L. M. Feder, and R. L. McDonnell
1978 *The Canton Street Site, St. Petersburg, Florida*. Publication No. 9. Florida Anthropological Society, Gainesville.
- Bushnell, F.
1962 The Maximo Point Site - 1962. *The Florida Anthropologist* 15(4):89-101.

- 1966 A Preliminary Excavation of the Narvaez Midden, St. Petersburg, Florida. *The Florida Anthropologist* 19(2-3):115-124.

Chance, M. A.

- 1982 *Phase II Investigations at Wetherington Island: A Lithic Procurement Site in Hillsborough County, Florida*. Interstate 75 Highway Phase II Archaeological Reports, No. 3. Division of Archives, History and Records Management, Bureau of Historic Sites and Properties, Tallahassee.
- 1988 *The Phase I Archaeological Assessment of a Florida Gas Transmission Company Proposed Corridor Expansion Project*. Gainesville, Florida.
- 1991 *A Phase II Archaeological Investigation of Six Sites for the Florida Gas Transmission Company*. Gainesville, Florida.

CH2M Hill

- 1981 *Installation Restoration Program Records Search for MacDill Air Force Base, Florida*. CH2M Hill, Gainesville, Florida.

Clausen, C. J., A. D. Cohen, C. Emiliani, J. A. Holman, and J. J. Stipp

- 1979 Little Salt Spring, Florida: A Unique Underwater Site. *Science* 203:609-614.

Cushing, F. H.

- 1896 Explorations of the Ancient Key-Dweller Remains on the Gulf Coast of Florida. *Proceedings of the American Philosophical Society* 35(135):329-448.

Dall, W. H.

- 1890 *Contributions to the Tertiary Fauna of Florida*. Wagner Free Institute of Science, Philadelphia.

Daniel, R.

- 1982 *Test Excavations at the Deerstand Site (8-Hi-483A) in Hillsborough County, Florida*. Interstate 75 Highway Phase II Archaeological Reports No. 2. Division of Archives, History and Records Management, Bureau of Historic Sites and Properties, Tallahassee.

Daniel, R., and M. Wisenbaker

- 1981 *Test Excavations at 8Hi450D: An Inland Archaic Occupation in Hillsborough County, Florida*. Interstate 75 Highway Phase II Archaeological Reports No. 2. Division of Archives, History, and Records Management, Bureau of Historic Sites and Properties, Tallahassee.
- 1987 *Harney Flats: A Florida Paleo-Indian Site*. Baywood Publishing Company, Inc., Farmington, New York.

Doran, G. H., and D. N. Dickel

- 1988a Radiometric Chronology of the Archaic Windover Archaeological Site (8Br246). *The Florida Anthropologist* 41:365-380.
- 1988b Multidisciplinary Investigations at the Windover Site. In *Wet Site Archaeology*, edited by B. A. Purdy, pp. 263-290. Telford Press, Caldwell, New Jersey.

- Dunbar, J. S.
 1991 Resource Orientation of Clovis and Suwannee Age Paleoindian Sites in Florida. In *Clovis: Origins and Adaptations*, edited by R. Bonnicksen and K. Turnmier, pp. 185-213. Center for the First Americans, Oregon State University, Corvallis.
- Dunbar, J. S., and B. I. Waller
 1983 A Distribution Analysis of the Clovis/Suwannee Paleo-Indian Sites of Florida - A Geographic Approach. *The Florida Anthropologist* 36:18-20.
- Ehrenhard, J. E.
 1987 Cultural Resources Reconnaissance, MacDill AFB, Florida. Letter to MacDill AFB Civil Engineer from National Park Service, February 3.
- Engineering-Science, Inc.
 1993 *Cultural Resources Report for MacDill Air Force Base Florida*. Tampa, Florida.
- Estabrook, R. W., and R. J. Austin
 1989 Shell Scatter Sites in South Florida. Paper presented at the 46th annual meeting of the Southeastern Archaeological Conference, Tampa.
- Fagan, B. M.
 1987 *The Great Journey: The Peopling of Ancient America*. Thames and Hudson, New York.
- Fairbridge, J.
 1961 Eustatic Changes in Sea Level. In *Physics and Chemistry of the Earth, Volume 4*, edited by L. H. Ahrens, pp. 99-185. Pergamon, New York.
- Fewkes, J. W.
 1924 Preliminary Archaeological Investigations at Weeden Island, Florida. *Smithsonian Miscellaneous Collections* 76:1-26.
- Forbes, J. G.
 1964 *Sketches, Historical and Topographical of the Floridas*. Facsimile reprint of the 1821 edition. Floridana Facsimile and Reprint Series, University of Florida Press, Gainesville.
- Fraser, L.
 1980 Faunal Analysis of The Venice Site. *Florida Bureau of Historic Sites and Properties Bulletin* 6:77-80.
- Gagel, K.
 1981 *Archaeological Excavations at Site 8Hi483B: An Archaic Habitation Site in Hillsborough County, Florida*. Interstate 75 Highway Phase II Archaeological Reports No. 6. Division of Archives, History, and Records Management, Bureau of Historic Sites and Properties, Tallahassee.
- Gagliano, S. M.
 1984 Geoarchaeology of the Northern Gulf Shore. In *Perspectives on Gulf Coast Prehistory*, edited by D. D. Davis, pp. 1-40. University Presses of Florida, Gainesville.
- Gilliland, M. S.
 1975 *The Material Culture of Key Marco, Florida*. University Presses of Florida, Gainesville.

- Goggin, J. M.
 n.d. The Archaeology of the Glades Area, Southern Florida. Ms. on file, Department of Anthropology, Florida Museum of Natural History, Gainesville.
- 1948 Some Pottery Types from Central Florida. Bulletin No. 1. Gainesville Anthropological Association.
- Goggin, J. M., and F. H. Sommer, III
 1949 *Excavations on Upper Matecumbe Key, Florida*. Publications in Anthropology Number 41. Yale University, New Haven, Connecticut.
- Goodyear, A. C., and L. O. Warren
 1972 Further Observations on the Submarine Oyster Shell Deposits of Tampa Bay. *The Florida Anthropologist* 25:52-66.
- Goodyear, A. C., S. B. Upchurch, and M. J. Brooks
 1980 Turtlecrawl Point: An Inundated Early Holocene Archaeological Site on the West Coast of Florida. In *Holocene Geology and Man in Pinellas and Hillsboro Counties, Florida*, assembled by S. B. Upchurch. Guidebook 22. Southeastern Geological Society, Tallahassee.
- Goodyear, A. C., S. B. Upchurch, M. J. Brooks, and N. N. Goodyear
 1983 Paleo-Indian Manifestations in the Tampa Bay Region, Florida. *The Florida Anthropologist* 36:40-66.
- Grange, R. T., J. R. Williams, and J. W. Stafford
 1977 An Archaeological Survey of Egmont Key National Wildlife Refuge, Hillsborough County, Florida. Ms. on file, Department of Anthropology, University of South Florida, Tampa.
- Griffin, J. W., and R. P. Bullen
 1950 *The Safety Harbor Site, Pinellas County, Florida*. Publication No. 2. Florida Anthropological Society, Gainesville.
- Hemmings, E. T.
 1975 An Archaeological Survey of the South Prong of the Alafia River, Florida. *The Florida Anthropologist* 28:41-51.
- Holmes, W. H.
 1903 Aboriginal Pottery of the Eastern United States. *Bureau of American Ethnology Annual Report* 20:1-237.
- Jahoda, G.
 1973 *River of the Golden Ibis*. Holt, Rinehart, and Winston, New York.
- Janus Research
 1995 *Repository Summary*. Completed for MacDill AFB and Avon Park Air Force Range, Florida.
- Keegan, W. F.
 1984 Pattern and Process in *Strombus gigas* in Tool Replication. *Journal of New World Archaeology* 6:15-24.

- Knapp, M. S.
1980 Environmental Geology Series: Tampa Sheet. Map Series No. 97, Florida Bureau of Geology, Tallahassee.
- Larson, L. H.
1980 *Aboriginal Subsistence Technology on the Southeastern Coastal Plain During the Late Prehistoric Period*. University Presses of Florida, Gainesville.
- Lazarus, W. C.
1965 Effects of Land Subsistence and Sea Level Changes on Elevations of Archaeological Sites on the Florida Gulf Coast. *The Florida Anthropologist* 18:49-56.
- Luer, G. M.
1977a Excavations at the Old Oak Site, Sarasota, Florida: A Late Weeden Island-Safety Harbor Period Site. *The Florida Anthropologist* 30:37-55.
1977b The Roberts Bay Site, Sarasota, Florida. *The Florida Anthropologist* 30:121-133.
1986 Some Interesting Occurrences of Quahog Shells on the Gulf Coast of Central and Southern Florida. *The Florida Anthropologist* 39:125-159.
- Luer, G. M., and M. M. Almy
1980 The Development of Some Aboriginal Pottery of the Central Gulf Coast of Florida. *The Florida Anthropologist* 33:207-225.
1981 Temple Mounds of the Tampa Bay Area. *The Florida Anthropologist* 34:127-155.
1982 A Definition of the Manasota Culture. *The Florida Anthropologist* 35:34-58.
- MacDill AFB
1995 Integrated Natural Resources Management Plan. Natural Resources Section, 6th Civil Engineer Squadron (ACC), MacDill AFB, Florida.
1996 Cultural Resources Management Plan, Natural and Cultural Resources Element, 6th Civil Engineer Squadron (ACC), MacDill AFB, Florida.
- Marquardt, W. H.
1992 Shell Artifacts from the Caloosahatchee Area. In *Culture and Environment in the Domain of the Calusa*, edited by William H. Marquardt, pp. 191-228. Monograph Number 1. Institute of Archaeology and Paleoenviromental Studies, University of Florida, Gainesville.
- Masson, M. A.
1988 Shell Celt Morphology and Reduction: An Analogy to Lithic Research. *The Florida Anthropologist* 41:313-335.
- Meshaka, W. E., Jr.
1994 *Status of the Herpetofaunal Community on MacDill Air Force Base*. Draft report to be included in Florida Natural Areas Inventory for MacDill AFB. Archbold Biological Station, Lake Placid, Florida.
- Milanich, J. T.
1994 *Archaeology of Precolumbian Florida*. University Presses of Florida, Gainesville.

- 1995 *Florida Indians and the Invasions from Europe*. University Presses of Florida, Gainesville.
- Milanich, J. T., and C. H. Fairbanks
1980 *Florida Archaeology*. Academic Press, New York.
- Milliman, J. D., and K. O. Emery
1968 Sea Levels During the Past 35,000 Years. *Science* 162:1121-1123.
- Missimer, T. M.
1980 Holocene Sea Level Change in the Gulf of Mexico: An Unresolved Controversy. *Southeastern Geological Society Guidebook* 22:19-23, Tallahassee.
- Mitchem, J. M.
1989 *Redefining Safety Harbor: Late Prehistoric/Protohistoric Archaeology in West Peninsula Florida*. Ph.D. dissertation, University of Florida, Gainesville.
- Moore, C. B.
1900 Certain Antiquities of the Florida West Coast. *Philadelphia Academy of Natural Sciences Journal* 11:349-394.
- Moore, R. C.
1969 *Treatise on Invertebrate Paleontology. Part I, Mollusca*. Geological Society of America Publication.
- Neill, W. T.
1968 An Indian and Spanish Site on Tampa Bay, Florida. *The Florida Anthropologist* 21:106-116.
- Patterson, L. W.
1982 The Importance of Flake Size Distribution. *Contract Abstracts and CRM Archaeology* 3(1):70-72.

1990 Characteristics of Bifacial Reduction Flake-Size Distribution. *American Antiquity* 55 (3):550-558.
- Patterson, P. E., D. P. Stanley, and K. J. Johnson
1994 *MacDill Air Force Base Cold War Material Culture Inventory*. Mariah Associates, Inc. Submitted to the U. S. Army Corps of Engineers, Fort Worth District.
- Percy, G. W.
1988 Cultural Resource Assessment Supplemental Information. Letter from SHPO to National Park Service, April 21.
- Purdy, B. A.
1981 *Florida's Prehistoric Stone Technology: A Study of the Flintworking Technique of Early Florida Stone Implement Makers*. University Presses of Florida, Gainesville.
- Purdy, B. A. (editor)
1988 *Wet Site Archaeology*. Telford Press, Caldwell, New Jersey.
- Puri, H. S., and R. O. Vernon
1964 *Summary of the Geology of Florida and A Guidebook to the Classic Exposures*. Special Publication No. 5. Florida Geological Survey, Tallahassee.

- Romans, B.
1962 *A Concise Natural History of East and West Florida*. Facsimile reprint of the 1775 edition. Floridiana Facsimile and Reprint Series, University of Florida Press, Gainesville.
- Ruppe, R. J.
1980 *The Archaeology of Drowned Terrestrial Sites: A Preliminary Report*. Bulletin No. 6. Division of Archives, History, and Records Management, Bureau of Historic Sites and Properties, Tallahassee.
- Russo, M.
1991 *Archaic Sedentism on the Florida Coast: A Case Study from Horr's Island*. University Microfilms, Ann Arbor.
- Sears, W. H.
1958 The Maximo Point Site. *The Florida Anthropologist* 20:23-75.

1967 The Tierra Verde Burial Mound. *The Florida Anthropologist* 20:23-75.

1971 The Weeden Island Site, St. Petersburg, Florida. *The Florida Anthropologist* 24:54-60.
- Simpson, J. C.
1937 Report on Activities in Hillsborough County. *Second Biennial Report to the State Board of Conservation* 1936:109-116.

1941 Source Materials for Florida Aboriginal Artifacts. *Proceedings of the Florida Academy of Science* 5.
- Ste. Claire, D.
1982 Shell Use-Wear Analysis: Archaeological Implications. Paper presented at the 46th annual meeting of the Florida Academy of Sciences, Winter Park.
- Stearns, R. E. C.
1870 Rambles in Florida. *American Naturalist* 3:349-360, 395-405, 455-470.

1872 Remarks on Mounds and Shell Heaps of Tampa Bay, Florida. *Proceedings of the California Academy of Science* 1(4):214-215.
- Tebeau, C. W.
1971 *A History of Florida*. University of Miami Press, Coral Gables.
- United States Department of Agriculture, Soil Conservation Service (USDA, SCS)
1989 *Soil Survey of Hillsborough County, Florida*.
- University of South Florida Library
1846 State of Florida Topographical Engineer's Map of Florida. On file in the Special Collections Department, University of South Florida Library, Tampa.

1856 Military Map of the Peninsula of Florida. On file in the Special Collections Department, University of South Florida, Tampa.

1882 Map of Hillsborough County, Florida. On file in the Special Collections Department, University of South Florida, Tampa.

- 1885 Coastal Chart No. 177, Tampa Bay, Florida. On file in the Special Collections Department, University of South Florida, Tampa.
- Upchurch, S. B.
- 1980 Chert Origins and Availability—Pinellas and Hillsborough Counties. In *Holocene Geology and Men in Pinellas and Hillsborough Counties*, compiled by Sam B. Upchurch, pp. 48-62. Southeastern Geological Society, Tallahassee.
- Upchurch, S. B., R. N. Strom, and M. G. Nuckels
- 1982 *Method of Provenance Determination of Florida Cherts*. Ms. on file, Department of Geology, University of South Florida, Tampa.
- Walker, K. J.
- 1992 Artifacts of a Fishy Nature: Charlotte Harbor's Prehistoric Estuarine Fishing Technology. Paper presented at the 46th annual meeting of the Southeastern Archaeological Conference, Tampa.
- Walker, S. T.
- 1880a Report on the Shell Heaps of Tampa Bay, Florida. *Annual Report of the Board of Regents of the Smithsonian Institution* 1879:413-422.
- 1880b Preliminary Explorations Among the Indian Mounds in Southern Florida. *Annual Report of the Board of Regents of the Smithsonian Institution* 1879:392-413.
- 1885 Mounds and Shell Heaps on the West Coast of Florida. *Annual Report of the Board of Regents of the Smithsonian Institution* 1883:854-868.
- Wang, C. Y., D. M. Durst, and D. A. Jacobs
- 1994 *Historic Building Survey for MacDill Air Force Base Florida*, 2 vols. Hardlines: Design & Delineation for Computerized Industrial Measurements, Inc., Columbus, Ohio.
- Warren, L. O.
- 1968 The Apollo Beach Site, Hillsborough County, Florida. *The Florida Anthropologist* 21:83-88.
- Warren, L. O., W. Thompson, and R. P. Bullen
- 1967 The Culbreath Bayou Site, Hillsborough County, Florida. *The Florida Anthropologist* 20:163-167.
- Watts, W. A.
- 1971 Postglacial and Interglacial Vegetation History of Southern Georgia and Central Florida. *Ecology* 52:676-690.
- Wiley, G. R.
- 1949 *Archeology of the Florida Gulf Coast*. Miscellaneous Collections 113. Smithsonian Institution, Washington, D.C.
- Wolf, J. K.
- 1975 *The Crystal Beach Site, Pinellas County: An Early Archaic Coastal Workshop*. Miscellaneous Project Reports No. 31. Division of Archives, History, and Records Management, Bureau of Historic Sites and Properties, Tallahassee.

APPENDIX A

DEFINITIONS OF PREHISTORIC ARTIFACT CLASSES

by

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FINISHED BIFACIAL TOOLS

Finished bifacial tools are those finely worked pieces in which the manufacturing process has been apparently brought to completion, as evidenced by secondary retouch, edge straightening, hafting preparation, notching, and similar characteristics. Ten categories are recognized: (1) dart point; (2) arrow point; (3) indeterminate point; (4) axe; (5) thinned biface (knife); (6) chopper; (7) drill; (8) adze/gouge; (9) marginal biface retouch; and (10) indeterminate biface. These tools are further divided into a number of subcategories: (1) complete; (2) tip; (3) midsection; (4) base/stem; (5) longitudinal fracture; (6) tang; and (7) blade.

Dart Points, Arrow Points, and Indeterminate Points

Dart points, arrow points, and indeterminate points are all varieties of projectile points, bifacial tools formed by fine secondary retouch with basal modification in the form of notching, stemming, or thinning of the proximal end for purposes of hafting. Dart points are those employed to tip hand-held darts or spears; arrow points are used to tip arrows; and indeterminate points are, as the name implies, of uncertain usage. All projectile points are assigned to recognized types whenever possible.

Axe

Axes are bifacially worked, generally rectangular to subrectangular tools which exhibit modification along all edges. The modification has produced relatively straight to convex ends. Indications of hafting are present.

Thinned Biface

Thinned bifaces are sufficiently whole, bifacially worked blanks which exhibit biconvex symmetry, the presence of at least one edge formed by fine secondary retouch, and an absence of cortex except for the proximal end. These artifacts are commonly recognized as knives in the literature.

Chopper

Choppers are cobbles which have been modified, usually bifacially, into a teardrop shape by the removal of several flakes from one end. The opposite cortical, rounded end is unmodified, providing a handgrip during utilization.

Drill

A long, tapered, bifacially flaked bit resulting in a diamond-shaped cross-section is the distinguishing characteristic for this tool. During the Archaic period, the distal ends of projectile points were often reworked to produce this form. Drills from later periods often were fashioned from flakes.

Adze/Gouge

These chisel-like woodworking tools, which may be either bifacial or unifacial, are triangular in shape and are worked along the wider end to produce a steep, beveled straight bit. The opposite end, at the point of

the triangle, was the hafted end; the tool itself was generally hafted perpendicular to the handle. In cross section, these tools appear to be plano-convex to pyramidal.

Marginal Bifacial Retouch

These specimens, usually modified flakes, are those that exhibit limited modification on both faces along a portion of an edge or edges.

Indeterminate Biface

An indeterminate biface is a finished bifacial tool whose original function remains uncertain.

UNFINISHED BIFACES

Unfinished bifaces are those in which the manufacturing process has not been brought to completion. These artifacts tend to be somewhat crude, lacking the fine workmanship of finished tools. Five categories are recognized: (1) aborted, early; (2) aborted, late; (3) arrow point preform; (4) dart point preform; and (5) unidentified fragment. Incomplete bifaces are further subdivided into the categories of complete and fragment.

Aborted, Early

Aborted bifaces are bifacially worked artifacts that appear to have been rejected prior to the completion of the bifacial reduction process. The early aborted biface specimens usually lack symmetry and exhibit sinuous edges formed by the removal of large, thick flakes. Cortex is usually present on at least one surface and areas of step or hinge fracturing may be evident.

Aborted, Late

These specimens usually exhibit biconvex symmetry and straight edges. Generally, all cortex will have been removed, but the fine, pressure retouch characteristic of a thinned biface is not present.

Arrow Point and Dart Point Preforms

These specimens are bifacially worked blanks with indications of fine edge retouch from pressure flaking along both lateral edges. The proximal ends of the blanks lack the necessary modification that would facilitate hafting. Some specimens retain portions of the original striking platform. The specimens are subjectively placed into the dart or arrow point subclasses based on overall dimensions.

Unidentified Fragment

These specimens are bifacially worked pieces that cannot be placed in a more specific class because of their fragmentary nature.

UNIFACES

Unifaces are those tools that exhibit flake scars on one face only. Eleven basic types have been identified: (1) marginal modified/retouched uniface; (2) borer; (3) burin; (4) denticulate; (5) end scraper; (6) side scraper; (7) scraper with graver spur; (8) graver; (9) notch; (10) burin spall; and (11) adze/gouge. These categories are further distinguished by whether the specimen is complete or fragmentary.

Marginal Modified/Retouched Unifaces

These are minimally altered pieces, usually flakes, that are characterized by a single row of relatively small flake scars (less than 2 mm in width) forming a working edge with an acute angle (less than 50°). One or more edges may have been modified.

Borer

Borers are small, drill-like unifacial tools that are characterized by alternating edge retouch. These pieces are further distinguished by two adjacent concavities formed along an edge through the removal of small flakes, resulting in a sharp, prominent protrusion that was used for perforating.

Burin

A burin is a tool on which a wedge-shaped, chisel-like edge has been produced by the removal of a long, narrow sliver or spall, often perpendicular to the axis of the specimen.

Denticulate

This type of tool is formed by the removal of small flakes along one lateral edge of a piece in order to form a working edge that is multiply notched or serrated.

End Scraper

These are pieces with retouch restricted to either the distal or proximal end of the blank, generally producing a convex working edge. Marginal retouch may appear along the lateral edges of the blank. The opposing end of the piece may bear some minimal retouch that was performed in order to facilitate hafting the piece.

Side Scraper

These are pieces with retouch present on one or both lateral edges of the blank. The working edge may be straight to convex or concave.

Scraper with Graver Spur

These specimens are scrapers with an additional carefully flaked, prominent, sharp protrusion formed by the creation of adjacent shallow concavities.

Graver

Gravers are similar to borers, except that the protrusion is retouched from one side only, for the purposes of scoring and engraving.

Notch

This type of tool is formed when small flakes are removed along one lateral edge of a piece in order to form a working edge along a single, relatively deep concave area.

Burin Spall

A burin spall is the small piece that is removed to produce a chisel-like edge, thus forming a burin. Burin spalls often retain minimal retouch along one edge and in some cases may have been used for graving purposes.

Adze/Gouge

These pieces are identical to bifacial gouges, except that they have been modified unifacially.

UNMODIFIED DEBRIS

Unmodified debris is the unused debris resulting from lithic reduction practices; it usually takes the form of flakes, that must exhibit a platform and a bulb of percussion, and nondiagnostic shatter. Debris may be further distinguished by the amount of cortex remaining on the piece. A total of six categories is recognized: (1) primary decortication flake, 75 percent cortex; (2) secondary decortication flake, less than 75 percent cortex; (3) tertiary flake, no cortex; (4) bifacial thinning flake; (5) angular shatter; and (6) not applicable. These categories are subdivided into type classes: (1) Size 1 (1 inch or 25 mm sieve); (2) Size 2 ($\frac{3}{4}$ inch or 19 mm sieve); (3) Size 3 ($\frac{1}{2}$ inch or 12.5 mm sieve); (4) Size 4 ($\frac{3}{8}$ inch or 9.5 mm sieve); (5) Size 5 ($\frac{1}{4}$ inch or 6.3 mm sieve); (6) Size 6 (less than $\frac{1}{4}$ inch or 6.3 mm sieve); and (7) not applicable.

Primary Decortication Flake, 75 percent cortex

These are flakes that retain a minimum of 75 percent cortex on their dorsal surfaces.

Secondary Decortication Flake, less than 75 percent cortex

These flakes retain less than 75 percent cortex on their dorsal surfaces.

Tertiary Flakes, no cortex

Tertiary (interior) flakes lack cortex, having derived entirely from the interior of a core.

Bifacial Thinning Flakes

Bifacial thinning flakes are those distinctive flakes that are produced by soft-hammer reduction or pressure flaking. They are often small, and are usually characterized by diffuse bulbs of percussion and lipped striking platforms.

Angular Shatter

The term "angular shatter" refers to those irregular fragments that do not express the characteristics of a typical flake. Many are flake fragments, while others are simply lithic chunks that were unintentionally produced during the lithic reduction process, as for example when a flake removal failed catastrophically or the striking platform was crushed by an ill-placed blow.

Not Applicable

This term refers to those bits of lithic debris that do not fit into a recognizable category.

UTILIZED FLAKES

Utilized flakes are those that exhibit discontinuous retouch or very abrupt retouch of a thin edge, which likely reflects use wear, rather than intentional modification. Utilized flakes often functioned as expediency tools. Seven varieties are recognized: (1) primary decortication flake, 75 percent cortex; (2) secondary decortication flake, less than 75 percent cortex; (3) tertiary flake, no cortex; (4) bifacial thinning flake; (5) angular shatter; (6) platform-bearing remnant; and (7) not applicable. Because most of these categories are identical to those recognized for unmodified debris, only type 6, platform-bearing remnant, will be defined here. As before, all seven categories are subdivided into type classes: (1) Size 1 (1 inch or 25 mm sieve); (2) Size 2 ($\frac{3}{4}$ inch or 19 mm sieve); (3) Size 3 ($\frac{1}{2}$ inch or 12.5 mm sieve); (4) Size 4 ($\frac{3}{8}$ inch or 9.5 mm sieve); (5) Size 5 ($\frac{1}{4}$ inch or 6.3 mm sieve); (6) Size 6 (less than $\frac{1}{4}$ inch or 6.3 mm sieve); and (7) not applicable.

Platform-bearing Remnant

A platform-bearing remnant is a utilized flake fragment retaining the platform. All other utilized flake fragments fall into the category of angular shatter.

CORES

A core is a cobble or mass of lithic material exhibiting scars that are the result of the systematic removal of flakes by human activity. Three subclasses of cores are recognized: (1) tested pebble/nodule; (2) complete core; and (3) fragment/indeterminate. Cores are further subdivided into morphological and technological categories: (1) bipolar; (2) discoidal; (3) blade; and (4) not applicable.

Tested Nodule/Pebble

These pieces are pebbles or cobbles with one or very few flakes removed. These specimens represent discards from an early material selection stage of the bifacial reduction process.

Complete Core

As the name implies, this consists of a core that appears to be complete.

Fragment/indeterminate

This category includes all core fragments (including core tablets, which are large flakes that have been removed from a core in order to prepare a new platform), as well as those pieces that may be either core fragments or complete cores.

GROUND/PECKED/BATTERED STONE

This artifact class includes those specimens that have been modified by grinding, pecking, or battering. Fifteen categories, divided further into complete and fragmentary pieces, are recognized: (1) abrader; (2) anvil; (3) celt; (4) hammerstone; (5) incised stone; (6) mano; (7) mano/hammerstone; (8) metate/grinding slab; (9) pendant/gorget; (10) polished stone; (11) smoothed stone; (12) sinker (fishing weight); (13) bead; (14) multi-purpose; and (15) atlatl weight/bannerstone.

Abrader

These specimens are usually limestone or sandstone fragments that exhibit longitudinal, V-shaped grooves resulting from use as a polishing, smoothing, and/or sharpening stone employed in the production of bone or lithic tools.

Anvil

Anvils are cobbles with a small circular indentation in the center of one face, which were presumably used as a base in the processing of nuts and/or grains.

Celt

These pieces are axe-like tools, round or oval in cross section, that are produced by extensive pecking and grinding. These tools may be grooved or nongrooved. Like adze/gouges, they have a steeply angled bit on one end.

Hammerstone

A hammerstone is a hard nodule of lithic material, usually quartzite, used for direct fracturing of the tool stone during lithic reduction. These pieces exhibit battering on one or more ends, resulting from utilization during the lithic reduction process.

Incised Stone

Incised stones are plano-convex cobbles, usually of limestone, that exhibit a series of three or more incised parallel lines near the center of the specimen. These pieces often exhibit the characteristics of having been thermally altered and apparently were used in the straightening process of shafts for darts or arrows.

Mano

A mano is an ovate-shaped nodule of quartzite or sandstone with one or more surfaces smoothed through grinding.

Mano/Hammerstone

These multi-use tools exhibit at least one flattened, ground face and one end that has been battered as the result of use as a hammerstone.

Metate/Grinding Slab

These specimens are large, thick slabs, usually of sandstone, that have been ground smooth on one or both surfaces. These surfaces may be flat or basin-shaped.

Pendant/Gorget

These pieces are ground, smoothed and polished stones, often of an exotic, nonlocal material, that exhibit one or two drilled perforations. They were presumably worn or utilized as decorative ornaments.

Polished Stone

Polished stones are small pebbles that have been ground and smoothed through purposeful modification, as opposed to modification through utilization.

Smoothed Stone

These are small pebbles, such as ochre or limestone, that have been modified and shaped entirely through utilization.

Sinker (fishing weight)

These are medium-sized, usually water-worn pebbles with notches worked into opposite ends; they appear to have been used as net sinkers, although they may have been used as bola stones.

Bead

Beads are small cylindrical or round pieces through which a hole has been bored. They were presumably strung with similar pieces and worn for decorative purposes.

Multipurpose

Multipurpose tools are those such as mano/hammerstones that were modified and/or utilized for a variety of tasks, such as grinding, polishing, abrading, etc.

Atlatl Weight/Bannerstone

The function of these rare artifacts remains a matter of debate, but they appear to be atlatl weights, tools used to obtain greater range and accuracy from atlatl darts. Most of these artifacts are winged, hourglass-shaped (similar in shape to a double-bladed executioner's axe), and drilled through the center in order to facilitate their attachment to an atlatl shaft.

UNWORKED STONE

Unworked stone refers to those materials at a site that, though they have not been formally or directly utilized or modified, have nevertheless been impacted by human activity. Two formal classes are recognized: (1) cobble (manuport); and (2) burned rock. An additional category, *not applicable*, is included for those materials that do not fit into these two categories.

Cobble (manuport)

Included in this artifact class are those nodules or cobbles that are not a natural part of the site context and that have not been altered by human activity.

Burned Rock

Burned rock includes those cobbles or rock fragments that exhibit angular fractures, crazing, pot lid fractures, or discoloration as a result of being heated. These rocks may have been used as boiling stones, griddles, or linings for earth ovens. The raw material may be limestone, sandstone, or quartzite. The term "fire-cracked rock" or the acronym "FCR" is also used for describing burned rock.

APPENDIX B

**PREHISTORIC AND HISTORIC ARTIFACTS
RECOVERED FROM SITE 8HI50**

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Date: 07/19/96

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag No.	Art No.	Class	Unit:	S.T.	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
8H10050	102	Unmodified Debitage	Unit: S.T. 3	Lev: 4	Flake frag, no cortex	N/A		Chalcedonic Chert	no	1	< 6.3mm	0.05
8H10050	103	Unmodified Debitage	Unit: S.T. 3	Lev: 5	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.40
8H10050	111	Unmodified Debitage	Unit: S.T. 4	Lev: 2	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	19-25mm	13.60
111		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	19-25mm	15.60
111		Unmodified Debitage			Shatter, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	1.90
111		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	3.40
111		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	0.70
111		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	0.40
111		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	2.60
111		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	< 6.3mm	0.30
8H10050	112	Unmodified Debitage	Unit: S.T. 4	Lev: 3	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	1.60
112		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	0.60
112		Unmodified Debitage			Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	2.50

Date: 07/19/96

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxHxT)	Weight (grams)
112		Unmodified Debitage	Flake frag, no cortex	N/A	"Type 4" Chert	Tampa Limestone Chert	indet.	1	6.3-9.5mm	0.30
8H10050		Unit: S.T. 4	Lev: 4							
113		Unmodified Debitage	Flake frag, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	1.70
8H10050		Unit: S.T. 10	Lev: 5							
134		Unmodified Debitage	Shatter, no cortex	N/A		Fossiliferous "Type 4" Chert	burned	1	6.3-9.5mm	0.60
8H10050		Unit: S.T. 10	Lev: 8							
135		Unmodified Debitage	Flake frag, no cortex	N/A		Unidentifiable	yes	1	6.3-9.5mm	0.20
8H10050		Unit: S.T. 11	Lev: 6							
105		Unmodified Debitage	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	indet.	1	12.5-19mm	2.00
8H10050		Unit: S.T. 11	Lev: 7							
106		Unmodified Debitage	Flake frag, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	4.40
106		Unmodified Debitage	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	1.50
8H10050		Unit: S.T. 12	Lev: 3							
132		Unmodified Debitage	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	1.60
8H10050		Unit: S.T. 12	Lev: 4							
133		Unmodified Debitage	Shatter, >75%	N/A		Fossiliferous	no	1	12.5-19mm	4.20

Date: 07/19/96

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
	cortex			"Type 4" Chert				
8HI0050	Unit: S.T. 13	Lev: 3						
107	Unmodified Debitage	Shatter, >75%	N/A	Fossiliferous	no	1	19-25mm	3.80
		cortex		"Type 4" Chert				
107	Unmodified Debitage	Tertiary flake	N/A	Chalcedonic	no	1	12.5-19mm	0.80
				Chert				
107	Unmodified Debitage	Shatter, >75%	N/A	Fossiliferous	no	1	9.5-12.5mm	2.10
		cortex		"Type 4" Chert				
107	Unmodified Debitage	Tertiary flake	N/A	Fossiliferous	no	1	6.3-9.5mm	0.20
				"Type 4" Chert				
107	Unmodified Debitage	Tertiary flake	N/A	Fossiliferous	no	1	6.3-9.5mm	0.30
				"Type 4" Chert				
107	Unmodified Debitage	Tertiary flake	N/A	Fossiliferous	no	1	6.3-9.5mm	0.30
				"Type 4" Chert				
8HI0050	Unit: S.T. 14	Lev: 4						
108	Unmodified Debitage	Secondary flake	N/A	Fossiliferous	no	1	> 25mm	14.40
				"Type 4" Chert				
8HI0050	Unit: S.T. 14	Lev: 5						
109	Unmodified Debitage	Tertiary flake	N/A	Silicified Coral	no	1	12.5-19mm	3.40
8HI0050	Unit: S.T. 14	Lev: 7						
110	Unmodified Debitage	Tertiary flake	N/A	Fossiliferous	no	1	6.3-9.5mm	0.40
				"Type 4" Chert				
110	Unmodified Debitage	Tertiary flake	N/A	Fossiliferous	no	1	6.3-9.5mm	0.20
				"Type 4" Chert				
110	Unmodified Debitage	Flake frag, no	N/A	Fossiliferous	no	1	6.3-9.5mm	0.20
		cortex		"Type 4" Chert				
110	Unmodified Debitage	Flake frag, no	N/A	Fossiliferous	no	1	< 6.3mm	0.05
		cortex		"Type 4" Chert				

Date: 07/19/96

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag Art No. No. Class	Unit: SURF 0	Lev:	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
8H10050 42	Unworked Stone	Burned Rock	N/A			Tampa Limestone Chert	no	1		19.20
42	Unfinished Biface	Aborted, Late	Complete		10YR7/3	Tampa Limestone Chert	no	1	57 X 52 X 11	35.60
42	Core	Complete Core	Multidirectional		10YR7/3	Tampa Limestone Chert	no	1	91 X 62 X 33	128.30
43	Unfinished Biface	Dart Pt Preform	Fragment		10YR7/1	Fossiliferous "Type 4" Chert	no	1	46 X 38 X 9	14.50
44	Finished Biface Tool	Dart Point	Complete		INDET., 10YR6/2	Chalcedonic Chert	no	1	41 X 26 X 11	8.40
92	Uniface	Marg modif/retouch	Complete		10YR7/4	Tampa Limestone Chert	no	1	48 X 63 X 17	46.20
93	Core	Tested	Multidirectional		10YR6/2	Chalcedonic Chert	no	1	69 X 60 X 30	125.60
171	Unmodified Debitage	Tertiary flake	N/A			Silicified Coral	no	1	> 25mm	9.80
171	Unmodified Debitage	Tertiary flake	N/A			Silicified Coral	no	1	19-25mm	7.40
171	Unmodified Debitage	Shatter, >75% cortex	N/A			Silicified Coral	no	1	12.5-19mm	5.70
8H10050 94	Unit: UNIT 1 Unmodified Debitage	Lev: 1 Secondary flake	N/A			Fossiliferous "Type 4" Chert	no	1	19-25mm	4.70
94	Unmodified Debitage	Tertiary flake	N/A			Silicified Coral	no	1	9.5-12.5mm	1.90
94	Unmodified Debitage	Tertiary flake	N/A			Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	1.00
94	Unmodified Debitage	Tertiary flake	N/A			Unidentifiable	no	1	9.5-12.5mm	1.90
94	Unmodified Debitage	Tertiary flake	N/A			Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.40
94	Unmodified Debitage	Shatter, no cortex	N/A			Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.30

Date: 10/06/97

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
94	Unmodified Debitage	Tertiary flake	N/A	Tampa Limestone	no	1	6.3-9.5mm	0.70
94	Unmodified Debitage	Flake frag, no cortex	N/A	Chert				
				Fossiliferous	no	1	6.3-9.5mm	0.30
				"Type 4" Chert				
8HI0050	Unit: UNIT 1	Lev: 5						
98	1 Finished Biface Tool	Dart Point	Complete	Suwannee	no	1	67 X 34 X 7	12.10
				Formation Chert				
152	Unmodified Debitage	Shatter, >75% cortex	N/A	Fossiliferous	no	1	> 25mm	58.10
				"Type 4" Chert				
152	Unmodified Debitage	Shatter, 1-75% cortex	N/A	Fossiliferous	no	1	19-25mm	2.70
				"Type 4" Chert				
152	Unmodified Debitage	Shatter, 1-75% cortex	N/A	Tampa Limestone	no	1	9.5-12.5mm	1.20
				Chert				
152	Unmodified Debitage	Flake frag, no cortex	N/A	Fossiliferous	no	1	9.5-12.5mm	0.30
				"Type 4" Chert				
152	Unmodified Debitage	Shatter, no cortex	N/A	Fossiliferous	no	1	6.3-9.5mm	1.10
				"Type 4" Chert				
152	Unmodified Debitage	Flake frag, no cortex	N/A	Tampa Limestone	no	1	6.3-9.5mm	0.10
				Chert				
193	Unmodified Debitage	Shatter, no cortex	N/A	Fossiliferous	no	1	19-25mm	10.70
				"Type 4" Chert				
8HI0050	Unit: UNIT 1	Lev: 6						
198	Unmodified Debitage	Tertiary flake	N/A	Fossiliferous	no	1	9.5-12.5mm	0.80
				"Type 4" Chert				
8HI0050	Unit: UNIT 1	Lev: 7						
101	1 Unfinished Biface	Dart Pt Preform	Fragment	Fossiliferous	no	1	29 X 31 X 9	4.60
				"Type 4" Chert				
150	Unmodified Debitage	Shatter, >75% cortex	N/A	Fossiliferous	no	1	> 25mm	18.50
				"Type 4" Chert				

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Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
150	Unmodified Debitage	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	19-25mm	6.30
150	Unmodified Debitage	Shatter, >75% cortex	N/A		Fossiliferous "Type 4" Chert	no	1	19-25mm	16.70
150	Unmodified Debitage	Shatter, >75% cortex	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	6.50
150	Unmodified Debitage	Secondary flake	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	1.10
150	Unmodified Debitage	Flake frag, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	1.90
150	Unmodified Debitage	Shatter, >75% cortex	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	1.60
150	Unmodified Debitage	Shatter, 1-75% cortex	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.60
150	Unmodified Debitage	Shatter, 1-75% cortex	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.80
8HI0050 248	Unit: UNIT 1 Unmodified Debitage	Lev: 10 Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.03
8HI0050 147	Unit: UNIT 3 Unmodified Debitage	Lev: 1 Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	19-25mm	9.00
8HI0050 117	Unit: UNIT 3 Unmodified Debitage	Lev: 3 Flake frag, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	0.60
8HI0050 213	Unit: UNIT 3 Unmodified Debitage	Lev: 5 Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.10

Date: 07/19/96

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag Art No. No. Class	Unit: UNIT	Lev:	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
8H10050 167	Unmodified Debitage	4	Lev: 1 Secondary flake	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	1.20
8H10050 137	Unmodified Debitage	4	Lev: 3 Tertiary flake	N/A		Silicified Coral	no	1	9.5-12.5mm	0.60
137	Unmodified Debitage		Tertiary flake	N/A		Silicified Coral	no	1	9.5-12.5mm	0.30
244	Unmodified Debitage		Flake frag, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.03
8H10050 140	Unmodified Debitage	4	Lev: 7 Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.20
140	Unmodified Debitage		Flake frag, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	< 6.3mm	0.05
8H10050 141	Unmodified Debitage	4	Lev: 8 Shatter, >75% cortex	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	2.40
220	Unmodified Debitage		Flake frag, 1-75% cortex	N/A		Unidentifiable	no	1	9.5-12.5mm	1.40
8H10050 142	Unmodified Debitage	4	Lev: 9 Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	6.3-9.5mm	0.30
8H10050 143	Unmodified Debitage	4	Lev: 10 Shatter, >75% cortex	N/A		Fossiliferous "Type 4" Chert	no	1	12.5-19mm	3.80
143	Unmodified Debitage		Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	9.5-12.5mm	0.70

Date: 07/19/96

Geo-Marine, Inc.
MacDill Testing #1114-203
Historic Artifact Data

Rec No.	Bag No.	Art Class	Type	Other	Dates	Group	Qty.	Analysis Comment
8H10050	Unit: S.T. 4	Lev: 3						
11	163	1 GLASS	Clear	BOTTLE	1910 - 1940	Domestic	2	CROSSHEND; SLIGHTLY PATINATED
8H10050	Unit: S.T. 4	Lev: 4						
18	161	1 GLASS	Clear	BOTTLE	POST 1910	Domestic	1	
8H10050	Unit: S.T. 11	Lev: 7						
10	169	1 CERAMIC	Stoneware	SALT GLAZED INTERIOR/EXTERIOR, CLAY BAND	1885 - 1900	Domestic	1	WATER WORN
8H10050	Unit: UNIT 1	Lev: 1						
7	155	1 GLASS	Lt. Green	WINDOW	N/A	Architectural	1	3.1 MM THICK
8	155	2 GLASS	Clear	BOTTLE	1910 - 1940	Domestic	2	
9	155	3 GLASS	Clear	N/A	N/A	Indeterminate	1	BURNED AND MELTED
8H10050	Unit: UNIT 1	Lev: 2						
1	95	1 METAL	Iron	WIRE MAIL	POST 1880	Architectural	1	BROKEN; ENCRUSTED
2	95	2 METAL	Iron	SCREW	N/A	Architectural	1	ENCRUSTED
3	95	3 GLASS	Clear	BOTTLE	1910 - 1940	Domestic	4	SLIGHTLY PATINATED
4	95	4 GLASS	Clear	N/A	N/A	Indeterminate	1	BURNED; SLIGHTLY PATINATED
22	186	1 GLASS	Clear	BOTTLE	1910 - 1940	Domestic	1	SLIGHTLY PATINATED
8H10050	Unit: UNIT 1	Lev: 3						
5	96	1 BLDG MAT	Brick	TRANSITIONAL	1876 - 1903	Architectural	1	
6	96	2 GLASS	Clear	BOTTLE	1910 - 1940	Domestic	2	SLIGHTLY PATINATED
8H10050	Unit: UNIT 3	Lev: 1						
16	148	1 GLASS	Clear	BOTTLE	POST 1910	Domestic	1	
17	148	2 GLASS	Amber/Brown	BOTTLE	POST 1910	Domestic	1	

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Geo-Marine, Inc.
MacDill Testing #1114-203
Historic Artifact Data

Rec No.	Bag No.	Art No.	Class	Type	Other	Dates	Group	Qty.	Analysis Comment
8HI0050	15	145	1	GLASS	Unit: UNIT 3 Lt. Green	1870 - 1900	Domestic	1	NECK; PATINATED; BREAKING DOWN
8HI0050	20	166	1	GLASS	Unit: UNIT 4 Clear	POST 1910	Domestic	1	SLIGHTLY PATINATED
	21	166	2	GLASS	Amber/Brown	POST 1910	Domestic	1	
8HI0050	12	243	1	BLDG MAT	Unit: UNIT 4 Concrete/Cement	N/A	Architectural	1	USED AS MORTAR
	13	243	2	GLASS	Clear	1910 - 1940	Domestic	1	SLIGHTLY PATINATED
	14	243	3	GLASS	Clear	POST 1910	Domestic	1	

APPENDIX C

**PREHISTORIC ARTIFACTS
RECOVERED FROM SITE 8HI5656**

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Date: 07/19/96

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag Art No. No. Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
8H15656 119	Unit: S.T. 2 Unmodified Debitage	Secondary flake N/A		Chalcedonic Chert	no	1	> 25mm	20.30
119	Unmodified Debitage	Secondary flake N/A		Chalcedonic Chert	no	1	19-25mm	8.80
119	Unmodified Debitage	Tertiary flake N/A		Silicified Coral	no	1	12.5-19mm	1.20
119	Unmodified Debitage	Tertiary flake N/A		Chalcedonic Chert	no	1	12.5-19mm	2.00
119	Unmodified Debitage	Secondary flake N/A		Chalcedonic Chert	yes	1	12.5-19mm	0.60
119	Unmodified Debitage	Secondary flake N/A		Chalcedonic Chert	no	1	12.5-19mm	2.50
119	Unmodified Debitage	Secondary flake N/A		Chalcedonic Chert	indet.	1	12.5-19mm	2.50
119	Unmodified Debitage	Tertiary flake N/A		Chalcedonic Chert	indet.	1	< 6.3mm	0.05
8H15656 1	Unit: S.T. 2 Unmodified Debitage	Shatter, no cortex		Bay Bottom Chert	no	1	9.5-12.5mm	0.60
8H15656 2	Unit: S.T. 3 Unmodified Debitage	Bifacial thinning		Bay Bottom Chert	no	1	9.5-12.5mm	2.30
8H15656 3	Unit: S.T. 3 Unmodified Debitage	Tertiary flake N/A		Bay Bottom Chert	no	1	12.5-19mm	1.40
8H15656 4	Unit: S.T. 3 Unmodified Debitage	Flake frag, no cortex		Fossiliferous "Type 4" Chert	no	1	< 6.3mm	0.05

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Geo-Marine Inc.
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Bag Art No. No. Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
4	Unmodified Debitage	Shatter, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.20
4	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	0.40
8HI5656	Unit: S.T. 3	Lev: 5						
5	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.20
5	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	0.70
5	Unmodified Debitage	Secondary flake	N/A	Bay Bottom Chert	no	1	> 25mm	3.70
8HI5656	Unit: S.T. 4	Lev: 1						
6	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	12.5-19mm	3.00
6	Unmodified Debitage	Shatter, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.30
8HI5656	Unit: S.T. 4	Lev: 4						
7	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	19-25mm	4.90
8HI5656	Unit: S.T. 5	Lev: 1						
8	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	0.50
8	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.10
8	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.05
8HI5656	Unit: S.T. 5	Lev: 3						
9	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	12.5-19mm	1.20
9	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.10
9	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.05

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Bag Art No. No. Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
8H15656	Unit: S.T. 5	Lev: 4						
10	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	12.5-19mm	3.00
10	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	0.70
10	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.20
10	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656	Unit: S.T. 5	Lev: 5						
11	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	1.40
11	Unmodified Debitage	Thin flake frag	N/A	Chalcedonic Chert	no	1	9.5-12.5mm	0.50
11	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.30
11	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.10
11	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	< 6.3mm	0.05
8H15656	Unit: S.T. 6	Lev: 1						
12	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	0.60
12	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.40
12	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.30
8H15656	Unit: S.T. 6	Lev: 3						
13	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.30
13	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.30

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Geo-Marine Inc.
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Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
13	Unmodified Debitage	cortex Bifacial thinning	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
13	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
13	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
13	Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.40
13	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
13	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
13	Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.30
13	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.20
8HI5656 14	Unit: S.T. 8 Unmodified Debitage	Lev: 2 Secondary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.90
8HI5656 15	Unit: S.T. 9 Unmodified Debitage	Lev: 1 Flake frag, no cortex	N/A		Fossiliferous "Type 4" Chert	no	1	< 6.3mm	0.05
8HI5656 16	Unit: S.T. 9 Unmodified Debitage	Lev: 2 Thin flake frag	N/A		Unidentifiable	no	1	< 6.3mm	0.05
8HI5656 17	Unit: S.T. 11 Unmodified Debitage	Lev: 2 Flake frag, no cortex	N/A		Tampa Limestone Chert	no	1	< 6.3mm	0.10
8HI5656 18	Unit: S.T. 12 Unmodified Debitage	Lev: 1 Tertiary flake	N/A		Chalcedonic	no	1	9.5-12.5mm	1.00

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Bag Art No. No. Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
Chert								
8H15656	Unit: S.T. 12	Lev: 2						
19	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.60
19	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.20
8H15656	Unit: S.T. 12	Lev: 3						
20	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	0.50
8H15656	Unit: S.T. 16	Lev: 1						
24	Unmodified Debitage	Flake frag, no cortex	N/A	Chalcedonic Chert	no	1	6.3-9.5mm	0.80
24	Unmodified Debitage	Flake frag, no cortex	N/A	Chalcedonic Chert	no	1	6.3-9.5mm	0.30
8H15656	Unit: S.T. 23	Lev: 4						
21	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	12.5-19mm	2.30
21	Unmodified Debitage	Thin flake frag	N/A	Bay Bottom Chert	no	1	12.5-19mm	0.90
21	Unmodified Debitage	Tertiary flake	N/A	Bay Bottom Chert	no	1	12.5-19mm	1.50
21	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	12.5-19mm	1.00
21	Unmodified Debitage	Shatter, no cortex	N/A	Bay Bottom Chert	no	1	9.5-12.5mm	1.50
21	Unmodified Debitage	Flake frag, no cortex	N/A	Bay Bottom Chert	no	1	6.3-9.5mm	0.20
8H15656	Unit: S.T. 24	Lev: 5						
22	Core	Complete Core	Multidirectional	Bay Bottom Chert	no	1	136 X96 X 84	907.00
22	Core	Tested nodule/pebble	Multidirectional	Bay Bottom Chert	no	1	120 X107 X42	455.00

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Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
22		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.10
22		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.20
8H15656		Unit: S.T. 27	Lev: 5							
23		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.90
23		Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.70
8H15656		Unit: SURF 0	Lev:							
29	1	Utilized flakes	Secondary flake	N/A		Chalcedonic Chert	no	1	> 25mm	20.50
30		Core	Complete Core	Unidirectional	10YR7/1	Bay Bottom Chert	no	1	66 X 70 X 29	132.90
31	1	Finished Biface Tool	Dart Point	Mid-section		Silicified Coral	yes	1	19 X 30 X 6	3.10
32		Unmodified Debitage	Tertiary flake	N/A	2.5YR7/2	Bay Bottom Chert	no	1	> 25mm	13.40
33	1	Utilized flakes	Tertiary flake	N/A		Chalcedonic Chert	no	1	> 25mm	19.50
34	1	Unfinished Biface	Aborted, Early	Fragment	10YR6/1	Chalcedonic Chert	no	1	55 X 38 X 13	23.30
35	1	Unfinished Biface	Dart Pt Preform	Fragment	10YR7/1	Chalcedonic Chert	no	1	43 X 48 X 12	24.10
36	1	Unfinished Biface	Aborted, Late	Fragment	10YR7/1	Fossiliferous "Type 4" Chert	no	1	66 X 64 X 9	35.60
37	1	Unfinished Biface	Aborted, Early	Fragment	10YR6/1	Chalcedonic Chert	no	1	75 X 62 X 22	96.90
38	1	Finished Biface Tool	Dart Point	Complete	CULBREATH, 10YR7/1	Chalcedonic Chert	no	1	55 X 41 X 8	16.80
39	1	Unmodified Debitage	Tertiary flake	N/A		Fossiliferous "Type 4" Chert	no	1	> 25mm	7.00
40	1	Uniface	End Scraper	Complete	10YR7/1	Bay Bottom Chert	no	1	52 X 28 X 6	8.00
120		Unmodified Debitage	Tertiary flake	N/A		Tampa Limestone	no	1	19-25mm	7.20

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Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
120		Unmodified Debitage	Tertiary flake	N/A		Chert	no	1	19-25mm	4.30
120		Unmodified Debitage	Tertiary flake	N/A		Tampa Limestone	no	1	19-25mm	4.30
120		Unmodified Debitage	Tertiary flake	N/A		Chert	no	1	12.5-19mm	2.00
120		Unmodified Debitage	Tertiary flake	N/A		Silicified Coral	no	1	12.5-19mm	1.90
120		Unmodified Debitage	Tertiary flake	N/A		Silicified Coral	no	1	12.5-19mm	2.60
120		Utilized flakes	Tertiary flake	N/A		Silicified Coral	no	1	12.5-19mm	18.50
120		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	> 25mm	10.40
120		Utilized flakes	Secondary flake	N/A		Bay Bottom Chert	no	1	> 25mm	6.30
120		Core	Fragment/Indet	N/A	10YR7/1	Chalcedonic	no	1	19-25mm	50.20
120		Core	Complete Core	Multidirectional	10YR7/1	Chert	no	1	42 X 52 X 26	237.70
120		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	83 X 72 X 41	13.90
120		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	19-25mm	4.40
120		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	14.20
120		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	8.30
120		Unmodified Debitage	Tertiary flake	N/A		Chalcedonic	no	1	> 25mm	15.60
120		Utilized flakes	Secondary flake	N/A		Chert	no	1	> 25mm	81.70
120		Uniface	Marg modif/retouch	Complete	10YR6/1	Chalcedonic	no	1	80 X 53 X 19	85.40
120		Core	Complete Core	Multidirectional	10YR6/3	Chert	no	1	85 X 72 X 36	206.50
120		Core	Complete Core	Multidirectional	10YR6/1	Chalcedonic	no	1	76 X 59 X 33	124.20
120		Unmodified Debitage	Tertiary flake	N/A		Chert	no	1	19-25mm	10.40
120		Utilized flakes	Tertiary flake	N/A		Chalcedonic	no	1	19-25mm	9.20
120		Unmodified Debitage	Tertiary flake	N/A		Chert	no	1	12.5-19mm	3.10

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Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
120		Utilized flakes	Tertiary flake	N/A		Chert	no	1	12.5-19mm	10.60
120		Utilized flakes	Secondary flake	N/A		Chalcedonic	no	1	12.5-19mm	5.10
120		Utilized flakes	Tertiary flake	N/A		Chert	no	1	12.5-19mm	3.80
120		Unmodified Debitage	Flake frag, no cortex	N/A		Chalcedonic	no	1	6.3-9.5mm	1.60
120		Unmodified Debitage	Tertiary flake	N/A		Chert	no	1	6.3-9.5mm	0.50
8H15656		Unit: UNIT 1	Lev: 4							
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	4.60
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	0.90
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.70
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.50
25		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.05
25		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.05
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
25		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10

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Geo-Marine Inc.
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Prehistoric Artifact Data

Bag No.	Art No.	Class	Unit	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
8HI5656	26	Unmodified Debitage	1	Lev: 5 Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	3.40
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	0.90
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	5.00
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.50
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.70
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.20
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.50
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Shatter, 1-75% cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.01
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
26	26	Unmodified Debitage		Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05

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Bag Art No. No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
26	Unmodified Debitage	cortex Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
8H15656	Unit: UNIT 1	Lev: 6							
27	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	17.00
27	Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	5.40
27	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.40
27	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.60
27	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.60
27	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
27	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
27	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
27	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
27	Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
27	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
27	Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.20
27	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
27	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
27	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656	Unit: UNIT 1	Lev: 7							
28	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.50
28	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.40

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Bag Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
28	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
28	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656	Unit: UNIT 2	Lev: 3							
144	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.20
144	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
8H15656	Unit: UNIT 2	Lev: 4							
126	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
126	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656	Unit: UNIT 2	Lev: 5							
127	Utilized flakes	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.60
127	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
127	Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.50
127	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
127	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
127	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
127	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
127	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
127	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	0.80
127	Unmodified Debitage	Marg	Complete	10YR7/4	Tampa Limestone	no	1	66 X 56 X 20	67.90
127	Uniface	modif/retouch			Chert				

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Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
8H15656 Unit: UNIT 2 Lev: 6										
128		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	2.10
128		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.50
128		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.50
128		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.00
128		Unmodified Debitage	Flake frag, no cortex	N/A		Silicified Coral	no	1	6.3-9.5mm	1.10
128		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
128		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
128		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
128		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
128		Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
128		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
128		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656 Unit: UNIT 2 Lev: 7										
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	4.50
129		Unmodified Debitage	Primary flake	N/A		Bay Bottom Chert	no	1	19-25mm	7.70
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	3.20
129		Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	4.20
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.50
129		Utilized flakes	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	2.20
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.10
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.90
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.30
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.50

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Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
129		Unmodified Debitage	cortex Shatter, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	2.00
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.40
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.80
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.20
129		Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.20
129		Unmodified Debitage	Shatter, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.60
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.50
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.20
129		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
129		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05

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Bag Art No. No. Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
129	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	< 6.3mm	0.10
129	Unmodified Debitage	N/A	Flake frag, no cortex	Bay Bottom Chert	no	1	< 6.3mm	0.20
129	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656	Unit: UNIT 2	Lev: 8						
130	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	19-25mm	5.60
130	Unmodified Debitage	N/A	Flake frag, no cortex	Bay Bottom Chert	no	1	12.5-19mm	2.70
130	Unmodified Debitage	N/A	Shatter, no cortex	Bay Bottom Chert	no	1	12.5-19mm	5.40
130	Unmodified Debitage	N/A	Shatter, no cortex	Bay Bottom Chert	no	1	6.3-9.5mm	0.20
130	Unmodified Debitage	N/A	Flake frag, no cortex	Bay Bottom Chert	no	1	6.3-9.5mm	0.20
130	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	< 6.3mm	0.10
130	Unmodified Debitage	N/A	Shatter, no cortex	Bay Bottom Chert	no	1	< 6.3mm	0.10
130	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	< 6.3mm	0.10
130	Unmodified Debitage	N/A	Flake frag, no cortex	Bay Bottom Chert	no	1	< 6.3mm	0.10
130	Unmodified Debitage	N/A	Flake frag, no cortex	Bay Bottom Chert	no	1	< 6.3mm	0.05
130	Unmodified Debitage	N/A	Flake frag, no cortex	Bay Bottom Chert	no	1	< 6.3mm	0.05
130	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656	Unit: UNIT 2	Lev: 9						
131	Utilized flakes	N/A	Tertiary flake	Bay Bottom Chert	no	1	19-25mm	6.50
131	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	12.5-19mm	2.40
131	Unmodified Debitage	N/A	Tertiary flake	Bay Bottom Chert	no	1	12.5-19mm	2.50
131	Unmodified Debitage	N/A	Flake frag, no cortex	Bay Bottom Chert	no	1	6.3-9.5mm	0.50

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Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
131		Unmodified Debitage	cortex							
			Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
131		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
131		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.05
131		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656		Unit: UNIT 3	Lev: 1							
121		Unmodified Debitage	Tertiary flake	N/A		Chalcedonic Chert	no	1	> 25mm	34.70
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	> 25mm	21.00
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	16.30
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	12.20
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	2.90
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	19-25mm	5.90
121		Unmodified Debitage	Tertiary flake	N/A		Chalcedonic Chert	no	1	12.5-19mm	1.30
121		Unmodified Debitage	Bifacial thinning	N/A		Chalcedonic Chert	no	1	12.5-19mm	2.40
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	2.40
121		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	3.40
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	4.30
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.50
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.70
121		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.60
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.40
121		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.30

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Bag Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LXWXT)	Weight (grams)
121	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	3.40
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	3.10
121	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	12.5-19mm	1.20
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	2.30
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	2.40
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	12.5-19mm	2.50
121	Unmodified Debitage	Shatter, >75% cortex	N/A		Chalcedonic Chert	no	1	9.5-12.5mm	2.40
121	Unmodified Debitage	Tertiary flake	N/A		Chalcedonic Chert	no	1	9.5-12.5mm	0.60
121	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.50
121	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.20
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.70
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.70
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.90
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.60
121	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.40
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.00
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.70
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.80
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
121	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.50
121	Unmodified Debitage	Tertiary flake	N/A		Unidentifiable	burned	1	6.3-9.5mm	0.30
121	Unmodified Debitage	Tertiary flake	N/A		Silicified Coral	no	1	6.3-9.5mm	0.10
121	Unmodified Debitage	Tertiary flake	N/A		Chalcedonic	no	1	6.3-9.5mm	0.50

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Bag No.	Art No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
121		Unmodified Debitage	Tertiary flake	N/A		Chert	no	1	6.3-9.5mm	0.20
121		Unmodified Debitage	Tertiary flake	N/A		Chalcedonic	no	1	6.3-9.5mm	0.20
121		Unmodified Debitage	Shatter, >75% cortex	N/A		Chert	no	1	6.3-9.5mm	0.50
121		Unmodified Debitage	Primary flake	N/A		Chalcedonic	no	1	6.3-9.5mm	0.20
121		Unmodified Debitage	Primary flake	N/A		Chert	no	1	6.3-9.5mm	0.20
121		Unmodified Debitage	Primary flake	N/A		Chalcedonic	no	1	6.3-9.5mm	0.70
121		Unmodified Debitage	Flake frag, no cortex	N/A		Chert	no	1	6.3-9.5mm	0.30
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
121		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.05
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.05
121		Unmodified Debitage	Secondary flake	N/A		Silicified Coral	no	1	< 6.3mm	0.10
121		Unmodified Debitage	Tertiary flake	N/A		Chalcedonic	no	1	< 6.3mm	0.10
121		Unmodified Debitage	Tertiary flake	N/A		Chert	no	1	< 6.3mm	0.10
121		Unmodified Debitage	Tertiary flake	N/A		Chalcedonic	no	1	< 6.3mm	0.20
121		Unmodified Debitage	Flake frag, no cortex	N/A		Chert	no	1	< 6.3mm	0.05
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
121		Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
121		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
121		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
121		Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10

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Bag No.	Art Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxWxT)	Weight (grams)
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.80
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.60
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	1.50
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.50
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	9.5-12.5mm	0.30
122	Unmodified Debitage	Tertiary flake	N/A		Chalcedonic Chert	no	1	6.3-9.5mm	0.20
122	Unmodified Debitage	Shatter, no cortex	N/A		Silicified Coral	no	1	6.3-9.5mm	0.10
122	Unmodified Debitage	Shatter, no cortex	N/A		Silicified Coral	no	1	6.3-9.5mm	0.10
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.60
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.40
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
122	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
122	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.20
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.30
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
122	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05
122	Unmodified Debitage	Flake frag, no cortex	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.05

Date: 07/19/96

Geo-Marine Inc.
MacDill Testing #1114-203
Prehistoric Artifact Data

Bag Art No. No.	Class	Type	Other	Type Name /Color	Material	Heat Treat.	Qty.	Size(mm) (LxHxT)	Weight (grams)
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.20
122	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	< 6.3mm	0.10
8H15656	Unit: UNIT 3	Lev: 3							
123	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.10
8H15656	Unit: UNIT 3	Lev: 4							
124	Unmodified Debitage	Secondary flake	N/A		Silicified Coral	no	1	6.3-9.5mm	0.20
124	Unmodified Debitage	Tertiary flake	N/A		Fossiliferous	no	1	6.3-9.5mm	0.30
					"Type 4" Chert				
124	Unmodified Debitage	Tertiary flake	N/A		Chalcedonic	no	1	6.3-9.5mm	0.60
					Chert				
8H15656	Unit: UNIT 3	Lev: 5							
125	Unmodified Debitage	Tertiary flake	N/A		Silicified Coral	no	1	9.5-12.5mm	0.50
125	Unmodified Debitage	Tertiary flake	N/A		Bay Bottom Chert	no	1	6.3-9.5mm	0.50

APPENDIX D

**VERTEBRATE FAUNAL SPECIMENS
RECOVERED FROM SITE 8HI50**

by
Brian S. Shaffer

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METHODS

Vertebrate remains recovered from site 8HI50 were analyzed for the purpose of identifying the taxa present and cultural modification of the material. Data were entered into a data base program (Shaffer and Baker 1992) for manipulation. Faunal attributes recorded include taxon, element, portion of element, side, and basic taphonomic information (Table D-1). The taphonomic information includes weathering, breakage, burning, and etching. Unique observations, such as pathological disorders, were also recorded. Unique or culturally modified specimens were observed under magnification, either a 10x hand lens, or a light microscope up to 30x.

DESCRIPTION OF TAXA RECOVERED

Vertebrate remains recovered include fish, turtle, mammalian remains, and bone fragments that could only be identified as *Vertebrata*. Of the fish remains, drum was the only taxon identified, and it is represented by teeth which compose most of the fish sample. Turtle remains are represented by shell portions but were too fragmented for further identification. Of the mammal remains, all were unidentifiable except for calcaneus and metatarsal fragments. These specimens were identified as being from a medium- or deer-sized artiodactyl, based on size and shape.

TAPHONOMY

All of the specimens recovered were recorded as having light weathering. This indicates that the assemblage was buried relatively quickly and the specimens were not subjected to prolonged periods of exposure to the weather. All of the specimens were recorded with angular fractures except for one long bone fragment (mammalian) which was spirally fractured. Six specimens were charred (burned black). Seven specimens were recorded with etching. The etching observed appears to be the result of dissolution in the ground and not root etching or etching produced when bones pass through the gastro-intestinal tract of animals.

UNIQUE OBSERVATIONS

Two unique specimens were recovered. The artiodactyl metatarsal was worked into a blunt-tipped bone tool (awl). The large fish dorsal spine fragment was pathological. The condition is a swollen spine base. The swelling is the result of hyperostosis (abnormal bone growth). Wheeler and Jones (1989:112-113) used the term "Tilly-bones" to describe hyperostosis of the fish spines. Apparently, the etiology of this condition is poorly understood (Meunier and Desse 1994:47-53; von den Driesch 1994:37-45; Wheeler and Jones 1989:112-113). In some species, however, this condition is so frequent that it appears to be almost normal (Wheeler and Jones 1989:112) and apparently does not significantly impact the "vitality of the individual" (von den Driesch 1994:44).

Table D-1
Vertebrate Analysis of Specimens Recovered from Site 8HI50

Unit	Level	Elevation (cm)		Qty	Taxon	Element	Portion	Side	Comments
		Top	Bottom						
Surface	0	0	0	1	<i>Artiodactyla</i> (deer-sized)	Metatarsal	Fragment		Light weathering, angular fracture, etched, stained, awl fragment
Unit 1	1	0	10	1	<i>Vertebrata</i>	Indeterminate	Fragment		Light weathering, angular fracture
Unit 1	1	0	10	1	<i>Sciaenidae</i> (drum)	Tooth	Fragment		Light weathering, angular fracture
Unit 1	1	0	10	2	<i>Testudinata</i> (turtles)	Shell	Fragment		Light weathering, angular fracture
Unit 1	1	0	10	1	<i>Sciaenidae</i> (drum)	Tooth	Fragment		Light weathering, angular fracture
Unit 1	2	10	20	1	<i>Vertebrata</i>	Indeterminate	Fragment		Light weathering, angular fracture, charred
Unit 1	3	20	30	1	<i>Mammalia</i>	Indeterminate	Fragment		Light weathering, angular fracture, charred
Unit 1	8	70	80	1	<i>Vertebrata</i>	Indeterminate	Fragment		Light weathering, angular fracture
Unit 3	1	0	10	1	<i>Vertebrata</i>	Indeterminate	Fragment		Light weathering, angular fracture, charred
Unit 3	1	0	10	1	<i>Testudinata</i> (turtles)	Shell	Fragment		Light weathering, angular fracture
Unit 3	3	20	30	1	<i>Vertebrata</i>	Indeterminate	Fragment		Light weathering, angular fracture
Unit 3	3	20	30	1	<i>Testudinata</i> (turtles)	Shell	Fragment		Light weathering, angular fracture
Unit 3	3	20	30	1	<i>Artiodactyla</i> (deer-sized)	Calcaneus	Fragment	Left	Light weathering, angular fracture
Unit 4	1	0	10	1	<i>Mammalia</i> (canid/deer-sized)	Long bone	Fragment		Light weathering, spiral fracture
Unit 4	4	30	40	1	<i>Vertebrata</i>	Indeterminate	Fragment		Light weathering, angular fracture, charred
Unit 4	2	10	20	1	<i>Sciaenidae</i> (drum)	Tooth	Fragment		Light weathering, angular fracture
Unit 4	6	50	60	2	<i>Testudinata</i> (turtles)	Shell	Fragment		Light weathering, angular fracture, charred
S.T. 4	3	20	30	2	<i>Sciaenidae</i> (drum)	Tooth	Fragment		Light weathering, angular fracture
S.T. 4	3	20	30	1	<i>Testudinata</i> (turtles)	Shell	Fragment		Light weathering, angular fracture
S.T. 4	4	30	40	3	<i>Vertebrata</i>	Indeterminate	Fragment		Light weathering, angular fracture
S.T. 4	4	30	40	1	cf. <i>Osteichthyes</i> (large)	Dorsal spine	Fragment		Light weathering, angular fracture, hyperostosis pathology
S.T. 4	4	30	40	1	<i>Sciaenidae</i> (drum)	Tooth	Fragment		Light weathering, angular fracture
S.T. 4	4	30	40	2	<i>Mammalia</i> (canid/deer-sized)	Indeterminate	Fragment		Light weathering, angular fracture
		Total		29					

REFERENCES CITED

Meunier, F. J., and J. Dese

- 1994 Histological Structure of Hyperostotic Cranial Remains of *Pomadasys hasta* (*Osteichthyes*, *Perciformes*, *Haemulidae*) from Archaeological Sites of the Arabian Gulf and the Indian Ocean. In *Fish Exploitation in the Past: Proceedings of the 7th Meeting of the ICAZ Fish Remains Working Group*, edited by W. Van Neer, pp. 47-53. Annales du Musee Royal de l'Afrique Centrale, Sciences Zoologiques, Tervuren, Belgium.

Shaffer, B. S., and B. W. Baker

- 1992 *A Vertebrate Faunal Analysis Coding System: With North American Taxonomy and dBase Support Programs and Procedures (Version 3.3)*. Technical Report 23. Museum of Anthropology, University of Michigan, Ann Arbor.

von den Driesch, A.

- 1994 Hyperostoses in Fish. In *Fish Exploitation in the Past: Proceedings of the 7th Meeting of the ICAZ Fish Remains Working Group*, edited by W. Van Neer, pp. 37-45. Annales du Musee Royal de l'Afrique Centrale, Sciences Zoologiques, Tervuren, Belgium.

Wheeler, A., and A. K. G. Jones

- 1989 *Fishes*. Cambridge Manuals in Archaeology. Cambridge University Press, New York.

APPENDIX E

**ANALYSIS OF THE MACROBOTANICAL SAMPLES
FROM SITE 8HI50**

by
Elisabeth Shepard Sheldon, Ph.D.

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ARCHAEOBOTANICAL IDENTIFICATIONS

Methods

Twenty-nine flotation samples, representing 24 levels in three units excavated at site 8HI50 by Geo-Marine, Inc., were examined under a Bausch and Lomb 10x to 70x dissecting microscope. First, carbonized plant remains were separated from the modern botanical detritus and shell fragments. Then, identifications were made by comparison to botanical collections from south Florida housed in the Archaeology Laboratory at Auburn University at Montgomery and to descriptions in taxonomic and anatomical botanical reference manuals. Carbonized nut shell (*Carya* spp.) fragments were weighed on an Ohaus beam balance as were charred wood fragments. Seeds were counted.

Results

Identifications from flotation samples taken in Excavation Units 1, 3, and 4 scattered across the archeological site are listed in Table E-1. The quantity of carbonized plant remains recovered was too small to analyze in any meaningful way (i.e., prehistoric environmental reconstruction, diet, or seasonal occupation). Samples from Levels 8 and 10 in Unit 1 and from Levels 4, 5, 6, 7, 8, 9, 10, and 11 in Unit 4 contained no carbonized botanical remains.

Levels 3 through 5 in Unit 1 yielded the largest quantities of carbonized remains, and the plant species are representative of those found in a coastal mixed forest, including coniferous and hard wood and fern spores. Remains of edible plants were identified only from Unit 1, Level 3—a single fragment (< .05 g) of hickory shell; from Unit 3, Level 2—.2 g of hickory shell; and from Unit 4, Level 2—a single poke seed. No evidence of domesticated plants was found.

The small quantity of plant remains is typical of flotation samples from columns in archeological middens along the Florida coast (Sheldon 1988). This site probably represents, as do many others, a campsite or resource extraction station occupied sporadically and for short intervals over a long period of time.

Table E-1
Archaeobotanical Identifications from Unit Excavated at Site 8HI50

Provenience		Nutshell	Seeds	Wood
<i>Unit 1</i>				
Level 1	(60)			< .1 g <i>Quercus</i>
	60-FS184			< .1 g <i>Quercus</i>
Level 2	(61)		37 fern spores (< 1 mm diameter)	
Level 3	(62)	1 fragment (< .05 g)	108 fern spores (< 1 mm diameter) 2 unknown (1 mm diameter)	.2 g <i>Pinus</i> & <i>Quercus</i>
Level 4	(63)		110 fern spores (< 1 mm diameter) 4 unknown (1 mm diameter)	.8 g <i>Pinus</i> , <i>Quercus</i> , & ring porous hardwood
Level 5	(64)		120 fern spores (< 1 mm diameter)	.1 g
	64-FS192			.2 g
Level 6	(65)		7 fern spores (< 1 mm diameter)	< .05 g
Level 7	(66)		1 fern spore (< 1 mm diameter)	< .05 g
Level 9	68-FS249			.3 g <i>Pinus</i>
<i>Unit 3</i>				
Level 2	71-FS203	.2 g		
Level 4	73-FS217			< .05 g <i>Quercus</i>
<i>Unit 4</i>				
Level 1	80-FS209		1 unknown (7 mm diameter) smooth hemispherical	
Level 2	(81)		1 <i>Phytolacca</i>	.75 g <i>Pinus</i>
Level 3	(82)		2 unknown spherical	.4 g <i>Pinus</i> & hardwood
Level 12	(91)		7 fern spores (< 1 mm diameter)	< .05 g <i>Pinus</i>

REFERENCES CITED

- King, F. B.
n.d. Key to Common Dicot Woods. Typescript.
- Long, R. W., and O. Lakela
1971 *Manual of the Seed Plants and Ferns of South Peninsular Florida*. Miami University Press, Coral Gables.
- Morton, J. F.
1974 *Wild Plants for Survival in South Florida*. Trend House, Tampa.
- Radford, A. E., H. E. Ahles, and C. R. Bell
1968 *Manual of the Vascular Flora of the Carolinas*. University of North Carolina Press, Chapel Hill.
- Sheldon, E.
1985 Identification of *Zea mays* Cobs from Two Archaeological Sites near Ocala, Florida. Unpublished manuscript. Submitted to Water and Air Research, Gainesville.
1986 Identification of Archaeological Plant Remains from an Archaeological Site on the Shore of Lake George, Florida. Unpublished manuscript.
1987 In *The Cultural Evolution and Environment of Colonel's Island, Georgia*, edited by Karl T. Steinen, Chapter 2. Studies in the Social Sciences 26. West Georgia College.
1988 Identification of Archaeological Plant Remains from the Apalachicola River Valley, Florida. Unpublished manuscript. Submitted to University of South Florida.
1990 Identification of Archaeological Plant Remains from Miramar, Florida. Unpublished manuscript. Submitted to SouthArc, Gainesville.
1992 Identification of Archaeological Plant Remains from Lake Ortona, Florida. Unpublished manuscript.
- Sheldon, E., and M. L. Cameron
1976 Reconstruction of Prehistoric Environments: the Warm Mineral Springs, Florida Project. *Southeastern Archaeological Conference Bulletin* 19:68-69.

APPENDIX F

**DESCRIPTIONS OF THE MOLLUSCAN REMAINS
FROM SITE 8HI50**

by
Richard Fullington, Ph.D.

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INTRODUCTION

A total of 1,652 molluscan units was identified in the samples collected in Excavation Units 1 through 4 at site 8HI50 (Table F-1). Of this total number, five species were marine bivalves, nine species were marine gastropods, and one species was terrestrial gastropods. The dominant species was the oyster (*Crassostrea virginica*) with 1,601 identifiable specimens (umbos). There was also a large number of unidentifiable oyster fragments.

A series of mollusca (from Units 1, 3, and 4) had been tentatively identified by Geo-Marine, Inc., as possible tools. These were examined and are discussed later in this appendix. Virtually all of the suspected "tool" specimens (bivalve and gastropod) were white and chalky-textured, which is much different from the "nontool" specimens. The suspected tool specimens appear to be much older.

The assembled nonoyster species (bivalve and gastropod) suggest that the adjacent sea water was quite saline. The epifauna (*Clione*, bryozoans, and polychaete worm borings) also suggest high salinity. In all units, Level 7 and below contained mostly oyster species with most of the other site species being in levels 1 through 6. Unit 2 contained mostly oyster shell with almost no other species present. The large barnacles found at Unit 2 and the *Crepidula* (Unit 4) suggest underwater or shoreline rock exposures.

METHODS AND MATERIALS

All molluscan pieces were examined by hand. Only those that could be determined to represent an individual (bivalves=umbos; gastropods columella, apex, aperture) were counted. Suspected tool specimens were examined for smooth holes, unnatural fractures, rubbed edges, and any other factors that would suggest usage or consumption. Data were entered into a Microsoft Access data base software program.

RESULTS

Unit 1

Unit 1 contained the least number of oyster specimens of the four examined units. Most of the oyster specimens were in Levels 7 and below, while most of the other bivalve and gastropod species were found above Level 7. Suspected tool specimens were found in Levels 4 and 7.

Unit 2

Unit 2 contained primarily oyster shell with almost no other molluscan species present. No tool specimens were found. This unit contained several specimens of the large crustacean barnacle *Balanus* (Levels 3 and 5).

Unit 3

Unit 3 also contained mostly oyster shell, primarily in Levels 7 and below. This unit contained the most suspected tool specimens (Levels 1, 2, and 4).

Table F-1
Site 8HI50 Mollusca

Taxa	Specimen #
<i>Marine Bivalvia</i>	
Family Mytilidae	
<i>Brachidontes (Ischadium) recurvum</i> Rafinesque	1
Family Ostreidae	
<i>Crassostrea virginica</i> (Gmelin)	1,601
Family Veneriday	
<i>Mercenaria campechiensis</i> (Gmelin)	2
Family Pectinidae	
<i>Argopectin gibbus</i> (Linne)	1
Family Cardidae	
<i>Laevicardium robustum</i> (Lightfoot)	3
<i>Marine Gastropoda</i>	
Family Turbinidae	
<i>Astraea caelata</i> (Gmelin)	1
Family Strombidae	
<i>Strombus alatus</i> (Gmelin)	4
<i>Strombus gigas</i> (Linne)	1
Family Melongenidae	
<i>Busycon contrarium</i> (Conrad)	15
<i>Melongena corona</i> (Gmelin)	10
Family Calyptraeidae	
<i>Crepidula fornicata</i> (Linne)	4
Family Littorinidae	
<i>Littorina angulifera</i> (Lamarck)	3
Family Fascioliariidae	
<i>Pleuroploca gigantea</i> (Kiener)	1
Family Naticidae	
<i>Polinices duplicatus</i> (Say)	3
<i>Terrestrial Gastropoda</i>	
Family Spiraxiidae	
<i>Euglandina rosea</i> (Ferrusac)	2
Total	1,652

Unit 4

Unit 4 contained a heterogeneous mix of oyster and other bivalve and gastropod species through all levels. A number of suspected tool specimens (Levels 3, 4, and 5) were found in this unit. Two specimens (Levels 1 and 2) of the predatory terrestrial gastropod *Euglandina* were found. It is not clear what the data from Unit 4 indicate, but perhaps the area of Unit 4 was principally used as a garbage space which attracted the meat eating snails.

USAGE OF SHELLS AS TOOLS

In general, only a few suspected tool specimens proved to have been actually used for some function. Two valves of the quahog *Mercenaria* (Unit 1, Levels 1 and 4) were ground flat along one side of the valve. The columellae of several lightning whelks *Busycon* (Unit 1, Levels 2 and 4; Unit 3, Levels 1 and 4; Unit 4, Levels 4 and 5) were somewhat pointed and worn smooth at one end. A large columella of *Strombus* g. recovered from the surface also exhibited evidence of usage on the anterior end.

A few specimens of the gastropods *Strombus* (Unit 1, Level 7; Unit 3, Level 3) and *Busycon* (Unit 3, Level 1) showed more evidence of consumption than of tool use as determined by the fracture and hole-boring patterns.

Most of the suspected tool specimens (Unit 1, Levels 1 and 4; Unit 3, Levels 1 and 4; Unit 4, Levels 4 and 5) were gastropod columellae worn through natural processes such as wave tumbling, long-term surface exposure, or subsurface water percolation. Virtually all of the suspected tool specimens exhibited a soft, chalky white texture with very little of the shell—except for the columella—left. All other shells and valves found in the units were grayer and more solid. The aragonite layer, which is hard, had not been transformed into the softer and whiter calcium carbonate. This transformation occurs after considerable exposure to agents such as water percolation or sunlight. It is possible that the suspected tool specimens were collected from a nearby earlier terrestrial deposit exposure.

Site 8H150 Mollusca

ID	Bag	Unit	Level	Depth	Species	Specimens	Taphonomy
88	165	0	0	0	<i>Strombus</i> g.	1	see Usage discussion (surface)
82	154	1	1	0-10 cmbs	<i>Strombus</i> a.	1	see Usage discussion
83	154	1	1	0-10 cmbs	<i>Mercenaria</i> c.	1	valve fragment; adult
36	185	1	1	0-10 cmbs	<i>Crassostrea</i> v.	16	many fragments
27	247	1	10	90-100 cmbs	<i>Crassostrea</i> v.	3	several fragments
53	187	1	2	10-20 cmbs	<i>Melongena</i> c.	1	marine gastropod; sub-adult shell fragment
52	187	1	2	10-20 cmbs	<i>Busycon</i> c.	1	marine gastropod; adult shell fragment
51	187	1	2	10-20 cmbs	<i>Littorina</i> a.	1	marine gastropod; adult
81	158	1	2	10-20 cmbs	<i>Pleuroploca</i> g.	1	columella & apex; immature
42	187	1	2	10-20 cmbs	<i>Crassostrea</i> v.	25	many fragments
80	158	1	2	10-20 cmbs	<i>Busycon</i> c.	1	columella; immature
32	190	1	3	20-30 cmbs	<i>Crassostrea</i> v.	14	many fragments
31	191	1	4	30-40 cmbs	<i>Crassostrea</i> v.	6	many fragments
45	191	1	4	30-40 cmbs	<i>Polinices</i> d.	1	marine gastropod
58	97	1	4	30-40 cmbs	<i>Mercenaria</i> c.	1	see Usage discussion
59	97	1	4	30-40 cmbs	<i>Busycon</i> c.	1	see Usage discussion
38	194	1	5	40-50 cmbs	<i>Crassostrea</i> v.	53	many fragments
50	194	1	5	40-50 cmbs	<i>Busycon</i> c.	1	columella, sub-adult; very chalky & worn
99	151	1	5	40-50 cmbs	<i>Busycon</i> c.	1	sub-adult
10	199	1	6	50-60 cmbs	<i>Crassostrea</i> v.	86	many fragments
66	197	1	6	50-60 cmbs	<i>Crassostrea</i> v.	3	immature
68	197	1	6	50-60 cmbs	<i>Brachidontes</i> r.	1	valve fragment
67	197	1	6	50-60 cmbs	<i>Laevicardium</i> r.	3	valve fragments
65	197	1	6	50-60 cmbs	<i>Argopecten</i> g.	1	valve fragments
76	252	1	7	60-70 cmbs	<i>Crassostrea</i> v.	2	immature
1	254	1	7	60-70 cmbs	<i>Crassostrea</i> v.	31	many fragments
54	257	1	7	60-70 cmbs	<i>Strombus</i> a.	1	see Usage discussion
19	232	1	8	70-80 cmbs	<i>Crassostrea</i> v.	9	many fragments
16	251	1	9	80-90 cmbs	<i>Crassostrea</i> v.	9	many fragments
77	250	1	9	80-90 cmbs	<i>Polinices</i> d.	1	sub adult
89	159	14	7	60-70 cmbs	<i>Crassostrea</i> v.	1	sub-adult
48	172	2	1	0-10 cmbs	<i>Busycon</i> c.	1	columella, sub-adult
47	172	2	1	0-10 cmbs	<i>Melongena</i> c.	5	marine gastropod
34	172	2	1	0-10 cmbs	<i>Crassostrea</i> v.	88	many fragments
39	181	2	10	90-100 cmbs	<i>Crassostrea</i> v.	4	several fragments
37	173	2	2	10-20 cmbs	<i>Crassostrea</i> v.	101	many fragments
44	173	2	2	10-20 cmbs	<i>Crassostrea</i> v.	7	dark colored, heated ?
35	174	2	3	20-30 cmbs	<i>Crassostrea</i> v.	90	many fragments
46	174	2	3	20-30 cmbs	<i>Balanus</i> sp.	3	large, adult barnacles
29	175	2	4	30-40 cmbs	<i>Crassostrea</i> v.	135	many fragments
43	176	2	5	40-50 cmbs	<i>Balanus</i> sp.	2	large, adult barnacles
33	176	2	5	40-50 cmbs	<i>Crassostrea</i> v.	140	many fragments
41	177	2	6	50-60 cmbs	<i>Crassostrea</i> v.	31	many fragments
30	178	2	7	60-70 cmbs	<i>Crassostrea</i> v.	19	many fragments
40	179	2	8	70-80 cmbs	<i>Crassostrea</i> v.	15	many fragments
28	180	2	9	80-90 cmbs	<i>Crassostrea</i> v.	12	many fragments
62	115	3	1	0-10 cmbs	<i>Busycon</i> c.	1	see Usage discussion
5	223	3	1	0-10 cmbs	<i>Crassostrea</i> v.	18	many fragments
56	225	3	1	0-10 cmbs	<i>Melongena</i> c.	1	see Usage discussion
57	225	3	1	0-10 cmbs	<i>Crassostrea</i> v.	2	immature
20	205	3	2	10-20 cmbs	<i>Crassostrea</i> v.	20	many fragments
63	116	3	2	10-20 cmbs	<i>Strombus</i> a.	1	see Usage discussion
79	204	3	2	10-20 cmbs	<i>Polinices</i> d.	1	immature
8	201	3	3	20-30 cmbs	<i>Crassostrea</i> v.	12	many fragments
24	218	3	4	30-40 cmbs	<i>Crassostrea</i> v.	32	many fragments
61	118	3	4	30-40 cmbs	<i>Busycon</i> c.	1	see Usage discussion
78	219	3	4	30-40 cmbs	<i>Crassostrea</i> v.	16	immature
9	215	3	5	40-50 cmbs	<i>Crassostrea</i> v.	32	many fragments
70	214	3	5	40-50 cmbs	<i>Crassostrea</i> v.	14	very immature
3	202	3	6	50-60 cmbs	<i>Crassostrea</i> v.	30	many fragments
4	212	3	7	60-70 cmbs	<i>Crassostrea</i> v.	23	many fragments
12	216	3	8	70-80 cmbs	<i>Crassostrea</i> v.	1	many fragments

Site 8HI50 Mollusca

ID	Bag	Unit	Level	Depth	Species	Specimens	Taphonomy
26	255	3	9	80-90 cmbs	Crassostrea v.	2	several fragments
2	211	4	1	0-10 cmbs	Crassostrea v.	17	many fragments
98	210	4	1	0-10 cmbs	Euglandina r.	1	adult
13	226	4	10	90-100 cmbs	Crassostrea v.	3	many fragments
96	235	4	11	100-110 cmbs	Crassostrea v.	3	immature
15	245	4	12	110-120 cmbs	Crassostrea v.	3	several fragments
14	208	4	2	10-20 cmbs	Crassostrea v.	33	many fragments
97	207	4	2	10-20 cmbs	Euglandina r.	1	adult
49	208	4	2	10-20 cmbs	Busycon c.	1	columella, immature
73	242	4	3	20-30 cmbs	Crassostrea v.	4	immature
71	242	4	3	20-30 cmbs	Littorina a.	1	adult
22	241	4	3	20-30 cmbs	Crassostrea v.	60	many fragments
72	242	4	3	20-30 cmbs	Melongena c.	1	fragment
55	242	4	3	20-30 cmbs	Strombus a.	1	see Usage discussion
6	228	4	4	30-40 cmbs	Crassostrea v.	136	many fragments
7	228	4	4	30-40 cmbs	Astrea caelata	1	marine gastropod
90	162	4	4	30-40 cmbs	Busycon c.	1	see Usage discussion
64	138	4	4	30-40 cmbs	Busycon c.	3	see Usage discussion
95	227	4	4	30-40 cmbs	Crassostrea v.	37	immature
93	227	4	4	30-40 cmbs	Melongena c.	1	sub-adult; columella
92	227	4	4	30-40 cmbs	Littorina a.	1	adult
94	227	4	4	30-40 cmbs	Crepidula f.	4	sub-adult
60	139	4	5	40-50 cmbs	Busycon c.	1	see Usage discussion
84	239	4	5	40-50 cmbs	Busycon c.	1	sub-adult; apex
85	239	4	5	40-50 cmbs	Crassostrea v.	31	immature
86	239	4	5	40-50 cmbs	Melongena c.	1	sub-adult; columella & partial shell
87	114	4	5	40-50 cmbs	Crassostrea v.	1	see Usage discussion
21	240	4	5	40-50 cmbs	Crassostrea v.	40	many fragments
18	240	4	5	40-50 cmbs	Crassostrea v.	57	many fragments
91	237	4	6	50-60 cmbs	Crassostrea v.	5	immature
11	238	4	6	50-60 cmbs	Crassostrea v.	13	many fragments
74	233	4	7	60-70 cmbs	Crassostrea v.	3	immature
25	234	4	7	60-70 cmbs	Crassostrea v.	41	many fragments
69	221	4	8	70-80 cmbs	Crassostrea v.	1	immature
17	222	4	8	70-80 cmbs	Crassostrea v.	6	many fragments
75	229	4	9	80-90 cmbs	Crassostrea v.	1	immature
23	230	4	9	80-90 cmbs	Crassostrea v.	4	many fragments

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REFERENCES CITED

- Abbott, R. T.
1954 *American Seashells*. Van Nostrand Co., New York.
- Andrews, J.
1977 *Shells and Shores of Texas*. University of Texas Press, Austin.
- Barnes, R. D.
1968 *Invertebrate Zoology*. W. B. Saunders Co., Philadelphia.
- Fullington, R. W., and L. Pratt, Jr.
1974 *The Aquatic and Land Mollusca of Texas; Part Three: The Helicinidae, Carychiidae, Achatinidae, Bradybaenidae, Bulimulidae, Cionellidae, Haplotrematidae, Helicidae, Oreohelicidae, Spiraxidae, Streptaxidae, Strobilopsidae, Thysanophoridae, Valloniidae (Gastropoda) in Texas*. Bulletin 1. Dallas Museum of Natural History.

APPENDIX G

**ANALYSIS OF ARTIFACTS FROM SITE 8HI50
PRESENTLY CURATED
AT THE UNIVERSITY OF SOUTH FLORIDA**

by
Brent R. Weisman, Ph.D.

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INTRODUCTION

This appendix presents an analysis, identification, and interpretation of 124 prehistoric artifacts from archeological site 8HI50 consisting of stone, shell, pottery, and miscellaneous specimens that are currently curated in the University of South Florida (USF) archeological collections. These artifacts were collected in a class project directed by Dr. Simon Messing of USF in October 1960. The skeletal remains of two prehistoric American Indians were excavated as part of the class project. Surface collections were taken from associated midden deposits along approximately 1,000 feet of eroding beach, from the area of the MacDill AFB Hospital to Gadsden Point on the west shore of Hillsborough Bay.

With the exception of a single conch shell, identified as specimen #178 in the original Messing inventory (and now missing from the collection), none of the artifacts can be positively associated with the human skeletal remains. Existing notes, artifact inventory sheets, a plan-view sketch map of the site, and photographs of the burial excavations in the USF site files fail to disclose a direct association between the artifacts and the burials, and suggest instead that the artifacts were obtained in general collections from midden deposits along the beach.

Collection methods and biases are not known, nor is there information regarding specific recovery contexts of the artifacts; therefore, a great deal of caution must be exercised in interpreting this collection as a valid archeological assemblage. Nonetheless, the collection has limited value in understanding the prehistory of the Tampa Bay area, and merits the brief discussion provided below. One of the more intriguing aspects of the collection is the nearly equal numbers of shell and stone tools present, indicating a technology in which both materials were of approximately equal importance. This is typical of sites in the central Gulf Coast region where both stone sources (and coral) and marine shell were readily accessible, and sets this region apart from the north peninsular Gulf Coast and the southwest Gulf Coast. Although temporally diagnostic artifacts are not common, implied periods of occupation include the Middle Archaic (5000–3000 B.C.) and Florida Transitional (1200–500 B.C.), both inferred on the basis of possible diagnostic stone projectile points, as well as a later Weeden Island presence (ca. A.D. 650–900) based on diagnostic ceramics. Except where specifically noted, all artifact identifications were made by comparison with the USF type collections.

LITHICS

Bifacial and unifacial tools from the 8HI50 collection are summarized in Table G-1. Selected specimens are shown in Figures G-1, G-2, and G-3. Two of the nine bifacial tools are possibly temporally diagnostic. These include the snapped base of a corner-notched point (specimen A, see Figure G-1) tentatively identified as a Citrus point dating to the Transitional period of 1200–500 B.C. in the Bullen typology (Bullen 1975:6, 25) and the snapped base of a stemmed corner-notched possible Levy point (see Figure G-2), a type of Florida Archaic Stemmed dating to 5000–3000 B.C. (Bullen 1975:6, 32).

A ground stone axe or celt of slate (or possibly basalt or other igneous rock) is pictured in Figure G-4. This artifact was cataloged as #46 by Dr. Messing, has a weight of 371.5 g, and measures 161.1 mm in length by 9.0 mm in width. No specific provenience is provided for this object, but its presence indicates trade contacts, either direct or indirect, with northern cultures of the southeastern piedmont or Appalachians. Overall, the lithic artifacts suggest a broad range of activities typically associated with midden sites, although several archeological contexts may be represented, specifically preceramic Archaic and Transitional period components (not reflected by the ceramic assemblage) and the stone axe, which may not have been strictly utilitarian.

Table G-1
Bifacial and Unifacial Lithic Tools from 8HI50, USF Collection

Catalog #	Weight (g)	Source	Type	Comments
<i>Bifaces:</i>				
28	8.5	chert	indeterminate	fragmentary
41	10.5	chert		blade
30	9.0	chert	dart/arrow point	snapped tip
36	7.4	coral	dart/arrow point	snapped tip
31	9.6	chert	dart/arrow point	snapped tip
24	7.5	chert	dart/arrow point	snapped tip
40	4.3	chert	tang	
35	17.8	chert	base/stem	corner-notched, possible Citrus
29	12.8	chert	base/stem	snapped base, stemmed corner-notched, possible Levy
<i>Unifaces:</i>				
58	3.7	chert	burin	
47	25.3	chert	side scraper	
32	4.1	chert	marginal modified/retouch	
190	5.4	chert	end scraper	
185	11.0	chert	side scraper	
<i>Unfinished Bifaces:</i>				
34	27.6	chert	aborted early	
37	83.1	coral	aborted late	
26	10.7	chert	dart/arrow point	
39	34.6	chert	aborted late	
27	6.4	coral	dart/arrow point	
51	8.8	chert	aborted late	
33	18.5	chert	aborted late	

Note: Catalog numbers listed for each artifact are those assigned by Dr. Messing in the original inventory of the collection.

Unifacial tools (n=5), particularly scrapers, are represented, as well as a number of unfinished bifaces (n=7) (see Figure G-3). Source material includes both chert and coral. Utilized flakes (n=13) and unmodified flakes (n=9) are summarized in Table G-2. Of particular interest is the observation that bifacial thinning flakes (n=6) comprise 46 percent of the utilized flake category. Cores and unworked stone are described in Table G-3.



Figure G-1. Selected bifacial tools. Possible Citrus point on left.

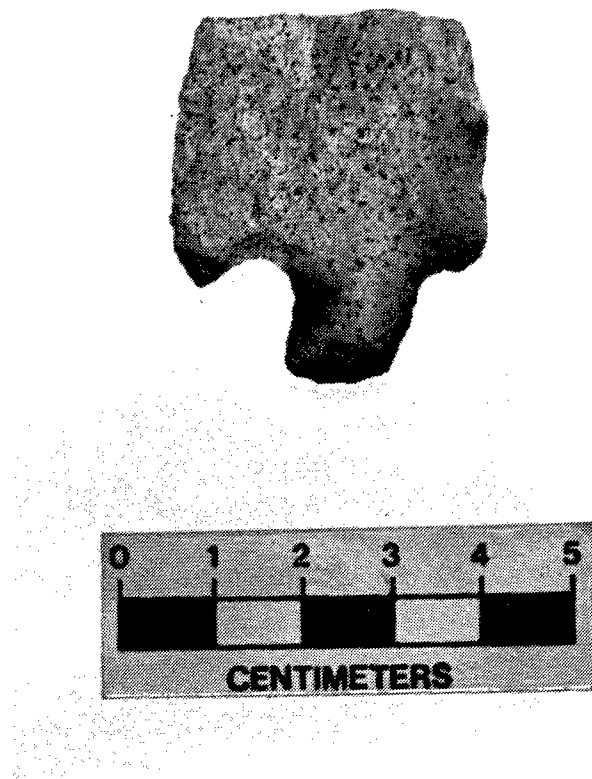


Figure G-2. Possible Levy point.



Figure G-3. Selected unfinished bifacial tools: #34 top left, #51 top right, #33 bottom left, #27 bottom right.

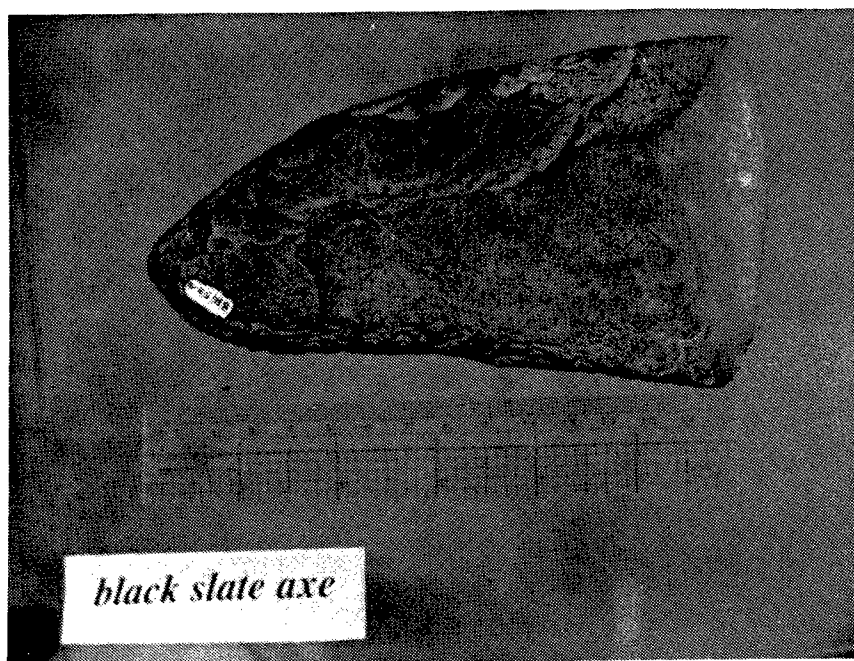


Figure G-4. Stone axe.

Table G-2
Lithic Flakes from Site 8HI50, USF Collection

Catalog#	Material	Weight (g)	Primary	Secondary	Tertiary	Bifacial Thinning
<i>Utilized Flakes</i>						
54	chert	42.1	1			
64	chert	2.0			2	2
187	coral	12.1	1			
63	coral	1.0				2
56	chert	5.6				1
49	chert	6.5				1
61	chert	2.6				1
62	chert	3.0			1	
53	coral	9.3				1
184	coral	82.5	1			
183	coral	42.9	1			
57	coral	5.1		1		
no #	chert	9.3	1			
<i>Unmodified Flakes</i>						
188	chert	17.7	1			
50	coral	2.4				1
60	coral	2.5			1	
52	coral	15.7	1			
66	coral	18.4	1			
55	chert	5.4	1			
59	chert	17.0	1			
48	chert	16.2			1	
65	chert	17.9	1			

Note: Catalog numbers listed for each artifact are those assigned by Dr. Messing in the original inventory of the collection.

Key to size categories:

1=1 inch (25 mm); 2=.75 inch (19 mm); 3=.5 inch (12.5 mm); 4=.375 inch (9.5 mm); 5=.25 inch (6.3 mm); 6=<.25 inch (<6.3 mm)

Table G-3
Cores and Unworked Stone from Site 8HI50, USF Collection

Catalog #	Weight (g)	Source
<i>Cores</i>		
43	186.2	chert
45	668.6	chert
44	305.8	chert
no #	50.8	chert
<i>Unworked Stone</i>		
no #	28.8	?
189	17.5	coral
no #	45.1	?
no #	16.8	?
no #	17.3	chert

Note: Catalog numbers listed for each artifact are those assigned by Dr. Messing in the original inventory of the collection.

CERAMICS

Sand-tempered plain pottery dominates the ceramic assemblage, accounting for nearly 61 percent of the total collection of 23 specimens, by count (Table G-4). The three sand-tempered rim sherds suggest jar and bowl forms (Figure G-5). Specimen B (Figure G-6) has a mend hole located approximately 10 mm below the rim. The presence of Pasco Plain and Belle Glade Plain in equal percentages significantly lower than sand-tempered plain suggests that the site was located somewhat south of the main range of Pasco ceramics (where it dominates assemblages from Pasco County north to Citrus County) and north of the Belle Glade range, typically from Lake Okeechobee west to the Gulf Coast of Charlotte and Lee counties, with prongs extending to the Cockroach Bay sites at the south end of Tampa Bay (Willey 1949:171-172). The highly eroded St. Johns Plain sherd is not diagnostic of time period or place of origin. The folded rim (Specimen A, see Figures G-5 and G-6) suggests a Weeden Island cultural affiliation, and the Swift Creek Complicated Stamped sherd (Figure G-7) also suggests occupation during the Weeden Island period. Belle Glade pottery becomes common and widespread after A.D. 650 (Cordell 1992:168), therefore it is likely that its presence in the site 8HI50 collection suggests occupation after this date. Thus, tentative late Weeden Island dating can be offered, perhaps between the years A.D. 650 and 900, when the Safety Harbor period begins.

Table G-4
Aboriginal Ceramics from 8HI50, USF Collection

Type	Catalog #	Weight (g)	Total	Rim	% of Total Count	% of Total Weight
Sand-tempered Plain	23	3.3		n		
Sand-tempered Plain	21	3.0		n		
Sand-tempered Plain	15	10.1		n		
Sand-tempered Plain	13	9.0		n		
Sand-tempered Plain	4	8.6		n		
Sand-tempered Plain	16	11.3		n		
Sand-tempered Plain	12	3.9		y		
Sand-tempered Plain	5	7.3		n		
Sand-tempered Plain	2	78.3		y		
Sand-tempered Plain	11	3.9		n		
Sand-tempered Plain	18	19.2		n		
Sand-tempered Plain	6	11.2		n		
Sand-tempered Plain	22	5.9		n		
Sand-tempered Plain	1	89.4	14	y	61.0	60.0
Belle Glade Plain	19	36.0		n		
Belle Glade Plain	10	34.9		n		
Belle Glade Plain	9	26.7	3	n	13.0	22.1
Pasco Plain	14	7.4		n		
Pasco Plain	17	15.0		n		
Pasco Plain	7	8.0	3	n	13.0	7.0
Sand-and-grog-tempered	3	15.1	1	y	4.3	3.4
St. Johns Plain	20	20.8	1	n	4.3	4.7
Swift Creek Complicated Stamped	8	13.9	1	n	4.3	3.1
<i>Total</i>		<i>442.2</i>	<i>23</i>		<i>100</i>	<i>100</i>

Note: Catalog numbers listed for each artifact are those assigned by Dr. Messing in the original inventory of the collection.

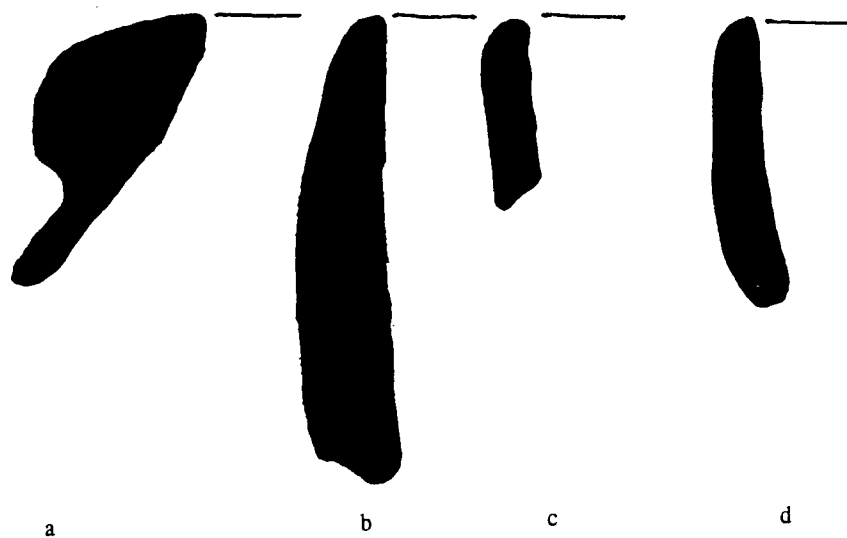


Figure G-5. Rim profiles of aboriginal pottery from site 8HI50: (a) possible jar, sand-tempered; (b) bowl, sand-tempered; (c) bowl, sand-tempered; and (d) bowl, sand- and grog-tempered.

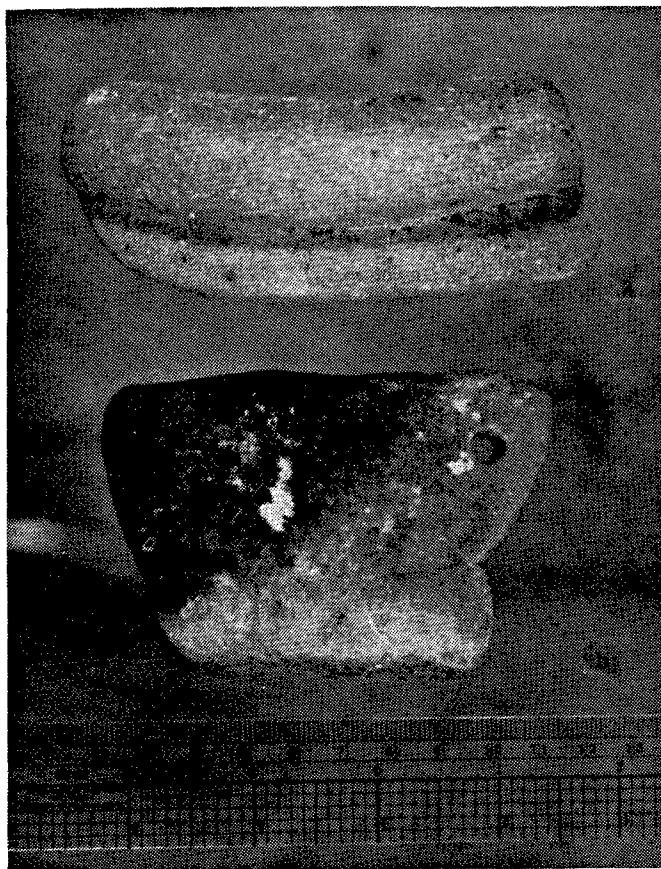


Figure G-6. Selected rim sherds: (a) folded rim, sand-tempered plain (#1); (b) sand-tempered plain with mend hole (#2).

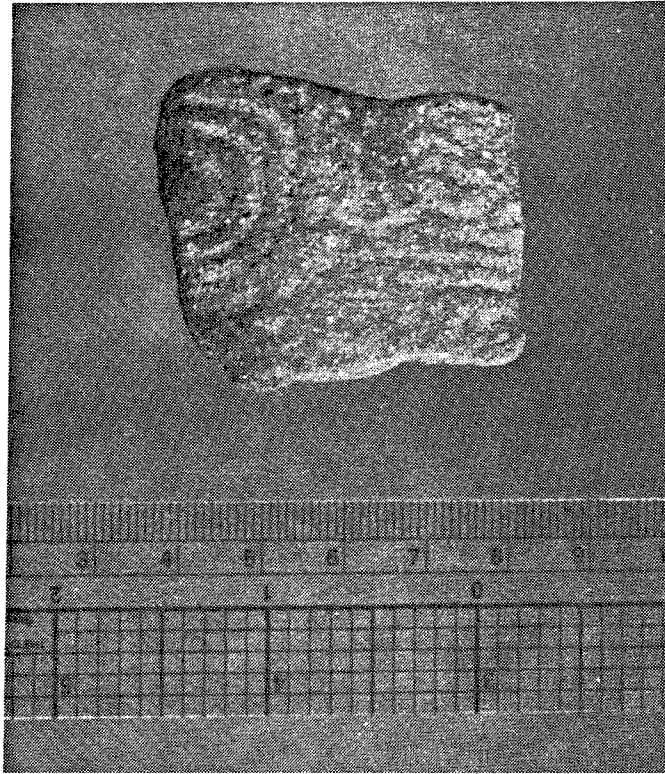


Figure G-7. Swift Creek Complicated stamped sherd.

SHELL

Of the 42 specimens of shell in the site 8HI50 collection, 28 (67 percent) are considered to be worked or modified in some recognizable way (Table G-5). Shell tool identifications are based on the USF type collections and follow the categories presented in Marquardt (1992:191-221). Columella tools account for most of the modified shell and are placed in three functional categories: columella hammers (n=11; 39 percent of all modified shell), columella cutting edge tools (n=6; 21 percent of all modified shell), and pick/drills (n=5; 18 percent). Species include both *Busycon contrarium*, or lightning conch (most common), distinguished by its left-handed opening, and *Pleuroploca gigantea*, or giant horse conch. Many of these specimens exhibit a high degree of wear. Columella hammers have blunted tips from excessive battering (Figure G-8). The pick/drills have sharply pointed tips (Figure G-9), and the cutting edge tools exhibit a tip strongly beveled to function as a working edge (Figure G-10). As a class of shell tool artifact, the cutting edge tools are the most massive and robust of the three classes. Gastropod hammers (n=3) account for 11 percent of total shell tools, and are made from *Melongena corona*, the crowned conch (Figure G-11). These specimens are also highly worn.

Table G-5
Worked and Unworked Shell from 8HI50, USF Collection

Shell	Catalog #	Species	Weight (g)	Length (mm)
Columella cutting edge tool	221	<i>Busycon contrarium</i>	46.0	92.7
Columella cutting edge tool	160	<i>Busycon contrarium</i>	45.0	120.7
Columella cutting edge tool	154	<i>Busycon contrarium</i>	66.7	107.9
Columella cutting edge tool	153	<i>Busycon contrarium</i>	74.9	129.7
Columella cutting edge tool	155	<i>Pleuroploca gigantea</i>	135.2	101.8
Columella cutting edge tool	156	<i>Busycon contrarium</i>	81.3	101.6
Columella hammer	161	<i>Pleuroploca gigantea</i>	20.7	82.9
Columella hammer	163	<i>Busycon contrarium</i>	33.5	994.4
Columella hammer	167	<i>Busycon contrarium</i>	662.8	154.9
Columella hammer	159	<i>Busycon contrarium</i>	58.1	113.9
Columella hammer	226	<i>Busycon contrarium</i>	20.9	64.6
Columella hammer	164	<i>Busycon contrarium</i>	76.7	166.1
Columella hammer	220	<i>Busycon contrarium</i>	50.2	106.6
Columella hammer	216	<i>Busycon contrarium</i>	92.3	145.6
Columella hammer	223	<i>Busycon contrarium</i>	41.5	83.9
Columella hammer	224	<i>Busycon contrarium</i>	20.7	81.4
Columella hammer	219	<i>Busycon contrarium</i>	36.4	95.4
Columella pick/drill	166	<i>Busycon contrarium</i>	26.9	142.0
Columella pick/drill	174	<i>Busycon contrarium</i>	7.3	104.0
Columella pick/drill	157	?	41.1	113.8
Columella pick/drill	168	<i>Pleuroploca gigantea</i>	82.1	140.7
Columella pick/drill	169	<i>Pleuroploca gigantea</i>	19.3	118.4
Gastropod hammer (spent)	228	<i>Melongena corona</i>	15.3	41.2
Gastropod hammer (spent)	227	<i>Melongena corona</i>	48.3	63.4
Gastropod hammer (spent)	229	<i>Melongena corona</i>	21.6	52.1
Worked columella	162	<i>Busycon contrarium</i>	31.8	105.5
Oliva bead	176	<i>Oliva</i> sp.	16.8	54.4
Oliva bead	117	<i>Oliva</i> sp.	5.7	38.2
Unworked columella	222	<i>Busycon contrarium</i>	266.5	100.6
Unworked columella	225	<i>Busycon contrarium</i>	11.8	57.8
Unworked columella	170	<i>Busycon contrarium</i>	124.0	195.0
Unworked columella	218	<i>Busycon contrarium</i>	45.0	109.3
Unworked columella	158	<i>Busycon contrarium</i>	22.7	86.9
Unworked columella	217	<i>Pleuroploca gigantea</i>	135.3	152.7
Unworked columella	165	<i>Busycon contrarium</i>	39.5	136.0
Unworked columella	173	right handed whelk	10.2	55.2
Unworked columella	172	<i>Busycon contrarium</i>	7.4	58.9
Unworked columella	175	right handed whelk	27.2	61.9
Unworked conch shell	181	<i>Busycon contrarium</i>	342.6	199.0
Unworked conch shell	230	<i>Melongena corona</i>	89.2	92.2
Unworked conch shell	180	<i>Melongena corona</i>	96.1	97.3
Unworked conch shell	179	<i>Busycon contrarium</i>	120.7	137.1

Note: Catalog numbers listed for each artifact are those assigned by Dr. Messing in the original inventory of the collection.

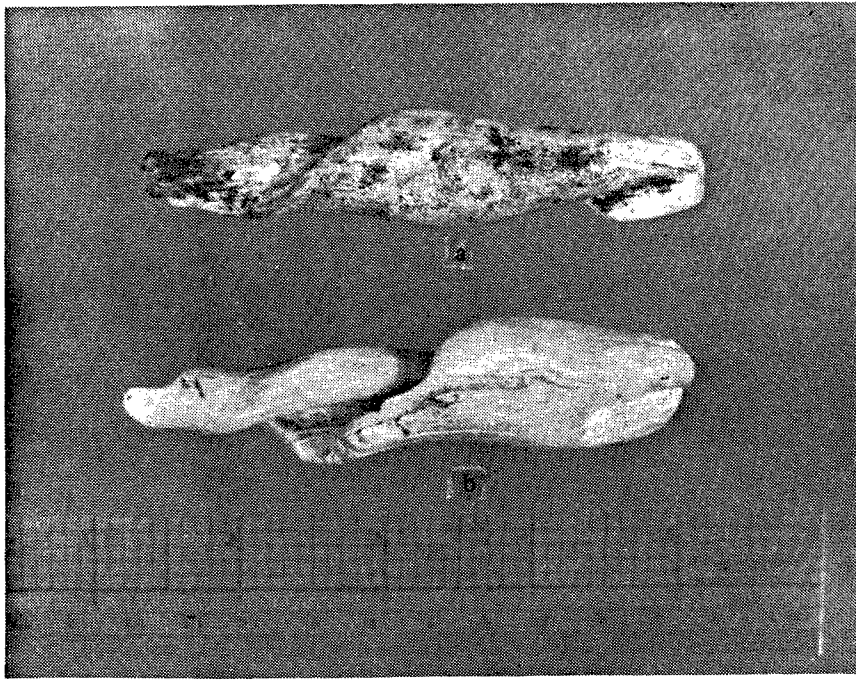


Figure G-8. Selected columella hammers: (a) #219; (b) #163.

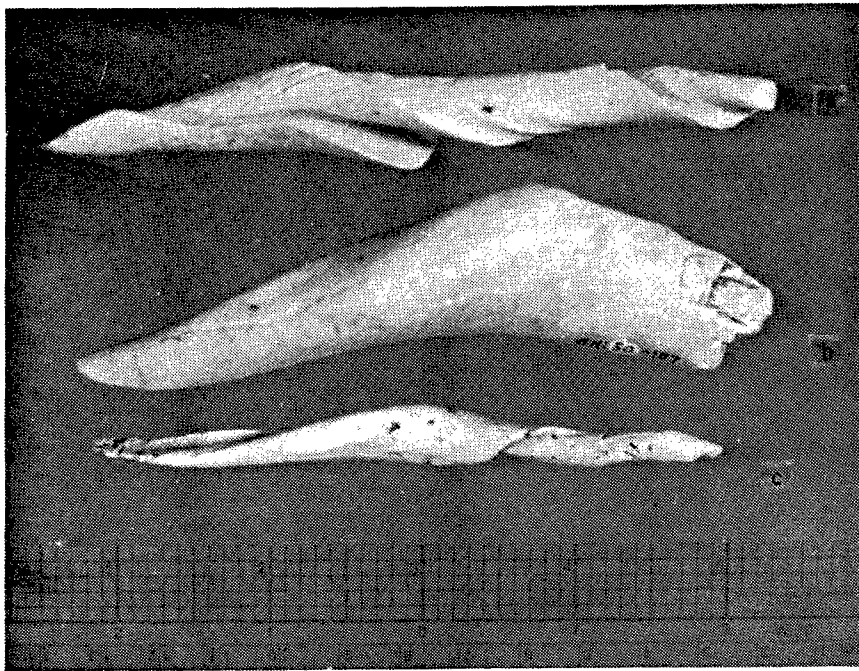


Figure G-9. Selected columella pick/drills: (a) #169; (b) #157; (c) #174.

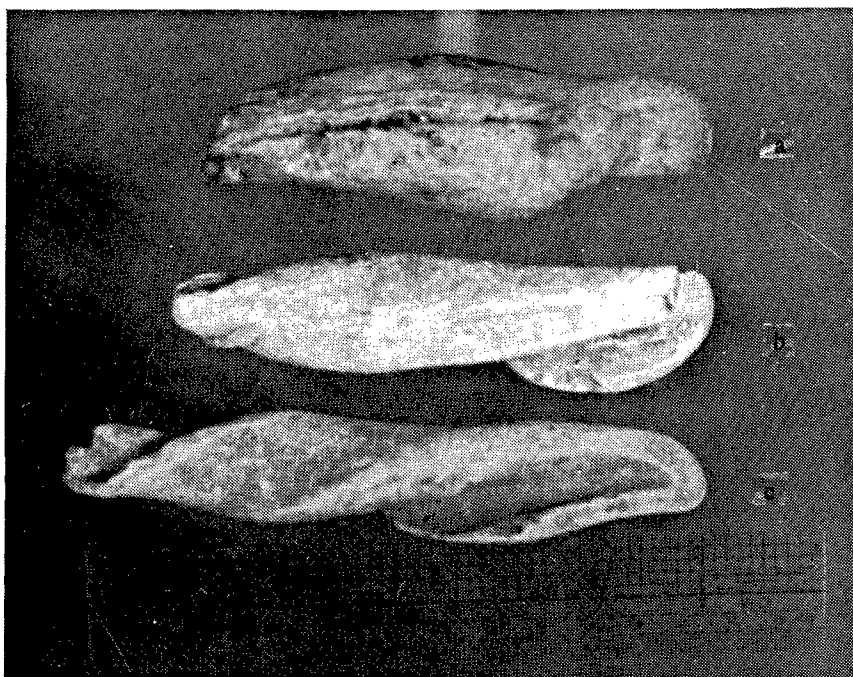


Figure G-10. Selected cutting edge tools: (a) #153; (b) #156; (c) #154.

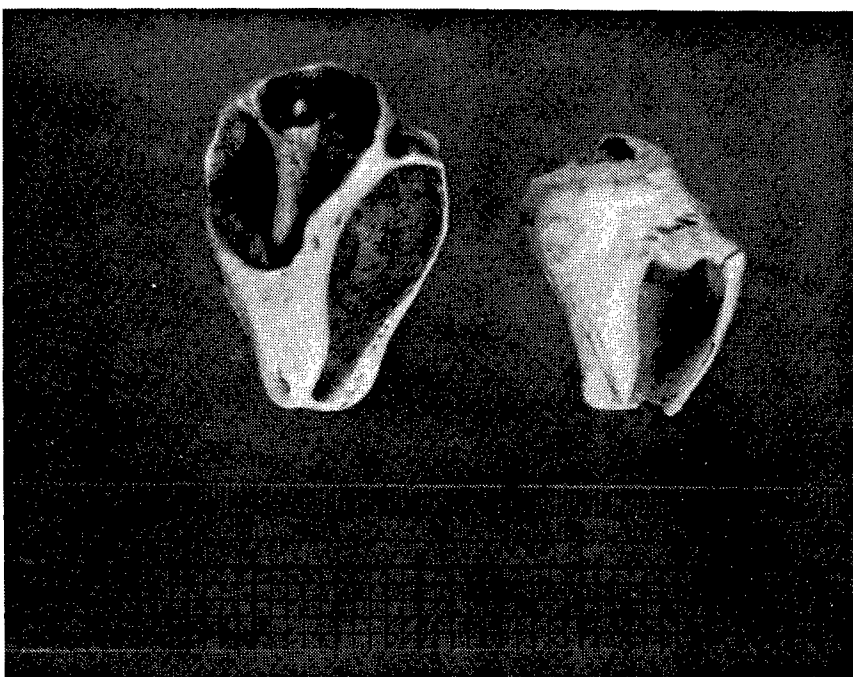


Figure G-11. Selected gastropod hammers.

Two presumed Oliva shell beads (seven percent of modified shell) are included in the collection. In both cases, the spire has been removed to create a circular hole to enable suspension (Figure G-12). There is a single modified columella too worn and fragmentary to be attributed to any functional category (4 percent of modified shell). Together, the shell tool collection from 8HI50 appears to be typical of shell tool assemblages from middens in the Tampa Bay vicinity and adjacent areas of the Gulf Coast.

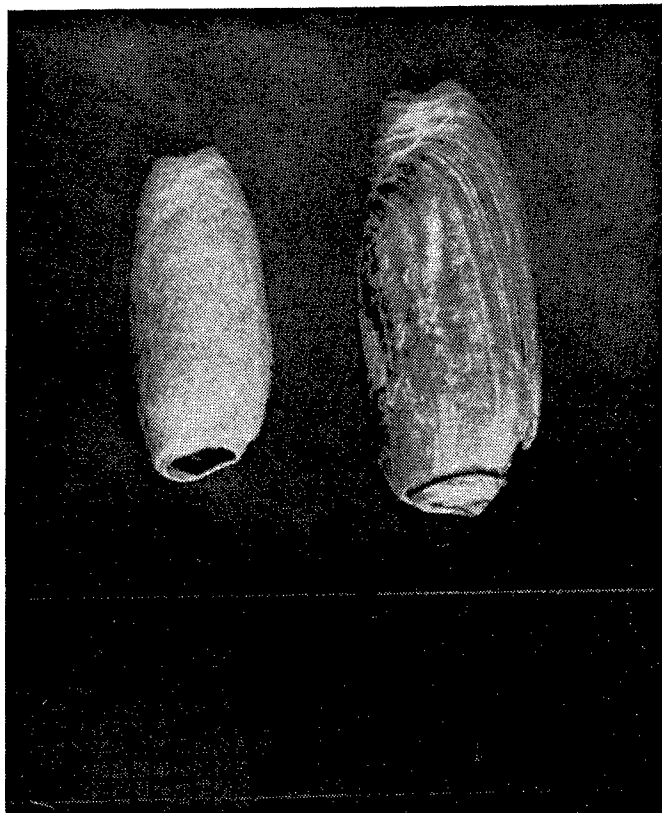


Figure G-12. Oliva beads.

MISCELLANEOUS

Table G-6 lists miscellaneous faunal material included in the 8HI50 collection at USF.

Table G-6
Miscellaneous Fauna from Site 8HI50, USF Collection

Catalog #	Weight (g)	Type
182	70.9	fish vertebra
no #	158.4	unidentified bone
no #	21.4	unidentified bone
no #	35.0	reptile vertebra
191	51.7	unidentified petrified bone
192	57.3	unidentified petrified bone

Note: Catalog numbers listed for each artifact are those assigned by Dr. Messing in the original inventory of the collection.

REFERENCES CITED

- Bullen, R. P.
1975 *A Guide to the Identification of Florida Projectile Points*. Kendall Books, Gainesville.
- Cordell, A.
1992 Technological Investigation of Pottery Variability in Southwest Florida. In *Culture and Environment in the Domain of the Calusa*, edited by William H. Marquardt, pp. 105-190. Monograph 1. Institute of Archaeology and Paleoenvironmental Studies, University of Florida, Gainesville.
- Marquardt, W. H.
1992 Shell Artifacts from the Caloosahatchee Area. In *Culture and Environment in the Domain of the Calusa*, edited by W. H. Marquardt, pp. 191-228. Institute of Archaeology and Paleoenvironmental Studies Monograph 1, University of Florida, Gainesville.
- Wiley, G. R.
1949 *Archeology of the Florida Gulf Coast*. Miscellaneous Collections 113. Smithsonian Institution, Washington, D.C.

APPENDIX H

HUMAN REMAINS RECOVERED FROM SITE 8HI50

by

Kaea J. Morris

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PREVIOUS INVESTIGATIONS

University of South Florida (USF), Tampa, anthropologist, Dr. Simon D. Messing conducted archeological work on site 8HI50 during the fall of 1960. At this time the remains of two male individuals, one adolescent and one adult, were discovered in situ (Figures H-1 and H-2). Presumably later that same year, these remains, as well as artifacts from 8HI50, were removed from the site and transferred to curatorial facilities at USF (Figure H-3). In 1995, Janus Research of Petersburg, Florida, inventoried the MacDill AFB collection of human remains at USF and found that there were at least three individuals represented (Table H-1 [bag 7]).

The collection may have contained both the two in situ individuals plus miscellaneous remains collected from the beach and tidal zone. It is also possible there were more individuals represented in the in situ burials than were recognized at the time of excavation and removal.

GEO-MARINE, INC., INVESTIGATIONS

From January 28 through February 1, 1996, during Phase II test excavations at site 8HI50, four bags (bag nos. 45-48) of human bone and possibly nonhuman bone were collected by GMI from the tidal zone of the site. The bags were kept secure in the Office of the Chief, Natural and Cultural Resources Element, MacDill AFB, until consultations with concerned Native American tribes were completed. In the interim GMI was asked to submit a proposal for inventory/analyses of the human remains. In May 1996, the proposal describing a range of possible analytical tasks was submitted by GMI to MacDill AFB and the U.S. Air Force Air Combat Command (ACC). While GMI was awaiting word from MacDill AFB and ACC whether or not to proceed with an inventory/analyses of the human remains, MacDill AFB concluded its consultations with the Native Americans and the remains were reburied (see Chapter 7). The human remains from both the 1960s and 1996 excavations were repatriated to the Seminole who requested that no inventory/analyses, measurements, or photography be done. As a result, the osteological staff at GMI did not have an opportunity to examine the remains first hand. What follows is a description of the remains recovered by GMI based on examination of the original field notes and debriefing of the project director and field crew members by a GMI human osteologist.

The bones observed and collected, although fragmented, retained structural integrity and were considered in good condition. They were black in color perhaps due to their immersion in salt water or the minerals in the soils from which they had eroded. The remains appeared to be concentrated by the sewer pipe at the north end of site—near an area believed to be the location of Messing's previous excavations. The remains that can be identified are as follows:

- One right mandible fragment. The right portion of the alveolar process (missing ascending ramus) with first (30) and second molars (31) present. There was little or no wear on the first molar and the second molar had no evidence of wear at all. We do not have information concerning the presence or absence of the third molars (17 and 32). The mandible fragment contained holes where the roots of the two premolars (28 and 29), the canine (27), and possibly the right lateral incisor (26) would have been. Judging from the lack of tooth wear and full eruption of the second molar this individual was young but at least 12 years of age. If the third molars had erupted completely this individual may have been as old as 21 but some tooth wear would likely have been apparent by then. Other teeth collected from this site in the 1960s showed signs of dental attrition (in some cases severe) believed to be caused by gritty food such as the *Zamia* plant root (Figure H-4; see Table H-1 [bag 5]).

- One right distal humerus fragment
- One possible portion of an ulna
- One left proximal femur fragment
- Several phalanges—probably human
- Several unidentifiable bones and bone fragments, maybe non-human

According to one crew member the mandible fragment seemed “small” compared to the long bone fragments collected and she believed there could have been two individuals represented. It is possible the long bones came from an adult and the mandible from a juvenile, but without direct examination, no conclusions concerning the number of individuals represented may be made.



'OPERATION DIG' TURNS UP BONES OF YOUNG INDIAN BOY
 Dr. Simon D. Messing, (white shirt, glasses) and T. Sgt. Bryan Robisheaux watch
 as students carefully clean sand away from skeleton.

Figure H-1. Article in *The Tampa Times*, October 27, 1960, regarding discovery of Indian burial on MacDill AFB.

THE TAMPA TIMES

TAMPA, FLORIDA, THURSDAY, OCTOBE 27, 1960

STUDYING INDIAN BURIAL HABITS

USF Class Unearths Skeletons

By NEAL BROGDON
Times Staff Writer

The skeleton of the 12-year-old boy showed that he had been buried in a flexed position, with his knees under his chin and his hands over his ears.

The bones of the Indian boy, along with those of an

adult, were carefully dug out of the sand on a beach at MacDill Air Force Base yesterday by an anthropology professor and his class.

The professor, Dr. Simon D. Messing, and his anthropology class from the University of South Florida were working in a ready-made laboratory, studying how prehistoric man buried his dead.

Working carefully with brushes, trowels and kitchen forks, the professor and his class of five girls and seven boys are unearthing the remains of Indians who may have died as long as 900 years ago.

Bones, pottery, arrow heads, spear points and pieces of stone jewelry have been found in a thousand-foot stretch of beach washed by the tide.

Fortunate Find

"We are very fortunate to find the skeleton of the boy in such an excellent condition," Dr. Messing said, explaining that the tide through the years has battered and displaced most of the skeletons.

How did the boy die? Why was he buried in such a strange position?

From all indications the boy died a natural death, according to the professor. He may have lived after the coming of the Spaniards to Florida and died from a disease contacted from the Europeans, Messing said, pointing out that many Indians died of disease brought by explorers and settlers from the Old World.

"It has been found in various parts of the world that prehistoric people at times buried their dead in a flexed position," he said. "Apparently they felt that a person should leave this world the same way he entered it in a flexed position, the position of a baby at birth."

Summer Find

The bones were discovered this summer by T. Sgt. Bryan Robisheaux, who was searching for agatized coral at the time. Oddly enough, there is plenty of agatized coral scattered among the bones, but the coral is in the form of spear points and arrowheads.

Dr. Messing and his class plan to make several more trips to the beach to excavate and search for more artifacts. The two skeletons already found were left carefully covered to protect them from the tide.

The two skeletons, along with any others found, will be left for state park and museum officials to examine and decide whether they are to be moved or to be left on the beach, properly protected, Dr. Messing said.

THE TIMES

OCTOBER 27, 1960

Skeletons

...dying how prehis-
...buried his dead.
...carefully with
...owels and kitchen
...professor and his
...e girls and seven
...nearthing the re-
...Indians who may
...as long as 900 years

...arrow heads,
...ts and pieces of
...elry have been
...thousand-foot
...beach washed by

Lucky Find
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...cellent condition,"
...g said, explaining
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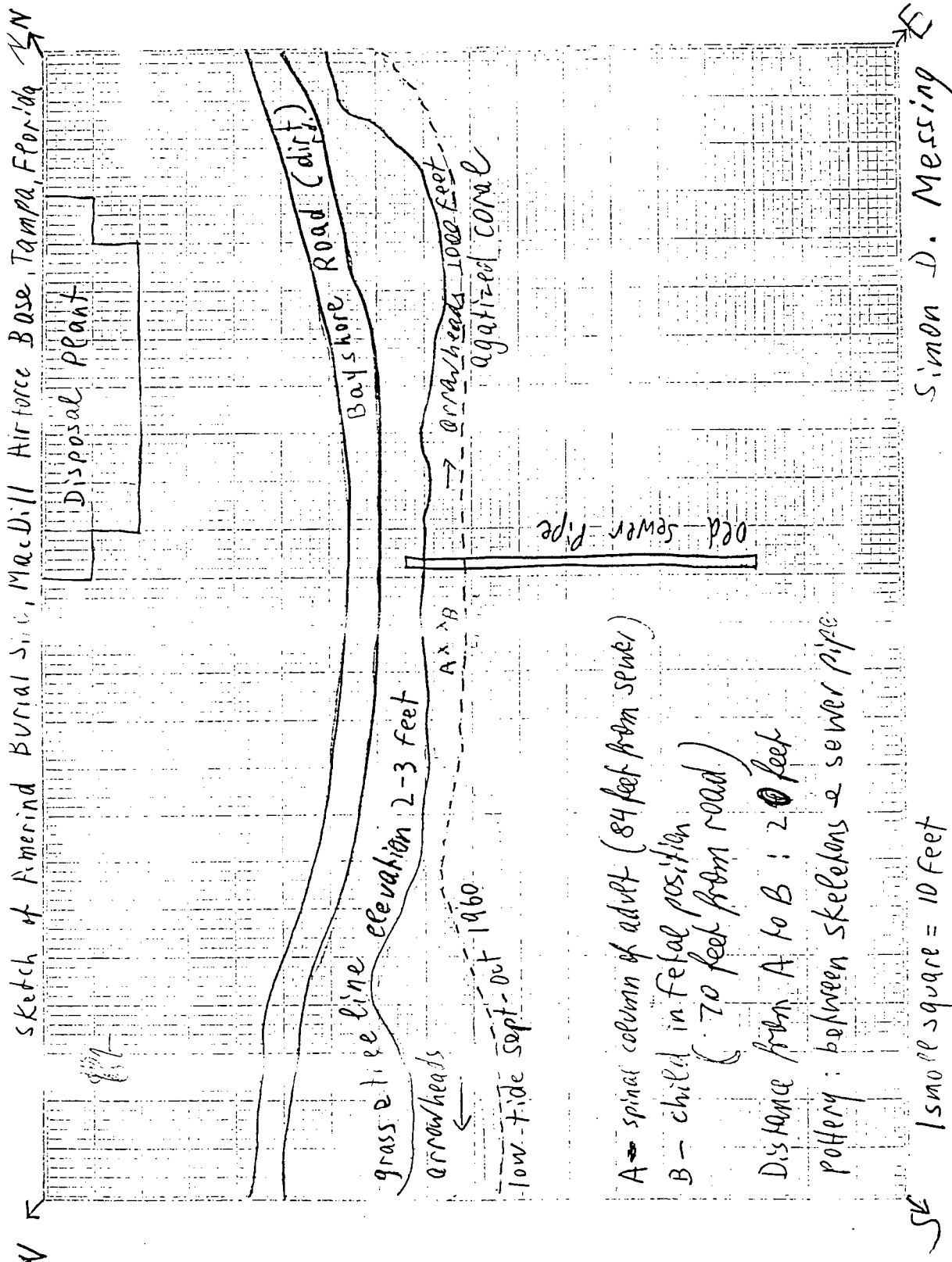


Figure H-2. Sketch map by Dr. Simon D. Messing showing location of site 8HI50, September-October 1960.

UNIVERSITY OF SOUTH FLORIDA
Archaeological Survey
SPECIFIC INVENTORY

Site No. 8 HI - 50

MacDill

Archaeologist S. Messing

Cat. No.	Description	Location	Date
1-2	Rimsherds	Surface	9/1960
3-23	Body Sherds	"	"
24-36	Projectile Points	"	"
37-40	Scrapers	"	"
41-42	Misc. Chipped Stone Artifacts	"	"
43-45	Worked Chipped Stone	"	"
46	Stone Celt	"	"
47-66	Unworked Chipped Stone	"	"
67	Unworked Petrified Bone	"	"
68-97	Skull Fragments	Burial Material, Surface	"
99-121	Mandible Fragments	"	"
122-137	Loose Teeth	"	"
138-145	Long Bones	"	"
146-152	Misc. Bones	"	"
153-163	Worked Columellae	Surface	"
164-175	Unworked Columellae	"	"
176-177	Oliva Beads	"	"
178	Conch Shells	From Tomb, Beach MacDill	"
179-181	Conch Shells	Surface	"
182	Animal Bones (Fish Verteb.)	"	"
183-184	Worked Chipped Stone	Surface	10/64
185-190	Unworked Chipped Stone	"	"
191-192	Unworked Petrified Bone	"	"
193-195	Skull Fragments	"	"
196-215	Long Bones	"	"
216-226	Columellae	"	"
227-229	Shell Hammers	"	"
230	Punctured Shell	"	"

Figure H-3. Inventory of artifacts as well as faunal and human remains recovered from site 8HI50 in 1960.

Table H-1
Curated Human Skeletal Remains (MacDill AFB Collection)

Bag Number	Description of Contents
1	21 adult skull fragments; three juvenile skull fragments; one unidentified rib fragment
2	two adult fibula; one adult humerus fragment
3	two adult rib fragments; one unidentified long bone fragment; two left femur heads; one adult parietal fragment
4	one adult male pelvis fragment
5	one fragmented mandible (encased in matrix) with teeth present, two molars and two premolars worn flat (at least 12 years of age)
6	16 loose teeth including molars, premolars, canines, and incisors
7	15 mandible fragments with teeth (representing at least three individuals)
8	one adult left tibia fragment
9	one unidentified skull fragment; one adult temporal bone
10	15 pieces of invertebrate fauna
11	seven unidentified long bone fragments; one juvenile skull fragment; one adult skull fragment; one juvenile ilium fragment; several invertebrate and vertebrate faunal fragments

Source: Janus Research 1995:Table 15.

ARCHEOLOGICAL EXCAVATION, BEACH SITE MACDILL AIR FORCE BASE,
SEPTEMBER, 1960
ANTHROPOLOGY CLASS. DR. SIMON D. MESSING

12. "Killed" conch shell from tomb.
13. Pre-columbian Indian teeth worn down by gritty food, e. g. from Zamia plant root.
14. Other piece of jaw.
15. "Weeden Island" type pottery. 800 A. D. --.
16. "Swift Creek" type pottery. Made with carved wood of Weeden Island I. 800 A. D. --.
17. "St. John" eroded pottery. 500 B. C. --.
18. Sand tempered pottery. 500 B. C. --.
19. Columella "drill".
20. "Tampa Bay" (white) projectile point. 800 A.D. & later
21. "Deptford" type projectile point. 700 - 800 AD
22. "Plumo-bon" type neck pendant.

Figure H-4. Partial list of items recovered from archeological excavations at site 8H150 by Dr. Simon D. Messing in September 1960.

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REFERENCES CITED

Janus Research

1995 *Repository Summary*. Completed for MacDill AFB and Avon Park Air Force Range, Florida.

APPENDIX I

**NAGPRA CORRESPONDENCE
WITH NATIVE AMERICAN TRIBES**



DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

FEB 15 1996

Mr. James Billie
Seminole Tribe
6073 Stirling Road
Hollywood, FL 33024

Dear Mr. Billie

MacDill Air Force Base is providing the following information for your review and comments. This letter is being written to comply with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended.

During a Phase II Archeological Survey of shell middens on MacDill AFB, the archeologist discovered human remains along the southeast shoreline of the base. The remains were found exposed during low tide along the shoreline. The remains collected were parts of a mandible, ulna, and a piece of long bone. The remains are estimated to be from the time period of 700 to 900 AD.

Human remains were also found on MacDill AFB in 1960 in the same location of the base. They are presently housed at the University of South Florida Anthropology Department. A list of the remains, artifacts, and a copy of the October 26, 1960 newspaper article of the discovery are also attached.

Please contact Shelley Urbinek at (813) 828-2718 or write her at the following address
6 CES/CEVN, 7621 Hillsborough Loop Drive, MacDill AFB, FL 33621-5207 for any further information.

Sincerely


JAMES C. CAMPBELL
Deputy Base Civil Engineer

Attachments:

1. Newspaper Article
2. List of remains & artifacts



DEPARTMENT OF THE AIR FORCE
6TH AIR REFUELING WING (AMC)
MACDILL AIR FORCE BASE, FLORIDA

November 6, 1996

U.S. AIR FORCE



Shelley Urbinck
6CES/CFVN
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

Mr. Ted Underwood
Seminole Nation Oklahoma
P.O. Box 1768
Seminole, Ok 74868-1768

Dear Mr. Underwood

I have provided the information that you requested in your August 5, 1996 letter to Ms. Shannon Larsen. Ms. Larsen contacted me in September to schedule a visit to the base for Mr. Bobby C. Billie to discuss the repatriation of human remains on MacDill.

On September 18, 1996 we met with Mr. Bobby C. Billie and Shannon Larsen to discuss the repatriation of the human remains found on MacDill in the 1960's and the remains found in January of 1996. Mr. Bobby C. Billie met with MacDill staff to discuss our how and when the remains were found. Mr. Bobby C. Billie and Ms. Shannon Larsen visited the site where the remains were found and decided where the reburial would take place and the date. Mr. Billie requested that the reburial take place as soon as possible. The date for reburial was set for October 2, 1996. Mr. Billie and Ms. Larsen returned on October 2, 1996 and the reburial of all human remains took place.

If we are presented with any other NAGPRA issues we will contact you immediately. Please contact me if you have any further information or questions. My phone number is 813-828-2567.

Sincerely


Shelley Urbinck

AMC – GLOBAL REACH FOR AMERICA

Seminole Nation Business & Corporate Regulatory Commission

Mekuskey Mission
Post Office Box 1768
Seminole, Oklahoma 74868-1768
(405) 382-8611 -- FAX (405) 382-8611

August 5, 1996

Ms Shelley Urbinek
Department of the Air Force
6CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

Dear Ms Urbinek,

This letter is in response to a notification from Mr. James C. Campbell informing the Seminole Nation of discovered human remains along the southeast shoreline of the base. As discussed in our telephone conversations the tribal repatriation advisory committee met on July 31, 1996. Enclosed you will find the points of concern discussed by the committee and how we would like to see this situation resolved.

The committee would also like to request the field reports on the seashore site and also any reports filed in regards to the 1960 excavations site. We wish to also request a listing and information on the whereabouts of the artifacts collected from the site. Photographs of the excavated site and the seashore site would also be helpful to the committee.

Please if you have questions or additional information please contact us at the address shown above.

Thank You



Ted Underwood, Director

cc: Chief Jerry Haney
Repatriation Committee
file

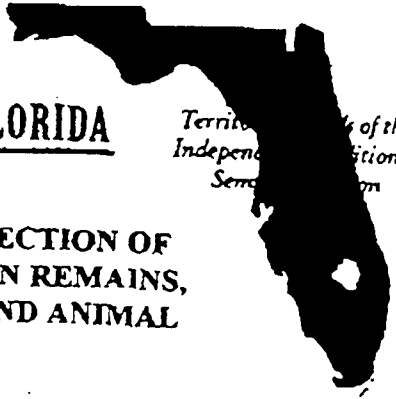
REPATRIATION COMMITTEE
SEMINOLE NATION OF OKLAHOMA

POSITION ON THE
DISCOVERY AND REINTERMENT OF
ANCESTRAL HUMAN REMAINS
8/5/96

- (1) In the case of inadvertent discoveries, all digging should stop until a response from the tribes with aboriginal claim on the land from which the human remains were discovered has been received.
- (2) All human remains should be returned along with all associated funerary objects and all animal artifacts for reburial as soon as possible.
- (3) That there be no testing of the artifacts that require the use of chemicals on the human remains.
- (4) That the parties responsible for relocating the remains from the discovery site be the ones to return all the artifacts.
- (5) That the remains be reburied at the original point of discovery. If this is not possible that they be buried at a location as close as possible to the original site.
- (6) That the parties responsible for the exhumation of the bodies be the ones to dig the graves for reburial and cover the grave site after all artifacts have been replaced in the same orientation as removed.
- (7) At this point all non-Indians and media are asked to leave the area until the spiritual leader has completed his ceremony.
- (8) That Independent Seminole Bobby C. Billie be allowed to oversee and direct the above mentioned concerns.
- (9) Security measures should be provided to protect the site from future disturbances.

On July 31, 1996 the Seminole Nation Repatriation Advisory Committee met to discuss the subject of inadvertent discoveries of human remains relative to cultural affiliation to the tribe. The list above are the points of discussion and the official position of the tribe until or unless future changes are made.

INDEPENDENT TRADITIONAL SEMINOLE NATION OF FLORIDA



Territory of the
Independent Traditional
Seminole Nation

POLICIES AND PROCEDURES CONCERNING THE PROTECTION OF INDIGENOUS NATURAL PEOPLES GRAVE SITES, HUMAN REMAINS, FUNERARY ITEMS, ASSOCIATED FUNERARY ITEMS, AND ANIMAL ARTIFACTS.

GRAVE SITES, HUMAN REMAINS, FUNERARY ITEMS, ASSOCIATED FUNERARY ITEMS, AND ANIMAL ARTIFACTS SHOULD NOT BE DISTURBED.

The Policy of the Independent Traditional Seminole Nation of Florida is that human remains, funerary items, associated funerary items and animal artifacts once interred should not be disinterred.

All remains, whether historic or prehistoric are our ancient relatives and must be respected and protected from any disturbance. However, the Independent Traditional Seminole Nation of Florida recognizes that under certain circumstances disinterment will occur. In these situations human remains, funerary items, associated funerary items, and animal artifacts must be reinterred as quickly as possible and as near to the original burial location as feasible, but far enough away from earth disturbing and erosional activities so to eliminate the likelihood of future impact.

The remains and funerary items and animal artifacts shall be re-buried in the same orientation and position as originally found.

Funerary items must be treated with respect. They have been placed with the human remains for essential reasons and should not be handled casually, collected, removed or separated from the human remains.

All reasonable alternatives must be exhausted before disinterring and at no time may the human remains or funerary items be subjected to scientific study of any kind.

The Independent Traditional Seminole Nation of Florida expects all human remains and funerary items to be treated with the utmost respect from the time they are discovered until their final disposition.

Traditional and spiritual values shall be observed in dealing with human remains, funerary items, associated funerary items, animal artifacts, burials and/or the relocation and transfer of grave sites

When an inadvertent discovery occurs, all ground disturbing activities shall immediately cease within a three hundred foot radius using the discovery as the center point. The burial should be left interred and the Independent Traditional Seminole Nation should be notified immediately and consulted as to the disposition of burials, prior to any action taken to disturb, examine, or excavate the human burials.

The Independent Traditional Seminole Nation must be notified within one business day from the day of discovery to arrange for proper evaluation and consultation. The person who has made the discovery shall identify himself and supply the following information:

- a. A verbal description of what has been found and the context in which the remains are located.
- b. The general location of the grave site, human remains, and or funerary items and any other pertinent information.

Verbal notification shall immediately be followed by written notification.

Human remains and funerary items must be protected in place until reinterment measures can be implemented. At no time may scientific studies of any kind, including measurements be conducted or any photographs taken. Upon proper evaluation and consultation by the Spiritual Leader of the Independent Traditional Seminole Nation reinterment should take place immediately following removal, unless there are extenuating circumstances.

At the time of the reinterment the Spiritual Leader of the Independent Traditional Seminole Nation must be present to conduct the reinterment and re-burial ceremony according to traditional and spiritual values held by the Independent Traditional Seminole Nation.

The Independent Traditional Seminole Nation understands that the taking of the Ancestors and their belongings from the Earth as something that violates all the rights of Indigenous Natural People. The Ancestors and their spirits of the Earth have to be left in the Earth. They need to be there because they are the spirits of all plants, and animals and waters and rocks and people that lived and animals that lived. To violate this principle means that the people have to pay. It has always been prohibited to take people and things out of the Earth. It is against the Creator's Law. The burial grounds should be left untouched. In the war time, they were fighting for their rights. Sometimes they died in the woods, but that is where they found their resting place and that is their right. It is these people we speak for, and a lot of them we know were unrecognized tribes - Independent Indigenous People. These people believed in the Creator's Law. Whatever we have said, we have never changed. It is our Law.

Our villages have never been abandoned no matter how old, maybe six million years or older. We have never abandoned them. Respecting the nature, we leave the villages when the natural resources begin to run low, so that the nature can renew itself. We respect the nature and move from village to village, this is our way of life. When you find an old village, we have not abandoned it. It is still our home site, but because of "keepout" signs, private ownership, state and federal parks, etc., we cannot visit these areas like we use to do, but they are our homes today as they were yesterday, and we ask that you respect them and leave them alone.

Bobby C. Billie
Spiritual Leader, Indigenous Natural Person
Independent Traditional Seminole Nation of Florida

Mailing address: 710 N. Oleander Avenue, Daytona Beach, FL 32118 Fax: (904) 471-9897
October 17, 1995



DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

FEB 15 1996

Mr. Tony Martin
Kialegee Tribal Town
P.O. Box 332
Wetumka, OK 74883

Dear Mr. Martin

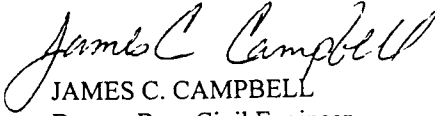
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Please contact Shelley Urbinek at (813) 828-2718 or write her at the following address
6 CES/CEVN, 7621 Hillsborough Loop Drive, MacDill AFB, FL 33621-5207 for any further information.

Sincerely


JAMES C. CAMPBELL
Deputy Base Civil Engineer

Attachments:

1. Newspaper Article
2. List of remains & artifacts

Global Power for America

Kialegee Etlwv

P.O. Box 332
Wetumka, OK 74883
(405) 452-3262
FAX: (405) 452-3413

Eulaw Moko
June Fixico

November 22, 1996

Kistunke
Maatha Guora

Eulaw Opvnyke
JoAnn Foley

Department of the Air Force
6th Air Base Wing (Ace)
6 CES/CEVN, 7621 Hillsborough Loop Dr.
MacDill Air Force Base, FL 33621-5207

Coku Hlay
Amy Barnes

Attention Shelly Urbinek:

Tokruwa Offwa
Millie Scott

The Kialegee Etlwv of the Mvskohe Confederacy has been contacted by state, federal agencies and Museums from around the United States over the past three years regarding summaries and inventories of possible Kialegee/Mvskohe ancestral human remains and sacred objects in compliance with the 190 Public Law #101-601, the Native American Graves Protection and Repatriation Act (NAGPRA).

Eno Potialke

Jessa Cashiche
Linda L. Fish

June Guora
Elma Hlay, Jr.
Mary J. Pigeon

The Kialegee Etlwv's Heritage & Culture program is authorized to carry out the responsibilities of the "Repatriation Project". The Project Director, Jim Wesley oversees the project and ensures implementation of the goals and objectives. Corky Allen, the researcher for this project conducts and coordinates initial contacts with museums and appropriate agencies in research efforts. Elders will assist the Project Director to officiate actual Repatriations of ancestral remains.

This document and attached resolution contain official notice that the Kialegee Etlwv (Tribal Town) one of forty-four Etlwv's reestablished after forced removal from the Southeastern United States to Oklahoma. Currently the Kialegee is working to enter into an agreement with other Etlwvs that all Mvskohe affiliated ancestral remains and objects will be of our concern. The Kialegee will conduct consultations with Etlwv (Tribal Town) Mekkos (Chiefs) to scope the concerns and issues for possible future repatriations.

Find enclosed the recent ratified tribal code of the Kialegee Etlwv entitled "Protection and Management of Archeological, Historical and Cultural Resources." Please contact Corky Allen if you should have any questions regarding NAGPRA or other relevant issues.

Respectfully yours,

June Fixico
June Fixico
Kialegee Mekko



KIALLEGEE ETVLWV CULTURE & HERITAGE PROTECTION CODE

Protection and Management of Archaeological, Historical and Cultural Resources (Ref.: A.R.P.A.)

1. TRIBAL POLICY AND LEGISLATIVE INTENT

The Kiallegee Tribal Town (Etvlvv), does affirm its authority and commitment to preserve, protect and promote tribal culture and heritage. This trust includes the management of ancient and contemporary cultural use sites and materials which are fundamental in the recognition of traditional lifeways, values and histories of the tribe. These cultural sites and materials include those associated with traditional foods and other natural resources, other sacred sites as designated by the tribe, habitations, and historical events and personalities. It is recognized that these are invaluable, irreplaceable and endangered tribal resources. It is basic tribal intent that these resources be protected and preserved within the traditional tribal territorial limits. In keeping with this intent, the following policies are established:

(1) A program shall be established to increase efforts in locating, documenting, and evaluating ancient, cultural, and historic sites. This information will provide a record of the past for future generations, and will be incorporated into land use management planning. Information on sites recorded in all ceded areas will also be collected and evaluated.

(2) Tribal laws and policies are established by this chapter that will protect archaeological, cultural, and historical sites and materials. Other federal and state laws also impact this subject. Those federal and state acts include, but are not limited to, 16 U.S.C. S 461, Historic sites, Buildings, and Antiquities; 16 U.S.C. S 469, Reservoir Salvage Act of 1960; 16 U.S.C. S 469 (A) (1), Archaeological and Historical

Preservation; 16 U.S.C. S 4709, Section 106 of the National Historic Preservation Act; 376 C.F.R. 800, Protection of Historic and Cultural Property; 42 U.S.C. S 4321, National Environmental Policy; 42 U.S.C. S 1996, American Indian Religious Freedom Act; 43 C.F.R. Part 7, 36 C.F.R. Part 296, 18 C.F.R. Part 1312, 32 C.F.R. Part 229, Archaeological Resources Protection Act of 1979, National American Graves Protection and Repatriation Act of 1990.

(3) All persons knowing the locations of archaeological, historical or cultural sites are urged to report this information to the Tribal Heritage and Culture Committee or any elected Tribal Town (Etlwv) Representative.

(4) All land use action taken pursuant to any future tribal land use code shall, take into consideration the possible impact of the land use action on archaeological, historical and cultural sites and materials.

(5) The proposed museum and cultural center being developed by the Kialegee Tribal Town (Etlwv) will be the repository of cultural materials from tribal, state, federal land and will house an information archive of all known ancient, historical and cultural sites on lands under tribal, state, federal control. The center will also contain cultural site information from ceded lands. Access to the collections and archives for educational and research purposes will be controlled by the Tribal Town (Etlwv).

(6) All tribal members are encouraged to adhere to the above policies with reference to their own properties.

(7) The Tribe encourages all property owners, land managers and developers in the central Northeastern Oklahoma area to adhere to federal, state and tribal laws protecting archaeological, cultural and historical properties.

(8) The tribe recognizes that activities to preserve and maintain the Traditional Culture of its people is a legitimate and necessary tribal government function, and may require the expenditure of tribal funds.

(9) The cultural education of tribal members is of equal or greater importance to the long-term welfare of the tribal towns and its members, as is traditional

schoolroom education in that it provides the foundation for the continuance of the tribe as a distinct political and cultural entity perpetually.

(10) It is the policy of the Tribe to recognize, respect and foster the wide range of cultural and traditional diversity that present among the constituent tribal towns, families and individual Indians.

(11) This chapter should be read broadly to effectuate the intent of the Tribe to protect tribal interests, in the geographical area, and in the ceded areas. Nothing in the chapter should be construed to, in anyway, limit Tribal Treaty Rights.

(12) This chapter should not be interpreted to encourage excavation or studies. They are not encouraged because of the interest of the Tribe and its members in protecting the privacy and nondisturbance of their land, persons and property. The intent of the chapter is to merely strictly control such activity when it does take place.

2. DEFINITIONS

(1) "Archaeological Material" means material evidence of cultural activities of the past, at least 50 years in age.

(2) "Archaeological Site" means a geographical locality which contains archaeological material or feature in contextual association with each other and the surrounding environment.

(3) "Cultural Material" means materials or objects designated by the Tribal Town (Etvlvv) as having cultural significance that are obtained from (A) protected lands or (B) outside the geographical areas, if associated with treaty rights or other tribal rights. Cultural materials may include such things as eagle feathers, crane feathers, fish, game, roots, cedar, Indian Medicines and spring water having special significance.

(4) "Cultural Site" means an area designated as such by the Tribal Town (Etvlvv) which has particular cultural, religious, or traditional value to the tribal towns and which requires the protection of this chapter to prevent damage, abuse, or deterioration.

(5) "Historic Site" means an area designated as such by the Tribal Town (Etvlvv) which has particular historical value to the tribal towns and which requires the protection of this chapter to prevent damage, abuse, or deterioration.

(6) "Indian" means unless otherwise specified, a member of the Kialegee Tribal Town or any other person of Indian blood who is a member of a federally recognized Indian tribe or any other person who is recognized by the tribal town/community as an Indian, including a Canadian Indian or an Alaskan Native.

(7) "Protected Lands" means

(a) All lands within the geographic boundary of the Muscogee Nation that were allotted to members of Kialegee, a total of 36,500 acres.

(See Attachment for map of area)

(b) All lands outside immediate tribal areas which are owned by the Tribal Town or held by the United States in trust for the Tribe or its members.

(c) "Ceded Lands" means all lands ceded to the United States by treaty of the Mvskoke Confederacy Ancestral territories.

(8) "Protected Objects" means archaeological materials and object of cultural or historical significance obtained from cultural or historical sites.

(9) "Protected Sites" means archaeological, cultural, and historical sites.

(10) "Geographic Areas or Boundaries" means all territories inside the geographic boundaries of the Mvskoke Confederacy of Tribal Towns. (Etvlvv) and territories outside those areas identified as ancestral town sites of the Kialegee Tribal Town (Etvlvv).

(11) "Tribal Town (Etvlvv)" means the elected Tribal representatives of the Kialegee Tribal Town (Etvlvv).

(12) "Tribal Towns" means the forty-four Etvlvv's reestablished after forced removal from the Southeastern United States to Oklahoma.

PROTECTION RULES AND REGULATIONS

3. PROHIBITED CONDUCT

(1) No person knowing or having reason to know that a protected site or object involved shall excavate, injure, remove, damage, destroy, or altar a protected site, or systematically remove a protected object located on protected lands unless that activity is authorized by a permit issued by the Tribal Town (Fivlvv).

(2) No person knowing or having reason to know that a protected object is involved shall sell, purchase, exchange, transport, receive, or offer to sell, purchase or exchange any protected object if such object is excavated or removed from protected lands in violation of:

- (a) The prohibition contained in subsection (1) of this section, or
- (b) Any provision, rule, regulation, ordinance, or permit in effect under any other provision of Tribal, State or Federal Law.

4. CRIMINAL PENALTIES

Any Indian who knowingly violates or counsels, procures, solicits, or employs any other person to violate, any prohibition contained in KTT 9.86 shall, upon conviction be fined not more than \$500.00 or imprisoned not more than six months, or both. Such person may also be subject to civil penalties provided for the KTT in 9.88.

5. CIVIL PENALTIES

Any person violating the provisions of the chapter commits a civil infraction punishable by fine or exclusion from the tribal land or protected lands where such infraction occurred. The infraction shall be punishable by a maximum fine of \$500.00. The trial of any such infraction shall be by the appropriate court without a jury and the prosecution shall have the burden of proving the alleged infraction by a preponderance of the evidence. There shall be no appeal from a judgment involving such an infraction.

6. CIVIL DAMAGES

Any person violating the provisions of this chapter shall be liable to the tribal towns of the Kialegee Tribal Town (Etvlvv) for civil damages to be assessed by the appropriate Court after a hearing without a jury. "Civil Damages" shall be interpreted liberally by the appropriate Court to include, but not be limited to, the following:

- (1) Costs of restoration of the protected site.
- (2) Enforcement costs associated with the enforcement of the provisions of this chapter.
- (3) Costs associated with disposition of protected objects, including reburial.
- (4) Costs associated with documentation, testing, and evaluation of the protected site in order to assess the characteristics of the site.

7. FORFEITURE OF CONTRABAND

All protected objects obtained in violation of the provisions of this chapter shall be deemed contraband and forfeited to the Kialegee Tribal Town (Etvlvv) after a hearing without a jury in the appropriate Court.

8. SEIZURE OF SECURITY

In the discretion of the citing officer, the officer may seize such property in the possession of the defendant as the officer deems reasonable necessary to secure payment of any fine or civil damages which may be levied upon the defendant upon conviction of the infraction or crime. The officer shall, at the time of seizure, give the defendant a receipt accurately describing the item seized. The officer shall further advise the defendant of his right to post security pursuant to this chapter shall be conducted in accordance with the provisions of the appropriate Tribal Court Code.

9. REMOVAL FROM PROTECTED AREAS

The citing officer may remove or escort from protected lands any person committing a violation of this chapter, other than Tribal land residents, employees of the

tribal towns, or employees of the federal government assigned to investigate purposes on this chapter.

ARCHAEOLOGICAL, HISTORICAL AND CULTURAL STUDIES

10. TRIBAL TOWN (ETVLWV) PERMISSION REQUIRED

(1) A person knowing or having reason to know that a protected site or protected object is involved may not excavate to alter a protected site on protected lands, conduct a field investigation or make any exploratory excavation on protected lands to determine the presence of a protected site, or systematically remove from without first obtaining a permit issued by the Kialegee Tribal Town (Etvlvv).

(2) Persons conducting historical or cultural studies on Tribal town lands shall first obtain a permit issued by the Kialegee Tribal Town (Etvlvv).

(3) The land use committee shall develop procedural rules for the issuance of such permits.

11. VIOLATION OF PERMIT TERMS

Any person violating the terms of a permit issued pursuant to KTT 9.93 shall be subject to the provisions of KTT 9.88 through KTT 9.92 in connection with such violations.

AMERICAN INDIAN RELIGIOUS FREEDOM ACT

12. TRIBAL POLICY AND LEGISLATIVE INTENT

On August 11, 1978, the Congress of the United States enacted Public Law 95-41 [92 Stat. 469, known as the "American Indian Religious Freedom Act, "which provides" on or after August 11, 1978, it shall be the policy of the United States to protect and preserve for American Indians their inherent Right of Freedom to believe, express, and

exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through Ceremonials and Traditional Rites." It is the policy of the Kialegee Tribal Town (Etlwv), to support this Act.

13. PROTECTION OF INDIAN RELIGIOUS FREEDOM

The Kialegee Tribal Town (Etlwv), shall, upon the advice of the traditional tribal religious leaders, take such actions as are necessary to implement the provisions of the American Indian Religious Freedom Act. Tradition tribal religious leaders shall be responsible for expression and definition of traditional religious practices on historical ancestral tribal lands. It shall be the prerogative and the duty of the Business Committee only after consultation with traditional Kialegee religious leaders and the Tribal Heritage and Culture Committee (THCC) to define traditional Kialegee religious practices, insofar as they relate to the exercise of tribal rights.

14. PROTECTION OF SACRED SITES AND RECOVERY OF RELATIVE RELIGIOUS MATERIALS

The Governing Committee shall take such actions as are necessary to protect religious sites identified (as such) by traditional tribal religious leaders. The Governing Committee shall disseminate information regarding the nature of tribal (sacred) objects as identified by traditional Kialegee religious leaders, and take such actions as are necessary to recover tribal (sacred) objects that have been illegally obtained.

15. ACCESS TO SACRED RELIGIOUS SITES

The Kialegee Town shall take such actions as it deems necessary to ensure that tribal members are granted access to religious sites.

NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT

American Graves Protection and Repatriation Act (NAGPRA).

The NAGPRA requires all Federal Agencies, all museums which receive federal funding and Universities to conduct summaries and inventories for the purpose of identifying all Native American human remains, associated and unassociated funerary objects, sacred objects and objects of cultural patrimony, for the ultimate purpose of returning such remains and objects to Indian tribes for repatriation.

The NAGPRA also requires that these summaries and inventories be conducted in consultation with tribes. The Kialegee Etlwv (Tribal Town) has not conducted previous repatriation activities. Since the passage of the NAGPRA the Kialegee Etlwv have developed an understanding that NAGPRA has the potential to create a multitude of social, financial, legal and administrative threats to the KTT.

The historical fact that the KTT have never had a tradition of unearthing ancestral human remains and due to the social, legal, and political implications surrounding the passage of the NAGPRA, have both compelled the KTT to develop fundamental policies and procedures to guide the Business Committee of the KTT in the decision making process regarding the NAGPRA and Repatriation activities. In response to the NAGPRA and the potential threats to the KTT, the following policies will have been adopted by the Business Committee of the KTT for use in the decision making process for the NAGPRA and all repatriation activities involving the Kialegee Etlwv.

Revision to Code

Any future revision to this code shall be under the direct authority of the governing body of the Kialegee Tribal Town (Etlwv). proposed amendments should be submitted in writing no less than 14 days prior to the regular monthly meeting as stated in the by-laws of the Kialegee Tribal Town (Etlwv).

17 October 96

Shelley Urbinck
6CES/CEVN
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

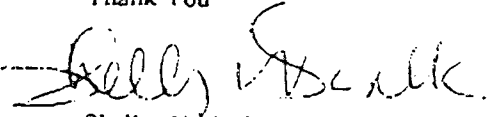
Shannon Larson
710 N. Oleander Ave
Daytona Beach, FL 32118

Dear Ms. Larson

I have enclosed the information that we agreed to provide during your visit to MacDill Air Force Base. The information that I have from the 1960's discovery, the curation needs assessment for MacDill, and the draft copy of the Phase II recommendations for National Register Eligibility are all enclosed.

If you have any further questions please call me at 813-828-2567 or Bob Hoffman.

Thank You


Shelley Urbinck



DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

FEB 15 1996

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

Mr John Thomas
Florida Tribe of Eastern Creek Indians
P.O. Box 3028
Bruce, FL 32455

Dear Mr. Thomas

MacDill Air Force Base is providing the following information for your review and comments. This letter is being written to comply with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended.

During a Phase II Archeological Survey of shell middens on MacDill AFB, the archeologist discovered human remains along the southeast shoreline of the base. The remains were found exposed during low tide along the shoreline. The remains collected were parts of a mandible, ulna, and a piece of long bone. The remains are estimated to be from the time period of 700 to 900 AD.

Human remains were also found on MacDill AFB in 1960 in the same location of the base. They are presently housed at the University of South Florida Anthropology Department. A list of the remains, artifacts, and a copy of the October 26, 1960 newspaper article of the discovery are also attached.

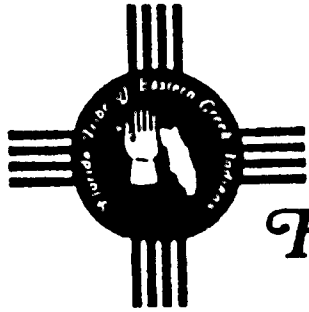
Please contact Shelley Urbinek at (813) 828-2718 or write her at the following address
6 CES/CEVN, 7621 Hillsborough Loop Drive, MacDill AFB, FL 33621-5207 for any further information.

Sincerely


JAMES C. CAMPBELL
Deputy Base Civil Engineer

Attachments:

1. Newspaper Article
2. List of remains & artifacts



Florida Tribe of Eastern Creek Indians

P.O. BOX 3028

Bruce, Florida 32455

(904) 835-2078

John C B Thomas, Chairman
Florida Tribe of Eastern Creek Indians
PO Box 3028
Bruce, FL 32455-3028

3-5-96

Ms Shelly Urbinek
6CES/CEVN
7621 Hillsborough Loop Drive
MacDill AFB, FL 33621-5207

Dear Ms Urbinek

We are pleased that Mr. James C. Campbell has provided the Florida Tribe of Eastern Creek Indians With NAGPRA notification regarding the physical human remains and associated funerary items previously removed from lands under the jurisdiction of MacDill Air Force Base. As was noted in the initial correspondence, the human remains and associated artifacts are said to date from 700 to 900 A.D., although some of the referenced items from the 1960 excavation indicate the presence of older materials.

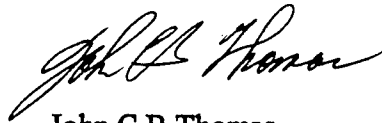
The age and original location of the referenced items preclude the establishment of an absolute and unbroken connection between modern Native populations and these earlier inhabitants. As descendants of the indigenous populations of what is now the Southeastern United States, however, we feel the need to strongly express our desire that these remains be handled with respect and dignity, and that they be reburied or subjected to some other type of traditional mortuary action in a timely fashion.

The Florida Tribe of Eastern Creek Indians wholeheartedly supports archaeological research if it is conducted by properly trained professionals, with sensitivity and public openness. Several of our tribal members are professionally credentialed under Department of Interior standards in the fields of archaeology and human osteology. We do not condone, however, leaving excavated human remains unanalyzed for extended periods of time, unless it is for valid scientific or traditional purposes.

If you so desire, the Florida Tribe of Eastern Creek Indians is willing to take possession of the subject materials for a traditional and unheralded disposition. We would also be willing to professionally analyze these materials if the human remains and associated funerary items have not been scientifically examined and documented in accordance with accepted professional standards. In such cases, copies of the summary documentation would be provided to MacDill, as we have previously done for Hurlburt Field.

Thank you for your consideration in this very important matter.

Sincerely

A handwritten signature in cursive script, appearing to read "John C B Thomas".

John C B Thomas
Chairman



DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

FEB 15 1996

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

Mr. Billy Cypress
Miccosukee Business Committee
P.O. Box 440021-Tamiami Station
Miami, FL 33144

Dear Mr. Cypress

MacDill Air Force Base is providing the following information for your review and comments. This letter is being written to comply with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended.

During a Phase II Archeological Survey of shell middens on MacDill AFB, the archeologist discovered human remains along the southeast shoreline of the base. The remains were found exposed during low tide along the shoreline. The remains collected were parts of a mandible, ulna, and a piece of long bone. The remains are estimated to be from the time period of 700 to 900 AD.

Human remains were also found on MacDill AFB in 1960 in the same location of the base. They are presently housed at the University of South Florida Anthropology Department. A list of the remains, artifacts, and a copy of the October 26, 1960 newspaper article of the discovery are also attached.

Please contact Shelley Urbinek at (813) 828-2718 or write her at the following address
6 CES/CEVN, 7621 Hillsborough Loop Drive, MacDill AFB, FL 33621-5207 for any further information.

Sincerely


JAMES C. CAMPBELL
Deputy Base Civil Engineer

Attachments:

1. Newspaper Article
2. List of remains & artifacts



DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

FEB 15 1996

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

Mr. Jerry Haney
Seminole Nation Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Dear Mr. Haney

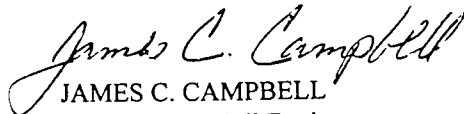
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6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

FEB 15 1996

Mr. Charlie McGertt
Thlopthlocco Tribal Town
Box 706
Okemah, OK 74859

Dear Mr. McGertt

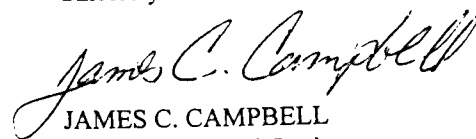
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DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

FEB 15 1996

Mr. Roland Poncho
Alabama-Coushatta Tribe
Route 3, Box 640
Livingston, TX 77351

Dear Mr. Poncho

MacDill Air Force Base is providing the following information for your review and comments. This letter is being written to comply with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended.

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DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

FEB 15 1996

Mr. Eddie Tullis
Poarch Band of Creek Indians
HCR69A-Box 85B
Altmore, AL 36502

Dear Mr. Tullis

MacDill Air Force Base is providing the following information for your review and comments. This letter is being written to comply with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended.

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6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

FEB 15 1996

Mr. Bill S. Fife
Creek Nation of Oklahoma
P.O. Box 580
Okmulgee, OK 74447

Dear Mr. Fife

MacDill Air Force Base is providing the following information for your review and comments. This letter is being written to comply with the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, as amended.

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DEPARTMENT OF THE AIR FORCE
6TH AIR BASE WING (ACC)
MACDILL AIR FORCE BASE, FLORIDA

FEB 15 1996

Mr. James C. Campbell
6 CES/CC
7621 Hillsborough Loop Dr.
MacDill AFB, FL 33621-5207

Mr. Duke Harjo, Chief
Alabama-Quassarte Tribal Town
P.O. Box 537
Henrietta, OK 74437

Dear Mr. Harjo,

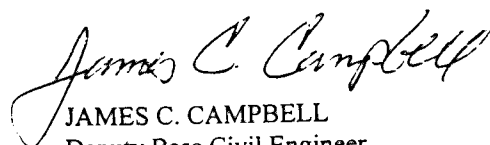
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Deputy Base Civil Engineer

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APPENDIX J

**CURATED MATERIALS RECOVERED FROM
SITES 8HI50 AND 8HI5656
MACDILL AIR FORCE BASE, FLORIDA**

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The materials generated by this investigation were sent for curation to MacDill Air Force Base, Tampa, Florida. The following list enumerates the materials sent to this facility under Contract No. DACA63-93-D-0014, Delivery Order No. 203, with the U.S. Army Corps of Engineers, Fort Worth District:

1. One copy of the final Scope of Work
2. One copy of the final report
3. The original field notes, maps, and records
4. One copy of each site form
5. Black-and-white contact sheets, negatives, and photo data sheets
6. Color slides and photo data sheets
7. The original artifact analysis data sheets
8. Computer disk(s) with a copy of each data base file
9. Printouts and code books for each data base file
10. Laboratory and field inventories for all collected materials
11. All collected artifacts and samples

CONTRACT DATA

This study was prepared for
MacDill Air Force Base, Florida

by
Philip R. Gerrell

with contributions by
Sharlene N. Allday
Richard Fullington
Floyd B. Largent, Jr.
Marianne Marek
Kaea J. Morris
Brian S. Shaffer
Elisabeth Shepard Sheldon
Brent R. Weisman

Principal Investigator
Duane E. Peter

United States Air Force Air Combat Command Series
Report of Investigations
Number 5

Geo-Marine, Inc.
550 East 15th Street
Plano, Texas 75074

under contract to
U.S. Army Corps of Engineers,
Fort Worth District

Contract No. DACA63-93-D-0014, Delivery Order No. 203
(GMI project no. 1114-203)

February 1997

United States Air Force
Air Combat Command