Report on the preliminary season of the Lepcis Magna Coastal Survey[1]

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Abstract

In October–November 2010 a pilot survey was carried out along the coastal landscape west of Lepcis Magna from the Villa of the Odeon. Intensive new building activities, in particular the development of tourist villages and luxury villas, made this archaeological survey particularly urgent. Earlier plans for a longer programme of research over several years were interrupted by the revolution in Libya; however, it is hoped that work can resume in the near future, and in the meantime the first overview of the season is given here. The survey revealed 52 ancient sites, including productive villas, ceramic kilns, sites equipped for oil and/or wine production and fish processing installations. This survey adds to previous archaeological work in the area and highlights the importance, wealth and economic role of the coastline of Lepcis Magna within the Roman Empire: not only do we see dense occupation, but also a wide range of activities, whether agricultural or the exploitation of marine resources. These results are significant for developing our knowledge of the coastal economy of Tripolitania and for helping to characterise the nature of production and how this may be linked to wider Mediterranean trading networks.

Introduction

In association with the Department of Antiquities of Libya and within the framework of the coastal survey carried out in the 1990s by the University Roma Tre and the Istituto Superiore per la Conservazione ed il Restauro (ISCR), under the coordination of Roberto Petriaggi, this survey was designed as an investigation of the coastal landscape 20 km west of Lepcis Magna, beginning from the well-known Villa of the Odeon, in Funduk Nagaza, and moving westwards towards Funduk al-Alus, in order to expand our knowledge of the coastal hinterland of Lepcis Magna, its use of the surrounding territorial and marine resources and its connectivity within Libya (Tripolitania) and throughout the wider Mediterranean. This work follows previous surveys in the region (see below) which highlighted the high density of coastal sites around Lepcis Magna, and identified Roman period elite residences interspersed with rural sites and productive activities, including olive and wine production and fish salting installations, not dissimilar to patterns recorded in Latium and Campania (Marzano 2007).

The season was intended as a pilot season for a five-year project, interrupted by the 2011 revolution in Libya; a brief synopsis is presented here to demonstrate the huge importance of the survey, ahead of future work in Libya to complete the gazetteer and to fully study the material collected – which will form part of a longer publication on completion. The survey (Fig. 1) covered 27 km west of Wadi Giabrun, and 52 sites were recorded, from prehistoric to modern, though the majority of the sites were Roman in date.

Owing to the short duration of the season many of the important sites could not be recorded in detail, but the preliminary descriptions provided here highlight the potential of the area for future study. Fortunately, ceramic samples found at site 026 were brought back to the UK and have already been analysed and published in *Libyan Studies* 42. These are of great significance, adding a new amphora production site to the archaeological record of this area (Capelli and Leitch 2011). The project is important not only for its contribution to specific information on the history and economy of Tripolitania, but also for its documentation of coastal sites at high risk of destruction.

Methodology

This first season was conceived to test the potential for further systematic survey, focusing not only on the archaeological data necessary for the reconstruction of the ancient shoreline, its territorial and marine resources exploitation, but also on the evaluation of the archaeology's current state of preservation. Both the shoreline and the *widian* were explored. Due to the small-scale nature of the project, *widian* were only surveyed if their setting seemed geographically important, though future investigations would

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hope to survey them more fully. The area from Wadi Giabrun westwards was chosen as it extends from the surveys carried out by Petriaggi *et al.* (2010) in the Wadi Giabrun area and Cifani *et al.* (2003) which covered a 20 km stretch, going inland for 3 km east of Wadi Giabrun up to Wadi al-Tura. Based on this work, it was decided to aim for a roughly 25 km stretch, also going inland up to 3 km. Archaeological visibility was generally reasonable with not too much cultivation obscuring the surface evidence.

Survey methodologies are varied and much debated, but ultimately depend largely on the landscape, time and manpower resources.[2] The idea is to have a sample representative of the range of material in the area. Mapping the distribution of artefacts found on the surface of well defined areas by systematically traversing these areas in lines is a tried and tested technique (Barker and Lloyd 1991; Haselgrove *et al.* 1985), but the area to be studied was too large for this, and with under three weeks and a team of half a dozen archaeologists, this would have been impossible. The method used by Barker *et al.* for the Libyan Valleys survey in fact combined several techniques: general reconnaissance of the whole area; detailed investigations of settlements found and their surrounding terrain; and excavation where necessary (Barker *et al.* 1996, 27–32). Given the limitations of time and labour, the current survey undertook rapid reconnaissance, combined with more detailed sherding and recording of more obvious and important sites. The result was that not only were buildings such as villas and farms recorded, but also the nature of the surrounding productive landscape – the characterisation of which was one of the principal aims of this survey. The recording process in the field included location, a description, sketch plans and photographic records. Barker *et al.* concluded that though more detailed and time-consuming plans are preferable, their sketch plans were a 'good first basis for archaeological discussion' (Barker *et al.* 1996, 35). A gridded approach for artefact collection was not followed as being impractical for the large area being covered; instead, we followed the approach developed by John Dore for the Libyan Valleys survey (Barker *et al.* 1996, 36), collecting diagnostic pottery needed for dating and other pottery and artefacts representative of the range on the site, trying to maintain a constant rate of pick-up. The bags were labelled and studied in the Museum at Lepcis Magna, where the finds are currently stored. All 'sites' were numbered consecutively from east to west (001, 002 etc.). The use of the term 'site' can be problematic (Ahmed 2010; Caraher *et al.* 2006) and should be taken as a loose term, rather than forcing the evidence such as artefact scatters into too narrow a range of traditional functions. Topographic maps were created using a total station (Leica TPR 705), while all sites were recorded with a GPS (GPSmap 60 CSx; average accuracy 3–5 m). Architectural remains were recorded and planned, the state of preservation was documented and a risk assessment drawn up for each site.

Description of the coast and risk evaluation

The portion of coast explored consists of: 1) rocky promontories of up to 30 m height with an abrupt eroded façade, and wide platforms which slope seawards and continue underwater with associated

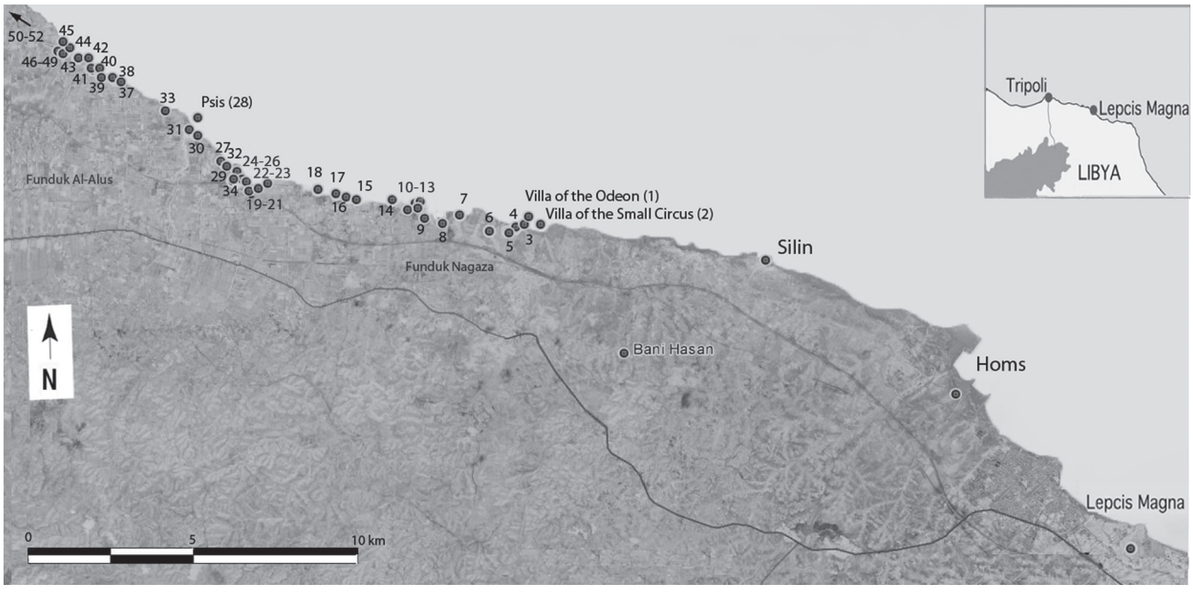

Figure 1. Map of the sites surveyed.

sandy bays; 2) long sandy shorelines associated with Mediterranean-type dune formations; 3) hill formations of *c.* 30 m height which slope towards the coast and are interrupted by *widian*.

The destruction of the coast by bulldozing activities related to the construction of coastal resorts, hotels, or villas has reached an advanced stage. Bulldozing activities consist both of the removal of entire portions of the coastline to create terraced platforms, and the systematic levelling of hilltops, pushing the soil seawards, at times covering the original slope with up to 20 m of soil, irreversibly modifying the landscape. In these areas, it was not possible to recover any archaeological data, except when it was still visible in bulldozed sections. The high density of sites recovered in the parts that have not been bulldozed suggest that we ought to think of a similar density and variety of sites in the areas already built over or bulldozed, as the qualitative aspects of the coastal structures (spectacular views and quality of life) are the same in modern times as in antiquity. Furthermore, modern houses are in some cases visibly built on ancient sites which can be used as foundations: this is particularly well illustrated by the construction of a modern house on top of the Villa of the Odeon (site 001).

Discussion of site types

The descriptions of the sites allowed for their tentative categorisation into broad site types, the grouping of which is useful for characterising the landscape. As with previous surveys of the area, there was some evidence for pre-historic settlement, with at least two discreet lithics scatters (sites 013, 018). However, there were many more occasional Neolithic finds suggesting more strongly than previously thought that the area may long have been inhabited. Moving on to historical periods, there was no apparent activity in the Punic period, and the first identifiable pottery was from the first century BC, taking us into the Roman landscape. Several maritime villas were logged (some of which have been previously published), including sites 001, 002, 003, 025, 027, 028, 038, 043?, 045, 050, 052, adding important new evidence about the considerable number of these wealthy residences along the coast. Site 045 for example had barrel-vaulted cisterns lined with bricks on the *intrados*, which may well be the first known example from North Africa of this type of construction.[3] Associated with the villas, several stone quarries were found, and would presumably have served mainly for the construction of the villas themselves. The next category of site was the presses (006, 028, 031, 034, 037). It is notoriously difficult to distinguish between olive oil and wine presses, especially from survey evidence (Brun 2004), and with no press beds (except 028) it was not possible to use oleic acid erosion as a diagnostic feature. However, at sites 006 and 031 there were Tripolitania III amphorae, which are generally accepted as containing olive oil (Bonifay 2004, 474). Connected to the productive activities, several ceramic kilns were located. Site 008 may have been a ceramic kiln and Tripolitania II wasters suggest amphora production; site 026 had produced Tripolitanian II and III; and sites 033, 038 and 040 were identified by wide scatters of ceramics, burnt patches and ceramic wasters (at site 040) hinting at nearby kilns. Further ovens, furnaces or kilns, of uncertain purpose were recorded at sites 004, 005, 017 and 020, though the state of preservation does not allow for any conclusive identification without excavation. The identification of fish-salting vats at the villa site 052 was particularly exciting, not only because such facilities are poorly recorded along the coast,[4] but also because of the possible association with the production of Tripolitania II amphorae in the area, which often contained fish or wine products (Capelli and Leitch 2011). Other possible features associated with fish products were recorded at site 039, and site 010. Further evidence of Roman, or earlier, occupation are the tombs at sites 044, 047, 048 – all barrel-vaulted single chambers, suggestive of a certain level of wealth and these sites would certainly benefit from further study into the funerary practices of the elites. Some sites show continuation into the Islamic period (015, 016, 019, 028, 029 = 035).Wells and basins were also found (046, 049) but cannot be dated.

The coastal economy of the hinterland of Lepcis Magna

Overall, the new survey paints a picture of a busy and mixed landscape, with settlements, elite villas and production facilities. Putting this together with evidence from previous surveys suggests that the area was inhabited from the Epipalaeolithic and Neolithic periods. Although a lack of Bronze Age material recorded in Libya in fact makes it extremely difficult to date the end of the Neolithic, and lithic tools have also been recorded in late Roman contexts at Seal Island, east of Tobruk, for example (Carter 1963, 21). More settled habitation is not apparent until much later: excavations at Lepcis Magna have suggested that the city was founded as early as the seventh century BC (Carter 1965; De Miro 2002). However, until the third century BC there is little evidence of occupation or productive activity, which Cifani *et al.* suggest is due to the constraints of Carthage's commercial politics. This new survey cannot add further

evidence to support or refute this theory as this period remains archaeologically almost invisible. The evidence from previous investigations of the territory points to the gradual intensification of agriculture and trade after the second Punic War in 201 BC, as new markets, no longer controlled by Carthage, developed, also evidenced in Sabratha (Bessi 2002). The massive escalation of economic and settlement activity in the Roman period is well demonstrated in the new survey as well as from previous ones – rich coastal villas, farms and oil and/or wine pressing sites (Ahmed 2010; Barker *et al.* 1996, 1, 281–85; Mattingly 1995, 138–55). Looking at the villas, the evidence from this survey has highlighted the importance of characterising the different types of villas: Italian literature has tended to emphasise the 'luxury' aspect of villas (Dyson 2003), and many of the Lepcis Magna coastal villas may have been viewed in this way. The discovery of nearby production facilities, such as fish-salting installations, ceramic kilns and presses, perhaps directly associated with some of the villas, suggests, however, that these residences had a strong economic and trading function, one that in fact would have provided the funds for the luxurious architectural and decorative elements that have been discovered.[5] Coastal sites were advantaged by a location close to transport routes, a favourable climate for cultivation, and for the fish installations, direct access to the 'raw' ingredients, a situation perhaps not unlike coastal villas in Spain and Portugal, which have fish-salting vats directly next to the villa. Indeed, fishing must have been an important part of the economic life of the inhabitants, and some of this presumably was for trade. Indeed, the very presence of amphora kilns suggest there was a surplus for trade, as why else produce a transport vessel? We should therefore perhaps rethink the image of the coastline purely as a resort for the leisure classes, and pay attention also to its economic role. The success of this area, apparent from the number of sites now recorded in the Imperial period, can be explained by Lepcis Magna's greater involvement in Mediterranean commercial networks (Mattingly 1995, 141), a situation paralleled in Roman Leptiminus in Tunisia, where farming and the exploitation of marine sources were capitalized through Mediterranean trade (Mattingly *et al.* 2011, 286). The relationship between the villa anchorages and the main port at Lepcis Magna is not clear, however, and would need to be looked at more carefully to see how the villas fitted into commercial maritime networks[6] – whether they sent their goods to the port of Lepcis Magna or shipped them directly to other Mediterranean ports. Tchernia points out that '*ce n'est pas le tonnage qui fait le trafic, c'est le trafic qui fait le tonnage*' (Tchernia 2011, 86), so understanding the nature of bays, anchorages, and harbours should indirectly tell us a lot about the volume of goods being shipped and whether they would have needed to go to larger ports for onward travel in bigger ships. Recent debates about modes of shipping could suggest coastal trading was practised, but on the other hand, with an important port nearby at Lepcis Magna, it may have been economically more secure and easier for the villa estates to take goods to this important trading centre which was part of the well organised '*grand commerce*' of the Roman empire.[7]

Another important indication from surveys in the area is the overall decline from the third century AD, highlighted particularly by Munzi *et al.* 2004, with a drop in amphora production and the abandonment of many coastal villas from the third century onwards – earlier in fact than the inland villas and farms. Contrary to the earlier boom, these patterns of decline are not in accord with the investigation of the Tarhuna region, where settlement and production is still healthy in the third and fourth centuries AD, and only declines steadily rather than sharply from the fifth to seventh centuries AD. Thus, the coastal area of Lepcis Magna has a particular economic dynamic, especially from the fourth century AD onwards. Nor can we automatically associate this decline with the 'third-century crisis' as North Africa generally seems to have avoided this (Lepelley 1998, 102–104) with continued trade and production, evidenced for instance by ARS D from el-Mahrine and the associated export of grain.

Why did the area around Lepcis Magna go into decline? The Austurian destructions of AD 363–66 in the territory may have been one of the factors amongst those which affected the whole Mediterranean. Subsequent patterns of decline from the fifth century AD are more in line with wider political and economic change in the area, including nomadic invasions: all the surveys in the area show this change. Evidence from the Islamic period is problematic, as pointed out by Munzi *et al.* (2004), not only because the pottery is poorly understood, but also because there is less of it. It is important, however, to identify these sites where possible, and to say whether or not they seem to be a continuation of previous Roman sites or completely new ones. The survey by Munzi *et al*. identified some Islamic sites in the area, but was unable to date or accurately characterise them; the present survey hopes to identify the Islamic pottery in the future. In the Medieval period, the desertification of the Libyan Valleys area and the redirection of trade through Tripoli led to further decline in Tripolitania.

Conclusions

The commercial importance of Tripolitania and its coastal centre at Lepcis Magna are increasingly being recognised through new archaeological surveys and excavations. This new survey has been of great significance for locating not only new coastal villas testifying to the wealth of the area, but more importantly, their productive capacity – evidenced through amphorae production sites, presses and fish tanks. Of particular importance for tracking the movement of goods from this area are the transport amphorae produced here, which have distinctive forms and fabrics, but also sometimes stamps (although no stamps were discovered in our survey area so far).[8] These finds have implications for Tripolitania in pan-Mediterranean trade and distribution and its importance as a productive centre, not only in terms of maritime trade, but also trade southwards, allowing us to suggest and map new routes and increase our understanding of the importance, evolution and connectivity of certain areas in the Libyan interior, as well as corroborate the pattern of trade and production identified on a much larger scale on the Tarhuna Plateau. Indeed, by comparing the different surveys it becomes apparent that the Tarhuna plateau was the main production centre of Tripolitania, particularly for oil and wine. Further, it was undoubtedly the Roman period that saw this boom with very little evidence for production or ceramics in the pre-Roman, or indeed late Roman periods, with changes in the fourth century AD. It has long been known that the Romans transformed the coast and its cities, but only now, with more archaeological investigations, are we starting to appreciate the huge economic importance of the coastal hinterland, which was a significant economic resource for the elites (Mattingly 1988; 1995). They produced oil, wine and fish products and their ceramic containers, and invested considerable capital in their facilities. Economic growth was key, and this preliminary survey has started to transform our understanding of the economic context of Lepcis Magna and its hinterland.

Key future research will try to further trace the location of amphorae produced in this region, and the evidence from kiln site 026 (Capelli and Leitch 2011) should form a useful base for the categorization of the Tripolitanian II variants. For instance the many Tripolitanian amphorae at Bu Njem, Gheriat al-Gharbia and in the Fazzan region can perhaps now be more closely matched to areas of production, and to specific products (Mackensen 2010; 2011; Mattingly *et al*. 2007; Rebuffat *et al*. 1966–7, 1969–70; Rebuffat 1969–70). In addition, the awaited publication of the French excavations at Lepcis Magna, along with previously published excavated contexts from the city should be compared with all the survey results to better understand the relationships between the productive hinterland and its mother city. Lastly, this survey has also been important for providing a dossier of information relating to damage and destruction of major sites in this key area at a critical moment, and is particularly important for setting new research goals when Libyan archaeology opens up again.

Notes

1 The authors would like to thank Dr Salah Aghab and Dr Muftah Ahmed for all their support, and our Libyan colleagues. Thanks also go to Prof. Luisa Musso, head of the University of Roma Tre Mission in Lepcis Magna, for whom this survey has been conducted. Huw Groucutt kindly offered advice on the lithics.

2 Slim *et al.* 2004, for a similar example of a coastal survey in Tunisia, though much larger-scale.

3 Lancaster 2005, 29–32, for this type of construction and chronology. These are mainly found in Rome.

4 Wilson 2002, 443, discusses the potential for matching specific amphora types to fish products, but notes the lack of evidence at Lepcis Magna, underlining the significance of these new findings.

5 Marzano 2007 for discussion on role of Italian villas as economic enterprises.

6 Schörle 2011 for discussion of villa harbours.

7 Schörle 2011 for the integration of villa harbours within the wider harbour hierarchy; Wilson 2011 and 2011b for a summary of shipping patterns and surrounding debates.

8 See also the important publication of amphorae stamps by Ahmed 2010.

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