Continued Archaeological Investigations at Grand Bay, Carriacou, West Indies (May 23rd-July 22nd 2005), and the Impact of Hurricanes and Other Erosive Processes

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Introduction

As reported in PIA 15 (Kaye et al. 2004), the Carriacou Archaeological Field Project is a multinational effort to record the prehistory of this small but archaeologically rich island in the southern Grenadines, West Indies. The 10-week 2005 campaign, co-directed by the authors, continued archaeological excavations at the Grand Bay site, aided in the first month primarily by American students and in the second by a group from UCL.

The excavations at Grand Bay derive from a need to examine and monitor closely high levels of erosion which appear to have been accelerating in recent years. An intense rainy season during the past 10 months and two hurricanes (an extremely rare occurrence in this part of the Caribbean) have exacerbated the situation previously observed at Grand Bay (Kaye 2003: 391-398; Kaye et al. 2004; Kaye et al. 2005).

This report provides a general synopsis of results from this year's excavations. Our findings indicate that Grand Bay is one of the largest and most important prehistoric sites in the southern Caribbean, but also one that, if erosion continues at its present rate, will probably be completely destroyed within the next 20-25 years.

Grand Bay

Grand Bay is located on the south-east coast of Carriacou, an island roughly 32km^2 in area (Fig. 1). The archaeology at the Grand Bay site consists of a dense midden covering approximately 6000km^2 in area, intersected by a series of eroded gulleys (Kaye et al. 2004: 87, f. 5). These eroded sections, as well as the coastal profile, reveal the depth of the humic topsoil, midden deposits and the orange/yellow subsoil from which a number of burial and household features have been exposed.

Our investigations on Carriacou have revealed a significant loss of coastline over the past six years, especially on the eastern side of the island. At Grand Bay these effects are clearly evident from the collapsed cultural deposits regularly found at the base of

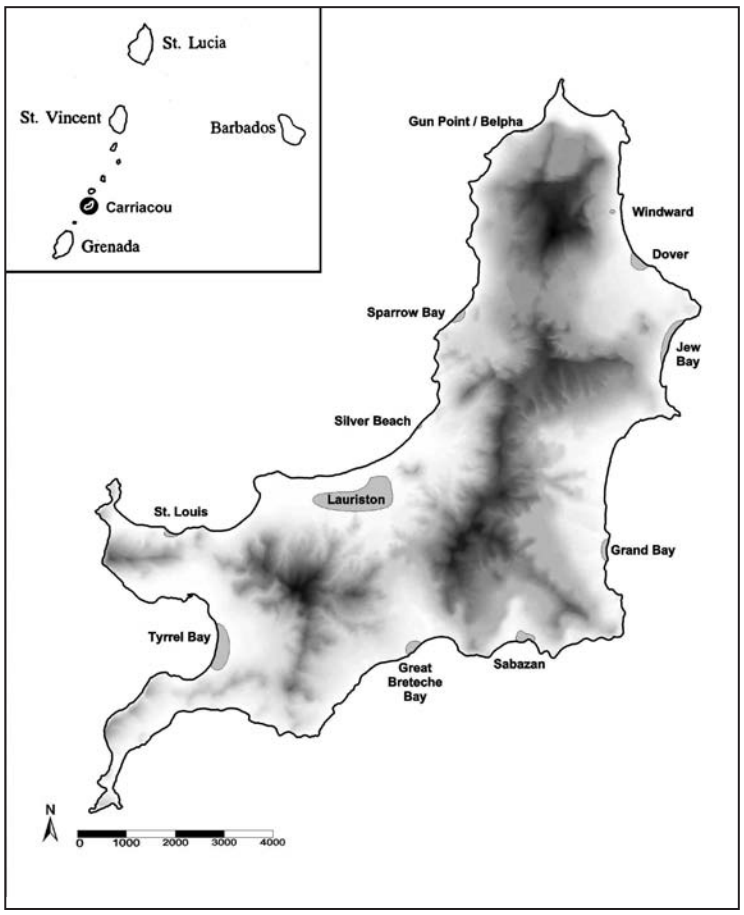

Figure 1. Map of Carriacou with site locations.

the coastal profile. Detailed measurements taken with a Total Station in 2003 and 2004, along with a sequence of photographs taken since 1999, indicate that the site is disappearing at an average of 1m per year, primarily due to natural erosion and sand mining. This mining activity has resulted in a directional change of the tidal flow, and by increasing the abrasive action of the sea is speeding up the collapse of the archaeological profile. Our measurements of the site this year confirmed that substantial subsidence had in fact taken place along the entire length of the site (Fig. 2; Kappers et al. 2005).

To record the rate of erosion at the site over time, determine the levels at which particular erosional processes are contributing to its destruction, and document prehistoric activities at the site, our excavation uses a sophisticated data retrieval and storage system consisting of a barcode-labelling and Bluetooth scanning system. This system, combined with Total Station mapping, allows us to process finds efficiently in the field with a Fujitsu Tablet PC and/or in the laboratory (cf. Kappers et al. 2005).

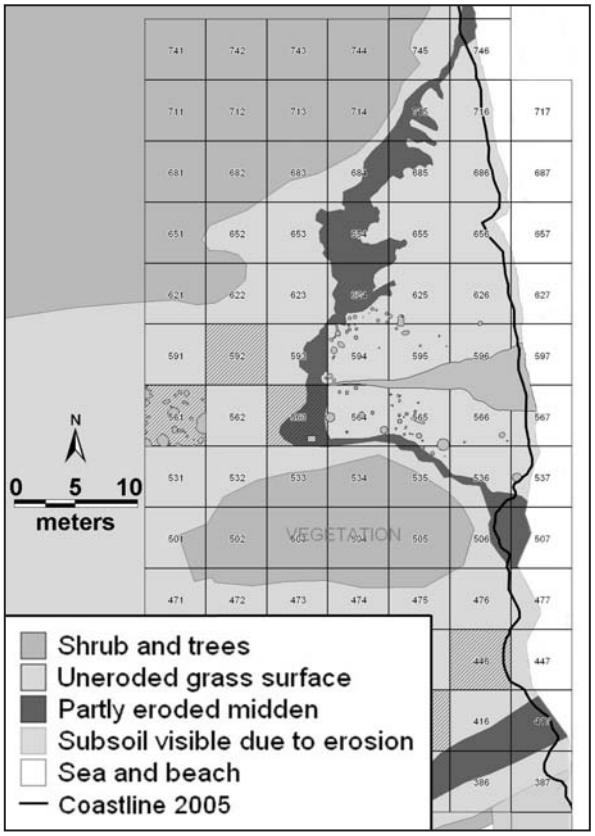

Figure 2. Grid system superimposed on southern portion of the Grand Bay site. Dark outline shows the coastline in 2005, demonstrating the effects of erosion at the site over a period of 10 months. Shaded squares are areas already excavated or currently under investigation.

Methods

After removing the backfill from the previous year's excavation, we opened up a new 5x5m trench (No. 415). Excavation proceeded in 10cm levels using mattocks, shovels and trowels. We continued our strategy of wet screening deposits from four 1m² test squares within each 5x5m trench to recover smaller site constituents for zooarchaeological and palaeobotanical analysis. Column samples were also taken for two postgraduates studying the vertebrate and invertebrate remains.

Results

Despite the unusually stormy conditions during this season's project (Fig. 3), we achieved a considerable amount relating to our long-term archaeological programme and helped further community awareness of the island's prehistory. We were able to recover a great deal of archaeological material, which has now been processed and stored in the Carriacou Museum (see Table 1). A few diagnostic pottery sherds and palaeobotanical samples were taken for radiocarbon dating and species identification. Vertebrate and invertebrate remains were taken to the Florida Museum of Natural History (see LeFebvre 2005) and the University of Washington archaeological laboratories for analysis under agreement with the Carriacou Museum.

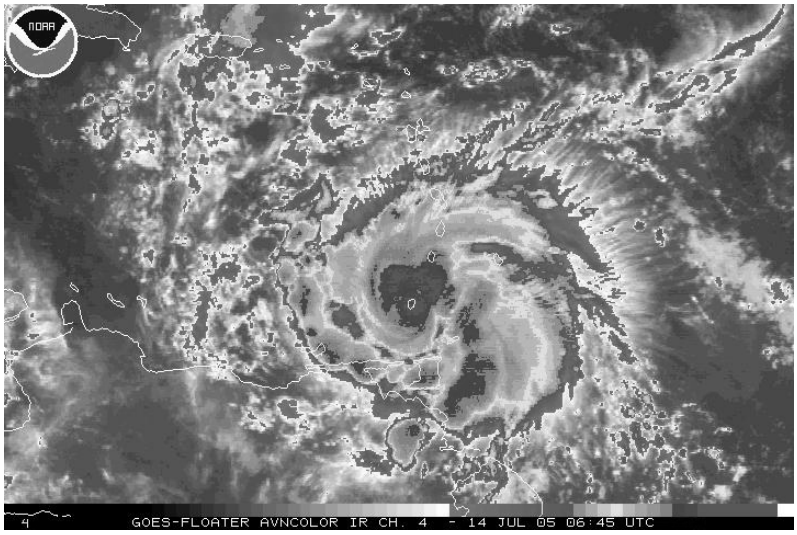

Figure 3. The eye of Hurricane Emily over Carriacou and Grenada, 14 July 2005 (National Hurricane Center, National Oceanic and Atmospheric Administration 2005).

Material	Weight/kg
Pottery	1721.71
Animal bone	74.61
Stone	6.53
Shell	178.20

Table 1. Summary of material excavated at Grand Bay, 2004-2005.

We also recovered and photographed numerous special finds including 27 ceramic adornos (decorative rim elements), five ceramic body stamps, 21 ceramic spindle whorls, nine pieces of worked stone (including three beads and one diorite miniature cemi (see Kaye et al. 2004: 86), 10 pieces of worked bone (including three fragments of intricately carved turtle bone and one bone awl), 14 shell tools and 40 other pieces of worked shell (32 beads and eight other miscellaneous artefacts). Six whole or nearly whole pot rests were among the intricately formed or decorated ceramic sherds recovered. Of special note was the discovery of one missing corner of an incised triangular ceramic stamp (No. 04CGB000448) that was found last year (Kaye et al. 2004: 85, f. 2).

Four new human burials were identified at the site, three of which were completely excavated this season. Elements of another skeleton, exposed in the profile by Hurricane Emily, were also removed due to the likelihood that the skeleton would not survive in its partially uncovered state. The hurricane's scouring of the profile (see Figs. 4 and 5) revealed numerous diagnostic pottery sherds in the lower levels. Details of these were entered into the data system and the sherds removed for future analysis.

Last year's trench, No. 446, was excavated to a depth of 65cm and Trench 415 to a depth of 35cm. A third trench, 561, was excavated to the subsoil at a depth of 40cm, where a series of dark-coloured, circular posthole features were revealed. These postholes are scattered across the site and have been interpreted as remnants of possible long houses that probably housed several family groups or extended families. Ceramic sherds recovered from one posthole (Feature F107) were reconstructed into a near complete vessel, now displayed in the Carriacou Museum (Fig. 6).

The presence of dense midden material in stratified deposits over 1m in depth and across a large area testifies to the intensity of occupation at Grand Bay. A suite of seven new ^{14}C dates from the northern and southern coastal profiles, a posthole (F016) and a child's burial indicate that the site was occupied from the Terminal Saladoid to the Suazoid period, c.AD 400-1250 (Fitzpatrick and Kappers n.d.).

Figure 4. The northern profile at Grand Bay before Hurricane Emily.

Figure 5. The northern profile at Grand Bay after Hurricane Emily.

Heritage Management, Awareness and Education

One of our objectives in continuing archaeological work on Carriacou is to raise community awareness of the island's rich heritage, many facets of which are quickly disappearing. To this end, we worked with the local Grenada Broadcasting Network (GBN) to broadcast four television news items about our fieldwork. We also gave newspaper and radio interviews and made two presentations to local secondary schools. Throughout our stay, and in interviews, we actively encouraged site visits and participation in fieldwork. Cub Scouts, numerous locals and several tourists (including a group organised through the local yacht marina) accepted our invitation to dig and were given personally guided tours by one or more of the co-directors.

Following a successful event last year, we again arranged to have a VIP day. Public officials from Carriacou and Grenada were invited to visit the site, observe finds processing at the museum, enjoy lunch, and attend an illustrated presentation that highlighted

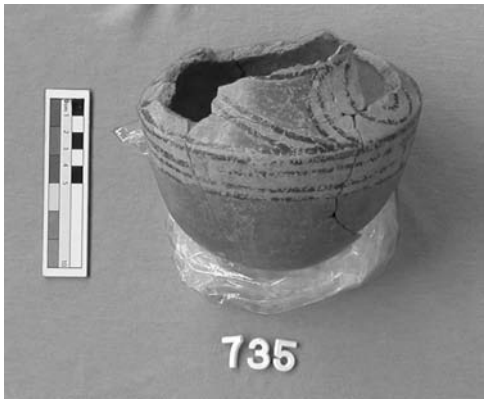

Figure 6. Caliviny polychrome pot (c.AD 650-800) found in trench 561.

the benefits of raising archaeological awareness on the island. The following day we held an Open House at the museum (widely advertised on the radio and by a poster distribution) with a well-attended public presentation and question-and-answer session.

In the museum, a small display case was recovered from storage and used to create an updated "Recent Finds" display. In addition, a new presentation explains the significance of skeletal and subsistence remains, adding breadth to the otherwise entirely artefactual display. We also created three large laminated posters which discussed the interpretation of archaeological stratigraphic sequences and two others that emphasised the ongoing collaboration of our field team with the Carriacou Historical Society and Museum. Smaller versions of these posters were given to the Carriacou Board of Tourism, to a local community environmental protection organisation and to one of the secondary schools after our presentation there.

Surveys and interviews were carried out by sociology graduate students and the Department of Parks, Recreation and Tourism Management at North Carolina State University. Some of these focused on the examination of local sentiments toward archaeological research and historical resource preservation and should provide a baseline for improving or altering our current efforts to increase public participation and awareness of Carriacou's ancient past.

Future Research Plans

Based on our experience working on Carriacou and visits to archaeological sites on Grenada, it is clear that these islands hold vital clues to the prehistoric settlement and culture of ancient Amerindians in the southern Caribbean. With support from the Grenadian government, we hope to conduct a short survey and mapping exercise of archaeological sites in Grenada next year, assisted by the Ministry of Tourism and with the participation of local cultural heritage students from Grenada. Our plans also include a brief visit to Carriacou in 2006 to take additional measurements and monitor erosion. In 2007 excavation will resume at Grand Bay, a site that continues to reveal important insights into southern Antillean prehistory.

Acknowledgements
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References

Fitzpatrick, S. M. and Kappers, M. n.d. *Strong Evidence for an Intensive Late Ceramic Period Occupation in the Southern Caribbean.* Submitted for publication.

Kappers, M., Fitzpatrick S. M. and Kaye, Q. 2005. *Automated Data Collection and 3D Modelling of Archaeological Sites: Examining the Prehistory and Destruction of Grand Bay in Carriacou.* Paper presented at the 21st Congress of the International Association for Caribbean Archaeology (July 24th-30th 2005), Trinidad.

Kaye, Q. P. 2003. A Field Survey of the Island of Carriacou, West Indies, March 2003. *Papers from the Institute of Archaeology* 14, 129-135.

Kaye, Q. P., Fitzpatrick, S. M. and Kappers, M. 2004. A Preliminary Report on the Excavation at Grand Bay, Carriacou, West Indies, June 28th-July 31st 2004. *Papers from the Institute of Archaeology* 15, 82-89.

Kaye, Q. P., Kappers, M. and Fitzpatrick, S. M. 2005. Archaeological Survey of Carriacou, West Indies. *Proceedings of the 20th Congress of the International Association for Caribbean Archaeology, Santo Domingo, Dominican Republic 2003.* Santo Domingo: Museo del Hombre Dominicano and Fundacion Garcia Arevalo, 391-398.

LeFebvre, M. J. 2005. *Prehistoric Exploitation of Vertebrates at the Grand Bay Site, Carriacou, West Indies.* Paper presented at the 21st Congress of the International Association for Caribbean Archaeology (July 24th-30th 2005), Trinidad.

National Hurricane Center, National Oceanic and Atmospheric Administration. *National Hurricane Center Website* [http://www.nhc.noaa.gov] [Accessed July 2005].