# TOPOGRAPHIC MAPPING AND ARCHAEOLOGICAL RECONNAISSANCE OF MOUND KEY STATE ARCHAEOLOGICAL SITE (8LL2), ESTERO BAY, FLORIDA

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A Report Submitted to Koreshan Unity Alliance, Inc.

by the

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# **PROJECT OBJECTIVES**

The primary objective of the project was to obtain data needed to create a detailed topographic map of Mound Key and to establish a metric grid system over the island. Secondary objectives included reconnaissance-level archaeological testing and the integration of previously known archaeological materials and historical documents relating to the site.

The project also provided educational opportunities to the public regarding the research being conducted on Mound Key. This included the utilization and training of volunteers for field work and the presentation of the research results to the interested public. Over 200 volunteers assisted in the field work, and 10 public talks were given in the area by Torrence and Chapman. The field research was featured several times in local television news programs and newspapers. A color brochure incorporating the project results was written and designed by Claudine Payne. It includes photographs by William Marquardt and Corbett Torrence and art work by Merald Clark.

# CULTURAL BACKGROUND

Mound Key, a 125-acre (51-hectare) island located in Estero Bay (Figure 1), is one of Florida's most significant historical sites. Contained within its dramatic ridges and mounds are archaeological clues that demonstrate that Mound Key has long been a place of habitation. Native Florida Indians, Spanish fisherfolk, and twentieth-century Euro-Americans made their homes here, each group altering the landscape in its own way.





Estero Bay is rich in estuarine resources, including an abundance of fish and shellfish. Many of the mangrove islands in the bay are home to a multitude of different birds and many other types of wildlife ranging from mangrove crabs and small lizards to gopher tortoises, marsh rabbits, snakes, and raccoons. The diversity of plant species is even greater than that of animals and one can easily find orchids, bromeliads, cactus, yucca, and many fine specimens of trees.

Over twelve thousand years ago, American Indian groups called Paleo-Indians moved into Florida from the north. They lived near the end of the Pleistocene epoch, a period in the earth's history when the climate was colder and glaciers advanced from the poles. During this time, large animals such as mastodons and giant ground sloth roamed Florida's cool grassy steppe. Paleo-Indians hunted big game, but more commonly lived off plants and smaller animals.

By 7000 B.C. the earth's climate had become warmer, and American Indian groups adapted to the changing environment. As sea levels rose and the climate became warmer and wetter, fresh water became more abundant. Rivers and streams increased in size. The mixing of fresh and salt waters formed rich estuaries along the Florida Gulf coast.

Coastal Indians developed a thriving culture based on the many resources the estuaries provided. These people were accomplished fishers; many species were eaten. Some fish were netted, while others were taken by hook and line or bow and arrow. Shellfish were also gathered and eaten. Certain shells were saved and used to make a

wide variety of tools and ornaments, including net gauges and weights, sinkers, hammers, celts, dippers, pendants, and beads.

Though these people depended on the estuaries, they did not overlook the many other resources available to them. Plants and terrestrial animals continued to be important resources in daily life. Nets were woven from palm fibers, and the leg bones of deer were used to manufacture tools such as fishing gear and arrow points. Around 1500 B.C., Indians of southwest Florida began to make clay vessels of many sizes and shapes. These were used for cooking and storage.

American Indians were probably living on Mound Key by A.D. 100, perhaps earlier. They discarded their food shells, fish bones, broken tools, and pots, forming large garbage heaps called middens. Some of the middens were deposited in a specific manner to form mounds, platforms, terraces, and ridges. Some of the mounds attained remarkable heights, over 30 feet (9 meters) tall.

When Europeans first came to southwest Florida in the 1500s, the Indians were known as Calusa (Hann 1991; Marquardt 1987, 1988). The Calusa were a powerful group whose influence reached over the entire southern half of the Florida peninsula. Other Indian groups paid tribute to them from as far away as Lake Okeechobee, Miami, and the Florida Keys. Their "cacique," or king, was believed to have influence over the natural world. Nobles had special privileges denied to commoners, such as access to particular foods.

Throughout the world, very few groups have achieved this level of organization without an economic base of farming. The abundant forms of plant and animal life in the

rich estuarine environments allowed the Calusa to harvest their food from the natural world instead of having to labor to grow it.

The first official contact between the Spanish and the Calusa was in 1513, when Ponce de León and his crew sailed into the area exploring the region for possible mineral resources and slaves. They found no gold or silver, but instead encountered the Calusa, who knew of the Spaniards from previous unofficial visits and did not welcome them. On June 5, 1513, 80 Calusa war canoes attacked the Spanish flotilla and demolished the vessel that was closest to shore.

In 1567 the Spaniards established a fort and Jesuit mission, San Antonio de Carlos, in the capital town of the Calusa (Lewis 1969). The purposes of the fort/mission were to protect shipwrecked Spaniards from the Indians and convert the Calusa to Christianity. Calusa resistance to conversion and mounting tensions between the two groups resulted in conflict.

In an attempt to bring the Indians under control, the Spanish soldiers stationed at the mission executed the Calusa king and two high-ranking nobles. This did little to change the deeply rooted problems and later the Spaniards executed the new Calusa king and many other leaders. After witnessing the murder of a second king, the remaining Calusa burned their village and abandoned it. Shortly after this, the Spaniards abandoned the mission.

One hundred thirty years later the Calusa king traveled to Cuba and requested that a new mission be established in his capital. Franciscan friars eventually arrived in 1697. Though the Calusa claimed to be interested in conversion, when they learned that gifts did

not accompany the conversion to Christianity and that the friars demanded that they renounce their own sacred beliefs, relations quickly deteriorated. Interactions between the Franciscans and the Calusa became hostile in less than three months. Finally, the Calusa stripped the friars of all their possessions and marooned them in the Florida Keys (Hann 1991:157-205).

Many researchers believe that Mound Key was "Calos," the capital town of the Calusa. Geographically and archaeologically, the island meets a number of requirements that other southwest Florida archaeological sites lack. The Spaniards described the capital town as a village of a thousand people situated on an island in the middle of a bay two day's sail from Havana. This places the capital somewhere between Key Marco and Punta Gorda. Key Marco, Mound Key, Galt, Demorey, Josslyn, Pineland, Useppa Island, and Big Mound Key are the only sites of sufficient size to contain such a village. Of these sites, only Mound Key and Useppa are located "in the middle of a bay," however, Spanish artifacts dating to the sixteenth-century mission period have been found in significant quantities only on Mound Key.

The Spaniards describe the island as having a circumference of "half a league" (Lewis 1969:7). This suggests that the island might be more or less circular, which Mound Key certainly is. Although there are several kinds of leagues used in Spanish writings of the period, one would need to increase the circumference only by twenty percent to fit the size estimate based on long-shore leagues (Lewis 1969:7).

The writings of Jesuit father Rogel and geographer López de Velasco reveal that the first mission was set up "in the court of the kings, ... two arquebus shots from the

north shore" (Lewis 1969:6-7; see also Hann 1991:309). When the 1567 mission was established, the Spaniards probably moved into 36 Indian houses and built one house of their own. A "thicket fence" was constructed around the compound delineating the fort of San Antonio de Carlos in the capital of the Calusa (Lewis 1969:6).

Assuming that the Calusa capital remained in the same location until the Franciscan mission attempt in 1697, the location of the latter mission may be the same as that of its Jesuit predecessor. The Franciscans tell of building their church near the house of the cacique, and other Spanish chroniclers note that the missions were in identical locations. As in 1567, the 1697 missionaries estimated that approximately 1,000 people inhabited the capital town.

What actually happened to the 1,000 Calusa people who lived in the village of the king remains a mystery. What is known is that after the Calusa left, Cuban fishing families inhabited Mound Key throughout the 1700s and early 1800s. These people set up their residences on the western fringe of the island, probably because deeper waters provided access for their boats there. Some of these fishing people likely lived on platform houses situated adjacent to the shore.

In the late 1800s, Frank and Mollie Johnson settled on Mound Key. Mollie Johnson's generosity and healing knowledge established her as a living legend. Locally known as "Grandma" Johnson, she was born of a white settler's daughter and a Cherokee Indian named Bill Whitton, who had escaped when his tribe was moved west (Briggs 1976:7). It is said that Grandma Johnson's medicines cured many, including wealthy

aristocrats who drove to the docks on the mainland where she would meet them. She protected the archaeological deposits on the island -- sometimes with a shotgun, it is said -- because of her belief that they ought not to be disturbed (Elmer Johnson, personal communication, 1994).

On November 9, 1891, Frank and Mollie Johnson were granted the entire island of Mound Key. Their homestead certificate, number 9353, was signed by President Benjamin Harrison. Within 25 years there were 17 families living on Mound Key and the small community had its own school house. Most of the houses were simple single-room structures. A cook house was constructed separately so that sleeping quarters would not be overheated. Black mangrove wood was smoked in the sleeping quarters before bed time. The small houses were then shut tightly for protection against mosquitos and biting gnats.

Some of the settlers were members of the Koreshan Unity, a turn-of-the-century communal society formed in Chicago. In 1894, led by founder Dr. Cyrus Teed, the Koreshans established a utopian community by the Estero River. Eventually they acquired portions of Mound Key; which is located at the mouth of the river. The Koreshans acquired land along the island's southern rim and constructed a house and a concrete cistern. Other families lived along the west and northwest edges of the island. Although the Koreshans were primarily farmers, most others on Mound Key made their living from both farming and fishing. Despite temporal and cultural separation, the twentieth-century residents of Mound Key lived remarkably similar lives to those of their Calusa predecessors.

In her old age, Mollie Johnson moved off of Mound Key and sold her land holdings for \$1,000. Eventually the forces of nature, particularly the hurricanes of the 1920s, convinced people to move off the island. By the late 1940s, only a single man who raised goats inhabited the island. In 1961, with their numbers dwindling, the last Koreshans, represented by then Koreshan Unity president Hedwig Michel, donated 139 acres of their original settlement grounds on the banks of the Estero River and all of their Mound Key property to the State of Florida for preservation into the future. The settlement grounds are today known as the Koreshan State Historic Site. The former Koreshan Mound Key property is known as the Mound Key State Archaeological Site; it is a detached portion of the Koreshan State Historic Site and is managed by the Historic Site's personnel.

# **PREVIOUS INVESTIGATIONS**

Although state records indicate that only one survey and several impromptu surface collections have been made on Mound Key, documentary sources reveal that the island has been visited for archaeological purposes several times since the late 1800s. Perhaps the best known and most widely referred-to source on Mound Key is Rolfe Schell's book 1,000 Years on Mound Key (1962, revised 1968). Schell's work contains interesting and pertinent data, but must be read critically due to numerous unverified speculations.

Mound Key was first reported by Douglass, but Cushing (1897:347-348) was the first professional archaeologist to visit the island, then known as "Johnson's Key," during his harbor reconnaissance in May, 1896. Cushing reported several mounds and some

Spanish artifacts. C. B. Moore (1900:366-367) investigated the site in 1900, hoping to duplicate Cushing's Key Marco finds. Moore excavated in some of the canals and lower areas of the island, but recovered little of what he considered of value and discontinued his work there. His findings of pottery and a shell tool are listed in the state records at the Florida Site File.

The next survey, which included some historical research and archaeological surface collections, was made by Goggin and Hahns of the University of Florida in 1950. Their findings include aboriginal, Spanish, and later ceramics, as well as shell, lithic, and metal artifacts. These are listed in the state records at the Florida Site File, along with a general synopsis of the research. The results of this survey are more fully discussed in "The Calusa: A Stratified, Non-Agricultural Society (with Notes on Sibling Marriage)" by Goggin and Sturtevant (1964).

In this article, Goggin and Sturtevant discuss the possibility of Mound Key's being the former town of Calos, capital of the Calusa and location of San Antonio de Carlos. Goggin reports a fragment of Isabella Polychrome majolica and several fragments of early-style olive jar dating to the sixteenth century. Because artifacts of this type and time period were unknown from other sites within southwest Florida, Goggin inferred that Mound Key was the location of the early mission. Since Spanish documentary sources indicate that the mission was established within the capital town of the Calusa, locating the mission would also identify this important settlement.

State records list artifacts from surface collections made by Joseph Willcox and David O. True. The collections were made previous to 1971 (the revision date on the

documents), but nothing further exists in the records as to provenience or discussion of these artifacts. Moore (1900:368-369) notes that Joseph Willcox had transferred "many relics" of European manufacture found on Mound Key to the Museum of Science and Art of the University of Pennsylvania prior to 1900.

The next surveys were made by Clifford M. Lewis of Wheeling College in 1967 and 1968. Lewis did additional historical research and conducted several surface collections on the island. He also interviewed several of the original white settlers who had occupied the island from around the turn of the century to the 1940s. Based on Goggin's work and his own discovery of several early-style olive jar fragments, Lewis also concluded that Mound Key was the former Calos. A detailed account of his work is in an unpublished document entitled *The Spanish Jesuit Mission of 1567-69 in Southwest Florida: Search for Location*. Additional information pertaining to his work on Mound Key can be found in the article "The Calusa" in the book *Tacachale* (Lewis 1978).

A survey was conducted by G. Huggins of Edison Community College in 1972-1974. Five *Fort Myers News-Press* articles give general summaries of his work, but apparently continuation of his work was disallowed by the State due to a failure on his part to report his findings. According to the articles, Huggins mapped two-thirds of the island and conducted numerous excavations. However, besides the newspaper articles, no results of Huggins' work are available, so far as we know.

In 1991, two different mapping surveys were initiated on Mound Key. James Marshall surveyed a portion of the island using a transit-level, covering about 10% of the

island. John Beriault of the Southwest Florida Archaeological Society produced a schematic map of the island using a compass and measuring tapes.

# METHODS OF DATA RECOVERY

In this section we present the specific sampling strategies employed during archaeological reconnaissance on Mound Key from December, 1993 to April, 1994. These include topographic mapping, surface collections, and subsurface test excavations. Questions at the site level included aspects of site structure, content, use, and temporal affiliations.

**Topographic Mapping** 

The primary objective was to map the 125-acre island with a high degree of accuracy and to establish a vertical and horizontal grid system. This was accomplished by taking elevation readings from known points and leaving reference markers in the field. Prior to the initiation of topographic data recovery it was necessary to determine the scope of the project and establish a survey strategy. To this end, aerial photographs were analyzed and major vegetation zones were mapped.

The island is comprised of three major vegetational zones delineated by elevation. The first zone, which we call the Normal Tidal Zone (NTZ), is observed between 0.0 and 0.9 m a.m.s.l.; it is dominated by red and black mangrove trees. Daily tidal fluctuations periodically inundate the entire NTZ. The second zone, situated between 0.9 and 1.3 m a.m.s.l., is called the Upper Tidal Zone (UTZ). It is generally devoid of vegetation, though organic matter accumulates along the high tide line. It is inundated only during extremely high tides. The third zone, called the Back Shore Zone (BSZ), is found above 1.3 m a.m.s.l. This zone is inundated only during extreme storms.

Walkovers of the site were used to gain familiarity with the main features. Aerial photographs were studied and systematic ground truthing of identified features was undertaken. This knowledge allowed us to generate a schematic topographic map. Prominent topographic features were identified and numbered (Figure 2). This enabled reference to topographic features in the field prior to the completion of the final map.

At a broad scale, the site is comprised of two major shellwork complexes and a series of ridge clusters, isolated mounds, canals, and courts. Complex I and Complex II are situated on the southeastern and northwestern sides of the central canal, respectively. The complexes themselves are comprised of ridges, mounds, and platforms. Platforms, in turn, contain lesser mounds and ridges. The distinction between a ridge, mound, and platform is inevitably gradational. However, these references are useful in analysis and interpretation because they allow distinction of discrete topographical features without functional interpretations.

During the topographic survey a Topcon laser transit was employed to determine the location and elevations of specific points. This instrument provides accurate readings within one millimeter (1/25 inch). In order to function, the Topcon requires a clear line of sight to a prism, which reflects the instrument's impulse laser back to the machine to calculate a variety of readings. Therefore, lines of sight must be established for topographic mapping. Over 4,000 person hours were spent clearing sight lines through





dense vegetation. Chainsaws, folding saws, machetes, and loppers were used for trimming brush.

Radial clearing patterns were selected instead of the Cartesian grid technique for a variety of reasons. First, the number of elevations required to define a feature varies proportionally with its degree of topographic undulation. By using radials, the number of survey points gathered from a station could easily be increased or decreased by changing the number of radials to be cleared from the central survey station. Second, radials can be judgmentally situated to optimize coverage of significant points and features, whereas the grid system is more restrictive. Third, radials can be cleared along paths of least resistance. Thus, sight lines can be situated where vegetation is less dense, and where rare and endangered species can be easily avoided without interfering with the mapping process.

In the center of each radial, a survey station was established by pounding a two foot length of rebar flush to the ground surface. A central point was marked on each piece of rebar. A wooden decoy stake was painted orange, labelled prominently, and placed near the actual survey station. This gave vandals something to kick over without damaging the permanent grid. Each survey station was referenced numerically.

Topographic mapping was initiated from an arbitrarily placed station on the top of the highest mound, called Station 1. Station 1 is situated 871.514 meters magnetic north and 648.689 meters magnetic east of Bench Mark 4, located on the island's southeastern shore. A magnetic north-south base line was established off of Station 1 on December 6,

1993 with a conventional transit. No further magnetic compass readings were taken and all subsequent angles were made in relationship to the established base line.

Over 5,700 readings were recorded from 72 different survey stations. Raw survey data were entered into a Hewlett Packard LX100 palmtop computer in LOTUS spreadsheets. Files were downloaded to a Hewlett Packard personal computer, where records were manipulated to calculate south and east grid locations and elevations. Elevations were recorded in meters above mean lower low water, which is zero elevation, i.e. "mean sea level," on the coastal geodetic survey. Grid points and their elevations were then loaded into the SURFER program, which generated two- and three-dimensional maps. A list of survey stations and their locations is presented in Table 1.

# Archaeological Reconnaissance

Sampling is an inevitable aspect of archaeological research. It has been demonstrated that a direct correlation exists between the intensity of coverage of any given area and the number of sites or find spots located (Grossman and Cavallo 1982). Thus the archaeologist must examine any given area as intensively as the research design permits in order to evaluate the cultural resources effectively.

Surface collections and subsurface test excavations were employed during the archaeological field work on Mound Key. The specific techniques employed during surface collections and subsurface excavations are presented below.

| Station | South    | East    | ĒÌV.  | n.ŝ.Ũ.  | Station | South   | East    | Elv.  | n.b.Ŭ. |
|---------|----------|---------|-------|---------|---------|---------|---------|-------|--------|
| 1       | 871.513  | 648.689 | 8.973 | 1.027   | 36      | 758.132 | 518.458 | 7.331 | 2.669  |
| 2       | 832.520  | 683.996 | 2.244 | 7.756   | 37      | 704.421 | 636.880 | 0.971 | 9.029  |
| 3       | 820.121  | 720.936 | 3.823 | 6.177   | 38      | 718.144 | 670.886 | 6.565 | 3.435  |
| 4       | 911.773  | 717.118 | 4.939 | 5.061   | 39      | 807.891 | 623.424 | 1.118 | 8.882  |
| · 5     | 878.439  | 689.707 | 3.049 | 6.951   | 40      | 865.897 | 570.732 | 0.793 | 9.207  |
| 6       | 921.743  | 776.575 | 2.490 | . 7.510 | 41      | 789.832 | 669.558 | 0.833 | 9.167  |
| 7       | 949.291  | 735.479 | 6.083 | 3.917   | 42      | 779.702 | 724.829 | 0.772 | 9.228  |
| 8       | 829.096  | 600.417 | 1.064 | 8.936   | 43      | 989.973 | 801.261 | 1.871 | 8.129  |
| 9       | 797.929  | 582.116 | 6.530 | 3.470   | 44      | 785.517 | 756.159 | 1.113 | 8.887  |
| 10      | 971.518  | 758.525 | 5.492 | 4.508   | 45      | 761.891 | 758.857 | 1.863 | 8.137  |
| 11      | 1020.566 | 720.310 | 2.382 | 7.618   | 46      | 753.739 | 798.434 | 0.906 | 9.094  |
| 12      | 913.053  | 685.706 | 5.917 | 4.083   | 47      | 704.608 | 757.734 | 0.817 | 9.183  |
| 13      | 972.988  | 780.363 | 5.558 | 4.442   | 48      | 863.447 | 523.199 | 5.081 | 4.919  |
| 14      | 914.294  | 807.682 | 2.246 | 7.754   | 49      | 881.592 | 505.886 | 4.067 | 5.933  |
| 15      | 952.500  | 820.405 | 5.964 | 4.036   | 50      | 701.544 | 456.122 | 1.646 | 8.354  |
| 16      | 930.920  | 842.925 | 4.605 | 5.395   | 51      | 974.420 | 824.601 | 4.375 | 5.625  |
| 17      | 906.532  | 838.431 | 3.090 | 6.910   | 52      | 683.906 | 401.935 | 0.835 | 9.165  |
| 18      | 869.302  | 823.035 | 2.569 | 7.431   | 53      | 657.347 | 385.208 | 1.246 | 8.754  |
| 19      | 946.697  | 874.566 | 4.942 | 5.058   | 54      | 617.335 | 367.153 | 0.912 | 9.088  |
| 20      | 919.912  | 867.431 | 4.995 | 5.005   | 55      | 745.236 | 830.806 | 1.396 | 8.604  |
| 21      | 937.952  | 901.208 | 4.364 | 5.636   | 56      | 722.512 | 814.054 | 0.842 | 9.158  |
| 22      | 884.161  | 746.080 | 2.499 | 7.501   | 57      | 695.116 | 697.809 | 0.942 | 9.058  |
| 23      | 941.025  | 690.444 | 4.439 | 5.561   | 58      | 745.463 | 871.903 | 2.324 | 7.676  |
| 24      | 886.487  | 785.047 | 2.674 | 7.326   | , 59    | 722.422 | 887.102 | 0.797 | 9.203  |
| 25      | 877.532  | 768.373 | 2.188 | 7.812   | 60      | 855.141 | 638.661 | 9.375 | 0.625  |
| 26      | 943.627  | 808.353 | 4.141 | 5.859   | 61      | 588.752 | 353.414 | 1.002 | 8.998  |
| 27      | 896.587  | 772.190 | 1.725 | 8.275   | 62      | 704.411 | 927.259 | 0.864 | 9.136  |
| 28      | 761.956  | 633.894 | 4.790 | 5.210   | 63      | 844.639 | 660.111 | 9.147 | 0.853  |
| 29      | 741.142  | 586.643 | 6.690 | 3.310   | 64      | 887.362 | 605.972 | 3.317 | 6.683  |
| 30      | 809.146  | 533.516 | 6.438 | 3.562   | 65      | 905.343 | 922.141 | 3.307 | 6.690  |
| 31      | 826.982  | 548.974 | 6.823 | 3.177   | 66      | 891.814 | 882.915 | 2.547 | 7.453  |
| 32      | 953.018  | 756.192 | 4.709 | 5.291   | 67      | 724.096 | 527.643 | 6.318 | 3.682  |
| 33      | 733.761  | 648.465 | 1.432 | 8.568   | 68      | 721.170 | 392.064 | 1.851 | 8.149  |
| 34      | 735.119  | 616.720 | 5.595 | 3,405   | 59      | 693.540 | 555.869 | i.618 | 8.382  |
| 35      | 864.855  | 504.453 | 1.519 | 8.481   | 70      | 814.958 | 773.115 | 0.910 | 9.090  |
|         |          |         |       |         |         |         |         |       |        |

Table 1. Location of Survey Stations.

Surface Collections

Surface collections were conducted along the southern margin of the island in the upper tidal zone (UTZ), along the eastern side of Mound 3 in the UTZ, and in the backshore zone (BSZ) on the east side of Complex I and the west side of Complex II (see Figure 3).

All artifacts collected from the surface were associated with known grid points by angle and distance. Three variations of artifact collection were employed. Along the southern margin of the island in the UTZ, artifacts were identified during intensive surface examinations. The primary objective was to collect 100 percent of ceramics over two centimeters in maximum dimension. Artifacts were marked with pin flags and then associated with collection stations by angle and distance using a Brunton pocket transit and nylon survey tape. A total of 3,250 proveniences were recorded from 15 collection stations.

On the east side of Mound 3 and the west side of Complex II, the same procedure was employed except that artifact collection consisted of shell artifacts only. Shell artifacts were also collected on the east side of Complex I. Artifacts were associated with the grid in the same fashion, but pre-existing survey stations were used in conjunction with surface collection stations. On the east side of Complex I, 97 shell artifacts were collected from 12 survey stations. These include collection stations 16-20 and survey stations 6, 18, 20, 22, 24, 26, and 27.





A total of 22 artifacts were collected incidental to the topographic survey because they were either of particular scientific value or they were easily visible in high traffic areas, making them susceptible to illegal collection by visitors.

#### Subsurface Excavations

During the subsurface testing, the meter square was the basic unit of excavation. Each meter square was designated with an numerical reference. In this fashion, each unit was referenced with its operation and unit number. Thus, the first meter square excavated is referenced A-1, and the next contiguous square A-2. The next non-contiguous meter square would be B-1, and so forth.

In one situation this system was not followed. Operations A-1 and A-2 are not contiguous, but because they are situated on a topographic feature that is spatially distinct it made sense to visualize excavations in this area as a single operation. Although Operations E through K are also situated on topographically distinct features, sequential numerical references were employed because we hope that future excavations in this area will be referenced by the established grid coordinate system rather than the system employed here. This would be advantageous because the grid coordinate reference includes locational information and large numbers of alphabetical operational references will in time become cumbersome and difficult to locate.

All excavations were conducted in arbitrary 10 centimeter (3.94 in) levels within a horizontal grid. Each level is numbered in relation to a master site level system beginning at a zero point 10 meters above mean lower low water (a.m.s.l.). In this manner,

artifacts recovered from a level situated between 1.0 and 1.1 m a.m.s.l. in Operation A-1 is referenced A-1-90. The next lower level, between 1.0 and 0.9 m a.m.s.l., is A-1-91, and so on.

Excavations were by trowel and all sediment was sifted through either eighth- or quarter-inch-mesh metal hardware cloth. Quarter-inch hardware cloth was utilized for operations A-1, A-2, B-1, and C-1. Eighth-inch hardware cloth was used for Operations E-1, F-1, G-1, H-1, I-1, J-1, and K-1, areas predicted by various observers as being likely places for the discovery of Spanish artifacts.

Special excavation techniques were employed in Operation D in order to excavate below water. High organic content and saturation of the sediments inhibited artifact visibility in the screens. Water screening could not be employed due to an insufficient source of water. For these reasons, screening of sediments was not productive. Excavations proceeded very slowly and objects were recovered by touch. Other problems resulted from water seepage into the excavation unit. To combat this, sponges and a bilge pump were employed in conjunction with terraces.

Sediment color, texture, staining, mottling, and inclusions were documented for each excavated level. Horizontal floor plans were sketched at the base of each level. Soil anomalies and/or stratigraphic breaks within a given level were designated as loci. Each locus was referenced numerically by order of encounter within each level. Sediment removed from a locus was treated as a distinct excavation unit and all cultural material recovered was bagged separately. The first locus identified within unit A-1-90 is thus referenced A-1-90-1, the second locus A-1-90-2, and so on. All soil anomalies identified

in the field were graphed in plan view every 10 cm and profiled in cross section.

During our excavations we collected lithic materials (chert, sandstone, limestone), carbonized plant materials, quahog (*Mercenaria campechiensis*) shells possessing the umbo (hinge) portion, bone, and manufactured materials. Manufactured materials and radiocarbon samples were mapped in situ to the centimeter on the vertical and horizontal grid system.

Each specimen mapped in situ was bagged and referenced separately. In this manner, the first item mapped in situ in Operation A, Unit 1, Level 90 is referenced A-1-90/1. Note that the in situ artifact number is preceded by a slash, not a hyphen. This creates a distinction between loci and plotted specimens. For example, if a tool is encountered in Locus 1 of Level 90 in Unit 1 of Operation A, then it is called A-1-90-1/1.

Some bulk samples were also recovered for possible zooarchaeological and archaeobotanical analysis in the future. These samples consisted of a predefined volume and will be processed by fine screening.

#### Preparation for Analysis

All materials recovered are currently being processed for analysis. This includes the washing of artifacts and the placement of catalogue numbers on each of the artifacts. Lithic, shell, and bone specimens are being washed in regular tap water and dried, while ceramic and floral materials are being dusted clean with a soft brush. All artifacts will be curated at the Florida Museum of Natural History, University of Florida, Gainesville.

# SAMPLING RESULTS

The topographic mapping provides a frame of reference for future archaeological data collection and elucidates geographical references contained in historical documents. Surface collections yielded information regarding spatial distributions of archaeological components and furnished ceramic specimens for preliminary analyses. The subsurface excavations addressed issues of site structure, content, and integrity.

The objectives of this research were to gain preliminary information that would establish a point of departure from which future research can be initiated. Funding will be sought to enable intensive analysis of the materials and information recovered during the past field season, but such an endeavor is beyond the budgetary scope of this project. Sampling results are preliminary, but informative. The discussions of sampling results that follow are reported according to method employed.

# Topographic Mapping

One topographical feature, Mound 2, is of particular historical interest, because it is the only single feature on the island large enough to have contained the fort/mission of San Antonio de Carlos. Its broad and level summit could have easily contained the "36 Indian structures in the court of the King" (Lewis 1969:6; see also Hann 1991:256).

This "court" area is situated directly across the central canal from Mound 1, the highest mound on the island, which overlooks the level summit of Mound 2 (see Figure 4). Mound 1 may have been the site of the king's house and Mound 2 may have been "the court of the King."



Another topographic feature warrants discussion at this time. Situated immediately adjacent to the north side of Mound 2 is a large depression that extends northwesterly to the north landing at the trail's end. This feature was excavated with heavy equipment by a man named May in the 1920s. The shell removed was shipped by barge to the mainland and used for road fill. Later a man named Furren excavated more shell fill from this area. Combined, the two men obliterated about ten percent of the archaeological deposits on Mound Key. Elmer Johnson (personal communication, 1994) describes the area prior to impact as being characterized by a low ridge and platform area with no high mounds or prominent features.

The Johnson home of the early twentieth century was situated on top of Mound 2. The Johnsons had two structures: a sleeping quarters and cooking house. The cooking house was situated south of the sleeping quarters. Archaeologically, one of the two structures, probably the sleeping quarters, is easily visible. The extent of the foundation is roughly defined by a dense growth of mother-in-law's tongue.

The Koreshans built a large house (in the words of Elmer Johnson) and a concrete cistern on the southeast side of the island on top of Platform 3. The cistern is plainly evident today, but there are no obvious surface indications of the house.

Homesteads were also situated along the western shore north of the canal and along the edge of Canal 2 near the northwestern shore. According to Elmer Johnson, these structures sat on pilings and thus were somewhat elevated. We identified structural remains in both areas. On the western side of the island north of the canal is at least one

cistern and possibly the remains of what was another cistern. Artifacts from these occupations, such as metal, glass, ceramics, and boards are evident.

On the southeast side of Canal 2 are two distinct clusters of structural remains characterized by piles of partially decayed boards. Lewis states that the U.S.G.S. quadrangle map of 1927 shows 11 structures on the island. Elmer Johnson (personal communication, 1994) also recalls 11. These include his family's two houses on Mound 2, the Koreshans' structure to the south, and four in each of the other two aforementioned locations.

Elmer Johnson also made reference to several Cuban families that migrated on and off the island seasonally. He said that these people lived along the north shore, but whether or not he is referring to the same people who lived adjacent to Canal 2 is unclear.

Surface Collections

As mentioned above, systematic surface collections were conducted in three discrete areas and other collections of individual specimens were made on a judgmental basis. Systematic surface collections were conducted in two environmental zones: the upper tidal zone (UTZ) and the backshore zone (BSZ). In the UTZ artifacts were collected from the southwest margin of the island and the eastern margin of Mound 3 adjacent to Water Court 1. In the BSZ, shell tools were collected from a portion of Platforms 1 and 4.

A total of 3,250 artifact proveniences were recorded from the southwestern shore in the UTZ from Collection Stations 1-15. Preliminary field observation and identifications indicate that this portion of the site was intensively utilized by both Native American and Euro-American peoples. Temporally diagnostic artifacts of American Indian origin include Sand-tempered Plain, Belle Glade Plain, St. Johns Check Stamped, Glades Tooled, Weeden Island, Safety Harbor, and Jefferson Plain (after Willey 1949:492-493) ceramics. Other unidentified aboriginal sherds were also recovered, including a solid conical pod.

Spanish artifacts recovered from Collection Stations 1-13 included olive jar fragments and six majolica sherds. One of the majolicas has been identified as Santo Domingo Blue on White, dating to the late sixteenth century (Deagan 1987:59-61). The remaining sherds are attributable to the late seventeenth and early eighteenth centuries.

In the other three surface collection areas, only shell artifacts were collected; 97 were recovered. Analysis has not been initiated, but field observations identified both cutting-edged tools and hammers, with Type C hammers being the most common (see Marquardt 1992).

During surface walkovers, human remains were identified on Mounds 6 and 7, indicating that these features were used as places of burial.

The locations of surface collection stations are presented in Figure 3.

# Subsurface Excavations

A total of 13.6 cubic meters of sediment was excavated from 12 1-x-1-meter square units (see Table 2). Operations A through D were situated judgmentally and represent reconnaissance-level survey tests. Operations E through K were oriented on the

| Unit        | Cubic<br>Meters<br>Exca-<br>vated | Elevation<br>of surface | Elevation<br>of bottom<br>of<br>excavation | Max.<br>Depth<br>Below<br>Surface | Minimum<br>Elevation,<br>Aboriginal<br>Artifacts | Post-<br>Contact<br>Artifacts<br>Present? | Minimum<br>Elevation,<br>Post-<br>Contact<br>Artifacts | Structural<br>Remains<br>Present? | Elevation<br>Structural<br>Remains<br>First<br>Encountered |
|-------------|-----------------------------------|-------------------------|--|-----------------------------------|--|---|--|-----------------------------------|--|
| A-1         | 1.37                              | 1.89                    | 0.52                                       | 1.37                              | 0.52   | N   |  | Yes                               | 0.71   |
| A-2         | 0.99                              | 1.51                    | 0.52                                       | 0.99                              | 0.52   | Y   | 1.30   | Yes                               | 1.14   |
| <b>B-1</b>  | 2.06                              | 2.66                    | 0.60                                       | 2.06                              | 0.80   | N   |  | Yes                               | 0.89   |
| C-1         | 3.26                              | 3.76                    | 0.50                                       | 3.26                              | 0.60   | N   |  | Probable                          | 1.30 ·   |
| D-1         | 0.80                              | 0.90                    | 0.10                                       | 0.80                              | 0.10   | N   |  | No                                |  |
| E-1         | 0.60                              | 6.20                    | 5.60                                       | 0.60                              | 5.60   | Y   | 6.00   | Yes                               | 5.80   |
| F-1         | 1.04                              | 6.44                    | 5.40                                       | 1.04                              | 5.40   | Y   | 6.10   | Yes                               | 6.08   |
| G-1         | 0.48                              | 6.18                    | 5.70                                       | 0.48                              | 5.70   | N   |  | No                                |  |
| H-1         | 0.76                              | 6.26                    | 5.50                                       | 0.76                              | 5.50   | Y   | 6.10   | Yes                               | 5.70   |
| I-1         | 0.84                              | 5.94                    | 5.10                                       | <b>0.84</b> ·                     | 5.10   | Y   | 5.80   | No .                              |  |
| J-1         | 0.59                              | 6.29                    | 5.70                                       | 0.59                              | 5.70   | Y   | 5.90   | Yes                               | 6.00   |
| <b>K-</b> 1 | 0.96                              | 6.36                    | 5.40                                       | 0.96                              | 5.40   | Y   | 6.10   | Yes                               | 6.00   |

Table 2. Summary of Excavation Results.

horizontal grid system and were situated to evaluate a portion of Mound 2 (Figure 5). The following summary of the excavations is divided by operation in alphabetical sequence. In instances where more than one excavation unit was used to evaluate a topographical feature, the discussions of the survey results are combined.

Operations A-1 and A-2 were situated on Mound 4, which is located in the central canal just east of Mounds 1 and 2. Operation A-1 was excavated to a depth of 1.36 meters below surface and A-2 to 0.99 meters below surface. Both units were terminated slightly below the water table, although the archaeological deposits continued below it.

Operations A-1 and A-2 revealed that Mound 4 is comprised of at least three major stratigraphic zones. All three strata are characterized by fine sand and shell matrix containing varying quantities of faunal, floral, and other cultural materials. The dominant cultural materials included *Strombus alatus* Type G shell hammers (see Marquardt 1992) and Sand-tempered Plain pottery. Other noteworthy artifacts included a ceramic platform pipe fragment from A-1-92/1, a carved petrified bone from A-2-91/2, and numerous proximal ends of deer tibia fractured just below the elements' point of constriction below the articular surface.

Two probable post molds were identified, one each in the lower two strata. One was encountered in the south profile of A-1 at a depth of 1.18 meters below surface and the other was identified in the east profile of A-2 at 0.37 meters below surface.

Operation B-1, situated just south of Mound 4 on top of Ridge 12, was excavated to a depth of 2.07 meters below ground surface and was terminated just below the water table in Level 94. A total of five stratigraphic zones were identified. The basal zone is



Figure 5. Location of subsurface test excavations.

characterized by a thick accumulation of predominantly oyster shells that began just above the water table and extended well below it. No cultural material was identified in the oyster deposit. The overlying stratigraphic zones are characterized by a fine sand and shell matrix that contained varying quantities of cultural material. Temporally diagnostic materials are limited to Sand-tempered Plain ceramics. Structural remains identified included two post molds associated with Level 91.

Operation C-1 was situated west of B-1 on a platform feature on Complex I, just east of Mound 1. Operation C was excavated to a depth of 3.16 meters below surface and terminated 0.10 meters below the water table in Level 95. Excavations revealed nine stratigraphic zones comprised of a fine sand and shell matrix containing varying quantities of cultural material. The deepest zone is characterized by a predominantly oyster deposit capped by a thin layer of surf clams in Level 93. Both of these deposits were devoid of cultural material. Between Levels 93 and 88, five distinct stratigraphic zones were encountered and three more zones were encountered between Level 88 and ground surface at Level 63. A possible fire pit was encountered in Levels 89 and 90.

Belle Glade and Sand-tempered Plain pottery was recovered from Levels 63-88, representing the upper three stratigraphic zones. Below this depth Belle Glade Plain pottery was not found, but Sand-tempered Plain sherds were recovered from Levels 88 through 93. Other notable artifacts include a shell dipper with an associated stone bead in Level 85.

Throughout the excavations of C-1, high quantities of bone were recovered compared to the excavations of A-1, A-2, and B-1. Of further interest is the fact that the

deer bone represented elements above the tibia, including teeth, mandibles, scapulae, and vertebrae, a noticeable contrast compared to the deer elements recovered from the Operation A units on Mound 4.

Operation D was situated at the west end of Water Court 1 at the base of Mound 3. The surface of this unit was situated only a few centimeters above the high tide line and thus the unit was located in the UTZ. This unit was initiated in the hope of evaluating the potential for the preservation of highly perishable remains such as plant fibers and carved wood.

Operation D was excavated to a depth of 0.74 meters below ground surface, but no distinctive stratigraphic variability was evident in the unit profile. In general, the matrix was comprised of a rich organic muck with cultural inclusions. Temporally diagnostic materials included Sand-tempered Plain and Glades Tooled ceramics.

Operations E-1, F-1, G-1, H-1, I-1, J-1, and K-1 were excavated on the summit of Mound 2 on a rise situated centrally along the southern flank of the mound above the central canal. These units were excavated to an average depth of 0.78 meters below surface with a minimum depth of 0.59 meters below ground surface in Operation G-1 and a maximum depth of 1.04 meters below ground surface in Operation F-1.

Stratigraphically these units were varied and complex. A plow zone impacting the upper 0.10 to 0.15 meters of each unit was the only zone that could be definitively identified in each of the seven units. Stratigraphic zones were characterized by a fine sand and/or shell matrix with varying quantities of other cultural inclusions. Structural remains comprised of living floors and/or post molds were encountered in five of the

seven units (see Table 2). Of particular note was a square post mold encountered in Operation F-1.

In some of the living floors, characterized by organically rich fine sands with small amounts of crushed shell and other artifactual remains, the quantity of bone was so great that their collection from the eighth-inch screens would have compromised time allowed for excavation. In these cases, in particular Operation F-1-38, bulk faunal samples were recovered for future analysis.

Artifacts of Native American origin came from all units on Mound 2. The ceramic inventory includes Sand-tempered Plain, St. Johns Check Stamped, Belle Glade Plain, and grog-tempered sherds. In Operation H, several notched sherds were associated with a concentration of perforated ark shell (*Noetia ponderosa*) net weights, suggesting that the notched sherds may also represent fishing gear, perhaps sinkers.

Other noteworthy aboriginal artifacts include a copper bead, bulbous stone plummets or weights, retouched chert fragments, worked columellas, Type C gastropod hammers, shell spoon/scoops, a small circular shell disk (similar to objects identified as "mask eyes" by Gilliland [1976:184]), shell and bone beads, bone points, carved bone fragments (probably pins or points), a barbed bone point, and two specimens of carved petrified wood and/or bone.

Artifacts attributable to Spanish origin, at least in part, include late seventeenthand eighteenth-century majolica pottery fragments, late seventeenth- to eighteenth-century olive jar fragments, wrought iron nails, glass seed beads, and a lead sinker fashioned like an aboriginal shell sinker. Depths for Spanish-period artifacts are included in Table 2.

# CONCLUSIONS

Mound Key is an extremely significant and well preserved site. Cultural materials from all major pre-contact and post-contact periods known in southwest Florida from 500 B.C. to the present were identified at Mound Key. These periods are presented in Table 3.

The exact extent of the pre-contact components on Mound Key is as yet unknown due to limited archaeological testing. Radiometric dating was not included in this initial phase of work. However, based on previous excavations in the Calusa area (e.g., Marquardt, ed. 1992) and the preliminary results of this survey, we can infer that portions of the site likely date as early as the Caloosahatchee I period (500 B.C. to A.D. 500). This interpretation is based on the observation that inundated archaeological components were unexplored in Units A-1 and A-2, whose excavated portions could be assigned to the Caloosahatchee IIA period (A.D. 500-800) based on the artifacts found.

Further evidence of Caloosahatchee I components can be hypothesized for the deposits in Ridge 12 and the basal portions of Operation C-1 east of Mound 1. In both of these contexts, Belle Glade pottery, a marker of Caloosahatchee II period deposits, was absent.

Caloosahatchee II period components were encountered in Mound 4 based on the artifact assemblages from Operations A-1 and A-2. Here the association of *Strombus alatus* Type G hammers with Sand-tempered Plain ceramics hints at an occupation dating to this period.

Table 3. Generalized Chronology for Caloosahatchee Area and Immediate Environs, Based on Summaries by Cordell (1992), Griffin (1988), and Widmer (1988), updated according to results of recent unpublished work at the Pineland and Mound Key sites.

| Date            | Period             | Present at  | Some Diagnostic Artifacts  |  |  |
|-----------------|--------------------|---|--|--|--|
| A.D. 1500-1750  | Caloosahatchee V   | Mound Key, Big Mound Key,<br>Galt Island and Pineland Burial<br>Mounds, Useppa Island | European artifacts (e.g., metal, beads,<br>olive jar sherds)   |  |  |
| A.D. 1350-1500  | Caloosahatchee IV  | Mound Key, Pineland, John<br>Quiet, Buck Key  | Safety Harbor, Giades Tooled, and<br>Pinellas Plain pottery present; Belle<br>Glade Plain diminishes |  |  |
| A.D. 1200-1350  | Caloosahatchee III | Mound Key, Buck Key, Galt<br>Island, Josslyn Island, Pineland                         | St. Johns Check Stamped, Englewood ceramics; Belle Glade Plain prominent                             |  |  |
| A.D. 800-1200   | Caloosahatchee IIB | Mound Key, Big Mound Key,<br>Galt Island, Josslyn Island,<br>Pineland, Useppa Island  | Belle Glade Red present; Belle Glade<br>Plain prominent  |  |  |
| A.D. 500-800    | Caloosahatchee IIA | Mound Key, Cash Mound, Galt<br>Island, Jossiyn Island,<br>Pineland, Useppa Island     | Beginning of Belle Glade Plain and<br>SPCB ceramics; Glades Red; thinner<br>ceramics                 |  |  |
| 500 B.CA.D. 500 | Caloosahatchee I   | Mound Key, Cash Mound,<br>Jossiyn Island, Useppa Island                               | thick sand-tempered plain pottery, with round and chamfered lips                                     |  |  |

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Based on the identification of Caloosahatchee II artifacts, including Belle Glade pottery, as well as St. Johns Check Stamped pottery, it can be stated that Caloosahatchee II (A.D. 500-1200) and III (A.D. 1200-1350) deposits are present on the island.

Ceramic markers for the Caloosahatchee IV period (A.D. 1350-1500) include Safety Harbor and Glades Tooled types. Glades Tooled ceramics were identified over large portions of the site, including the controlled surface collections at Collection Station 10, Operation D-1, and Operation F-1. There can be little doubt that this period is well represented at Mound Key.

Caloosahatchee V (A.D. 1500-1750) components are also represented on Mound Key based on the recovery of diagnostic Native American and Euro-American materials. Specifically, Jefferson Ware ceramics and the Spanish majolica and olive jar fragments recovered from the surface collections and on Mound 2 are in sufficient numbers to imply occupations dating to both the early seventeenth and the early to middle eighteenth centuries, and a Santo Domingo Blue on White sherd dates to the late sixteenth century.

Previous archaeological information, the historical research of Hann (1991) and Lewis (1969, 1978), and the research conducted during this investigation all support the hypothesis that Mound Key was indeed Calos, the capital of the Calusa. If so, it is also the site of the fort/mission of San Antonio de Carlos, the first Jesuit mission built in this hemisphere to serve and convert the Indians.

A number of other observations can also be gleaned from our preliminary research. First, there are at least two burial mounds on the island based on the identification of human remains. These are Mounds 6 and 7.

The matrix of Mound 7 is characterized by fine sand, with numerous scallop and small crown conch shells. Belle Glade ceramics were also identified, indicating a temporal affiliation somewhere between A.D. 500 and 1500. Numerous dippers, all punctured, were evident over the surface. The mound has been badly disturbed by illegal excavations.

Mound 6, previously known as 8LL3, also has been badly disturbed by illegal digging. Here only Sand-tempered Plain sherds were observed during walkovers. In contrast to Mound 7, Mound 6 is comprised primarily of fine sand and oyster shells.

Mound 5 is also likely a burial mound based on form, content, and location. Elmer Johnson, who was born on Mound Key in 1908, indicates that the ridges and possibly the muck areas of the site were also used as places of burial. More specifically, he states that hundreds of human bones were unearthed in one of the northerly ridges off of Complex II and that one burial was encountered during the excavations by May in the early twentieth century (Elmer Johnson, personal communication, 1994).

Second, contrasting faunal assemblages were recognized in our limited testing. These may be attributable to the utilization of areas by Native Americans of different social status. Fontaneda (1944) makes clear reference to high-ranking members of Calusa society having differential rights to particular food resources. The distinction in deer bone elements between the excavations in Mound 4 (Operations A-1 and A-2) and Operation C-

1 could also be explained as differential usage of deer bones for tool manufacture. Similarly, the matrix distinction (oyster versus scallop and crown conch) between Mounds 6 and 7 may have to do with the social status of individuals who lived on or were buried in these features, or may be due simply to deposition at different time periods.

Third, evidence of structural remains was identified in eight of the twelve excavation units. Based on historical records and local informants who lived on Mound Key, the Euro-Americans who inhabited the island after the contact period did not construct fences. This information, combined with the stratigraphic associations, suggests that structural remains such as post molds are attributable to the pre-contact and early post-contact periods. Furthermore, several of the structural remains are clearly attributable to Native American origin, indicating that information on aboriginal structures is potentially available at least for Caloosahatchee periods III through V.

Finally, at the base of Operations B-1 and C-1, below the apparent extent of cultural deposits, dense oyster shell deposits were encountered. These deposits may represent a natural accumulation of oyster bars on which the initial occupations of Mound Key began to accumulate. In concert with the research of Karen Walker (1992), these deposits and other proxy environmental data available on Mound Key could contribute significantly to our understanding of environmental dynamics related to sea-level change and human cultural adaptation in the region (see Walker, Stapor, and Marquardt 1994).

In contrast with the spatially extensive Native American deposits, the Euro-American components are restricted to the western side of the island. This is not surprising when combined with the topographical data for two major reasons. First, the

waters on the east side of the island are too shallow to enable boat access in any vessel other than a canoe, whereas the west side is accessible in most tidal situations to a wide variety of water craft. Second, the east side of the island is dominated by mangrove swamps, while the western side is higher, facilitating Euro-American land use practices. During the post-contact period, Spanish access to the eastern side of the island may have been restricted by the Calusa for spiritual reasons.

The earliest Euro-American components probably date to the first mission of San Antonio de Carlos established in 1567. A single sherd of Santo Domingo Blue on White majolica was recovered from the southwestern shore. Numerous other artifacts can be attributed to this time period, though not exclusively. The evidence in support of the mission being situated on Mound 2 of the Mound Key site is compelling, though circumstantial.

Surface collections along the southwestern shore suggest that at least this region of the site was occupied by Euro-Americans in the mid-eighteenth century, shortly after the demise of the Calusa, if not during this transitional period.

Historical documents indicate that itinerant Cuban fisher folk inhabited the island throughout the early and late nineteenth centuries and into the Homestead period which began sometime in the late 1800s. Numerous accounts and documents elucidate the lifeways and land-use practices of the Mound Key homesteaders, and archaeological remains of their habitation are extensive.

It is evident from documents, newspaper articles, local informants, and our own surface evaluations undertaken during this project that extensive amounts of archaeological

material have been removed from Mound Key. Southwest Florida historical materials collected during the 1890s are curated at the Smithsonian Institution and at the University of Pennsylvania Museum, catalogued simply as "Punta Rassa." It is likely that these artifacts came from Mound Key (George Luer, personal communication, 1990), and were mailed from the Punta Rassa post office, accounting for the catalogue assignment to that locality.

Years of public and scientific surface collection have removed a vast quantity of "obvious" artifacts from the island. By obvious we mean decorated pottery sherds and artifacts of precious metals. (One informant, Robert Porter, donated to the Florida Museum of Natural History a gold bead he had found on the island as a teenager in 1927. His desire was that it be properly curated and analyzed. And James Kenefick wrote from Connecticut to inform us of his surface collections and digs on the island in the 1940s. We are attempting to obtain photographs of Mr. Kenefick's Mound Key collections.)

Even more distressing are the extensive looters' pits that pock the surface everywhere. Nowhere is this more evident than in Mounds 6 and 7. In Mound 7 there is a single pit more than three meters square and a meter deep. In all, the open pits on Mound 7 represent more earth removal than was accomplished during this entire project. Furthermore, illegal excavations were initiated during our presence on the island and on three occasions our excavations and decoy reference markers were vandalized.

Nonetheless, the present extent of damage has not destroyed the overall significance of the site. Mound Key is still one of the best preserved archaeological sites in the Calusa domain.

# RECOMMENDATIONS

The extent of the different components on Mound Key is not known at this time. The way the site is interconnected by canals, courts, and ridges suggests that it functioned as a contiguous whole during its zenith. Under these conditions, it makes sense to refer to the site as a single multicomponent deposit rather than arbitrarily carve it up into a myriad of spatially limited sites, each with its own state number. How would one determine where one site ended and the next began?

When the site was first assigned a number in the state files, two small features on the island were referenced under two separate site numbers, 8LL2 and 8LL3. Today there is confusion as to which features these numbers refer to. To clarify matters, 8LL3 is definitely the same as Mound 6.

Site number 8LL2 appears once to have referred to a small rise located south of Mound 1, however the current 8LL2 site file has been enlarged to encompass the entire island with the exception of Mound 6 (8LL3). As per conversations with personnel with the State Site File, all future research will utilize the 8LL2 number, including any work conducted on Mound 6. This will alleviate many headaches in the future, but researchers should be aware that previous collections from Mound 6 are likely to be listed as site 8LL3.

Recommendation 1. Further research on Mound Key is definitely warranted.

The excellent preservation of this site sets it apart from most sites in the region. Our data suggest that aboriginal structural remains are well preserved along with

numerous activity areas. Wet site potential is likewise extremely high, and our research further indicates that data applicable to sea-level fluctuation studies and dynamic models of paleoenvironmental reconstruction are present at the site. Finally, there are significant deposits dating to the post-contact period, including Mission, Cuban, Pioneer, and Homestead periods.

Mound Key is the high point of Lee County in many ways. Most obviously, Mound 1 is the highest elevation in the county at 9.79 meters (32.12 feet) a.m.s.l. Second, it is widely believed to have been the capital of the Calusa domain. Some recognize that this also means it was the site where the Spaniards established the first Jesuit mission to serve the Indians in this hemisphere. Third, it is a symbol of the more recent past. The homesteaders who worked a living out of the estuary continued a fishing tradition already many centuries old. The early agricultural and fishing industries represented on Mound Key are important reminders of Lee County's heritage.

Recommendation 2. The archaeological site should be better protected and interpreted than it is today.

The public visits Mound Key frequently. During our five months of research, not a single day passed without a person stopping to investigate the island. On some days, over 50 different people would stroll across the path that traverses the island. Because of this extensive public interest, the State of Florida should take responsible action to protect and interpret the island.

Primarily because of the unsubstantiated (and in fact refuted) legends of Gaspar the Pirate, which have been published in such works as Rolfe Schell's book 1000 Years on Mound Key, extensive illegal excavations have taken place over the site. This misinformation continues to threaten the irreplaceable archaeological record of Mound Key. Monitoring of the island by law enforcement personnel is desperately needed.

Considering the vandalism to our equipment and excavations during the project, and given the high traffic on the island, we recommend that the rebar permanent survey stations not be marked with brightly colored plastic caps, although this is technically required by our contract with Koreshan Unity Alliance. This would draw attention to the markers, and invite their removal. The rebar markers can be easily found using a metal detector, so it does not make sense to mark them conspicuously.

Recommendation 3. Trails should be stabilized to prevent further erosion and deterioration.

The heavy foot traffic over the island is exacerbating erosion of the mounds, in particular Mounds 1 and 2. If Mound Key is to remain open to the public, then the trails should be secured to avoid continued degradation of the site. If any excavation (e.g., for installation of steps) is necessitated by such trail improvement, a professional archaeologist should be on hand to monitor the work and systematically collect and interpret any artifacts.

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