

■ TANZANIA

**Field Report: Archaeological Survey of Songo Mnara Island**

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**Introduction**

This paper reports results of an archaeological survey of Songo Mnara Island and nearby Sanje ya Majoma Island in the Kilwa archipelago off the southern coast of Tanzania. The purpose of this research was to gain an appreciation of settlement chronologies and patterns beyond the walls of the 14<sup>th</sup> to 16<sup>th</sup> century stonetown (after which the island is named) located on its north-west tip. The survey includes a paleoethnobotanical component, results forthcoming, which aims to reconstruct ancient Swahili land-use strategies and maintenance or change in plant communities. With the overarching environmental nature of this research in mind, I rely heavily on contemporary physical conditions (namely substrate type and character) in order to frame the results and analysis of this work.

This survey was conducted in conjunction with the 2011 field season of research at Songo Mnara directed by S. Wynne-Jones and J. Fleisher (see this issue), augmenting their ongoing research through the addition of settlement patterns across the island as a whole.

**Archaeological Survey**

I performed an archaeological survey of the islands in order to locate previously unknown archaeological sites. Through the course of the survey I was able to become familiar with each of the

different environmental zones identified by pre-existing satellite surveys of the area (Figure 1). I restricted archaeological survey to the “land-scrub” environment in order to avoid water-saturated areas as well as those inaccessible due to vegetation. To achieve the greatest amount of coverage across the “land-scrub” area I divided the island into a series of equidistant transects and placed shovel test pits (STPs) at 250m intervals (Figure 2).

The paleoethnobotanical component of this project motivated the spacing of STPs because baseline differences between botanical community structures should be visible within a 250m<sup>2</sup> grid. Previous archaeological surveys conducted along the Swahili coast (Fawcett et al. 1989; Fleisher 2003; LaViolette et al. 1989; Pawlowicz 2009) demonstrates that sub-surface testing is more successful in identifying archaeological sites than exclusive reliance on surface survey.

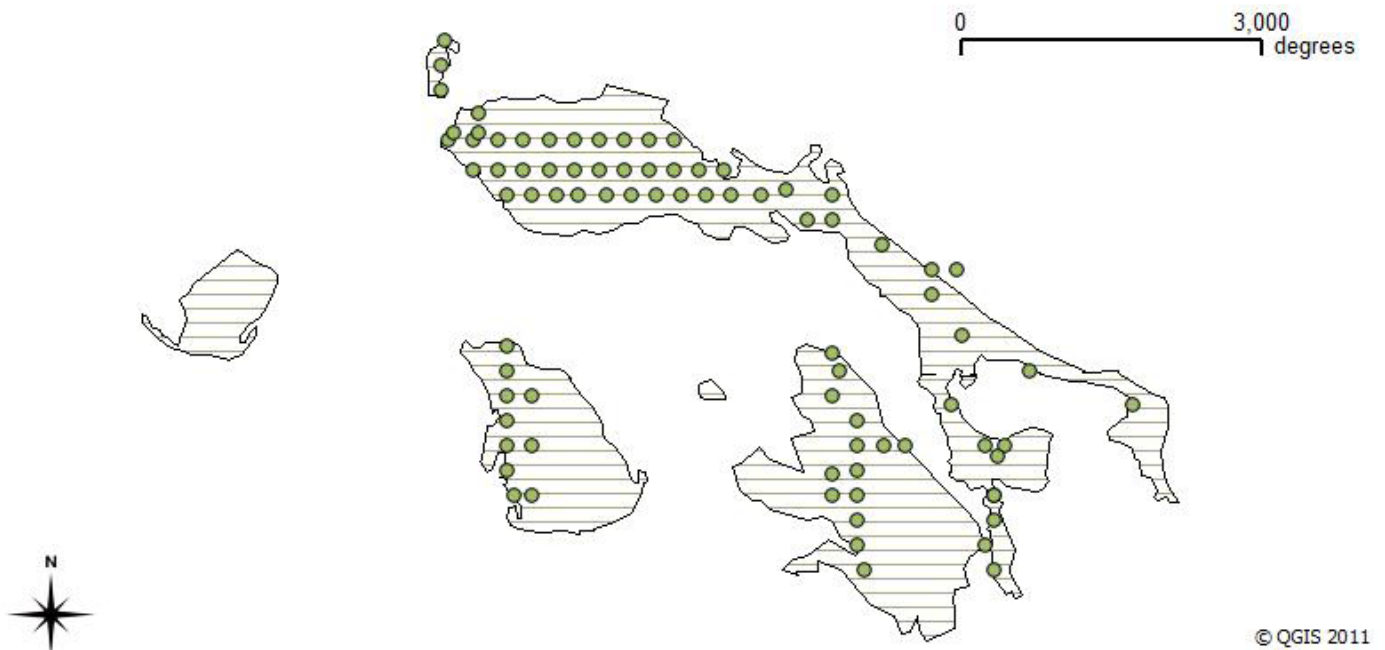
Songo Mnara and Sanje ya Majoma lie within the “Lukuledi Beds” geological formations first observed near Lindi (Nicholas et al. 2006). Lukuledi Beds formations range between Lindi and Kilwa and are described as “impure greyish-yellow to reddish fossiliferous limestone, with angular to little rounded quartz pebbles and shell fragments, grey porous limestone, light grey hard coral and foraminiferal limestone” (Haughton 1938).

On the coastal fringes of Songo Mnara Island this geology is manifest in the form of bluffs, which may rise several meters above high water mark. The combination of wave energy from the Indian Ocean and this hard substrate precludes the colonization of mangrove forest from the eastern side of the island. Instead the area features shallow tidal pools leading to sand beach and coral bluffs. Mangrove forests dominate the western coastline. In some areas mangroves have been unable to settle on fossilized coral outcrops, features that have been interpreted as causeways (Pradines and Blanchard 2005).

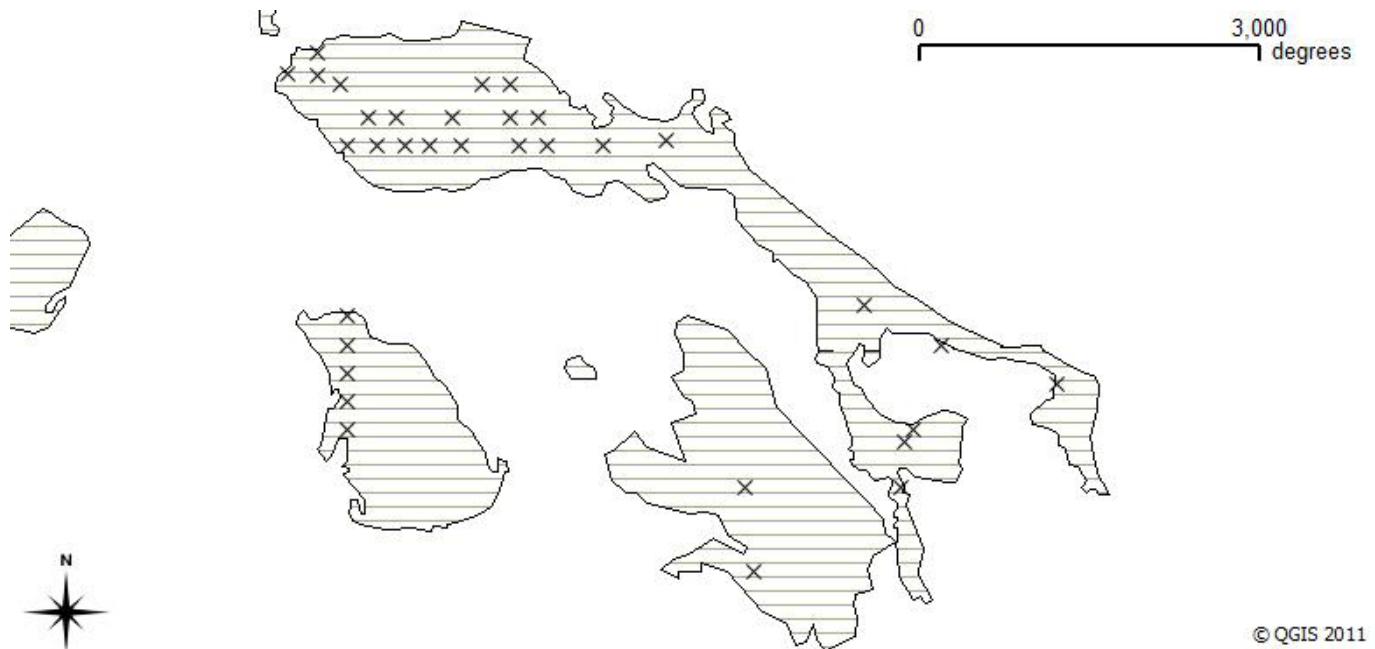
**Figure 1:** Environments of Songo Mnara. Mangrove (black with white dots), Land Thicket (vertical stripe), Coral (white with black dots), Sand and Mud (checks), and Land Scrub (horizontal stripe).



**Figure 2:** Shovel test pit survey of Songo Mnara. Note, that Land Scrub is the only one included in image.



**Figure 3:** Positive shovel test pits.



Lukuledi geological formations heavily influenced the archaeological survey, as many areas dominated by fossilized coral precluded STPs. In an attempt to mitigate limitations presented by fossil coral I sought areas that were able to support vegetation with the hope of finding soil pockets between rag areas. Such pockets are attractive for planting crops and offer the only potential for deep stratigraphy in rag-riddled areas (Middleton 1961). Further, the chance to evaluate change in crop through time within isolated pockets was attractive for the paleo-ethnobotanical aspect of this research. Often these areas did not yield a stratigraphy deeper than 10cm. I encountered heavily degraded limestone throughout the northern part of the island. In nearly every case an STP placed in fossiliferous limestone would terminate at or before 50cm.

### Survey Results

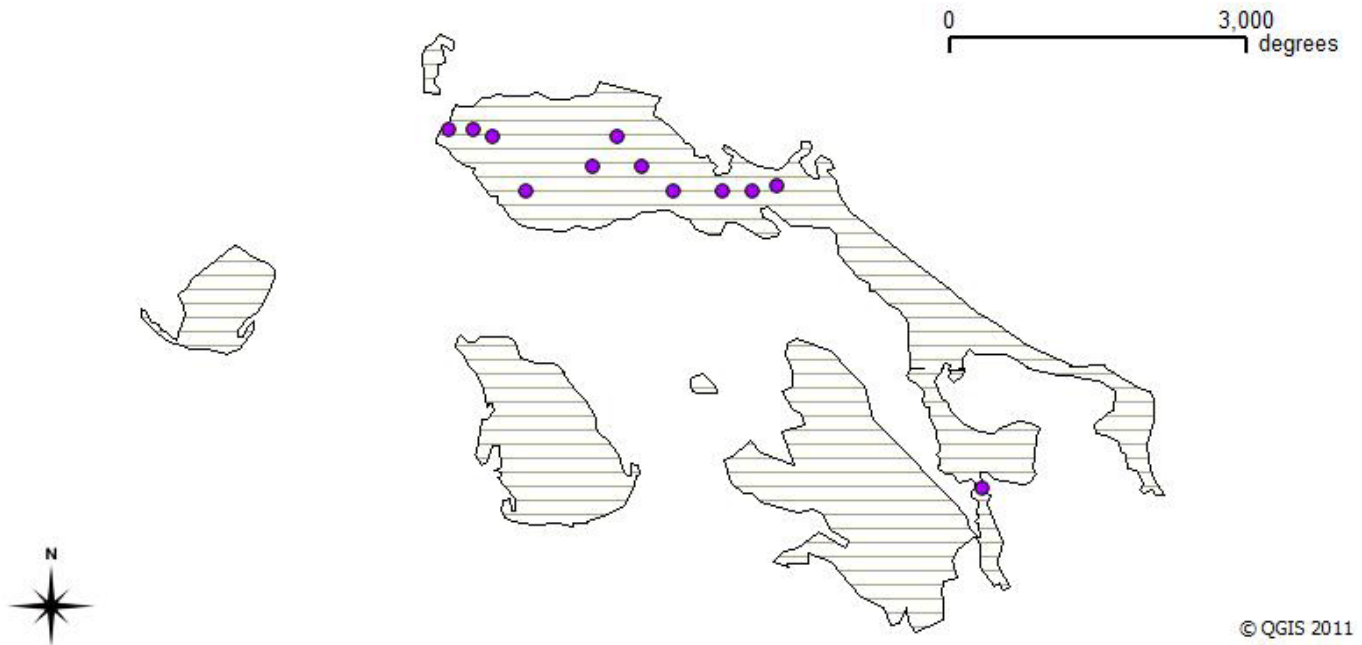
The archaeological survey recovered artifacts from 32 test pits, 39% of the 83 excavated. Positive units were distributed through 70% of transects (Figure 3). The tidal island, Sanga Rungu, directly north of Songo Mnara was the only area that

did not produce any sub-surface artifacts. Not surprisingly, positive test units correlate with the past urban center, in the north, and more recent village and agricultural areas, concentrated in the south. The spread and range of positive units between these known occupation zones offers a new appreciation of the geographic extent to which people have occupied and interacted with physical conditions across Songo Mnara Island.

Survey of Sanje ya Majoma resulted in five positive test pits, 50% of those excavated. These test pits did not reveal a rich or varied material culture. That said, they are located in succession and form a 1.25km line which hugs the eastern coastline of the island. Excavations to the west of this line were all negative. Survey further west was prohibited by both vegetation and geography.

I do not consider each positive test unit as a distinct archaeological site. A majority of sites contained a single undiagnostic pot sherd. In order to filter such units for further analysis, I define five artifacts as the minimum threshold necessary to index an archaeological site. Twelve test units, 37.5%

**Figure 4:** Sites recorded at Songo Mnara.



of the 32 positive units, therefore constitute the archaeological sites discovered through the course of this archaeological survey (Figure 4).

Distribution of archaeological sites is more restricted than that of positive units. Four transects boast the presence of an archaeological site and of these, 11 of the 12 sites are found in the three northernmost transects. These sites all cluster around Songo Mnara; the furthest site is located roughly 3km south-east of the former town wall. Considering artifact assemblages specific to each, a wave pattern of material richness becomes evident. Areas directly adjacent to the urban center demonstrate a rich and diverse material assemblage. Material richness decreases with distance from the urban center until you reach 2.5 to 3km from the town wall, at which point material richness correlates with that found directly outside the walls of Songo Mnara.

Ceramic identification in the field by S. Wynne- Jones and J. Fleisher (2011, personal communication) noted six sherds with chronologically

diagnostic characters. Four of these sherds date to the 14<sup>th</sup> to 15<sup>th</sup> centuries whereas two demonstrate features consistent with 19<sup>th</sup> century ceramics in the Kilwa region. As Figure 4 demonstrates, the sites bearing 14<sup>th</sup> to 15<sup>th</sup> century ceramics are adjacent to the urban site whereas those with 19<sup>th</sup> century characters are associated with an area that is devoted to rice agriculture today. Thus, there appear to be two discrete occupations on Songo Mnara: one during the 14<sup>th</sup> to 16<sup>th</sup> centuries associated with the urban center at the northern end of the island, the other beginning in the 19<sup>th</sup> century and located in the southern portion of the island.

## Discussion

Initial archaeological survey of Songo Mnara suggests that the island has experienced two settlement phases: the first during the 14<sup>th</sup> to 16<sup>th</sup> centuries, and the second beginning in the 19<sup>th</sup> century and continuing through to today. There appears to be little spatial overlap between the two periods as contemporary populations cluster around rice



fields in the southern part of the island while 14<sup>th</sup> to 16<sup>th</sup> century residents settled in the northern part of the island.

This survey demonstrates that 14<sup>th</sup> to 16<sup>th</sup> century settlement extended beyond the walls of the urban center. The stonetown was surrounded by a community which extended up to 3km to the east and south. The non-stone community was dependent on the success, or at least existence, of the urban center. Evidence indicates that the hinterland community dissolved after the stonetown was abandoned in the 16<sup>th</sup> century. As a result, the northern half of the island demonstrates a simple, shallow stratigraphy similar to that found within the stonetown itself. Future archaeological survey of the island will surely take advantage of this stratigraphy to further elucidate the relationship between stonetown and hinterland residents. A survey conducted with smaller intervals between STPs will offer a level of detail unattainable in this preliminary investigation.

### Acknowledgements

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### Bibliography

- Fawcett, W. B., A. LaViolette and N. J. Karoma  
1989 *Final Report: Archaeological Investigations at Coastal Sites Between Dar es Salaam and Bagamoyo*. Dar es Salaam:

Archaeology Unit, History Department,  
University of Dar es Salaam.

Fleisher, J.

- 2003 *Viewing Stonetowns from the Countryside: an archaeological approach to Swahili regional systems, AD 800-1500*. PhD dissertation: University of Virginia.

Fleisher, J. and S. Wynne-Jones

- 2010 *Archaeological Investigations at Songo Mnara, Tanzania: Urban Space, Social Memory and Materiality on the 15th- and 16th- century Southern Swahili Coast. Preliminary Report*. Submitted to the Department of Antiquities, Republic of Tanzania.

Haughton, S.H.

- 1938 *Lexicon de Stratigraphie, vol. 1: Africa*. London: Thomas Murby, pp. 203, 229.

LaViolette, A., W. Fawcett, N.J. Karoma and P. Schmidt

- 1989 The Coast and the hinterland: University of Dar es Salaam archaeological field schools, 1987-88. *Nyame Akuma* 32: 38-45.

Middleton, J.

- 1961 *Land Tenure in Zanzibar*. London: Colonial Research Studies No. 33.

Nicholas, C., Paul N. Pearson, Paul R. Bown, Tom Dunkley Jones, Brian T. Huber, Amina Karega, Jackie A. Lees, Ian K. McMillan, Aoife O'Halloran, Joyce M. Singano, Bridget S. Wade

- 2006 Stratigraphy and sedimentology of the Upper Cretaceous to Paleogene Kilwa Group, southern coastal Tanzania. *Journal of*

*African Earth Sciences* 45: 431-466.

archéologiques dans la baie de  
Kilwa, Tanzani. *Annales Islamologiques* 39:  
25-80.

Pawlowicz, M.

2009 Archaeological Exploration of the  
Mikindani Region of the Southern  
Tanzanian Coast. *Nyame Akuma* 72: 41-51.

Wynne-Jones, S. and J. Fleisher

2010 Archaeological Investigations at Songo  
Mnara, Tanzania, 2009. *Nyame Akuma* 73:  
2-8.

Pradines, S. and P. Blanchard

2005 Kilwa al-Mulûk. Premier bilan des travaux  
de conservation-restauration et des fouilles