

**Archaeological Assessment of Soldier Key,
Biscayne National Park**

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Introduction

A shell midden site, previously noted to have been exposed during Hurricane Andrew, needed to be evaluated for its archeological potential. How extensive are the archeological remains on this key? Does the site (or sites) require any stabilization measures to be taken due to the erosion after the hurricane?

Public access to Soldier Key is temporarily restricted due to the presence of a bird nesting site and pending the results of archeological evaluation. The findings of this report will contribute to a management policy for this key.

History of Soldier Key

The history of the lands and waters within Biscayne National Park have been described in Burrus (1984). A more specific history for Soldier Key is in Adams & Helmers (1996).

Recent archeological finds on the neighboring mainland indicate that the first human activity was as early as 10,000 years Before Present (BP), much earlier than the previously reported date of 4,000 years BP, for south Florida. There is much evidence of Paleo-Indian and Tequesta Indian settlements within southeast Florida and the Biscayne Bay area, to include the northern Keys. European contact first occurred in 1513 AD near what is now Miami.

The small 2.5 acre Soldier Key actually has a good deal of documented history. Of particular note for this survey, are the activities and degree of construction that occurred within the last 130 years. Coupled with the recorded hurricane storm damage for this period, this information can be related to the archeological remains found on the key.

Previous Archeological Work

Previous archeological studies have been conducted in the park. Although the formal studies have not included Soldier Key, they provide background and related information. The results of a general archeological assessment and survey can be found in Sears & McGregor (1974) and Fischer (1975). Further survey and testing of Sands Key is documented in Carr (1988).

As part of project compliance for the removal of trees and debris after Hurricane Andrew, several archeological sites within Biscayne National Park were viewed by an archeologist from the Southeast Archeological Center (SEAC). This included the investigation of a previously unrecorded site on Soldier Key. The results from this 1993 trip report are provided:

Acting on information provided by Park Resource Management Coordinator Curry, we visited Soldier Key on Tuesday 11/16. Walking over the island we observed that the island floor (mostly on the east side) exhibited a great deal of modification, by the pouring of old-style coral-and-sand cement. It appears that efforts were made to smooth

over or level the normally rough and jagged exposed coral line bedrock to create some sort of working platform or surface for the island, although the overall effect was somewhat uneven. The coral cement also included a large number of broken (and apparently prehistorically-altered) conch shells. These had been added as fill, much like oyster shell in tabby construction. Also evident in the mix were brick and glass fragments of a nature indicating the cement was poured within the last hundred years or so. Finally, the degraded condition of the cement meant that the mixture had been made with salt water, and has deteriorated over time.

The reason for the visit was the observation by Curry that there was an exposed shell midden on the southern end of the island. This midden is readily discernible, and exhibits some erosional degradation since the southern end of the island was impacted by Hurricane Andrew. This erosion was indicated by several large (20-30 ft high, 8-10 inch diameter) uprooted large mangroves with a number of prehistoric altered shells embedded in the root systems. The site is on the South and Southwest corner of the island, and is approximately 20-30 m in diameter. Shells show both aboriginal extraction techniques (single entry perforation), as well as more modern homesteader extraction techniques ("topping," or removal of the columella), indicating that the area has continued to be used for conch-meat extraction and processing throughout the historic period. Four items were recovered from the surface at the midden site: one fragment of prehistoric ceramic (St. Johns Check Stamp, 800 - 1700 A.D.), one fragment of porcelain (1600 - Present), and two .30 caliber cartridges (M-1 carbine).

Present Archeological Findings

Between December 1, 1995, and January 17, 1996, three field visits were made to Soldier Key by Jim Adams, Archeologist, Cultural Resource Specialist for Biscayne National Park (BNP). The first was with James Dame, Supervisory Resource Management Specialist, BNP, the second with Park Volunteer Terry Helmers, and the third with Richard Curry, Science Coordinator, BNP. An additional field visit to Sands Key Site 2, with Richard Curry, provided the opportunity for comparison of the two sites.

During these visits it was observed that there are the remains of a midden site on the south side of the key (Figure 1). Mainly conch shells were observed, although there are a few whelk shells. Most have what appears to be the single entry perforation on the side, with a few that have been topped. The center of the largest concentration is approximately 20 meters from the south point of the key. An area of approximately 10 x 15 meters has numerous shells exposed on the surface of the sand. There is a slight rise to the contour of the key at this point, maybe 4-6 feet above sea level (asl) and is semi-covered with grass. Towards the shore on three sides (east, south, and west) are mangroves, many of which were uprooted during the hurricane. Some of this uprooting has exposed more of the site. What appears to be worked shells are found all the way to the water's edge in all three directions; some are underneath the mangrove roots, some are exposed in eroded beach areas.

Shells found near the shoreline under the roots appear very weathered; much more so than shells found in the sand inland. These shells have been broken, with much of the thin skin areas gone. This is probably due to excess weathering when compared to those shells that are farther inland and not subjected to tidal action. Mixed in this tidal zone are flotsam, ceramics and glass. Some of the glass and ceramic could be early twentieth century; nothing earlier was observed.

The worked shell that was predominately seen had the single hole extraction that is typical of aboriginal use. There were numerous examples of the topped method (see Brewer's notes above), but curious that no tops or columellas were seen. This part of the shell, being thick and heavy, would presumably be present. Assuming that once a shell was topped, the meat removed, and the shell thrown away, would not the same be expected for the tops, that they also would have been dropped in the same locale? Possibly this represents the removal of the columella for use as a tool, a technique that has been used by aboriginals, and not evidence of the homesteader's use of the same midden pile in this instance. This could be a question for further investigation.

Towards the eastern center of the key, there is evidence of the worked shells being used as fill in the concrete (see Brewer's notes above). Possibly, modern construction workers would have observed a large shell (midden) pile(s) and regarded them as a good source of fill for their mortar mix. Use of shell in the construction of the present pier was also observed.

Some worked shells were noted sporadically around the key. This would not be unexpected as this small key had at least 130 years of historical use that could have easily scattered the shell midden sites. Possibly, since the heaviest building construction appears to have been in the center of the key, more midden piles could have previously been here and have long been disrupted.

In conversation with Bill Cass, Visitor Protection Division, he recollected that during his visits to Soldier Key, prior to Hurricane Andrew, that he saw the midden (shell) pile that is on the southern end. This suggests that the presence of the pile was commonly known to the island's recent occupants and, although the recent hurricane caused much more recent erosion, the surface of this site was previously exposed.

Study of the recent erosional affects of Hurricane Andrew can provide insight into the site formation processes that have occurred in previous storms. It is remarkable when you compare the 1990 pre-hurricane aerial photograph (original on file with Resource Management Division) to the present. In the photograph the caretakers house, as well as other smaller structures next to the house, walkways, etc., are clearly visible (earlier photographs are on file that also present similar views). These structures are gone now as a result of the storm damage. No cleanup of the island has occurred. There is scant evidence of their existence, mainly only a few pieces of brick and mortar, along with the pier and walkway. According to Richard Curry, it was estimated that during the hurricane sixteen feet of water covered Soldier Key for four hours.

Even though most of the key's vegetation was removed by the storm, vegetation regrowth is now occurring and is covering the midden site.

A snorkel inspection was made of the sunken barge that is located outside the boat slip on Soldier Key. Nothing noteworthy was observed. The sunken barge is visible in the 1990 aerial photograph. A floating houseboat, of the same size and in the same location and azimuth, is present in a series of 1981 aerial photographs (on file with Resource Management Division) that show an oblique profile of Soldier Key. Presumably this is the same vessel before it sank. The deck house and canopies noted in the photographs were not seen during the inspection, but it would not be unexpected for these to have washed away during the recent hurricane, if they even remained at that time. Further research with recent occupants of the key and a document search may reveal more about the houseboat, if thought necessary.

Discussion

There is no need to take extraordinary measures to stabilize the archeological sites on Soldier Key. Re-vegetation is occurring naturally and this will provide protection for the exposed midden site. This type of action is part of the natural site formation process.

Soldier Key provides an opportunity to study the effects of major storms, such as Hurricane Andrew, on archeological sites. With the information that can be obtained from the photographs from pre-Andrew, and possible observations from occupants of the island, comparisons to present archeological remains could be made. The effects of the storm above the surface are obvious, testing below ground could provide insight into what affect the storm surge had on subsurface archeological deposits.

Subsurface testing of the midden site could provide valuable archeological data for comparison with the Sands Key site. Information obtained may give insight into how extensive the settlement and aboriginal use of Sands Key was.

Testing of other areas on the key may reveal evidence of how extensive the midden site on Soldier Key was. Is there evidence that other midden piles, besides the one known on the southern tip exists below the surface? Was aboriginal use of Soldier Key only as an intermittent fishing camp or is there any evidence to substantiate a more formal use of the key? This information would add to the understanding of aboriginal settlement patterns within the region.

It may not be possible to answer the research questions dealing with possible aboriginal use due to the history of storm erosion and more modern use of the key. With a systematic pattern of subsurface test excavations, the possible value of further research could be easily evaluated. This testing would at a minimum provide valuable data related to present subsurface stratigraphy, and extent of the known midden site, all of which could be used for regional studies of aboriginal use of the keys as well as site formation processes.

Recommendations

Regarding the need for stabilization of the archeological sites, the only measures that are needed are to allow nature to take its natural course. During the course of any natural resource

management actions that are necessary on the island, care should be taken to not disturb the surface areas of the exposed midden site.

The subsurface archeological testing, as discussed in the previous section, should be implemented. It should occur prior to the reopening of public access. This is both for ease of work and in the unlikely situation that findings would necessitate a reevaluation of a management policy for the key.

If public use of the key is to be for picnic and overnight camping, and there is to be no construction of facilities, allow sufficient time for natural ground cover to return before the access is allowed. If anything other than simple use of the key is to be considered, then Section 106 procedures need to be followed prior to the construction of facilities or subsurface excavations made. The present recommended subsurface testing may produce sufficient results that would preclude needing any further evaluations, if more development of the key is considered at a later date.

If it is necessary to have to remove or relocate the sunken barge located outside the boat slip, this is acceptable as this wreck has no noteworthy historical value. Prior to the barge's removal though, the bottom lands adjacent to its present location should be surveyed for any other possible submerged sites that might be impacted during the operation. Similarly, if dredging of the boat slip becomes necessary, the submerged lands should be surveyed first. The Submerged Cultural Resource Unit concurs with these recommendations (phone conversation with Larry Murphy on 2/1/96).

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Squares to the Inch

Figure 1. Sketch Map of Soldier Key

