GHANA

Transformation in the Era of the Atlantic World: The Central Region Project, Coastal Ghana 2007-2008

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Introduction

This report details archaeological fieldwork conducted in coastal Ghana between May 2007 and February 2008. The research undertaken was part of the Central Region Project (CRP), an ongoing program to examine socio-cultural transformations in African societies, with particular emphasis on trade, social organization, and technological change during the era of the Atlantic World (e.g. Cook and Spiers 2004; DeCorse 2001, 2005; DeCorse et al. 2000). The research aims to complete a systematic survey of terrestrial archaeological sites between the Pra River basin in the west and the Sweet River in the east. The project also includes survey of underwater shipwreck sites in target areas off the coast of Elmina, Komenda, and Shama, and in the Benya Lagoon (Elmina).

Central Region Project fieldwork undertaken during 2007 and 2008 consisted of an extensive field program, including site survey and excavations of both terrestrial and marine sites. Over 360 terrestrial archaeological loci were identified and test excavations were undertaken at two sites. Underwater research focused on survey work, the excavation of a 19th century shipwreck site at Elmina, study of related site formation processes, and the documentation of probable early 18th century ship remains impacted by dredging activities in the Benya Lagoon.

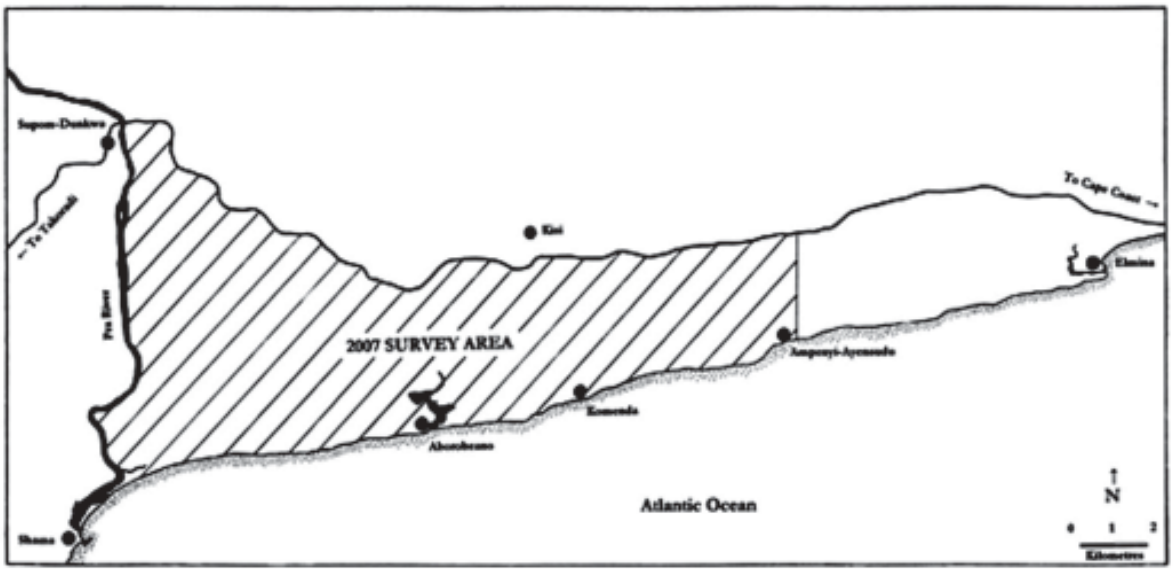
The 2007-2008 CRP field program involved more than three dozen participants including: the principal investigator and doctoral students from Syracuse University; students and faculty from the University of Ghana and Latrobe University; and volunteers from the United States, Britain, and Canada. The project also benefited from a Syracuse University archaeological field school during July 2007. Undergraduate students helped with both the test excavations and field survey. Field work was supported by National Science Foundation grants and research money from the Maxwell School of Citizenship and Public Affairs, Syracuse University. The project was undertaken with the permission of the Ghana Museums and Monuments Board and was under the overall direction of Christopher R. DeCorse, principal investigator.

Archaeological Site Survey

Survey work directed by Sam Spiers focused in the southwestern corner of the project survey area, particularly the area between the villages of Ampenyi and Ayensudu and the Pra River, south of the coastal highway (Figure 1). This area comes under the jurisdiction of three traditional councils: Komenda, Shama and Supom-Dunkwa. Villages and towns visited during the survey included Ampenyi, Nsadwer, Dutch Komenda, British Komenda, Aboabo, Aborobeano, Kafodzidzi, Antadu, Aboransa, Apaano, Shama Beach, Kwasi Kwaa, Domenase, Krobo, Bosomdo, Fawomanye, Bronikrom, Asemase, Obinyim Okyena, Bedukrom, Beposo and Supom-Dunkwa. While effort was made to provide as complete coverage as possible, examination of many areas was limited by dense vegetation, including transitional forest and farm bush. Our plan at each village was to meet with the local chief and elders for permission to survey around their towns, and to ask them if there were any known sites, shrines or other places of interest such as stone outcrops in their area. We then proceeded to investigate these sites, and survey surrounding farm land and pathways. Cleared areas of farmland, construction areas, road cuts, and erosion surfaces were examined most thoroughly. Construction work in some areas, particularly around salt ponds, has severely impacted archaeological sites (Figure 2).

The areas surveyed during the 2007-2008 field season had been less fully examined than the eastern portion of the survey area in previous field seasons (see Cook and Spiers 2004; DeCorse 2001, 2005;

Figure 1: Central Region Project Survey areas.



DeCorse et al. 2000) and 364 new loci were identified. A locus was defined as a place of archaeological or historical interest, and varied from individual, isolated artifacts such as a pot-sherd or *nyame akuma*, to large high-density artifact scatters, such as some of those found around the lagoons at Ampenyi or Aborobeano. Loci also included features on the landscape, such as a shrine or an outcrop of granite associated with the production of ground-stone tools. The majority of the loci recorded in the survey consisted of isolated finds, though several larger sites and features were also recorded. It should be noted however, that given the limited surface visibility in some areas, the extent and distribution of the archaeological materials represented will not be entirely clear until further work is undertaken. Some of the loci identified may in fact represent portions of large, multi-component occupations rather than discrete settlement or activity areas. Sites will be reexamined in future field seasons.

Many of the sites identified consisted of small artifact scatters in cleared farmland, along the beach or on hill top sites. Relatively fewer sites consisted of denser artifact scatters. The time periods represented varied widely both within and between sites, ranging from pre-European contact or possible Late Stone Age occupations, through the 19th century. Finds such as quartz flakes, ground stone artifacts, gritty orange local ceramics, and stone beads are characteristic of sites dating from the mid-first millennium AD or earlier into the 17th century. Historic period and largely 19th century artifacts, included glass, European ceramics, tobacco pipes, and beads, as well as locally produced artifacts. Several hill top sites include areas identified by local inhabitants as sacred groves. Previous fieldwork had indicated that at least some of these groves were ancient settlement areas, in some cases unrecognized as such by the local population (Chouin 2002a, 2002b, 2008; Spiers 2007).

Komenda Fort Excavations

Test excavations directed by Christopher DeCorse were undertaken at two locations within the town of Komenda: the British Fort and Komenda Cave. Of the two locales excavated, more extensive work was completed in and around the Komenda fort site, a sizable English installation founded in 1686, substantially rebuilt in 1708, and used by the British into the 19th century (Lawrence 1963: 288-291; Van Dantzig 1980: 41-44). Excavations in an around the fort were undertaken to assess pre-European contact occupation of the area, as well as to evaluate the possible presence of midden deposits associated with the 17th through 19th century European fort occupation. Thus far, European sites in West Africa have received limited systematic archaeological attention and few have produced significant assemblages clearly associated with European garrisons.

Figure 2: A pre-18th century site impacted by the construction of salt ponds.

The exterior walls of the British Komenda fort were extensively robbed for stone during the 20th century and traces of many of the walls are only visible at ground level. Nevertheless, the fort's plan is still relatively clear and it closely corresponds to a 1756 map (Lawrence 1963: 289). The fort has a distinctive floor plan consisting of an inner defensive work encompassed by a newer and substantially larger fortification. Of the exterior defenses, the eastern curtain wall, along with the associated northeastern and southeastern bastions remain largely intact; rooms in these walls are, in fact, occupied by squatters. The northwestern bastion also survives intact, but the adjacent curtain walls are completely gone. Another surviving feature associated with the fort's early history is a vaulted brick cistern, located beneath the southern court yard. This is completely intact and still used to collect water, although the arched brick vault of the roof is now exposed at ground surface and weathering. The southern bastion and eastern curtain wall have traces of several 20th century structures that oral histories indicate were used as the chief's residence into the 1970s.

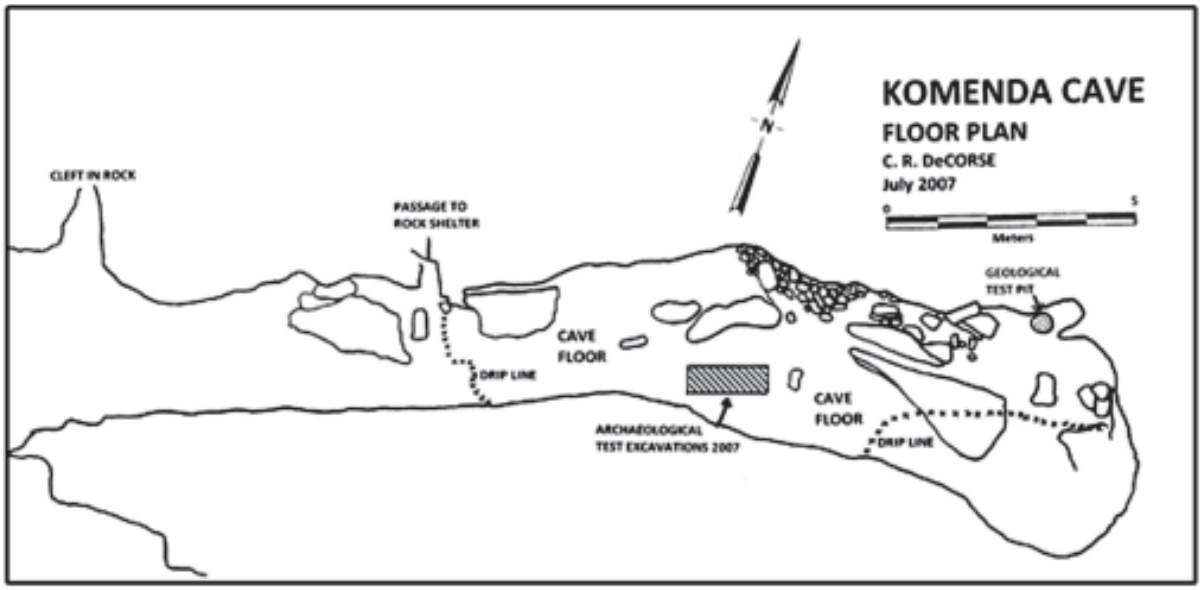
Forty 1m by 1 m excavation units were opened clearing portions of the northern fortifications, as well as testing areas to the east and within the fort. No intact deposits associated with the English occupation were identified. Upper levels of the excavations proved to be extensively disturbed to a depth of almost 2 m in places and produced few pre-20th century artifacts. This is consistent with oral histories that indicate that portions of this area housed a petrol or kerosene tank during the 20th century. Late 19th century burials, possibly Colonial Period, were exposed both within the fort and to the east. These were reburied without complete excavation.

The lower stratigraphic levels of the excavations proved to be more intact providing evidence of pre-European contact occupation. Gritty orange ceramics, stone beads, quartz flakes, and ground stone tools were found in good stratigraphic context below the more recent, disturbed material. This material is typical of assemblages pre-dating the 17th century and the material provides interesting comparative data with other early sites excavated on the coast such as Coconut Grove (DeCorse 2005).

Komenda Cave Excavations

Test excavations were also conducted in Komenda Cave. The cave is located on the ocean shore, west of Komenda town, on the property of Komenda College. The Cave is the largest of a series of natural erosional features carved into the sand-

Figure 3: Plan of Komenda Cave showing excavation units.



stone along the shore (Figure 3). The site is a tourist attraction and it is frequently visited by Komenda College students and visitors to the College. The Cave consists of a relatively narrow tunnel, open at both ends with a floor area of approximately 200 m^2. However, rock debris, the narrowness of the passage, and the low ceiling limit the usable floor space. The site was noted in geological and archaeological reports of the 1960s and 1970s (Davies 1976:126). The geological test shaft, which is still visible, produced quartz flakes and stone beads suggesting a possibly early occupation. Local oral histories indicate that Queen Elizabeth II was hidden in the Cave during World War II, at which time the Komenda College site served as an RAF station.

A small test trench measuring 1 m by 3 m which extended to a depth of 2 m was excavated to determine if intact cultural deposits were present within the cave. The excavations produced no intact cultural deposits: a large portion of the floor deposits appear to have been disturbed, possibly by individuals looking for gold deposits. The presence of this disturbance is suggested by oral histories. Few artifacts were recovered from the excavations: these included fragments of gritty orange ceramics and quartz flakes. While the artifacts confirm a likely pre-17th century occupation of the area, they do not provide a diagnostically useful assemblage from a secure stratigraphic context. No evidence of mid-20th century RAF activity was noted.

Underwater Survey

The 2007-2008 underwater field program, directed by Andrew Pietruszka and Rachel Horlings included survey, coring, and excavation. Possible shipwreck sites had previously been identified in the Elmina survey area using a large-scale side scan sonar survey during 2003 field season (Cook and Spiers 2004). One target was identified as a 19th century ship wreck site (referred to as the Elmina Wreck) and subsequently tested in 2005.

Fieldwork during 2007-2008 examined all of the side scan sonar targets identified during the 2003 survey and conducted further excavations at Elmina Wreck site. Prior to the 2007-2008 field project the 2003 survey data were independently reanalyzed by Greg Cook, Rachel Horlings, and Andrew Pietruszka to evaluate the targets identified and to assess their potential for representing submerged shipwreck sites. All targets falling in the top two tiers of probability were explored by divers. This method ensured that no evaluation outweighed another and that the maximum number of potential targets was selected for diver investigation. Analysis resulted in a list of 50 targets, which at least one of the evaluators had designated as a high probability target.

All of the high priority targets identified were ground surveyed by divers during 2007. Each target was located using GPS. This allowed the research team to easily locate the general area associated with

each target, and facilitated in the planning of each day's dives. Each target was investigated by divers, using a circle search method. A diver descended to the bottom, attached a guide line to the anchor, and swam in concentric circles radiating outward in fixed intervals from the central reference point. This method provided the most complete coverage of the seafloor bottom and was repeated for all targets. Unfortunately no further shipwreck sites were discovered during the investigation of the 50 designated targets. While the source of some anomalies can now be attributed to natural phenomena such as submerged rock formations, the reason for other target anomalies remains unclear as no cultural or natural features were located on the seafloor. It is possible that some features, exposed at the time of the 2003 survey, were reburied by sediment by 2007. These targets will be resurveyed during future field seasons.

Elmina Shipwreck Site

The Elmina Wreck Site was discovered by Greg Cook in 2003 during the sonar survey and further examined in 2005 as part of his dissertation research (Cook and Spiers 2004). This site was reexamined under the supervision of Andrew Pietruszka in 2007. A new baseline and grid system were established and the site was remapped. Additional survey work, surface collection, and excavation work was then carried out.

The 2007 surface collection was carried out systematically over the entire site. This is analogous to the surface collection of artifacts from terrestrial sites. In both terrestrial and marine collections, artifacts are recovered from secondary rather than primary contexts. Although some terrestrial archaeologists have questioned the interpretive value of surface data for its lack of congruity between surface and subsurface finds (e.g. Boismier 1997; Dunnell and Dancy 1983; Tolstoy and Fish 1975), it has proven an effective tool in nautical archaeology (e.g. Overton 1995; Smith 1998; Werz 1999: 98-101). The greater congruence between surface and subsurface finds in nautical sites can be attributed to the unique quality of shipwrecks representing a single event rather than a site occupied over time. Surface collection during the 2007 field season yielded a small number of artifacts, which complement the more extensive surface collection carried out by Cook in 2005.

Following the baseline, one meter trenches were excavated along the site's two axes in the hope of delineating the site's boundaries. However, due to both time and financial restraints the excavations were concluded before this could be established. A total of 28 1m by 1 m units were opened during the excavation. Each unit was excavated using arbitrary levels corresponding to 30 gallons (113 liters) of sediment; the matrix was lifted to the surface and was screened using 1/8 inch mesh. Artifacts were collected and unit and level provenances recorded. The wreck site was further tested using an innovative micro-sampling method, also used for the collection of sediment cores (Figure 4). This allowed for the wreck's extent to be delineated and provided a further means of assessing the associated artifact assemblage. The artifacts collected are currently undergoing conservation and analysis. The data sets (surface collection, intrusive excavation, and coring) will be analyzed for similarities and discrepancies, biases inherent in each sampling strategy, and their effect on archeological interpretation.

Formation Processes

Additional underwater research directed by Rachel Horlings specifically examined the formation processes of underwater sites and sedimentation within the survey area. Knowledge of these aspects of the survey area allows for wider inferences to be made regarding both the natural and cultural contexts of sites within the survey area (e.g. Adams 2001; Gibbins 1990; Oxley 1998a, 1998b). Work was undertaken in a control area within the Elmina survey area, as well on the Elmina Wreck site. The degradation of a modern wreck site on the shore was also monitored.

Several interrelated methods were used to evaluate formation processes: 1) thirty-two sediment cores were collected in and around the Elmina Wreck site, and six sediment cores were collected from a control area; 2) the artifactual scatter and the debris field surrounding the Elmina Wreck site were documented (see Moore 1997:1-5); 3) Cook's 2005 site plan was compared with features visible in 2007, including documentation of the presence/absence of material remains and evidence of changing sedimentation patterns; 4) excavation profiles from the 2007 excavation units were examined.

Figure 4: Sample profile obtained from Elmina Wreck using diver-operated coring device. Notice fragment of intact wood, probably from the vessels hull, at the bottom of the profile.

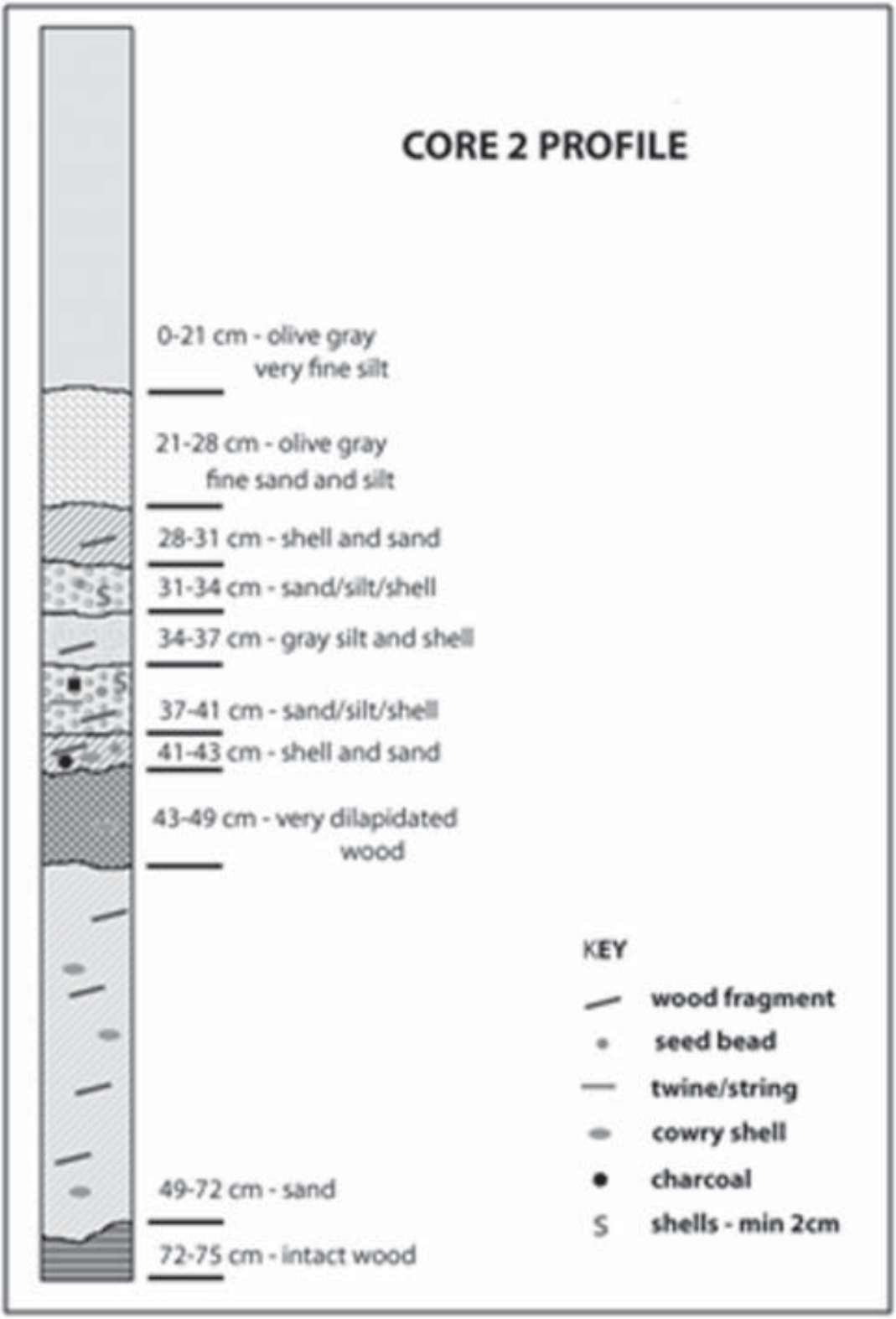


Figure 5: Photograph of the ship remains of the Benya Lagoon after their removal during dredging operations. A large section of wood can be seen at bottom center. Eighteenth century timbers and historic cannon were mixed with modern trash and debris.

Sediment cores were collected using a diver-operated coring device (Horlings 2009). The preliminary results of this work demonstrate that it is possible, using the simple technology and methods employed in sediment coring, to conduct investigations into site formation processes in an incredibly dynamic, low-visibility environment. This coring method also proved to be a useful technique for micro-sampling of the wreck site. Initial sediment core processing revealed that the Elmina Wreck site is significantly larger (by more than 20 m lengthwise) than originally thought. It also demonstrates an appropriate method for capturing archaeological stratigraphy on submerged sites, something often problematic in underwater archaeology. The relatively simple technology involved is both affordable and useful.

Benya Lagoon Site

The Benya Lagoon Site was an unexpected discovery. During the 2007 field season a Belgian company, Dredging International, was conducting dredging operations in the Benya Lagoon, a minor drainage separating the Elmina peninsula from the mainland. In the process of dredging the lagoon a large number of old timbers and four historic cannon were discovered in the spoil heap from a single area of the lagoon (Figure 5). Dredging International notified our research team of the discovery and granted the Central Region Project personnel access to their work site. Unfortunately, the dredging was carried out by a clamshell scoop excavator and much of the context of the cultural remains was destroyed. The materials that did survive, however, made it evident that the

cannon and timbers were the remains of an historic European vessel. Although no surviving historical accounts document the loss, either intentional or unintentional, of European vessels in this area they do note that ships upwards of 100 tons were admitted into the Benya River for careening (e.g. Porter 1974:14).

Given the limited time available, the nature of the find, and the particulars of the dredging operation the site was approached as a salvage project. From the dredge spoil it was possible to recover 15 timbers sufficient in size to make reasonable conjectures concerning their placement in the ship's construction. Documentation of the site entailed records of the exact site location, detailed drawings and photographs of the 15 recovered timbers, collection of cross-section cuttings from several timbers for dendrochronological and wood type analysis, and the examination of the associated cannon. Three cannon, identical in their manufacture and markings, were recovered. The cannon were photographed and drawn. Braided hemp wadding and what is believed to be black powder was recovered from the sealed touchholes. The fourth cannon disappeared before it could be documented. Preliminary analysis of the ship's timbers indicates a small to medium size vessel probably constructed in the first decade of the 18th century.

Besides its historical significance, the Benya Lagoon wreck provides yet another data set pertinent to our questions concerning methodologies and the interpretation of artifact assemblages. While the excavation of the Elmina Wreck yielded a multitude of artifact types it failed, thus far, to produce any timbers associated with the ships construction. In contrast the Benya's Lagoon wreck assemblage consists entirely of timbers and cannon. Thus the two sites provide two very different case studies. When examined in conjunction researchers will be able to quantify unique data sets and their relevance in providing detailed information concerning shipwreck sites.

Future Fieldwork

Fieldwork will be continued during 2009-2010. Terrestrial survey under the supervision of DeCorse and Spiers will remain focused on the western portion of the terrestrial survey area. Additional underwater survey will be continued by Rachel Horlings with support from a Waitt Foundation Grant from National Geographic. The original 2003 Elmina survey area will be resurveyed using a magnetometer and sub-bottom profiler. This will further investigate the reasons for the 2003 target anomalies that could not be located by divers in 2007, as well as determine if any other potential sites are located within the area. To further assess the targets identified, they will be cored with the diver operated coring devise used in 2007-2008.

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