INTRODUCTION

On July 20, 1982, the State of Florida and the Deltona Corporation entered into a comprehensive agreement regarding various property parcels in Collier County. Included in that agreement was the Goodland Marina property. Specific stipulations were made regarding archaeological resources on property. These stipulations are as follows:

12.2 STIPULATIONS AND COMMITMENTS - ENVIRONMENTAL ADVISORY COUNCIL

A. Stipulations to Rezoning of Category I Lands: Unit 30, Unit 24, Isle of Capri, Goodland Marina

2. Archaeological Resources
   a. Deltona will design and implement a plan so that if an archaeological site or artifact is uncovered during site clearing, grading, or excavation, construction in that location will be stopped for a sufficient length of time to give both Delton's archaeological consultant and/or one selected by the Environmental Section to assess the find and determine whether excavation is necessary.
   b. The Environmental Section or its selected consultant will respond to such a find in a timely manner so that construction is not necessarily delayed.
   c. Prior to any work in the Goodland Marina area, the Environmental Section, with the assistance of selected local archaeological assistance, will survey the development are to determine the validity of reported sites in that vicinity.
   d. If a significant site is discovered, the Environmental Section will coordinate the excavation of the site, consistent with Deltona's construction schedule, to remove any significant artifacts.

On March 4, 1988, in fufillment of condition "c." of the above agreement, the Florida Division of Historic Resources requested of Coastal Engineering Consultants, Inc., additional information regarding archaeological resources on the proposed Goodland Marina project property. That request resulted in a meeting at the proposed project tract on March 31 between Kris Dane of Coastal Engineering Consultants, Inc., Louis Tesar and Mike Wisenbaker of Florida's Division of Historic Resources, and the archaeological consultants. At that meeting, the state representatives established guidelines for conducting an archaeological survey and assessment of the project property. This report is designed to meet those state requirements for a cultural resource assessment as well as similar requirements needed for county and regional planning reviews.

NATURAL SETTING

The Goodland Point area is the southeastern portion of Marco Island and is bound by Coon Key Pass on the east, Blue Hill Creek on the south and east, Goodland Bay on the north, and SR92 on the west. It includes the community of Goodland and the adjoining uplands and wetlands to the west just east of SR92. The project area is located in section 13 of Township 52S, Range 26E. It incorporates an upland ridge that is separated from Goodland proper.

The Goodland area is prominent in an area of coastal mangroves because it is a major upland feature that has provided opportune conditions for settlement from prehistoric to modern times. The area has been intensively altered because of prehistoric activities that have resulted in shell mounds, ridges and canals. It is unclear how much of the Goodland Point shell midden (8CR45) may have had an underlying sand ridge or natural shell banks.

Although much of the present configuration of the Goodland area is the result of Holocene geological and cultural processes, the sand ridge west of the community of Goodland located on the project property is probably a result of Pleistocene processes. If the ridge is contemporaneous to the other ridges at Marco, it probably dates to the mid-Wisconsian.

The vegetative setting of the Goodland area is characterized by four communities. These communities are the coastal or maritime hammock, the fringing mangrove forest, the buttonwood association and the shell mound. The Goodland Marina property appears to incorporate all of these floral communities.

At one time, the most prominent feature of Goodland was the large shell mound and its attendant hammock community that covered about 40 acres of Goodland. This shell mound community has been totally decimated by the development of the community of Goodland. Much of the shell mound hammock was cleared by the early settlers to plant vegetables and fruits. Goggin reports that much of the Goodland Point midden was used as an avocado grove prior to development by the Collier Corporation (1964:142).

The midden was characterized by a deep, shelly mixture of dark brown organic matter and broken shell intermixed with ash that provided an incredibly rich, fertile and well-aerated soil that supported a rich and diverse tropical hardwood hammock. The diverse flora [probably] included gumbo-limbo, dove plum, sea grape, mastic, figs, poisonwood, myrsine, bustic, paradise trees, nakedwood, Spanish and white stoppers, saffron plum, royal palm, cabbage palm, black ironwood, canella, ardisia, foresteria, inkwood, Jamaica dogwood, two species of dalbergia, soapberry, two species of capers and manchineel (Craighead 1971:101). Craighead reports that "there is a greater number of plant species present on these mounds than in any other plant association of this zone" (ibid).

The fringing mangrove forest is presently the most abundant plant community in the Goodland area and fringes all the coastal areas that are not developed. Vegetation in this association is almost exclusively composed of the red mangrove (Rhizophora mangle) and the black mangrove (Avicennia nitida), because other vegetation is precluded by the dense canopy of the mangrove forest. Red and black mangrove distribution is based on salt tolerance and hurricane survival. Craighead reports that red mangroves are more susceptible to hurricane damage but are more salt-tolerant and are usually found seaward of the black mangroves (1971:73). Mangroves are usually found in mucky holocene sediments, either composed of fine freshwater marls and/or organic muck derived from slow decomposition of the deciduous mangrove leaves. The fringing mangrove zone is tidally drained.

The buttonwood association is found upland of the black mangrove fringe. This wetland association usually consists of the buttonwood (Conocarpus erectus), Salicornia spp., and other halophytic groundcover. This association was far more prevalent in the past but early settlers logged much of the buttonwood for charcoal.

The coastal or maritime hammock is found on stabilized coastal dunes with a sand substrate (AHC 1988). This xeric upland hammock community can usually be found on coastal sand ridges which exhibit cultural shell deposits. These shell deposits tend to decrease the acidity of the quartz sand soil in this area thus promoting the growth of gumbo limbo (Bursera simaruba), the cabbage palm (Sabal palmetto)and other tropical hardwood species. Understory species include prickly pear (Opuntia stricta), Acanthocereus floridanus, Pisonia aculeata, saffron plum (Bumelia celastrina), and Acacia spp. Sea-grape (Coccoloba uvifera) are also common. The coastal hammock usually differentiates into a prickly zone on the shoulder of the ridge and the larger hardwoods on the crest.

PREVIOUS RESEARCH

Goodland has received extensive archaeological interest due in part to the large shell midden located at Goodland Point (8CR45) and the exceptional artifacts documented by Moore (1900:371-376;1905:311; 1907:460,Fig.10). Moore visited Goodland on at least three separate occasions, the first during the 1899-1900 field season, the second during the 1904-1905 and third during the 1906-1907 season.

During the first visit, he excavated at 8CR46, a site located one-half mile from the landing, and describes the site as follows:

> In the mangroves ... a number of low, irregular undulations, which seem to have served as places of burial for the aboriginal settlement. Considerable previous digging had been attempted. An imperfect examination indicated that parts of disjointed skeletons

had been buried just below a shell deposit, and subsequently about one foot of loam had been piled above (1900:87).

Additionally, he uncovered a partial skeleton which included four chert "arrowheads, or knives" (ibid). Another burial mound excavated yielded 20 shell drinking cups, twelve of which were "just beneath the surface" (ibid).

During this first visit, Moore acquired from the Pettit family, owners of the eastern portion of Goodland, "a considerable collection of objects found during cultivation of the place" (ibid). These objects were apparently collected at the Goodland Point Shell Midden (8CR45). Most of the artifacts obtained were stone or shell ornaments and/or tools with the exception of two birds' heads pendants made from earthenware (MAI 17/2074)(Moore 1900: Fig. 20,21).

Apparently on his subsequent visits to Goodland, Moore did not excavate at 8CR46. He merely surface collected at the shell midden (8CR45) during the 1904-5 field season. This collection resulted in the acquisition of several pendants, plummets and a wide assortment of Busycon shell tools. In the 1907 report, he documents that several artifacts "came from Goodland Point," two of which are pictured and described, a decorated shell gorget and an incised fossil bone pendant(MAI 17/2069)(Moore 1907:460-461:Fig.10,11).

In 1918, Ales Hrdlicka, a physical anthropologist at the Smithsonian Institution, stopped at Goodland Point while conducting an expedition to locate "Indian remains from Key Marco to the southern extremity of the Peninsula" (1922:16). He documented that Goodland consisted of "shell heaps, canals, and mounds with burials [that] occur on the so-called Goodland Point, the whole covering many acres of ground" (1922:24). He concludes by suggesting that this site (8CR45) seemed "to deserve a comprehensive survey" (ibid). Despite this observation, Hrdlicka did not do any work on the shell midden.

Goggin reports that H.B. Collins, Jr., an archaeologist and assistant curator at the United States National Museum, made a limited collection at Goodland Point during the U.S.N.M. expedition to South Florida in the winter of 1927-8 (1949:n.p.;1964:143). Although Collins does not make any mention of Goodland Point in his report, material collected by him from Goodland Point is housed at the United States National Museum (Collins 1929).

Mrs Stewart (Violet) Hanley excavated at 8CR46 in 1946(Goggin 1949:np). The excavated material is housed but uncatalogued at the University of Michigan Anthropology Laboratory. Goggin who reviewed the collection while at the university in 1946 documents that the following artifacts were unearthed: Busycon implements including a pick type A; a well finished ceramic bowl, 12 cms long and said to have been patched and mended when found; a shell

collection; a bag of bones which includes fragmentary human remains, 4 Glades Plain sherds and a Fort Drum Incised sherd (Goggin 1946:February). The latter pottery sherd suggests that the accompanying burial dates from 500 to 800 A.D.

In 1949, Goodland began to develop due in part to the pressure exerted by the sudden influx of the populace from Caxambas in southern Marco Island. At the time of this population increase at Goodland, John Goggin, an archaeologist who was deeply interested in the Goodland point midden (he had listed Goodland Point midden [8CR45] as a top priority to visit in his unpublished 1947 field notes), scheduled a trip to the shell midden on January 27, 1949. Upon his arrival, he found that part of the midden had been cleared and stripped in anticipation for a future development by the Collier Corporation (Goggin 1964:140).

A preliminary reconnaissance had indicated that "large surface areas of almost pure shell were relatively sterile in terms of artifacts, while other exposed areas rich in dark soil and ashes had a high artifact content" (ibid). He thus instituted a plan of controlled sample collecting to derive data from the site, a strategy previously used at the Gordon's Pass midden with considerable sucess. Most of the site was sampled by controlled sampling with the exception of sector 3A where an excavation unit 52 by 52 inches was attempted. This unit was later enlarged by an additional 28 by 28 inch extension. Final depth was 6 feet. The composition of the midden in this area consisted of a black dirt heavy with ash and some shell and bone (Goggin 1949b:1/27).

Goggin describes the Goodland Point shell midden as follows:

> The midden extends some 1700 feet in an east/west line and measures about 1900 feet on north/south axis. It is difficult to arrive at an average elevation of the site due to the extensive removal of shell in the northern portion and the grading and susequent smoothing of contours in the western and southern portion. An estimate ... is that one half of the site was from 2 to 5 feet in elevation, one third ranged from 5 to 10 feet in elevation, with a few high points perhaps reaching 12 or 15 feet, while the remainder around the edges was from 0 to 2 feet in elevation (Goggin 1964:141-2).
>
> The composition of the midden is mainly shell in fact the bulk of it is pure shellwith the narrow lenses or layers of black dirt. In all, shell constitutes about 95 per cent of the total contents. Of the shell an estimated 90 per cent or more consists of small oysters (2 to 3

inches long)(Goggin 1964:142).

From the anlysis of the collected material from the Goodland Point midden (8CR45) and their spatial location, Goggin postulated a "theory of midden building in South Florida"(1964:163). He suggested that "midden refuse deposition moves out from the center, following the shoreline of the midden" (ibid). He also demonstrated "an about entire range of Glades Area occupation at Goodland Point (1964:161).

While doing research at 8CR45, Goggin took the opportunity to make a small collection at 8CR46, the burial site excavated by Moore and Hanley. These colllections are presently housed at the Florida State Museum, #A-6859 consisting of five sherds and #A-15012 which consists of two well fashioned, partially restored, small shallow incurved bowls and a single blue painted? spur.

The Goodland Burial mound(8CR46) was extensively tested in 1954 by Bill Plowden, a student of Goggin, through grant funds awarded by the Smithsonian Institution. Plowden reports that the burial mound:

> lies in the crescent shaped hollow of a shell ridge, five hundred yards west of the main shell midden at Goodland Point. At first appearances the site appears to be composed entirely of black muck. The site is elliptical, being twenty-nine feet on the north-south axis and thirty-two feet east-west axis. At the time of our work, the height was 3 feet (1954: np).
>
> The excavations revealed that the black dirt mound had been constructed upon a shelf of an earlier shell midden. Before the construction of the mound an area was first prepared of burned bone and shell varying from eight to twelve inches in depth (ibid).

Material unearthed includes four restorable vessels, shell artifacts, a limestone pendant, a portion of embossed copper and a fragmentary sheet of mica. Ten burials were recovered; nine were fragmentary bundle burials and the last a cremation. All material recovered is now housed at the Smithsonian Institution (ibid).

National Park Service personnel made a small collection at the Gooodland Point Midden. The resultant collection was later transferred to the Florida State Museum in 1954 and consists of 22 artifacts (F.S.M. #4112). No additional information could be elicited except a small mention by Goggin in the Goodland report that this material had been surface collected(1964:143).

In 1969, Cockrell conducted an archaeological survey of Marco

Island and documents both the Goodland Point Midden (8CR45) and the Pettit Site (8CR119). The latter,catalogued as MAR 15 in his thesis, is described as "a plaza-like sandy area in the red mangroves west of Goodland" (Cockrell 1970:81). No cultural material at this site during the survey.

In 1974, as an outgrowth of the Cockrell survey, a comprehensive survey was conducted of Marco Island by Randolph Widmer on behalf of the Deltona Corporation with the goal to provide "a comprehensive guide to the location of all prehistoric archaeological sites on Marco Island, a description of the significance of each site and the DHRAM recommendation as to the disposition of each site on Marco Island" (Widmer 1974:1).

Widmer incorrectly places 8CR46 as south of 8CR119, the Pettit site, when the Goodland Burial Mound is actually located several hundred meters to the northwest of 8CR119. Goggin who visited 8CR46 in 1949 documents a general location for this site when he reported that the burial mound is "due west of the north part of the site [8CR45]" (1964:142). Plowden reports the distance between these sites as 500 feet. Widmer seems to have relied heavily on Hrdlicka's account of Goodland Point to place the burial mound. Hrdlicka reported that:

> Not far from the house of the present inhabitants on the Point and between two large shell middens there remains a short canal, doubtless partly or entirely of Indian making, which is useful to this day (1922:24).

Widmer then adds that Hrdlicka's description is indeed correct for in this canal is an abandoned fishing skiff (1974:20). An abandoned fishing skiff was noted by the present survey on a canal just east of a shell midden located below the Pettit site. However, Hrdlicka was not describing the canal mentioned by Widmer but an old filled-in canal to the northwest on the Goodland Point midden which Goggin had uncovered while doing research at 8CR45. Goggin describes area 16 located on the north end of the midden as:

> a pair of low shell ridges [which] were separated by a muck filled depression, apparently an old canal heading into a small basin. Recent activity has leveled the area and filled in the basin (1964:147 and Figure 10).

Finally, Widmer assumed that the house that Hrdlicka meant was the Pettit residence located on the sand ridge in the project area. Actually, the main Pettit household was located on the top of the Goodland Point midden at its northern end, probably just east of the present marina basin.

Widmer surveyed 8CR119 and reports:

> The Pettit site is situated on the southern end of a hammock island just west of the Goodland dump.... Just north of a cleared area, the presumed location of the homesite, a few scattered, highly eroded shells are found in an area of about 400 square meters, together with some very light, humic stained soil. Informal testing revealed no evidence of stratigraphy, nor were any ceramics found (1974:42).

In 1980, Piper Archaeology was contracted to survey a 4.3 acre parcel of land in Goodland just west of the marina basin. This tract included portions of both 8CR45, the Goodland Point Midden, and 8CR46, the Goodland Burial Mound. Eight test pits and two trenches were dug in the upland area. Piper recorded that the stratigraphy of the tests consisted of "5 to 10 cm layer of dark soil overlaying shell" (1980:nd). The tested midden was composed almost entirely of shell with an extremely high percentage of small oysters (4 to 8 cms), a finding similar to Goggin's description of 8CR45. Possible human bone fragments were encountered in an area near SR892 at an average depth of 10 cms. Artifacts recovered included 4 sherds of Glades Plain pottery.

During an on-going archaeological survey of Collier County, the Southwest Florida Archaeological Society surveyed the Goodland area during January, 1988. The survey located the Saffron Plum Mound (8CR685), a small sand mound north of the Pettit site. The site is about 1 meter high and covers about 150 sq meters.

Tebeau, in his history of Collier County, records that Harry Pettit built the road to Goodland "almost single-handed" (Tebeau 1966:159). Pettit built the road "as he moved from one low shell mound to another filling in the low intervening spaces" (ibid) thus creating a series of winding turns. No further information is available for these shell mounds.

CULTURAL SETTING

The concept of the Glades Area, coined by Stirling, was popularized by Goggin (1947,1949a,1949b). He defined the Glades Area as "the southern tip of the state south of Boca Grande on the west coast and below Fort Pierce on the east coast" (Goggin 1964b:86). He divided the Glades culture area into three subareas. These sub-areas are the "Calusa" of southwest Florida, the "Tekesta" or "Tequesta" of southeast Florida and the Florida Keys, and the "Okeechobee" sub-area around Lake Okeechobee. Since Goggin's preliminary definition, there have been several amendments (Sears 1967, Griffin 1974, Milanich and Fairbanks 1980, Carr and Beriault 1984). Although no consensus has been reached, all amendments are agreed that Goggin's definition of the Glades Area was too inclusive and that the Caloosahatchee Area, defined by Sears (1967,) and the Belle Glade Area (Sears

1967) are distinct and should be separated from the Glades Area. Carr and Beriault (1984) have separated the Glades Area into two distinct archaeological regions, named the Everglades and Ten Thousand Island Area, but reception to this idea has been lukewarm. It is hoped that future research will clear the air and can elucidate a definition for the remaining archaeological areas of South Florida. Goodland Point is located in the Glades Area in most models of South Florida and the Ten Thousand Island Area in Carr and Beriault (1984).

Goggin proposed two distinct traditions for southern Florida. These were the Archaic and the Glades traditions. A third, the Paleo-Indian tradition, has been added by Griffin (1974) upon the discovery of Paleo-Indian remains in Little Salt Spring (Clausen et al 1979) and Warm Mineral Springs (Clausen, Brooks and Wesolowsky 1975, Cockrell and Murphy 1978). An additional Paleo-Indian site has been discovered in Dade County at the Cutler Fossil site (Carr 1986, 1987) suggesting that Paleo-Indian cultural remains can be found throughout South Florida.

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

Archaeological evidence indicates that the Paleo-Indian arrived in Florida at least 10,000 years ago (Clausen, Brooks and Wesolowsky 1975, Cockrell and Murphy 1978, Clausen et al 1979, and Carr 1986,1987). Although known Paleo-Indian sites in southwest Florida are limited to two sites: Little Salt Spring and Warm Mineral Springs, the possibility of uncovering further Paleo-Indian sites from South Florida is strong. Cockrell and Murphy (1978) provide an excellent location model for Early Man sites throughout Florida and present a convincing case for the existence of submerged sites off Florida's coastline.

The Paleo-Indian may have lived in Southern Florida in association with mammoth (Mammuthus columbi), mastodon (Mammut americanum), bison(Bison antiquus), giant ground sloth (Eremotherium mirabile), giant land tortoise (Geochelone crassiculatta), spectacled bear (Tremarctos floridana), dire wolf(Canis dirus) and other megafauna. A giant land tortoise was found at Little Salt Spring which may have been killed by being impaled with a wooden stake thus suggesting coeval habitation of southern Florida by man and megafauna (Clausen et al 1979:609-10).

Archaic Tradition (8500 B.P.-2500 B.P.)

Late glacial warming began about 16,000 B.P. and, with glacial melting, sea-level began to rise (Fairbridge 1974:229). Scholl, Craighead and Stuiver (1969) document that sea-levels have been rising since 6000 B.P., and recent data recovered from the Upper Keys and the Florida Reef tract by Robbin corroborates that "sea-level has risen continuously in this area for the last 14,000 years, and there is no evidence supporting a higher sea-level stand than that of the present" (Robbin 1984:441). It should be noted that archaeological data from the continental shelf and the

Gulf coast (Emery and Edwards 1966, Salwen 1967, Bullen 1969) tends to support the model presented by Scholl, Craighead and Stuiver.

Data presented by Ruppe (1980) at Venice and Warren (1964) at Tampa Bay document that inundated archaic sites can be found below the present shoreline. It is expected that these sites are present off the coasts of southern Florida. Beriault has recorded a large number of chert artifacts recovered from Southwest Florida beaches suggesting inundated archaic sites in that area (AHC 1988).

The extent and nature of archaic sites in southern Florida was not realized until recently due in part to the scarcity of lithic material and inadequate models for reconstructing archaic lifeways in this area. Archaic sites have been documented in lower southwest Florida at Bay West (Beriault et al 1981), Horr's Island (McMichael 1979), Marco Island (Morrell 1969, Cockrell 1970), and Firebreak (Beriault et al nd). Archaic site types recognized at this time in South Florida include: mortuary ponds (Beriault et al 1981, Clausen et al 1979) archaic cemeteries (Carr,Iscan and Johnson 1984), black-dirt middens (ibid), shell middens (McMichael 1979), and "camp sites" on Pleistocene sand ridges (Cockrell 1970, Morrell 1969).

The Archaic has been subdivided into three periods: Early, Middle and Late. The first two periods, the Early Archaic and the Middle Archaic, are considered to be pre-ceramic cultures. The Late Archaic is characterized by fibre-tempered pottery. Except for possibly the Cutler Fossil site, no evidence of the Early Archaic has been noted in South Florida. Middle Archaic cultural contexts so far identified in southern Florida consist of the mortuary ponds and scattered projectile point finds. The characteristic marker of the Middle Archaic in North Florida are "several varieties of stemmed, broad-blade, projectile points of which the Newnan point is perhaps the most distinctive and most widespread"(Milanich and Fairbanks 1980:54). Newnan points have been found at Bay West and Little Salt Spring as well as unprovenianced finds in South Florida.

Late Archaic (4000 B.P-2500 B.P.)

Fibre-tempered pottery and Semi-Fibre tempered pottery are the markers for the Late Archaic in South Florida. Fibre-tempered pottery, frequent in Late Archaic contexts in central and north Florida, seems rare in southern Florida. Fibre-tempered pottery has been recovered at Marco Island (Morrell 1969, Cockrell 1970). Late Archaic sites in southwestern Florida are often located on imposing Pleistocene formations, such as the high dunes of Marco Island. These sites consist of stratified shell scatter (Cockrell 1970). Other Late Archaic sites have been found beneath the water table near upland-mangrove transitional zones (Beriault et al nd).

Glades Tradition

Unlike the pottery of the late Archaic, the pottery of the Glades tradition is sand-tempered. Goggin (1949) defined three periods for the Glades Tradition based on pottery types. Griffin has refined Goggin's model based on his excavations in the Everglades National Park (Griffin 1976, Milanich and Fairbanks 1980:234) and at the Grenada site (8DA11) (Griffin et al 1984).

Glades I (500 B.C. - A.D. 800)

It should be noted that no appreciable difference, besides pottery, can be discerned between the late Archaic and the Glades I period in southern Florida. Excavations in Dade County at DA1082 (Carr 1981) and DA2132 (Carr, Iscan and Johnson 1984), two late archaic cemeteries, and at DA1053 (Carr 1981), a Glades I cemetery, show that the material culture and interment practices are very similar. Cockrell located Glades I Early sites overlying Late Archaic at Marco Island with no appreciable difference except the differing pottery.

Glades I Early

The Glades I Early period is characterized by the use of an undecorated sand-tempered pottery labeled Glades Plain. Glades I sites have been unusually difficult to discern because Glades Plain pottery comprises at least 90 percent of any given sample from any given period of the Glades Tradition. Thus, surface collections often do not reveal Glades I sites unless rim shape and ceramic paste composition is considered. The Glades I period has been dated from 500 BC to AD 500.

Glades I Late

Decorated pottery of the Fort Drum series begins to appear in extreme southern Florida during the Glades I Late period, dating from AD 500 to 800. Fort Drum Punctate, Fort Drum Incised and a rare decorated pottery style named Cane Patch Incised are the type markers for the Glades I Late period. Fort Drum Punctate seems to appear in the archaeological record prior to both Fort Drum Incised and Cane Patch Incised. Fort Drum pottery is found in lower southwest and southeast Florida (Goggin 1949:np). A pottery style that has been named Turner River Linear Punctate is found in the Ten Thousand Islands during this period and appears to be coeval with the Fort Drum types. At the end of the Glades I Late period ca. AD 700, the first Glades Incised types begin to appear, Opa Locka Incised in southeastern Florida and Sanibel Incised in southwestern Florida. These appear to be coeval at first with the Fort Drum types and then supersede the latter after AD 800 (Griffin 1984:35). It is at this time that the pottery suggests a break between the peoples of the lower southwest coast and those of the lower southeast coast of Florida.

Glades II (A.D. 800 - A.D. 1200)

The Glades II period is divided into three distinct phases, labeled a, b, and c, and spans the period from AD 800 to AD 1200. Aboriginal population seems to have reached its maximum extent during this period consequently Glades II sites are prevalent throughout southern Florida. Sand mound construction seems to have been initiated during this period possibly reflecting a ranked society (AHC 1988). Manifestations of the Glades Tradition continue to differ in regards to pottery styles on the lower southeast and lower southwest of Florida. The boundary between these differing manifestations has yet to be determined but appears to be "near the eastern boundary of the Big Cypress" according to Carr and Beriault (1984:5).

Glades IIa

The Glades IIa period is characterized by the introduction of several decorated pottery types in the Glades series. These include: Miami Incised (A.D. 750-900), Dade Incised (A.D. 750-1000) and Key Largo Incised (A.D. 750-1300) on the lower east coast (including the Keys) and Gordon's Pass Incised (A.D. 800-1000?) on the lower west coast. Both Opa Locka (A.D. 700-900) and Sanibel Incised (A.D. 700-900) continue to be made during this period. The uncertainty of the dating of the west coast types is based on the limited work done in that area. The lower west coast sequence is based on extensive surface collections at Goodland (Goggin 1950), Mysterious Island (Goggin 1949:np) and Gordon's Pass (Goggin 1939).

Glades IIb

The Glades IIb period is characterized by the introduction of Matecumbe Incised. Matecumbe Incised continues to the end of the period. Key Largo Incised is still the most common ceramic type found during this period. Lip-grooving and incision on the rim begin to appear late in this period (Milanich and Fairbanks 1980:234, and Goggin 1950:245). Gordon's Pass Incised continues to appear in the lower west coast during this period while Key Largo Incised and Matecumbe Incised are primarily confine to the lower southeast coast.

Glades IIc

Goggin described this horizon based on his work in the Everglades National Park and observes that "this newly recognized horizon apparently has little of a distinctive nature, pottery being mainly Glades Plain" (Goggin 1950:245). The marker for this period is considered Plantation Pinched (Goggin 1950, Griffin 1976), a rare type, which has been dated from A.D. 1000 to 1150 (Carr n.d.). During this period, non-local pottery are noted in the Glades archaeological record. St Johns Plain, St Johns Check Stamped and Belle Glade Plain are the non-local types most often recovered.

It should be noted that this period has proven hard to isolate due to the preponderance of Glades Plain throughout the Glades

sequence hence, the late recognition. It is possible that this horizon may be a local expression or be caused by sampling difficulties. Carr (ms) has suggested dates for both Key Largo Incised (A.D. 800-1300) and Matecumbe Incised (A.D. 1000-1200) based on his work in Dade County which question the validity of a Glades IIc period.

Glades III (A.D. 1200-1753)

The Glades period is divided into three distinct phases, named Glades IIIa, IIIb and IIIc, and dates from AD 1200-1753. Mound building still continues until the end of the period. The percentage of non-local pottery increases during the Glades III period. Griffin has estimated that the percentage of St. Johns wares increases from 2 per cent during Glades II to 35 per cent in the Glades III period. Distinct pottery types which depart with the tradition of Glades incised designs begin to appear during this period.

Glades IIIa

The Glades IIIa period is marked by the appearance of Surfside Incised on both coasts. Surfside Incised is most often found on coastal sites. Key Largo Incised is still made until about A.D. 1300. Sherds from this period usually include some St Johns Plain and St Johns Check Stamped in the east coast and Belle Glade on the west coast. Glades IIIa dates from A.D. 1200 to 1400.

Glades IIIb

The Glades IIIb period is marked by the appearance of Glades Tooled pottery. Glades Tooled is quite rare in the west coast and relatively common in the lower southeast coast. This pottery style seems to be a departure from previous pottery types of the Glades tradition. Glades IIIb is generally bereft of any incised pottery. St Johns Plain and St Johns Check Stamped are well represented in the pottery record of this period in the east as is Belle Glade in the west. Glades III dates from A.D. 1400 to 1513.

Glades IIIc and Post-Contact

The Glades IIIc period is marked by the appearance of European material into the Glades archaeological record. Mound building for burials is curtailed by the practice of intrusive burials in existing sand mounds. Glades Tooled was still used during this period as were St Johns Plain and Check Stamped. Glades III dates from A.D. 1513 to 1763.

The southwest coast of Florida was the location of some of the earliest Spanish explorations in North America. Beginning with the landing and death by Indian arrows of Ponce de Leon in 1513 at some unknown southwest Florida bay, subsequent Spanish

explorers have staged their Florida expeditions from points beginning on the southwest coast. The Menendez expedition of the 1560's included an aborted attempt at introducing a Spanish mission among the Calusa.

South Florida Indian populations began a drastic decline after the initial Spanish visits, undoubtedly because of the introduction of diseases of which the natives had little resistance. It has been estimated that the South Florida native population may have numbered 20,000 during the time of the initial Spanish arrival in the 16th century, but by the mid-18th century, Indian numbers had declined to only several hundred (Romans 1775). The last of the Calusas and other South Florida tribes were boat-lifted to Cuba in several resettlement expeditions between 1711 through 1763, but many disheartened with their new Cuban life returned to Florida and engaged in fishing and a lucrative trade between southwest Florida and Cuba. These Cuban fishing ranchos extirpated during the Seminole Indian Wars, and their Indian and mixed blood inhabitants, although traditional enemies of the Seminoles and Creeks, were forced to emigrate to western reservations by American military forces. It would not be surprising if one of these fishing ranchos had been located on the Goodland Point shell midden (8CR45).

With the Indian depopulation of Southwest Florida, white settlers eventually began to arrive in the Ten Thousand Islands. Johnny Roberts, a squatter, is the first recorded settler of Goodland (Tebeau 1957:159). Roberts sold his rights to Goodland to Samuel Alexander Pettit who with his wife and seven children settled on Goodland. His son, Harry Pettit, maintained his homestead and eventually built a road through the mangroves connecting Goodland to the Marco Road. Eventually, Goodland was subdivided and became the site of many relocated Caxambas settlers.

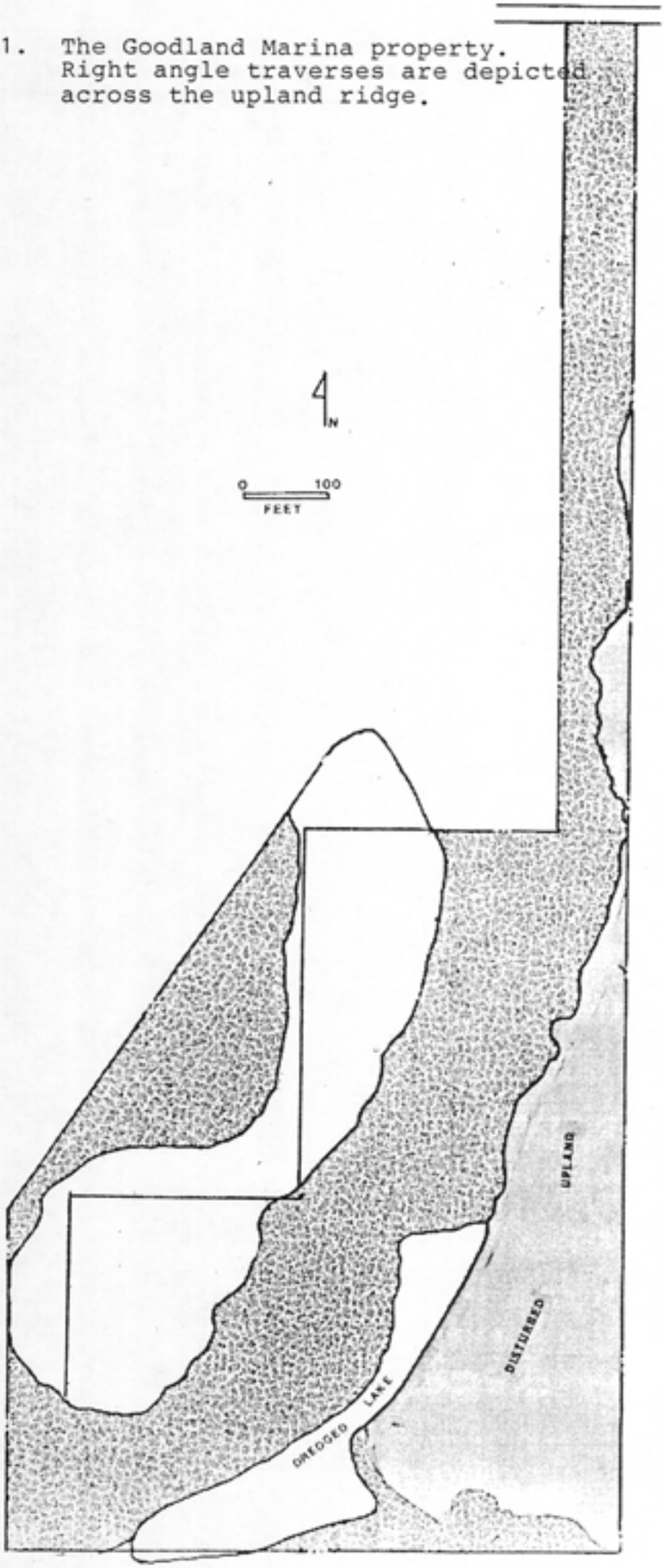
SURVEY METHODS

Methods used during the Goodland survey included: systematic traverses, judgemental tests and high probability pedestrian searches.

The systematic traverses consisted of four right angle transects which covered the length and breadth of the surveyed upland ridge (see Fig. 1). The transects, aligned north/south or east/west, consisted of systematic shovel tests usually spaced 30 or 40 feet apart. The spacing was deliberately varied to allow the detection of periodicities of phenomena. The tests consisted of 50-cm shovel test to a depth of about 50 cms. At below this depth, a 50 cm test becomes unmanageable. A posthole was then dug in the center of the shovel test. Differences in sample size were not considered critical in part due to the survey aims and the better recovery rate by the implementation of an eighth-inch screen. A total of 67 test holes were excavated.

Judgemental tests were placed randomly in areas not tested systematically. The tests were placed to supplement the data

Figure 1. The Goodland Marina property. Right angle traverses are depicted across the upland ridge.



acquired through the systematic traverses and to refine the boundaries of the cultural material. Judgemental tests were performed with a post hole digger.

In addition, high probability pedestrian surveys were performed. These surveys consisted of walking the transitional zone searching for cultural remains. This pattern has proved very succesful in isolated and delimited archaeological sections (Carr 1985; Carr, Allerton and Rodriguez 1987). This search pattern allows the surveyors the opportunity to travel in relatively open terrain as well as the ability to detect cultural remains or vegetative discontinuities in both the upland and mangrove communities, thus providing a very efficient and cost-effective survey strategy. Aerial map interpretaions, following the methods outlined by Carr (1974), were used to complement this phase of the survey.

Due to the possibility of chert remains, an eighth-inch screen was used wherever possible. This proved inordinately difficult in portions of the survey. Several tests had to be bagged and taken to the water's edge for water screening.

Processing of the recovered material consisted of placing this material in a container with standing water to separate the modern vegetal contaminants from the remaining sample. The floated material was recovered and sorted. The heavy fraction was washed thoroughly in running water to remove soil and any other debris. After cleaning, the sample was dried, sorted, weighed and bagged. Each cultural fraction was isolated and then weighed and a description and tables of those results are presented elsewhere in this report.

SURVEY RESULTS

T.P. #1

Surface: No cultural material noted.

Stratigraphy: 0-23 cm black mucky soil
23-55 cm gray sand
55 cm tan sand

Vegetation: Transition zone.

Screen: 1/8", water screened.

Findings: Culturally sterile.

T.P. #2

Surface: No cultural material noted.

Stratigraphy: 0-6 cm black mucky soil

6-16 cm dark grey sand
16-120 cm white sand

Vegetation: Prickly zone,includes saffron plum, Acacia sp. and Opuntia.

Screen: 1/8", water screened.

Findings: culturally sterile.

T.P. # 3

Surface: No cultural material noted.

Stratigraphy: 0-6 cm black mucky soil
6-11 cm dark gray sand
11-57 cm white sand
57-89 cm dark gray sand

Vegetation: Prickly zone.

Screen: 1/8", water screened.

Findings:Culturally sterile.

T.P. # 4

Surface: No cultural material noted, pronounced elevation.

Stratigraphy: 0-100 cm gray white sand
100-150 cm tan sand
150 cm brown sand

Vegetation: Coastal hammock, includes sabal palm, Opuntia, ficus, saffron plum and gumbo limbo.

Screen: 1/8".

Findings: Pottery and most cultural material at the 0-30 cm level. Six pottery sherds found were sand tempered plain. Crab claw and calcined shell also recovered.

T.P. # 5

Surface: No cultural material noted, elevation decreasing.

Stratigraphy: 0-17 cm black humic soil
17-100 cm white sand
100 cm brown sand

Vegetation: Prickly zone.

Screen: 1/8", water screened.

Findings: Culturally sterile.

T.P. # 6

Surface: No cultural material noted.

Stratigraphy: 0-13 cm black mucky soil
13-85 cm white sand
85 cm brownish sand

Vegetation: Transition zone.

Screen: 1/8", water screened

Findings: Culturally sterile.

T.P. # 7

Surface: No cultural material noted.

Stratigraphy: 0-19 cm black mucky soil
19-100 cm white sand
100-105 cm yellow sand
105 cm brown sand

Vegetation: Prickly zone.

Screen: 1/8", water screened

Findings: Culturally sterile.

T.P. # 8

Surface: No cultural material noted.

Stratigraphy: 0-10 cm black mucky soil
10-100 cm white sand
100 cm brown peaty sand

Vegetation: Disturbed with hammock, Brazilian pepper and cabbage palm noted nearby.

Screen: 1/8", water screened

Findings: Culturally sterile.

T.P. # 9

Surface: Busycon noted in transition zone, increased surface elevation noted.

Stratigraphy: 0-80 cm white gray sand
80- cm brownish sand

Vegetation: Coastal hammock.

Screen: 1/8", water screened

Findings: Pottery recovered at the 10-25 cm level,and calcined shell noted.

T.P. # 10

Surface: No cultural material noted.

Stratigraphy: 0-95 cm white sand
95 cm yellow/tan sand

Vegetation: Coastal hammock includes cabbage palm, ficus and gumbo limbo.

Screen: 1/8", water screened

Findings: Charcoal, shell, pottery and calcined shell present. Pottery includes a temperless St. Johns-like sherds from thin walled vessels and a sand tempered plain sherd.

T.P. # 11

Surface: No cultural material noted.

Stratigraphy: 0-23 cm black mucky soil
23-75 cm white sand
75 cm brown sand

Vegetation: Coastal hammock

Screen: 1/8", water screened

Findings: Culturally sterile.

T.P. # 12

Surface: No cultural material noted. Elevation has decreased.

Stratigraphy: 0-100 cm dark brown mucky soil

Vegetation: Transition zone.

Screen: 1/8", water screened

Findings: Culturally sterile.

T.P. # 13

Surface: No cultural material noted.

Stratigraphy: 0-110 cm dark brown mucky soil

Vegetation: Transition zone.

Screen: 1/8", water screened

Findings: No cultural material observed.

T.P. # 14

Surface: No cultural material noted.

Stratigraphy: 0-105 cm dark brown mucky soil

Vegetation: Transition zone.

Screen: 1/8", water screened

Findings: A small amount of shell recovered in this test.

T.P. # 15

Surface: No cultural material noted. Rise in elevation.

Stratigraphy: 0-60 cm medium gray sand, wet
60-80 cm wet white sand
80-105 cm dark brown sand

Vegetation: Transition zone.

Screen: 1/8"

Findings: Oyster shell, faunal bone, calcined shell, a modern lead bullet and 2 sand tempered plain pottery sherds recovered in this pit.

T.P. # 16

Surface: No cultural material noted.

Stratigraphy: 0-105 cm tannish brown sand

Vegetation: Transition zone.

Screen: 1/8"

Findings: Oster and whelk shell fragments and a crab claw recovered.

T.P. # 17

Surface: No cultural material noted.

Stratigraphy: 0-23 cm grayish sand
23-50 cm white sand
50-55 cm dark brown sand
55-73 cm white sand
73 cm dark brownish sand

Vegetation: Transition zone.

Screen: 1/8"

Findings: Oyster shell recovered at 0-45 cm level.

T.P. # 18

Surface: No cultural material noted.

Stratigraphy: 0-100 cm chocolate brown sand

Vegetation: Transition zone.

Screen: 1/8"

Findings: Marine shell recovered.

T.P. # 19

Surface: No cultural material noted.

Stratigraphy: 0-75 cm gray sand
75-100 cm brown sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Oyster shell and lead shot recovered.

T.P. # 20

surface: Cultural material was noted on a nearby gopher tortoise burrow pile.

stratigraphy: 0-110 cm white sand
110-120 cm dark grayish/black sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Cultural material found includes 1 glass? fragment, marine shell and a pottery sherd.

T.P. # 21

Surface: Cultural material noted.

Stratigraphy: 0-95 cm white sand
95 cm dark grayish/black sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Mercenaria fragments, Strombus pugilis, oyster, faunal bone and charcoal were recovered from this test pit.

T.P. # 22

Surface: No cultural material noted.

Stratigraphy: 0-90 cm white grayish sand
90 cm tannish orange sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Cultural material recovered includes marine shell (Oyster and melongena), faunal bone, charcoal and at least 3 pottery fragments. The fragments is ofparticular interest since it appears to be made of a contorted friable St. Johns paste. It is possible that the pieces are the result of pottery manufacture. One small fish vertebra may have been drilled as a bead.

T.P. # 23

Surface: No cultural material noted.

Stratigraphy: 0-20 cm dark grey sand
20-140 cm white sand
140 cm brownish tan sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Faunal bone, oyster and Melongena shell, and charcoal recovered from this test pit.

T.P. # 24

Surface: No cultural material noted.

Stratigraphy: 0-30 cm medium gray sand
30-75 cm white sand
75 cm brown sand

Vegetation: Transition zone.

Screen: 1/8"

Findings: Culturally sterile.

T.P. # 25

Surface: No cultural material noted.

Stratigraphy: 0-130 cm white sand
130 cm tan sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Faunal bone, marine shell and pottery recovered in this test.

T.P. # 26

Surface: No cultural material noted.

Stratigraphy: 0-90 cm gray sand
90-130 cm tan orange sand
130 cm white sand

Vegetation: Coastal Hammock.

Screen: 1/8"

Findings: Faunal bone, 3 human tooth fragments, oyster shell and two small pottery sherds were recovered.

T.P. # 27

Surface: No cultural material noted.

Stratigraphy: 0-110 cm tannish gray sand
110 cm brownish tan

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Faunal bone and marine shell recovered.

T.P. # 28

Surface: No cultural material noted.

Stratigraphy: 0-75 cm gray sand
75-100 cm white sand
100 cm tan sand

Vegetation: Coastal hammock includes sea grape and cabbage palm.

Screen: 1/8"

Findings: Faunal bone, charcoal and marine shell recovered.

T.P. # 29

Surface: No cultural material noted.

Stratigraphy: 0-45 cm gray sand
45-48 cm white sand
48-85 cm gray sand
85 cm tan sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Marine shell recovered.

T.P. # 30

Surface: No cultural material noted.

Stratigraphy: 0-45 cm gray sand
45-100 cm white sand
100 cm tan

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Oyster shell and 1 faunal bone fragment was recovered.

T.P. # 31

Surface: No cultural material noted.

Stratigraphy: 0-35 cm dark grey sand
35-85 cm light grey sand
85-105 cm tan sand
105 cm dark brown sand

Vegetation: Coastal hammock.

Screen: 1/8"

Findings: Oyster shell and one burnt shell fragment recovered.

T.P. # 32

Surface: Faunal shell noted on surface of the clearing.

Stratigraphy: 0-110 cm light tannish sand
110 cm darker tan sand

Vegetation: Area cleared of vegetation.

Screen: 1/8"

Findings: Culturally sterile.

T.P. # 33

Surface: Faunal shell noted on surface of the clearing.

Stratigraphy: 0-65 cm brownish gray sand
65-100 cm black sandy soil
100 cm tan brown sand

Vegetation: Area cleared of vegetation, formerly coastal hammock.

Screen: 1/8"

Findings: Faunal shell recovered in the test.

T.P. # 34

Surface: Faunal shell, pottery and a chert fragment noted on a nearby gopher tortoise burrow spoil.

Stratigraphy: 0-35 cm tan brown sand
35 cm dark grey sand

Vegetation: Tamarind, coastal hammock

Screen: 1/8"

Findings: Surprisingly this test proved sterile.

T.P. # 35

Surface: Faunal bone noted on the surface.

Stratigraphy: 0-50 cm gray sand
50-95 cm white sand
95 cm orange brown sand

Vegetation: Tamarind, coastal hammock

Screen: 1/8"

Findings: Busycon shell fragment noted but not collected.

T.P. # 36

Surface: No cultural material noted, pronounced elevation.

Stratigraphy: 0-85 cm gray sand
85 cm tan sand

Vegetation: Coastal hammock including gumbo limbo and cabbage palm

Screen: 1/8"

Findings: Mercenaria fragment recovered at 20 cm and a Busycon at 60 cm.

T.P. # 37

Surface: Cultural material noted.

Stratigraphy: n/a

Vegetation: Tamarind, coastal hammock.

Screen: 1/4", 1/8"

Findings: Charcoal and faunal bone recovered at 20 to 40 cm level.

T.P. # 38

Surface: Cultural material noted.

Stratigraphy: 0-10 cm dark brown sand
10-60 cm tan sand

Vegetation: Coastal hammock.

Screen: 1/4", 1/8"

Findings: Faunal shell recovered between 20 to 60 cm. Faunal fish, charcoal, calcined shell, a possible chert flake and a human tooth fragment were recovered also. Faunal bone recovered in moderate quantities in this test.

T.P. # 39

Surface: Cultural material noted.

Stratigraphy: 0-45 cm grayish sand
45-65 cm lighter gray sand

Vegetation: Coastal hammock.

Screen: 1/4", 1/8"

Findings: Shell recovered to 60 cm and at 1 iron stained rock also recovered. Shell includes two Busycon fragments.

T.P. # 40

Surface: No cultural material noted, near bottom of ridge.

Stratigraphy: light gray sand

Vegetation: Coastal hammock

Screen: 1/4", 1/8"

Findings: Faunal shell recovered.

T.P. # 41

Surface: No cultural material noted.

Stratigraphy: 0-35 cm dark humic soil
35 cm dark grey sand

Vegetation: Coastal hammock.

Screen: 1/4", 1/8"

Findings: Faunal shell recovered.

T.P. # 42

Surface: No cultural material noted.

Stratigraphy: 0-40 cm dark wet mucky soil

Vegetation: Tranzition zone.

Screen: 1/4", 1/8"

Findings: Culturally sterile.

T.P. # 43

Surface: Circular depression, no cultural material noted.

Stratigraphy: 0-50 cm dark black muck
50-100 cm dark gray sand
100 cm organically stained black muck

Vegetation: Red mangrove

Screen: 1/4"

Findings: Culturally modified wood recovered.

T.P. # 44

Surface: No cultural material noted, dramatic elevation change.

Stratigraphy: 0-50 cm gray sand
50 cm white sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Culturally sterile.

T.P. # 45

Surface: No cultural material noted, elevated area.

Stratigraphy: dark grey soil

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Culturally sterile.

T.P. # 46

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-30 cm dark grey sand
30-80 cm light grey sand
80 cm yellow tan sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Culturally sterile.

T.P. # 47

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-30 cm dark grey sand
30-50 cm light grey sand
50-80 cm white sand
80-95 cm yellow tan sand
100 cm tannish wet sand
Vegetation: Coastal hammock.
Screen: 1/4"

Findings: Culturally sterile.

T.P. # 48

Surface: No cultural material noted.

Stratigraphy: 0-30 cm black mucky soil
30-50 cm tannish grey sand
50 cm organically dark stained sand, wet

Vegetation: Tranzition zone.

Screen: 1/4"

Findings: Culturally sterile.

T.P. # 49

Surface: A weathered Busycon shell noted on the surface, elevated area.

Stratigraphy: 0-35 cm dark grey sand
35-80 cm light grey sand
80 cm tan sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Culturally sterile.

T.P. # 50

Surface: No cultural material noted.

Stratigraphy: grey sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Faunal shell noted.

T.P. # 51

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-65 cm gray sand
65-80 cm light gray sand
80 tan sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Cultural shell found at 65 cm.

T.P. # 52

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-55 cm gray sand
55 cm tan sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Oyster fragment at 35-40 cm and burnt shell fragments at 55 cms.

T.P. # 53

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-50 cm gray sand
50-100 cm white sand
100 cm tan sand

Vegetation: Costal hammock.

Screen: 1/4"

Findings: Busycon fragment at 30 cms.

T.P. # 54

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-60 cm dark grey sand
60 cm tan sand

Vegetation: Costal hammock.

Screen: 1/4"

Findings: Sand-tempered plain sherd recovered at 60 cms, also calcined shell noted.

T.P. # 55

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-65 cm dark grey sand
65 tannish white sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Calcined shell and oyster fragments were recovered. The charcoal and calcined were found at 26-30 cms.

T.P. # 56

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-100 white sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Culturally sterile.

T.P. # 57

Surface: No cultural material noted.

Stratigraphy: 0-20 cm white/gray sand
20-120 cm white sand
120 cm tannish/white sand

Vegetation: Coastal hammock.

Screen: 1/4", 1/8"

Findings: Liguus shell, burnt shell, calcined shell and a sand-tempered sherd at 30-40 cm were found.

T.P. # 58

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-90 cm grey sand
90-105 cm light grey sand

Vegetation: Coastal hammock.

Screen: 1/4", 1/8"

Findings: A crab claw, charcoal, calcined shell and faunal shell were recovered.

T.P. # 59

Surface: No cultural material noted, elevated area.

Stratigraphy: 0-25 cm dark grey sand with humic stain
25-40 cm gray wet sand
40-65 cm light grey sand, wet
65-80 cm dirty white sand

Vegetation: Coastal hammock.

Screen: 1/4", 1/8"

Findings: Calcined shell, shell fragments and charcoal recovered.

T.P. # 60

Surface: No cultural material noted.

Stratigraphy: 0-30 cm very dark grey sand
30-40 cm tannish sand
40-70 cm light gey sand
70 cm black organic wet sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: A few oyster shell fragments were recovered.

T.P. # 61

Surface: No cultural material noted near Gopher tortoise burrow.

Stratigraphy: 0-40 cm medium grey sand
40-75 cm light grey sand
75 cm tannish sand

Vegetation: Coastal hammock.

Screen: 1/4"

Findings: Shell fragments and calcined shell recovered.

T.P. # 62

Surface: No cultural material noted.

Stratigraphy: 0-10 cm dark grey sand
10-70 cm light grey sand

Vegetation: Coastal hammock

Screen: 1/4"

Findings: Shell fragments including a Busycon shell fragment were recovered.

T.P. # 62A

Surface: No cultural material noted.

Stratigraphy: 0-50 cm medium gray sand
50-80 cm white sand
80 cm tan sand

Vegetation: Coastal hammock

Screen: 1/4"

Findings: Shell fragments recovered at 0-40 cms.

T.P. # 63

Surface: No cultural material noted.

Stratigraphy: 0-40 cm medium gray sand
40-70 cm light grey sand
70 cm dark/white sand

Vegetation: Coastal hammock including gumbo limbo

Screen: 1/4"

Findings: Calcined shell and faunal shell were noted.

T.P. # 64

Surface: No cultural material noted.

Stratigraphy: 0-30 cm dark grey sand
30-45 cm white sand
45-60 cm tan sand

Vegetation: Coastal hammock including gumbo limbo

Screen: 1/4"

Findings: Shell fragments noted.

T.P. # 65

Surface: No cultural material noted, near a fence line.

Stratigraphy: 0-50 cm dark grey
50- cm tan sand

Vegetation: Coastal hammock

Screen: 1/4"

Findings: Calcined shell noted at 65 cms. Faunal shell also seen.

T.P. # 66

Surface: No cultural material noted.

Stratigraphy: 0-55 cm medium gray sand
55-60 cm white sand
60-80 cm light gray sand

Vegetation: Costal hammock

Screen: 1/4"

Findings: Faunal shell and calcined shell noted to 55 cms.

CULTURAL MATERIAL SUMMARY

In total, seven classes of cultural material were recovered from the testing at the Goodland Marina project tract. These classes include marine shell, faunal bone, charcoal, pottery, human teeth, non-local chert lithics, and calcined shell/ash and are discussed below:

Marine shell

This is by far the most commonly recovered material. Most of the shell represented was the oyster (Crassostrea virginica?). Other significant species includes lighting whelk, Busycon contrarium, the king's crown, Melongena corona, and the southern quahog, Mercenaria campechiensis. All of the shell was worn and highly leached indicating carbonate leaching from humic and carbolic acids in solution percolating through the well drained sandy soil.

Pottery

Twenty-six sherds of pottery were recovered. These include sand-tempered plain (with one rim fragment suggesting a Glades I age) and St. Johns plain ware. These St. Johns sherds are generally regarded as non-local trade ware and are usually associated with the Late Archaic and the Glades III periods. These specimens are undoubtedly of the earlier age. In addition, several pieces of contorted ceramic fragments were found associated with ashy deposits and might represent residue from pottery manufacturing.

Faunal Bone

The use of the 1/8" screen resulted in the recovery of moderate quantities of tiny animal bones. Archosargus probatocephalus, the sheepshead, and Arias felis, sea catfish, and an unidentified marine turtle are the most common species found during the survey. Other species were probably present but have not been identified. The miniscule size of the bones in the fish sample is noteworthy, and the bones include some of the smallest the author has seen. One catfish otolith was 4 mm long at the longest axis. Bone preservation was reasonably good for microfauna sandy conditions which are anathema to bone preservation. There is some correlation between shell and faunal bone recovery suggesting the possibility that the preserved faunal bone was posibly in contact with the shell. Other evidence to be presented later in this section suggests that this hypothesis is probably correct.

Charcoal

Botanical remains were represented solely by charcoal. In some instances, the charcoal appeared to be associated with the faunal and shell refuse, suggesting that the charcoal was a result of prehistoric activities. Several instances of ashy clumps were related to the charcoal indicating intensive fire activities.

However, other charcoal samples still retain portions of uncharred wood indicating modern fires, either natural or as a consequence of historic clearing activities.

Human teeth

Two test holes (#26 and 38) produced fragments of human teeth. These teeth fragments are very small (less than 1 cm) and were not noticed until after drying of the water screened fractions. The teeth fragments are mostly enamel pieces with one piece including a portion of the root. One fragment has the occlusal surface with wear that is typical of prehistoric Amerinds.

The recovery of the human teeth may indicate burials. However, the paucity of human remains recovered may suggest isolated finds as Goggin has documented at the Snapper Creek site (1964b:167). A more plausible explanation is that the paucity is a function of site preservation. Bone does not preserve well in acid soils as is the case on sand ridges. The paucity of faunal bone recovered would indicate that preservation of human bone would be minimal in the surveyed tract. A mitigating factor for preservation of bones in the survey tract are the deposits of shell. The hardwood hammock vegetation suggests that shell deposits are prevalent on the surveyed ridge. The preponderance of calcined shell in the samples suggests that ashy deposits are widespread on the ridge. These deposits tend to be basic thus promoting preservation. However, strongly basic solutions are deleterious to organics. In addition, the aboriginal inhabitants of South Florida often selected sandy deposits or constructions to inter their dead. Carr, Iscan and Johnson (1984) have documented that Late Archaic and Glades I people interred their dead in habitation middens. Cockrell (1970) has reported burials in a sand ridge context.

Non-local chert

Non-local chert was recovered during this project. A small fragment of what appears to be a chert debitage was recovered from test pit # 38. The basal fragment of a possible archaic stemmed projectile point was recovered from the surface spoil of a gopher tortoise burrow near test pit # 34.

Calcined shell/Ash

Calcined shell consists of amorphous medium gray lumps with a consistency similar to clay. These lumps consist of a composite aggregate which includes ash. Several lumps exhibit natural sculpturing found on shell i.e. one instance that was identified as the whorl of a Busycon contrarium shell. Several tests were performed with household chemicals and Ph strips.

The lumps were visibly affected in acid solutions and started bubbling. Ph tests suggested that the lumps were neutralizing the acid since the Ph changed from about 3, an acid, to 7, neutral. The lumps when placed in the acid appear to at first

decompose slowly into a fine silty powder. While in the acid solution, the lumps appear to present a surface suggesting an aggregate. Lumps left in an acid solution,an unknown dilution of glacial acetic acid (photographic stop bath concentrate), overnight stopped fizzing and have reached an equilibrium state.

Lumps placed in an unknown solution of ammonium hydroxide, a common ammonia household cleaner, did not show any visible effects. Ph tests showed that the solution was basic with a Ph of 9 to 10. No change was noted in the Ph tests over time.

Lumps placed in water and disassembled turn the solution slowly from neutral to basic. This test suggest that the principal component of the lumps appears to be slightly soluble in water. A fine silty fraction appeared to remain in solution while the heavier fraction remained undissolved in the water.

Lumps placed in a five per cent solution of sodium hypochlorite, household bleach, promptly disassembled into a fine grayish/white powder. The colour of the powder may be due to the bleaching qualities of the solution. Examination of this powder under a 20X binocular microscope reveals an amorphous assemblage of crystalline matter. Average crystal size is in the neighborhood of .005 mm.

A tentative conclusion based on the limited tests performed suggests a mixture of ash and burnt shell with a chemical composition of sodium or potassium hydroxide (ash) and calcium hydroxide (burnt shell) mixed with quartz crystals.

GOODLAND SURVEY--TEST HOLES

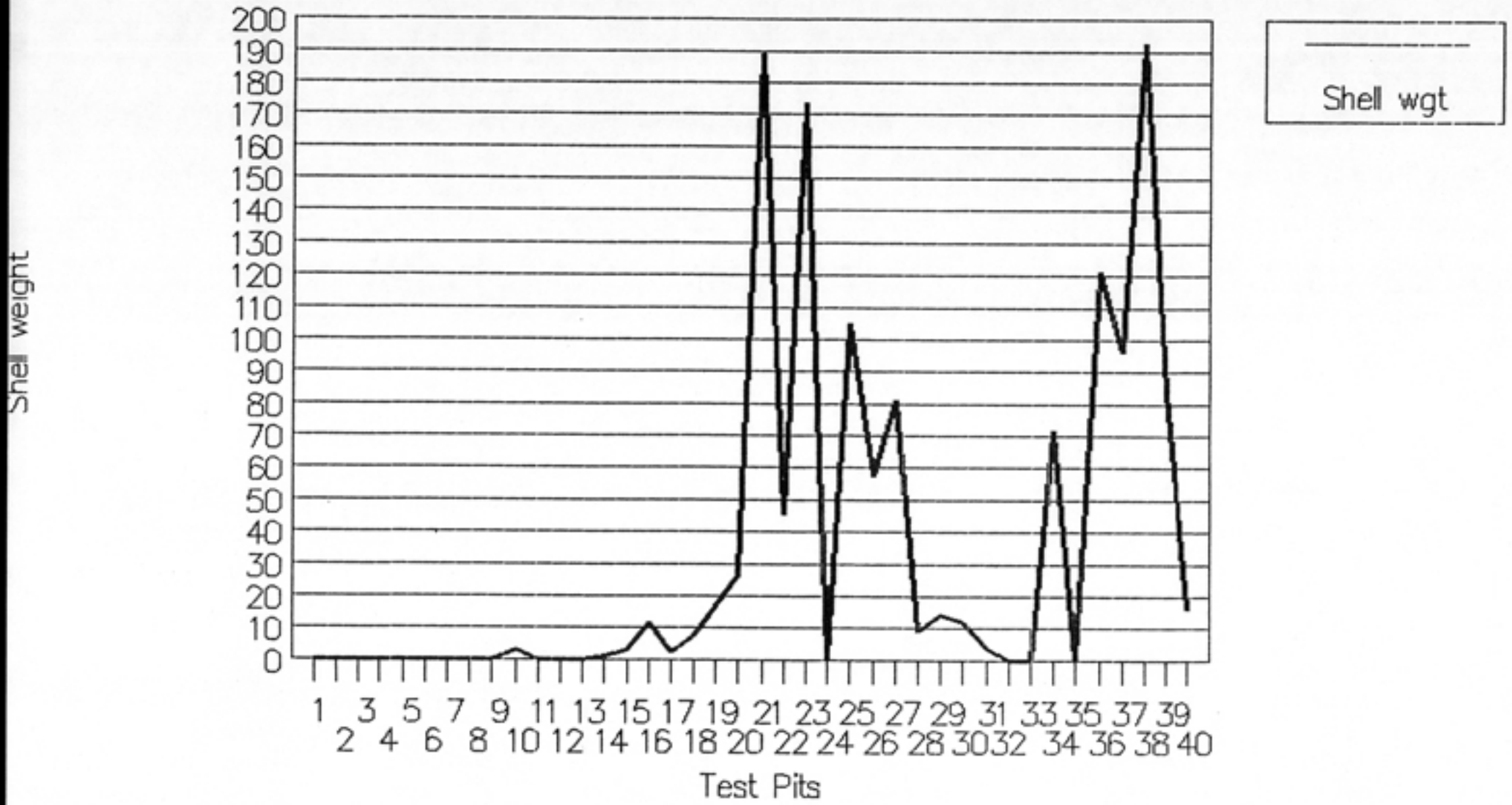
T.P.#	Depth of T.P (cm)	Shovel(S) or (P) Posthole	Screen Yes or no	Mesh size inches	Cultural material Yes or No	Collected total wgt grams	Pottery weight grams	Pottery count	Shell weight grams	COMMENTS
1	70	S/P	Y	0.13	N	0.0	0.0	0	0.0	
2	120	S/P	Y	0.13	N	0.0	0.0	0	0.0	
3	150	S/P	Y	0.13	N	0.0	0.0	0	0.0	
4	150	S/P	Y	0.13	Y	12.0	10.0	6	0.0	Pottery,crab,calcined shell
5	110	S/P	Y	0.13	N	0.0	0.0	0	0.0	
6	120	S/P	Y	0.13	N	0.0	0.0	0	0.0	
7	110	S/P	Y	0.13	N	0.0	0.0	0	0.0	
8	110	S/P	Y	0.13	N	0.0	0.0	0	0.0	
9	110	S/P	Y	0.13	Y	57.4	2.5	1	0.0	Pottery, calcined shell
10	120	S/P	Y	0.13	Y	42.0	6.4	5	3.0	Pottery,shell,calcined shell,charcoa
11	110	S/P	Y	0.13	N	0.0	0.0	0	0.0	
12	100	S/P	Y	0.13	N	0.0	0.0	0	0.0	
13	110	S/P	Y	0.13	N	14.4	0.0	0	0.0	
14	105	S/P	Y	0.13	Y	11.0	0.0	0	0.9	Shell
15	105	S/P	Y	0.13	Y	39.4	1.4	2	2.8	Pottery,bullet,f. bone,shell
16	105	S/P	Y	0.13	Y	12.1	0.0	0	11.5	Shell,crab
17	105	S/P	Y	0.13	Y	2.0	0.0	0	2.0	Shell
18	100	S/P	Y	0.13	Y	10.3	0.0	0	7.3	Shell
19	110	S/P	Y	0.13	Y	17.1	0.0	0	17.0	Lead shot,shell
20	120	S/P	Y	0.13	Y	41.9	0.2	1	26.4	Pottery,glass,shell
21	150	S/P	Y	0.13	Y	195.4	2.8	2	189.0	F. bone,shell,charcoal
22	140	S/P	Y	0.13	Y	75.9	0.5	3	45.5	Pottery,f. bone,shell,charcoal
23	165	S/P	Y	0.13	Y	192.9	0.0	0	173.4	F. bone, shell,charcoal
24	110	P	Y	0.13	N	0.0	0.0	0	0.0	
25	140	P	Y	0.13	Y	115.2	1.1	1	105.0	Pottery,f. bone,shell
26	130	P	Y	0.13	Y	63.6	0.4	2	57.6	Human,pottery,f. bone,shell
27	110	P	Y	0.13	Y	86.3	0.0	0	81.1	F. bone,shell
28	115	P	Y	0.13	Y	9.6	0.0	0	9.1	F. bone,shell,charcoal
29	110	P	Y	0.13	Y	16.5	0.0	0	14.4	Shell
30	110	P	Y	0.13	Y	12.9	0.0	0	12.1	F. bone,shell
31	105	P	Y	0.13	Y	4.6	0.0	0	3.6	Shell
32	120	P	Y	0.13	N	0.0	0.0	0	0.0	
33	110	P	Y	0.13	Y	0.0	0.0	0	0.0	Shell
34	110	P	Y	0.13	Y	85.0	0.8	2	71.4	Shell
35	110	P	Y	0.13	Y	0.0	0.0	0	0.0	Shell
36	110	P	Y	0.13	Y	124.6	0.0	0	121.1	Shell
37	n/a	S	Y	0.13	Y	96.4	0.0	0	96.2	F. bone,charcoal
38	60	S	Y	0.13	Y	208.1	0.0	0	192.6	Human,chert,f. bone,shell,charcoal
39	65	S	Y	0.13	Y	93.5	0.0	0	84.1	Shell,rock

GOODLAND SURVEY--TEST HOLES

T.P.#	Depth of T.P (cm)	Shovel/ Posthole	Screen	Mesh size(in)	Cultural material	Collected total wgt	Pottery weight	Pottery count	Shell weight	COMMENTS
40	n/a	S	Y	0.13	Y	16.0	0.0	0	16.0	Shell
41	50	S	Y	0.13	N	0.0	0.0	0	0.0	Shell
42	40	S	Y	0.25	N	0.0	0.0	0	0.0	
43	100	S	Y	0.25	Y	31.3	0.0	0	0.0	wooden planks,historic well
44	50	P	Y	0.25	N	0.0	0.0	0	0.0	
45	110	P	Y	0.25	N	0.0	0.0	0	0.0	
46	120	P	Y	0.25	N	0.0	0.0	0	0.0	
47	105	P	Y	0.25	N	0.0	0.0	0	0.0	
48	70	P	Y	0.25	N	0.0	0.0	0	0.0	
49	70	P	Y	0.25	N	0.0	0.0	0	0.0	
50	90	P	Y	0.25	N	0.0	0.0	0	0.0	Shell
51	90	P	Y	0.25	Y	10.4	0.0	0	10.4	Shell
52	55	P	Y	0.25	Y	0.0	0.0	0	0.0	Shell
53	100	P	Y	0.25	Y	12.4	0.0	0	12.4	Shell
54	60	P	Y	0.25	Y	1.1	1.0	1	0.0	pottery,calcined shell
55	70	P	Y	0.25	Y	0.0	0.0	0	0.0	Shell,calcined shell,charcoal
56	100	P	Y	0.25	N	0.0	0.0	0	0.0	
57	55	S/P	Y	0.13	Y	23.7	1.9	1	0.0	Pottery,shell,calcined shell,Liguus
58	105	S/P	Y	0.13	Y	11.0	0.0	0	10.0	Shell,crab,calcined shell,charcoal
59	95	S/P	Y	0.13	N	48.3	0.0	0	0.0	Shell,calcined shell,charcoal
60	70	P	Y	0.25	Y	0.0	0.0	0	0.0	Shell
61	85	P	Y	0.25	Y	27.8	0.0	0	20.5	Shell,calcined shell
62	70	P	Y	0.25	Y	27.5	0.0	0	20.5	Shell,calcined shell
62a	80	P	Y	0.25	Y	13.6	0.0	0	10.0	Shell
63	70	P	Y	0.25	Y	0.0	0.0	0	0.0	Shell,calcined shell
64	60	P	Y	0.25	Y	0.0	0.0	0	0.0	Shell
65	60	P	Y	0.25	Y	0.0	0.0	0	0.0	Shell,calcined shell
66	80	P	Y	0.25	Y	0.0	0.0	0	0.0	Shell,calcined shell
	TOTAL					1863.2	29.0	27	1426.9	
	MEAN					27.0	0.4	0.4	20.7	
	STANDARD DEVIATION:					47.5	3.7	1.1	44.3	
	VARIANCE:					2258.9	2.2	1.2	1966.0	

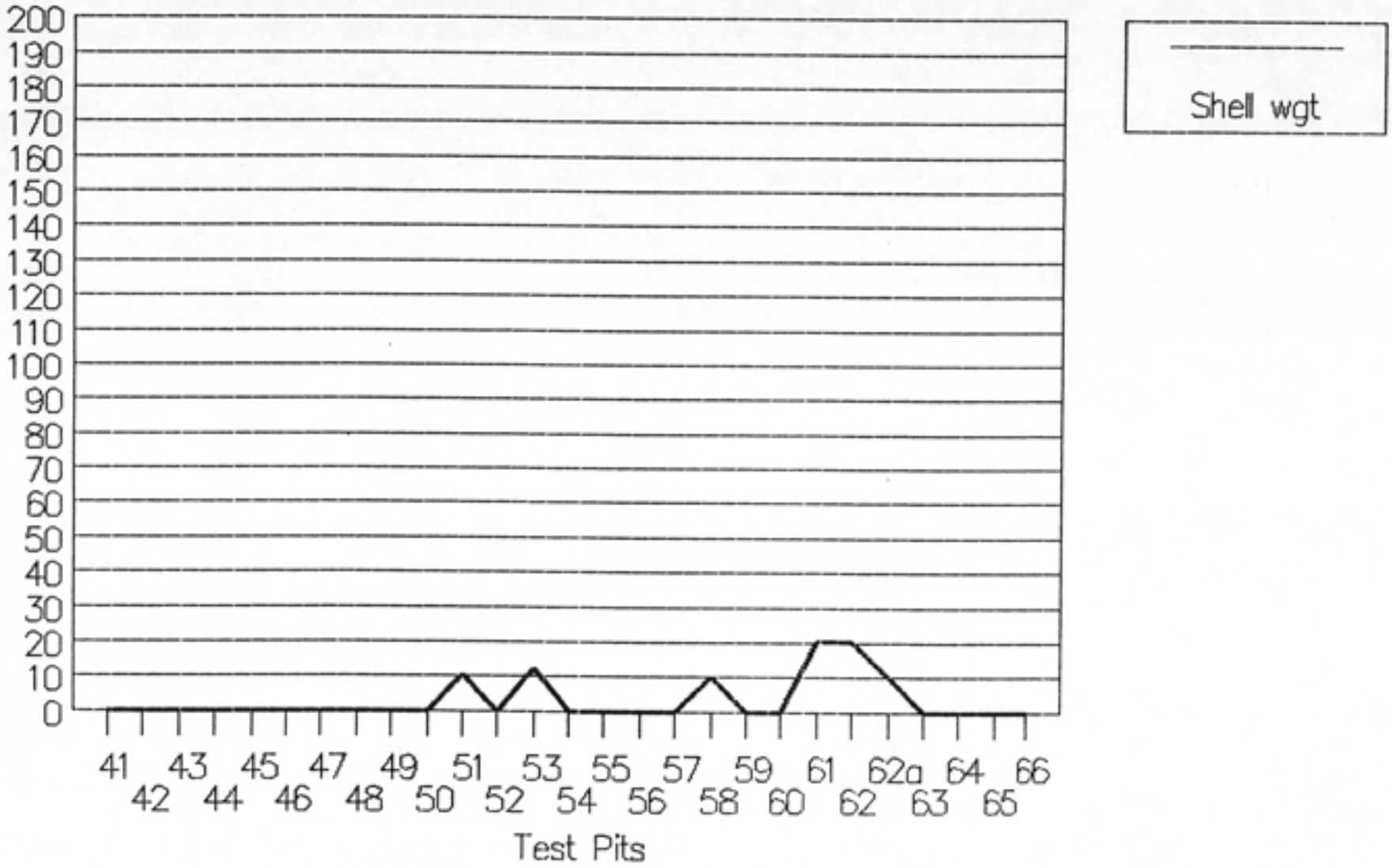
GOODLAND SURVEY

Shell weight charted by test



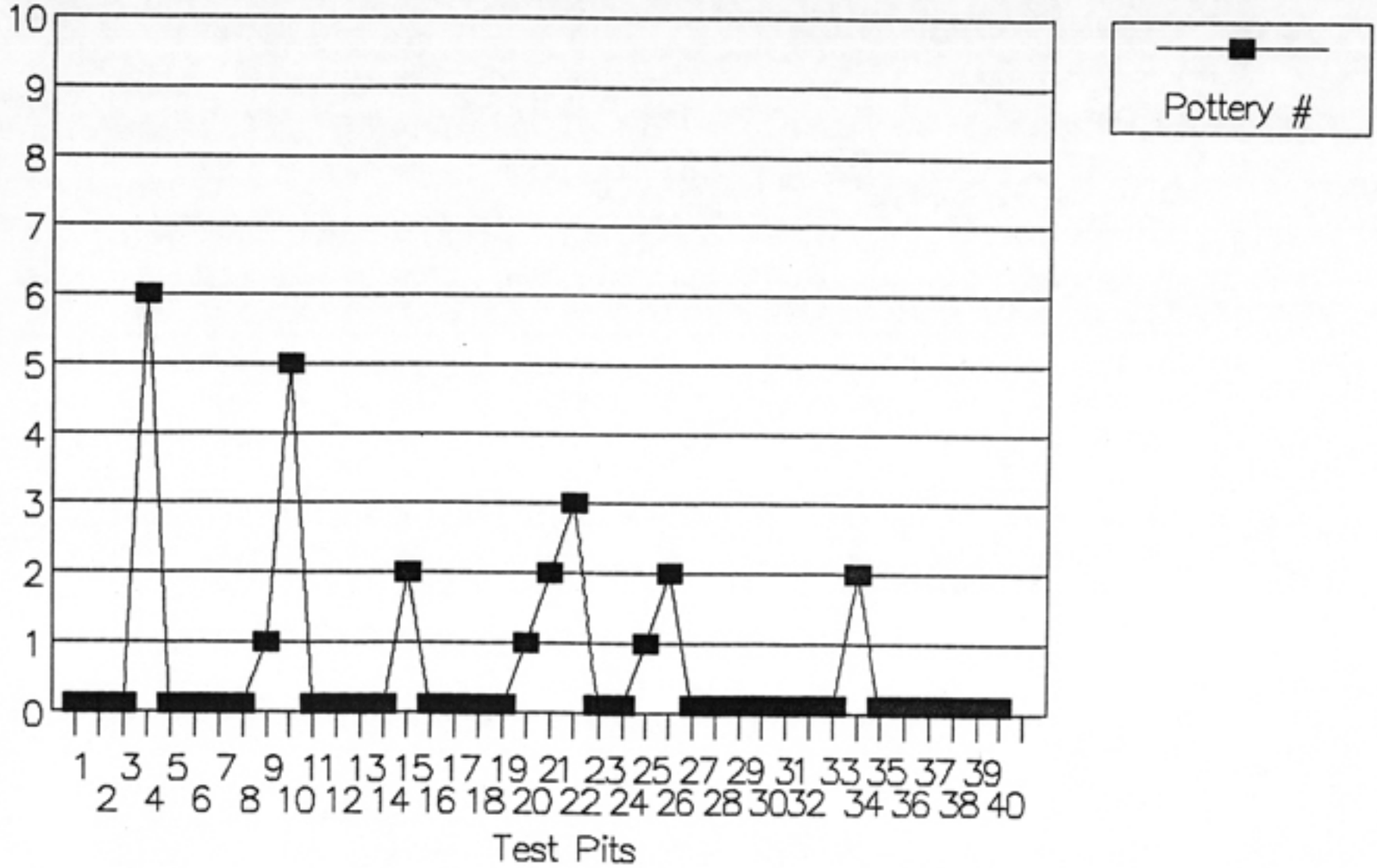
GOODLAND SURVEY

Shell weight charted by test



GOODLAND SURVEY

Sherd count charted by test



GOODLAND SURVEY

Sherd count charted by test

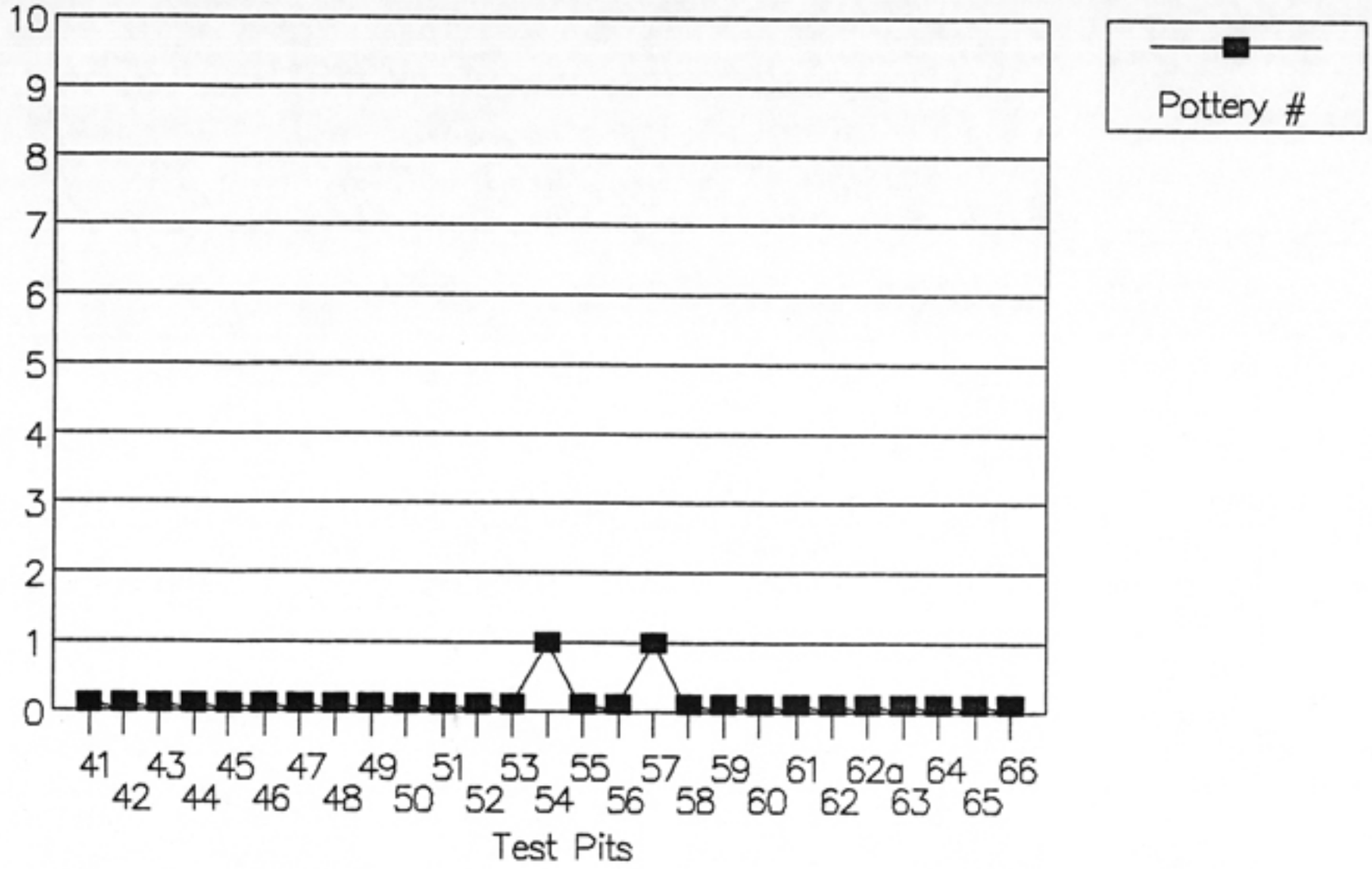


Figure 2. Location of shell refuse recovered from test holes.

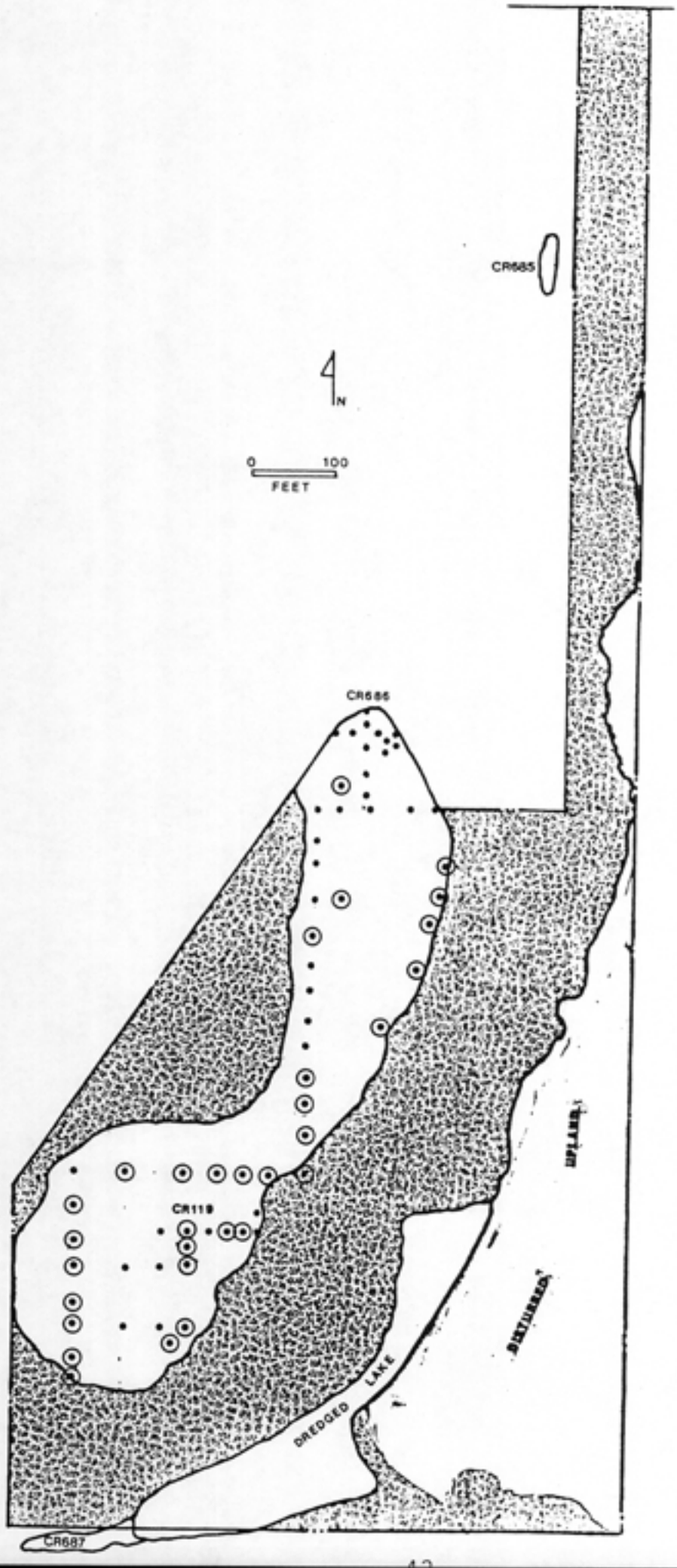


Figure 3. Location of faunal bone recovered from test holes.

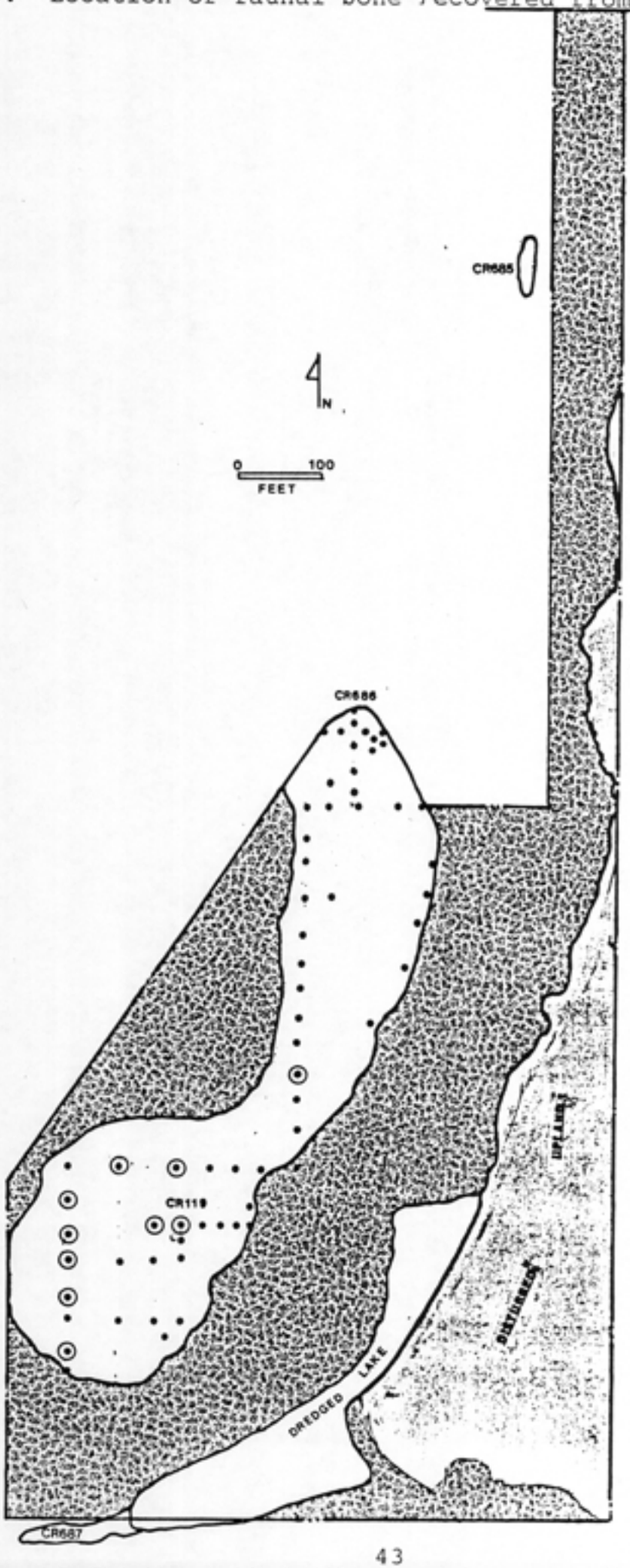


Figure 4. Location of pottery recovered from test holes.

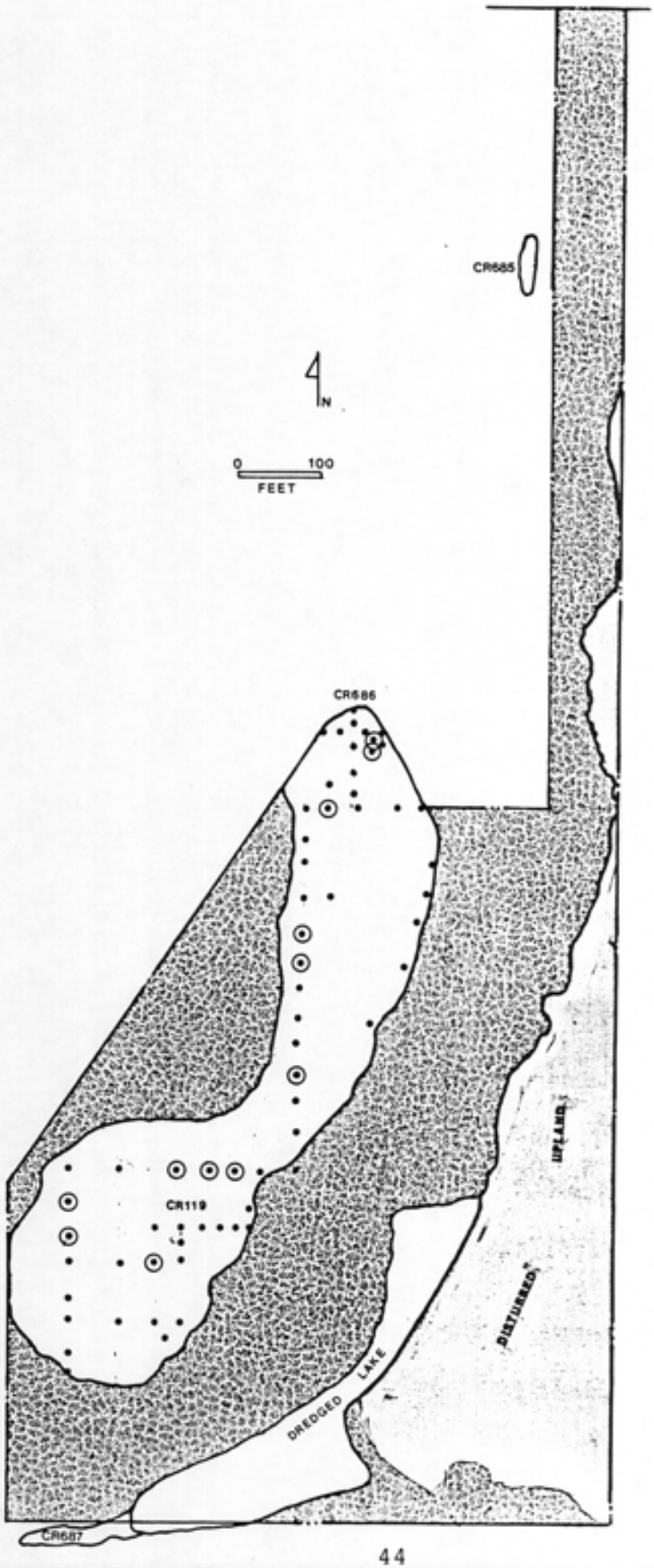


Figure 5. Location of burnt shell/ash recovered from test holes.

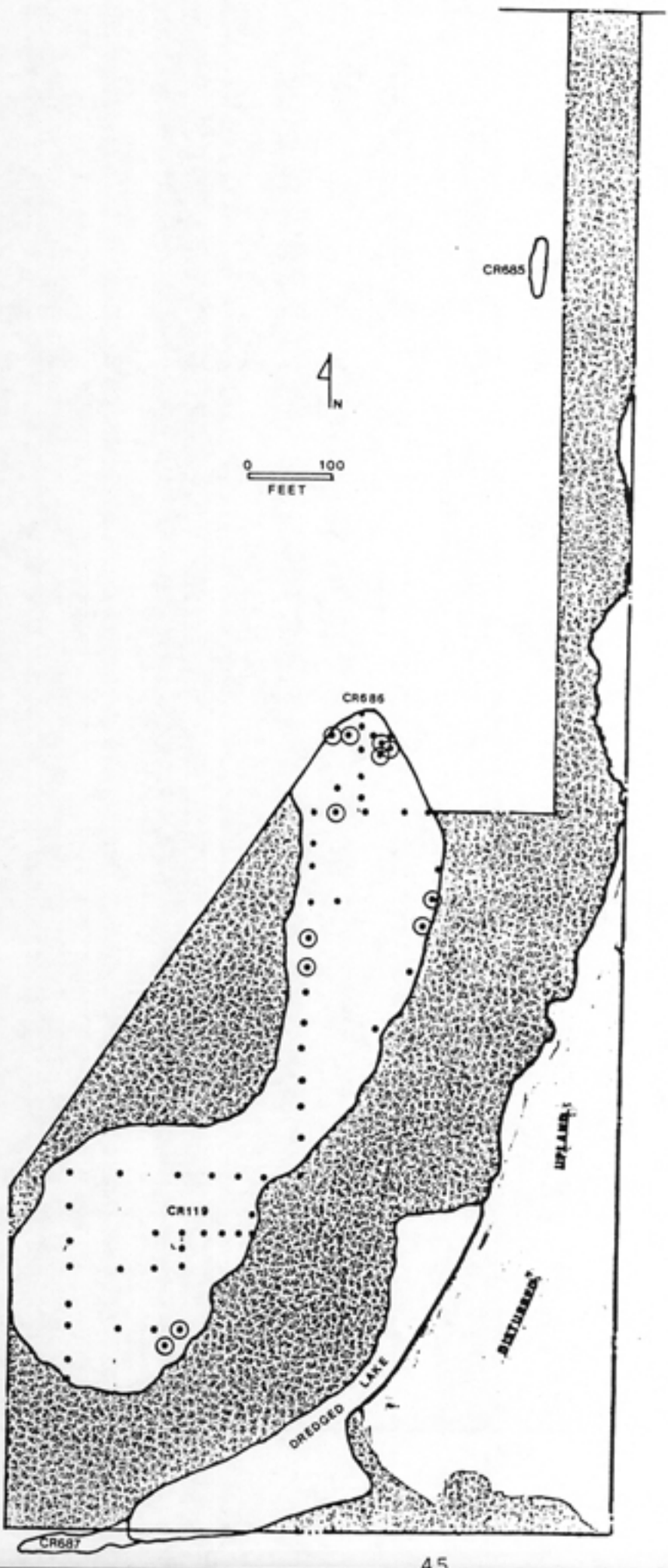
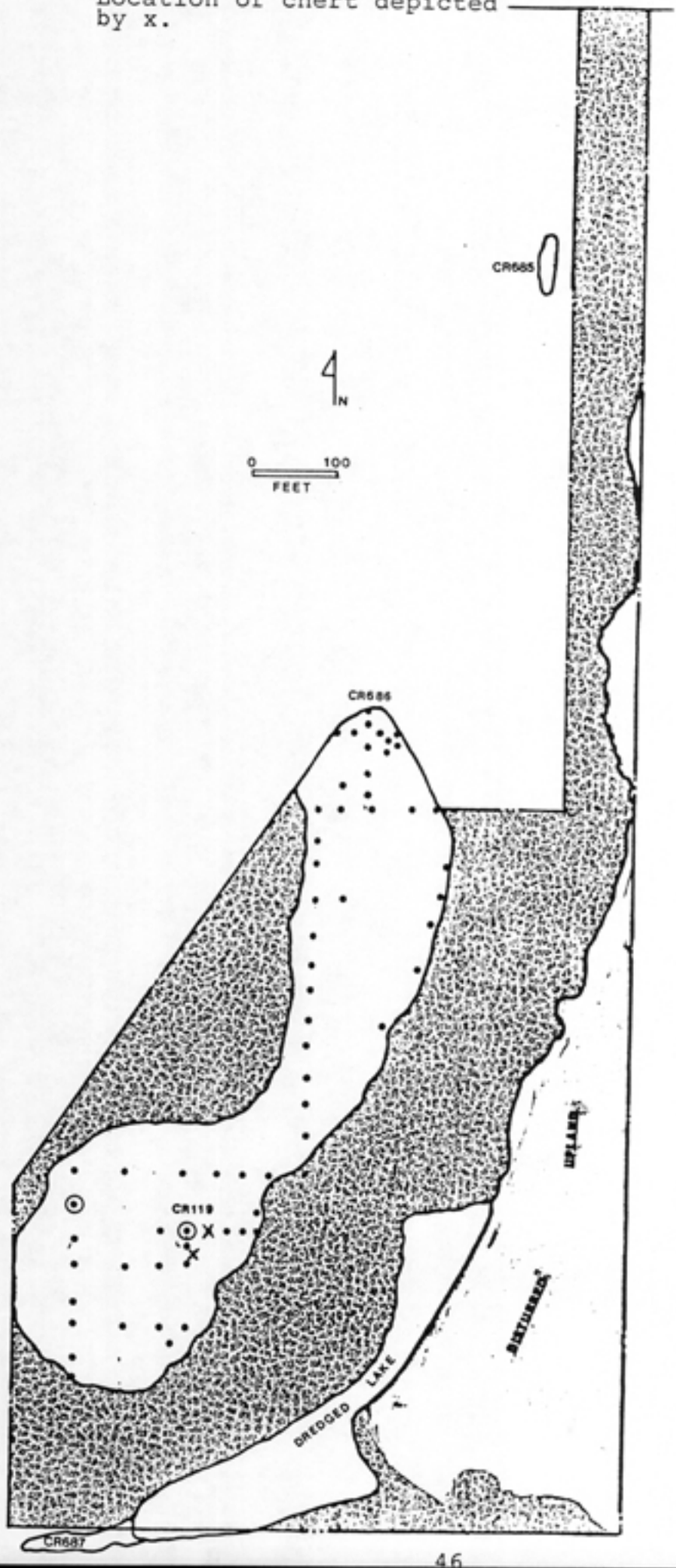


Figure 6. Location of human teeth recovered from test holes. Location of chert depicted by x.



SITE DESCRIPTIONS

The project area encompasses two upland sand ridges separated by mangrove forest. The upland area along the eastern portion is intensely disturbed by clearing and fill activities and has served a local dump for years. Evidence of a natural sandy ridge was observed in the extreme southeastern portion of the tract and some shell was observed but it could not be determined whether the shell was naturally or culturally deposited. Nonetheless, if site features did exist in this area, previous disturbances have severely dimished their integrity and accessibility.

A mangrove forest separates the eastern uplands from the Pleistocene dune ridge that dominate the western portion of the property. A lake has been dredged in the mangrove wetlands approximately 30 to 40 years of age. Spoil along the canal indicates large quantities of shell, particularly oyster, indicating an extensive substrate of shell within the project area.

The sand dune ridge that was the principle target of this archaeological survey represents a relic Pleistocene geomorphic feature that is up to two meters in elevation above the surrounding mangroves. The ridge, overall, suggests prehistoric activities through time that may have ranged from as early as the Late Archaic period through the Glades II period. Discrete activity areas of more intensive cultural remains are described and summarized below.

CR46 GOODLAND BURIAL MOUND

LOCATION: T.52S R.26E S.13

NATURAL SETTING: Mangrove Forest

DESCRIPTION: Moore describes the site as a number of low, irregular, undulations, which seem to have served as places of burial for the aboriginal settlement. He mentions that considerable digging had been attempted prior to his visit in 1899 and that parts of disjointed skeletons had been buried just below a shell deposit which in turn was overlain by one foot of loam. During these excavations, Moore uncovered a burial with four chert tools and a mound which yielded 20 shell cups, twelve of which were near the surface. Plowden who tested the site in 1954 for the Smithsonian Institution reports that the burial mound "lies in a crescent shaped hollow of a shell ridge, five hundred yards west of the main shell midden at Goodland Point". He adds that the site "is elliptical, being twenty-nine feet on the north-south axis and thirty-two feet east-west axis, and is about 3 feet high". Plowden reports that the "excavation revealed that the black dirt, previously described as black muck, mound had been constructed upon a shelf of an earlier shell midden".

CHRONOLOGY: Glades I late.

COLLECTIONS: The material collected by Violet Hanley is housed at the University of Michigan Anthropology Lab and includes Busycon implements including a pick type A, a well finished bowl, 12 cms long and said to have been patched and mended when found; a shell collection, a bag of bones including human remains, 4 Glades Plain sherds and a Fort Drum Incised sherd. Two collection, presumably made by Goggin, are housed at the Florida State Museum. Collection #A-6859 consistes of five sherds of sand-tempered plain pottery, and collection #A-15012 consists of two-well fashioned, partially restored, small shallow incurved bowls and a single blue metal spur. The material unearthed by Plowden and deposited in the Smithsonian includes four restorable vessels, shell artifacts, a limestone pendant, aportion of embossed copper, a fragmentary sheet of mica and ten burials. Nine of the burials were fragmentary bundle burials and the remaining one was a cremation.

NOTE: This site has been erroneously assigned a location on the southwest corner of the project property by R. Widmer while conducting an archaeological survey for Florida's Division of Archives and Records Management. Widmer confused CR687 with CR46.

PREVIOUS RESEARCH: Moore 1900; Goggin 1946, 1950, 1964, Plowden 1954, Piper 1980

PRESERVATION QUALITY: 3

CR119 PETTIT SITE

LOCATION: T.52S R.26E S. 13

NATURAL SETTING: Pleistocene sand dune ridge

DESCRIPTION: Widmer describes this site as a "few scattered , highly eroded shells are found in an area of about 400 square meters, together with some very light, humic stained soil" (1974:42). He adds that informal testing revealed no evidence of pottery or stratigraphy and suggests that if a site had existed in this location it had been destroyed (ibid). The present survey recovered an eroded whelk tool, several pottery sherds, a basal portion of a projectile point and two human teeth fragments. The site consists of a sand ridge that runs roughly NW-SE with occasional elevations. Testing suggests that the site is a collection of activity areas on a natural dune with possible burials near the tamarind. The present maximum elevation is about 3 feet from the surrounding mangroves. The site dimensions are about 260 feet by 160 feet with the long axis running NW-SE. Near the tamarind, the soil appears stained a light coffee brown while elsewhere the cultural layer is a gray sand layer. The humic staining may derive from historic activities. The historic component appears to date from ca. 1920-1940 based on structural remains. The historic use of the site encompasses a structure

built by a member of the Pettit family, cultivation for a garden, and the excavation of at least two wells.

CHRONOLOGY: Late Archaic, Glades I, Glades II?

COLLECTIONS: Pottery, shell refuse, chert projectile point fragment, faunal bone.

PREVIOUS RESEARCH: Widmer 1974, Cockrell 1970.

PRESERVATION QUALITY: 2. The surface may have been altered during prior clearing. Gopher tortoises may be causing subsurface damage to the cultural lenses by mixing.

CR685 SAFFRON PLUM SITE

LOCATION: T.52S R.26E S.13

NATURAL SETTING: Mangrove Forest

DESCRIPTION: A small circular sand mound about 80 feet in diameter with a saffron plum growing near the center of the mound. The mound is about 2 feet high.

CHRONOLOGY: Prehistoric: undeterminate

COLLECTIONS: None made.

PREVIOUS RESEARCH: None.

PRESERVATION QUALITY: 1, the site is virtually intact.

CR686 NORTH MOUND

LOCATION: T.52S R.26E S.13

NATURAL SETTING: Pleistocene sand dune ridge

DESCRIPTION: The site consists of an elongated sand dune ridge, about 130 feet long, running NW-SE adjacent to a natural creek. The ridge has a maximum elevation of 4.5 feet on top of a circular mound-like elevation, about 50 feet in diameter. A second elevated, elongated area , about 4 feet high and 30 feet long, is located on the extreme north end. The intervening swale between the higher elevations has an average elevation of about 2.8 feet. Tests indicate that both elevated areas contain cultural material. The site is defined by its higher elevation, and by test results that include some pottery sherds and lenses of calcined shell/ash. These areas of ash vary from 20 to 40 cm below the surface. The vegetation on the ridge consist of a maritime hammock which includes gumbo limbo, saffron plum, cacti, and cabbage palm.

CHRONOLOGY: Glades I?

COLLECTIONS: A small collection was made during the present survey.

PREVIOUS RESEARCH: None.

PRESERVATION QUALITY: 1, site appears virtually intact.

CR687 SOUTH RIDGE SITE

LOCATION: T.52S R.26E S. 13

NATURAL SETTING: Mangrove Forest

DESCRIPTION: Widmer describes this site as follows:

> The site is composed ... of a series of shell and ridges which fringe the western border of a slough currently bounded on the north and east by the Old Goodland Dump. The site extends for 350 m along the slough. The width of the shell ridges varies, but typically is between three and five meters. Maximum elevation of the shell works does not appear to be 1.3 M. This elevation is only reached in the westernmost area of the site.... Shell midden exists on the southern bank of the canal for a distance of about 125M then ends abruptly. Shell midden exists on the southern bank of the canal for a distance of about 50 M east of the canal's end. The midden on the south bank is quite extensive, but tapers off to a narrow ridge. A single, large gumbo limbo tree marks the termination of the canal. Here the shell is at its maximum concentration. The midden extends west from the canal's end for a distance of 40 M. The width of the site at the end of the canal is 12 M gradually decreasing until the site is terminated. Red mangrove encroaches the edghes of the site from all directions. The midden is void of soil except at the extreme west end. Here black muck is mixed with shell (1974:20-21).

A map in Plowden's manuscript shows this site as an elongated, sinuous shell ridge which runs east west with a maximum elevation of six feet. This maximum elevation is located just south of the end of the shell road. The east end of the site is next to a tidal stream and may have been the point of access for the site.

The present survey placed a test on the north end of the mound near the gumbo limbo. Shell was encountered for a meter before

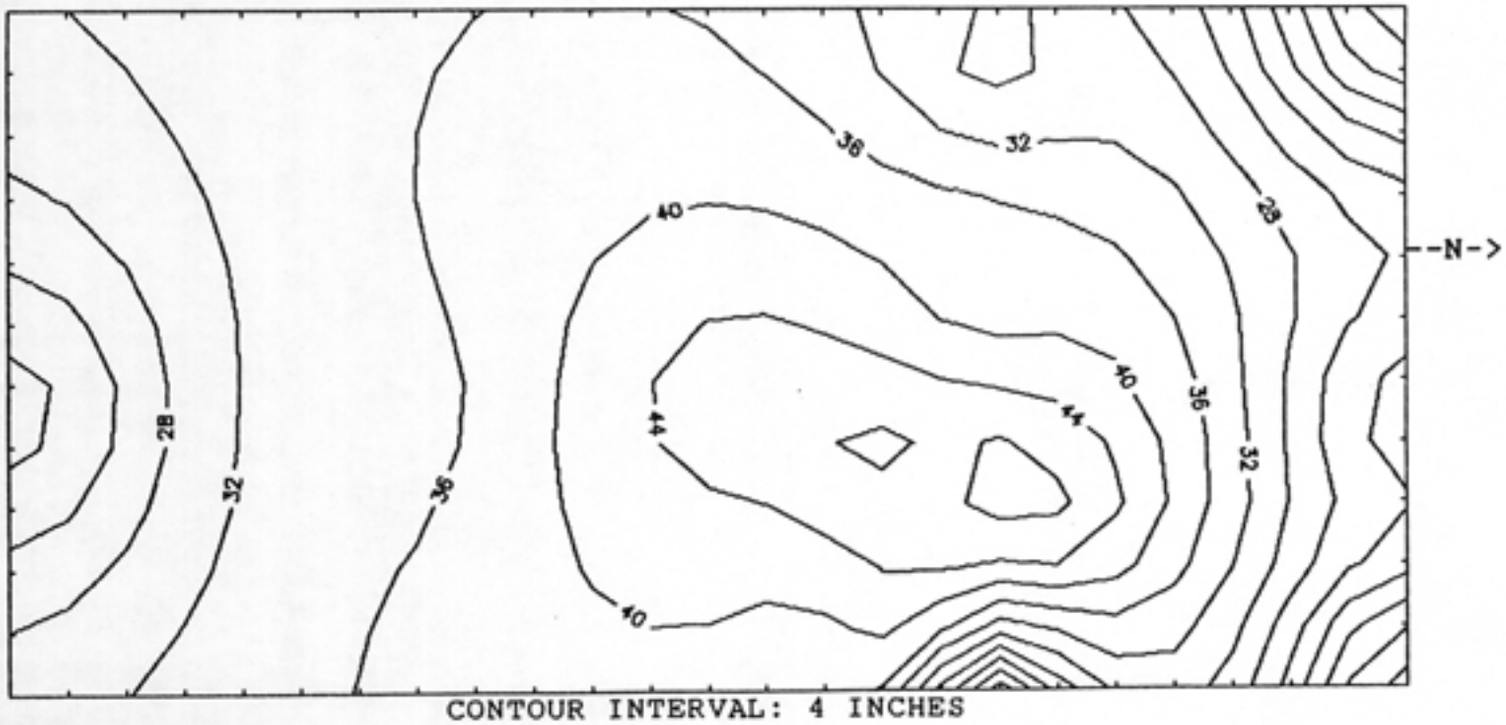
water terminated the test. The upper two inches consisted of black muck. The shell seemed intermixed with a tan/orange marl. No cultural material was noted on the test.

CHRONOLOGY: Prehistoric: unknown possibly includes a Glades I component.

COLLECTIONS: A single sand tempered plain sherd, possibly Glades I, was collected from the surface.

PREVIOUS RESEARCH: Plowden 1954, Widmer 1974 who lists the site as CR46.

PRESERVATION QUALITY: 3.



NORTH MOUND (8CR687)– Elevation Contours

RECOMMENDATIONS

Overall, the upland ridge and adjacent wetlands encompass numerous archaeological features and sites. The most significant of these prehistoric site areas, based on the available data, are discussed below with specific recommendations to offset adverse impacts from development activities.

8CR46 GOODLAND BURIAL MOUND

The site 8CR46, as designated by R. Widmer during his 1974 survey of Marco Island, was incorrectly located. There is no recommendation for this site since it is located outside the project property.

8CR119 PETTIT SITE

The material sample thus far recovered suggests a highly eroded site. Some portion of the site area should be selectively tested, particularly in those areas that produced indications of cultural activities (i.e. human teeth, shell midden, pottery, chert projectile point fragment). Other features that might be considered worthy of additional investigation are the Pettit wells. Any clearing in the site area should be ideally preceded with limited testing. Any subsurface digging, excavations, or dredging in the site area should be subject to archaeological monitoring.

8CR686 SOUTH RIDGE SITE

This was thought previously to be the Goodland burial mound. It is instead a shell midden with few discernible artifacts or features. Only a portion of the site is within the project property tract. Excavations and dredging should be subjected to archaeological monitoring.

8CR687 NORTH MOUND

If preservation of this site is not feasible, the site should be subjected to scientific investigation and archaeological recovery. Several excavation units should be excavated prior to any clearing or construction there. These units would attempt to determine mound function and significance. A contour map of this site should also be completed prior to clearing. Additional investigative needs would be determined based on results of testing, but equipment possibly could be used under the supervision of an archaeologist to carefully strip the mound if prior test results do not warrant expanding the existing units. Clearing of vegetation should be done by hand. Any clearing, dredging or construction in this area should be subjected to archaeological monitoring.

8CR685 SAFFRON PLUM MOUND

According to the most current project plan, this mound is within

the 100' corridor of the proposal R.O.W. for an access road to the marina. Shifting the road eastward would place it on another private property parcel, and shifting the road westward would further impact wetlands. We recommend a scientific excavation of this small site prior to development.

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