

# Caribbean Archaeology

At the Florida Museum of Natural History

## GRAND TURK EARTHWATCH EXPEDITION REPORT

FEBRUARY 1996

**Dr. William F. Keegan**  
**Florida Museum of Natural History**  
**BEFORE COLUMBUS**  
**January 8 to February 12, 1996**  
**Site GT-3, Grand Turk, Turks and Caicos Islands, BWI**  
**20 EarthCorps volunteers**  
**Assistants: Betsy Carlson, Barbara Toomey, Lee Newsom**

### Highlights

At the completion of excavations in 1995, we realized that GT-3 was an extremely important site (Figure 1). The radiocarbon dates that we obtained placed it as the oldest archaeological site in the Bahamas archipelago and the animal remains were so unique in comparison to other sites it was clear that this must have been an early colony. Given that island colonization is my area of specialization, I was overjoyed to be excavating the site. It is very rare to find the first of anything, and GT-3 is the first site from this time period to be excavated outside of Puerto Rico! What is even more exciting is that the site is virtually undisturbed by modern intrusions.



Panoramic view of excavations at the Coralie site in January 1996.

As we prepared for the 1996 excavations it became increasingly clear that GT-3 was of interest not only for the West Indies, but on a global scale as well. The site appears to have been occupied during

a period of lower sea level and at a time when the climate was extremely arid. Because Grand Turk is on a relatively stable geological platform, it is possible to study minor fluctuations in sea level. Such studies are not possible in most areas due to geological processes such as tectonic uplift and subsidence. Further, the arid conditions on Grand Turk have aided in preserving the remains of the plants and animals that people exploited at the site.

In 1996 we collected samples that will help us address these issues. Soil samples are being analyzed by Dr. Mary Collins, charcoal and plant remains are being analyzed by Dr. Lee Newsom, animal bones are being identified by Betsy Carlson, Corbett Torrence is preparing the topographic map, and I am working on the pottery from the site. The analysis of data collected in 1996 will be used to refine our interpretations of the northern West Indies between A.D. 700-900, and provide clues to environmental changes on a global scale.

### **Objectives**

The overriding importance of the site is what it can tell us about global changes in sea level and climate and the human responses to those changes. Others have hypothesized that when GT-3 was occupied the climate was more arid and sea level up to a meter lower. We are in a position to test these hypotheses with data collected during the expedition. Grand Turk is unique in its geological stability affords the opportunity to investigate such small-scale changes in sea level, and the preservation of carbonized material at the site will facilitate the recreation of the climate and vegetation when the site was occupied. Most recent studies of climatic changes have been undertaken by ecologists who view environmental change as deterministic. For example, just last year ecological data from Haiti was used to propose that the Turks and Caicos Islands could not have been occupied before A.D. 950. The fact that GT-3 dates to between A.D. 700-900 shows that cultures are able to overcome environmental stresses.

In addition to collecting data that would allow us to address those global issues, the main objectives of this season were to collect evidence concerning cultural responses to the colonization of a new island. We needed to determine whether or not permanent structures were built at the site, how long the site was occupied, whether the deposits reflected a single or multiple occupations, and how materials were specifically related to each other over a large area. We also collected data concerning specific, local environmental conditions and how these may have changed through time.

### **Methods**

To address those questions it was necessary to open a wide area. Prior to the arrival of the volunteers, Dr. Mary Collins (University of Florida) and two of her students conducted a ground-penetrating radar survey of the site. The radar sends a signal through the sand that is reflected by large buried features. By using this equipment we were able to identify the locations of large hearths that were



Ground penetrating radar survey of GT-3.  
Photo © Betsy Carlson)

buried by up to a meter of sand.

The basic layout of the excavation was crossed trenches North-South and East-West, covering much of the central

portion of the site (Photo 1). The North-South trench was connected to the trench excavated by EarthCorps volunteers in 1995 (Figure 2). These trenches gave us excellent visibility of the site's



GPR printout of radar hits on buried features.  
(Photo © Betsy Carlson)

layout. The East-West trench covered the full extent of the site on this axis, and the North-South trench extended 20 meters across the main area of habitation. Trench locations were based on the previous years excavation and test pit survey as well as a ground penetrating radar survey completed in January 1996.

Shovels were used to remove the overburden to a depth of 30 to 60 cm below datum (about 20 to 50 cm below ground surface). Pointing trowels and finer tools were used to excavate the cultural deposits in 10 cm levels. Features were excavated in 10 cm levels or as single units. Features included midden deposits, post stains, hearths, and other soil discolorations. In one area a substantial number of turtle bones were recovered. These were carefully uncovered, identified, and then wrapped in aluminum foil before they were removed. The large bones were especially fragile and required the support of foil to keep the pieces together. To expose fragile pieces of pottery and bone we used sculpting tools, dental picks, plastic knives, wooden ice cream spoons, chop sticks, tea spoons, and a wide variety of brushes. All artifacts were carefully measured, mapped, and recorded. Sieves, ranging in size from 5 mm<sup>2</sup> to .2 mm<sup>2</sup> were used to collect materials not observed in situ and small animal and plant remains.

## **Volunteer Tasks and Accomplishments**

There were two teams of 10 volunteers each. We worked a total of 22 days from 7:30 am to 3:30 pm. Most of the work involved excavating the site, but all of the artifacts recovered had to be cleaned, and all of the shell had to be identified, weighed, and measured.

The volunteers did everything: shoveling, trowelling, sieving, foiling, soil, feature excavation, special sampling. Volunteers contributed several new tools to the project, notably a type of metal-handled artist's brush and chop sticks. They also assisted on a variety of specialized tasks. Members of Team 1 helped with the initial testing of a site on Salt Cay. The materials recovered have positively identified the time period and functions of this site. Several people on Team 2 helped with the production of the topographic map. In addition, most of Team 2 assisted archeobotanist Lee Newsom with the collection and processing of modern and archaeological plant samples.

## **Results**

The project was perhaps our most successful to date. The excavations revealed a clear picture of the layout of materials from which it was possible to detect specific patterns. At the junction of the two trenches we encountered four large round stains beginning at 70-80 centimeters below datum (cmbd), which mark where the central posts of a house rotted in place. The posts are all tilted to one side as if the structure was spun from the top as it collapsed. The substantial amount of loose charcoal in the site suggests that the structure may have been burned after it was abandoned; a common practice in South America to get rid of insect pests and other vermin. As expected, the areas around the center of the house had virtually no artifacts. And although Team 2 got tired of excavating essentially sterile sand, the absence of artifacts supports the interpretation that this space was inside a structure because most people keep the interior of their houses swept clean. Midden deposits around the perimeter of the structure attest to the practice of sweeping debris against house walls which we detected during the 1995 excavation. It should also be noted that the post stains extend into the groundwater table, which commences at about 100 cmbd, in accord with our belief that sea level was lower at the time the site was occupied.

A second set of roughly semicircular posts which became visible at about 60 cmbd, appear to be part of a later structure. In addition, one of the midden deposits and a hearth are about 10 cm deeper than the others. The deeper midden and hearth may represent an earlier occupation. Radiocarbon dates will be obtained to define the chronological relationship between these features. The deepest hearth 90-95 cmbd is only 5 cm above the groundwater table which is a further indication that the site was occupied at a period of lower sea level.

That the site was later inundated is apparent as a wedge of fine sand that overlays the eastern, North Creek side of the site. The

sand wedge has a flat upper surface and a sloping lower surface which would be expected in the lake-bottom situation that would have prevailed as North Creek flooded the site. Moreover, a conch-shell tool appears to have been partly consumed by boring marine sponges, and turtle bones appear to have been preyed upon by marine worms. These circumstances could only prevail if artifacts discarded on the surface of the site were submerged for a period of time.

To summarize up to this point. The data we collected are consistent with expectations that the site was occupied at a period of lower sea level and that the site was later submerged by a rise in sea level. Second, site features suggest that there were several occupations at the site. However, because the pottery is so similar through the entire occupation, it is likely that the same people occupied the site through its history. Different layers and structures would thus reflect sequences of structure abandonment and rebuilding (which occurs today in Amazonia on 5 to 10 year cycles).

The pottery was all very similar to the pottery recovered last year. It fits within the Ostionan subseries, and all of the pottery was made in the Greater Antilles and imported to the Turks and Caicos. The petrographic comparison of potsherds from Grand Turk with those from sites in the Greater Antilles may reveal where the people who settled at GT-3 got their pots.

Several potsherds merit specific comment. First, a red-painted appendage in the shape of a turtle's flipper was recovered; it appears to be from an effigy vase which would have had a turtle head adorno at one end and four flippers arranged just below the rim of an oval bowl. Second, a large griddle sherd was recovered from beside a large hearth. The griddle had to be removed with the surrounding soil and then hardened with glue before it could be extricated. It is much thicker than other sherds at the site. This sherd and several others fit the pattern of over-use observed in last years collection. It appears that at this time pottery had to be imported from the Greater Antilles and was therefore in short supply. Most sherds show evidence of being cooked right through; in other words, cooked until the clay lost its elastic properties and crumbled. When a little water is added the vessels disintegrate. Last, two other sherds had small nubbin adornos. The remainder of the pottery was plain and fits the fineware/courseware dichotomy assigned to Ostionan vessels.

The animal remains are of special note. The assemblage is again dominated by sea turtles, iguanas, fishes (especially very large fishes) and birds. With the exception of conch shells used in firepit construction there are very few mollusks represented at the site. By identifying the bones prior to their removal we gained a great deal of information about butchering practices, meat selection, and food processing.

When Team 2 took over the excavation of Unit 28, they immediately encountered a large fireplace/hearth (photo 2). Several days were spent carefully excavating the hearth and taking it apart piece by

piece. The center of the hearth contained sea turtle carapace along with large fish bones and iguana bones. It appears that food was cooked directly in the turtle shell, and that other foods were being cooked with the turtle. The hearth gives us



Lee Newsom (left) collects modern plants for a comparative collection with the assistance of Earthwatch volunteers.

a much better appreciation for cooking. In addition, samples collected from around the hearth have a high incidence of carbonized grains which suggests that plant seeds and other botanicals are present. Dr. Lee Newsom is presently investigating these samples. In addition, Lee collected a wide variety of plants for comparative purposes. She has already learned that the plants from Grand Turk are substantially stunted in comparison to taxonomic keys. This observation alone will save hours of effort in attempting to identify archaeological samples.

A few tools were recovered, including shell scrapers (for peeling roots?) and a flake of white chert. Four conch shell beads of identical appearance were found near each other in adjacent units.

## **Discussion**

The 1996 field season was a tremendous success. There still remains two areas of the site that merit further investigation. One area produced a substantial number of hits on the radar and is between two units that produced larger potsherds than have been found elsewhere. The second area is in lot 22 where we found two hearths during excavations in 1995 but covered them before they were excavated to provide an orientation point for the planned radar survey. It is my intention to investigate these areas with 2 teams from EARTHWATCH in January 1997.

## **Publications**

Keegan and Betsy Carlson presented papers on the work at GT-3 at the 16th Congress of the International Association for Caribbean Archaeology held in Guadeloupe in July 1995. The papers have been submitted for publication in the conference proceedings (anticipated publication date of 1997).

## **Other Accomplishments and Benefits**

This was the year that the Turks and Caicos government finally took notice. We were visited by the Chief Minister, the Deputy Chief

Minister, the Minister of Education and Culture, the Minister of Natural Resources and the Environment, and the Minister of Tourism (who visited us on three occasions). The presence of EarthCorps Volunteers helped to make these officials more cognizant of the importance of the site. As a result they are arranging a land swap in which the government will take possession of the site in order to preserve and protect it, while the landowners will be given an equivalent size parcel elsewhere in the Turks and Caicos. Until this deal was arranged, about half of the site was for sale as part of a housing development. GT-3 will now be preserved for posterity.

We were also visited by numerous local residents and tourists. Reporters from Islands magazine and SCUBA Times visited the site, and the fifth and sixth grades of the Christian Academy school made field trips to the site. Bill Keegan gave a public slide show at the Saltraker Inn that was attended by about 100 people. In sum, the project and its significance was communicated to a much broader audience in 1996.

### **Acknowledgements**

The project has benefited from the assistance of a variety of specialists. The day-to-day operations would not have run so smoothly without my research assistants Betsy Carlson and Barbara Toomey. Dr. Lee Newsom (Southern Illinois University) worked with Team 2 collecting modern plants for comparative purposes as well as assisting with the collection of carbonized plant remains. Local assistance was provided by Mrs. Grethe Seim and Brian Riggs of the Turks and Caicos National Museum. Jean L. Borchardt took over cooking chores for most of Team 2. Prior to the arrival of Team 1, Dr. Mary Collins and her graduate assistants Reid Hardman and David Heuberger conducted a ground penetrating radar (GPR) survey of the site. We found cultural features in places identified by the GPR, and found nothing where the GPR also detected nothing. Graduate Students Anne Stokes and Corbett Torrence assisted during the last days of Team 2. Anne collected modern animal specimens for her economic and isotopic study of prehistoric West Indian diet, and Corbett used a laser transit to make topographic maps of GT-2 and GT-3.

The project was undertaken with the cooperation of the Florida Museum of Natural History, the University of Florida, Southern Illinois University, the Turks and Caicos National Museum, and the Turks and Caicos Ministry of Natural Resources and the Environment.

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