Kourion’s Hinterland in Late Antiquity and the Findings of the Sotira Archaeological Project’s 1997 and 2004 Seasons

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ABSTRACT

This dissertation presents a discussion on the Late Antique (fifth to eighth centuries AD) landscapes of Cyprus based on the archaeological, environmental, and historical records. This dissertation argues that apart from being an economically well-integrated province, Cyprus was also well-integrated into the large social and strategic trajectories of the Late Antique east Mediterranean. This study also uses archaeological data generated by the Sotira Archaeological Project (SAP) to examine the Late Antique landscapes in the south coast urban settlement of Kourion's hinterland. Interestingly, the majority of the loci recorded by the SAP are interpretable as either estate centres or farmsteads. Analysis of these loci revealed the existence of a comparatively complex Late Antique landscape that embodied aspects of the manifold relationships between the productive, commemorative, and authoritative landscapes of Kourion's hinterland during this period.

To My Parents Emanuel and Susan Mavromatis

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CHAPTER 1

INTRODUCTION

Over the last two and a half decades, intensive archaeological field survey data has increasingly contributed to our understanding of Late Antique multi-component settlement systems in the eastern Mediterranean. Undoubtedly the emphasis on diachronic research frameworks, among a host of other methodological developments, adopted by many second generation or "New Wave" Mediterranean archaeological field surveys have increasingly illuminated Late Antique landscapes as well as those of other previously marginalized periods (Alcock and Cherry 2004: 3). Arguably, Cyprus is one of the most intensively surveyed areas in the eastern Mediterranean and, as a whole, the large regional and the smaller period-specific archaeological survey projects operating on the island have closely followed contemporary survey methodologies as practiced in other parts of the Mediterranean (figures 1.1 and 1.2)[1]. However, to date, with the notable exception of the Sydney Cyprus Survey Project (*e.g.* Given and Knapp 2003; Given 2004) and Manning and colleagues' (Manning *et al* 2000; Manning *et al* 2002) work in the Maroni Valley, very few of the larger interdisciplinary survey projects have

[1] The literature on Mediterranean survey is voluminous; however, the volumes edited by Athanassopoulos and Wandsnider (2004), Alcock and Cherry (2004), Francovich and Patterson (2000), and Papadopoulos and Leventhal (2003) provide the essential methodological and theoretical developments. The various contributions in the recent volume edited by Iacovou (2004) provide a succinct account of archaeological survey's development on Cyprus.

produced complete final publications and even fewer have produced reports specifically dealing with the Late Antique period in their study areas.

While there are exceptions (*e.g.* Kardulias and Yerkes 2004; Given 2004; Given and Knapp 2003; Rautman 2000), Late Antique Cypriot landscapes remain comparatively under-theorized in relation to other more intensively studied periods, like the Bronze Age, for example (*e.g.* Knapp 1990; Knapp 1999; Keswani 1993; Keswani 1997). Nevertheless, the general trend identified by several of the larger Cypriot surveys (*e.g.* Given and Knapp 2003; Rautman 2004; Ed. Fejfer 1995) for the Late Antique period in Cyprus is one characterized by an increase in rural activity. The aggregate trend derived from both excavation and survey data also indicates a general disruption of the established exchange conduits starting in the mid-seventh century AD. The appearance of handmade pottery at the south coast urban site of Kourion (Hayes 2007) and at the village of Kalavasos Kopetra (Rautman 1998; Rautman *et al* 2003) in deposits attributable to the second half of the seventh century AD also supports this general impression. However, while perspectives that have used ceramic assemblages (*e.g.* fine ware and amphora) as the main means of measuring the vitality of the Cyprus' rural sector have contributed to our understanding of the province's relationships with the larger rhythms of Late Antique exchange in the east Mediterranean, this class of material evidence is not without its own set of problems. For example, based on stratified assemblages from area three of the Paphos Theatre excavations, Rowe (2004) has

recently argued that several CRS forms, which scholars (*e.g.* Hayes 1972; Catling 1972; Catling and Dikigoropoulos 1970) have traditionally assigned to sixth and seventh centuries AD should be reassigned to the fourth and fifth centuries AD[2]. Additionally, Armstrong (2009) has recently argued that the production of CRS form 9 and its variants along with Dhiorios cook pots and dimple bottom jugs continued well into the eighth century AD. Both Rowe (*ibid*) and Armstrong's (*ibid*) research clearly illustrates that more work needs to be done on refining CRS' typology and chronology[3]. Furthermore, their (*ibid*) work also illustrates the important role coarse wares can play in identifying late seventh and eighth century AD activity in the archaeological record. As a general point, most researchers would agree that difficulties arise in the comparative analysis of ceramic assemblages derived from surface survey projects (Given 2004; Terrentato 2004). Apart from the issues associated with the quantitative comparison of ceramic data generated by archaeological survey, time lag presents another, but often overlooked, problem in the interpretation of ceramic assemblages derived from both excavations and surveys (Adams 2003)[4]. While some researchers (*e.g.*

[2] For example, Rowe's (2004: 298-300) argues that the opening production dates for CRS form 8 should be attributed to the fifth century AD rather than the mid to late sixth century; CRS forms 9 and 11, Rowe (*ibid*) believes, should be reassigned to the fifth century AD.

[3] Armstrong (2009: 174) states "There can be no doubt that the key to unlocking the 8th century in the east Mediterranean lies with Cypriot Red Slip Ware, especially Hayes's Form 9 and 'Well form'". Armstrong also notes that researchers working in Syria and Turkey have identified CRS from eight century AD contexts (Armstrong 2009: 178).

[4] Although Adams' (2003) discussion is geared for capitalist economic systems and new world historic sites, nearly all of the elements identified in his schematic model of the time lag process are equally valid to pre-capitalist societies. Thus, following Adams (2003: 41), time lag is best understood as

Rautman *et al* 2003; Hayes 2007) working on Cyprus have acknowledged the potential distorting effect of this phenomenon on their data, it remains largely unaccounted for in Late Antique Cypriot archaeology[5].

As Athanassopoulos and Wandsnider (2004: 9) have pointed out, the dominant trend in Mediterranean survey has been the continuation of "environmental functionalist" paradigms. One feature of this trend is the continued preference for binary analytical frameworks that have focused on the apparent dichotomy between dispersed and nucleated settlement patterns for the analysis of post-prehistoric periods (*e.g.* Alcock 1994; Bintliff *et al* 2007). One shortcoming of frameworks based on the use of binaries is that they pay "little attention to different land-use histories and impose uniformity in interpretation at the expense of regional diversity" (Athanassopoulos and Wandsnider 2004: 5)[6]. In other words, binary interpretive frameworks tend to homogenise the comparatively diverse datasets generated by intensive archaeological survey. One interesting development that has addressed this issue has been the adoption of Phenomenological concepts for the theorization of landscape. Such perspectives view the landscape as an active

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the difference between an object's manufacture date and the date of its disposal an entrance into the archaeological record. In other words, time lag is the cumulative product of two main phases that include the time span between object's manufacture and its arrival at its place of use and the object primary and secondary use life.

[5] At Kalavasos Kopetra, for example, the excavators suggest "Since the site's widespread damage *c*.650 would have dampened local demand, many of the vessels assigned to the second half of the 7th c…probably were used earlier as well" (Rautman *et al* 2003: 209).

[6] For a discussion on the limitations of binary frameworks in geographic analysis, which are also equally valid for the analysis of archaeological survey data, see the various contributions in the volume edited by Cloke and Johnston (2005).

constituent in social mediation rather than as a passive backdrop or simply as a "container for action" (Tilley 1994: 10).

Because many of the larger archaeological surveys in Cyprus have not produced final publications, much of our present understanding of rural conditions within the province predominantly comes from several excavated sites. Thus, the results of the excavations at Kalavasos Kopetra in the Vasilikos Valley (Rautman *et al* 2003), the excavations at Maroni Petrera and the associated limited survey in the lower Maroni valley (Manning *et al* 2002), the excavations at Alassa in the upper Kouris Valley (Flourentzos 1996), the survey and excavations at Ayios Kononas and survey in the Akamas (Ed. Fejfer 1995) and to a lesser extent, the excavations at Panayia Ematousa (Eds. Sorensen and Winther Jacobsen 2006) have provided the best means of assessing the rural activity in the Late Antique Cypriot countryside. Although the above mentioned excavations are in non-urban village contexts, with the exception of Panayia Ematousa, and to a lesser extent the wider excavations at Ayios Kononas, they have predominantly focused on basilicas or other special-purpose monumental edifices.

Turning to Kourion's hinterland, although several projects have operated in the greater Kourion area (*e.g.* Swiny 1981; Held 2003) or have examined aspects of the Roman and/or Late Antique landscape (*e.g.* Hadjisavvas 1992; J. Leonard 2005; Parks 1999; Last 1975), the detailed examination of the Roman and Late Roman landscapes were not their main objectives. However, unlike those studies, the main aim of the present study is to explore several interrelated aspects of

the Late Antique Cypriot provincial landscape, like the authoritative and productive components of the landscape, as represented in the south coast settlement of Kourion's hinterland and in the urban environment itself from a perspective that views these phenomena as active constituents in social mediation. The primary field data used in the present study comes from the Sotira Archaeological Project's (SAP) 1997 and 2004 seasons and the Kourion Mapping Project. In relation to the wider trends in Mediterranean field survey, the Sotira Archaeological Project's field procedures (see Chapter 5) occupy the methodological middle ground between extensive and intensives survey. This study also includes a discussion of contemporary environmental conditions within the Sotira Archaeological Project's study area (see Chapter 2). In 1997, I was a field walker for the Sotira Archaeological Project. The project's principal investigator, Professor Stuart Swiny (S.U.N.Y, Albany), granted me permission to access the 1997 archaeological and environmental survey data (*i.e.* notebooks, maps, project databases) for the present study in 2001. In 2004, with the encouragement of Professor Stuart Swiny, I initiated a small fieldwork programme that focused on the reinvestigation of several Late Antique loci identified by the Sotira Archaeological Project in 1997. Although the 2004 season operated under a limited work permit and that restricted the collection of surface materials, it did produce usable data that refined aspects of the data recorded in 1997. The reanalysis of the SAP 1997 field data and the data acquired in 2004 are presented and analyzed in Chapter 5. The Sotira Archaeological

Project's findings augment the results of other Cypriot surveys and, when taken in conjunction with those projects' data, allow for the partial modelling of Cyprus' Late Antique multi-component landscape (see Chapter 6).

Late Antique Cypriot urban landscapes also remain largely under-theorized. Although there are exceptions (*e.g.* Ed. Fejfer 1995; Sorensen and Jacobsen 2006; Kondoleon 1994), current research directions in Cypriot Roman and Late Roman archaeology have generally tended to favour monumental public and ecclesiastic architecture at the expense of both domestic monumental and vernacular architecture[7]. However, this situation is not unique to Cyprus. The changes in urban topography and in the civic corporate establishment are two issues that have received considerable attention in the literature dealing with Late Antique urbanism. In general, researchers also have approached this topic from a binary framework that has centred on decline and continuity (*e.g.* Liebeschuetz 1992, 2001; Jones 1964; Whittow 1990, 1996, 2001, 2003; Rapp 2004, 2005). Such a rigid interpretative framework has not escaped critique. Some researchers (*e.g.* Cameron 2001; Dagron 2002) have questioned the utility of such a value-laden term like "decline" to clarify persistent historical questions while others (Alston 2003) have questioned the explanatory power of frameworks that focus the particularities of urban sites as the unit of analysis rather than the "urban system" (see Chapter 2).

[7] For example, the so-called Earthquake House, House of Eustolios, the House of the Gladiators, and the Apsidal building at Kourion all await final publication.

Approaches to Late Antique architecture have been equally problematic. Researchers have traditionally approached architecture, arguably the main material expression of the Late Antique urban landscape, largely from an art historical-typological perspective (*e.g.* Buchwald 1999). In response to this, Lavan (2003a & 2003b) has suggested that a shift to the analysis of "activity spaces" (which consists of both a functional and material aspect) could serve as "the basis for the general description of human space" which could then form "components of a historical narrative of ancient topography" (Lavan 2003a: 184). While Lavan's (*ibid*) "activity settings" represent a break from the art historical-typological approach, architecture's role in social mediations still remains an essentially static and passive one. Furthermore, poor excavation techniques (*i.e.* clearance rather than controlled stratigraphic excavation) and the underutilization of recovered data (*e.g.* faunal assemblages, publication of the main phase rather than full occupational sequence) have also placed severe limitations on our ability to model spatial relations in Late Antiquity[8].

On the other hand, the analysis presented in Chapter 4 (§4.3), while still subject to the limitations imposed by the available data, offers a less pessimistic interpretation of Kourion's Late Antique urban landscape than that argued by some scholars (*i.e.* Mitford 1971; 1980). The analysis of Kourion's urban landscape, while relying primarily on published materials, was supplemented by

[8] Putzeys and colleagues' (2004) work at Sagalassos provides a particularly good example of the maximization of ceramic and macro-botanical data from domestic contexts.

data generated by the Kourion Mapping Project. In 2006, the Kourion Mapping Project's principal investigator, the late Doctor Danielle Parks (Brock University), invited me to direct the final field season of the total station survey portion of that project and to contribute to the publication of that project's results (*e.g.* Buell and Mavromatis forthcoming). Without the generosity of both Professor Swiny and Doctor Parks, the present study on Kourion's hinterland and urban landscape would not have been possible in its present form.

Like the archaeological data, the available historical data for Late Antique Cyprus has its own particular set of difficulties. In general, the Late Antique historical record contributes very little to our understanding of the multifaceted and multi-component landscapes of Late Antique Cyprus. As Cameron (1996) has pointed out, the main sources for the period are devoid of explicit information on local Cypriot conditions and only provide information on major geo-political events (*e.g.* invasions). However, even this data tends to be of variable quality[9]. For example, the Reconstituted Chronicle of Dionysius of Tel-Mahre (Trans. Palmer 1993: 174-175) provides a considerably more detailed account of Muawiyah's invasion of Cyprus in 649 AD than the minimalistic description found in Theophanes (Trans. Turtledove 1982: 43). These problems, however, are not unique to Cyprus and are a common feature of the Late Antique historical record for many regions of the eastern

[9] Cameron (1996) states that one major difficulty is the discrepancies that arise between Arabic and Byzantine accounts of the same events.

Mediterranean (Athanassopoulos 2004; Cameron 1996). Unsurprisingly, the majority of the historical research (*e.g.* Jenkins 1953; Browning 1977-1979; Kyrris 1994-1998) dealing with Late Antique Cyprus had focused on the chronology and implications of the geo-strategic and political events of the mid-to-late seventh century AD. Some researchers (*e.g.* Potter nd; Mitford 1980; Browning 1977-1979) have argued that Cyprus only emerged out of comparative obscurity in the mid-seventh century AD. However, the considerably more robust archaeological record offers a different perspective on the period. Arguably, because of the historical record's paucity for Cyprus during Late Antiquity, the comparatively diverse archaeological record offers the best approach for examining this particular period. The analysis presented in Chapter 4 argues that the Late Antique provincial and central governments recognized Cyprus' potential tactical importance as early as the sixth century AD.

From the preceding discussion, several interesting questions emerge about Cyprus' relationship and place in the larger social, economic, strategic, and political trajectories of the Late Antique eastern Mediterranean. This thesis will address the following

- To what extend does Cypriot provincial infrastructure and the composition of the Cypriot elites support the notion that the province was well integrated during Late Antiquity?
- To what extent did the central government recognise Cyprus' tactical value during the sixth and seventh centuries AD?
- Based on the case study of Kourion, to what extent did this urban landscape remain viable during Late Antiquity; is

Kourion’s development in Late Antiquity best characterised as decline, continuation, or transformation?

- To what extent did Cyprus experience intensification in rural production during Late Antiquity? To what extent, if any, is this process detectable in Kourion’s hinterland?

In order to examine the questions mentioned above, this thesis is divided into an additional five chapters. Chapters 2 and 3 provide the theoretical framework for the discussion and analysis of Late Roman Cyprus and the results of the Sotira Archaeological Project’s investigations in Kourion’s hinterland and its urban landscape. The first half of Chapter 2 (§2.1-§2.2.5) presents the particular theoretical perspectives on power, space, and place used in the analysis of both the cultural landscape and urban environment. The discussion presented in the second half of Chapter 2 (§2.3-§2.4) focuses on the shifting power relationships embodied in several social constructs such as the ‘city’, the imperial/central administrative apparatus and the administrative apparatus’ ability to acquire, extrapolate and use geographic information for the maintenance of imperial power during Late Antiquity. The first half of Chapter 3 (§3.2) provides a general discussion of the past and present Mediterranean environment which provides a point of comparison for the more detailed presentation of the Cypriot environmental proxy data (§3.3-§3.3.4.1). The second half of Chapter 3 (§3.3.5-§3.3.5.A) discusses the vegetational regime in the greater Kourion area before presenting the results of the Sotira Archaeological project’s ecological study.

Chapter 4 examines several interrelated topics that have contributed to the formation of a contested Cypriot provincial landscape during Late Antiquity. This chapter also explores themes such as provincial administration, elite competition, the colonization of various landscapes by authoritative institutions (*i.e.* the Cypriot Church, the Late Roman state) and corporate groups (*i.e.* senatorial elites) (§4.2-§4.2.4). Finally, the closing section of Chapter 4 presents a discussion on the transformation and re-conceptualization of urban space on Cyprus during Late Antiquity based on an analysis of Kourion's urban landscape (§4.3-§4.3.1.2).

Chapter 5 presents a detailed discussion of the field and data capture methods used by the Sotira Archaeological Project. This discussion also includes the results of several other projects in close proximity to the SAP study area. The second half of Chapter 5 presents a detailed analysis and interpretation of the Late Antique loci identified by that project based on the theoretical framework developed in Chapters 2 and 4. Chapter 5 also compares the SAP results with those of other select Cypriot surveys. While the methodological problems presented by any attempt at the direct comparison of various classes of archaeological survey data (*i.e.* sherd density) are well known (*e.g.* Given 2004; Terrentato 2004), the comparison of the SAP data with other projects' results is predominantly qualitative in character. Chapter 6 compares several of the trends identified on Cyprus with other regions while addressing the issues mentioned above. Finally, Chapter 6 provides suggestions for future research directions in Kourion's hinterland.

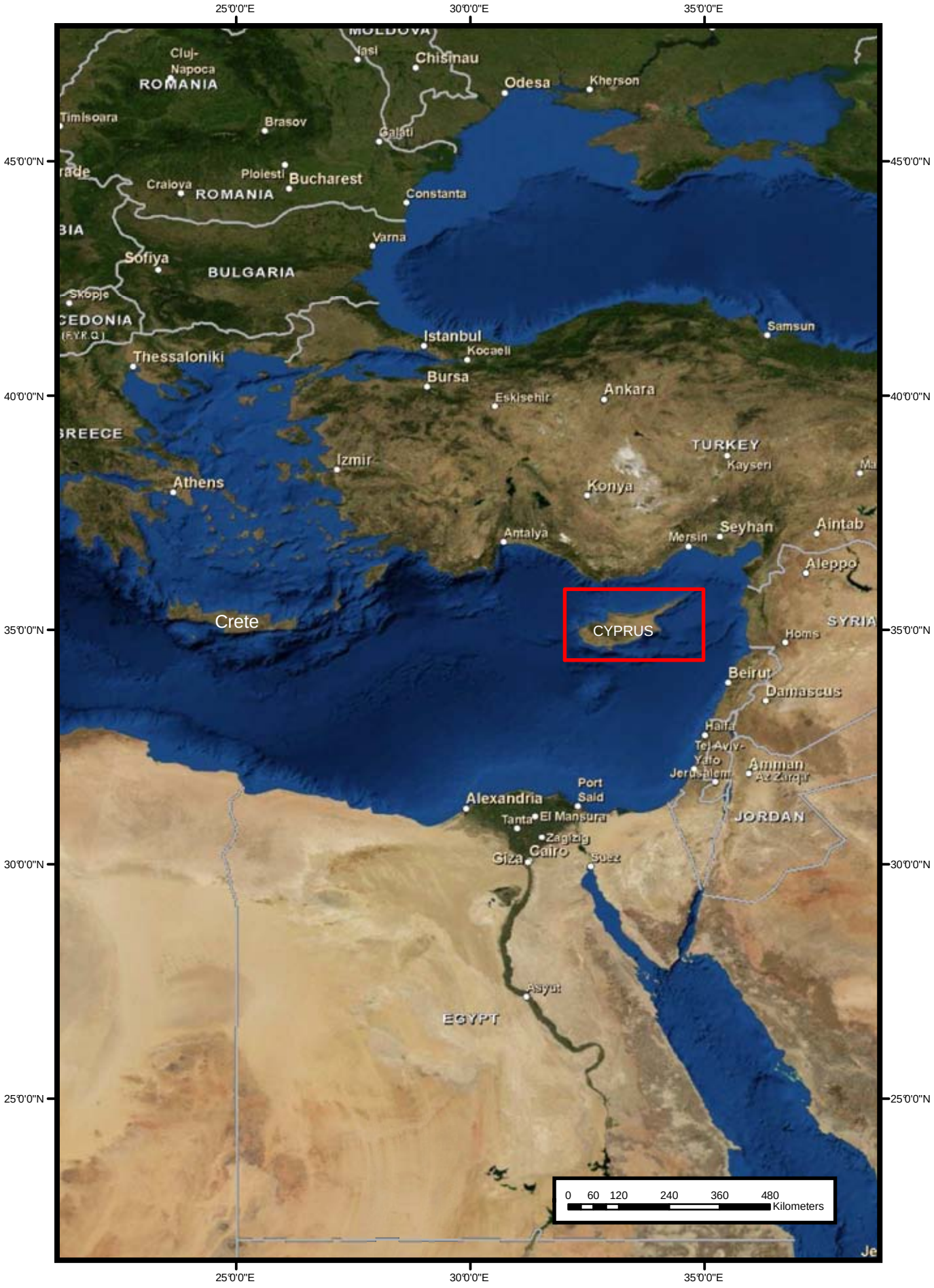

Figure 1.1 Location map (Source: ESRI World Imagery 2009; Datum WGS 84).

Figure 1.2 Major modern Cypriot settlement (Source: ESRI World Imagery 2009; Datum WGS 84).

CHAPTER 2

Theoretical and Historical Framework

2.1 Chapter introduction

This chapter's main purpose is to provide the theoretical underpinnings and the broad socio-historical context for the analysis of various contexts of Late Roman Cyprus in Chapter 4 and the Sotira Archaeological Project's (SAP) survey data in Chapter 5. Organizationally, this chapter is divisible into two main parts. The first half, comprised of sections 2.2 to 2.2.5, discusses how select elements of 'power' and its role in spatial relations, the formation of place and architecture. Sections 2.3 and 2.4 provide a general discussion of the shifting power relationships embodied in several social constructs such as the 'city', imperial/central administrative apparatus, as well as the administrative apparatus's ability to acquire, extrapolate, and use geographic information for the maintenance of imperial power.

2.2 Social power and the built environment

Social researchers (Giddens 1984; Giddens 1979; Mann 1986) have argued that power negotiations are fundamental components of all social interaction[1]. However, some researchers have presented and

[1] Lukes's (1986) edited volume provides essential papers on the theorization of power in the social and political sciences. Several contributions are

theorized power in simple or commonsense ways, “but little more about power is so simple” as Galbraith (1986: 212) notes. McGuire (1992: 132) echoes the same sentiment: “scholars err in trying to reduce all forms of power to a single tally or in trying to understand history without talking about power”. This section focuses on several approaches, theorizations and aspects of power, which, in turn, contribute to the discussion on the interplay between the Late Roman State, various socially definable groups and power resources, as well as the interplay between power and the built environment presented later in this chapter.

2.2.1 Power, ideology, and the built environment

Social and political theorists have provided a variety of definitions for power that range from the comparatively general to the specific and embrace the phenomena’s individual and collective aspects[2]. For example, although Weber’s (1964: 152) main interest was authority, which is an aspect of power, he theorizes power in *The Theory of Social and Economic Organization* as “the probability that one actor within a social relationship will be in a position to carry out his will despite resistance, regardless of the basis on

particularly useful: see Dahl’s contribution for a discussion of the distributional aspect of power; for a discussion of power’s various aspects, see Arendt’s contribution; for a discussion of power as the ability of a given social class to achieve its interests, see Poulantzas’s contribution; for a discussion of domination and authority, see Simmel’s contribution; for a discussion of power as it is related to reproducing inequality in a given society, see Lenski’s contribution. Additionally, for a general review of the historical development of the theorization of power, see Lukes’s (1978) contribution in Bottomore & Nisbet’s (1978) edited volume entitled *A History of Sociological Analysis*.

[2] See, for example, the various definitions in the works presented in Lukes’s (1986) edited volume as well as Lukes’s (1986) introduction to that volume.

which this probability rests" [3]. In addressing the individual aspect of power, Goldman (1986: 157) argues, the "central idea…is connected with *getting what one wants*" (emphasis in the original); Russell (1986: 19) defines power as "the production of intended effects"[4]. All three of the aforementioned theorizations of power essentially propose a general, adaptable, and inclusive definition of power. The analytical value of such an all-embracing approach to power -like Weber's- has not escaped criticism (*e.g*. Dahl 1986). For example, both Dahl (1986: 40) and Galbraith (1986: 211) criticize these theorizations of power because they believe such approaches are unable to capture adequately power's situational/contextual diversity. From this perspective, Dahl (*ibid*) argues "the great variety and heterogeneity of these relations may, in fact, make it impossible –or at any rate not very fruitful- to develop general theories of power intended to cover them all".

In discussing agency, structure and culture in archaeological theory from a Marxist prospective, McGuire (1992: 132) builds on the basic principle that all social actors "have the power to act". He further distinguishes between "power to" and "power over" in this discussion. "Power to", McGuire (*ibid*) states, is the ability of social actors "to act or intervene" and, perhaps, more importantly, "alter" a given social situation. "Power over", in contrast, is

[3] However, Dahl (1986: 39-40) notes Weber's real interest was not in power itself but, rather, in its legitimate exercise, or authority.

[4] Russell's (1986) selection presented in Lukes (1986) is drawn from Russell's (1975) *Power: A New Social Analysis*. Goldman (1986's selection presented in Lukes (1986) is drawn from Goldman's (1972) article 'Towards a theory of social power' published in *Philosophical Studies* 23.

chiefly concerned with the ability to engage in "negative action" (*ibid*). While accepting the basic assumptions inherent in both 'power to' and 'power over', Arendt (1986: 64-65) theorizes power as the ability to act *in concert* with others[5]. However, 'action in concert' precludes individual social actors from possessing power. Power, Arendt (*ibid*) believes, resides strictly with groups and never with an individual[6]. Thus, from Arendt's (*ibid*) perspective, when power is associated with an individual social actor it is actually a metaphor for strength and hence an aspect of personal character.

Though they differ in their precise definitions of "resources", several researchers (*e.g.* Galbraith 1986; Russell 1986; Giddens 1979, 1984; Mann 1986) suggest that power is essentially a resource-based social phenomenon. Galbraith (1986) identifies three instruments and three sources of power[7]. These consist of condign, compensatory and conditioned power, which form the instruments of power; personality, property/wealth and organization, serve as power sources within this framework. Condign power exacts compliance because those social actors under its influence deem the reproach for noncompliance as too severe. Compensatory power exacts

[5] The selection presented in Lukes (1986) is drawn from Arendt's (1970) *On Violence*.

[6] "Power is never the property of an individual; it belongs to a group and remains in existence only so long as the group keeps together. When we say of somebody that he is 'in power' we actually refer to his being empowered by a certain number of people to act in their name. The moment the group, from which the power originated to begin with…,disappears, 'his power' also vanishes" (Arendt 1986: 64).

[7] The selection presented in Lukes (1986) is drawn from Galbraith's (1984) *The Anatomy of Power*.

compliance through positive reinforcements and rewards (*e.g*. pay and praise). Conditioned power, in contrast, operates on a more subtle level because it seeks to change a social actor's opinion in order to achieve compliance. Galbraith (1986: 214) observes "submission reflects the preferred course; the fact of submission is not recognized." Although Galbraith (*ibid*) does not explicitly link conditioned power to ideology or authority, it seems reasonable to suggest that conditioned power can also function like certain aspects of ideology. Of the three sources of power, he links organization (*e.g*. the state) closely with conditioned and, to a lesser extent, condign power. Personality, in contrast, draws on a social actor's personal trait (*e.g.* morals or auditory skill) and is predominantly associated with condign and, in modern societies, conditioned power. Wealth/property, in turn, "provides the wherewithal to purchase submission" (Galbraith 1986: 214), and is associated with compensatory power. In actuality, Galbraith (1986: 215) argues, social actors/ groups exercise power by using these sources and instruments in various combinations and proportions. Similarly, Russell (1986) also suggests that power operates through three main channels: power exercised by social actors over other social actors operates through physical means, rewards and punishments as well as the influence of opinion. It seems acceptable to approximate these three channels to Galbraith's (*ibid*) condign, compensatory and conditioned power forms (Russell 1986: 19-21; Galbraith 1986: 211-215).

On the other hand, Giddens (1984: 15; 1979: 88) has rejected power's widely accepted definition as the capacity to bring about a desired outcome[8]. Rather, he (1984; 1979) theorizes power as resource-based and an essential component of social reproduction. However, resources in this context, Giddens (1979; 1984) argues, are the conduits through which power flows and, perhaps more importantly, knowledgeable social actors as well as institutions utilize them in social reproduction. Thus, resources as such do not represent power but are the means by which knowledgeable social actors and institutions exercise power "via signification and legitimation", (Giddens 1984: 15) as well as "authorization and allocation" (Giddens 1979: 93). Giddens (1984) also argues within the theory of structuration that power does not necessarily equate with the promotion of sectional interests. Both individual social actors and groups within this framework, it is important to note, are capable of negotiating power in the sense that even those groups and/or actors with less power are capable of transforming those with more.

Similarly, in formulating his I.E.M.P model of power, Mann (1986: 6) accepts Giddens' (1979; 1984) arguments dealing with the relationship between power and resources. Power, Mann (*ibid*) argues, operates through ideological, economic, military and political resources. In his discussion of the economic component of his model,

[8] See Lukes (1978: 636-638) for a discussion of power as asymmetrical relationship (securing compliance, relation of dependence and inequality) and as a collective concept. However, Mann (1986: 6-8), in his discussion of the aspects of organizational power, also provides an accessible critique of power as an asymmetrical resource.

Mann (1986: 24) uses the term *class* as a purely economic descriptive concept that describes the social organization of the extraction, transformation, distribution-exchange and consumption of "the objects of nature". The "circuits" of production, distribution, exchange and consumption, in turn, form the economic organization, or the "circuits of praxis", of a given society (*ibid*). The military component of I.E.M.P model uses violence, which Mann (1986: 24-25) describes as "the bluntest instrument of human power" to achieve its ends. Military power is socially dual, Mann (1986: 26) argues, because it employs various coercive tactics to insure that a minimum level of compliance is achieved, but it is unable to exact positive control on its targets. The political modality of power is centralized and radiates outward. Organizationally dual, political power has both a domestic (internal) and an international (external) aspect.

Additionally, Mann (1986: 7-8) considers several other bimodal organizational aspects of power: collective-distributive, extensive-intensive and authoritative-diffuse[9]. The extensive-intensive aspect essentially describes power's spatial-geographic component. Thus, extensive power is the organizational means by which great numbers of social actors spread over a vast spatial extent and "engage in minimally stable cooperation" (Mann 1986: 7-8). Intensive power, in

[9] I have used the term bimodal rather than binary in this context because the distinctions are not clearly divisible into opposites but rather they capture the disproportionate and interrelated aspects of the phenomena in question. Consider, for example, in this context Mann's (1986: 7) statement: "the primary structures of society combine extensive and intensive power, and so aid human beings in extensive and intensive cooperation to fulfill their goals- whatever they may be".

contrast, is not limited to any particular spatial extent but rather, Mann (1986: 7) suggests, is best understood in terms of the "ability to organize tightly and command a high level of mobilization or commitment from participants". The ultimate component of this modality centres on the distinction between authoritative power, that is to say the power exercised by groups and/or institutions, and those practices of power that result "in similar social practices that embody power relations but are not explicitly commanded" (Mann 1986: 7).

While accepting the premises that power negotiations are key features of social reproduction and transformation, Shanks and Tilley (1987) prefer to view power as

> "…that aspect of human practice *which brings about effects*, or permits the achievement or attempted achievements of outcomes. These may or may not be transformative in intent. Power may usually be connected with the sectional interests of individuals or groups involving exploitation, domination and subjection, and resistance to these practices, but this is the usual effect rather than part of its definition" (Shanks and Tilley 1987: 73, emphasis in the original).

Like Giddens (1979; 1984), they (*ibid*) also suggest that power is dialectically related to both material and non-material resources. Perhaps, more importantly they (*ibid*), like Giddens and Mann, view

power as something that individuals cannot possess or exercise. They (1987: 73) do argue, however, that power's "…operation usually results in a structured asymmetry of resources benefiting certain individuals or groups as opposed to others"[10].

Social theorists have often linked ideology with the negotiations of power within a given society[11]. There is also considerable debate surrounding ideology's mechanisms, its role in societal relations, and its exact aspects[12]. For example, Gardner (1996: 98) has suggested ideology operates on three basic levels. The first is when a belief "demands explanation in terms of its social cause and effects on social relations rather than what (if anything) makes it true" (*ibid*). The second element centres on the belief's social impact rather than the arguments constructed to support it. Gardner's (1996) third element, and perhaps the most well know aspect of the phenomenon, is ideology as a representation of certain group or groups interests as a universal interest and representation of the established order as a natural state of existence[13]. Similarly, Giddens' (1979: 193-196) also mentions that the presentation of sectional groups interests as universal, the

[10] For Giddens (1979), "domination involves the *asymmetries of resources employed* in the sustaining of power relations in and between systems of interaction" (emphasis in the original).

[11] For a concise general introduction to ideology, see Eagleton (1991, especially chapter 1: 1-31) and for a detailed discussion of the philosophical/historical development of the term, see Giddens (1979, especially chapter 5: 165-184).

[12] Also see Shanks and Tilley (1987), Hodder (1986), and Hodder and Hutson (2003) for an example the use ideology in archaeological interpretation.

[13] Shanks and Tilley (1987: 75) also reject ideology as purely false consciousness; they regard ideology as a representation of social actors' lived experiences that seeks to maintain rather than transform society while simultaneously suppressing its own existence.

masking of contradictions, and the naturalization of the existing order as among ideology's more important aspects. On the other hand, Eagleton (1991: 28-31) has emphasised different aspects of this phenomenon. For Eagleton (*ibid*), ideology can symbolically represent an important/dominant social group or groups' true and/or false ideas and beliefs; it *can* promote and legitimize this social group(s) position or interests in a general way or in the face of opposition from competing groups. Ideology can achieve this result through the "distortion and dissimulation" (Eagleton 1990: 30) of various forms of communicative media as well as through the material structures of a given society as a whole[14]. However, Giddens (1984: 33) argues

> "...ideology is not a particular 'type' of symbolic order or form of discourse. One cannot separate off 'ideological discourse' from 'science', for example. 'Ideology' refers only to those asymmetries to the domination which connect signification to the legitimating of sectional interests. We can see from the case of ideology that structures of signification are separable only analytically either from domination and from legitimation."

Additionally, Mann (1986) also identifies two additional ideological modes: transcendent and immanent morale. Both modes operate by imposing meaning upon sensory perception, monopolizing norms as well

[14] "The most celebrated instance of this sense of ideology…is Marx's theory of the fetishism of commodities" (Eagleton 1991: 30).

as aesthetic-ritual practices; however, transcendent morale, Mann (1986) argues, generates “a ‘sacred’ form of authority...set apart from and above more secular authority structures”. Immanent morale, in contrast, strengthens the “cohesion confidence, and, therefore, the power of an already-established social group” (Mann 1986: 24). Despite their differences, all of the above-mentioned theorizations have linked ideology with power and its negations within society (Hodder 1986: 66-70; Johnson 2001: 94-95; Giddens 1984: 30-33; Mann 1986: 24-32).

At this point it is useful to distinguish between a social group and an individual social actor’s wants and interests. Giddens (1979: 188-189) provides a useful distinction. He argues that interests represent a “potential course of action” which aims at fulfilling a want. Wants, then, are an aspect of interests, but are not reducible to them. Individuals acquire interests through their associations with a group (*e.g.* social, economic, and political). For the present purpose, I suggest it may be useful to consider a *want* as initially operating at the individual level which can then transform into an *interest*, as Giddens (*ibid*) argues, when it takes on a corporate/group dimension and becomes a means for a group to achieve a desired outcome.

2.2.1.1 Force, coercion, and authority

Force, coercion and authority are three interrelated facets of power[15]. Force and coercion are power's overt manifestations. Force in its simplest form, Arendt (1986) argues, is a synonym for violence[16]. Dovey (1999) argues that force creates an environment that removes choice from its intended subject(s). This view essentially presents forces as the ability to constrain and limit action. However, as a facet of power, it seems reasonable to assume that force *can* also facilitate action and compliance through the removal of choice. Some researchers (*e.g.* Lenski 1986) posit that force is present in complex social constructs such as political sovereignty as well as in basic social activities like the division of surplus[17]. Perhaps more importantly, social groups must eventually convert force into authority in order to maintain their power in the long term (Lenski 1986: 244-245) (see below).

In its common usage, coercion is often associated with the act of compelling or bringing about a desired result or outcome through force[18]. Dovey (1999) suggests that force has two basic components: domination and manipulation. It is possible to conceptualize the

[15] Dahl (1986: 41) suggests that "for purposes of exposition it is convenient to think of the analysis of power in terms of the familiar distinction between dependent and independent variables". Thus, it seems that Dahl's underlying premise also places emphasis on power's distributive and asymmetrical characteristics.

[16] For example, Webster's collage dictionary (1999) defines force's most common meaning as "physical power or strength" followed by "strength exerted upon an object; physical coercion; violence."

[17] The selection presented in Lukes (1986) is from Lenski's (1966) *Power and Privilege: A Theory of Social Stratification*.

[18] See Webster's collage dictionary's (1999) definitions one and two for coerce.

main distinction between domination and manipulation as one that centres on the overt threat of force and latent use of force respectively. As a latent expression of power, manipulation creates a false environment of apparent free choice in which "power is made invisible to its subject and the possibility of resistance is thereby removed" (Dovey 1999: 11). Thus, manipulation's fundamental outcome is similar in its effect to Galbraith's (1986) conceptualization of conditioned power. Dovey (1999: 10) also includes seduction as an aspect of manipulation. Seduction involves the exploitation of the subject or subjects' perceived interests against their interests[19]. In this capacity, it seems reasonable to suggest that both seduction and manipulation *can* operate in an analogous manner to at least one aspect of ideology, namely, the creation and reproduction of a false reality.

At this point, it is useful to draw a comparison between the way Dovey (1999) has theorized domination, force and coercion and the way Giddens (1979; 1984) theorizes them in relation to structuration theory. According to the theory of structuration, domination depends on the effective use of allocative and authoritative resources. The distinction between these types of resources in structuration theory centres on the ability of those groups utilizing them to exercise a transformative capability on objects (*e.g.* raw materials) in the former case, and social actors (*e.g.* persons) and objects in the latter. By using authoritative

[19] Consider Dovey (1999: 12) comment that this "is a highly problematic distinction since it implies that the subject cannot judge their own interest".

resources, one group is able to influence and produce an effect on other social actors and/or groups. Additionally, it is interesting to note that within the theory of structuration, force and coercion are treated as an element of a 'sanction' which, in turn, is a facet of power's "constraining aspect" (Giddens 1984: 175; 1979: 93-94).

Researchers (Dovey 1996; Lenski 1986) have also linked the concept of authority with a given society's institutions and their ability to enforce commands[20]. Because authority is based "on socially acknowledged rights and obligations", Dovey (1996: 12) believes that it "is the most pervasive, reliable, productive and stable form of power". On the other hand, Arendt (1986: 65) provides a more inclusive definition and suggests that authority is not only an institution's ability to obtain unquestioned obedience and compliance to its commands, but is also an individual's ability to do so. However, Weber's (1964) theorization of authority provides useful additions to this basic explanation. Weber (1964) identifies three components of authority which consist of legal authority, traditional authority, and charismatic authority[21]. All three types of authority essentially seek to legitimize their position within a given society. However, these three aspects of authority differ from one another in several ways. First, they differ in their internal organization's complexity level. The complexity level ranges from

[20] Giddens (1984: 17) defines the term 'institution' as "those practices which have the greatest time-space extension" within a given societal totality. For Lenski, "Authority is the enforceable right to command others" (Lenski 1986: 250).

[21] Recently, Rapp (2005) has used a framework based on one aspect of Weber's (1964) theorization of authority (charismatic authority) to examine the rise of the Bishop in Late Antiquity.

the highly structured (*i.e.* legal authority) to the loosely structured (*i.e.* traditional authority), and the highly individualistic but differentially structured (*i.e.* charismatic authority). Second, they differ in the way in which they induce compliance or obedience. Legal authority seeks to divest individuals –regardless of their office or position- from a role as the objects, or focus, of obedience in favour of an impersonal abstraction of authority embodied (*e.g.* laws)[22]. Traditional authority, in contrast, seeks to foster personal loyalty to an individual or group of individuals (*e.g.* elders) rather than to an impersonal abstraction. This is not to say that abstract elements are not present in such social structures, but it does suggest that less formally structured groups define and use them in a different manner than their counterparts who must negotiate legal authority. Weber (1964: 343) notes:

> "It is impossible in the pure type of traditional authority for law or administrative rules to be deliberately created by legislation. What is actually new is thus claimed to have always been in force but only recently to have become known through the wisdom of the promulgator. The only document which can play a part in the

[22] Weber (1964: 330) states: "…it is held that the members of the corporate group, in so far as they obey a person in authority, do not owe this obedience to him as an individual, but to the impersonal order".

> orientation of legal administration are the documents of tradition; namely, precedents".

Traditional authority also seeks to cast itself as a timeless entity within a given society. Charismatic authority differs from both legal and traditional authority in that charismatic authority rests on an aspect, or aspects, of a social actor's personal character. Thus, the recognition of this characteristic by a group is essential for the maintenance of this particular type of authority. Weber (1964: 360) notes that if this characteristic(s) fails to meet the group's expectations, "it is likely that…charismatic authority will disappear" (Weber 1964: 325, 329-340, 341-345, 358-361).

Third, although all three types of authority share an interest in legitimizing their existences, they differ in the way they manipulate what Weber (1964) calls the "every day routine" to achieve this end. Because legal and traditional authority operate through formal rules and precedents, both are specifically concerned with the everyday routine. Charismatic authority, in contrast, operates outside this setting because it embraces a set of principles that neither support nor engage with the established societal modes of legitimizing authority. In other words, charismatic authority is "a claim to authority which is specifically in conflict with the base of legitimacy of an established, fully institutionalized order" (Parsons 1964: 64)[23]. Further, Parsons (1964) points out that charismatic leaders embody revolutionary

[23] Parsons' (1964) comments are found in his introduction to Weber's (1964) *The Theory of Social and Economic Organization*.

elements because they often position themselves against some aspect of their own society. However, Weber (1964) notes that as charismatic authority expands and becomes a solidified, but differentiated, feature within a given society it will eventually transform itself into either legal, traditional, or a combination of the two modes of authority in order to ensure its long-term survival. This observation has led Weber (1964: 364) to conclude that the pure form of "charismatic authority may be said to exist only in the process of originating" (Parsons 1964: 63-64; Weber 1964: 329-340, 341-345, 362-365; Parsons 1964: 64-65). Thus, it is reasonable to conclude that charismatic authority is a means to an end but not an end in itself.

2.2.2 Space and place

Before discussing space, place and the built environment, it is necessary to provide a brief discussion of the possible ways social actors can directly acquire spatial knowledge about their environment through their bodies and senses. Most researchers (e.g. Parker-Pearson & Richards 1994; Taun 1977; Lefebvre 1991; Low & Lawrence-Zúñiga 2003; Letesson & Vansteenhuyse 2006) would agree that the human body and its senses are key elements in the social mediation of space[24]. Low and Lawrence-Zúñiga (2003: 2) note "the

[24] The following excerpt from Taun (1977: 35) illustrates the human body's importance in spatial perception: "Among mammals the human body is unique in that it easily maintains an upright position. Upright man is ready to act. Space opens out before him and is immediately differentiable into front-back and right-left axes in conformity with the structure of his body. Vertical-horizontal, top-bottom, front-back and right left are positioned and coordinates of the body are extrapolated onto space".

perception and experience of…space, contracts and expands in relationship to a person's emotions and state of mind, sense of self, social relations, and cultural predispositions". Social actors can acquire spatial knowledge about their environment through two main techniques referred to as the survey perspectives and the route perspectives, respectively, in the relevant literature (Bugman *et al* 2007; Golledge *et al* 1995)[25]. These two modes of spatial knowledge-acquisition differ from one another in several ways. The survey, or overview, perspective is a map-based technique that provides social actors with a stable orientation and an allocentric (bird's eye) viewpoint that, in turn, allows them to discern and view simultaneously the relationship between various locations and landmarks within their given environment. On the other hand, the route perspective utilizes an egocentric (first person) viewpoint and a fluid orientation that results from "sequential procedural learning…through navigation" (Bugmann *et al* 2007: 381) within a given environment. It is important to note that the individual social actor's orientation while navigating directly affects the visual field and, by extension, the range of environmental data available to them. One aspect of a recent study (Bugmann *et al* 2007) on the effects of contextual clues on information retrieval for cognitive maps indicated that the way a social actor conceives of a location, which in this study was based on either the frequency of

[25] Various researchers, Golledge and colleagues (1995: 136) note, have suggested that spatial data acquired through the survey perspective is the most advanced form of spatial knowledge because it "incorporates understandings of revealed and latent properties as well as of a range of visual, geometric, relational, perceptive, emotional, and descriptive information that are related to observed or otherwise sensed features".

visits or the type(s) of actions performed at the given place, directly affected the social actor's verbal descriptions and ability to judge distances. Additionally, a slightly older study (Golledge *et al* 1995) suggested that a social actor's ability to navigate a given route does not depend on achieving a uniform level of knowledge for all of the route's segments. Locations where the participants were required to make decisions became "important organizing features" of the route (Golledge *et al* 1995: 240). This study's (Golledge *et al* 1995) results also indicated that a social actor's ability to derive various data sets from a given route and use them in combination to form patterns constitutes a key component in the process of acquiring spatial knowledge (Bugmann *et al* 2007: 381-382, 390-391; Golledge *et al* 1995: 135-137, 239-240; Parker-Pearson & Richards 1994: 10-11; Taun 1977: 34-36; Lefebvre 1991: 40, 194-203; Low & Lawrence-Zúñiga 2003: 2-3; Letesson & Vansteenhuyse 2006: 92-96). Furthermore, as social actors combine and recombine various datasets over time, they are also transforming space into place.

In a review of the geographical literature on space and place, Agnew (2005) has noted researchers have often described the relationship between space and place as binary rather than as two interrelated aspects of a manifold social phenomenon or as a proxy for scale with space fulfilling the role of the global, and with place fulfilling the role of the local[26]. However, as Agnew (2005:

[26] For a discussion on the re-thinking of various binaries in human geography, see the volume edited by Cloke and Johnston (2005) and their (2005: 1-20) contribution in that volume. Apart from Agnew (2005: 81-96)

90) points out, Lefebvre's (1991) neo-Marxist dialectical framework for the analysis of space and place provides an alternative to the general binary disjunction between space and place found in the majority of the available literature[27]. Although Lefebvre's (*ibid*) main interest lies in the social production of space in modern capitalist societies, elements of his theory provide a useful framework for the analysis of spatial relations and practices in pre-capitalist state-level societies[28]. Space as theorized by Lefebvre (1991: 38-41) consists of an interlinked triad comprised of "spatial practice", "representations of space" (abstract, or conceptualized space) and "representational spaces" (lived space). Within this framework, complex social constructs such as state, political, military, economic, and strategic policies as well as other authoritative institutions create and manipulate abstract, or conceptualized, space (Lefebvre 1991: 285-290, 306-307). Abstract space, Lefebvre (1991: 288, 308-310) argues, seeks to homogenize and infiltrate representational space while simultaneously concealing

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discussion on the space-place binary, Cox's (2005: 175-198) contributions on the local- global binary and Crang's (2005: 199-220) contribution on the time-space binary in Cloke and Johnston (2005) are also useful.

[27] Lefebvre's (1991: 218) view on the usefulness of binaries is clear: "Structural distinctions between binary operations, levels and dimensions must not be allowed to obscure the great dialectical movements that traverse the world-as-totality and help define it". See Agnew (2005: 89-92) for a brief review of those researchers who have attempted to treat space and place in a more holistic manner. For a general and concise discussion of the use of dialectics in geographical research, see Merrifield (1993: 517-518). For a critical review of Lefebvre's (1991) spatial theories as well as a general critique of Marxist theorizations of space, see Sayer (1985: 58-61). On the other hand, for a positive review of Lefebvre's (*ibid*) work and a general discussion of the French Marxist geographic tradition, see Soja (1985: 107- 110).

[28] For a brief discussion of the differences between the spatial relations of capitalist and pre-capitalist societies, see Tilley (1994: 20-22).

its own heterogeneousness character. However, abstract space in itself is "not the object of false consciousness, but rather the locus and medium of the generation (or production) of false consciousness" (Lefebvre 1991: 310). Representational space, in contrast, comprises social actors' lived and everyday space within their given society: it is the space of the "inhabitants" and "users" of these spaces[29] (Lefebvre 1991: 39, 60). The last element in Lefebvre's (1991) analytical triad is spatial practice. Spatial practice, Lefebvre (1991: 38, 358) suggests

> "…regulates life –it does not create it. Space has no power 'in itself', nor does space as such determine spatial contradictions. These are contradictions of society - contradictions between one thing and another within society, as for example between the forces and relations of production – that simply emerge in space, at the level of space, and so engender the contradictions of space."

Soja (1985: 91-93) has also stressed the active and reciprocal role space plays in social life: "to be alive is to participate in the social production of space, to shape and be shaped by a constantly evolving spatiality which constitutes and concretises social action and relationship". He (1985: 93; 1996), like Lefebvre (1991), also believes that the physical, cognitive and social aspects of various

[29] Tilley's (1994: 16-17) theorization and definition of perceptual space is similar in scope to Lefebvre's (1991) definition of representational space.

spaces comprise an interrelated whole[30]. Soja (1996: 68) states that "Both Thirdspace and Lefebvre's most encompassing notion of social space and comprised of all three spatialities – perceived, conceived, and lived – with no one inherently privileged *a priori*". Soja (1996: 68) also contends that "It is political choice, the impetus of an explicit political project, that gives special attention and particular contemporary relevance to the spaces of representation, to *lived space as a strategic location* from which to encompass, understand, and potentially transform all spaces simultaneously". Both Agnew (2003: 90-91) and Merrifield (1993: 525) have interpreted Lefebvre's (1991) representational space as a cognate to place[31]. Representational space, or place, Merrifield (1993: 520) proposes, "engenders the space of the whole" through its various connections and links with other places[32]. Thus, as space becomes place, it can acquire complex relational meaning with other places.

In discussing the processes that help create place, most researchers (*e.g.* Taun 1977; Tilley 1994; Giddens 1984; Rodman 2003)

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[30] In defining Thirdspace, Soja's (1996) modified Lefebvre's (1991) theories. The bulk of Soja's (1996) reinterpretation of Lefebvre (1991) is presented in the 2nd chapter of Thirdspace ('The Trialectics of Spatiality'). Also, see the 5th chapter of Thirdspace for the use of Foucault's concept of 'heterotopias' (Soja 1996).

[31] On this topic, Merrifield's (1993: 525) interpretation is worth quoting at length: "Correspondingly, everyday life becomes a practical and sensual activity acted out in place. The battle becomes the moment of struggle between conceiving space through representation and living place through actual sensual experience and representational meaning. Place is synonymous with what is lived in the sense that daily life practice are embedded in particular places. *Social practice is place-bound, political organization demands place organization*" (my emphasis).

[32] This is similar to Taun's (1977) observation that place can acquire meaning through its relation to other places.

would agree that habitual action orientated in both time and space is an essential component in the transformation of space into place[33]. Habitual action allows various social actors and/or groups to imbue space with meanings that both accrete and vary over time. The accretion process is not bound to one linear temporal trajectory because contemporary groups can and do instil the same place with contradictory meanings. Places, Rodman (2003: 212) argues, can simultaneously possess manifold meanings, or multilocality[34]. In structuraton theory, for example, Giddens (1984: 118-119) notes the general importance of place, or *locales*, in social reproduction. He contends that *locales* form the settings of various routine social interactions that create the contexts where those interactions take place. It is important to note that Giddens (*ibid*) theorizes *locales* as zoned, or regionalized, not only in place but also in time. However, as Tilley (1994) points out, *locales*, as theorized by Giddens can simultaneously exist at multiple scales. Instead, Tilley (1994: 19-20) believes that *locales* should be restricted to the "small-scale and the specific" when the term is employed in an archaeological context[35].

[33] For example, Giddens (1984) modified aspects of time geography for structuration theory. For the role of habitual action in social reproduction, see Bourdieu (1990).

[34] Rodman (2003: 212) proposes researchers can uncover a given place's multilocality by (1) examining place from the view points of others, (2) by considering the reflexive relationship and polysemic meanings a place can have for the various users of that space and (3) by considering the possibility that global phenomena can also shape local relations and spatial perceptions.

[35] For Giddens (1984: 118), locales "may range from a room in a house, a street corner, the shop floor of a factory, towns and cities, to the territorially demarcated areas occupied by nation-states".

Repeated habitual action is not the only means of transforming space into place. For example, a social actor's "intensity of experience" (Taun 1977: 179) can hasten the transformation process. Nevertheless, as mentioned above, it is important to note that these accreted meanings can and, often do, vary over time: a social actor or a group's various temporal rhythms and trajectories actively contribute to the formation of place. Places, Taun (1977: 179) suggests, represent pauses in the flow of time, which, in turn, make time visible within a given society and to various social actors. Researchers (*i.e.* Agnew 2005; Rapoport 1990) have generally tended to associate places with both past and present time and space, along with the various processes involved in the transformation of space into place, with future time. The phenomenological notion of internal time-consciousness is also germane for understanding time's role in shaping place. Internal time-consciousness provides a social actor with the means to link "the internal temporality of…conscience life" with "the objective temporality of worldly events" (Sokolowski 2000: 134)[36]. In other words, time-consciousness helps social actors correlate their realms of personal experiences and memories with their respective society's larger temporal rhythms (*e.g.* calendar

[36] Apart from consciousness of internal time, the phenomenological perspective theorizes time in two additional ways. These consist of objective time, internal time and consciousness of internal time (Sokolowski 2000: 130-131). World time, or transcendent time, Sokolowski (2000: 130) notes, is "public and verifiable" such as the twenty-four hour day. Internal time, or subjective / private time, consists of the sequences of memories and experiences as well as the feeling they may generate for the social actor in the present.

systems and religious festivals)[37]. In sum, habitual routine activity, intensity of experience, as well as individual and collective temporal rhythms all coalesce in the creation of place from space; perhaps more importantly, place is also *multilocal*. Thus, for the present study, it is useful to define multilocality as the way a place acquires various meaning by individuals and groups as well as the way these meanings accrete and compete over time. The present study also retains the multi-scale aspect of *locales* by recognizing that *locales* can also function as nodal spaces in their own immediate landscapes.

2.2.2.1 The active role of the built environment

Recently, Moore (2003) and Leach (2002) have suggested that contemporary architectural theory and criticism are ill-equipped to theorize properly the relationship between built form and social relations[38]. One limiting factor, Leach (2002: 126) notes, is the preoccupation and privileged position form occupies in current architectural theory and criticism[39]. Both Samsom (1990: 3) and Moore (2003: 236-237) believe that because aesthetics and form frame most analytical and critical discussions within architectural theory and criticism, and since these are essentially art-historical in focus, they do not generally view a given monument in its larger social

[37] "All locales and landscapes are therefore embedded in the social and individual times of memory. Their pasts as much as their spaces are crucially constitutive of their presents"(Tilley 1994: 27).

[38] Leach (2002: 126) argues that architectural theorists "have been preoccupied almost exclusively with questions of form, as though cultural identity is somehow constituted by form alone".

[39] For example, Buchwald (1982, 1984 and 1986) has advocated a form-based approach for the study of Byzantine architecture.

context. One particular aspect of the art-historical approach they (Samson 1990: 3; Moore 2003: 237) have negatively commented on is the persistent use of vague and unqualified language (*e.g*. weight and vitality) in discussions of the build/designed environment[40]. Samson (1990: 3) contends "the pretentious and often meaningless vocabulary of the art critic that surrounds much of architectural history only helps the reader to understand what it is that the author likes about certain styles"[41]. Buchwald's (1999) approach to the study of Byzantine religious architecture, for example, typifies the over emphasis of form in the analysis of architecture. Although he acknowledges the utility of other approaches (*e.g.* the socio-economic, stylistic, individual studies, functional and symbolic-iconographical), he suggests a stylistic classification of forms based on general rather than specific characteristics that employs a neutral nomenclature devoid of historic-chronological or typological implications[42]. Such an approach relegates the built environment,

[40] Moore (2003: 237) points out that such criticisms are not new and cites an observation made several decades ago by Bruno Zevi (1957) in *Architecture as space*: "The average reader, leafing through books on the aesthetics and criticism of architecture, is horrified by the vagueness of the terms: *truth*, *movement*, *force*, *vitality*, *sense of outline*, *harmony*, *grace*, *breadth*, *scale*, *balance*, *proportion*, *light and shade*, *eurhythmics*, *solids and voids*, *symmetry*, *rhythm*, *mass*, *volume*, *emphasis*, *character*, *personality*, *analogy*" (Zevi 1957: 21, cited in Moore 2003: 237).

[41] Moore (2003: 239) suggests one possible way to move beyond the limitations of the art historical and formal approach is for archaeological approaches to architecture should embrace and root itself in "anthropological holism".

[42] The 1999 publication of *Form, Style and Meaning in Byzantine Church Architecture* provides the essential elements of Buchwald's theoretical approach to Byzantine church architecture. For an alternate approach to the study of Byzantine church architecture, see Mango (1986), who argues against the over reliance on formal abstraction. Mango (1986: 7) appears to be alluding to Buchwald's primacy of forms approach when he states: "The typological method is that of the historian of art, whose primary concern is with forms. Its main weakness, it seems to me, lies in its abstraction from reality, where buildings are by definition concrete; indeed they are,

whether secular or religious, to a passive and disconnected neutral backdrop because it fails to recognize architecture as a *multilocal* social construct.

In contrast to a purely aesthetic approach to the designed and built environment, various researchers (e.g. Taun 1977; Rapoport 1980; Rapoport 1990; Dovey 1998; Hiller & Hanson 1984) propose that the relationship between built environments and larger social mediations is bi-directional and dialectical. As an active component in social relations, Rapoport (1980; 1990: 9-10, 300) asserts architecture's role in creating tangible metaphors for a social group's various beliefs and, perhaps more importantly, in creating systems of settings for action as well as the cues for appropriate behaviour[43]. According to Rapoport (1990: 15; 1980: 291-292), such systems of settings provide a means of non-verbal communication that conveys various meanings (*e.g.* ideological) and orders social actors/groups activities and actions in time-space. Rapoport's (1990) system of settings is similar to Gidden's (1984) use of time geography as embodied by the concept of *locales* (as places, see above) within the theory of structuration because both approaches emphasize the important role time and various spaces play in organizing social action and encounters. Similarly, Parker-Pearson

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in the first instance, utilitarian". Ousterhout (1998: 81), like Mango (*bidi*) also provides an offset to the exclusive use of form in the analysis of Byzantine church architecture and argues that "a building does not just house events: its form may amplify, sanctify, comment upon, and interact with the function it houses, and both form and function can be empowered by the interaction".

[43] Rapoport (1990: 12) defines a `setting' as "a milieu which defines a situation, reminds occupants of the appropriate rules and hence of the ongoing behaviors appropriate to the situation defined by the setting, thereby making co-action possible".

and Richards (1994: 5, 22) have also suggested that architecture is a symbolic technology primarily because of its ability to communicate concisely complex messages (as condensed metaphors, for example) through re-occurring usage and purposeful activities. Along similar lines, Hiller & Hanson (1984: 1) argue that buildings are "not just objects", but rather, they are the "transformations of space through objects". Like Rapoport (1990; 1980), they (1984: 2, 8-9) believe that architecture actively mediates social activity through the configuration of various spatial systems[44]. One possible way that architecture accomplishes this goal, they suggest, is by regulating social encounters through the control of access and circulation/movement. This links the built environment to the wider negotiations of power and inequality within a given society at both the local and global as well as the spatial and trans-spatial. Additionally, Hanson (1998: 47) believes that the analysis of spatial configurations alone may not provide adequate information about the various social processes at work within a given built environment or spatial system. In response, Hanson suggests that researchers should also "consider such features as orientation, decorative styles, and regularities in the dispositions of furniture and…artifacts" in order to gain a more nuanced understanding of the spatial configuration (Rapoport 1990, 1980: 289-294; Parker-Pearson and Richards 1994: 1-5, 20-25; Giddens 1984: 111-119; Hiller & Hanson 1984: 8-9, 26-29, 39-42; Hanson 1998: 45-47).

[44] Hiller and Hanson (1984: 9) argue that built environment "constitutes (not merely represents) a form of order in itself: one which is created for social purposes, whether by design or accumulatively, and through which society is both constrained and recognizable".

Although Hanson's (*ibid*) observations are geared towards the analysis of upstanding domestic architecture drawn from the recent historic and ethnographic records, it seems reasonable to suggest that they are equally valid for archaeological investigations of architecture and the built environment. Detailed stratigraphic and assemblage-based analyses used in conjunction with various context-based stylistic analysis of decoration (aesthetics), configuration, and typology are essential to the process and provide a more robust interpretative platform than any one approach can achieve in isolation. In sum, many of the processes presented in the preceding discussion on the transformation of space into place are equally applicable to the built environment.

2.2.2.2 Monumental architecture

Monumental architecture exemplifies many of the themes mentioned in the preceding section. Trigger (1990: 119) provides a succinct definition of monumental architecture with broad applicability. Trigger (*ibid*) defines monumental architecture as buildings whose scale and level of elaboration greatly exceed what is required for them to perform their intended function adequately. Trigger (1990:124-125, 128) also suggests monumental architecture reinforces institutionalized and hence power relationships within a given society through the control and conspicuous consumption of both material resources and human resources such as labour (*e.g.* energy). In a recent study, based on a sample of modern and historic buildings, Dovey (1999: 15-16) has identified several ways through

which monumental architecture can mediate power. Dovey (*ibid*) suggests the monumental built environment can orientate or disorientate/intimidate, naturalize and authenticate existing social inequalities and authoritative structures, provide illusions of stability and/or change, as well as promote or differentiate group identity. Dovey (*ibid*), like Trigger (1990), also considers building with large scale and large mass of volume as indicative of the asymmetric control of various resources, and hence the asymmetric distribution of power within a given society.

Like other types of architecture, monumental architecture can orientate social actors by differentiating between public and private as well as by controlling access to elements (*e.g.* persons or areas) within the building or complex. This is similar in conception to Hiller and colleagues (Hiller and Hanson 1984; Hanson 1998) observations regarding architecture's role in regulating movement and social encounters, or access. Monumental architecture can also help create place by fixing locations in both time and space (see above). Lefebvre (1991) also touches upon many of these aspects of monumental architecture in his theorization of space. Monumental architecture, or monumental space, he argues (1991: 220), possesses "a specific or indefinite multiplicity of meanings, a shifting hierarchy in which now one, now another meaning comes momentarily to the fore, by means of –and for the sake of- a particular action". It seems reasonable to interpret this particular aspect of Lefebvre's (1991) theorization of monumental space/architecture as cognate to Rodman's (2003) concept of

multilocality as defined in the preceding section (Dovey 1999: 14-16; Trigger 1990:119-122, 124-129; Lefebvre 1991: 220-223).

In sum, monumental architecture, like other aspects of the designed and built environment, permeates social relations. Unlike vernacular architecture, monumental architecture is the direct and implicit product of the conspicuous consumption of material and human resources and the asymmetrical distribution of power and authority within a given society. Although monumental architecture often seeks to project itself from a particular ideological (*e.g.* legitimizing) vantage, it is not a static social construct but, rather, it has manifold and often contradictory and contested meanings. In this respect, monumental architecture is a component of what Lefebvre (1991) has identified as “abstract space”. Finally, as a cognate to place and as a component within a large spatial network, monumental architecture, like other types of architecture, is *multilocal*.

2.2.3 Summary

Several useful points emerge from the brief review of power and space and place discussed throughout section 2.2. First, and perhaps most importantly, power and its various components (force, authority and coercion in particular) are best understood as a manifold construct that is not only present in all social relationships, but is also a fundamental component of those relationships. However, there is no clear consensus among the experts on whether power

resides in groups and/or institutions exclusively[45]. Admittedly, all social actors are able to act (*i.e*. express "power over" and "power to") and engage in "social labour", as McGuire (1992) contends, but groups and institutions appear to exercise power in a qualitatively different manner from the way individual social actors do. The scope of available resources (*e.g.* economic, political, geographical) and the way individuals, groups, and institutions access, combine and utilize these resources is perhaps the most important difference between them. Thus, I suggest that apart from coercion based on violence, social actors exercise individual power predominantly through various combinations of authority-based resources (like Weber's (1964) legal, traditional and charismatic authority or personality and property/wealth in Galbraith's (1986) scheme). This view does not preclude the possibility that an individual's personal resources may intersect with resources that are associated with the institutions and/or groups to which the particular individual may belong. Furthermore, it also reasonable to suggest that an individual's larger social identity is an inseparable component of his individual identity and group affiliation(s) forms an important component of an individual social actor's basic resource set as well as their personal authority. Resources are an integral component of power's successful implementation in any given set of social relationships because they provide knowledgeable social groups and institutions with the means to exercise power. However, it is

[45] For example, Giddens (1979; 1984), Mann (1986) and Arendt (1986) believe power resides in groups and institutions rather than individuals.

important to note, as both Giddens (1979; 1984), Mann (1986) and, to a lesser extent, Galbraith (1986) have argued, that power is not reducible to the resources through which it flows. Second, in order for groups or institutions to maintain their power in the long-term, they must convert power into authority (as Lenski (1986) suggests), and then legitimize their authority (as Weber (1964) suggests) in order to maintain their status.

Second, most researchers would agree that ideology plays an important role in all types of power negotiations and therefore all social relationships. However, in practice, it is often difficult to disentangle completely one from the other during analysis. Dovey's (1999) discussion on manipulation and coercion, which are both aspects of power, clearly illustrates the overlapping, interrelated and often obscure relationship between power and ideology. Some researchers have suggested that ideology is inherently false and that it creates a false consciousness, however, such a simple unidirectional definition often masks a much more complex and nuanced interaction. Ideology, like power, is a complex social construct that operates as both a means to as well as an outcome of social interaction. Third, space and place are not removed from or passive components of social practice. Space becomes place as individuals and groups imbue them with manifold meanings through interaction, the collection of data, and the processing of those data gathered from these locations over time. The temporal component of this process is variable as Taun (1979) notes and it is linked to a given individual or group's "intensity of experience".

As space becomes place it also acquires nuanced relational meanings with other places. This process is not necessarily bound to a single linear temporal trajectory because contemporary groups can instil a place with contradictory and competing meanings. Place is the ongoing result of these processes. Multilocality, as Rodman (2003: 212) has pointed out, is place's simultaneous possession of manifold meanings. For the present study, multilocality is taken to mean the way a place acquires meaning by individuals and groups and the way these meanings accrete, intersect, and compete over time to produce time-depth at a given place. Arguably, the same processes are equally valid for understanding the built environment as an active rather than a passive facet of social relations and it is from this perspective that the present study views the built environment. Monumental architecture, while it undoubtedly projects itself from an ideological vantage, is both the direct and implicit product of the conspicuous consumption of material and human resources and the asymmetrical distribution of authority within a given society. Monumental architecture provides a vivid material example of a spectrum of societal asymmetries. As a cognate to place and as a component of larger spatial network, monumental architecture, like all architecture, is multilocal.

2.3 Cities and the central government

This section discusses the Roman and Late Roman administration's purposeful use of cites framed by the theorizations of power provided throughout section 2.2. In order to isolate the

mechanisms involved, the discussion is restricted to general comparisons between global-level imperial administration and the local-level corporate city of the Principate and Dominate, the Late Roman Elite in section 2.3.1.2 and 2.3.1.2.A, and the physical changes to the fabric of the city in section 2.3.2. Section 2.3.2.1 also provides the aspects of the theoretical framework for the analysis of the Cypriot case study presented in Chapter 4. Section 2.3.3 explores how cities formed a power resource for the imperial government in relation to the theorizations of power discussed above in section 2.2.

2.3.1 Aspects of administration

The Principate's provincial administrative structure is divisible into two types at the macro-level: the senatorial and the imperial. The main distinction between these two provincial types centred on those that required military defence and those that did not. Imperial provinces received an equestrian governor because of their military requirements[46]. Senatorial provinces, in contrast, had distinctively non-military requirements within this dichotomous system. Throughout the Principate, Garnsey and Saller (1987) argue, the Roman state adopted a minimalist approach to governing its territories[47]. A more complex administrative system was unsustainable, they suggest, because the government did not possess

[46] Egypt, though not heavily militarized, is the most well known equestrian province because of its role as a major grain-producing province.

[47] Consider also Whittow's (1990: 4) comment that the Romans "did not have an administrative system that they could impose in the manner of some nineteenth-century colonial empire".

a specially trained civil service at that time. They maintain that during the Severan period, the Empire's paid officials numbered approximately 350 persons (Garnsey and Saller: 26). Kelly (2004: 111) has also suggested that in addition to this small paid corps, an additional 10,000 persons (consisting of seconded soldiers and imperial slaves) may have been actively involved in the administration throughout the early and high empire. However, the successful utilization, exploitation and manipulation of the empire's self-governing cities along with their accompanying territories and dependent settlement types (*e.g. vicus*) formed a fundamental component of the imperial administrative strategy[48]. These basic administrative mechanisms remained stable until the mid or late third century AD.

With the inception of the Dominate in the late third and early fourth century AD, the central government actively pursued a policy that formalized many of the *ad hoc* administrative measures enacted during the politically unsettled period of the mid to late third century. The Dominate's administrative structures differed from the Principate's in two pronounced ways. First, the reforms that Diocletian and Constantine either formalized or enacted introduced a pronounced division between civilian and military components in

[48] Jones's (1964: 712) description of the Roman Empire as "an agglomeration of cities" and "a mosaic of civic territories" highlights the cities' importance to the Roman administrative apparatus. Scholars (*e.g.* Whittow 1990: 8) often cite the fact that the imperial government allowed various cities to mint their own small bronze coinage to illustrate the relatively high level of autonomy –especially financial autonomy- cities possessed under the Principate (Whittow 1990: 8).

virtually all aspects of the empire's administration[49]. This policy essentially facilitated the creation of two parallel structures that dealt with the military and civil aspects of administration respectively[50]. The civic component of this dichotomy is further divisible into a legal-administrative branch and fiscal branch. Secondly, their reforms created considerably more bureaucratic depth in the system by the addition of the prefecture and dioceses as intermediate administrative levels between the smallest administrative unit and the palatine offices. Administratively, the empire consisted of four prefectures each headed by a praetorian prefect; each prefecture consisted of several dioceses each administered by a *vicarius* and his associated staff. Each diocese, in turn, consisted of several provinces, each administrated by their own governors and staff.

Although the *Notitia Dignitium* lists the province as the basic unit of civic government, the city (civitas/polis) and its dependent territory continued to remain the smallest administrative unit available to the state (Kelly 2004: 41; Kelly 1998: 166-168; Haldon 2005: 44). The above-mentioned administrative structures remained in place until the Justinianic reforms of John the Cappadocian. The objective of those reforms, Kelly (2004) notes, was to make

[49] "The third vital element in Diocletian's new system was the separation of military and civil authority all down the line" (Williams 1985: 107).

[50] In addition to Jones (1964: 366-400), both Kelly (2004; 1999) and Haldon (2005) provide accessible and detailed discussions of the various infrastructures (*i.e.* offices, departments) that comprised the civil administration. Recently, Slootjes (2006) provides a detailed account of the office of governor in Late Antiquity. Williams (1985) notes that the partitioning of civil and military responsibility now meant a usurper would have to make complex horizontal and vertical alliances to secure the necessary support to lead a successful rebellion.

government more transparent, accessible and efficient[51]. Haldon (2005: 50-51) suggests that among John the Cappadocian's more important reforms were the elimination of several dioceses, the recombination of both civil and military jurisdiction in several provinces under the administration of a *proconsul*, and the creation of a new military administrative block under a *quaestor exercitus*. The *quaestor exercitus* shifted resources from several economically stable provinces in the Aegean and eastern Mediterranean to several economically exhausted and militarily active provinces along the lower Danube[52]. The post of *quaestor* linked the fiscal, judicial and military departments of this administrative unit in one office. Nevertheless, taken as a whole, these reforms addressed a wide range of issues and they met with varying degrees of success. One contemporary bureaucrat, John Lydus, viewed these reforms with disdain and regarded them as harmful to the prefecture's institution integrity and, ultimately, the state's well being[53]. After John the Cappadocian's removal from office, Justinian or his immediate successors reversed many of these reforms[54]. However, administrative innovations centring on the unification of civil and military

[51] For a discussion of Justinian I's views on the role of change in relation to traditional values see Pazdernik's (2005: 185-205, especially 192-202) contribution in Maas (2005).

[52] Also, see the discussion in Jones (1964: 280-281).

[53] Regarding John the Cappadocian's reforms, Haldon (2005: 51) argues "The administrative problems his reforms attempted to address could not be resolved by this rather piecemeal tinkering with the system". Barnish *et al* (2001: 169) describe the criticisms of John the Cappodocian presented in John Lydus' *On Magistracies* as "Procopian".

[54] For example, as Haldon (2005: 51) points out that the elimination of several dioceses in Anatolia made the administration in that region considerably less effective: "bandits and brigands could simply move across the border to avoid pursuit".

continued throughout the remainder of the sixth century AD. The creation of exarchates in Italy and Africa during the reign of Maurice (582-602 AD), each headed by the office of *exarch*, illustrates the continuation of the earlier unification trend started by the Jutinianic *quaestor* and *proconsul* (Haldon 2005: 43-45, 47-52; Jones 1964: 279-285; Kelly 2004: 41-43; Williams 1985: 107-114; Barnish *et al* 2001: 168-170).

2.3.1.1 Civic administration

The greatly expanded and increasingly complex administrative machinery of the Late Roman state required a comparatively vast number of personnel to function in relation to its manifestation under the Principate. Although the exact numbers are difficult to determine, Kelly (2004: 110-111) estimates that the Dominate's administrative apparatus consisted of approximately 30,000-50,000 paid persons by sixth century AD. Kelly (2004: 105-111; 1999: 187) also notes that the new administrative structure required individuals with high levels of experience, specialized knowledge and training to function effectively. Perhaps, more importantly, the state became the principle consumer of human resources drawn from a particular sub-stratum of the empire's elite (see below § 2.3.1.2).

As mentioned above, the self-governing city, its dependant territory, along with all the other settlement types (*e.g. vicus*) contained within that territory remained the empire's fundamental fiscal-administrative unit under both the Principate and Dominate. From the standpoint of the Roman and Late Roman state, a city

(civitas/polis) was primarily a legal abstraction that could possess a wide verity of physical manifestations, but performed specific administrative tasks. An especially good example of this particular perspective comes from the sixth century AD when Justinian I upgraded the North African *chōrion* of Capatvada's status to that of city (see §2.3.2.2 for a discussion of the 'administrative' cities of the sixth century). Thus, "by imperial decree alone, and by the institution of a *boulē* and some public buildings, rather than through any economic logic, a tiny *chōrion* had become a polis" (Ward-Perkins 1998: 373)[55]. This is not to say all segments of society adopted this particular legalistic view of the city. Nevertheless, taken as a whole, such conceptions did frame the internal power negotiations within the state's administrative apparatus and particularly those relations between the local and central levels of administration. Unsurprisingly, the relationship between the local and central government did not remain static throughout the period in question.

During the Principate, these self-governing cities could and did possess specific legal manifestations; all urban institutions shared a common element in their reliance on one particular diverse social group, the local landed elites, to fill the ranks of their

[55] In the sixth book of the *Buildings* Procopius states the following about Capatvada: "So the Emperor Justinian…conceived the desire to transform this place forthwith into a city which should be made strong by a wall and distinguished by its other appointments as worthy to be counted an impressive and prosperous city" (Procopius *Buildings* VI.vi. 13, Trans Dewing 1940: 237).

respective civic council, or *curia*[56]. As Reinhold (2002), Rapp (2004: 170) and Boatwright (2000: 44) all note, only a small proportion of the actual civic population of a given city met the land qualifications for entrance into the *ordo decurionum* and service in their city's curia[57]. Those relatively few citizens that did meet the requirement for entry into their city's curia were eligible to serve as magistrates, active civic councillors, or *decuriones* (Boatwright 2000: 44)[58]. The civic council's responsibilities included selecting candidates from the curial order for the various magistracies and perhaps more importantly, for selecting the officials that were responsible for collecting taxs owed to the provincial authorities and ultimately the central government[59]. As the corporate embodiment of their city, the council was directly liable for any tax shortfalls. However, the *Constitutio Antoniniana*, which granted citizenship to all of the empire's free inhabitants, issued by Caracalla in 212 AD, removed the main legal distinctions between the various types of self-governing cities

[56] See Boatwright (2000: 43-44) for a brief discussion of the differences between *coloniae* and *municipia* during the second century AD. Liebeschuetz (2001: 344-345) notes that individual city's laws often treated their non-Roman citizens as Roman citizens as long as they remained within their home city's territory.

[57] As far as the size of the curia is concerned, Reinhold (2002: 42) suggests the "*ordo decurionum* (curiales)" usually consisted of the "top one hundred wealthiest men in each city". Similarly, Rapp (2004: 44) accepts "the *curiae* of the Early Roman Empire usually had 100 members" but also suggests that larger cities "were known to have as many as 1000". Additionally, apart from the "25 *iugera*" (Rapp 2005: 281) of land, Garnsey and Saller (1987: 113) note that "respectable birth" was also a requirement for admission into the *ordo decurionum*.

[58] Also, see Rapp's (2004: 171, n83) comments on the identification of active councilors with *decuriones*.

[59] Additionally, some larger and more important villages achieved an administrative privilege know as *autopragia* that allowed them to collect their own taxes (Liebeschuetz 2001: 66).

within the empire[60]. This legislation homogenized the empire's cities by removing the linkage between city charter and citizenship (Carrié 2005: 270-271; Liebeschuetz 2001:63; Haldon 1990: 100-102; Jones 1964: 725; Rapp 2004: 171-172; Boatwright 2000:40-45; Lewin 1999: 397-398,401; Ward-Perkins 1998: 373-378).

During Late Antiquity the central government's increased size, complexity, and growing involvement in local government had specific ramifications for the empire's self-governing cities. Among the various challenges cities faced during this period, Ward-Perkins (1998: 375-376) has identified two main administrative developments that produced negative outcomes for the civic institution over the course of the mid-fourth to mid-fifth centuries AD. He (*ibid*) suggests that (1) the central government began to consume local sources of wealth on an ever-increasing scale while (2) simultaneously increasing the land tax. Similarly, Haldon (1990:96-99) has identified the losses of civic revenue, the diminution of cities' role as the main means by which the state collected taxes, and the general downgrading of civic administrative structures in relation to the state, as key developments that also produced negative outcomes for the city as an institution. For example, by the fifth century AD, the posts of *curator*, *defensor*, *sitōnēs* and *patēr tēs poleōs* in large part overshadowed the traditional civic

[60] Carrié (2005: 272) states "politically, the *Constitutio Antoniniana* marks an important stage in the leveling of municipal statuses, by depriving of their meaning the old distinction of status between civitates, municipia and coloniae".

magistrates[61]. Additionally, a constitutionally ambiguous group with strong imperial links, which both Jones (1964) and Liebeschuetz (1994; 2001) collectively referred to as "notables", gradually assumed and eclipsed the curia's traditional responsibilities throughout this period[62]. These new civic notables essentially consisted of the bishop and select clergy, ex-imperial officials with various senatorial ranks and the more influential members of the old civic council or, *principales*[63]. Although various configurations of these notables selected potential candidates from their own ranks to fill these new civic posts as their curial predecessors had done under the Principate, the central government rather than the citizen body was ultimately responsible for approving their formal appointment. Furthermore, these officials reported to the provincial governor rather than the civic administration. The central government's reach – albeit through the provincial governor- also regulated civic building projects throughout his province. However, at the civic level, the notables (*i.e.* the bishop, *pater* and *possessores*) remained in control of

[61] See Frakes (1994) for a discussion on the offices of *defensor* and *curator* under Constantine and Valentinian. It is important to note that in the early fourth century these offices complemented one another. However, both are concerned with monitoring and curtailing the local elites' abuse of other citizens throughout their existence.

[62] Liebeschuetz (2001:112) notes that the legal data describes these 'notables' as "*proteuontes/primates* and *ktetores/possessores*, but no longer *principales*".

[63] Rapp (2004: 173) notes that by the fifth century "there is mounting evidence that a small body of men, perhaps no more than a dozen or two, played the most active role in the governance of their cities". For the role of Bishops, see the preface of Justinian's I edict of 535 AD reproduced in Maas's (2000: 14-15) sourcebook: "it shall be the duty…of all bishops to enforce these provisions and to inform us if the provincial governors violate any point, so that none of the laws that we have reverently and justly decreed may be alighted".

enforcing the building codes as well as water rights in their own city[64].

Based on the fourth century AD (Constantine I to Julian the Apostate) epigraphic evidence, Lewin (2001: 33) proposes that the growing role of governors in local civic building projects is detectable as early as the reigns of Constantine I and Constantius. However, taken as a whole, these various processes do not appear to have been temporally or spatially uniform. Nevertheless, in Egypt, for example, the remaining curiales became 'insignificant' components of the civic establishment in comparison to the various senatorial *honorati* by the fifth century AD. By the seventh century AD, a distinctively non-curial elite firmly controlled the civic establishment (Haldon 1990: 94-101; Haldon 2004: 200; Holum 2005: 107-109; Liebeschuetz 2001: 104-109, 111-116; Liebeschuetz 1992: 30-36; Jones 1964: 726-729, 456-459; Rapp 2005: 221-227; Rapp 2004:170-178; Ward-Perkins 1998: 374-376).

Of the various administrative shifts that occurred in Late Antiquity city, scholars have devoted considerable attention to the bishop's growing role in secular affairs and civic affairs in particular. In a recent study on this topic, Rapp (2004 & 2005) concluded that the office of bishop gradually assumed a series of unofficial secular administrative responsibilities (*e.g.* working closely with the *honorati and potentiores*) during the fifth century AD. Rapp (2005) argues that although the bishop became an important

[64] Lebeschuetz (2001: 111) notes that the local civic administrators could refuse building directives issued by the central government that conflict with their own prerogatives.

member of the Late Antique civic administrative structure, he was not its leader. Rather, she (2004: 177) believes the bishops “stood alongside the small body of leading citizens” that increasingly dominated local civic government throughout Late Antiquity. As a result, Rapp (2004: 178) maintains that the bishop’s increasing role in secular affairs and civic affairs in particular is best understood as the result of the “growing involvement of the episcopate in performing valuable public functions for the benefit of the community as a whole”, rather than the product of a consciously targeted imperial legislative initiative or the greed of individual bishops. Similarly, Holum (2005: 107) also believes that the episcopal institution was “city-friendly” because it sponsored and/or supervised major urban construction projects (*e.g.* construction of city walls), and it strengthened the ties between the urban and rural by its building activities in the countryside (*e.g.* rural churches). Additionally, the *episcopalis audientia*, or bishop’s civic judicial court, not only strengthened the links between the city and legal authority, but also the links between the ecclesiastic institution and the city.

However, it is important to note that the institutional Church provided an alternate authoritative power structure that could potentially undermine as well as compete with the established secular authoritative power structures of the state. In a recent study on the provincial governor in Late Antiquity, Slootjes (2006: 44-45) identified several ways in which episcopal authority could potentially undermine the provincial governor and, by extension, the

central government's authority. The establishment of the bishop's *episcopalis audientia*, Slootjes (*ibid*) suggests, created one such means. The *episcopalis audientia* essentially created an alternate lower court system to that of the state. Legislation preserved in the Theodosian code indicates that by the early fifth century AD, litigants lost the right of appeal against the bishop's verdict. The bishop's judgment, like that of the Praetorian Prefect, was final while the provincial governor's judgment, in contrast, remained open to appeal. Perhaps more importantly, the provincials could also use the episcopal court system as a court of appeal if their case met with an unfavourable outcome in the secular provincial court. Bishops, as opposed to provincial governors, occupied their office for a considerably longer period. The bishop's considerably longer tenure in office, Slootjes (2006: 45) argues, placed them in a unique position to address the "long-term problems" that faced the communities in which they operated in a way the provincial governor could not. In addition, it also seems reasonable to include the management of long-term projects (*e.g*. building) in the list of potential advantages the bishop's longer tenure brought to the Episcopal office (Rapp 2005:221-227). Furthermore, by the sixth century AD, Justinianic legislation required the bishop to take part in their respective city's annual audit of expenditures (Liebeschuetz 2001: 111; Rapp 2005: 289) and perhaps more importantly, report any maladministration by the provincial governor directly to the Emperor (Slootjes 2006: 45; Rapp 2005: 227).

As mentioned above, the collection of tax revenues was perhaps the most important task the imperial government expected the local civic government to perform under the Principate. However, during the Dominate the central government repeatedly attempted to reduce the prominent position that cities occupied in the state's revenue collection system. This approach met with various degrees of success throughout the forth and fifth centuries AD and by the late fifth century AD (during Anastasius I's reign), a new imperial official, the *vindex*, assumed a leading role in the tax collection procedure. As a result, the central government assigned a *vindex* to each city, and the *vindex*, in turn, enlisted local curials to aid in process[65]. However, under Justinian I, the *pater's* scope of responsibilities came to include the collection of tax revenue, and it replaced the *vindex* in this role. Nevertheless, as Liebeschuetz (1992: 27-28) notes, the tax collection arrangements remained fluid and showed considerable regional variations. During the second half of the seventh century AD, the central government eliminated the city-based tax collection system and replaced it with one based on the village[66]. Both Barnish colleagues (Barnish *et al* 2001: 203-205) and Brandes and Haldon (2000: 148) posit that the state opted for a system based on the village because of the widespread destruction of

[65] This new situation now meant that the civic council was no longer responsible for any shortfalls.

[66] Liebechuetz (1992: 35) attributes this change to the inception of the thematic form of administration. He argues, "From the middle of the seventh century the theme organization broke the administrative link between city and territory and marked the end of the traditional institutions of urban self-government". In this particular instance, Liebechuetz's (1992) position complements that of Brandes and Haldon (2000).

cities during the Persian, Avar and then the Arab wars[67] (Barnish *et al* 2001: 200-206; Liebeschuetz 2001: 105-110, 116-121; Liebeschuetz 2001b: 212-Liebeschuetz 1992: 26-28,30-36; Jones 1964: 726-729, 456-459; Brandes and Haldon 2000: 147-148; Rapp 2005: 221-227; Rapp 2004).

Financially, both Duncan-Jones (1990: 176-178) and Jones (1964: 732) note that under the Principate, an individual city could generate income for its various projects from several potential sources: trade, taxation, rents generated from civic property and the payments received from those local elites holding a civic office[68]. Jones (1964: 732) also includes the interest generated by endowments (whether from interests on money and/or land) as an additional potential revenue source[69]. Although imperial benefactions could provide funds for a verity of civic projects, civic administrators could not count on them as a regular source of income because they were difficult to obtain and were of limited duration[70]. On the other hand, based on the African evidence, Duncan-Jones (1990: 178) has argued that the revenue generated by the payments for offices (*summa honoraria*) made by the local landed elites formed

[67] The idea that the Persian and the Arab wars contributed to the decline of cities is present in Haldon (1990: 123) also. On the other hand, Whittow (1996) attributes more weight to the role these conflicts had in the decline of the classical urbanism.

[68] However, it is important to note that the central government discouraged cities from creating new taxes that could potentially impinge upon the flow of imperial taxation.

[69] Jonston (1985) provides a useful discussion on the legal aspects of endowments and the process that cities used to accept or reject benefaction as well as the steps benefactors could take to "safeguard" their legacies.

[70] For example, see Boatwright's (2002) discussion of Hadrian's interactions with cities.

a regular and significant proportion of most cities' total revenue[71]. Additionally, once in office this system required the officeholder to provide additional funds if the need arose[72]. It seems probable that the funds derived from private munificence and the payment of office accounted for a considerable percentage of a city's financial portfolio. However, the urban local landed elites were not the only group that was required to perform unpaid services for the city. Lower-status citizens and resident aliens were required to contribute a fixed amount of unpaid labour (*munera personalia* or *munera civilia*) in support of various civic projects (construction and general maintenance of buildings, roads, and walls, for example) as well[73] (Duncan-Jones 1990: 39-40, 159-160, 175-178; Jones 1964: 732-733; Boatwright 2000: 43-44).

With the inception of the Dominate, the central government actively pursued a policy that alienated the city from its economic resource base through legislation that seriously curtailed the city's ability to generate income from its assets. Over the course of the fourth century AD, the imperial government appropriated civic funds at different rates before finally allowing cities to retain one third of their overall revenues (Jones 1964: 732-733)[74]. A

[71] The dataset dates to the third century AD and consists of the *summa honoraria* of Thubursicu Numidarum in Numidia.

[72] The imperial government granted several professions such as philosophers, rhetoricians, teachers and doctors' immunity from these requirements (Duncan-Jones 1990: 160).

[73] This corvée amounted to five days of unpaid labor (Duncan-Jones 1990: 160).

[74] On the topic of confiscations, Liebeschuetz (2001: 176) states "…confiscation surely did not mean cities were deprived of all income from the estates that had been confiscated. It must however have meant that they henceforth would only receive a small portion of their former revenue, and

second area of potential conflict between the central (*res privatia* & *sacrae largitiones*) and local civic government's treasuries centred on the former's preference for perpetual and hereditary leases on returned civic estates/lands, rather than the latter's desire to maximize the revenues generated from these properties through competitive bidding. Nevertheless, although the civic authorities regained a measure of autonomy in their financial expenditures through the embodiment of the *patēr tēs poleōs*, Justinianic legislation indicates that each item of civic expenditure had a distinct source of funding within the civic revenue portfolio. As a result, Liebeschuetz (2001: 173) argues "civic expenditure had been depoliticized and institutionalized" (Jones 1964: 730-735; Liebeschuetz 2001: 170-178; Haldon 1990: 96-99; Lewin 2001: 36-37).

In sum, the discussion presented in this subsection highlights two main points. First, the civitas/polis through its legal linkage to the state formed an indispensable component in the overall administrative strategy of the Roman and Late Roman state, at least up until the second half of the seventh century AD. It also draws attention to the potentially contradictory and antagonistic internal relationships that could exist within a spatially extensive and socially differentiated and hierarchical authoritative institutional organ of the state such as the Late Roman administrative system. In this case, the internal tension resulted from the needs and wants,

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that for definite and approved purpose, especially the building of fortifications. Before it was modified confiscation meant that the extent to which a city could maintain its services became totally dependent on the goodwill of imperial officials".

whether perceived or actual, of the local level government on the one hand and those of the central government on the other. However, this is not to say that the various social groups (*e.g.* senators and curiales) that engaged with the urban environment, or were associated with it at different governmental levels, shared a monolithic view of the city.

2.3.1.2 Late Roman elites

Recently, several researchers (*i.e.* Cameron 2004; Haldon 2004a; 2004b) have questioned the utility of approaches that employ a generalized theorization of elites in Late Antiquity. They (*ibid*) have argued that the loose and often poorly defined use of the term 'elite' in Late Antique and Byzantine historiography and archaeology is not only restrictive but also masks, rather than illuminates, a complex social phenomenon[75]. Any discussions or theorization of the 'elite', they (*ibid*) suggest, must acknowledge the existence of multiple 'elites'. However, these Late Antique elites can possess similar, intersecting and divergent interests[76]. Furthermore, Haldon (2004a and 2004b) argues that researchers must also distinguish

[75] Consider Cameron's (2004: 91) comment on the descriptive use of the term elite: "in this descriptive sense ('elite culture', 'elite values'), 'elite' is too blunt a term to be of much real use to historians, and that we need rather to recognize the existence of multiple elites, some overlapping, others not".

[76] For example, Haldon (2004a: 7) states: "We may thus talk about cultural elites as being at least in part different from political elites, of 'civil' elites and 'military' elites, which may again overlap or represent different sides of the same social coin, each of which may appear in the sources as a clearly identifiable group under some circumstances, but which may equally dissolve when different circumstances prevail, or when its members find themselves fulfilling other social institutional roles. The bureaucratic elite of the administration at Constantinople is not the same as, even if it had a partially shared membership with the cultural elite".

between the elite and “power elite”. Haldon (2004b: 181) suggests that the power elites are identifiable by several general traits such as their “political position, their immediate field of vested interests, and they ways in which those interests could be protected and preserved”. He (*ibid*) also suggests that the power elite “acted in concert (and in competition) with those in a similar position, whether explicitly or not”[77].

In the closing article in a volume edited by Rapp & Salzman (2000) dedicated specifically to elites in Late Antiquity, Matthews (2000) reached a very similar conclusion to the one reached by Haldon (2004a & 2004b) and Cameron (2004). Matthews (2000: 466) argues that

> “Elites are a multifaceted social construct and a negotiable instrument for the individual, and they have subjective value in terms of human experience as well as analytic value for the historian. They proliferate and, in doing so, they resist simplification. They come and they go, they evolve and they transform, they look in and they look out. They are meant to include or to exclude, to define or to separate, as appropriate; they function because they exact and are exposed to

[77] Haldon (2004a: 5-8, and references cited within) provides a concise discussion of the various frameworks researchers have used to analyze elites. However, Haldon’s (*ibid*) particular distinctions are in part based on the framework developed by C. Wright Mills (1965) in *The Power Elite*.

> the appraisal of others: they invite participation and they need an audience".

Thus, Matthews (2000), Cameron (2004) and Haldon (2004a; 2004b) essentially suggest a paradigm shift that actively recognizes (1) the ranked and stratified but pluralistic character of the Late Antique elite as a social group as well as (2) their ability to create complex inter and extra group alliances as well as conflicts at various scales and intensities.

Under the Principate, among the empire's non-servile populations, two main social distinctions are discernable at the global level: citizen/non-citizen. The empire's citizen population, in turn, is divisible into *honestiores* and *humiliores*. *Honestiores* consist of senators, equestrians, decuriones as well as veterans. Leaving veterans and military careers to the side, entry into the one of the three orders allowed a social actor to engage in public/civic life at their appropriate station and receive honour and prestige[78]. On the other hand, the humble free, or *humiliores*, comprised the majority of the empire's citizen population[79]. The term *humiliores*, Bradbury (1999: 497) notes, describes a segment of the population that "could claim no special status deriving from high birth, office, or wealth" regardless of their free birth. These broad distinctions remained relatively consistent until the third century AD. With the inception of Caracalla's edict of universal

[78] See Garnsey and Saller (1987:112-116) for a concise discussion of the various requirements for each order.

[79] See Scheidel (2006) for a discussion of the use of the term 'class' and the idea of a 'middle class' in Roman society.

citizenship (212 AD), the distinction between citizen and non-citizen lost its weight as a viable means of social differentiation. As a result, later Roman society, especially in the legal sphere, polarized around the rather binary distinction between *honestiores* and *humiliores*. Mousourakis (2003: 338) points out that from the fourth century AD onward the clergy joined the *honestiores* while displaced persons, prisoners of war, as well as monks and hermits all ranked as *humiliores*. Additionally, from the mid-third century to the mid-fourth centuries AD, the senatorial and equestrian orders entered into a comparative state of flux and disequilibria in relation to their respective roles in the state's administrative apparatus. Throughout the latter half of the third century AD, the equestrian order gradually monopolized both civil and military posts within the imperial administrative apparatus to the detriment of the senatorial order[80]. As a result, the equestrian order essentially became an aristocracy based on imperial service, or *militia*[81]. However, during the early fourth century AD (starting with the reign

[80] The reign of Gallienus (253-260 AD) represent a culmination of various civil and military administrative trends that developed over the course of the late second and early to mid-third centuries AD. Recently, Campbell (2005: 117-118) argued that Gallienus's reign set the precedent for several unofficial trends in military and civil administration that eroded the status of senators in the state service: these include the preference for equestrian military commanders and administrators (*e.g.* legionary commanders, tribunes and duces) as well as the preference for equestrian governors. Campbell (2005: 118-119) further suggests that those senators that did receive governorships may not have been responsible for the military aspect of their province.

[81] Jones (1964: 377) points out that although "the service of the emperor in all its forms was often loosely styled *militia*, there was a clear distinction, both in form and substance, between *militia* in the narrower and technical sense of service as a common soldier or non-commissioned officer in the army or as an official in the civil service, and the higher military and administrative posts, the *dignitates*, *honores* or *administrationes*".

of Constantine I 312-337 AD), the trend reversed itself. The senate expanded and absorbed the equestrian order slowly over the course of the fourth century AD[82]. The service ethos of the equestrian order came to play an important role in this new hybrid and reoriented senate. Throughout the fourth and fifth centuries, this considerably enlarged body became highly differentiated. Additionally, the hereditary component of the senate lost its prominence in defining the body: “The new hierarchy effectively transformed the aristocracy from one of birth into one of office” (Jones 1964: 529) (Lendon 2001: 32-42; Brown 1978: 31-34; Bradbury 1999: 497; Garnsey & Saller 1987: 112-115; Campbell 2005: 117-119; Jones 1964: 46-50, 377-380, 525-535; Mousourakis 2003: 321-338).

By the sixth century, the senatorial rank increasingly polarized around the distinctions between *illustres* and the now diminished grades of *spectabilis* and *clarissimus*. *Illustres*, Jones (1964: 529) notes, now formed the most privileged group within the senatorial order. During the fifth century, imperial legalization required senators of the *clarissimus* grade to reside in their respective provinces and by Justinian I’s reign, the senate at Constantinople consisted exclusively of senators of *illustris* rank. In general, it is important to note that among the elaborate senatorial protocols, the distinction between titles awarded through an active office (awarded as a personal dignity) and that of an honorific office remained clearly demarcated with the former

[82] The equestrian order also experienced an expansion in the fourth century and a subsequent devaluation of its ranks before its absorption into the senate.

receiving a higher precedent over the latter. Nevertheless, during the sixth century AD, the grade of *illustris* was awarded to such a degree that the additional titles of *gloriosus* and *gloriosissimus* came to identify the highest echelon of that grade[83]. However, during the period from the seventh to mid-eighth centuries AD, the senate underwent another considerable period of reorientation as titles based on the palatine service gradually replaced the three senatorial classes of *clarissimus*, *spectabilis* and *illustris*. Haldon (2004a: 225-226) believes this produced several outcomes such as the elimination of the *clarissimate's* hereditary element and, perhaps more importantly, the creation of a body that relied exclusively on imperial appointments to sustain itself. As a result, Haldon (2004a: 226) believes the senate "no longer embodied the economic or political interests of a broad stratum of landowners, an aristocracy of privilege whose urban-based municipal culture was also the elite culture of the late Roman world" (Lendon 2001: 32-42; Brown 1978: 31-34; Bradbury 1999: 497; Garnsey & Saller 1987: 112-115; Campbell 2005: 117-119; Jones 1964: 46-50, 377-380, 525-535; Haldon 2004a: 188-195, 221-225).

Late Roman society, like that of the Principate, remained status driven as well as ranked and stratified. The continued desire for honour, or *philotimia*, Brown (1978: 31) points out, "committed members of the upper class to a blatant competitiveness on all

[83] Additionally, special titles awarded by the emperor such as *patrikios*, *nobilissimus* and *curopalates* also conferred senatorial rank (Haldon 2004a: 222).

levels of social life"[84]. Unsurprisingly, as a social phenomenon, *philotimia* required social actors to engage constantly with their peer group in order to validate themselves and their accomplishments in the larger social arena[85]. Although it deals specifically with the situation at Antioch, lines 135-137 of Libanius' *Oration 11* of 360 AD illustrate the competitive nature of curial service while simultaneously suggesting the possibility that many curiales from other cities began to view their mandatory civic duty as an unwanted burdensome imposition (especially line 137):

> "135.For the feeling which elsewhere follows upon gain is here joined instead with spending, and a wealthy man would be more ashamed of fleeing a liturgy than he would be of diminishing his property through his liturgies. As though they had some god as a surety that whatever they lay out, double gain will come from Good Fortune they spend lavishly on horse races and gymnastic contests some according to their means, others more than is suitable for their means. 136.The object which each of those engaged in the liturgies strives for is to surpass his

[84] Brown (1978: 31) describes *philotimia* as an "explosive substance" within Roman society.

[85] Brown (1978: 31) states that without reference to a peer group, *philotimia* "would have been deprived of a large part of its meaning". Similarly, Lendon (2001: 39) notes the important role the "opinion community" played in the recognition of honor and in the self-validation process of the upper class.

> predecessor and to make rivalry impossible for his successor, and to bring forth in fairer fashion the things which are customarily performed, while adding new features to those which have been traditional. 137.Among us alone is there *more competition over the undertaking of liturgies than there is among other in escaping them, and many men have often through expenditures sought to win their way to honor,* joining expense to expense, and making their way to the second outlay by means of the first, not purchasing, by means of small expenditures, an escape from greater ones, but by many outlays making their way to spending more" (Trans. Downey 1959: 667; my emphasis).

Additionally, Lendon (2001: 32) suggests that the Greco-Roman conceptualization of honour acted as both a unifying social force by fostering a sense of group solidarity and as a means by which social actors differentiate themselves from their peers through *auctoritas*. Researchers (*e.g.* Lendon 2001; Syme 1986; Harries 1999) have generally defined *auctoritas* as a mixture of a social actor's various personal attributes (wealth, education, dignity, moral standing and connections) that roughly corresponds to authority. Syme (1986: 425) notes *auctoritas* is an aspect of "*potentia*" and it "enables ends to be achieved without recourse either to legal

authority or to violence". In the political arena, Lendon (2001: 176) also notes that honour and prestige are "absolutely at the heart of Greco-Roman perceptions of office holding". Similarly, Jones (1964: 383-384) as well as Barnish *et al* (2001: 176) argue that Late Antique social actors viewed offices in much the same way as their counterparts had during the Principate: as prizes to compete over that once won, enhanced the social status of the officeholder[86]. Therefore, it seems acceptable to suggest that peer competition and the pursuit of prestige and authority remained a potentially dangerous social force throughout Late Antiquity (Harries 1999: 56-57; Syme 1986: 423-425; Cameron 2004: 105-107).

It also seems reasonable to assume that the upwardly mobile Late Antique social actors operated within a social environment that exhibited a considerable amount of continuity with the preceding period. However, those local landed elites that financially qualified for curial status and possessed the necessary education (*paideia*) gained additional routes for social advancement and the pursuit of honour besides the traditional mechanism offered by participation in their local civic government[87]. The greatly expanded

[86] On this topic Jones (1964: 383) states: "It is not without significance that a post is normally called *dignitas* or *honor*, and very rarely *administratio*. To those who applied for them they were primarily distinctions to be won, not posts carrying duties, and the emperors who made the appointments regarded themselves as distributing prizes as much as choosing suitable persons to carry out administrative tasks".

[87] It is widely accepted (*e.g.* Liebeschuetz 2001) that by the second century AD, while still regarded as an honor, curial service had become a legal obligation for the qualified rather than a voluntary act and membership in the *curia* became hereditary. However, while accepting the possibility that participating in the curia may have been becoming more costly to individual social actors in the second and third centuries, Carrié (2005: 302) suggests that curial status was not hereditary because each member had to

imperial administrative apparatus offered one such alternate outlet. Service in the *militia* provided an ideal arena for the pursuit of honour (*philotimia*), increased personal authority and financial gain through the collection of fees (*sportulae*) for services rendered while in office. Serving the church as a member of the clergy or through benefactions provided the status-minded Late Antique social actor with yet another non-civic based outlet to convert their wealth into social capital[88] (Jones 1964; Evans 1996: 46).

In assessing Late Antique social actors' perceptions of the office of bishop, Rapp (2005: 164-171, 173-174) suggests that they viewed the episcopate like other secular civic offices that could contribute to their *auctoritas* and their pursuit of honour. At the close of a successful career in the civil service, Rapp (2005: 186-188) posits, social actors of both curial and senatorial backgrounds viewed the Episcopal office as an honour, or reward, for their service rather than a distinct career path. Although the Apostolic Constitution places more emphasis on the personal characteristics of those candidates seeking the Episcopal office than on their formal education, those candidates of humble background that lacked the sufficient *paideia* could have encountered a 'glass ceiling' in their pursuit of higher office. It is important to note that there were no formal requirements placed on the bishop to further secular or

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demonstrate they were able to hold, execute and meet the office's requirements (*idoneitas*). Carrié (*ibid*) contends that the town council would have passed over or would have assigned less burdensome tasks to the sons of their poorer compatriots.

[88] Liebeschuetz (2001: 173) states: "voluntary giving now overwhelmingly benefited the church".

theological study once he achieved the office. However, by the late eighth century (787 AD), the situation changed somewhat as candidates for the office had to pass an examination that tested their scriptural knowledge (Rapp 2005: 164-181, 186-187). Nevertheless, with the reorientation of the senate during the seventh and eighth centuries mentioned above, service in the church, Haldon (2004a: 233) argues, may have provided the older displaced senatorial elite with a "shelter and an environment within which they could better preserve their traditions and cultural capital".

2.3.1.2.A Curial status in Late Antiquity

As mentioned above, during the mid-third century AD, the senatorial and equestrian orders experienced a role inversion that ended with the former absorbing the latter. This juxtaposition redefined the senate's relationship with the imperial administration and the imperial office. The curial order's relationship within the imperial administrative apparatus and, by extension, with the senatorial order also experienced a reorientation because of the large administrative changes mentioned above (§ 2.3.1.1). Reinhold (2002: 42) argues that during the fourth and early fifth centuries AD, "the principle arena of social flux all over the empire was in the upper strata of the municipal aristocracy who constituted the *ordo decurionum* (curiales)". The growing realization among the curiales, which at this point constituted the empire's local landed elites, that they could achieve prestige and wealth through extra-civic channels is perhaps the most important aspect of this

development. Thus, as imperial service and, later, ecclesiastic service, gained increasing currency among the socially mobile, the curial order and civic service as a means to convert wealth into social status appear to have become considerably less attractive. The result of this development, Brown (1978: 32) believes, was that "local families from the larger cities of the Greek East…were drained upwards and away to the senate and court of Constantinople" and, as they did so, they left behind "a rump of resentful and vociferously impoverished colleagues" to fill the curia of the empire's cities[89]. Undoubtedly, the more powerful curiales, or *principales*, attempted to consolidate and maximize their position in this changing context as both Evans (1996: 46) and Liebeschuetz (2001: 207) suggest, while others, as Ward-Perkins (1998: 378, 381) posits, were prepared to safeguard their own interests at the expense of their cities' (Liebeschuetz 2001: 104; Liebeschuetz 2001b: 212; Liebeschuetz 1992: 8; Barnish *et al* 2001: 176; Ward-Perkins 1998: 376, 378-381, 402; Maas 1992).

By the late fifth and early sixth centuries AD, Liebeschuetz (2001: 108-109) argues, aspects of curial service, primarily financial burdens, had become hereditary and linked to a curiale's properties. This shift in obligation from persons to land undoubtedly decreased a curiales ability to liquidate land and, in turn, escape the required services. The Theodosian Code (12.1)

[89] Like Brown (1978), Maas (1992) also maintains imperial service provided an alluring alternative to the upwardly mobile Late Antique social actor. He suggests "young men had left their provincial cities for carriers in the imperial offices at the capital as new routes to prestige gradually replaced the urban curial offices" (Maas 1992: 117).

preserves 192 laws that deal with decuriones and the performance of their duties. In a discussion of the evidence for social mobility preserved in the Theodosian Code, MacMullen (1964: 53) observes it "certainly reveals what the emperors intended, but it should be used with great caution by anyone seeking to describe the realities of the times". However, Barnish and colleagues (Barnish *et al* 2001: 166) have adopted a more optimistic view of the Theodosian Code's repeated legislation regarding the decurions. They (ibid) suggest the curial system probably functioned in "a reasonably effective way over much of the empire" and, they believe, the code's redundant legislation is best understood as "forcible reminding" by the state, rather than as a symptom of the general decline of the curial institution (Liebeschuetz 1992: 30-31; Liebeschuetz 2001; Liebeschuetz 2001b: 212, 222; Evans 1996: 45-46; Arjava 1998: 253; Barnish *et al* 2001: 166-167; Harries 1999: 83-88, 135-155).

Similarly, in a recent study on law in Late Antiquity, Harries (1999:83-84, 87) argues that the numerous instances of repeat legislation preserved in the surviving codes are not necessarily symptomatic of the central government's impotence or legislative failures. Rather, Harries (*ibid*) suggests several alternate reasons as to why the central government may have opted to repeat legislation apart from noncompliance. She believes that (1) Late Roman legislators generally believed that recent laws were considerably easier to enforce than older laws, (2) various provincials/groups requested numerous laws in order to forward their own interests and (3) emperors realized the beneficial results of

providing a sense of social security and order to the empire's inhabitants through legislative reinforcement. Nevertheless, Liebeschuetz (2001: 108) maintains that Justinianic legislation ultimately aimed at keeping curial land in the civic council's service[90]. However, the imperial administration's concern with keeping curial lands at the council's disposal stretched back into the fourth and fifth centuries. For example, a late fourth century (395 AD) law of Arcadius and Theodosius preserved in the Theodosian Code vested the civic councils with the authority to confiscate any decurions' property if the owner remained absent for five years[91]. Additionally, Arjava (1988: 253) points out that various pieces of fifth century AD legislation actively encouraged daughters of decurions who had inherited their father's land to marry a decurion. Failure to comply initially resulted in the confiscation and transfer of one quarter of the inherited land to the civic council; later, the proportion increased to three quarters of the inherited land. These two examples illustrate the central government's concern for maintaining the supply of curial land and, by extension, the perceived importance such land and its owners held within the system as an economic resource for cities. The latter of the two also

[90] "Among the 68 laws of section 32 of the tenth book of Justinian's *Code*, laws 33-4 and 35-53 are concerned to ensure that councilors, and if not the councilors then their descendants, and if not the men themselves that at least their property, remain at the council's disposal to meet civic expenditure" (Liebeschuetz 2001: 108).

[91] "12.1.44 In order that decurions may not wander abroad for a long time or join the imperial service, to the fraud of the municipalities, unless they return to their own municipalities within five years, their property shall be assigned to their municipal councils for performing the compulsory public service and bearing the burdens of their municipalities [Arcadius and Honorius 395]" (Maas 2000: 19).

provides a good example of the various types of 'social engineering' the central government attempted during Late Antiquity. On the other hand, the curial order undoubtedly experienced a pronounced devaluation in its overall social value. For example, by the mid-fifth century AD, there is evidence to suggest curial status no longer conferred immunity from corporal punishment[92]. It is important to note that the curial class was not the only social group targeted by this development; it was part of a much wider socio-legal phenomenon in which previously immune groups, like the curiales, increasingly lost their exempt status from this type of legal sanction (Harries 1999: 135-140). There is evidence to suggest that curial status declined appreciably by the mid-sixth century AD. For example, Justinian I "ordered clergy caught taking part in an illegal game of dice to be enrolled" (Liebeschuetz 2001b: 222) into their respective city councils as punishment for their transgression. Unsurprisingly, those curiales that could upgrade their status by achieving senatorial rank, whether legitimately or by dubious means, did so (Liebeschuetz 1992: 30-31; Liebeschuetz 2001; Liebeschuetz 2001b: 212, 222; Evans 1996: 45-46; Arjava 1998: 253; Barnish *et al* 2001: 166-167; Harries 1999: 83-88, 135-155).

At first, every senatorial grade brought their recipients the much sought-after benefit of immunity from local (*i.e.* curial)

[92] On this topic, Evans (1996:46) notes: "A law of 436 conceded the privilege to five principales from Alexandria so that they might defend the interests of the city without fear; presumably it was quite legal to flog the rest of Alexandria's decurions".

obligations[93]. Justinian curbed this privilege to a certain extent with legislation that limited this benefit to senators with *Illustrious* grade. Throughout the course of the fourth and fifth centuries AD, Liebeschuetz (2001: 105) contends, *honestiores* (*e.g.* ex-officials, active provincial officials) amassed considerable wealth which, in turn, further eroded the social position of the curiales within their own local communities. Ward-Perkins (1998: 375-376) argues that local government began to lose its autonomy to the growing "network of imperial power" manifested at the provincial administrative level as early as the fourth century AD. At the same time, by the sixth century AD, the institutional character of civic finances and expenditures created an environment where "there no longer was any opportunity for individuals to build up a position of power by conspicuous public expenditure" (Liebeschuetz 2001: 173). Thus, it seems reasonable to conclude that from the perspective of an upwardly mobile social actor, civic service through the curia no longer possessed adequate mechanisms that would allow them to successfully compete with the growing numbers of *honestiores* in the provinces. It also seems reasonable to suggest that the civic institution's ability to provide an environment in which upwardly mobile social actors could convert their wealth into the required social capital for effective peer competition diminished as well (Liebeschuetz 2001:104-105; Bradbury 1999: 497; Barnish *et al* 2001: 183-196; Evans 1996: 45-47; Ward-Perkins 1998: 373-376).

[93] In the fourth century AD, equestrian rank also conferred immunity from curial obligations (Jones 1964: 526).

2.3.2 The changes to the physical fabric of the urban environment

This sub-section discusses the spatial changes that occurred in the Late Antique urban environment. This discussion also presents the main spatial trends within the Late Antique urban environment such as the colonization of public space by private and economic spaces and the growth of authoritative spaces (*e.g.* religious space). The themes developed in the current subsection and those developed in §2.2.4 provide the framework for the analysis of Cypriot case studies presented in Chapter 4 (§4.2.1.1 and 4.3).

2.3.2.1. Methodological trends

Recently, Cameron (2003) and Liebeschuetz (2001b) have commented on the various agendas and scholarly trends present in Late Antique studies, and they have drawn attention to the prevalence of continuity models in the discipline[94]. The fate of the city's corporate embodiment, that is to say the curial class and the civic council, and the changes in urban topography are two issues that have received considerable attention in recent discussions of the Late Antique city[95]. In general, researchers have framed their

[94] Cameron (2003) draws on many of the papers presented in Bowersock *et al* (1999). Additionally, Whittow's (2003: 408-418) summary of the fiscal and the intensification and abatement models and their applications for assessing long-term change in Late Antiquity is particularly useful. Additionally, see Liebeschuetz (2001) for a counter against the continuation paradigm in which he provides a reflexive and illuminating discussion on the concept of decline in ancient history and archaeology that attempts to provide the larger academic context that has contributed to the recent scholarly aversion to the use of decline-driven frameworks.

[95] For example, see Liebeschuetz (2001), Holum (2005) and Whittow (1990) as well as the volumes edited by Rich (1992), Burnes and Eadie (2001), Lavan (2001), Lavan and Bowden (2003; especially part four) and Brogiolo *et al* (2000). The changing socio-economic conditions and fate of Late Roman

discussions of the Late Roman city in terms of either decline (*e.g.* Jones 1964; Liebeschuetz 2001, 1992) or transformation/continuity (*e.g.* Whittow 1990, 1996, 2001, 2003; Rapp 2004, 2005)[96]. Nevertheless, researches have increasingly questioned the validity of these binaries. For example, researchers (*i.e.* Alston 2003: 406-407; Cameron 2001: 238-239) have either questioned the utility of what they consider value-laden terms such as 'decline' to clarify persistent historical questions or an apparent return to a decline-driven model as exemplified by Liebeschuetz (2001). Others have questioned the effectiveness of frameworks that select "the individual city as the unit of analysis" rather than focusing on the "urban system" (Alston 2003: 406-407). Other scholars have questioned either the explanatory power of frameworks that operate within a continuity and discontinuity binary (*i.e.* Dagron 2002), or if the decline of the classical city and urbanism (corporate and institutional) directly correlates with what is often viewed as the general decline of Greco-Roman urban culture in the seventh century (Haldon 1990) and the decline of the curial class in particular (Whittow 1990; Cameron 1993)[97]. On this topic, Dagron (2002: 400) argues

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elites is also a closely related subject; see the recent volume edited by Haldon and Conrad (2004), and especially the bibliography cited within Cameron, Rapp and Haldon's contributions in that volume.

[96] Cameron (2003: 5), like Alston (2003), regards Liebeschuetz's (2001 and 2001a) work as a particularly good example of the "return to rupture and decline" model in recent scholarship.

[97] Haldon (1990: 123) states: " …the crux of the matter is, surely that the debate has wrongly assumed an intimate connection between the question of whether classical urban life continued or died and that of whether or not its sites were abandoned or deserted. The evidence…makes it clear that both questions are to a large extent misguided. Classical civic life was already

> "Continuity? Discontinuity? It matters little. Whether they survived or disappeared, cities changed between the end of the sixth century and the middle of the ninth century in appearance, in function, and in definition. A 'right' or a hierarchical catalogue of cities no longer existed, except to establish the precedence of sees in ecclesiastical geography that sustained the ancient provincial demarcations".

While the use of binary frameworks can place a specific archaeological or historical question in sharp relief, it clearly does so at the expense of the available data's resolution. Similarly, in addressing the use of decline-driven frameworks, Lavan (2001: 244-245) suggests studies that focus on "regional divergence" would better capture the complexity of the available data.

Several researchers (*e.g.* Lavan 2003a, 2003b; Cantino-Wataghin 2006; Roskams 2006) have commented on the need for greater methodological precision in the archaeological excavation of the Late Antique urban environment in particular. In a recent review article, Lavan (2003a) has identified several shortcomings in current approaches to the study of the Late Antique monumental urban

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on its death-bed before the seventh century; what was replacing it was provincial town life of a very different character, on a very much less wealthy and less physically extensive basis. Hostile attack and harassment speeded up the former process and almost smothered the latter". Whittow (1990: 12) takes a similar view and suggests that "To see the decline of the *curiales* as equivalent to the ruin of the cities and the impotence of their elites is…misleading".

environment. The approaches he comments on include architectural studies, topography and site syntheses. Of these, architectural studies are the most inefficient because they produce poor quality and redundant data in the form of “sterile architecture” (Lavan 2003: 179). Perhaps more importantly, with its reliance on uncontrolled clearance excavation, this approach also precludes the employment of a host of modern archaeological interpretive methods[98]. Thus, from the ‘architectural studies’ perspective, the depositional contexts as well as their assemblages obscure the real target of interest: the architecture for its own sake. On the other hand, Lavan (2003: 178) argues that syntheses encourage “a human historic space, which strongly conditions our perceptions of urban life but exceeds the real limits of its methodology”. Additionally, Lavan (2003a: 178-180) also argues that these approaches tend to concentrate on the primary functions of these complexes without adequately addressing the later phases and use-life of the structure.

In response to these shortcomings, Lavan (2003a & 2004b) suggests a framework based on prehistoric excavation methods that incorporate texts. The main units of analysis in Lavan’s (2003a: 184) framework are the “activity spaces” that include the functional

[98] Indeed, Lavan’s (2003a: 179) argument that “the continued clearance excavation of Late Antique sites in the Lavant, in spite of rich destruction deposits containing objects in situ, is disastrous” is well founded particularly in light of the continued prevalence of such poorly designed excavation strategies in the Mediterranean. Similarly, Cantino-Wataghin (2003: 246) observes “A full exploitation of all the possibilities of current archaeological procedures requires the integration of stratigraphic excavation and masonry studies with scientific methods analysis; these have to be managed carefully within a strong interdisciplinary framework”.

descriptor as well as the material setting. Human activity is the central concern of the "activity space". Within this framework, Lavan (*ibid*) notes, "activity settings" serve as the "basis for general descriptions of human space, components of a historical narrative of ancient topography". Lavan also argues that because this framework emphasizes "human action" it provides an ideal means to identify what he calls "non-architectural activity spaces, such as those which took place in the street rather than in buildings, or in a variety of architectural settings". In order to reconstruct the activities taking place in these settings, Lavan (*ibid*) correctly argues that the analyst must combine assemblage, *in-situ* inscriptions and contemporary texts (sources other than the rhetorical) in their interpretation. Additionally, apart from issues based on the secular/religious binary, the use of "perceptual pluralism", Lavan (2003a: 189) believes, is not a useful approach for the study of the Late Antique urban environment because "there seems generally to have been little but consensus about the nature of the everyday functions of political and social space; alternate voices seem untraceable".

At a lower analytical resolution, MacDonald (1986) has developed an approach that centres on examining the interrelations between the urban environment's connective architecture (*e.g.* plazas, main streets and avenues), passage architecture (*e.g.* gates, arches, way stations) and the main civic buildings (*e.g.* forum, baths, curia, religious buildings) for the analysis of Roman Imperial urban environments. These elements, MacDonald (*ibid*)

suggests, formed the urban armatures of Roman cities. Armatures are the products of long-term processes within a particular urban environment: they are not the products of comprehensive planning initiatives. The time span required for the creation of the most basic of armatures could have been considerable. For example, based on North African data, Duncan-Jones (1990: 178) suggests that an average city with four temples, two baths, a theatre, square with portico and a market would have required approximately 90 years worth of budgeted civic funds. However, with the inclusion of drains, street paving, walls/gates as well as aqueducts, the figure substantially increases to approximately 120-140 years worth of budgeted civic funds. Although these figures do not take into account the accelerated building times that could result from various benefactions (*i.e.* imperial or private), they do provide a rough estimate of the time spans required for average urban armatures to form based on civic funding. Such armatures, MacDonald (1986: 30) argues, are the response to a "universal urban need for an architecture of connection and passage". Perhaps more importantly, armatures are key components of the urban spatial system because they constituted the main organizing elements of urban space. MacDonald (1986: 256-257) notes that the elements comprising the armature coalesced to form a unified and visible town rather than fragmented parts. Within this system, the forum often forms the symbolic centre of the armature because of its unimpeded connections with the main gates of the urban street alignments (MacDonald 1986: 3-8, 10-20, 22-30, 255-257).

However, Perring (1991) notes that the pattern identified by MacDonald's (1986) research is perhaps better suited for the Mediterranean urban environment than those urban environments in the empire's northwestern provinces. The forum's role in these armatures illustrates this point. While forum complexes remained focal points within the street systems of the northwestern cities, through traffic was generally discouraged. This stands in contrast to one key aspect that MacDonald (1986) attributes to these armature elements: the flow of movement. Perring (1991: 278) notes that the curtailment of movement

> "was usually achieved by directing the *decumanus* across one of the ends of the forum and by building a basilica, portico, or temple complex to block the path of the *cardo*. This frequently resulted in the *cardo* and *decumanus* meeting in a T-junction at one end the forum whilst the extension of the *cardo* from the opposite end of the forum was often treated as a minor road or even omitted altogether. Plans broadly of this type can be found at Verona and Milan".

Thus, Perring (1991) suggests this indicates two spatial planning trends in the Roman period.

Although Lynch's (1960) focus is modern city form, his work provides several broad insights that are equally useful for the

study of the Antique and Late Antique urban environment. Lynch (1960) posits that any urban environment is comprised of various images, or mental maps, that aid social actors and groups of social actors in their negotiations of that particular environment. The formation of such images results from a bi-directional process between participant and environment[99]. Lynch's (1960: 6) discussion of this process is worth quoting at length:

> "The environment suggests distinctions and relations, and the observer – with great ability and in light of his own purpose – selects, organizes, and endows with meaning what he sees. The image so developed now limits and emphasizes what is seen, while the image itself is being tested against the filtered perceptual input in a constant interacting process. Thus the image of a given reality may vary significantly between different observers".

Although each individual social actor's image may differ from others' images, Lynch (1960: 7) argues that the common elements of these individual images help form a group, or public image, for a given environment. This approach to the urban designed environment

[99] Consider Lynch's (1960: 46) statements: "Such group images are necessary if an individual is to operate successfully within his environment and to cooperate with his fellows". "Each individual picture is unique, with some content that is rarely or never communicated, yet it approximates the public image, which, in different environments, is more or less compelling, more or less embracing".

is similar to those in the general discussion of place and architecture as a particular type of place in a larger socio-spatial system presented above.

The urban environmental images, Lynch (1960: 47) suggests, consist of five interrelated components: paths, edges, districts, nodes and landmarks. These components essentially are linear (path and edges), area (districts) and point (nodes and landmarks) elements. The distinctions between the image components are dependent on the "circumstances of viewing" and scale, or resolution (Lynch 1960: 48). For example, although a district can contain several nodes, paths and landmarks, it can function as a node when the target emphasis shifts from the middle (district) to a larger scale (civic region) of a particular urban environment[100]. These distinctions can serve as a complement to MacDonald's (1986) framework by adding additional dimensions to the armature. For example, because armatures tend to emphasize the flow of movement rather than its restriction, the inclusion of edges can introduce a more pronounced and nuanced sense of pause into a given armature than the "way station" architecture MacDonald (1986: 105) suggests does.

Approaches such as 'architectural studies' are a-contextual on at least two resolutions because (1) they absolutely ignore both the individual depositional contexts (*e.g.* use-surfaces, destruction

[100] Lynch (1960: 48) states "…a central area may be a district when a city is organized on a medium scale, and a node when the entire metropolitan area is considered". "But the categories seem to have stability for a given observer when he is operating at a given level".

deposits and middens) as well as (2) remove the monuments from their larger settings. Perhaps more importantly, clearing excavation not only produces poor-quality data but also precludes other forms of modern archaeological interpretation: particularly the interlinked analytical procedures between stratigraphic, phasing and assemblage interpretation. The continued emphasis on the 'main phase' rather than adopting a multi-phase diachronic approach also precludes any attempt at understanding a particular structure's use-life. The particular approaches mentioned by Lavan (2003a & 2003b) are, it seems reasonable to suggest, liable to the same critique as any art-historical based approach to architectural analysis mentioned above (§2.2.4). In general, most scholars would agree that Late Antique Archaeologists must embrace modern excavation methods if the discipline is to use its rich archaeological data more effectively. Arguably, although Lavan's (2003a & 2003b) "activity settings" approach represents a clear step in the right methodological direction away from a-contextual frameworks, it fails to recognize architecture as an active component in social reproduction and its potential role in the mediations of power[101].

Based on the spatial framework developed above, I suggest that the apparent consensus of the "everyday function" (Lavan 2003a) of political and social spaces masks a complex set of relationships. It is the ways in which social actors imbue places with various meanings based on their experiences in relation to the accepted or

[101] Lavan's (2003a & 2003b) "activity settings" are a passive version of Rapoport (1990) "system of settings".

official functions, I believe, that form a fundamental aspect in understanding a socio-spatial system. For example, Lavan (2003b: 315) points out that the civil praetoria not only served as the provincial governors' residence and administrative centre but could also "include prisons, tax offices, archives and horrea". Additionally, Lavan (*ibid*) notes, the civil praetoria could serve as "social centres" for provincial *honorati*. Within the spatial framework established above, praetoria are monumental *multilocal* authoritative social constructs. Thus, while it is probable that Late Antique social actors had little difficulty recognizing political space as such, it is equally probable that social actors entering the praetoria as an *honorati* or *humilitores* would develop differing conceptions of this particular environment as this building accreted meanings over the course of their interactions at that location. For those social actors that lacked the proper status within society, the building could represent an authoritative space that manifests itself through intimidation and/or oppression. On the other hand, for *honorati*, who could often possess higher status than the provincial governor whose audience they sought, the praetoria could represent a contested place where local social trajectories and interests compete with those of the state structure as embodied in the office of governor[102].

[102] See Slootjes's (2006) study for examples.

2.3.2.2 Spatial trends

In assessing the connotations and use of the word “city” (*civitas*/polis) in Late Antiquity and the sixth century AD in the works of Procopius, Zanini (2003) has concluded that the term *civitas*/polis did not have a fixed meaning but, rather, described a spectrum of sites that varied in size, structure, economic power and administrative function. However, Zanini (2003: 198-199) believes that those urban environments that possessed aqueducts, churches, palaces, porticos, various residences for magistrates, city walls and baths collectively came to represent the idea of a polis in the sixth century AD. It is important to note that these elements are also important components in high imperial urban armatures (see above). Additionally, Zanini (2003) suggests that the new sixth century civic foundations in Serbia (Justiniana Prima), Mesopotamia (Dara) and Syria (Resafia Sergiopolis and Zenobia Halebiyye) exemplify the state’s ideal urban image (see figures 2.1, 2.2, 2.3, and 2.4). These cities differed from their high imperial predecessors in several ways. First, they are smaller in their overall area and perform several functions such by serving as components in the administrative, defensive and ecclesiastic networks of their respective provinces. Second, they are imperial foundations and, perhaps more importantly, they are the result of a conscious and relatively standardized planning effort on the part of the imperial government[103]. Zanini (2003: 217) argues further that

[103] Zanini (2003: 220) believes that “When the decision was taken in Constantinople to build a new city in one of the provinces of the empire, a

these foundations illustrate the shift from city to defensive city and finally to a city defending a territory, or a castrum.

Among the various processes that characterize the Late Antique urban environment, the colonization of formally public space by private and/or commercial space is a well-represented and spatially extensive phenomenon in the archaeological record. As a result, the following case studies serve only to highlight select aspects of this particular phenomenon. Tsafrir and Foerster (1994: 105-106) have observed that during the fifth and sixth centuries AD the city of Scythopolis (modern Bet Shean, Israel), which was the metropolis of Palaestina Secunda from the late fourth century AD onwards, underwent a series of spatial reorientations that redefined several districts within the city. For example, a substantial Roman colonnade and its associated reflecting pool became an economic space after the installation of shops as well as other infrastructure elements (extended street paving, sidewalk and portico) in that area of the city[104]. These modifications, they note (*ibid*), transformed this particular sector of public space into a new commercial district while the extension of the basalt herringbone paved street also linked the city's older Roman core with a new southern suburb. Similarly, the space occupied by the city's large civic basilica became an area comprised of "rooms, lanes and porticoes, probably for utilitarian or even industrial

perfectly defined conceptual model was referred to: this could be used as the basis for a well-articulated overall plan, to be adapted to the specific needs of each settlement".

[104] For a discussion of a similar process at Carthage in Late Antiquity, See Leone (1999: 122) and the reference cited within.

purposes" after its destruction in the mid-fourth century AD (Tsafrir and Foerster 1994: 105). However, by the end of the sixth and the early seventh century, private space and multi-functional (domestic and economic) spaces colonized the economic and public space of the preceding century (Tsafrir and Foerster 1994: 101-111)[105].

The shops at Sardis, which occupied the southern face of the bath-gymnasium complex, also provide a good example of the colonization of public space by private and/or economic spaces in Late Antiquity (see figure 2.5). Crawford (1990) has suggested the shops engaged in a considerable range of manufacturing (dyeing), service (restaurants) and retail (glass, hardware and jewellery) activities, however, he also cited the shops' comparatively poorer construction methods as evidence that indicates the general decline of Sardis's urban institutions and monumentality. However, Harris (2004) has reanalyzed the assemblage, stratigraphic and architectural data from the shops and has suggested that the data is equally capable of supporting alternate interpretations. For example, based on the presence of a uniform and contemporary external mosaic at the front of the shops, a set of shared structural features such as vertical tile drains and the presence of double frontages at several rooms, she posits that either the owners or an "external individual, group or body" (Harris 2004: 87) became interested in promoting commercial activities in this portion of the

[105] See Tsafrir and Foerster (1994: 10-11) for examples that illustrate this process.

town in the fifth century AD. Furthermore, she argues (2004: 91) that during the shops' initial phase, several rooms, which previously have been interpreted as discrete units, may have been involved in coordinated economic/productive activity based on dyeing and/or the production of dyes. She also believes that the available assemblage data indicates that the structures were workshops rather than retail shops during their initial phase. However, during the second phase, the occupants blocked doors, windows and drains as well as re-laid floors. This development, Harris (2004: 91-92) believes, signalled not only the end of coordinated economic activities but a move to domestic activities or a period of craft working activities followed by a final phase of domestic activities[106]. Regarding the retail function of these structures, Harris (2004: 113, 120) posits that before their destruction in the seventh century AD, the majority of these structures' assemblages indicate the prevalence of domestic activities rather than retail or artisanal activities. However, aspects of the recovered assemblages also suggested a certain degree of functional diversity. For example, Harris (2004: 113) argues that building E8 and E13's assemblages provide evidence for contemporaneous non-domestic and domestic activities that were spatially discrete (occurring on the ground and first floors respectively) within these buildings.

A recent study conducted by Leone (2003) centring on various "topographies of production" in Vandal and Byzantine North Africa

[106] For example, Harris (2004: 112-113) mentions that building E3 appears to have had 3 phases of activity; the final two consisted of semi-industrial activity followed by domestic activity.

(Tunisia and Tripolitania) provides additional examples of the colonization of public space by economic spaces during Late Antiquity[107]. Leone's (*ibid*) study examined the spatial trends in the data relating to urban olive oil presses, pottery kilns and lime kilns. Her research (2003: 275) suggests there is an association between urban intramural olive oil production installations and fortified complexes and churches[108]. Pottery kilns were associated with substantial structures and were located near the coast. For example, the pottery production areas within the cities of Uthina (located in the province of Zeugitania) and Leptiminus (located in the province of Byzacena) were both situated in former bath complexes[109]. The solid construction of these types of structures provided Late Antique social actors with several options for reuse. At Leptiminus, for example, apart from pottery production, the former bath complex also accommodated activity areas for metal working, glass working, and butchery. Limekilns, Leone (2003: 273-274) notes, often occurred within the urban core or in inhabited areas of cities. Late Antique social actors placed limekilns "close to or in imposing buildings" that formerly constituted either public or private spaces (Leone 2003: 274).

[107] Leone (2003: 257) defines the term "topographies of production" as "the spatial organization of production sites and their location within urban areas".

[108] However, there are exceptions. Leone (2003: 274) notes that at Uchi Maius the forum became a scentre for olive oil production during the Vandal period.

[109] Apart from the urban kilns, Leone (2003: 273) notes that Roman pottery kilns also "ringed the fringes of Leptiminus".

The increasing visibility and growing complexity of Christian urban topography are another well-attested phenomenon in the Late Antique archaeological record[110]. In general, most researchers (*e.g.* Harries 1992; Catino-Wataghin 2003; Catino-Wataghin 2005) would agree that ecclesiastic monumental architecture became important focal points, or nodes, within the Late Antique urban environment. The basic elements of Christian urban topography consist of an episcopal complex (cathedral, baptistery and residences for bishop and clergy), extra-mural churches (*e.g.* for funerals and the veneration of the martyrs), and cemeteries. According to Catino-Wataghin (2003: 242-243), the location of the cathedral within the walls was largely the result of pragmatic factors such as the availability of an adequate building site to accommodate the structure or complex. On the other hand, cemetery churches and martyria tend to cluster in extra-mural locations because of their associations with Roman necropoleis. Ecclesiastic monumental architecture, like all types of monumental architecture, is also indicative of the conspicuous consumption of both human and material resources. Similarly, Catino-Wataghin (2006: 289, 295-296) has suggested church building outwardly demonstrated the social standing and economic resources of a given Christian community. This outward architectural display of authority and prestige is also detectable in the architecture associated with episcopal residences. Rapp (2005: 209-210) believes that although the layouts of episcopal

[110] This process is not restricted to the urban environment alone. For a discussion of the process in the countryside, see, for example, Kidner's (2001) discussion on Christianizing the Syrian countryside in the volume edited by Burnes and Eadie (2001).

residences are heterogeneous, they utilized many of the same architectural elements that contemporary secular monumental residences employed (*e.g.* governor's residence and aristocratic mansions)[111]. The main difference, Rapp (2005: 210) believes, was in the level of elaboration: atrium courtyards with elaborate water features as well as excessively expensive decorations like marble revetments, for example, were absent from episcopal residences.

Several points emerge from the discussion presented above. Researchers often cite the use of mundane *spolia* like brick fragments, tile fragments and various types of architectural blocks as general indicators of urban decline during Late Antiquity[112]. For example, many of the *spolia* elements used in the construction of the so-called shops at Sardis would not have been readily visible to the social actors utilizing these structures because there is evidence that indicates plaster and frescoes covered several wall surfaces within the complex (Harris 2004). Ellis (2006: 422-423) also argues that because of their location within the city, economic potential, as well as their overall solid construction, these structures would have made an attractive residence[113]. Perhaps more importantly, Harris's (2004) careful reanalysis of the assemblage data from these

[111] "The variations in the layout of the Episcopal residences throughout the empire reflect both the universal aspects of the episcopal office and the concrete conditions of the individual sees" (Rapp 2005: 210).

[112] On the topic of the reuse of building materials, see Coats-Stephens (2003) for a concise review of the general arguments and several possible explanations for the phenomena; Saradi-Mendelovici (1990) for a discussion on the various Late Antique attitudes on reuse of pagan monuments for other purposes such as civic embellishment. See also Alchermes (1994).

[113] For a general discussion on the attributes of buildings that combine domestic and economic activities, see Ellis (2000: 78-80, especially pg 80).

structures also indicates the social actors utilizing them had attained a certain degree of material wealth, which in turn, suggests they were among the middle class rather than the urban poor[114].

As mentioned above, Procopius's usage of the terms *polis* in conjunction with the presence of various types of monumental buildings suggest that at least some elements of the early imperial urban armature remained culturally relevant to Late Antique social actors. Thus, it seems reasonable to suggest that these elements also contributed to the formation of a particular image of the urban environment in Late Antiquity (*e.g.* the official state image of Justiniana Prima). Lavan's (2006) recent study on fora/agorai in Late Antiquity illustrates the continued use of one such armature element. His (*ibid*) study indicates that although they display divergent temporal trajectories based on their geographical location, fora/agorai continued to be viable components of the urban environments throughout Late Antiquity, with several new constructions or substantial reconstructions occurring during the fifth and sixth centuries, and some others continuing in use beyond the mid-seventh century. Perhaps more importantly, apart from their traditional social functions, these spaces, Lavan (2006: 210-214, 235-236; 2003: 317-318) argues, also became associated with "political rituals" linked to the provincial governors (*e.g.* honorific statues of governors, public trials and executions, as

[114] For a discussion of the archaeological evidence for the urban poor, see Roskams (2006).

well as the preferred locations of civil praetoria in the provincial metropolis)[115].

Although most researchers would agree that Late Antique social actors generally approached urban planning in a more pragmatic and less structured manner than their Roman predecessors, there is evidence to suggest that coordinated and planned urban development projects were still possible[116]. For example, the excavations at both Scythopolis (Tsafrir and Foerster 1994) and Sardis (*e.g.* Harris 2004) indicate that the new commercial districts appear to be the result of a conscious and purposeful development rather than disjointed and undirected development. Furthermore, at Scythopolis, the urban armature expanded and incorporated a new southern suburb through the extension of a main thoroughfare; the new commercial district acted as a buffer between the southern suburb and urban core. In Chapter 4 (§4.3), I explore several of these trends in relation to the Cypriot evidence from the polis/civitas of Kourion.

2.3.3 Discussion: The urban environment as a power resource

Several points emerge from the various themes presented throughout section 2.3. First, until at least the mid-seventh

[115] Lavan (2003b: 316) notes that "the praetorium, with its prisons, ceremonial courts, offices, archives and audience halls represents the most developed public building ever placed on the ancient agora".

[116] For example, Tsafrir and Foerster (1994: 106-109) note that within Scythopolis's urban core, new building generally attempted to follow the existing urban framework while new constructions in the suburbs, in contrast, tended to be organic. Thus, they (1994: 109) argue, "It was the scale of priorities that changes, and gave way to new ideas in town planning and city life".

century AD, the city constituted the main conduit through which the state extracted wealth from and administered the territories under its control. In this respect, the city formed a resource for the replication and maintenance of imperial power. However, cities also served a number of other important functions such as providing an arena for local elites to compete with one another, as well as providing administrative centres (both secular and ecclesiastic), strategic centres and productive centres. In this respect, cities are clearly multi-scalar and *multilocal* social constructs within the larger landscape. However, the relative functions that a city performed, or were expected to perform, varied according to individual geographic, geo-political and temporal constraints. At the level of the individual city, the interplay between abstract, or official spaces, and lived spaces and the various urban images (both theoretical and material) this process produced is also a useful indicator of the changing patterns of authority in Late Antiquity.

The so-called new administrative cities of the sixth century illustrate this point. From the available data, the urban image of imperial cities like Justiniana Prima (Serbia), although they often retained elements associated with high imperial urban armatures (Zanini 2003: 209-210), also exhibit a pronounced decline in the area devoted to residential domestic architecture. As Poulter (1992: 125) notes, “only a few buildings could qualify as civilian houses and some of these presumably accommodated the clergy serving the city’s churches” within the area enclosed by the main fortification wall. Similarly, the area enclosed by an extension of the southern

fortification line does not appear to have enclosed an extramural residential district; rather, it primarily enclosed churches. Similar spatial phenomena are detectable in the archaeological record of Nicopolis Ad Istrum (northern Bulgaria). The results of several seasons of extensive geophysical survey and targeted excavations at the site have identified the presence of a range of structures interpreted as consisting of non-residential/domestic buildings (*e.g.* workshops and churches). These investigations revealed a substantial portion of the area enclosed by the city fortifications (northeastern quarter and the west central) remained undeveloped throughout Late Antiquity (Poulter 1992: 124-128)[117]. Arguably, these particular cities represent one ideological and material aspect of the process because they represent the triumph of the abstract authoritative, and often monumental, spaces of the state and institutional church over the lived, but also *multilocal*, spaces of the everyday that characterized much of the traditional classical urban environment. Thus, these cities exemplify one particular facet of the Late Antique urban condition in which the needs of the state have usurped both the material and ideological image of the traditional classical urban ideal. The state chose to display directly its own authority through a traditional medium, but substantially streamlined conduit in which its own needs are explicitly rather than implicitly stated within the urban environment. In short, cities like Justiniana Prima represent nodes

[117] Poulter (1992: 127) notes that the remains of mud-brick residential architecture “covered the ruins of the abandoned Roman city to the north”.

that overtly represented authoritative space within a larger multi-component and *multilocal* landscape at several spatial scales.

Initially, the administrative apparatus relied on one particular social group, the curial class, for the successful execution of administrative directive at the civitas level. Essentially the curial class formed a substantial corps of low-level and unpaid civil servants. The central administration's ability to entice, coerce and manipulate this social group provided the administrative apparatus with the human resources it required for the effective exercise and reproduction of its own authority at the local level. Because of the comparatively small number of professional civil servants involved in government, researchers have described the comparatively unobtrusive character of the Principate's administrative apparatus as "amateurish" (Garnsey and Saller 1987: 26), or as "soft" government (Brown 1978: 48). Nevertheless, as "amateurish" as imperial administration may have been during the Principate, when viewed in terms of relative inputs and outputs, the indirect approach generated a very high return because it allowed the state to meets its administrative needs with a minimum outlay of official human and material resources. At the geo-political strategic level, the preference for indirect rule is also discernable in the state's extensive use of client kingdoms, or hegemonic imperialism, during the late republic and early Participate[118]. Nevertheless, the situation changed appreciably over

[118] Consider, for example, the various client states in the Near East of the late first century BC and the first half of the first century AD. See Isaac

the course of the late third to fourth centuries AD with the steady erosion of the autonomy of local civic government.

However, elements of the traditional civic urban ideology that bound the members of the curial classes into costly forms of competition (*philotimia*) with one another at the local level and that the central government exploited (*e.g.* Romanization) became increasingly detached from its local focus and increasingly refocused towards imperial service and the church. Paradoxically, the central government exacerbated this situation through its consumption of a large proportion of the human resources that previously maintained local government. The resulting devaluation of curial status as preserved in various laws and the rise of a new and diverse social group with strong imperial links illustrate the state's indirect colonization of various types of local landscapes. Correlate to this development, social actors with surplus wealth increasingly engaged in conspicuous consumption patterns that benefited the institutional church (*e.g*. donations/benefactions) and promoted a more explicitly egocentric form of self-aggrandizement (*e.g*. investment in monumental rural and urban domestic architecture) than patterns that benefited the civic institution.

Regarding the first component of this new pattern of conspicuous consumption, Bowden (2003:151-154) has suggested the

(1990) for a discussion of the Roman Near East as well as Luttwak (1979) for a discussion on the use of clients.

prestige associated with church construction achieved a "cyclical dimension" in Late Antique Epirus[119]. He (2003: 151) believes

> "New churches generated prestige for donors, the community and the ecclesiastical establishment. This encouraged donations from within the community and perhaps from outside. Often the larger donations and bequests were specifically for the foundation of new churches, while local bishops and prelates also built churches to enhance their own prestige and encourage donations (aside from motives of genuine piety). The result was that church construction became almost a self-perpetuating activity, which may in part account for the phenomena of multiple churches in towns such as Nikopolis and Byllis in Epirus Nova".

Although the institutional church could return a proportion of these resources to its host community (*e.g.* through employment during construction and, later, through charitable giving), it could equally alienate wealth from its host community. Bowden (2003: 153) argues that this occurred when the ecclesiastic authorities used non-local workmen and materials and, perhaps more importantly, over

[119] See Bowden's (2003: 152-153) figure 6.30 for a flow model of the cyclical process he attributes to church construction and figure 6.31 for a flow model of the process of resource withdrawal that church buildings drain from the community.

the course of time the resources required to maintain the clergy within the episcopal see would have absorbed the majority of its income. The situation undoubtedly became increasingly complex when local and regional interests intersected and competed with such projects.

As Garnsey and Saller (1987: 109) have pointed out, the property system, the legal system and the occupation system (division of labour) constituted three mechanisms that preserved and reproduced social inequalities during the Principate. They argue further that the "system of acquisitions and transmission of property was the framework of social and economic inequality" (Garnsey and Saller 1987: 110). This scheme is also useful for the Late Antiquity because these three general mechanisms appear to have continued to form a fundamental component of the social system throughout the Dominate. With the reorientation and colonization of the local civic political landscape by the quasi-imperial notables and *honestiores*, the civic institution lost its ability to provide an adequate medium for upwardly mobile social actors to convert their material wealth into social capital. Thus, a key functional aspect of the urban social environment had changed. Because the main sources of prestige increasingly orientated upwardly mobile social actors towards a decisively non-civic arena of competition, these new imperial and semi-imperial based elites did not need to engage with the civic institution in the same way as their curial predecessors had done in the past (*e.g.* through competitive benefaction and civic politics). In short, it is reasonable to

suggest that these *honestiores* perceptions of the urban image changed in relation to one particular facet of that image advocated by the state.

Kelly (2004: 130) has argued that clout (*potentia*) and connections (*gratia*) formed the "commonest and most effective currencies of power" for Late Antique social actors[120]. These two constructs are also key components of the large social construct of *philotimia*. Thus, based on the position advocated above (§2.2) in which social actors exercise power predominantly through various combinations of personal authority-based resources, it seems reasonable to suggest that this shift also influenced the way that social actors organized their individual resource sets in order to maximize their personal authority's potential scope in relation to the growing ideology of imperial and ecclesiastic service. Those social actors of appropriate means could also engage with the legal system in a more efficient manner because of their ability to draw upon their personal connections (*potentia* and *gratia*), as well as pay for the array of official fees (*commoda*), tips (*sportulae*) and travel expenses that were often associated with litigation. Thus, the cost of litigation is an institutionalized form of social inequality between upper and lower class. It also seems reasonable to suggest that over the long term, the declining status of the curial class is symptomatic of one facet of a manifold phenomena which arguably ended in the mid-eighth century after the senatorial aristocracy's position, as Haldon (2004a) notes, became based solely

[120] See Harries's (1999: 163-166) discussion of *gratia*.

on palatine service and no longer represented the interests of a diverse group of landowners.

Perhaps more importantly, the growing role of the state in civic government laid bare the exploitive relationship that existed between the state on one hand and the institutional city and the curial class on the other. Although some researchers (Barnish *et al* 2001; Harries 1999) have interpreted the repeat legislation preserved in imperial legislation as a relatively neutral phenomenon, other aspects of the law clearly indicate the state's desire to keep curial land, if not the curiales themselves, securely within the system in order to insure various civic expenditures were met (Liebeschuetz 2001: 108; Arjava 1998: 253). The legal constraints the state placed on the curiales also took on a spatio-temporal dimension: their ability to reside away from their municipal territory was limited to a maximum of five years (Theodosian Code 12.1.44 in Maas 2000: 19), and they were expected to live within the city rather than their country estates.

In sum, the city in Late Antiquity is best understood primarily as a multifaceted social construct. As a component within a large landscape, it is a nodal space where abstract and lived spaces intersect and compete with one another: it is a contested and ideological space, perhaps more importantly, it is a *multilocal* space within the larger social landscape. The legal system is another important authoritative resource that the state used in conjunction with the institutional city to reproduce its authority. Thus, the city, or rather, specific city types, remained a viable

authoritative resource for the state apparatus at least until the mid-seventh century AD when the village replaced it.

2.4 Geographic information as a power resource

Most research on geographic knowledge's role in imperial planning essentially occupies different positions within a bi-axial paradigm based on the oppositions between scientific and non-scientific frontiers on one hand and the opposition between military and social interpretations of what constitutes a frontier on the other. Recently, Wheeler (1993a and 1993b) has argued against the demilitarization of Roman frontier studies seen in reductionalist (Isaac 1990) and Annaliste (Whittaker 1994) historic methodologies and social archaeological frameworks[121]. While accepting the argument that a certain amount of 'demilitarization' has taken place in recent social interpretations of frontiers, it is still useful to keep in mind Lightfoot and Martinez's (1995: 487-488) discussion of three common problems encountered in the archaeological and historic investigations of frontiers in general. First, they observe, the dominant tendency of core-periphery models is to privilege the centre and reduce the periphery to a passive recipient of the dominant centre's culture[122]. Secondly, they reject the global scale level of analyses in favour of a multi-scale framework for both

[121] Wheeler's (1996a:17-21) criticisms of reductionism, and in particular the reductionalist underpinnings of several of Isaac's (1990) claims is also useful in illustrating how limiting this approach can be.

[122] For a discussion of the use of world-system theory in a Cypriot archaeological context by Kardulias and Yerkes (2004).

archaeology and historical research[123]. Finally, they believe what they term “Maginot Lines” may be quite rare in archaeological contexts” (Lightfoot and Martinez 1995: 487-488).

Those researchers (Whittaker 1993 and Isaac 1990) who support a non-scientific Roman frontier have emphasized the under-developed and imperfect state of Roman geographical and cartographic knowledge. The lack of modern geographical knowledge, and by extension modern instruments, they argue, provided the Roman state with an almost insurmountable hindrance in their attempt to understand and use geographic knowledge effectively in a global strategic context[124]. However, while conceding that mapping projects on the scale of continents would have been beyond the technical abilities of the Roman state’s surveying and geographic abilities, there is evidence to suggest that the Romans did possess a rather sophisticated multi-tiered conceptualization of space (*e.g.* the Ptolemaic demi-Cartesian grid system and the linear abstracted space of the itineraria)[125]. However, both Lee (1993) and M. Graham (2006) have pointed out there is scattered evidence that indicates maps and itineraries were in circulation in the Late Roman period and some of these itineraries appear to have been intended for use in conjunction with abstract graphic representations of the itineraries

[123] Herod (2003) introduces the use of scale and the use of the local-global binary in geographical theory. Though concerned with the local-global binary in modern capitalist societies, Cox’s (2005) discussion of the development of this binary in geographic thought is useful as well. For a detailed study of the effect of scale on interpretation of distributional archaeological data, see Ebert (1992: especially chapter 8).

[124] Isaac (1990: 374; 394-395; 401-402) and Mann (1979) are particularly good examples of this position.

[125] See Lee (1993) and Graham (2006).

themselves. Ethnographic data, on the other hand, also supports the notion that pre-modern societies can possess a developed and informative concept of the world around them *vis-à-vis* their spatial ability, spatial knowledge and through a developed sense of place. The geospatial acumen of Eskimo, Polynesian and Micronesian navigators, who are able to traverse great distances without the aid of modern instruments such as maps and satellite navigation, demonstrate this point (Tuan 1977). Undoubtedly, such skills do not occur evenly across these societies but, it is reasonable to suggest that the lack of modern instruments like detailed topographical maps does not neatly correlate with a lack of and/or a misunderstanding of geographical knowledge[126].

Additionally, it is important to note, as Wheeler (1996a: 25) points out, "a geopolitical approach to military policy…first begins to be formalized in Byzantine treatises" in late antiquity. By the tenth century AD, the creation of various new commands and territorial acquisitions that aimed at creating geographic depth between the core provinces and the frontier zone indicates "that Byzantine governments certainly possessed the geographic and strategic understanding to defend what had been recovered and to plan further expansion" (Haldon 1999: 39-41).

There is evidence that indicates the governments of the early and late empire also possessed geographic and geostrategic understanding. First, the case of the so-called Gallic Empire of the

[126] The geographer Yi-Fu Tuan (Tuan 1977: especially chapters 4 and 5) discusses several generic and cross-cultural ways in which people understand and locate their relationship to the wider world.

third century AD illustrates the fact that Roman military planners could extrapolate on several spatial scales and think in terms of the security of populations. In response to the inadequate regional security provided by the central government, self-help initiatives undertaken by local military commanders, governors or opportunistic client states commonly resulted in rebellion. Williams (1985: 20-21) maintains that the central government's failure to provide adequate security at the provincial level provided the catalyst for the Gallic Empire's creation:

> "The stripping of the Rhine defences had opened the way for a great invasion of Franks, occupying Eastern Gaul and North-Eastern Spain; Gaul was also cut off from Italy by a separate invasion of the Alemanni which threatened Milan. With the support of the civilian population the Rhine army commander Postumus murdered the imperial heir, occupied Cologne and had himself proclaimed Emperor, not of the Roman world but of an independent Gaul… …Needing the military support of Gaul, the governors of Britian and Spain declared allegiance to this new state".

Secondly, the establishment of the Tetrarchy with its multi-nodal political and command centres close to the empires main theatres of war and/or potential theatres of conflict is perhaps the best evidence for the important influence geography played in imperial

planning during late antiquity. The Dominate's increased governmental depth (§ 2.3.1) also created a richer spatial hierarchy within the empire as the central government grouped provinces into dioceses and dioceses into prefectures. Justinian's *quaestor exercitus* illustrates the continued importance of geographic information in imperial strategic thinking. Administratively, the *quaestor exercitus* extracted resources from several economically prosperous and militarily stable provinces from the Aegean and the Eastern Mediterranean, and redistributed them to less prosperous and stable provinces in the Balkans. Additionally, the creation of the *quaestor exercitus* also suggests that the central government possessed enough geographic data to allow strategists to arrive at and implement multiregional strategic plans.

Thus, based on their geo-spatial abilities, it is probable that the imperial administration was able to access, though rather crudely as Whittaker (1994) points out, the marginal costs of imperialism. As a power resource, the state utilized various types of geographic information for the maintenance of imperial authority for both internal (domestic) and external (international) policies. How these processes manifested themselves in Cyprus as it became a contested frontier region and then a neutral condominium over the course of the seventh and eight centuries AD is presented in Chapter 4 (§4.2.2.2 and 4.2.4).

2.5 Chapter summary

Several points emerge from the various themes discussed above. First, individuals and institutions drawn on a varied set of what can be loosely termed “resources” to maintain and expand their scope of available resources (*e.g.* economic, political, geographical), and the way individuals and groups and institutions access, combine and utilize these resources is perhaps the most important difference between the two. Arguably, apart from coercion based on violence, social actors exercise individual power predominantly through various combinations of authority-based resources (like Weber’s (1964) legal, traditional and charismatic authority or personality and property/wealth in Galbraith’s (1986) scheme). Thus, individual social actors and institutions employ qualitatively different conduits in their power maintenance strategies. Second, space, place and built environment are not passive or static backdrops removed from larger social mediations. Rather, the active multifaceted social constructs influence and are influenced by larger social contexts. For example, this is particularly true in the transformation of space to place (see above §2.2.4 to §2.2.5). It is important to note that these processes do not produce a monotone spatial texture, but rather it creates nuanced layers of meaning that accrete over time. These processes operate at multiple scales, which in turn, create nested meanings within a particular landscape (*i.e.* a rural hinterland or an urban landscape).

Among the manifold authoritative landscapes of Late Antiquity, the urban landscape provides a good example of the interplay between the state, institutional church, groups and individuals. In Chapter 4 (§4.2.1.1) of this thesis, some of these facets are explored in a Cypriot context. Nevertheless, the colonization of the urban image by the authoritative spaces of the state was undoubtedly a nuanced process. The so-called administrative cities of the sixth century AD exemplify one particular facet of the Late Antique urban condition in which the needs of the state have usurped both the material and ideological image of the traditional classical urban ideal. In short, cities like Justiniana Prima for example, came to represent nodes in a landscape that overtly represented authoritative space within a larger multi-component and *multilocal* landscape at several spatial scales. Perhaps more importantly, the complexity and *multilocal* character of the Late Antique urban environment is also characteristic of ordinary provincial cites as well. This phenomenon is well illustrated by the Cypriot case study presented in Chapter 4 (§4.3) of this thesis.

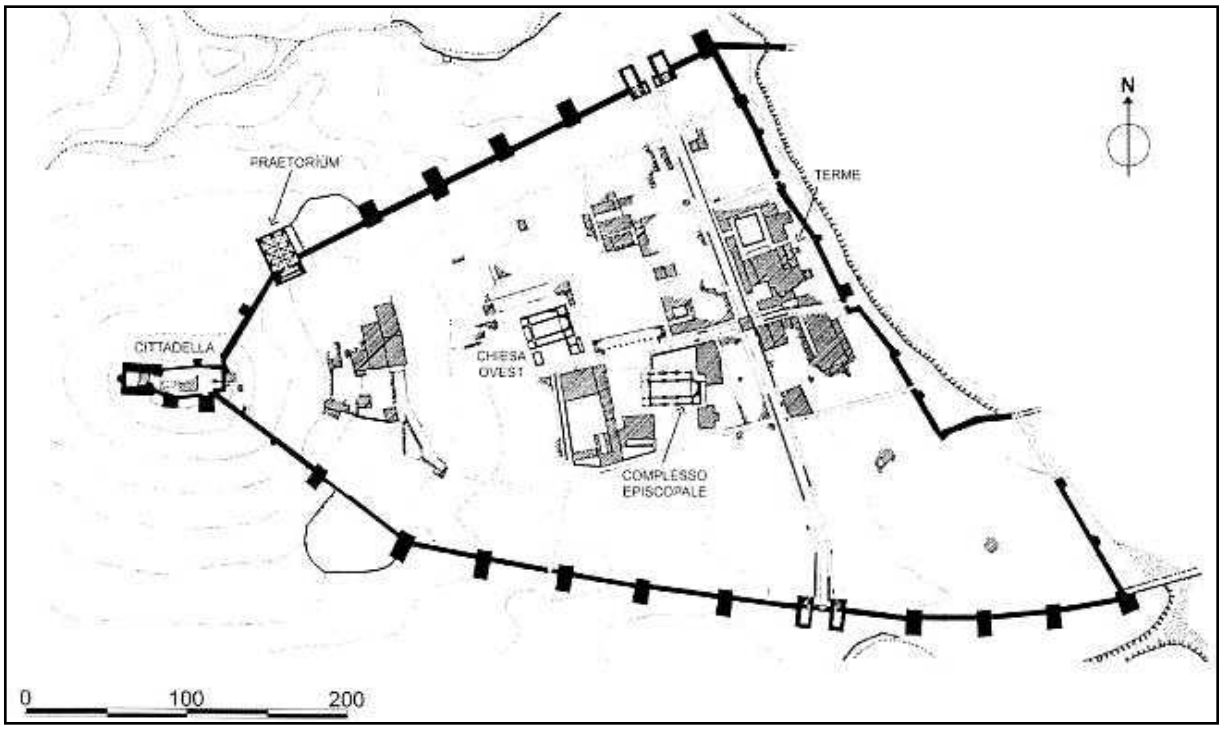

Figure 2.1 Plan of Zenobia (Zanini 2003: 205, figure 3).

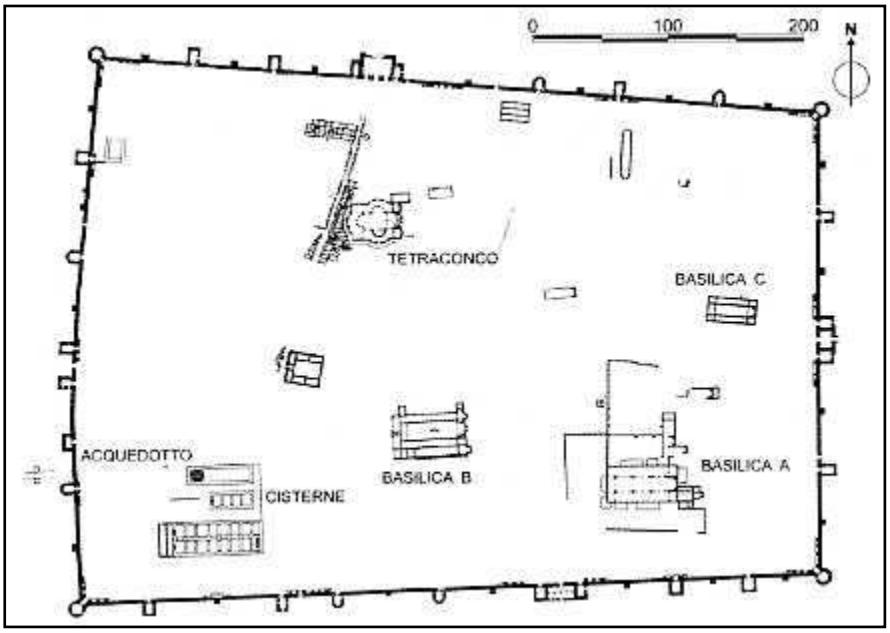

Figure 2.2 Plan of Resafa (Zanini 2003: 207, figure 4).

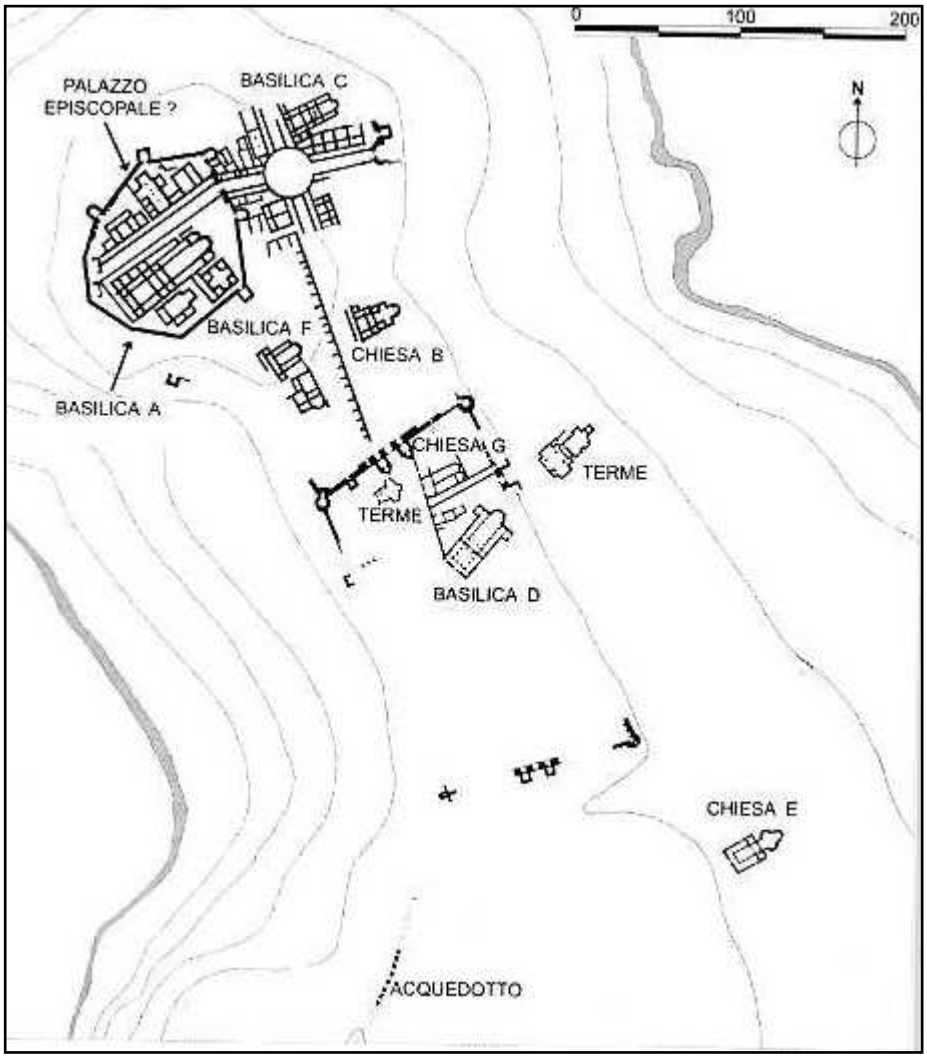

Figure 2.3 Plan of Justiniana Prima (Zanini 2003: 208, figure 5).

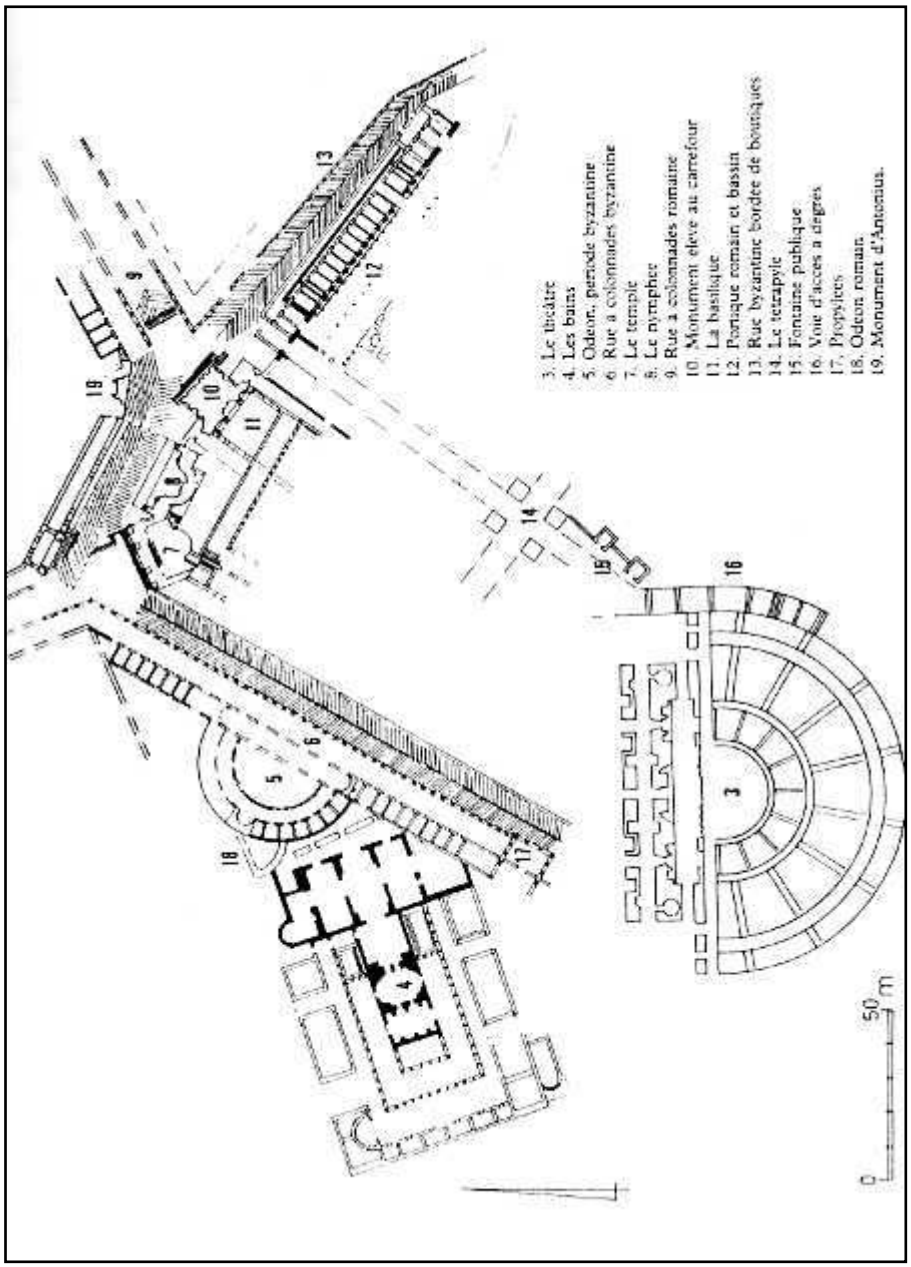

Figure 2.4 Plan of Scythopolis (Tsafrir and Foerster 1994: figure 15).

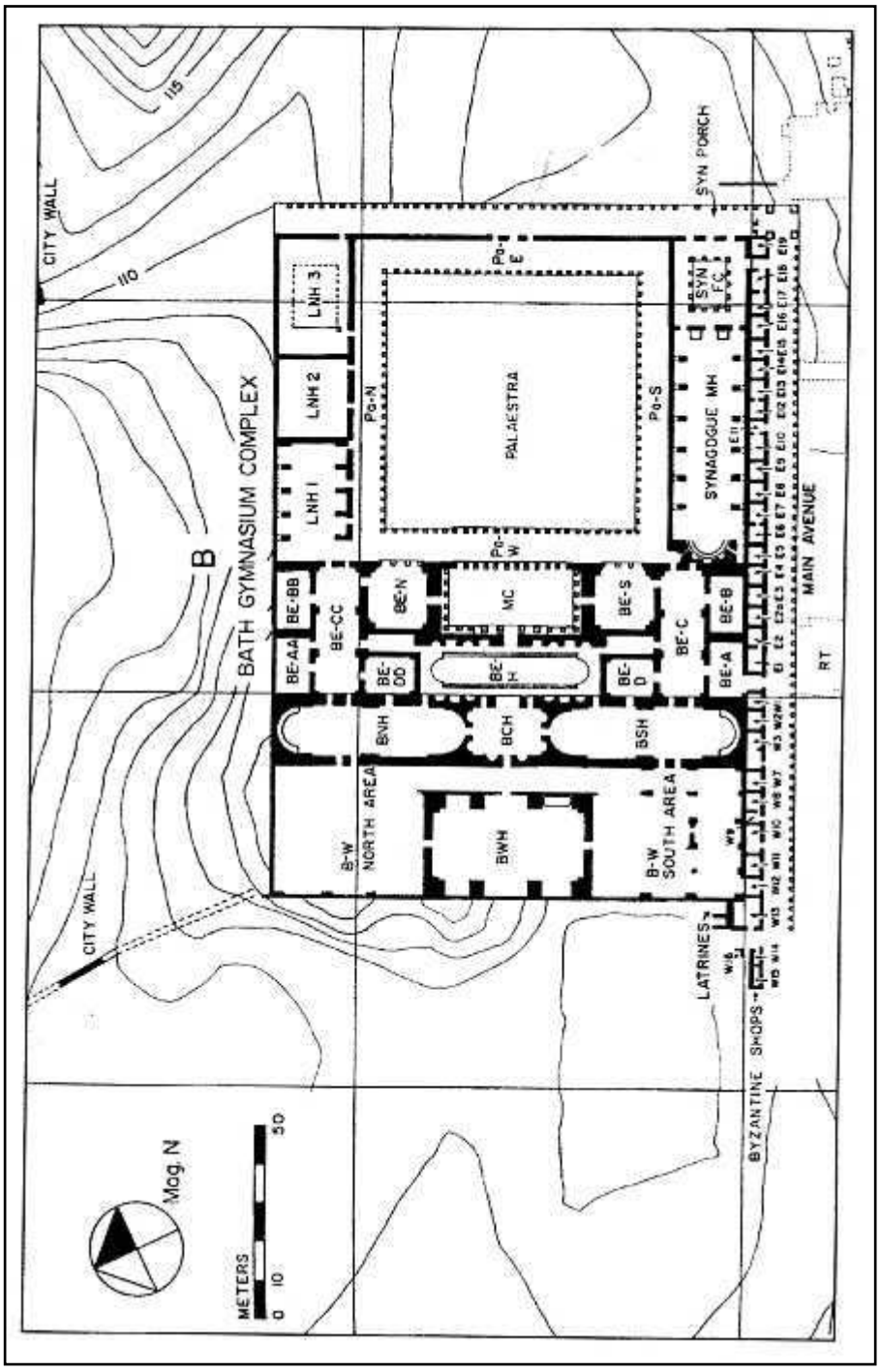

Figure 2.5 Plan of the Byzantine shops at Sardis (Harris 2004:83, figure 4.1).

CHAPTER 3

Environmental Framework: The East Mediterranean and Cypriot Environment

3.1 Chapter introduction

This chapter's main purpose is to provide an environmental context for the Sotira Archaeological Project's (SAP) survey data (presented in Chapter 5). As a result, this chapter explores several eco-historical themes that operate at very different scales, resolutions and trajectories. Although a detailed account of the geology, geomorphology and historical ecology of the lands around the Mediterranean basin is beyond the scope of the present work, section 3.2 introduces several general characteristics of the Mediterranean environment at the macro level. This information in turn provides a broad comparative context with which to view the regional manifestation of the Mediterranean environment on Cyprus presented in section 3.3.

3.2 The Mediterranean environment

Mediterranean-type environments first appear during the Pleistocene and provide a transitional zone between dry and moist environments. Strong seasonal contrasts typify the Mediterranean-type environment: dry hot summers and wet cool winters. The Mediterranean-type climate, with its pronounced seasonal contrasts and low rainfall, is ideally suited for xerophytic vegetation like

"summer-dry evergreen forests, scrub and dry heath" (Roberts 1998: 186). Such Mediterranean-type environments, or Mediterranoid environments, cover approximately one percent of the world's surface area and occur on the European, African, Australia, Asian and both American continents. Despite this seemingly widespread distribution, the lands around the Mediterranean basin contain nearly fifty percent of the total global area. However, the circum Mediterranean basin is far from uniform. Apart from the main east-west division, the plethora of ecotones and terrain types exhibit considerable diversity at both the micro and macro levels[1]. Such diversity makes wide generalizations about geology, geomorphology, topography as well as weather variables like rainfall and temperature exceedingly difficult (Aschmann 1973: 11-19; Di Castri 1981: 1-6; Roberts 1998: 186-7; Roberts *et al* 2001: 631; Geyer 2002: 31-32).

3.2.1 Physical environment

The Mediterranean basin's present configuration took shape during a particularly diverse tectonically active period that started in the late Mesozoic (Cretaceous 144-66.4 mya) and terminated towards the end of the Tertiary (the Pliocene 5.3-1.6 mya)[2]. Tectonic activity during this long period started the processes that eventually transformed and created most of the Mediterranean Basin's first order relief features, or geotexture. As

[1] Crete provides a good example because it possesses characteristics of a mini continent (Moody, Rackham, and Rapp 1996).

[2] Mya = million years ago. Geological time scale divisions are based on Chernicoff (1999:232 fig. 8-33). For additional information relating to the Mediterranean Basin's complex geological evolution, see various articles in Dixon and Robertson (1984) as well as the relevant chapters in Ager (1980).

the North Atlantic Sea formed and its floor started to spread, the super continent Pangea broke apart; moreover, the African and Eurasian plates began to collide and the Tethys Sea floor began to be consumed[3]. The African and European continental plates' subsequent collisions (and possibly other macro and micro plates) created islands (*e.g.* Crete and Rhodes), peninsulas (Italy and Greece) and introduced a period of orogenesis that created the steep fold and thrust mountain systems that characterize much of the basin today (*e.g.* the Alps and Balkans)[4]. Various micro plates (*e.g.* the Anatolian micro plate, the Arabian and Sinai sub-plates), faults (the East Anatolian), arcs (*e.g.* the Cyprus and Cretan) and rifts (the Dead Sea Rift) formed because of these collisions. Additionally, activity along rift, subduction, suture zones and various volcanic mechanisms produced islands as well (*e.g.* Melos and Thera). Although the mountain ranges surrounding the Mediterranean basin might initially appear as monolithic units, various topographic features (*e.g.* corridors, basins and depressions) puncture and subdivide them. Geyer (2000) draws attention to disproportionate distribution of mountains to plains and notes the importance of the latter in regions where they occur (Higgins and

[3] The Atlantic Ocean began to form approximately 190 mya (Higgins and Higgins 1996: 16). The Tethys Sea, a distant ancestor of the modern Mediterranean Sea, was a vast shallow ocean that occupied the area between the super continents Laurasia and Gondwanaland. For more information on the geological contribution of the Tethys to the eastern Mediterranean, see various articles throughout the first four sections of Dixion and Robertson (1984).

[4] The Aegean provides a particularly good representative sample of the geo-processes that has shaped and continues to shape the Mediterranean Basin. For more information, see Higgins and Higgins (1996). Bozkurt (2001) provides a synthesis for Turkey's complex geological history.

Higgins 1996: 16-23; Geyer 2002: 32-33; Garfunkel 1998: 5-6; Bozkurt 2001: 3-6).

By the Miocene (23.7-5.3 mya), the Mediterranean began to attain its current shape[5]. Fabricius and colleagues (1985: 293-298) identify several events that had a basin wide effect; two of the most important these are the Messinian salinity crisis in the late Miocene and the Pliocene revolution. After a fall in overall sea levels or a localized tectonic event which cut off inflow from the Atlantic Ocean, the Mediterranean basin experienced a series of evaporation and sedimentation phases known collectively as the Messinian Salinity Crisis. This important period of sedimentation is responsible for the deposition of poorly consolidated erosional material and various evaporates like marl, limestone and gypsum (Krijgsman *et al* 2001). However, by the Pliocene (5.3-1.6 mya) the Mediterranean basin began to fill back up in an episode known as the Zanclian Refill (Higgins and Higgins 1996: 22-23; Garfunkel 1998: 6-7, 29-30).

The various tectonic and sedimentary phases mentioned above have created a complex lithology across the circum Mediterranean. Yaalon (1997) and Shiel (1999) have identified several common Mediterranean soil types; they are luvisols (chromic, calcic and vertic variants), cambisols, calcisols, vertisols and regosols[6].

[5] For additional information on the sea floor basins of the eastern Mediterranean, see Garfunkel (1998).

[6] These soil types are base on the FAO system. Their equivalents in the USDA system are luvisols = alfisols, cambisols = inceptisols, calcisols = aridisol, vertisols = vertisols, and regosols = orthents/psammats (Gerrard 2000: 115 table 5.5). Shiel (1999), using the USDA classification system mentions entisols, inceptisols and alfisols as the main monocyclic

Additionally, Yaalon (ibid) and Shiel (ibid) point out the importance variables like geology/parent material, topography, climate, aeolian inputs (dust storms, see below), and various biotic factors like long-term anthropogenic activity and vegetation cover have in defining the character and development of Mediterranean soils. A brief description of these important Mediterranean soils is necessary at this point.

Luvisols/alfisols are usually associated with deciduous (especially oak) and coniferous vegetation. They are largely a product of the Holocene and develop on level to gently sloping topography. Luvisols/alfisols commonly form in the transitional zone between arid and humid environments. They range in color from brown to dark brown and often occur over a greyish brown to strong brown argillic B-horizon[7]. Topographical conditions appear to dictate these soils current usage in the Mediterranean region. According to the FAO (2001), when luvisols/alfisols occur on lower slopes and they are predominantly used for growing wheat; on upper slopes, however, they are used for pastoral activities and planted tree crops (Gerrard 2000: 139; USDA 1999: 163-164; FAO 2001: Luvisols; Fanning and Fanning 1989: 267-269).

Mediterranean soil types. Of the three large USDA groupings Shiel (ibid) mentions, entisols equate to several soil types such as arenosols, regosols, leptosols and fluvisols in the FAO system (Gerrard 2000: 115 table 5.5). For a general review of the various taxonomies and their associated problems, see Gerrard (2000: 111-124); additionally, see Rogel *et al* (2001) for a specific Spanish case study in which the existing USDA and FAO classification schemes proved too rigid to be used effectively.

[7] The leaching (eluviation) of clay from higher up the soil column and its accumulation in the lower portion (illuviation) creates argillic horizons within the soil profile (Gerrard 2000: 109, 66-69; Fanning and Fanning 1989: 42-46). For more information on the common terminology used for describing soil profiles, see Rapp and Hill (1998: 31-32).

Cambisols/inceptisols are often associated with deciduous vegetation but they are also capable of supporting an array of vegetation types. Cambisols are mainly a product of the Pleistocene and Holocene periods. Although they occur under a range of topographical conditions, cambisols/inceptisols are common on gentle slopes, slope bases and in areas where developed soils, like luvisols, have eroded away. Cambisols are usually brown in color and have only slight horizon differentiation if any at all; where they occur, B-horizons tend to be fine sands with little clay content. Because soils in this class lack development, they frequently occur in areas with active erosion and/or high deposition environments. The FAO (2001) has classified cambisols as generally productive for use as both agricultural and grazing lands (FAO 2001: cambisols; USDA 1999: 489; Gerrard 2000: 112, 132).

Calcisols/aridisols develop in semi-arid to arid climates on calcareous and evaporate parent materials where rainfall superficially penetrates the soil profile[8]. Soils of this class are associated with xerophytic vegetation. Calcisols tend to be pale brown in color and azonal like cambisols but often develop calcic or petrocalcic horizons at about one meter below surface level. They also have a very low percentage of organic material (1-2%) and can have high salt content. In general, soils of this type are better suited for grazing than for agriculture; however, with proper irrigation, especially in the Mediterranean region, they can become

[8] According to the FAO (2001) gypsisols, solonchaks, solonetzs and durisols are common in semi arid and arid environments as well.

relatively productive (FAO 2001: calcisols; USDA 1999: 329; Gerrard 2000: 111).

Regosols/entisols share several characteristics with cambisols, calcisols and vertisols. Like vertisols, regosols develop on unconsolidated parent material. However, regosols do not possess any diagnostic horizons and frequently occur in areas with high erosion or deposition with other young poorly developed soils like calcisols and cambisols (FAO 2001: regosols; Gerrard 2000: 145-46; USDA 1999: 389).

Vertisols/vertisols are dark colored heavy clay-rich soils that expand and contract seasonally as their moisture content changes. These soils mainly form through the chemical weathering of unconsolidated or poorly consolidated erosion prone materials (like shale, marl, basalt and certain kinds of limestone) on shallow slopes of less than 8 degrees. They occur under a range of climates with distinct wet and dry periods (tropical to Mediterranean) and can support a variety of vegetation types (grass to woodland). According to the FAO (2001), vertisols have limited agricultural value without intensive management because their high clay content makes them difficult to work under both wet winter and dry summer conditions. Additionally, their characteristic seasonal expansions and contractions severely restrict vertisols' engineering potential (USDA 1999: 783; FAO: vertisols; Gerrard 2000: 113).

Perhaps the most well-known and fertile soil in the Mediterranean is terra rossa. Terra rossa soils roughly equate to the various subtypes of cambisols, luvisols and regosols within the

FAO classification system and specifically to feriallitic red soils in Duchaufour's (1983) environmentally based classification system[9]. Terra rossa forms through the chemical weathering of limestone, which produces the clay and iron oxides that provide its characteristic color and texture. In general, the weathering process under dry conditions can be considerably longer than under wet conditions. Thus, terra rossa soils can vary considerably in age. Some terra rossa soils, Duchaufour (1983: 381) points out, are "true palaeosols going back to the early Quaternary or the Tertiary and are distinguished from recent terra rossa by their desaturation and great abundance of kaolinite"[10].

3.2.2 Climate

Four main atmospheric systems help create the dry summers and wet winters that characterize the Mediterranean basin's present weather pattern[11]. The Azores High and the Indo-Persian Low are responsible for the hot and dry conditions that are prevalent throughout the entire Mediterranean basin during summer months. Variable-duration heat waves, ranging from an additional five to fifteen degrees centigrade, are a common feature of summer weather patterns. Such heat waves are particularly common during July and August because of fluctuations in the Subtropical Jet Stream. During

[9] For more information on the mechanics of this classification system, see Duchaufour (1983: 175-181).

[10] Kaolinite is aluminosilicte clay (Gerrard 2000: 204).

[11] For more information on the complex atmospheric systems that contribute to the Mediterranean's present weather and climate, see Wigley and Farmer (1982).

the winter, however, the North Atlantic Low replaces the Azores High while high pressure over northern Europe pushes cool moist air southward into the Mediterranean basin. This influx of cool moist air creates eastward moving cyclonic depressions, which are responsible for the characteristic winter rains that provide approximately 65-70 percent of the total annual precipitation[12]. These winter rainstorms tend to fall as concentrated but erratic bursts rather than as continuous precipitation events. Regional and local topography have a pronounced impact on rainfall. As Grove and Rackham (2000: 27) point out, “it is not easy to separate changes in climate from ordinary fluctuations of weather”. Variation in rainfall and moisture retention has lead Nahal (1981) to divide the Mediterranean climate into six sub-classes ranging from the very arid to the super humid[13]. It is important to note that a single region or country can have multiple climate types. Nahal (1981: 73-78) points out that while summer drought conditions and winter peak rainfall is the most common precipitation pattern throughout the Mediterranean basin, it should not be regarded as a universal condition[14]. Similarly, Geyer (2002) divided the Mediterranean’s climate into two main subgroups based on latitude. This division essentially equates to a distinction between the northern and

[12] Grove and Rackham (2000: 26) mention the Gulf of Genoa, the Northern Adriatic, Gulf of Lions, the sea west of Crete and the sea west of Cyprus as regions of storm genesis within the Mediterranean basin.

[13] Nahal’s (1981: 68) Mediterranean climate classes are (1) Saharan or very arid, (2) arid, (3) semi-arid, (4) sub-humid, (5) Humid and (6) super Humid.

[14] The variation centers on the main rainy season’s fluctuations between winter, spring and autumn (Nahal 1981: 73-74).

southern portions of the basin. The regions in the southern group have one peak rainy season in winter; the northern group has two, one in autumn and a second in spring (Aschmann 1973: 11-12; Di Castri 1981: 1-3; Nahal 1981: 68-70; Grove 1996: 13; Grove and Rackham 2000: 23-25; Shiel 1999: 69-70; Geyer 2002: 34-35).

Extreme storm events, or “meteorological bombs”, often occur during the winter months in addition to the normal seasonal storm activity[15]. Very strong winds and intense precipitation are characteristic of these extreme storms. A recent study by Conte and colleagues (2002) has shown that this phenomenon is quite common in the central Mediterranean but less so in the Aegean and the eastern Mediterranean[16]. Additionally, hot dry air from the Sahara known as the Sirocco wind can generate large dust storms in spring that are capable of transporting sediment many thousands of kilometres[17]. Grove and Rackham (2000: 29) have estimated that dust storm deposit approximately 0.1-1 ton of sediment per hectare annually on Crete (Grove and Rackham 2000: 25-230; Conte *et al* 2002: 16-20 and fig 2.1; Shiel 1999: 69-70; Mc Neill 1992: 15-16).

[15] A meteorological bomb is a depression characterized by a pressure fall-off of $1hPAH^{-1}$ or more that lasts for more than twenty-four hours (Conte *et al* 2002: 16).

[16] Of the 101 “bomb events” recorded between 1965 and 1995 studied by Conte *et al* (2002: especially fig 2.1), only four occurred in the eastern Mediterranean.

[17] Dust storms have been a regular feature of the Mediterranean basin since the Pleistocene (Grove and Rackham 2000: 29).

3.2.3 Vegetation

Apart from olive, carob, cultivated crops and other various tree types, evergreen shrubs (maquis) and their tree forms, succulents, various gray-green undershrubs (phrygania) and grasses (steppe) are the basic components of the Mediterranean's vegetation profile[18]. Most plants composing maquis formations have developed physiological adaptations which have helped them deal with drought stress like sclerophyll (hard) leaves with a small pore to leaf ratio (reduceing transpiration), stiff upper branches and deep root systems. Plants composing phrygania formations have adapted to the same stresses differently, however. These plants tend to be seasonally dimorphic (lose leave and branches seasonally in order to reduce transpiration) and have shallow root systems. Annual grasses, in contrast, tend to remain in seed form during the dry months (Espigares and Peco 1995: 135). Some researchers (McNeil 1992; Shiel 1999; Quézel 1981) have drawn a distinction between Phrygania on silicacious soils and Maquis on calcareous soils while others (Di castri 1981; Grove and Rackham 2000) have noted that both vegetation types often appear on either substratum. Grove and Rackham (2000: 48; 55) point out that without human influence, maquis shrubs will become trees but phrygania undershrubs become grass steppe. However, Rackham (1982: 189), using Boeotia as an example, suggests even without grazing "the country would not turn into continuous forests in the present climate" but rather a mosaic of steppe and forests

[18] Common maquis are Holm oak, lentisk, cistus, juniper and kermes oak; common phrygania are lavender, sage and rosemary (Mc Neill 1992: 17-18). For a detailed East Mediterranean regional case study, see Rackham (1983).

(Di Castri 1981: 1-3; Rackham 1982: 186-9; McNeil 1992: 17; Shiel 1999: 71-77; Quézel 1981: 115; Grove and Rackham 2000:48-55).

Quézel (1981: 115-16) mentions several visible changes in the character of the vegetation when moving from the western to eastern Mediterranean. Two of the more important changes centre on an increase in evergreen nanophanerophyites and in the floristic richness of maquis and phrygia. Grove and Rackham (2000: 57-58) also draw a contrast between maquis, phrygia and steppe's relatively separate distributions in the western Mediterranean in contrast to their mosaic-like pattern in the eastern Mediterranean (Grove and Rackham 2000: 48-56; Rackham 1982: 183-189; Di Castri 1981: 1-3; Quézel 1981: 115-117).

Fire also plays a prominent role in Mediterranean-type vegetation ecosystems. Many plants commonly found throughout the circum- Mediterranean are rich in essential oils and resins, which make them naturally inflammable. Furthermore, these plants possess certain adaptations that allow them to survive in such a fire prone environment. Common adaptations among the various trees and their associated maquis consist of thick insulating bark, the ability to regenerate from the root and the use of fire as a reproductive trigger. Nevertheless, periodic fires serve to curtail the encroachment of non-fire resistant species as well as increase the biodiversity in recently burned areas. Periodic fires also reduce a given area's fuel levels. Reduced fuel budgets lower fire intensity, which in turn increases the local vegetation's ability to survive subsequent conflagrations. However, when it occurs too frequently in

one area, whether by anthropogenic or natural agencies, fire will impair the local vegetation's ability to regenerate as well as lower biodiversity (Grove and Rackham 2000: 218-38; Núñez and Calvo 2000: 183-190).

The amount of precipitation along with the soil's nutrient content and moisture retention properties greatly influence any region's vegetation profile (Rackham 1982; Nahal 1981; Di Castri 1981; Shiel: 1999; Kooijman *et al* 2005). While acknowledging the importance of soil nutrients, Nahal (1981) advocates a classification system based on the climatic subdivisions mentioned above for describing Mediterranean and Mediterranoid vegetation ecosystems. A system based on climatic-precipitation characteristics is necessary, according to Nahal (ibid), because moisture availability is the main stress factor that limits vegetation development[19]. Pons and Quézel (1998: 756), however, suggest that the way in which plants utilize the local soils' summer moisture budget is the main stress factor. However, Di Castri (1981:4) notes that oligotropic (nutrient poor) soils tend to produce heath land and eutrophic soils (nutrient rich) tend to allow greater vegetal development. Nevertheless, the results of a recent study of evergreen woodland in Catalonia's coastal mountain region conducted by Kooijman and colleagues (Kooijman *et al* 2004) found that a soil's parent material and its nutrient content are key variables in determining vegetation development. They (ibid) suggest that this

[19] "…the origin of rain is of no concern to the life of plants; what influences them is the amount of rainfall and its seasonal distribution" (Nahal 1981: 63).

indicates Mediterranean plant ecosystems operate under complex conditions with multiple shifting stresses (Rackham 1982: 183-189; Di Castri 1981: 1-3; Quézel 1981: 115-117; Nahal 1981: 68-78; Kooijman *et al* 2005; Pons and Quézel 1998: 755-756).

3.2.4 Environmental stability and instability

Environmental stability and instability in the Mediterranean region during the Holocene has been and continues to be an actively debated topic[20]. Several disciplines such as historical ecology, geology, palynology and geomorphology, which are the most familiar to archaeologists and historians, are actively contributing to the subject's refinement and have become regular components of many modern interdisciplinary archaeological survey projects throughout the Mediterranean[21]. Additionally, archaeologists are beginning to exploit proxy data derived from oceanography (isotope analysis and deep sea coring, for example), seismology, and atmospheric and planetary sciences for the reconstruction of past Mediterranean environments. Advances in archeo-scientific techniques continue to contribute new data and refine existing data on the subject as well.

3.2.4.1 Erosion and tectonics

The most common image of the Mediterranean is one of bare mountains contrasted by valleys rich in alluvial and colluvial

[20] See, for example, Bintliff and Van Zeist (1982), Bell and Boardman (1992) and Bottema *et al* (1990).

[21] Rapp and Hill (1998: 1-18(chapter 1)) introduce the history and uses of earth science approaches in archaeological interpretation in a very concise manner.

deposits. This image is the product of erosion and environmental instability[22]. As mentioned above in section 3.2, two (Regosols and Cambisols) of the five most frequently occurring Mediterranean soil types are primarily associated with active erosion and deposition contexts[23]. However, this is not to suggest that erosion is a uniform process throughout the Mediterranean. Erosion rates can vary considerably at the intra and inter-regional scales because of differences in cultural trajectories and physical characteristics like geology and relief. An example from two locations in Greece, the Argolid (southern Argolid and Argive plain) and Thessaly (Larissa plain), clearly illustrate the first point. The Argive and Larissa plains both have their highest erosion levels during the Bronze Age in contrast to the southern Argolid's peak in the Hellenistic-Roman period[24]. Brückner's (1990: 131) work in southern Attica and Roberts's (1990: 63-64) work in southwest Turkey illustrate the second point because in both cases the scale of erosion varied along with the differences in geology and relief within each study area (Brückner 1990: 127-128, 131-133; van Andel

[22] Closely related to this topic are the formation processes of the archaeological record. For more information relating to natural formation processes, see various chapters in part III of Schiffer (1987) as well as chapter 3 in Rapp and Hill (1998: 50-84).

[23] See Cerdà (1998) for a specialized study that covers several Mediterranean countries and focuses on modern erosion rates in relation to sediments/soils on limestone parent material in which anthropogenic and climatic factors both contributed to the erosion process. See Thornes and Alcántara-Ayala (1998) for a study on mass failure in the Alpujarras region (Southeast Spain), which focuses on hydrological controls.

[24] The Southern Argolid is a peninsula and the Argive plain is a coastal basin; both differ in their cultural trajectories and geomorphology despite their close proximity to one another. For a different interpretation of the evidence from the Southern Argolid, see Bintliff (1977) (van Andel and Zangger 1990: 141, 145, 151).

and Zangger 1990: 141-148,152; van Andel *et al* 1990: 380-381, 389-390; Zangger 1993: 83-84; Roberts 1990: 62-64; 189-191).

Recently, several reviews (Bintliff 1992, 2002; van Andel *et al* 1990) have discussed the various frameworks used to model erosion in the Mediterranean region over the last three decades. Bintliff (1992) has divided the conceptual development of erosional studies in the Mediterranean region into six stages, which start with interpretations based on Vita-Finzi's model and end with the wide scale acceptance of Van Alden's paradigm. In an attempt to establish a Basin-wide synthesis and chronology, Vita-Finzi (1968) adopted a generalized approach that rejected the idea of progressive landscape degradation and reduced the valley sediments to either "Younger Fill" or "Older Fill". Vita-Finzi interpreted the "Younger Fill" as largely the product of landscape instability in the post Roman period, a period spanning approximately one thousand years, while the "Older Fill" was the product of erosion episodes during the Pleistocene and early Holocene[25]. Within Vita-Finzi's model, climatic fluctuations serve as the main catalysts for these erosional phases; anthropogenic factors become passive components and a secondary consideration within the model[26] (Bintliff 2002: 417-418; Bintliff 1992: 125-126; Van Andel and Zangger 1990: 140-141; Zangger 1992: 134-135; Wagstaff 1981: 253-255, 258-259).

[25] The 'Younger Fill' consists of a well-bedded buff to grey silty fine sand often with lenses of sub/rounded gravel lenses. The 'Older Fill', in contrast, is poorly bedded and red/reddish in color (Wagstaff 1981: 247-248).

[26] For an early application of Vita-Finzi's model, see Bintliff (1977). However, Wagstaff (1981) considers Bintliff (1977) to be an example of the uncritical acceptance of Vita-Finzi's model.

Butzer (1969) highlighted a number of problems with Vita-Finzi's model. Butzer (*ibid*) argued that the evidence did not have the necessary quality to support the generalized conclusions Vita-Finzi (1968) had reached about both the 'Older fill' and 'Younger fill' in *The Mediterranean Valleys*. Butzer believes that Vita-Finzi's simplified sequence only masked a considerably more complex deposition history. Similarly, Wagstaff (1981: 253) viewed the chronological diversity as suggesting an "anthropogenic explanation cannot be ruled out". Additionally, Wagstaff (1981: 260) points out that there is a lack of distinction between colluviums and alluviums in some earlier works dealing with the sequence and chronology of the 'Younger Fills'[27]. However, during the 1980's detailed geomorphological research coupled with intensive archaeological survey began to reveal that erosion in the Mediterranean was in fact much more complex than Vita-Finzi's model allowed (van Andel and Zangger 1990: 141; van Andel *et al* 1990: 380; Zangger 1992: 133; Butzer 1980: 137-138).

In the current, but not universally accepted model, which Bintliff (2002) termed "van-Andel-ism" (as opposed to "Vita-Finzi-ism"), human agency is the key factor in the erosional process[28]. Thus, the fundamental difference between what Bintliff (2002: 420) has termed "Vita-Finzi-ism" and "van-Andel-ism" lies in the artificial dichotomy between a natural (Vita-Finzi) and anthropogenic impetus (van Andel) for the various Mediterranean

[27] Wagstaff (1981) mentions Bintliff's (1977) work in particular.

[28] See for example, Grove and Rackham's (2000) recent assertion of climatically induced triggers for erosion.

Holocene erosion episodes. A second feature of this model is the emphasis on linking the various erosion episodes in a given area with a corresponding cultural period[29]. Bintliff (2002: 420-421) has criticized both 'Vita-Finzi-ism' and 'Van Andel-ism' for employing a monocausal interpretative framework. Instead of a moncausal model, Bintliff (*ibid*) suggests adopting an approach that (1) allows for the interplay of both anthropogenic and environmental variables in the erosional process and (2) rebalances the concept of a pronounced human dominance over nature in the late Holocene. However, the concept of interplay between anthropogenic and natural variables is not new. Wilkinson (1999) adopted this type of approach for a study of Southern Turkey and Northwest Syria's valley fills. Roberts (1998: 191) has suggested "historical soil erosion was a combined product of natural and cultural forces"; similarly, Zangger's (1992: 135) work in the Berbati Valley has led him to conclude "human-induced clearance of the natural vegetation on meta-stable slopes represents the most likely trigger of soil erosion". Additionally, Bintliff (*ibid*) takes issue with these erosion events' timing and duration by favoring a punctuated equilibrium model and by calling into question what constitutes the natural erosion levels in the circum Mediterranean. Bintliff's (*ibid*) punctuated equilibrium model shares some characteristics with what Roberts (1990: 56-57), citing Oldfield (1983), refers to as metastable steady states[30]. Also

[29] For a classic example of this approach, see Van Andel *et al* (1986). Bintliff (2002) has criticized the proponents of the van Andel paradigm for constructing circular arguments.

[30] Roberts' (1990) uses Oldfield (1983) for the interpretation of vegetation history.

associated with this approach are the affects of small climate shifts and their subsequent affect on anthropogenic landscapes (Bintliff 2002: 419-420; Bintliff 1992: 127-128; Butzer 1969: 52-53; Van Andel and Zangger 1990: 140-141; Zangger 1992: 135-136; Wagstaff 1981: 258-261; Roberts 1990: 56-57; Roberts 1998: 190-192).

As mentioned above in section 3.2.1, the Mediterranean basin's present configuration developed over the course of several million years in a tectonically active era of the geologic past. The collisions and splintering of the European, African and various micro plates (like the Arabian and the Anatolian) created a network of faults, rifts and arcs that crisscross the Mediterranean Sea's floor as well as the lands of the circum-Mediterranean. Although often operating under different trigger mechanisms and on dissimilar timescales from the erosion episodes, tectonic and seismic activities have been an important source of environmental instability in the Mediterranean region throughout the Holocene. Of particular interest is a period of tectonic activity and instability spanning the fourth to sixth centuries AD known as the Early Byzantine Tectonic Paroxysm, or the EBTP (Pirazzoli 1986). The tectonic activity that occurred during this period has left a series of geomorphic and archaeological traces such as raised beaches, sea notches, submerged shorelines, numerous literary references, inscriptions, destroyed buildings and the evidence for the repair of

damaged buildings distributed across the eastern Mediterranean (Pirazzoli *et al* 1996; Stiros 2001)[31].

The high frequency and distribution of these geomorphic features has led some researchers (*i.e.* Pirazzoli 1986) to conclude they are the result of a major interrelated tectonic event during the paroxysm period in which the main fault systems in the eastern Mediterranean became active almost simultaneously. Others (*i.e.* Stiros 2001), after reviewing the evidence in conjunction with archaeological and historical data for the period, believe that the evidence does not fully support the interrelated fault reactivation thesis but suggests a series of tectonic bursts throughout the period instead. In relation to the apparent fluctuating cultural trajectories recorded in the region during this period, Guidoboni and colleagues (1994) have reasonably suggested that seismic activity alone should not be attributed to large breaks in cultural continuity.

[31] The Cretan landscape has some of the most striking examples of these geomorphic indicators; see Pirazzoli (1986: 33-35) along with Grove and Rackham (2000) for more information. Pirazzoli *et al* (1991)(Orontes Delta) and Leroy *et al* (2002)(Lake Manyas, northwest Turkey) provide more examples of coastal uplift because of seismic/tectonic activity. For a detailed discussion of the geomorphologic indicators of coastal uplift, see Pirazzoli *et al* (1996). More recently, Stiros (2001) provides a good introduction and a very useful compilation of the key available archaeological and textual sources on the Early Byzantine Tectonic Paroxysm. Additionally, Flemming and Webb (1986) provide a discussion and statistical analysis of tectonics and eustatic coastal changes in the Mediterranean. Hancock and Altunel (1997) explore the impact of faulting on Hierapolis's (in Turkey) architectural remains. Additionally, various articles in Stiros and Jones (1996) provide detailed examples relating to archaeoseismology and geological disasters.

3.2.4.2 Changes in climate

A number of natural variables are capable of causing large scale (global) and abrupt climatic changes. For example, influxes of volcanic aerosols, fluctuations in North Atlantic Oscillation, movements of the Inter Tropical Convergence Zone (ITCZ), the Croll-Milankovitch Cycle (which causes variations in the earth's albedo) and sunspot activity all can contribute to climatic instability. Changes in hydrological inputs such as the increased fresh water entering the oceans from melting glaciers and increased river inflow during periods of hight precipitation, as well as deforestation, can have a direct impact on climate. However, the Holocene climate's general development is accessible through historical sources (when they are available) and the analysis of various types of environmental proxy data (Schilman *et al* 2001: 161-165, 168-169; Roberts 1998: 88-93)[32].

Based on the analysis of data from fifty paleoclimate sites distributed across the world, Mayewski and colleagues (Mayewski *et al* 2004) have identified several major worldwide Holocene climatic

[32] Some well-known sources of climatic proxy data come from the study of ocean and lake sediments, soil types and their development, sapropels (organic rich marine deposits), speleothems (cave deposits), various types of isotopic analysis (from terrestrial, marine and ice core sources), fossil pollen, dendrochronological, and historical sources (particularly for the later Holocene). An introductory review of various dating, palaeoecological, geological techniques used in environmental reconstruction is available in Roberts (1998: 7-21, 21-30, 30-39 respectively (chapter 2)). McDermott (1999) provides a review dealing with the analysis of stable isotopes from speleothems. For a general review of dendrochronology in climate reconstruction, see Martinelli (2004). Although dealing with a much earlier period (the Neogene), Cramp and O'Sullivan (1999) provide basic information on the study and interpretation of sapropels; De Lange *et al* (1999: 371-373) provide useful information on sapropels also.

phases, which start at the end of the last glacial maximum (LGM) and end with the inception of the modern climate in the mid-nineteenth century AD. However, they (Mayewski *et al* 2004: 252, and 249 fig 5) note these phases have produced both temporally and spatially heterogeneous results[33]. From a broad Euro-centric perspective, the warm period that followed the last glacial maximum lasted for about two thousand years. A thousand year long cold period known as Younger Dryas followed this initial warm up. The colder climate of the Younger Dryas began to warm gradually over the next several thousand years and culminated in the mid-Holocene maximum (between 6000-5000 BP). Following the mid-Holocene maximum, the climate underwent several fluctuations and during the classical Greek and Roman periods (500BC-500AD approximately), despite the general cooling trend, a second climatic optimum occurred. After several centuries of fluctuating conditions along with episodes of glacial advance and retreat, relatively warmer and moist conditions prevailed again during the next phase known as the Mediaeval Warm

[33] The calibrated dates in years before present (BP) for these events are 9000-8000, 6000-5000, 4200-3800, 3500-2500, 1200-1000 and 600-150 (Mayewski *et al* 2004). However, an older model (Blytt-Sernander model) based on peat stratigraphy has five main divisions for the Holocene; they are the Pre-Boreal (10000-9500), Boreal (9500-7000), Atlantic (7000-5000), Sub-Boreal (5000-2500) and the Sub-Atlantic (2500-present) (Roberts 1998: 88). Lamb (1977; 1995), though slightly dated, still provides very useful information and a good starting point for the climatic change, especially in pulling together the available historical information for the classical period through the mediaeval period. More recently, Roberts' (1998) synthetic account of the Holocene's environmental history introduces the subject at the global level in a manageable way. Apart from detailed data on the Little Ice Age, Grove (1988) also has valuable information on the possible causes of Holocene glacial cycles (chapter 10), which provide information on the climatic system as well.

Period or MWP (800–1200 AD approximately)[34]. Hughes and Diaz (1994) have provided a critical review of the historical and proxy data relating to the Medieval Warm Period in which they conclude that the available evidence is still not of a high enough resolution to support the warming phenomena at the global scale. Rather, they suggest that "the time interval known as the *Medieval Warm Period* from the ninth to perhaps the mid-fifteenth century AD may have been associated with warmer conditions than those prevailing over the next five centuries (including the twentieth century), at least during some seasons of the year in some regions". By the fourteenth century AD, however, the climate entered into a severe period known as the Little Ice Age. Cold and moist conditions in conjunction with episodes of glacial re-advance characterize this period[35]. However, the modern climatic patterns began to emerge and replace the Little Ice Age's by around the mid-nineteenth century AD (Lamb 1977: 435, Grove 1988; Roberts 1998: 88-92; Grove and Switsur 1994: 149-155).

It is important to note that these global changes were not synchronous and often had differential manifestations within the lands of the circum-Mediterranean. For example, although moisture levels were higher in the eastern Mediterranean during the early and middle Holocene, after the cold and aridity of the Younger Dryas, some researchers (*e.g.* Rossignol-Strick 1995; 1999) have suggested

[34] Additional information on the evidence for climatic change during the Medieval Warm Period see various articles in Hughes and Diaz (eds) (1994) and in particular Grove and Switsur (1994: 149-157) for information on the data derived from glaciers in Europe (the Swiss Alps especially).

[35] For more recent information on the LIA, see various articles in *Climatic Change* 48(1)2001.

that dry summer conditions characterised the circum-Mediterranean's climatic regime while others (*i.e.* Roberts *et al* 2001b) believe that summer condition during this period were not dry, but were moist. Interestingly, Jalut and colleagues' (Jalut *et al* 1997; 2000) research in the western Mediterranean has identified a pattern that indicates the Mediterranean-type climate's advance was a gradual process that cycled between true Mediterranean and sub-Mediterranean climates. Perhaps more importantly, their identification of six aridification phases at 10900-9700 cal BP, 8400-7600 cal BP, 5300-4200 cal BP, 4300-3400 cal BP, 2850-1730 cal BP and 1300-750 cal BP clearly illustrate the climate's unstable character during both the early and late Holocene in this part of the circum-Mediterranean[36]. However, summer drought associated with Mediterranean climate reached 41°30N-44°N by 2870 cal BP (920calBC)(Jalut *et al* 1997: 331-333; Jalut *et al* 2000: 284-285; Rosiggnol–Strick 1995: 913-914; Rossignol-Strick 1999: 528; Mangy *et al* 2002: 47-48)

Despite these discrepancies, several broad trends are observable for the eastern Mediterranean. Throughout the early-mid Holocene, the climate was less arid than at present and may have lacked a pronounced summer dry period. A northern shift of the Inter Tropical Convergences Zone (ITCZ) appears to have been responsible for introducing increased moisture into the region during this period. By the start of the late Holocene variations in the Croll-Milankovitch cycle increased the northern hemisphere's solar

[36] We can convert these calibrated ^{14}C dates into calendar BC/AD dates by subtracting them from 1950 AD. Thus, we arrive at 8950-7750CalBC, 6450-5650calBC, 3350-2250calBC, 2350-1450CalBC, 900CalBC-220CalAD and 650-1200CalAD respectively.

radiation input by as much as eight percent which resulted in a return to arid conditions (Roberts 1998: 90; Roberts *et al* 2001b: 734). Some researchers (*e.g.* deMenocal 2001: 668) have suggested that up to 40-60 percent of the temperature fluctuations over the last one thousand years are the result of "solar irradiance and volcanism". For the late Holocene, several researchers (Lamb 1977, 1985; Geyer 2000; Reale and Dirmeyer 2000, Reale and Shukla 2000; Issar 1998) have characterized the general climatic conditions in the Mediterranean during the Classical and Roman periods as considerably moister and benign in comparison to the present regime (sub-Atlantic period in north west Europe). By the beginning of Late Antiquity, however, the climate appears to have entered into a phase of instability which is believed to have replaced the preceding period's milder climate with cool and wet conditions (Geyer 2002: 42-42). There is, however, evidence to suggest that these conditions were not universal (see section 3.2.5). This situation lasted for approximately several centuries. Although some regions may actually have become slightly more arid, relatively "wetter regional conditions probably occurred all over the Middle East region" during the Medieval climatic Optimum (Schilman *et al* 2001: 169)[37]. Despite the general trend towards warmer temperatures, Pfister and colleagues (1998: 547-549) note that cold anomalies, some as severe as the LIA, were also part of the climatic regime during the MWP in Europe. On the one hand, Telelis (2000: 232)

[37] Also, Hughes and Diaz (1994: 130-131) suggest that no warming occurred in the Mediterranean during the mid-fourteenth century.

believes that the MWP was “a phenomenon of northern and north-western Europe rather than of southern Europe”. On the other hand, the cold and wet conditions associated with the Little Ice Age in Europe appear to have produced similar conditions in the Mediterranean, which experienced an in increase in moisture, a drop in temperature and oscillations before the modern climate’s inception during the nineteenth century[38]. Thus, in very broad terms we can group the eastern Mediterranean’s Holocene climate into two large phases: a moist early-mid phase and a relatively dryer and perhaps less stable later phase (Schilman *et al* 2001: 168-169; Roberts 1998: 89-90; Magny *et al* 2002: 52-53; Lamb 1985; Geyer 2001: 41-43; Real 2000a; Issar 1998: 125-126; Telelis 2000: 231-232; Grove and Rackham 2000: 139-140).

3.2.4.3 Changes in vegetation

Unsurprisingly, there is a broad two-fold division between the early-mid and late Holocene vegetation history in the circum Mediterranean. The early Holocene vegetation pattern of sub-humid forests primarily composed of broad-leaved deciduous trees and conifers replaced the late Pleistocene pattern of herb-dominated steppe at about 14000BP. The xeric vegetation that characterizes the Mediterranean today, a rather small component of early-mid Holocene woodlands and forests, only emerged as the main vegetational type in the late Holocene at around 5000BP. These transitions’ dates often vary regionally across the circum-

[38] Issar (1998: 125) suggest that the around “500-100 BP, the climate was colder and probably more humid in the Mediterranean region”.

Mediterranean. However, much like the debate surrounding erosion in the Mediterranean, researchers have presented models with strong anthropogenic, climatic and combined components for the development of the region's vegetation. The main debate centres on the mechanisms that triggered the transformation from the early/mid to late vegetational pattern (Roberts 1998: 186-192; Roberts *et al* 2001: 632-633; Behre 1990: 219-221; Eastwood *et al* 1999: 671; Magney *et al* 2002: 47-48; Wilkinson 2005: 15).

3.2.5 The East Mediterranean climate during the 6th-8th centuries AD

From the above cursory review, it is possible to conclude that the Mediterranean's Holocene climate varied greatly over time and space. Unfortunately, the sixth through eight centuries AD is an opaque period in the east Mediterranean's climatic history in general and for Cyprus in particular (see §3.3.5). However, as mentioned above, Geyer (2002) believes that the advance of European glaciers points toward colder and possibly moist conditions in the east Mediterranean until the start of the MWP in the ninth century AD. Proxy data from the eastern Mediterranean, on the other hand, suggest a certain degree of regional diversity.

Telelis' (2004) recent analysis of the available Byzantine narrative historical material, which discusses climatic fluctuations from the fourth to the fifteenth centuries, has identified several broad climatic trends in the historical data[39]. According to Telelis

[39] Also, see Telelis and Chrysos' (1992: 19-21, 26-38) review and classification of the Byzantine historical sources and their limitations. In their opinion, chronographers are the most useful source available for

(2004) the fourth to approximately the seventh century AD exhibited a general trend toward arid conditions. Koder (1997: 275) reports that famines often followed particularly cold and dry winters during the early sixth century (515-520, 523-538, 542 and 545 AD)[40]. These conditions stand in contrast to the preceding period's mild and humid climate, which some researchers have suggested characterize the early Roman period. The latter part of our period of interest (sixth to eighth centuries AD) overlaps slightly with a period characterized by Telelis (2004) as relatively humid, cold and interspersed with arid episodes, which lasted from the eighth to the thirteenth century AD. It is during the earlier part of this period (the eighth century AD), for example, that two main historical sources (Theophanes and Patriarch Nicephoros) record an exceptionally severe winter in 763/764AD in which both the Black Sea and the Bosphorous froze over (Telelis 2004: 874-875; Telelis and Chrysos 1992: 20-21, 28-29; Telelis 2000: 228-233)[41]. Additionally, Stathakopoulos's (2004: 54, table 3.2) analysis of the historical sources, which discuss subsistence crises from the fourth to eight

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climatic information followed by historians, church historians and saints' lives. Despite this, they have concluded that the Byzantine historical sources are better suited for a supporting role in the reconstruction of past climate. At this point, we can consider the cautionary points suggested by Bryson and Padoch (1981) for the use of historical sources in climatic reconstructions. The two main problems are "compound parameters" and what they have called the "data filter of human recollection" (Bryson and Padoch 1981: 5-6). Salvesen (1992: 226) also notes that often individuals will fail to recognize gradual climatic changes; more importantly, they can cognize and react to conditions which may be actual, potential, past or present occurrences in a variety of ways.

[40] Koder (1997) uses the then-unpublished material from Telelis' catalogue.

[41] Pfister and colleagues (1998: 541-542) have described the period between 750-1000AD as one characterized by cold anomalies.

centuries, has found that 31 out of 81 surviving occurrences, or roughly 37 percent, were the direct result of drought.

Several proxy environmental sites from Israel exemplify the Late Roman-Early Byzantine climate's diverse regional manifestation in the eastern Mediterranean as well as the proxy data's problematic nature. Based on rises and falls of the Dead Sea, Issar (1998) identified warmer and dry conditions in the third and fourth centuries AD (17000-1800BP) and the eighth to eleventh centuries AD (1300-1000BP). Bookman and colleagues (Bookman *et al* 2004: 568; fig. 8A) provide an up to date synthetic curve for the Dead Sea's Levels over the past several thousand years that indicates the Dead Sea's level declined from the first through the fourth centuries AD. However, the Dead Sea's trend toward lower levels reversed after the fourth century AD as indicated by a high level in the mid fifth century AD. During the sixth, seventh and eighth centuries AD, however, their curve indicates that the Dead Sea's level was in a state of decline which peaked in the ninth century AD. Both Enzel and colleagues (Enzel *et al* 2003: 256, fig. 2A, 268) and Netser (1998: 133, fig. 7.1) have accepted the interpretation of a steady decline in the Dead Sea's level during the period spanning the sixth to ninth centuries AD. Thus, data derived from the fluctuations in the Dead Sea's level indicates that the Levant's climate during the Roman-Byzantine period was comparatively cool and moist but also, perhaps more importantly, it was unstable. The subsequent Arab period, in contrast, was a comparatively dry and arid one based on these data.

On the other hand, Schilman and colleagues (Schilman *et al* 2001: 168-169,172) analysis of two sea cores from Israel's southern coast indicates that the region generally experienced humid conditions between the first to eleventh centuries AD (2000-1000BP) with a humidity peak in the seventh century AD (1400BP)[42]. Bar-Matthews and colleagues (1998: 206 fig. 9.2; 1999) isotopic analysis of speleothems (stalagmites and stalactites) from the Soreq Cave has produced contrary evidence which points to pronounced climatic instability throughout the late Holocene. Additionally, their (1998: 206, fig.9.2 stage 3) analysis shows a trend toward moist conditions between the 1st-fourthcenturies AD (2000-1700BP). From the mid-fourth to sixth centuries, their isotopic data indicates that conditions became progressively dry and that the region experienced relatively moister conditions during the sixth to the ninth centuries AD. Frumkin and colleagues (Frumkin *et al* 1999: 680) note that "during the last 2500yr correlation between the proxies seems poor" for their Nahal Cave speleothem data. Despite this, their data suggests an overall trend toward moist conditions (increased negative $\delta^{18}O$ values) during the Roman and Byzantine periods which peaked around the sixth century AD (Frumkin *et* al 1999: 681 fig 40). In addition, Gvirtzman and Wieder's (2001: 1848) analysis of sediment sequences along Israel's coastal plain has identified several alternating moist-arid climatic periods, which started at the beginning of the late Holocene and have continued into the present.

[42] The part of the isotopic analysis centers on the $\delta^{18}O$ values of the plankton foraminifera *G.ruber* (Schilman *et al* 2001: 172).

3.2.5.1 Other Eastern Mediterranean climatic proxy data for the 6th-8th centuries AD

Data from several other eastern Mediterranean proxy environmental sites also suggest a diverse and fluctuating climate during the sixth-eight centuries AD. Rösner and Schäbitz (1991) suggest that the Syrian climate in the Hellenistic, Roman and Byzantine periods may not have been substantially different from the present climatic regime but they suggest that the region did exhibit climatic variations. They argue that the sedimentological and palynological data from the Khatouniye profile indicates that the period between *ca.* 170BC-323AD may have been more humid than today. Arid conditions replaced this humid regime, they believe (Rösner and Schäbitz 1991: 85), around the first quarter of the fourth century AD (323AD). Similarly, Vermoere and colleagues (2000) found that an abrupt change from wet to dry conditions occurred at the Gravagaz wetland in the territory of Sagalassos (southwestern Turkey) during the early Byzantine period. Interestingly, this moist-dry transition parallels the abandonment of arboriculture in the larger Sagalassos territory. At the site of Gölhisar Gölü in southwestern Turkey, Eastwood and colleagues (Eastwood *et al* 1999: 690) report an increase of arboreal pollen and a disappearance of both primary and secondary anthropogenic indicator species from the palynological record after the Beyşehir Occupation Phase (BO) ended in this region between 665-783calAD[43]. The regenerated woodland's dominant arboreal

[43] For a discussion of the primary and secondary anthropogenic indicators in the pollen record, see Behre (1990) and Bottema and Worlding (1990).

pollen at Gölhisar Gölü, and several other sites from southern Turkey (Söğüt, Pinarbaşi and Beyşehir), is *pinus*; these regenerated woodlands generally exhibit low species diversity in comparison to their pre-BO counterparts[44]. Evidence for a period of reforestation beginning at the end of Late Antiquity is present in the data from the White Mountains of Crete (Atherden 2000), the Peloponnese (Atherden *et al* 1993) and Lake Kinnerate (Israel).

Recently, Reale and colleagues (Reale and Dirmeyer 2000; Reale and Shukla 2000) have attempted to isolate and model the effect that changes in the land surface process (LSP) through deforestation may have had on Roman North Africa's climate. Their research indicates that changes in vegetational cover can influence the climate by altering the albedo (the amount of heat absorbed) of the land surface within the deforested or degraded region. Their finds, perhaps more importantly, also indicate that these changes are likely to have reduced the amount of rainfall/moisture in the affected region enough to downgrade its potential climax vegetation from forest to scrubland or shift the environment from semi-desert to desert. For example, their model predicts that after the Roman-period deforestation in North Africa, the Nile Valley would be transform from a sub-arid to a the hyper-arid climate it possesses today. Additionally, Oliver's (1991) study of the historical climatic data preserved in al-Biruni's chronicle for Egypt identified a pattern that suggests that the Nile region may have

[44] *Pinus* and *Quercus* were the co-dominant arboreal pollen types before the BO phase commenced at 1240BC^{cal} at Gölhisar Gölü (Eastwood *et al* 1999: 692).

received more precipitation in the Hellenistic and Roman periods (100BC-100 AD) than it does at present[45]. One main difference between the Hellenistic-Roman and modern precipitation patterns is the presence of a spring maximum in the earlier period (Oliver 1991: 446, fig. 4) (Reale and Dirmeyer 2000: 170-173, 175, 181-83; Reale and Shukla 2000: 198-200, 211,212-213).

3.2.5.2 Aerosol inputs and the 536 AD event

At this point, it is necessary to consider what effect natural aerosol inputs may have had on the eastern Mediterranean's climatic regime during Late Antiquity. Stothers and Rampino (1983: 6366-6367) have identified four major eruptions from the historical records of the late fifth through seventh centuries. Fallout from one alleged eruption of Vesuvius in 472 AD appears to have reached as far as Constantinople; a second series of eruptions occurred in 502 and 512 AD[46]. Nearly two decades later, a number of historical sources from different geographical locations within the circum-Mediterranean recorded a dust-veil event that began in 536 AD and lasted between six and eighteen months[47]. The sources describe anomalies such as a general dimming of the sun, diminished daylight hours, dry fogs,

[45] Al-Biruni lived between 973 and 1054 AD (Oliver 1991: 438).

[46] For a list and concise discussion of the source material, see Stothers and Rampino (1983: 6361-6362).

[47] The main sources for the Mediterranean are Prokopios, Cassiodorus, John Lydus, John of Ephesos, Zacharias of Mytilene, Bar Hebraeus and Michael the Syrian (Stathakopoulos 2004: 266-267; Stothers and Rampino 1983: 6361-6362; Young 2000: 35-37; Farquharson (1996: 265-266). Also, see Farquharson (1996) for information on other atmospheric anomalies, which appear in historical sources from non-Mediterranean parts of Europe.

haze, unseasonably cold and arid weather, and crop failure. Cassiodorus's account of this event describes its core features:

> "…we marveled at bodies which cast no mid-day shadow, and at that strength of intense heat reaching extreme and dull tepidity. And this has not happened in the momentary loss of an eclipse, but assuredly been going on equally through the whole year…The seasons have changed by failing to change; and what used to be achieved by mingled rains cannot be gained from dryness only" (Cassiodorus Book XII, Letter XXV, cited in Young 2000: 35).

Interestingly, Stathakopolous (2004: 377) points out that Theophanes mentions an atmospheric anomaly in 607-608 AD, which may suggest the possibility of another dust veil event[48]. Nearly two decades later (*ca.*626 AD) a volcanic eruption or a series of eruptions AD may have produced anomalies across the circum-Mediterranean and Europe similar to those recorded for 536 AD event (Stothers 1999: 716-718; Farquharson 1996: 264-266; Stothers and Rampino 1983a: 6363; Stathakopolous 2004: 265-268, 337-339).

The 536 AD dust-veil event is perhaps the best known of the above-mentioned atmospheric anomalies and is ideally suited to serve as a model which can increase our understanding of the possible

[48] Theophanes described 607-608 AD as a dark year (Stathakopoulos 2004: 339).

effects and causes of the 607-608 AD and *ca* 626 AD events[49]. One of the debates surrounding the 536 AD event centres on its cause. Unsurprisingly various researchers have suggested several alternate scenarios as potential triggers capable of producing the results observed in both the historical and environmental records. According to Stothers (1999: 714), after a very large volcanic eruption, the infusion of aerosols into the stratosphere can cause several environmental reactions. These reactions, Stothers and Rampino (1983a) have noted, can produce hemispheric-wide cooling for several years after the initial aerosol influx, optical effects (*e.g.* dim sun, moon and abnormal twilight) and dry fogs in various combinations and intensities. They argue (1983b) that a low latitude stratospheric eruption might have been responsible for the dust veil[50]. On the other hand, Baillie (1994) has pointed out that the 536 AD event does not have a strong signal in the ice core record. This suggests, according to Baillie (*ibid*), that either an interstellar cloud or a meteoric impact was responsible for the climatic anomalies recorded in the historical and proxy data records. Grattan and Payatt (1999), however, report that smaller low atmospheric eruptions and/or gas venting episodes can produce climatic disruptions analogous to larger stratospheric eruptions.

[49] For a recent discussion of the far-reaching effects of the 536/7 dust-veil outside of the circum-Mediterranean in Africa, the Americas and China, see various articles in Gunn (ed) (2000).

[50] The aerosol fog is composed of “sulfuric acids nuclei in a water solution” (Stothers 1999: 714). For a review of the available historical sources mentioning volcanic eruptions from the Classical through the Late Roman period until 610 AD, see Stothers and Rampino (1983a) especially table 1, which provides a detailed list of the eruptions, their characteristics and the historical sources which they are recorded in throughout.

These low atmospheric eruptions, they note, would only affect a limited or localized area[51]. On the other hand, Stothers (1999: 717) has reinterpreted the available evidence and now believes that a high latitude volcanic eruption possibly of Icelandic origin was responsible for the 536AD dry fog and concluded that “conjectures of a meteoritic impact as a source of this dry fog seems unnecessary”. Despite this, Gunn (2000) maintains that the present evidence is equivocal and either solution is viable.

3.2.5.3 Discussion

At present, Mediterranean historical archaeologists are at a marked disadvantage in comparison to pre- and proto-historical archaeologists working in the eastern Mediterranean, and particular Cyprus (see below) in relation to the amount and quality of environmental data at their disposal. Future environmental research undoubtedly will help clarify and refine our understanding of the Near East’s Late Roman and early Byzantine climate and environment. The selection of proxy data and synthetic environmental reconstructions presented above in section 3.2.5 and 3.2.5.1 offer several possible climates for the Levant and Anatolia during the Roman and Early Byzantine periods. However, as Wilkinson (1999: 667) has noted, the various proxy-data sites in the eastern Mediterranean have produced conflicting evidence. Grove and Rackham (2000: 141) believe that modelling climate via computer simulation “is of little

[51] Grattan and Pyatt (1999: 178) reached their conclusion after reviewing the frequent occurrences of dry fogs in the Italian historical record and their lack of collaborative signals in the ice core records.

help" and "cannot cope with the towering coastal mountains of the Mediterranean"[52]. In this respect, the value of multi-proxy (scientific and historical) data from site and regions, when available, becomes indispensable because it ultimately provides a more complete dataset for any attempt at an environmental reconstruction. Despite the inconsistencies and limitations noted by Wilkinson (1999) as well as Grove and Rackham (2000), several basic characteristics of the eastern Mediterranean climate and, more specifically the Levantine region, in Late Antiquity nevertheless begin to emerge from these data.

The majority of the isotopic and the Dead Sea data from Israel presented above demonstrate fluctuations between moister-than-present and arid conditions in the Levant. In general, these proxy data (Bar-Matthews *et al* 1998; Issar 1998; Bookman *et al* 2004; Frumkin *et al* 2001) contrast with Grove and Rackham's (2000) view that the climatic conditions bracketing (*i.e.* Hellenistic, Roman, and Mediaeval) Late Antiquity were not very different from those of the present. Evidence from the western Mediterranean (Jalut *et al* 2000) also indicates a return to arid conditions in the mid-seventh century, which appears to have lasted until approximately the thirteenth century AD (650-1200 CalAD). This warm-dry period in the Western Mediterranean overlaps with the warm-dry conditions that Tinner and colleagues (Tinner *et al* 2003: 1455-1456, table 4) have

[52] Grove and Rackham (2000: 141) consider the current computer modeling procedures too "course grained" but it is important to note that as technology advances, computer climatic modeling and simulation will undoubtedly become finer grained and considerably more powerful as an analytic tool.

identified for central Europe between the eighth and eleventh centuries AD (700 AD - 1000 AD). Additionally, Telelis's (2004) analysis of the historical climate data and Stathakopoulos's (2004) analysis of subsistence crisis and epidemics provide a further point of comparison and control. Telelis's (*ibid*) data for Palestine during the sixth and seventh centuries AD suggests a trend toward dry and arid conditions, which roughly correlates with the reconstruction suggested by Issar (1998), Bookman and colleagues (Bookman *et al* 2004) and Enzel and colleagues (Enzel *et al* 2003) for the Levant at that time. Because both the historical and the majority of the scientific data dealing with the Levant in Late Antiquity have a broadly similar trajectory, it seems reasonable to conclude that the Levant began experiencing a general shift towards desiccating conditions as early as the sixth century AD that continued for several centuries.

A second factor with the potential to exacerbate the unsettled environmental conditions across the Eastern Mediterranean at this time is the dust-veil events of the sixth and seventh centuries AD. Despite the disagreement about the exact cause, the 536 AD event's effects appear to have been hemisphere-wide and some researchers have viewed it a variable factor in large-scale cultural disjunction. Because aerosols are capable of altering weather patterns for at least several years after their introduction into the upper atmosphere, they undoubtedly would have exacerbated and compounded any fluctuating regional conditions across the Mediterranean and Europe at the time of their introduction. These

aerosols may have amplified the unusually cold and dry conditions mentioned by Koder (1997) for the years between 523-538 AD. After placing these events into a wider historical context, Stothers (1999) argues for a strong causal link between the dust-veil events of 536 AD, 607-608 AD and 626 AD with outbreaks of plague. On the other hand, Stathakopoulos (2004: 268) approaches this linkage cautiously and concludes that such anomalies "constitute *one* factor among many, and they are certainly not the most important one"[53]. The available historical climatological data (Telelis 2004:809) also place the dust-veil events of 607-608 and 626 AD in a meteorologically unsettled period with reports of cold and wet winters in Anatolia and Mesopotamia as well as a period of storms, droughts and aridity in Palestine (603-642 AD). Thus, although aerosols may have been "*one* factor among many", as Stathakopoulos (*ibid*) proposes, it also seems likely that their introduction into the atmosphere would have amplified the pre-existing climatic instability and exacerbated any famine or plague's effects for at least several years after their introduction[54].

Another point of consideration is the implications of the climatic reconstruction presented by Geyer (2002) for the sixth to ninth centuries AD in relation the data presented above in subsections 3.2.5, 3.2.5.1 and 3.2.5.2. As mentioned above in sections 3.2.4.2, Geyer (2002: 42) argues that in the late fifth

[53] For a detailed discussion on the chronology of plague outbreaks for the Late Roman and Early Byzantine period see Stathakopoulos (2004: 113-124).

[54] For a discussion of the social response to the plague and famine outbreaks and in particular the accounts of price gouging during these episodes, see Stathakopoulos (2004: 73-77,147-154).

century the climate changed to a colder (and possibly humid) regime, which roughly equates to a period of glacial advance known as Göschenen IIb[55]. In general, Geyer's (*ibid*) reconstruction relies on proxy data presented by Neumann (1991) for the Black Sea region, the central Caucasus, the south European portion of the former Soviet Union and the Swiss Alps[56]. However, because these regions have different geographical configurations from the Eastern Mediterranean, they may not be the best gauges of climatic change in the Eastern Mediterranean in general and for the Levant and Cyprus in particular. Proxy data from the Levant and the historical data available for Mesopotamia, Syria, Anatolia and the Balkans show that Geyer's (2002) reconstruction is perhaps better suited for characterizing conditions in the Balkans and some parts of Anatolia rather than those in the Levant and Cyprus. Thus, the available regional data tentatively suggest that the overall climatic trend in the Late Roman and Early Byzantine Levant was one that progressively moved away from the preceding Roman period's humid and benign climate towards a relatively unstable regime with frequent arid periods.

[55] The overall evidence form the Alps suggests periods of glacial advance at 1000-1500 year intervals throughout the Holocene (Grove 1988: 307).

[56] It is important to note that Neumann (1991) has not calibrated the radiocarbon dates for the Caucasus and, as a result, we must treat these figures with caution because they do not neatly equate to calendar BC/AD years. The imprecision that can result from the use of such dates is often quite substantial. For example, consider the radiocarbon date 1930±70BP, which Neumann (1991: 456) interpreted as equating to approximately 20±70CE (1950-1930±70) or roughly 50BCE-90CE. However, when calibrated with the OXcal 3.10 program, this date's range increases substantially to 100BCE-250CE (95.4% probability, 95.4%).

3.3 The Cypriot environment

This section deals with the Mediterranean environment's sub-regional manifestation on the island of Cyprus. The discussion of the Cypriot environment will operate on a higher resolution than those presented in previous sections, which dealt with the Mediterranean environment at the macro scale. I will present Cyprus's soils, geology, vegetation, relief and climate in broad terms before examining these attributes in detail for the Kourion area. Additionally, I will present the limited data, which deals with the Cypriot climate in Late Antiquity. More importantly, this discussion provides the larger environmental background for the Sotira Archaeological Project's Survey Universe discussed in Chapter 5.

3.3.1 The physical environment

Cyprus is the third largest island in the Mediterranean after Sicily and Sardinia with an approximate area of 9251 square kilometres (3,572 square miles). Cyprus is approximately 72 kilometres (45 miles) from southeastern Turkey, 96 kilometres (60 miles) west of Syria, 386 kilometres (240 miles) north of Egypt and 386 kilometres (240 miles) east of Rhodes (see figure 1.1). Some researchers (Christodoulou 1959) have divided the island into over a dozen morphological zones while other (Stow *et al* 1995; King 1987; Greensmith 1994) have suggested fewer zones based on tectonics and

geologic stratigraphy[57]. For the present purpose it is possible to divide the island into four larger physiographic zones: (1) the Kyrenia Range and the Karpas Peninsula, (2) the Troodos Massif and the Pillow Lavas, (3) the central lowlands, and (4) the coastal lowlands[58]. The highest peak on the island, Mount Olymbos, stands at 1951masl (6,401fasl) in the Troodos Massif which is considerably higher than the Kyrenia Range's highest peak, Kyparissovouno, at 1,024masl (3357fasl). According to Papadopoulous (1997), the island's main aquifers are located in the western Mesaoria, the southeastern Mesaoria, Akrotiri, and the Kyrenia Range. Papadpoulous (*ibid*) also notes that the island's 14 main rivers are not presently perennial and all originate in the Troodos Mountains. The Kouris River has the largest catchment on the island and a recent study by Boronina and colleagues (2003) has shown that the increased use of irrigation pumps and other water extractors has had a negative impact on the catchment's recharge rate. Similarly, Gomez and colleagues (2004: 11) have also noted the negative impact over-pumping has had in the Vasilikos Valley. In the mountainous uplands, for example, there are a number of perennial springs in the Troodos and the Kyrenia Range, which local communities have tapped into in order to meet their increasing needs for domestic water. The over-

[57] Stowe and colleagues (Stowe *et al* 1995: 245-246) suggest (1) Troodos terrain, which consists mainly of the island's ophiolites, (2) Mamonia terrain consisting of Palaeozoic to Cretaceous sedimentary, igneous and metamorphic rocks of the south and (3) the Palaezoic to recent sedimentary rocks of the Kyrenia terrain.

[58] Christodoulou (1995: 12) points out that 'plain' or 'Mesaoria' are often used to describe the central low lands but are misleading because the area varies in relief between 30masl and 213masl and the majority of its area lies outside to the east of the point where the Troodos Massif recedes.

exploitation of groundwater resources continues to change the island's hydrological profile as springs dry out and sea water intrusions into terrestrial aquifers become increasingly common phenomena (Thirgood 1987: 17-18, 58-60; Christodoulou 1959: 5, 9-18; Xenophontos 1996: 17-18; Zomenis and Afrodisis 1988: 154-158; Osmond 1954: 1-2; figure 3.1). Thus, these relatively recent changes in water management and consumption patterns undoubtedly have altered the island's antique hydrological landscape to a considerable degree (figure 3.1).

Cyprus originally started as two islands, the Kyrenia Range and the Troodos Mountains, with a shallow sea, the future Mesaoria, separating them. The island's present physiographic arrangement is largely a product of uplift processes that occurred in the Pliocene and Pleistocene. A number of raised marine terraces associated with these events are scattered across the island at various elevations (Poole and Robertson 1991: 913-915; Rapp 2003: 461; King 1987: 9; Vita-Finzi 1993:421-422). The Kyrenia Range varies in width from approximately 3-10 kilometres along the island's northern coast and forms the Karpas Peninsula's spine. The Kyrenia range is predominantly composed of Miocene limestone and sandstone, which overlay "Permian to Jurassic limestones, dolomites and marbles, associated with Cretaceous chalks interbedded with basic pillow lavas and acid volcanic tiffs, thick sequences of Palaeocene and Eocene chalky limestones, recrystallised limestones and cherts" (Greensmith 1994: 6). These in turn overlay lower parts of the

Troodos ophiolite complex[59]. The Kyrenia range's core, Osmond (1954: 6) points out, is approximately 96 kilometres (60 miles) long and 4 kilometres (2.5 miles) wide and is composed of Hilarion Limestone. The Troodos Massif, in contrast, is a large dome-like ophiolite complex composed of low silica plutonic igneous rocks and various lavas, which occupies a substantial portion of the island's south[60]. In its larger geological context, Troodos is one of a series of Cretaceous ophiolites spread across the eastern Mediterranean. The Troodos formed because of tectonic and hydrothermal processes that thrust masses of altered oceanic crust from the proto Mediterranean and the upper mantle to the surface during the Upper Cretaceous. The Troodos and its pillow lava foothills' present topography is the direct result of uplift episodes during the Pliocene and Pleistocene when the younger igneous materials which overlaid the ophiolite eroded into the surrounding coastal and central lowlands. Additional ophiolite complex outcrops occur in the Limissol Forest, Troulli region, the southern Akrotiri peninsula and the Akamas peninsula (see Greensmith 1994: 7, figure 2). The pillow lava foothills have been and continue to be economically important because they contain substantial mineral deposits. Chief among the pillow lava's mineral resources are its large deposits of metallic sulfides –especially copper- and smaller deposits of mineral

[59] For a readable account of the geological development of the northern range, see Harrison *et al* (2004) and Robertson and Woodcock (1986).

[60] For more information on the composition and formation of the Troodos ophiolite, see Gass *et al* (1994) as well as Robertson and Xenophontos (1993) and the literature sited within.

pigments[61]. Nearly 85 percent of the island's copper deposits are located in four ore bodies in the Skouriotissa area (Constantinou 1982: 15). Pyrite, chalcopyrite and small amounts of spalerite as well as various copper sulphates, copper oxides and copper sulphides are common minerals associated with these deposits. Both the Central Lowlands and Coastal Lowlands have some of the youngest geological sediments on the island. In the central lowlands (Mesaoria), these sediments overlay calcareous formations of upper Miocene to Quaternary date; the south coast follows a similar geological succession (see Greensmith 1994: 7, figure 2; Thirgood 1987: 23). The island's southwestern geological secession, in contrast, is significantly more complex because of the juxtaposition of late Cretaceous (Maminia and Moni complex), Cretaceous (ophiolite complex), upper Miocene to Quaternary deposits (Christodoulou 1959: 9-19; Greensmith 1994: 5-17; Osmond 1954; Thigood 1987; FAO 1973: 161; Gass *et al* 1994: 7-9, 173-174, 206: Rapp 2003: 461; Constantinou 1982: 15-17).

As mentioned above, the island's geology is predominantly composed of calcareous sediments and these sediments have greatly influenced the distribution of soil types across the island. When examined at low resolution, calcareous deposits make up nearly eighty percent of the island; basic igneous rocks compose the remaining twenty percent (Thirgood 1987). Secondary limestone, a regular feature of Cypriot geology, consists of both a hard

[61] For a discussion of the ophiolite's mineral resources, see Gass *et al* (1994: 175-200).

calcareous surface crust known locally as *Kafkalla* and a comparatively soft limestone know as *Havara*[62] (Thirgood 1987; Osmond 1954; Christodoulou 1959; Rapp 2003: 461-464). Based on the data presented by Lüken and Grivas (1988: 22, table 2), moderately to extremely calcareous soils cumulatively account for approximately 62 percent of the total soils on Cyprus. Calcareous soils are characteristically low in organic material, have low available nitrogen and have high pH values (alkaline). Because they have high calcium carbonate levels, these soils often develop on hard water resistant horizon, or caliche, that forms naturally over the course of yearly rainfall or as a byproduct of agricultural irrigation. Calcareous soils are often associated with sparse natural vegetation primarily composed of ephemeral grasses and xerophytic shrubs. They are agriculturally productive when irrigated (FAO,AGL 2000: Calcareous Soil).

In addition to most of the common Mediterranean soil orders mentioned in section 3.2.1, Hadjiparaskevas (2001) also includes lithosols, rendzianas, solonchaks and solonetz for Cyprus[63]. Lithosols/Lithosols develop under diverse environmental conditions but are typical thin, poorly developed (approximately 10cm in depth) and overlie hard stone parent material. Rendzinas/Rendolls develop on calcareous parent material; climate and topography are relatively minor factors in their formation. These soils are characteristically

[62] Often *Kafkalla* overlays the comparatively softer deposits of *Havara*.

[63] See Markides (1988) and FAO (1973) for a list and discussion of the suborders associated with these soil types.

thin, suffer from moisture stress and are associated with “lime-loving” vegetation (Gerrard 2000: 146).

Solonchaks/Salorthids primarily develop under semi-arid to arid climates on unconsolidated parent material during the Holocene[64]. Solonchaks are characteristically high in saline and commonly develop salt crusts and horizons. Unsurprisingly solonchaks are often associated with salt-tolerant (halophytic) shrub, herbs and grasses that are also capable of enduring prolonged drought. According to the FAO (2001), these soils are better suited for grazing than agricultural activity because they require large amounts of water and substantial drainage systems to control effectively their tendency to produce excessive salt accumulation. Solonetz, like Solonchaks, develop under semi-arid climatic conditions with 500mm or less annual rainfall on unconsolidated parent material. These soils tend to become increasingly saline with depth. The presence of a clay rich natric B-horizon at approximately 100cm below surface level is also characteristic of this soil type. Additionally, gypsic horizons frequently form under the initial natric horizon. These horizons, especially the natric, tend to restrict root penetration and water percolation within the profile. Solonetz are erosion prone even on relatively level terrain, they tend to become sticky when wet and hard when dry; they require a substantial amount of humus for successful arable agriculture. As a result, the FAO (2001) suggests that Solonetz make better

[64] Gerrard (2000: 146) specifically mentions parent material consisting of leoss and alluvium.

pastureland than agricultural land (FAO 2001: Solonchaks, Solonetz; Gerrard 2000: 146-149).

Additionally, these nine main orders (Lithosols, fluvisols, regosols, rendzianas, solonchaks, solonetz, vertisols, cambisols and luvisols) have several variants on Cyprus. Lithosols, fluvisols and regosols occur in both eutric (non calcareous) and calcaric sub-types. Both Solonchaks and solonetz occur in gleyic (wetland or poorly drained environments) and orthic varieties. Solonetz also occur in a mollic (associated with an organic forest environment) variety. Cambisols, the largest group on the island, occur in the vertic (clay rich), calcic (calcium carbonate), eutric (volcanic) and chromic (red to reddish brown colour) sub-types. Finally, Luvisols have two varieties: calcic and chromic (Markides 1988: 53-57).

As mentioned in section 3.2.1, terra rossa is perhaps the most widely recognized Mediterranean soil. However, as Osmond (1954: 59-60; 1957) points out, not all red colored soils on Cyprus are true terra rossa. Siallitic terra rossa and plastosols, while red in color, are not derived from limestone parent material. Osmond (ibid) describes plastosols as

> "…probably the most extensive of the red-coloured soils in the island and are duller than terra rossa which is well shown by comparing dry specimens of the (B) horizons; they are deep, stony dense when wet hard and not friable when dry and are associated with

> igneous conglomerate beds cemented with carbonate in wider or narrower bands. They occupy flat or gently sloping areas and do not appear to be associated with limestone formations. It may be that these soils have developed on old alluvial and/or colluvial deposits derived from soils formed originally on the igneous rocks of the Troodos Range in the past" (Osmond 1954: 59-61).

These igneous red soils appear to correspond roughly with eutric lithosols and eutric cambisols within the FAO system (FAO 1973: 161-165).

3.3.1.1 Tectonics and erosion

As mentioned above, the Eastern Mediterranean's geological and tectonic evolution is complex and Cyprus encapsulates many of these processes. Cyprus occupies a volatile tectonic position in the Eastern Mediterranean because it lies between the African, Arabian and Anatolian plates. At the macro scale, four large regional Mediterranean seismic zones surround the island (The Dead Sea Rift Zone, The Aegean and Cretan Arcs, the Cyprus Arc, and the East Anatolian Fault). The Dead Sea Rift Zone (east) and the Aegean and Cretan Arcs (west) frame Cyprus's east-west seismic boundaries and are the most distant of the four. The East Anatolian Fault comprises the northern boundary and runs from southeast Turkey through north Cyprus via the Kyrenia Range. Finally, the Cyprus Arc lies several

kilometres off of the island's southern coast and forms the southern boundary. Roberts and Xenophontos (1993: 87) identify three sub-tectonic zones on the island: the Troodos Complex, the Mamonia Complex and the Kyrenia Range. Within these zones are a series of additional faults. The Kithrea and Ovgos faults are the main tectonic fault features in the island's north while the Southern Troodos Transform Fault Zone, Arakapas Fault, Arcuate Fault and the Yerasa Fold/Thrust Belt are the dominant features in the south. Although the southern faults are comparatively less active than their northern counterparts are, the Arcuate Fault in the southwest is the more active of the southern faults. The Mamonia Complex's geology, which is among the least seismically stable strata on the island, covers most of southwestern Cyprus and contributes to seismic activity in that part of the island (Ambraseys 1965: 14) (Greensmith 1994; Stiros 2001: 546, fig.1; Robertson and Xenophontos 1993: 86-67, fig. 1; Harrison *et al* 2004: 191-193, fig. 2). Thus, the combination of geology and tectonics make southwestern Cyprus particularly susceptible to seismic events and their affects.

Cyprus, unsurprisingly, has been and continues to be seismically active because of this tectonic juxtaposition[65]. As mentioned above in section 3.2.4.1, the fourth through sixth centuries AD were a particularly tectonically active period throughout the Eastern Mediterranean. The Cyprus Arc and/or the East Anatolian Fault, the main tectonic features to the island's south

[65] Guidoboni *et al*'s (1994) catalogue of earthquakes up to the tenth century is a valuable resource but for the later quakes on Cyprus see, Ambraseys (1965).

and northeast, appear to have caused at least 18 earthquakes in the eastern Mediterranean during the period 304-588 AD (Stiros 2001: 554, table 1). Several well-known historical sources (Gregory of Nazianzus, John of Ephesus, Libanius, Malalas, Michael the Syrian, Theophanes and the *vita* of St. Hilarion) attest to wide-scale seismic destruction on the island during the fourth century AD (Guidoboni *et al* 1994: 246, 247-248, 250, 277-278). The available historical data describe the destruction in very similar ways. For example, the account given in John Malalas' *Chronographia* describes the 342AD earthquake and associated sea wave as follows:

> "In his (Constantius') reign (337-361) the city of Salamis in Cyprus suffered from the wrath of God, and the greater part of the city was plunged into the sea by an earthquake. The remainder was leveled to the ground…" (Pohlsander 1999: 56).

Theophanes' *Chronographia* provides a less detailed account of the 332 AD earthquake:

> "In the same year (332) a terrible earthquake occurred in Cyprus and the City of Salamis fell in ruins, killing a considerable number (of people)" (Pohlsander 1999: 74).

Paphos's ruinous state is illustrated further in Jerome's *Vita* of St. Hilarion: "…when he entered Paphos, a city of Cyprus made famous by the songs of poets, which, destroyed by frequent earthquakes, has now only ruins to show of what it once was…" (Roberts 2000: 48). The

destruction and disruption recorded in these accounts must also represent contemporary conditions at a number of small but historically invisible communities scattered across the island at the time.

Perhaps the most compelling archaeological evidence for the EBTP on Cyprus comes from the so-called “Earthquake House” on Kourion’s Acropolis and the nearby temple of Apollo Hylates[66]. Soren and Davis (1985) believe a three-pulsed magnitude seven earthquake (on the modified Mercalli scale), with its epicentre off the south coast, destroyed the area in 365 AD. This, in turn, suggests that activity along the Cyprus Arc may have been responsible for the quake (Soren *et al* 1987; Soren 1988; Soren *et al* 1985; Butrion-Oliver *et al* 1996; Soren *et al* 1986). Sitiros (2001: 552, table 1), on the other hand, argues that the quake’s epicentre may lie in the Aegean Arc rather than in the Cyprus Arc. In addition, Guidoboni and colleagues (Guidoboni *et al* 1994: 277) have adopted a more cautious attitude regarding the linkage of the Kourion earthquake with the 365 AD earthquake. They believe that the association of Kourion’s destruction with the events of 365 AD “is no more than speculation, based on coin finds” and they subsequently date this event to approximately 370 AD in their catalogue.

[66] Severe earthquakes have a long history in the Kourion area. For example, a quake destroyed the Early Bronze Age site of Sotira Kaminoudhia (Rapp 2003: 466). The wall tumble in Area B of the site provides a particularly good example of the way buildings constructed with traditional materials react to seismic shock (*Pers. Obs.* 2001; Swiny *et al* 2003: plate 14.1). Recently, an earthquake in 1999 was strong enough to crack the walls of the old Gymnasium’s walls in Lower Episkopi village and dislodge several boulders from Kourion’s Acropolis around the Amathous Gate (*Pers. Obs.* 1999).

Additionally, several smaller sites preserve evidence of the EBTP's effects on Cyprus. At the north coast sites of Lambousa and Kyrenia, for example, the upward displacement of several fishponds attests to a rise in ground surface in excess of one meter between the years 400 and 700 AD (Dreghorn 1981: 283; Pirazzoli 1986: 38; Nicolaou and Flinder 1976)[67]. Though less securely dated, the partially submerged seaside Roman quarry site of Ayios Nikolaos in the eastern Akamas peninsula (J. Leonard 1995: 148-149; Fejfer and Mathiesen 1995: 59-60) clearly illustrates the ground surface's downward displacement; the same may be said of the partially submerged Roman remains at Dreamer's Bay on Akrotiri Peninsula[68]. Whelan and Kellatet (2002: 7, 16, table 2) have suggested the possibility of a tsunami event in Akamas (and other locations, see below) from geomorphologic data collected near Eremiti bay dating between the early-mid seventh century and the early-mid eighth century AD, which falls toward the end of the EBTP period.

It is possible to glean additional information about the disruptions that the EBTP quakes may have caused on Cyprus from the surviving historical accounts of later quakes recorded on the island. Two sources, Neophytos Enkleistos and Marchisius the Scribe, from the twelfth and thirteenth centuries AD respectively, provide particularly useful information. Neophytos Enkleistos, in the *Oratio de Terrae Motibus*, provides an eyewitness account of the destruction

[67] Also, see Vita-Finzi (1993), Flemming (1978) and Flemming and Webb (1986) for discussions on tectonic uplift and subsidence as well as eustatic sea level change in the eastern Mediterranean.

[68] *Pers. Obs.* in 1998.

as well as information on the aftershocks generated by the 1159 AD earthquake. His account is as follows:

> "…I feel compelled in the present work also to collect and report briefly the events which I have seen with my own eyes or simply heard. From early on in my confinement in the Enkleistra, in the fourth hour of the night, such a strong earthquake suddenly shook the earth (ca. 1159) that I almost fell flat on my face, from my bed to the ground. Such a quake occurred up to seven times during the night, and fourteen churches in the whole district of Paphos collapsed, including the great church of the Immaculate Theotokos, in the fortress of Paphos, which the people call the Limeniotissa" (Pohlsander 1999: 146).

The extensive aftershocks (seven in number) must have compounded the initial destruction despite the fact that there is no mention of any significant flooding following this particular event. However, Marchisius the Scribe's description of the 1221 AD quake in the *Gesta Episcoporum Halberstadensium* does mention severe inundation along the south coast:

> "…the sad earth was moved by a divine miracle. There was an earthquake on the island of Cyprus and great destruction along the shoreline followed. The ocean destroyed as

> much as possible, and among the losses the cities of Paphos and Limassol were nearly submerged underwater" (Roberts 2000: 111).

Marchisius' account appears to describe a sever tsunami event along the island's south coast because of this earthquake (Ambraseys 1965: 7). The 1221 AD quake also destroyed Saranda Kolones castle in Paphos and caused a substantial upward displacement in Paphos harbour. Additional evidence for mediaeval ground surface displacement along the southern coast comes from Kition (Larnaca) where Yon (1994) reports the presence of a marine terrace dated to 865±45BP one-meter above the present sea level. Recently, Whelan and Kelletat (2000) have summarized what they believe are the geomorphologic signatures of tsunami events on Cyprus from the western/southwestern coast (between Petra tou Romiou and Cape Akamas) and the southeastern coast (between Ayia Napa and Cape Greco)[69]. The geomorphologic evidence they cite from these locations consist of displaced boulders, boulder ridges, cobble and boulder terraces, destroyed and newly formed tafoni (honeycomb-like weathering), damaged sea notches, as well as the presence of bare rock platforms beyond the surf zone. Based on the analysis of these data, they concluded that "high magnitude–low frequency tsunami

[69] Whelan and Kelletat's (2002) article is available electronically through the *International Journal of the Tsunami Society*. This journal is accessible at http://library.lanl.gov/tsunami/sth.htm and http://www.sthjournal.org/.

events have had a significant impact on the coastal landscapes of Cyprus" (Whelan and Kelletat 2002: 16)[70].

Another point of interest is the island's erosional history during the Late Holocene as represented by select valleys systems in southern Cyprus. Deckers's (2003) study of five valleys (Dhiarizos, Ezousas, Kithasi, Stravros-tis-Psoka and the Xeropotamos) in southwest Cyprus has identified limited evidence for Roman to Late Roman erosion. The most secure evidence Deckers (*ibid*) provides for Roman to Late Roman erosion comes from the Ezousas, which has a 2-meter stream flood deposit dating to 160± 160BC-300AD. A second deposit from the Ezousas, dated 868±559 AD (309AD-1427 AD) consists of 2.1-meters of stream flood material. Deckers (ibid) also identified a 2.5-meter debris flow deposit dated to ±753 Stavros-tis-Psokas as well as a 3.3-meter stream flood deposit dated to 894±250 AD (644AD-1144 AD). Between the mid-twelfth and the late sixteenth century AD (1140±60, 1320±60 and ±1560), Deckers (*bid*) has identified three fill phases in the Dhiarizzos valley, which deposited approximately 6 meters of sediment. Additional Mediaeval to Ottoman horizons are present in both the Ezousas (1221±52.5 AD, 1.1-meter debris flow) and the Xeropotamos (1730±70 AD, 2.8 meter stream flood sediment) valleys.

Gomez's (1987; 1982; Gomez *et al* 2004) work in the lower Vasilikos Valley around the vicinity of Kalavassos-Tenta has identified at least 5.5 meters of overbank sedimentation. Sediment

[70] For a list of samples which were dated using absolute dating techniques, see Whelan and Kelletat (2002: 15, table 2).

deposition in the lower valley, Gomez (*ibid*) proposes, began about 6330±100 BP and remained relatively constant until approximately the fifteenth century AD. However, nearly 1.5 meters of alluvium have accumulated in the valley since the fifteenth century AD. In the Yialias valley, Devillers (2003) identified three river terraces (A, B and C), which formed during the Bronze Age (A), between the Bronze Age and the Hellenistic periods (B) and between the Byzantine and the Ottoman periods (C). Two soil horizons dated to the ninth century BC and eight century AD (745±145 AD {600-890 AD}) are associated with these terraces. Perhaps more importantly, the younger palaeosol, associated with the ninth century AD, formed during a period of landscape stability with an unstable climatic regime, which appears to have alternated between arid and moist conditions. For the Kryon Neron River valley in the Mitsero Basin in the Troodos foothill region Whitehill (2003) has identified several erosional phases, which date from 10,000BP to 100BP. This landscape appears to have been stable from the Iron Age up to the Mediaeval period (see Whitehill 2003: 148, fig. 4.46). On the other hand, Whitehall (2003: 149) found that the “landscape during the Medieval and Ottoman periods was characterized by brief periods of stability (≤ 50 years), separated by sedimentation during short-lived events such as floods”.

A second point of consideration is the relationship that man-made terracing may have had with the periods of increased erosion identified in two (Vasilikos and Mitsero Basin) of the valley systems mentioned above. The presence of check dams, also known as

cross channel dams and transverse terraces, in the landscape, Wagstaff (1992: 158) argues, implies a desire to conserve soil and water resources as well as to increase the amount of available arable land. Unfortunately, establishing the Vasilikos terraces' ages poses certain difficulties because there is no discernible difference in the construction methods used in their creation. Wagstaff (1992: 159) observes that often several phases of fill consisting of fine silts as well as gravels have accumulated behind many of the dams in his study area. Noller and Wells's (2003: 190-191) investigation of the damns across the Argaki Kokkinobamboula in the Mitsero Basin, in contrast, have identified several discrete phases of rebuilding which start as early as the ninth century AD. The sediments trapped by these check dams are morphologically similar to those identified by Wagstaff (1992) in the Vasilikos Valley and consist of either silts or poorly sorted gravels.

Although tentative in nature, the data presented above suggests that during the mediaeval to early modern periods the valley systems across southern Cyprus experienced considerable alluvial deposition. In all the studies cited above, the investigators consider the fill to be anthropogenic rather than climatic in origin. From the research conducted by Noller and Wells (2003) and to a lesser extent Wagstaff (1992) it seems reasonable to suggest that past social actors in these areas were aware of the practical value check dams provide as both a means of soil and water conservation and arable expansion. As future research projects embrace designs that include

substantial environmental components, the picture will undoubtedly change.

3.3.2 The present vegetation of Cyprus

Cyprus's indigenous flora consists of 1800 species of which 128, or seven percent, are endemic species[71]. Nearly one third of these endemics grow in the greater Troodos region (Tsintides and Kourtellarides 1998). Apart from olive, carob, cultivated crops and other various perennial crop tree types, the present Cypriot vegetation is predominantly composed of xerophilic grasses (steppe), garaigue, maquis and forests (Christodoulou 1959: 49)[72]. According to Thirgood's (1987: 32-33, figure 2), forests represent about half of the island's reconstructed vegetation and are dominant in the higher elevations. It also depicts two areas, the Mesaoria and the Larnaca hills and plains, as hypothetically forested as well as representing the island's coastal climax vegetation as either maquis or maquis/forest. Tsintides and Kourtellarides (1998: 11-19) divide Cyprus's present vegetation into pine forest, garaigue and maquis, rocky areas, coastal areas and wetlands group. Cypriot pine forests mainly consist of either Turkish Pine (*Pinus brutia*) or Black Pine (*Pinus nigra*). Turkish Pine grows from sea level to approximately

[71] The main reference for Cypriot flora is Mekiel's (1977) two-volume set and more recently Burnet's (2004) study of the exploitation of bio resources in the Makheras Forest; more recently, Della's (1999) flora checklist is also a useful field tool.

[72] The other small plant societies are hydrophile and mesophile (moderate tempature). For a brief discussion of the associated species associated with these classes, see Christodoulou (1959: 46-49).

1400masl and is lowland to midland forest tree in areas which receive 450-800mm of rainfall annually. Black Pine grows at the higher altitude of 1200-1900msal in the comparatively moist environment of the Troodos (which receives 800-1000mm of annual rainfall). Aleppo Pine (*Pinus halepensis*), Constantinou (1982: 18) notes, grows comparatively quicker in gossans rich environments like the Troodos foothills. Christoudoulou (1959: 50-51) also includes forests composed of evergreen Cypriot oak (*Quercus alnifolia*), wild cypress (*Cupressus sempervirens*) and cedar (*Cedrus libanotica* ssp. *Brevifolia*). Both Christodoulou (1959: 50-51) and Burnet (2004) assert that at some time in the past, pine forests began to expand and replace the island's other forests[73]. Palynological data derived from cores in the Larnaca region (Gifford 1975, cited in Kypris 1996: 127) also support Christodoulou (*ibid*) and Burnet's (*ibid*) hypothesis and further suggest an abundance of oak in the area at approximately 1456 BC. Additionally, using wood consumption estimates derived solely from the production of copper, Constantinou (1982: 22-23) suggests that past social actors cleared the island's forests at least sixteen times in the past.

Tsintides and Kourtellarides (1998: 12-14) have further divided Cypriot *garaigue* into two subclasses: garrigue on dry eroded soil and garrigue on moderately eroded soil. While these groups' distributions across the island are not mutually exclusive, Tsintides and Kourtellarides (*ibid*) have identified several basic

[73] "This oak occupies a prevalent place among the tree species which grow in the present-day pine forests; it seems probable that the pines, especially Aleppo pine, and to a less extant the cedar, in the past extended into areas of woods formed by this oak…" (Christodoulou 1959: 50).

environmental characteristics, which can aid in identifying each vegetation class's geographical range. Garrigue on dry eroded soil is common in the Mesaoria, Nicosia district and Larnaca district's eastern sector. This grouping roughly corresponds to what Christodoulou (1959: 49) calls "rock steppes". Additionally, Christodoulou (*ibid*) points out that diffuse concentrations of maquis shrubs often grow among the garrigue. According to Tsintides and Kourtellarides (*ibid*), garrigue on moderately eroded soil are common in the coastal lowland up to the Troodos. They are widely distributed in the Limassol, Paphos, and Larnaca districts as well as in the northern range and in the Karpas Peninsula. Their ground cover, in contrast, is often greater than fifty percent and they are usually associated with maquis. This group roughly corresponds to what Christodoulou (*ibid*) has classified as "dwarf-shrub steppe".

Tsintides and Kourtellarides (1998: 14) have also adopted a two-fold division for categorizing the island's maquis. Their division centers on the geographical distinction between the lowlands and uplands. Lowland maquis, or coastal maquis, is limited to areas with over 450mm of annual rainfall and to areas below 1000msal like the Akamas and Karpas Peninsulas and the Episkopi and Akrotiri Forests while upland maquis, in contrast, are common above 1000masl in areas like the Troodos. Lowland maquis formations are predominantly composed of sage, rockrose, juniper, mastic, carob, olive and pine. On the other hand, highland maquis are predominantly composed of oak, mandrone, carob, mastic and pine. Christodoulou (1959: 49-50), conversely, has adopted a three-fold division for

classifying the island's maquis. Christodoulou's (ibid) first group is composed of rockrose (*Cistus*) and is common in the both the lowlands and mountains. The second is composed of mastic (*Pistacia lentiscus*), which he considers "the most widely distributed maquis shrub of Cyprus" (Christodoulou 1959: 49). The third group consists of Juniper *maquis*, which is common on the lowland limestone plateau especially in Akamas, Limassol, Paphos area, Karpas and east Cyprus (Christodoulou 1959: 48-50).

3.3.3 The present climate of Cyprus

The Cypriot climate is typically Mediterranean with cool wet winters (October through March) and hot dry summers. Like other areas in the eastern Mediterranean most of the island's precipitation comes from eastward moving cyclonic depressions, which originate in the central Mediterranean around the Gulf of Genoa and in the Adriatic. Mount Olymbos often is snow-covered during winter from December to April. In the summer months, low pressure from the Indian monsoon low is the dominant atmospheric system. Depressions originating over North Africa from the Atlas Mountain, Tunisia and Libya as well as the Siberian and Azores lows (anticyclone), Pashardes and Christofides (1995: 405, 413) point out, affect Cyprus's climate. Several interesting characteristics emerge from Thirgood's (1987: 19-23, fig. 1) description of the island's climate. Chief among them is the distribution of rainfall. It is important to note that modern rainfall distributions vary according to the physiographic properties of the micro region in question. For

example, the average annual precipitation level in the Morphou region is below 304.80mm compared to the 914mm that the Troodos Mountains receive annually. The Troodos Mountains, and perhaps the Kyrenia Range to a lesser extent, deprive the Mesaoria (which is the island's traditional agricultural centre) of a substantial amount of the available cyclonic moisture. Xenophontos (1996) and Kypris (1996) point out that the amount of precipitation declines appreciably on the leeward side (eastern) of the Troodos Massif but remains above the minimum level for dry cereal and sustainable agriculture in the Mesaoria[74]. The island's coastal regions tend to receive more rainfall than the Mesaoria on average. However,it is important to note that the present Cypriot climate is comparatively dryer than Syria, Lebanon and northern Israel's are at present (Kypris 1996). Additionally, a recent study by Price and colleagues (Price *et al* 1999: 96-97) has shown that although diurnal temperature variation is common on Cyprus, over the last one hundred years Cyprus's average temperature may have increased by as much as 1.5 degrees Celsius.

Poorly distributed rainfall is a serious and recurring problem on the Cyprus; although severe droughts are less frequent, they are considerably more destructive (Christodoulou 1959: 30)[75]. Data derived from the *Lysi Chronicle* (Lysi is located in the Mesaoria), which covers most of the nineteenth century AD, suggests that

[74] These are 240mm for dry cereal and 300mm for sustainable agriculture (Xenophontos 1996: 17).

[75] Thirgood (1987: 59) mentions that the droughts of 1835, 1870, 1901-1902, and 1931-1932 were particularly severe.

farmers in Cyprus dealt with crop failure and/or related difficulties for as many as 20-29 years each century (Kypris 1996: 122; Gomez *et al* 2004: 11)[76]. Additionally, Xentophontos (1996: 17) notes that since 1901 AD "the average annual rainfall over Cyprus has dropped only three times below 300mm and once below 250mm". Hailstorms are another common feature of the island's winter precipitation. William Turner, travelling in Cyprus during the early nineteenth century (1815 AD), recorded both a late winter rainfall and a severe hailstorm in his journal as follows:

> "I found the climate of Cyprus delicious during my two visits. But in summer the heat is intolerable, and in winter generally is one continued torrent of rain. The rainy seasons are March and April (it is the rain of these months which, by filling the marshes, causes the fever) and November, December, and January. Up to my departure, the rain had hardly begun; we had only two days of it, in Nicosia, and the inhabitants attribute this unusual condition of dry weather (which oppresses every one with colds and fevers) to the early cold which is wafted here from the snows on the mountains of Caramania. In winter a sort of tornado is not unfrequent, and the

[76] Kypris (1996: 122) suggests that information derived from the chronicle for the years 1800-1876 is most useful and reliable while Gomez and colleagues (2004: 11) consider the period 1800-1897 as useful and reliable.

> inhabitants have not yet forgotten one of these which occurred in a night of February, in the severe winter of 1812-1813, during which hail-stones fell as big as walnuts that beat in the mud roofs of many houses" (Martin 1998:189).

Several decades later, in 1890 AD, Lieutenant Donistorpe Donne recorded a similar storm on Christmas Eve. His account is as follows:

> "On Christmas Eve the worst storm I ever remember came over us. Coming up from the west it continues for 3 hours with great fury in huge hail stones, which literally darkened the air and deluged the country. Had there been any wind not a vestige of our camp could have remained. The ground was so covered by inches of hail and when it abated the country round Limassol was a vast lake and the destruction in the town tremendous. 10 lives were lost and 96 houses washed down. The river overflowed and communication with the town was cut off. In 3 hours 6 inches of rain was gauged!" (Martin 1999: 179)[77].

[77] We can add Mrs. Lewis's account of winter flooding in Limassol in February during the early 1890's (Lewis 1894: 91). She states: "About the first week in February, Limassol rejoiced, if we did not, in a deluge of rain, which made havoc of the country thoroughfares, and the high-road between our

As mentioned in section 3.2.2 dust storms are common in the Mediterranean during the spring months and Cyprus also experiences these storms' effects[78]. A recent study of the sailing winds around Cyprus by Murray (1995) has revealed that the modern patterns are good approximations for the ancient ones. Murray (1995: 39-41) points out that the wind direction in the Eastern Mediterranean predominantly blows west to east and that from September to November the wind conditions are at their best for travelling from Egypt and the Levant to Cyprus. The interior and coastal wind patterns however differ slightly from one another during the summer and winter months (Pashardes and Christofides 1995: 413-414, figure 5).

3.3.4 The Cypriot climate during the 6th-8th centuries AD

The available historical source material from the sixth through eight centuries AD that deal directly with meteorological phenomena on Cyprus is practically nonexistent. The situation for the fourth and fifth centuries AD is slightly better. Telelis's (1995: 809) meteorological catalogue mentions only one reference which directly discusses meteorological phenomena on Cyprus during the sixth to eight centuries. This reference, dated to approximately 650 AD, mentions heavy rains in the Tremithous region. Anastasios Sinates, writing during the mid to late seventh century AD, provides a

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hotel and the town was actually intercepted by a river of water filling up the paved hollow…" (Lewis 1894: 91).

[78] For a modern account of these sand storms see Haglund's (2001) article "Torrential rains clear sand cloud" in the May 15 2001 issue of the *Cyprus Mail*.

valuable indirect reference to the Cypriot climate at that time. Sinates states:

> "A short time ago I was in the Dead Sea, in the area of Zoeri and Tetrapyria, where the climate is pernicious, hot, and causing things to rot, just as it is in Cyprus. And I found all the prisoners on the state farm to be Cypriots. When I was astonished and inquired as to the reason, the men in charge gave me this answer: the climate here does not accept other bodies, only from Cyprus. And often, they say, prisoners sent here from other countries have fallen ill and died within a short period of time" (Pohlsander 1999: 66).

In discussing the historical climatic data available between 300-600 AD, Chrysos (1993: 7) asserts that using the data available from neighbouring regions may provide suitable indirect evidence for the climatic situation in Cyprus during these centuries[79]. Because weather is an interrelated phenomenon, and the island is in close geographic proximity and is subject to many of the same atmospheric systems as the Levant, it seems probable that Cyprus did, at least in part, experience some of the phenomena recorded in the proxy data from surrounding regions. However, the exact degree to which Cyprus experienced such conditions must remain open until more specifically

[79] Chrysos (1993) utilizes data from Telelis'(1992) article *The Great Climatic Risks of the Past: The Drought described by Byzantine Sources (4^{th}-6^{th} Centuries AD)*.

Cypriot proxy data are available. As mentioned in both section 3.2.5 and 3.2.5.3, data derived from the historical record (Telelis 1995), isotopic record (Frumkin *et al* 1999) and fluctuations in the Dead Sea's level (Issar 1998; Bookman *et al* 2004) suggest that the Levant's climate was moving toward increasingly arid conditions during this period. Anastasios Sinates indirect observations on Cypriot weather further imply that the island experienced similar conditions to the Levant's at the time and provide further support for Telelis' (1995: 850) argument that the period between 500 and 750 AD was particularly dry for both Cyprus and the Levant. Additionally, as mentioned above in section 3.3.1.1, pedological data from the Yialias river valley indicates that climatic conditions were fluctuating between periods of aridity and humidity by at least the mid-eight century AD.

3.3.4.1 Other climatic data

In order to place the limited evidence from the Late Roman and Early Byzantine periods into their wider Cypriot context, it is necessary to expand beyond the chronological limits of the present study and look at several select examples from both the preceding and subsequent historical periods. Both Xenophontos (1996) and Hadjioannou (1987) believe that apart from minor fluctuations the Cypriot climate has remained essentially stable since the Neolithic. Xenophontos (1996: 17) also questioned if the proxy data derived from the Levant truly reflect Cypriot conditions and concluded:

> “There is no evidence for equivalent much drier periods in Cyprus but if there were, then their effect was not sufficiently severe to produce desertification or a distinct change in the flora. We can therefore assume that the climate during the Early Bronze Age was not much different from now. The amount of tree cover, however, may well have been much greater”.

On the other hand, King (1987: 8) argues “in Cyprus there is also the problem of the general insensitivity of the vegetation to climate and other environmental changes”. Thus, the need to correlate several proxies in order to create a more robust climatic model clearly emerges from the shortcoming that King (*ibid*) has pointed out for Cyprus. Furthermore, projecting modern Cypriot climate conditions back into the historic and proto-historic past presents another set of problems because the present Cypriot climate may actually be becoming warmer (Price *et al* 1999: 96-97).

The early fourth century AD drought recorded in St. Spyridon’s *Vita* is perhaps the best-known Cypriot drought from the pre-Medieval period. This drought allegedly lasted for forty-three years (Stathakopoulos 2004: 177) and caused a severe famine, which the saint’s miraculous intervention brought to an end. The fifteenth century AD chronicler Leontios Makhairas also records a version of this drought in which he reports that the island was uninhabited and without water for thirty-six years until St. Helena, rather than St.

Spyridon, brought about its termination (Dawkins 1936: 7-9)[80]. Chrysos (1993: 7-8), while acknowledging that some type of climatic disturbance may have taken place at the time, suggests that the sources have exaggerated the drought's duration and the island's severe depopulation. Rain miracles of this type, Stathakopoulos (2004: 67) argues, serve as a literary device within the *Vita* literary genre, and, as such, may not reflect actual historical events. However, Telelis and Chrysos (1992: 21) believe that saints' lives are often accurate in their descriptions of meteorological phenomena but usually suffer from a lack of chronological precision. If, on the other hand, we accept that a degree of exaggeration is present in this account and view it as an extended period of irregular rainfall and abnormally arid conditions rather than a drought in the fullest sense, it is reasonable to interpret this event as Kypris (1996: 124) suggest: "as a short duration climatic change". This modified interpretation still fits within the larger climatic trend recorded by both the historical records (Telelis 1995: 854; Stathakopoulos 2004: 177-178) and the environmental proxy data (Issar 1998; Bookman *et al* 2004) from the Levant for the early fourth to seventh centuries AD.

Extreme meteorological phenomena preserved in Medieval, Turkish and early modern historical record mention severe drought and flooding events. For example, Telelis (2000: 236) lists two droughts, 1134 and 1135 AD, for the twelfth century and Hadjioannou

[80] Pohlsander (1995: 99-100) points out that there are no real facts to support the authenticity of Helena's visit to the island. Therefore, it is possible to conclude that the tradition was an attempt by the Cypriots to reconcile with the house of Constantine after their support for Licinius.

(1987: 7-8) mentions the droughts of 1469, 1510 and 1873 AD as being particularly acute. Other sources record destructive floods for the years 1330 and 1547 AD as well as the presence of snow throughout the summer months on the Troodos in the late eighteenth century (during the LIA) (Hadjioannou 1987: 8; King 1987: 13). Additionally, evidence for the Phedieos River's seasonal flow recorded during the late fourteenth, sixteenth and late eighteenth centuries AD suggested to Kypris (1996) that the climate was moving toward increasingly arid conditions. For the nineteenth century AD, as mentioned in section 3.3.2, evidence from the Lysi Chronicle supports the idea that irregular rainfall patterns were common, which ultimately led to poor or total crop failure for approximately one quarter of that century.

3.3.5 The environment of the Kourion area

Morphologically the greater Kourion area is part of the Limassol plateau and falls into the general pattern of chalk plateau and discontinuous small river plain topography that characterize much of southwestern Cyprus (see figures 3.2, 3.9). Present rainfall patterns provide well over the 240mm and 300mm of rainfall required for dry cereal and sustainable cultivation respectively (Xenophontos 1996: 17). Based on rainfall data collected from Limassol for the years 1887-1989 AD, the greater Kourion area received approximately 452mm of annual rainfall on average[81]. The region follows the common

[81] This data is freely available for download via the World Wide Web at http://www.fao.org/waicent/faoinfo/agricult/agl/aglw/aquastat/countries/cyprus/index.stm

East Mediterranean rainfall pattern with approximately 77 percent of the total annual precipitation falling between November and February. This figure increases to 91 percent when October and March are included in the calculation.

3.3.5.1 Geology and soils

The Kourion region's dominant geological substrata date to the Miocene (8-25mya) and are part of the Pakhna formation. The Pakhna formation consists of well-bedded chalks and limestone with various lenses in its upper layers as well as clastic facies with igneous rock detritus derived from the Troodos. The upper layers, which form the majority of the bedrock, consist of Episkopi chalk and various chalky marls. These chalks overlay Kandou sandstone, which overlay Khalassa sandstone and marls. These strata in turn overlay the Lophos beds. Additionally, shale and gypsum outcrops occur less frequently in the area[82] (Xenophontos 1996: 183-185; Rapp 2003: 463; Gass *et al* 1994: 119-123; Swiny 1982: 2-3; Christodoulou 1959 fig. 2, 16-18; Rapp 2003: 462-163).

As a whole, the Kourion area's soils fit comfortably within the general island-wide pattern presented in section 3.3.1. Sheet 53, Ypsonas, of 1:25,000 soil series maps, identifies calcaric lithosls, calcaric fluvisols, calcaric regosols, chromic vertisols, calcaric cambisols and calcic luvisols in the greater Kourion's area. Inspection of both the 1:50,000-pasture series map and the 1:25,000

[82] Xenophontos (1996: 183) notes that Kandou sandstone is visible in the valley walls of the Kromya River area and Khalassa marl in the Symboulos River's valley walls.

soil series map, shows that exposures of *kafkallia* and *havara* are also common landscape features. Pockets of terra rossa, Rapp (2003: 463) notes, are often associated with such *kafkallia* and *havara* exposures. On the other hand, aeolian and relatively young alluvial sediments brought down by the Kouris River are the main components, which make up the plain east of the Kourion bluff (Calacerous Soil Map 1986; Pasture Map 1956; Xentophontos 1996: 183). Several toponyms on the 1:50,000 topographical map (sheet LII/LIII) also illustrates aspects of the past surface geological and geomorphic conditions in the greater Kourion area[83]. At present, for example, carob, vine or citrus are grown at the localities of Kafkalla (UTMs 3844 4880 and 3840 4800) and Kafkarotopia (3837 4900) but their meanings attest to a time when the locality may have been comparatively barren (Goodwin 1978: 663, 665). Additionally, the localities of Kokkatika (UTM 3838 4790) and Gonies (UTM 3839 4870) suggest the presence of terra rossa, or a reddish soil, and yellowish clay respectively (Goodwin 1978: 882, 621). Additionally, Butzer and Harris' (2007: 1947-1948)limited geoarchaeological investigations at Episkopi Bamboula have identified several erosion phases at that site which began after the collapse of the Archaic wall (possibly during late fourth century AD) and ceased during the early sixteenth century AD[84].

[83] Typonyms' UTMs are referenced by the southwest corner of the grid square they occupy on the 1:50,000 topographic map.

[84] Butzer and Harris (2007: 1948) conclude that "With only scattered surface sherds, there is no firm dating for the Roman period" and they believe that "local soil erosion began only after the collapse of the Archaic wall".

3.3.5.2 Hydrology

The two major river systems in Kourion's hinterland are the deeply incised Kouris gorge to the west and the Paramali gorge to the east of Kourion (see figures 3.8 and 3.10). Between these major gorges are the comparatively smaller Perdhika, Symboulos and Kromyas valleys, which dissect the landscape further and provide several springs and seepages(see figure 3.6, Map 1). The Kouris, however, is among the island's largest rivers and is undoubtedly the most important fluvial system in the area. Although several geological layers can produce substantial amounts of water, the Kandou sandstones and the Khalassa marl are the main water bearing horizons in the Kourion region. These layers have greatly influenced the area's hydrological resources. Other hydrological features like springs and seepages are usually located in ravines and valleys (Xenophontos 1996: 185). Apart from geological constraints, the amount of forest cover is an equally important factor in determining the area's hydrological resources. Xenophontos (*ibid*) argues that any changes in the area's vegetation cover would have directly affected the presence of springs in the landscape. The increased vegetation cover of the past, Burnet (2004: 76) also argues, would have enable rivers/streams to maintain a perennial flow. On the 1:50,000 topographic map (sheet LII and LIII), several toponyms in the Kourion's hinterland have hydrological connotations associated with them. These localities are Dhiplarkaka (large double stream, northeast of Prastio, UTM 3845 4800), Stronjylakas (round well, south of Episkopi, UTM 3835 4910) and Vathyronas (deep water, south

of Pano Kividhes, UTM 3844 4860) (Goodwin 1978: 797, 850; Goodwin 1985: 523).

Eighteenth and nineteenth century AD travelers' accounts of the Episkopi/Kourion area also provide useful data on water resources in the vicinity. Giovanni Mariti, traveling in Cyprus during 1760-1776 AD, described the Kouris as a torrent and Episkopi as having "abundant water" (Cobham 1895: 101). Nearly a century later, Lt. Dinisthorpe Donne, during the years 1880-1882 AD, describes an event in which he and his companion were "nearly washed down" crossing a high river just outside Episkopi Village (Martin 1999: 180). Mrs. Elizabeth Lewis, travelling in the early 1890's, mentions a "clear stream gushing through" Episkopi during her winter visit (Lewis 1894: 94). However, the stream Mrs. Lewis described in Episkopi village may have actually been an irrigation channel[85].

On the other hand, Last (1975) believes that the springs immediately around Kourion were not capable of providing enough water to meet the city's requirements during the Roman period. This situation forced civic administrators to draw upon springs near Sotira and Souni to meet Kourion's growing water requirements[86]. Analogously, Last (*bid*) observed that modern Episkopi, which had a population of approximately 1500 persons during his field work, needed to draw its water from a source further north near Sotira village. This suggests a possible difference between the discharge rates for lowland and upland springs and according to Xenophontos

[85] Swiny (*Pers. Comm.* 2005)

[86] The plain below the acropolis, according to Last (1975) has potable water in close proximity to the surface.

(1996: 185) the geology to the city's north favours the presence of more productive and regular springs because the water bearing strata have considerably higher infiltration rates. Despite this, it is important to note that over-pumping has recently caused several springs in the Symboulos valley to migrate down slope (Held 2003: 472, figure 15.1), and has caused one of the springs Sotira village draws on for its water to foul[87]. Additionally, the Phassouri Chiftlik's groundwater consumption rates have considerably lowered the water table around Erimi village (Bolger 1988: 18).

3.3.5.3 Vegetation

Nineteenth and early twentieth century AD travelers' descriptions of the Kourion/Episkopi area's vegetation provide a useful point of comparison with information derived from modern investigations. Giovanni Mariti commented on the abundance of citrus and fruit trees around Episkopi during late eighteenth century AD (Cobham 1895). Similarly, Lt. Donisthorpe Donne, described Episkopi as "one of the prettiest villages in the island, surrounded by orange gardens" in the late nineteenth century (Martin 1999: 180). Mrs. Elisabeth Lewis similarly described Episkopi as "picturesque" and commented on the number of citrus groves surrounding the village (Lewis 1894: 94). She also described the area surrounding the temple of Apollo as one composed of brush and marshy land in winter (Lewis 1894: 96-97). Two later accounts provide additional information about the immediate vegetation around

[87] *Pers. Obs.* during the 2000 Sotira Kaminoudhia field season.

Episkopi/Kourion as well. Sir Patrick Geddes, travelling in 1896 AD, described the area around the temple of Apollo Hylates as "endless pistacia-scrub" and full of wild carob and olive (Martin 1999: 289). Conditions further west of the sanctuary, in Paphos district, differ in Geddes account:

> "…the forest region suddenly ends at a day's journey west of Limassol, and a new landscape opens, that of historic Paphos, and long bare perspectives of parallel hill slopes sweep down into the goodly plain watered by at least one perennial river" (Martin 1999: 289).

Four years later in 1900, Sir Henry Rider Haggard described the landscape around Kourion's stadium as a "bush-clad plain" and expressed surprise at grazing goats and sheep because, at that point, as a state forestland, the area was technically off limits for grazing (Martin 1999: 315)[88]. Presently the area lies within the Akrotiri Sovereign Base Area and forms one of the island's minor state forests, the Episkopi Forest[89].

Kourion's hinterland is part of the Limassol plateau, which forms one of the main geomorphologic features of southern Cyprus: the Chalk Plateau. Burnet (2004: 76) notes that the chalk plateau region has two main vegetation associations, which are carob (*certonia* silqua) and oak (*quercus* coffifera) with a lentisc (*pistacia lentiscus*) understory and wild cypress (*cupress*

[88] For a history of the early forest service on Cyprus, see Thirgood (1986: 91-110)

[89] To the west of the Episkopi forest is the Paramali forest.

sempervirens) and juniper (*juniper Phoenicia*) with a similar understory (see figures 3.6, 3.7, and 3.8). Similarly, Thirgood (1986: 32-33, fig. 2) suggests that this area's climax vegetation consisted of forest or *maquis* predominantly composed of carob with a lentisc understory (see figures 4.3 and 4.4).

Two small studies by Burnet (2004) and Van Warmelo (2003) provide additional information on the characteristics of both coastal and lowland vegetation in the Kourion area. Burnet's (2004) investigation around the Neolithic site of Kandou Koufovouaros, located approximately 3km to Sotira village's southeast, has identified cypress (*cupressus sempervirens*) and olive (*olea europaea*) trees along with a lentisc (*pistcia lentiscus*), thyme (*thymus capitatus*) *and* prickly broom (*calycotome villosia*) understory as the most common vegetation associations in the area. This, Burnet (2004: 77) argues, "confirms the projected forest composition of a *Cupressus sempervirens – Juniperus phoenicia* association with an element of *Olea europea* and *Pistacia lentiscus*". Van Warmelo's (2003: 477-478) study of the immediate vegetation around Paramali village in the early 1980's recorded an abundance of carob trees and few olives[90]. The surrounding fields were largely uncultivated for nearly a decade and showed evidence of regeneration at the time of the study. Van Warmelo (*ibid*) also found that the understory vegetation around Paramali consisted primarily of lentisc, spiny burnet (*Sarcopoterium spinosum*), thyme, gorse (*Genista sphacelata*), prickly broom and various types of rockrose

[90] Van Warmelo conducted this study in 1983.

(*Cistus*). Archaebotanical data from Kourion city fit within this patter. Soren and colleagues (Soren *et al* 1986) have identified laurel, carob, olive and rockrose charcoal in several flotation samples from excavations within the city. Pine and oak, they point out, are the major wood charcoal species recovered from the site and they believe this is indicative of "the deliberate importation of timber for construction" (Soren *et al* 1986: 206).

3.3.5.3.A The 1997 Sotira Archaeological Project's ecological study

Additionally, the Sotira Archaeological Project's 1997 (SAP) survey season included a small ecological study. Alessandra Swiny with the assistance of various SAP 1997 survey team members collected data from twenty-six (A-Z) 30m x 30m environmental boxes distributed throughout the SAP survey universe (Quad 001, 3 boxes; Quad 002, 1 box; Quad 004, 4 boxes; Quad 009, 2 boxes; Quad 011, 3 boxes; Quad 012, 4 boxes; Quad 013, 4 boxes; Quad 015, 5 boxes) (see figure 3.4, Map 1). The area intensively investigated amounts to approximately 2.34ha, or roughly, 0.161 percent of the total SAP project universe of 1445ha and 0.225 percent of the 1040ha area actually surveyed. The field recording methods A. Swiny employed during this study are largely adapted from the work undertake by Burnet (2004) in the Makheras Forest, Cyprus[91]. Information about the contents of the sample unit was recorded with a standardized form, which grouped the variables of interest into larger information blocks that centred on topography, flora-fauna, weather, and

[91] A. Swiny participated in this project and undoubtedly became familiar with Burnet's (2004) system.

disturbances as well as a section for descriptive and/or observational notes. Because the environmental study's focus was restricted to identifying present patterns, A. Swiny did not attempt to reconstruct past vegetational patterns in any detail. The complete environmental database is present in Appendix I and II, which list all of the observed fauna and flora from this study (Appendix II) as well as the data recorded from each sample box (Appendix I).

Based on the data presented in Appendix I, the sample boxes were located on plateau, hillside, gully, riverbed and coastal plain terrain-types. Cumulatively, nearly seventy percent (*n* =18) of the boxes were located on riverbeds, plateaus and hillsides. Nearly all (with the exception of box A, 300-399masl) of the boxes (*n* =25) were located between the 0-299masl while over eighty percent (*n* =22) are located on flat to moderate sloping terrain with a southerly aspect (south, southeast and southwest; *n* =15).

Twenty three percent (*n* =6; Boxes A, k, M, N, Q and J) of the sample boxes are on plateau terrain. Half of the plateau boxes had moderate to dense surface vegetational cover (see, for example, box K). Apart from pine, both domestic and wild olive and carob are the common trees in these boxes (see figures 3.6 and 3.7). Shrubs and understory vegetation in the plateau boxes consisted of lentisc, thyme, spiny burnet, gorse, thistle as well as wild wheat and barley. Rockrose and oleander occur infrequently, however. Disturbances from fire, grazing or anthropogenic activities were regular features and occurred singularly or in various combinations.

Box N, located near Sterakovou Village, provided particularly good evidence for the types of damage goats can cause by trampling (damaged understory growth) and feeding (wild and domestic olive trees) on the vegetation. Several carob trees within the same box showed signs of coppicing or other anthropogenic damage.

Hillside boxes (n = 6; B, L, P, R, Y and Z) composed approximately twenty three percent of the total sample(figure 3.8). Like plateau boxes, fifty percent (n = 3) of these boxes fall within the moderate to dense surface vegetation range. Common hillside trees are juniper, wild olive, domestic olive and carob. Common shrubs and understory vegetation in the plateau boxes and hillside boxes are similar and consist of lentisc, thyme, spiny burnet, gorse, lavender, thistle along with scattered wild wheat and barley while rockrose was less common. Both boxes L and Y preserved evidence of a substantial burning event in the recent past but, by 1997, the vegetation had regenerated considerably. Grazing damage was limited to boxes R and Y.

Gully boxes (G, H and I) composed approximately eleven percent (n = 3) of the total sample. All gully boxes had moderate to total ground surface vegetation densities. Frequently occurring gully trees consisted of oak, carob and wild olive. Common shrubs within gullies are lentisc, myrtle, rockrose, oleander and reeds. Wild wheat and barley were less frequent (recorded in box H only). Damage from goats was limited to paths and occurred in one box (box H) only. The presence of seepages and a greater level of

inaccessibility may account for the higher vegetation densities observed in these boxes.

River boxes (C, D, E, T, X and O) composed nineteen percent (*n* = 6) of the total sample. These boxes are located in close proximity to the Kouris River (C, D and E), the Paramali River (T and O) and a creek in Sterakovou Village near the village spring (x). Gravel mining operations, bulldozer cut terracing and the introduction of citrus groves along the Kouris River's course have altered the surrounding landscape and vegetation(figure 3.10). The remaining natural vegetation recorded in boxes C, D and E consist primarily of lentisc, gorse and reeds. On the other hand, the Paramali boxes show evidence of higher species diversity and denser ground cover in comparison to those boxes from the Kouris. Juniper, domestic carob, wild carob, domestic olive and wild olive frequently occur in the Paramali boxes. The shrubs and understory vegetation from Paramali also shows a relatively high diversity level compared to the Kouris and consist of reeds, fennel, thistle, gorse, wild garlic and spiny burnet. Both lentisc and rockrose were less common, however. The Sterakovou box (x), in contrast, consisted of only carob and olive trees with an understory of lentisc.

The coastal plain boxes (V, W, U and S), like the Kouris River boxes, contain citrus groves and were heavily modified by anthropogenic agency. These boxes tended to have lower ground-cover values, which range between sparse and moderate. Boxes U and W were located within a vineyard and citrus plantation respectively. Apart from citrus trees and other plantation trees, juniper and cypress

are the most common trees among the coastal plain boxes. Nevertheless, the majority of the observed cypresses function as windbreaks on the citrus plantation. The shrub and understory vegetation for this terrain type exhibits a comparatively high level of diversity and consists typically of mastic, rockrose, lentisc and wild wheat and barley. In general, the vegetation within this terrain class became increasingly dense as the distance to the sea decreased.

Unfortunately the available 1:25,000 soil maps (sheets 53 and 58) do not provide full coverage for SAP survey universe. This deficiency, however, only affects two sample locations, or 7.69 percent (n = 2; J and K in the western half of quadrate 1), of the collection boxes. Approximately 3.85 percent (*n* =1) of the sample locations are located on built up terrain (box Y, which lies within the Steracovou village). Two collection units (box D and C), or approximately 7.69 percent of the sample locations, are located in the now dry Kouris riverbed. The majority (53.85 percent, n = 14; boxes A, B, N, P, X, Z, T, G, H, I, M, O, Q, V and F) of the sample units are situated either on the very shallow (10-25cm) Sotira (SO) series soils or exposed Tymbou (T) limestone[92]. Boxes on very deep (+100cm) Zyyi (ZY) series soil underlay 15.38 percent (*n* = 4; boxes S, T, U and W) of the sample locations[93]. Zyyi soils tend to form on parent materials comprised of alluvium. The remaining boxes (E, L and R) are situated on either Alassa (ALc), Pakhna (PA_1) or Pissouri

[92] Soil sheet 53 classifies Sotira series and Tymbou as calcaric regosols and lithosols respectively (soil sheet 53).

[93] Soil sheet 53 classifies Zyyi series soils are as calcaric cambisols.

(PL_2) soils. These soils range from between 10-100cm in depth and form on either alluvium or limestone parent materials[94].

The area's toponymy also provides useful information on the past and present vegetational pattern. Several localities on the 1:50,000 topographical map of the area (sheet LII and LIII) have toponyms that support the vegetational types identified from the above studies as well as types not observed such as cane and figs. For example, carobs now dominate the localities of Kyparissovouno (cypress hill, northeast of Prastio village, UTM 3844 4800) Kannies (cane, northwest of Prastio, UTM 3844 4780), Sikouestia (place of figs, southwest of Zanaja, UTM 3842 4890) and Arkolies (wild olive, northwest of Sotira, UTM 3841 4860) rather than the species referenced by the toponyms (Goodwin 1978:768; 1985: 229, 721, 890). Toponyms derived from the Greek Cypriot dialect word for carob, terratsi, attest to the widespread distribution of carobs within the SAP project area (*e.g.* Teratseros, east of Prastio, UTM 3843 4810; Teratsokambos, southeast of Paramali, UTM 3838 4820) (Goodwin 1978: 812).

Thus, the findings from this small study suggest that a degree of difference exists between costal lowland and the regular lowland vegetation in the Kourion area. The non-coastal boxes broadly conform to both Burnet (2004) and Van Warmelo's (2003) findings. Carob, juniper and olive with a lentisc understory are the common associations within the area. Within the SAP survey universe, the

[94] Soil sheet 53 classifies Alassa and Pissouri soils as calcaric cambisols and Pakhna soils as calcaric regosols.

main difference between the present lowland and coastal lowland vegetation is one of contemporary land use practices and appears to be largely anthropogenic in origin (see figure 3.5). However, the preference for citrus growing in the coastal regions has a long history in the region, which extends back several centuries (see above). Thus, it seems reasonable to conclude that the gross characteristics of the present vegetational pattern closely resemble the late nineteenth century pattern described in the historical accounts of Kourion/Episkopi area mentioned above (see above, §3.3.6.3).

3.4 Chapter summary

Several general points for both the larger east Mediterranean Basin and Cyprus clearly emerge from the themes discussed in this chapter. First, it is misleading to think of the Mediterranean environment (climate, erosion and vegetation) as a uniform set of condition with equal validity throughout the entire basin. Regional and sub-regional diversity appears to be the rule rather than an exception; this diversity, more importantly, ebbs and flows over time and space. The differences between the two main models of erosion in the Mediterranean (Van andel-ism and Vita-finzi-ism) have emphasized the difficulty present in any attempt to disentangle anthropogenic and natural effects from one another because they form a closely linked system throughout the Mediterranean in general and the eastern Mediterranean in particular where human activity has been longest. The vegetation, climate, geomorphology, historical

geography and archaeology of the lands surrounding the Mediterranean represent a complex series of interrelated phenomena, which in turn are component parts of the region's larger cultural-ecological continuum.

The scientific and historical data for the Levant's climatic regime during the Early Roman Imperial period suggest moist conditions. This contrasts with the Late Roman and Early Byzantine periods, which appear to have been comparatively arid. These conditions are representative, as noted in other environmental contexts, of the regional nature of climate in the eastern Mediterranean. The environmental data available for Cyprus during the Late Roman and Early Byzantine periods are tenuous at best, but what information is available suggests a certain degree of similarity to the pattern observed in the Levant. However, as Cyprus's own environmental development comes into sharper focus through the publication of more Cypriot specific proxy data, it will become possible to compare critically the island's trajectory with those of neighbouring regions such as the Levant and southern Turkey. Some researchers (mentioned in section 3.2.5.1) have suggested vegetation cover, through albedo, can exert a pronounced influence on rainfall levels and by extension climate in a given region. The effect that variations in vegetation cover may have had on the Cypriot climate in the past has not been explored nor modelled in any detail to date. If, however, we accept that changes in vegetational cover can affect climate and hydrological resources, it becomes an important variable in our understanding of the Cypriot

paleoclimate because several researches (Xentophontos 1996, Kypris 1996, Burnet 2004) recently have suggested that the island had considerably more forested area in antiquity. Further work on this topic will undoubtedly contribute to, as well as alter, our understanding of Cyprus's historical climate and ecology.

At the sub-regional scale, the SAP survey area's present environmental conditions are well within the larger climatic, geomorphologic and vegetational characteristics established for southern Cyprus. The main observed differences within the survey area cantered on a distinction between coastal and uplands areas. This distinction is largely the product of modern land usage practices with a preference for larger plantation style agriculture in the coastal areas. The negative effects of the overexploitation of the area's hydrological resources through over pumping groundwater and the tapping of springs are also apparent when present conditions area compared with nineteenth and early twentieth century travellers' accounts of the greater Episkopi area which they describe as well-watered.

Figure 3.1 Major morpological zones (Datum WGS 84).

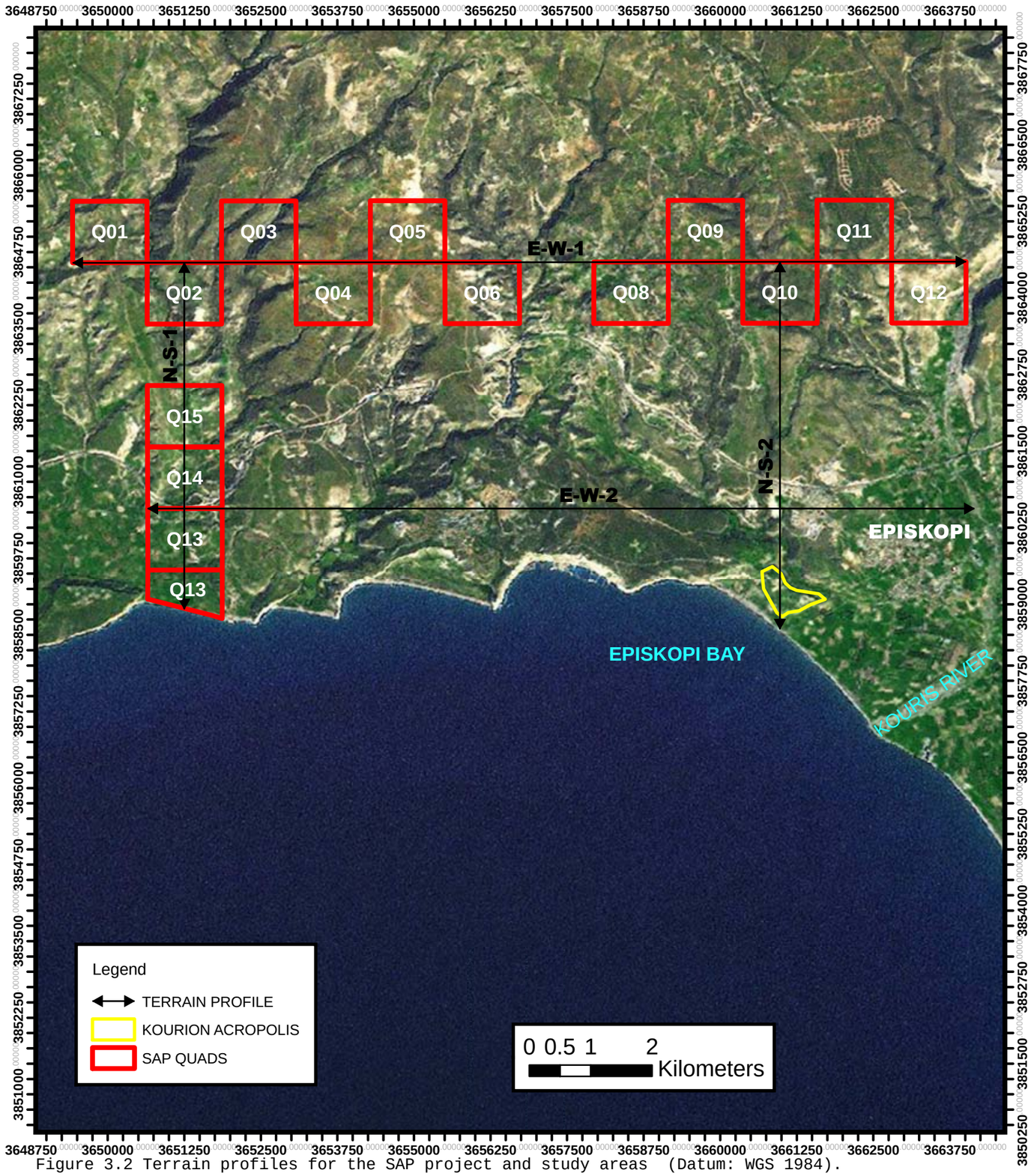
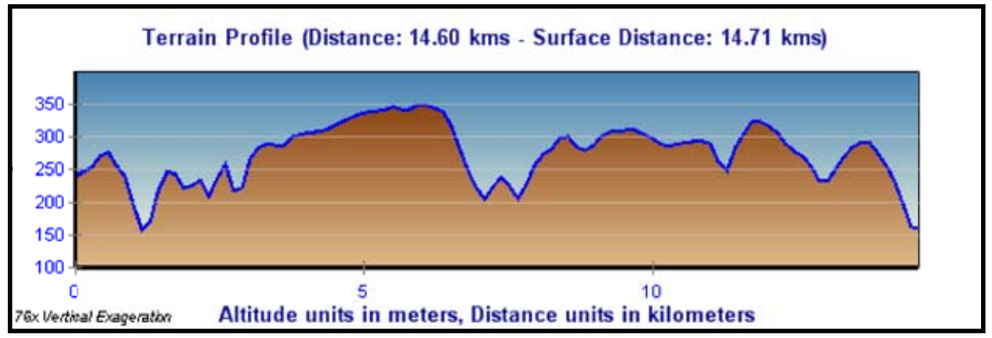
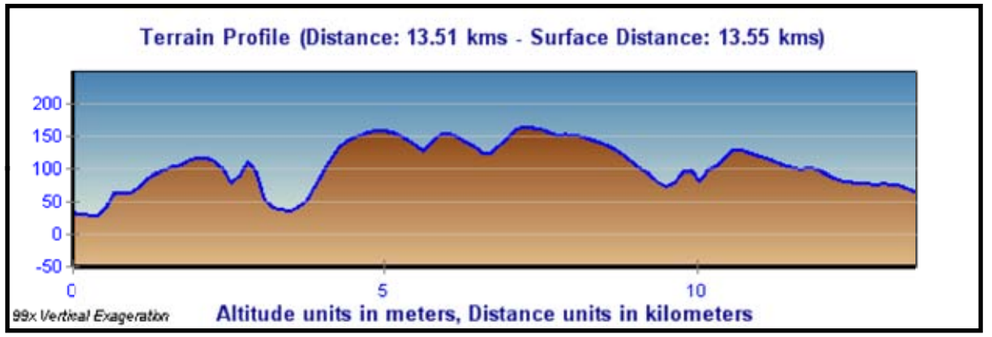


Figure 3.2 Terrain profiles for the SAP project and study areas (Datum: WGS 1984).

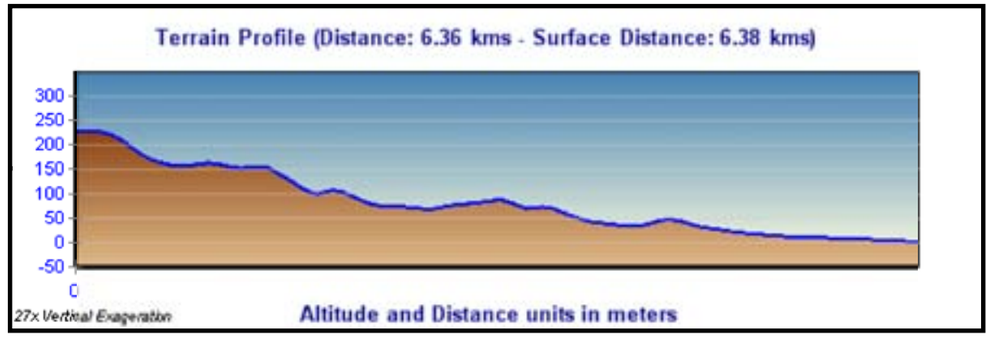
TERRAIN PROFILES



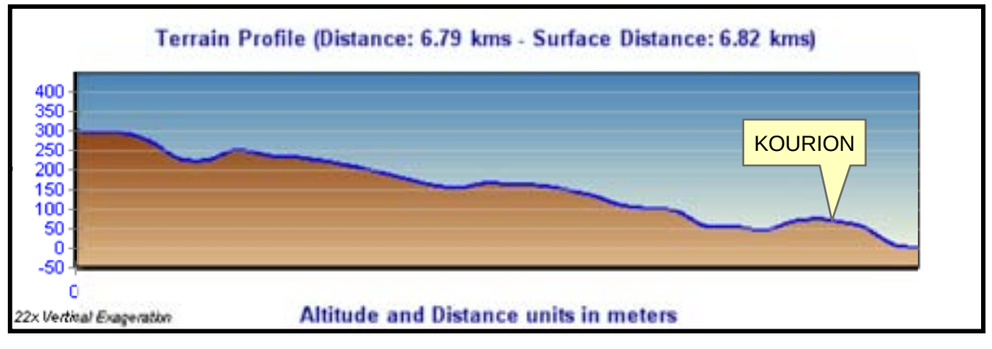
E-W-1



E-W-2



N-S-1



N-S-2

Figure 3.3 Vegetation types present in the SAP study and project areas (modified from the University of Marlyand's IGBP-DIS 1km x 1km Land Cover data set) (Datum: Europe 1950).

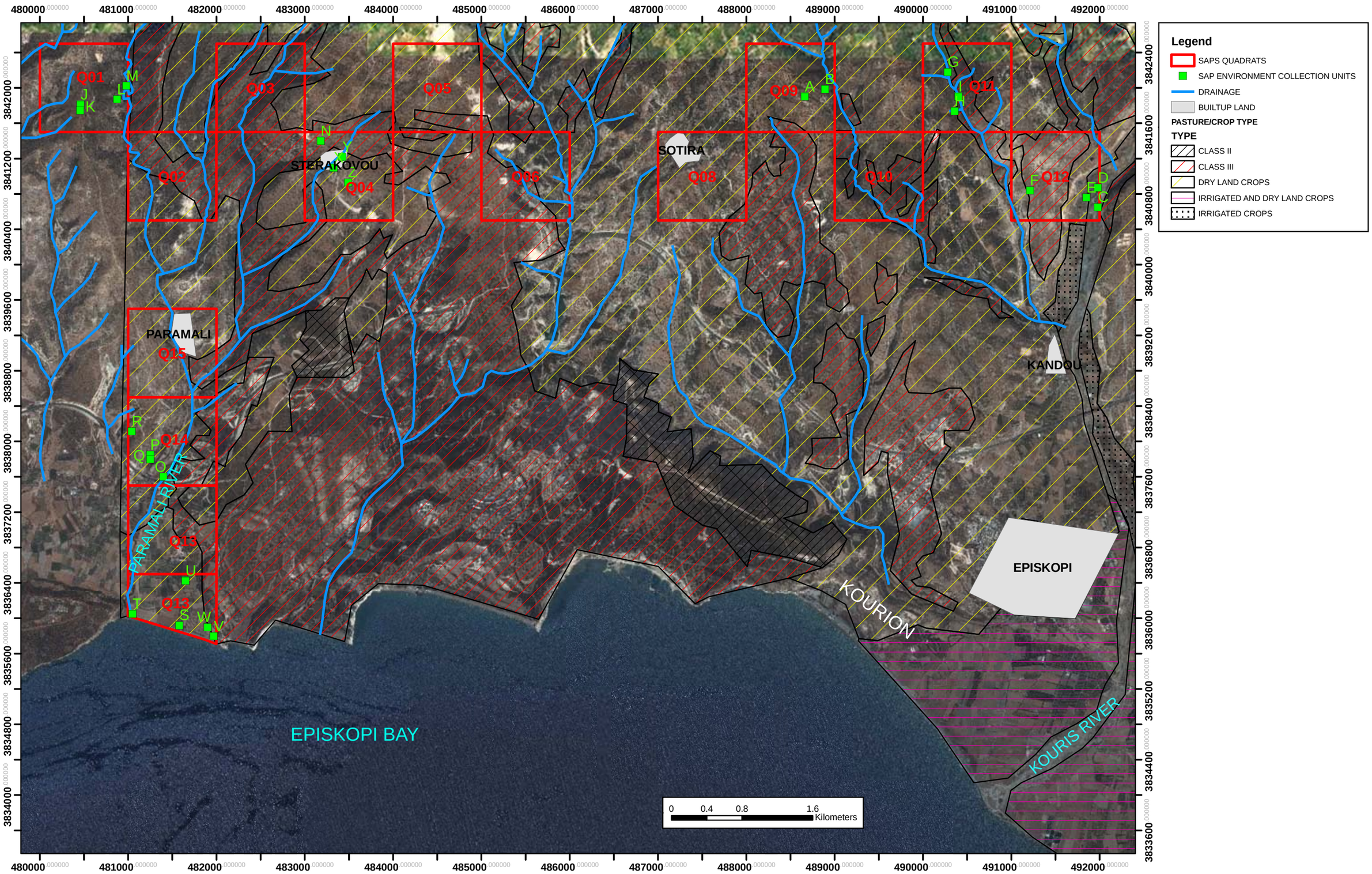


Figure 3.4 Terrain suitable for (1) dry land crops (e.g. barley, wheat mixed with carob and/or olive trees), (2) terrain requiring little or no preliminary preperation for crops (CLASS I), terrain requiring preprelimінary preperation for crops (CLASS II); terrain requiring special treatmet (CLASS III) within the SAP project and study areas (Datum: Europe 1950).

Figure 3.5 Plantation style agriculture in the Episkopi area. (Datum: WGS 84)

Figure 3.6 View: NW. General landscape shot of terrain surrounding the site of Sotira Teppes.

Figure 3.7 View: E, from Sotira Teppes. Terrain surrounding Sotira village.

Figure 3.8 View: NE. General shot showing the terrain in the Paramali Gorge in SAP Quadrat 01.

Figure 3.9 View: E, from Locus 97-06. General landscape shot looking towards the locality of Kajillen.

Figure 3.10 View: SW. Terrain in the Kouris Gorge. Early modern limekiln in the foreground and agricultural retention pond in the background.

CHAPTER 4

Late Roman Cyprus

4.1 Chapter introduction

This chapter's main objective is to create a historical context for the analysis of the Sotira Archaeological Project's results. In order to achieve this goal, Chapter 4 discusses several aspects of the Roman and Late Roman administration's engagement with Cyprus in relation to the wider themes presented in Chapter 2. The discussion is divisible into two main parts. Subsection 4.2 examines the island's administrative structures, and authoritative resources in relation to the theorization of power, authority and their relationship to the built and designed environment advocated in Chapter 2 (§2.2). Because of the close relationship between economic, military and geo-political resources, these themes are discussed as component parts of an interrelated strategic whole in subsection 4.2.4. However, because the available historical and archaeological datasets for Roman and especially Late and Post Roman Cyprus are fragmentary, it is necessary to examine several of these various themes' development from the early Roman period in order to contextualize adequately their long term trajectories. Subsection 4.3 examines Kourion's Late Antique urban landscape within the framework established in Chapter 2 (§2.2.4 & 2.3.2), in which the build environment is approached as a dynamic and *multilocal* social

construct. Subsection 4.3 also explores the archaeology of secondary occupation at several Cypriot sites.

4.2 Contexts

Cyprus' administrative history during the Later Roman and Early Byzantine period is divisible into two broad periods. They are the Roman-Late Roman/Late Antique of the first century BC to the mid-seventh century AD and the subsequent condominium of the mid-seventh to tenth centuries AD[1]. It is during the latter of these two periods that the island's political status and administrative structures are particularly obscure and open to debate (§4.2.2.1, 4.2.2.2 and 4.2.4). The specific manifestations of Roman, Late Roman/Early Byzantine institutions and those of the condominium developed under divergent contexts: the former (Roman and Late Roman/Early Byzantine) developed within a clearly defined set of increasingly authoritative structures, resources and conduits while the latter (condominium) developed under a comparatively fluid and localized set of structures. This, in turn, suggests a changing pattern of power interactions that involved, among other things, the relationships between individual social actors/groups and the localized structures and those extensive structures of two competing states (*i.e.* the Byzantine and Caliphate). This subsection traces aspects of this transformation in relation to the provincial

[1] Mitford (1980) and more recently Potter (nd [forthcoming in the Makarios Foundation's History of Cyprus]) are essential works for the early Roman period.

administration and the changing patterns of elite authoritative resources.

4.2.1 Aspects of Roman, Late Roman, and Condominium administrations

Throughout all of the Hellenistic period, Cyprus was under Ptolemaic Egypt's control where it served as an outpost for that dynasty in the eastern Mediterranean, and as a means of defense against Selucid Syria. In this context, Cyprus was strategically desirable for both powers. However, with Rome's growing power and influence in the Eastern Mediterranean during the first century BC, it was only a matter of time before they too would become involved in Cypriot affairs. Unsurprisingly, the Romans first became interested and then exerted their influence on Cyprus through Egypt. The Roman State, while serving as the Ptolemaic State's protector, forced Antiochus IV Epiphanes to withdraw from the territory he had occupied: Cyprus was among these territories. In 58BC, the tribune of that year, P.Clodius Pulcher, set into motion certain legal measures that led to the island's annexation by the Romans. Under the administrative agency of M. Porcius Cato, the Roman government extracted nearly 7000 talents that formed "a substantial aid to Caesar in the impending civil war" (Mitford 1980: 1290). This brief initial phase of direct Roman control and administration ended when Caesar returned the island back to the Ptolemaic Kingdom and it

remained a Ptolamic possession throughout the Triumviral period[2]. After Antony and Cleopatra's defeat at the battle of Actium, the Roman state assumed direct control over Cyprus again. Because Octavian's propaganda presented the conflict with Antony as a foreign war rather than a civil war, he treated the Cypriots as *deditici*[3]. As a result, one of Octavian's *legati* administered the island. Apart from the ideological dimension associated with this particular administrative choice, the de facto direct imperial control provided by a *legatus* served a practical strategic purpose. First, Cyprus became a frontier province of sorts after the administration abolished the province of Cilicia and entrusted that territory's administration to local client kings. The use of client states and hegemonic imperialism became a defining characteristic feature of the Julio-Claudian strategic policy (Luttwak 1976: 13-49). In this context, the presence of a *legatus* provided the state with a streamlined administrative channel on the island in the event the geopolitical situation in either Cyprus or Cilicia developed in a way the central administration did not approve of. However, after the situation stabilized, Octavian Augustus transferred Cyprus to the Senate's jurisdiction in 22BC (Mitford 1980: 1289-1295; Michaelides 1990: 110-115; Mommsen 1996 vol I: 223; vol II: 25; Potter nd: 18-19).

[2] For a general review of the Roman Near east in the late 1st BC and the benefits of ruling through client states, see Millar (1993, especially Chapter 2) and Luttwak (1976, in particular Chapter 2 Pp: 30-39).

[3] For a discussion of the propaganda involved and its material manifestation in works of art, see Zanker (1990).

After Octavian Augustus returned Cyprus to the senate in 22 BC, a *proconsul* draw from the senate possessing *praetorian* status headed the island's administrative apparatus from Paphos for a one-year term[4]. Apart from the proconsul's immediate support personnel, a *quaestor pro praetore*, a *legatus pro praetor*, imperial procurators, *curator civitatis* (to monitor city expenditures) and port/harbour inspectors (*limenarcha cypri*) assisted the governor in administering the province. In assessing the overall career paths of those relatively few known governors of Cyprus, some researchers (*e.g.* Potter nd; Mitford 1980) have argued that this particular post did not attract politically ambitious or well connected candidates[5]. The rather limited administrative abilities and professional inexperience of some of these governors undoubtedly would have required the occasional intervention by the central administration[6]. For example, Cassius Dio (LXXIX 30.4, tans. Cary 1961: 409) mentioned an instance from Caracalla's reign (211-217 AD) in which the imperial administration deemed it necessary to dispatch a former governor of the province of Asia to Cyprus in order to advise the island's incumbent governor[7]. Nevertheless, the posting would still

[4] The governor's term started in July and lasted for one year.

[5] Thus, Potter (nd: 22) states that "men of future distinction did not often go to the island". This position echoes that of Mitford (1980: 1305): "Cyprus was not welcomed by men of ambition or military ability". Nevertheless, of the fifty proconsuls from 70-120 AD, less than one half dozen are mentioned as holding a commission in a military province (Mitford 1980: 1305).

[6] The correspondence between Hadrian and Pliny provides a particularly good example of the types of dialogue that could exist between the administrative centre and the provincial periphery.

[7] Dio clearly states that Caracalla sent Avitus, a former governor of Asia, to Cyprus to act as an advisor for the island's governor. However, Mitford (1980: 1298) believes that Avitus's purpose on the island is unclear.

have provided the incumbent governor with opportunities for enrichment through the collection of various fees for services, gifts and bribes (Potter nd: 28-30; Mitford 1980: 1295-1296; Michaelides 1990).

At the provincial administrative scale, the island was composed of four districts that consisted of Salamis in the east, Lapithos in the north, Paphos in the west and Amathus in the center. The regions within these larger districts, in turn, were composed of the civic territories attached to the island's twelve major cities. The province's main Roman cities consist of Salamis (modern Ammokhostos), Kition (modern Larnaca), Amathus (modern Limassol area), Kourion (modern Episkopi area), Arsinoe (modern Polis Tis Khrysokhou), Soloi (modern Morphou), Lapethos (modern Karavas-Lampoussa), Chytroi (modern Kythrea), Karpasia (modern Rizokarpaso), Kyrenia (modern Kyrenia) and Nea Paphos (modern Kato Paphos)[8]. Recently, Parks (1999: 121) has argued that Ledri continued into the Roman period and should also be included as the thirteenth city. As mentioned in Chapter 2, the early imperial Roman administrative apparatus lacked a professional civil service and within this system, the self-governing city formed the fundamental unit of imperial administration. Researchers (*i.e.* Mitford and Nicolaou 1974; Mitford 1980; Potter nd) have suggested that the Cypriot civic councils of the Roman period were essentially oligarchies into which

[8] See Michaelides (1990) and Mitford (1980) as well as Rupp's (2000) gazetteer for the modern associations of these cities.

a civic censor would enrol eligible members[9]. As in other parts of the empire, the holders of civic office did so at their own expense. Unsurprisingly, the civic offices of Gymnasiarch (official in charge of the Gymnasium), agonothete (official in charge of athletic events), archon (chief magistrate), grammateus of the boule (clerk of the civic council), tamias (treasurer), archiereus (civic high priest), sitonas (official in charge of the grain supply) and agoranomos (official in charge of the market) are all well represented in the Cypriot epigraphic record of the early Roman period[10]. The uniform administrative structures of each city undoubtedly contributed to the island's overall administrative stability during this period. Curiously, as Mitford (1980: 1296) points out, the imperial government did not deem it necessary to establish colonies on the island. All Cypriot cities were taxpaying; perhaps more importantly, no city received the full franchise or the so-called Latin rights. Cyprus, like other regions of the Greek East, had a developed *Koinon*, or provincial assembly, which also undoubtedly contributed to the solidification of the island's provincial self-image and provided a much needed touch point with the larger Roman provincial system (Potter nd: 28-30; Mitford 1980: 1295-1296; Michaelides 1990; Mitford & Nicolaou 1974: 26). Additionally, it seems reasonable to assume that the Cypriot provincial civic landscape remained relatively unaffected by the

[9] The Ptolemaic administration also preferred oligarchic civic governments. See Mitford and Nicolaou's (1974: 24-26) inscription 11, for example, which provides epigraphic evidence for the presence of a Censor at Salamis.

[10] For these and other examples of civic officials of the early Roman period, see Mitford (1971) for Kourion and Mitford and Nicolaou (1974) for Salamis.

"levelling of municipal statuses" (Carrié 2005: 272), and the homogenization of the empire's more diverse provincial civic landscapes that resulted from Caracalla's edict of universal citizenship in 212 AD (see Chapter 2).

From an institutional standpoint, the *Koinon Kypriōn*, based in the provincial metropolis of Paphos, performed a variety of functions such as presiding over minor judicial and administrative tasks, providing bronze coinage for small change (from the reigns of Claudius to Caracalla, or slightly later), as well as administering religious festivals[11]. It also provided its member cities with a self-contained medium for arbitration. More importantly, it formed a conduit through which local civic governments could present their collective interests in a uniform way to the central administrative apparatus (*e.g.* governor, senate or emperor) and engage with the larger Roman world (*e.g.* dedications to former governors in their home cities)[12]. However, the institution lacked the authority to compel its members to act in concert or against their individual interests for the greater good of the province if a given member city did not wish to comply. On the other hand, the *Koinon* was not obligated to aid individual cities with problems that resulted from individual civic diplomacy or policy (*e.g.* civic debts or individual

[11] Paphos became the provincial metropolis in the early second century AD, but that city served as the seat of the Koinon before it received that honor. This institution honored various deities and individuals. See, for example, the statue base inscription dedicated to Zeus Olympios by the *Koinon* found at the locality of Toumba tou Michaili in Famagusta district (Mitford 1980: n445).

[12] For example, Servius Sulpicius Panacles Veranianus of Salamis, who had become a Roman citizen under Galba, led three embassies to Vespasian and his sons during his three tenures as provincial high priest and head of the Koinon (Mitford and Nicolaou 1974: 138).

negotiations)[13]. Thus, for the first three centuries (first to the late third centuries AD) of imperial rule, the *Koinon Kypriōn* was the most important and far reaching political institution on the island (Potter nd: 45-46, 50-53; Mitford 1980: 1371; Michaelides 1990).

The provincial reorientation and administrative reorganization of military and civil commands, which occurred during the late third and early fourth centuries AD, appears to have had little to no direct repercussions on Cyprus' provincial administrative structures because of the province's non-military character. The city remained the basic administrative unit on the island throughout Late Antiquity[14]. It seems reasonable to conclude that Cyprus experienced many of the general administrative developments discussed in Chapter 2 albeit on a localized trajectory. Interestingly, the number of official cities (*i.e.* settlements that performed secular and ecclesiastic administrative functions and met specific legal requirements) increased from twelve to fifteen over the course of Late Antiquity with the addition of the cities of Neapolis/Theodosiana (modern Limassol), Ledra/Leukotheon (modern Lefkosia), and Trimithus (modern Tremetousia (Gregory 2001: 724)[15].

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[13] As Potter (nd: 13) notes, the provincial assembly did not intervene on behalf of Salamis when that city encountered problems with one of its creditors, Scaptius, an agent of M. Iunius Brutus, during the late republic.

[14] On this topic see Papageorghiou (1993) and Gregory (2001), as well as Rupp's (2000: 1096-1101) gazetteer for Map 72, Cyprus, in Talbert and Bagnall's (ed)(2000) *Barrington Atlas of The Greek and Roman World*.

[15] Regarding Neapolis/Theodosias Gregory (2001: 723) states the following: "there can be no doubt that Theodosiana/Theodosias was founded by Theodosius II (408-50), although we have no information as to why this took place. Then at some late date, the formal dynastic name was forgotten and

Additionally, based on their position within the Late Antique road system (§4.2.3.1.B), it is also reasonable to suggest that the settlements of Thronoi, located in the Pedalion promontory, and Paleokastro, located in the Krommyakon promontory, would have been important *locales* within their immediate and regional contexts (See Bekker-Nielsen 2004: fig. 16; Papageorghiou 1993: 40)(see figure 4.1)[16].

In general, most researchers would agree (Rautman 2000, 2001, 2003; Manning *et al* 2002) that Cyprus experienced a demographic expansion and the creation of various complex social landscapes throughout Late Antiquity. The expansion of the civitas/polis administrative structure into the island's interior during Late Antiquity, as Gregory (2001: 724) notes, contradicts the generally accepted paradigm (*e.g.* Hill 1940; Mitford 1980) that emphasizes coastal settlement in the Roman and Late Antique periods[17]. The inadequacy of the coastal model becomes even more apparent when the analysis includes other settlement types. For example, the results of the Sydney Cyprus Survey Project clearly indicate the existence of complex multi-component Roman and Late Roman landscapes (*e.g.*

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the city was called by the more generic name Neapolis". The modern names are derived from Rupp's (2000) gazetteer.

[16] Regarding Throni, Papageorghiou (1993: 40) states: "To the east of Larnaca the town of Thronoi, although it lost its importance, survived until the beginning of the Middle Ages. This settlement is attested by the remains of a basilica on the coast at the locality of Ayia Thekla".

[17] Gregory (2001: 724) states: "The appearance of Trimithus and Lefkosia in the centre of the island is particularly significant, since their appearance significantly modifies Hill's argument (and common received wisdom) about the coastal emphasis of settlement in Cyprus under the Roman regime. Traditionally, we are supposed to wait until the difficulties of the seventh century for the collapse of the coastal urban system and withdrawal of cities into the interior".

productive and consumptive) in the Troodos Mountain's north-central foothills (in the vicinity of the modern villages of Politiko, ancient Tamassos, and Mitsero) (Knapp 2003:1)[18]. Additionally, other inland settlements with Late Antique phases, such as Anogyra (modern Anoyira), Alampria (modern Alambra), Philoitos (modern Pyrogi), Kelliake (modern Kellia) and Leukos Oikos (modern Lefkaniko), for example, all have components that date back to the Roman or earlier periods (see map 72 in Talbert and Bagnall (ed) 2000 and Rupp 2000's contribution in that volume). In general, apart from the island's main cities, approximately 79 percent (*n* = 42) of approximately 53 loci (which in this case are settlements, villas and churches) possessing Late Roman phases also possess occupation from either the Roman or an earlier period(s)[19].

Under the new system, Cyprus fell under the jurisdiction of the "Praetorian Prefect –later Vicar and after 331 Count- of the Orient" (Mitford 1980: 1375) based at Antioch. After the seismic upheavals of mid to late 4th century (see Chapter 3 for a discussion of Cypriot historic seismology), the provincial administration relocated from Paphos to Salamis-Constantia, which became the new provincial

[18] See the volume edited by Given and Knapp (2003) and their sites SIA 2 (Klirou Manastirka, Pp:75-82) SIA 6 (Politiko Ayios Mnason, Pp: 126-127) for examples of this multi-component landscape.

[19] The sites in this example come from Rupp's (2000) gazetteer (Ayios Georgios (Lagoudera), Ayios Georgios (Ayios Nikolaos), Ayios Kononas, Ayios Mavri, Ayios Nikolaos, Ayios Stephanos, Ayios Trias, Alampria, Alyki, Anogyra, Aphrodision, Ardana, Arsinoe, Dreamer's Bay, Drepon, Drousham Galounia, Geronisos, Gy…,Kelliake, Khelones, Klirou, Knidos, Kopetra, Kourias, Lakki, Leukos Oikos, Limenetes, Lysi, Mitero, Panayia Ematousa, Peya, Kokkinovouno, Koutsopetria, Magounda, Makaria, Mandres, Mansoura, Mathiatis, Melandryna, Ourania, Petrera (modern Maroni), Petrera (Marathovounos), Philoitos, Platani, Sarka, Shyrvallos, Styllarka and Teratsia) with the addition of Panayia Ematousa (Sorensen and Jacobsen 2006).

metropolis[20]. As in the preceding period, the overall social standing and career of those who governed a province provides an indirect measurement of the perceived importance that particular province held within the greater administrative mechanism. The governor of Cyprus usually received his post based on the recommendations of senior members of the Prefecture's administration (Kyrris 1985: 166-169; Kyrris 1992: 101-102). As in other aspects of the Late Antique administration, the office holder was required to pay a fee to the imperial government upon receiving the insignia of office and its corresponding rank. Those social actors that attained the governorship of the island received the title of *praeses* and later *consularis* (Kyrris 1996: 161), which conferred senatorial (*clarissimus* grade) status on the office holder[21]. It is probable that some upwardly mobile social actors pursuing careers in the civil service (*militia*) would have regarded Cyprus as a minor posting in the same way as their early imperial predecessors would have. However, based on the discussion of late Antique office holding presented in Chapter 2, it seems reasonable to suggest that

[20] As Michaelides (1990: 128) notes that it was strategic interests that resulted in the shift from Paphos to Salamis.

[21] The *Notitia Dignitatum* and the *Synecdemus* of Hierocles identify the governor of Cyprus as a *consularis* (Jones 1964: 1459, appendix III). For a discussion on the various titles and ranks associated with the governorship in Late Antiquity, see Slootjes (2006 [especially Chapter 1]). It is important to note that governors with the title of *praesides* are often associated with smaller provinces. The general empire-wide trend and the gradual absorption of the equestrian class over the course of the fourth century seem to indicate that a governor with the title of *praeses* ranked as a *perfectissimus* in the early fourth century AD and a *clarissimus* by the late fourth century AD (Slootjes 2006: 19). Perhaps more importantly, by the third century AD, the title of *consularis* had "become one the titles for governor, without his necessarily having been a consul" (Slootjes 2006: 20).

upwardly mobile Late Antique social actors would have viewed even a minor postings, like Cyprus, as a *dignitas* and a potentially useful step in their overall career path[22] (Chrysos 1993: 3).

Cyprus' administrative linkage with Antioch remained in place until the sixth century when Justinian I's provincial reorientation grouped Cyprus along with several other provinces (Scythia, Moesia Secunda in the Balkans, Caria in Anatolia and the Cycladic Islands in the Aegean) into a new administrative block, under the *quaestor exercitus*. Several authorities (Mitford 1980; Lokin 1984; Jones 1964; Barnish *et al* 2001; Roueché 2001) suggest that the motivation behind the selection of the *exercitus's* component provinces centred on grouping wealthy provinces, of which Cyprus was one, with those that were experiencing disruption and/or were economically exhausted[23]. Therefore, the more wealthy provinces within this system bore most of the economic burden for the defence of the Balkan provinces of Moesia and Scythia (Haldon 2005: 50).

This new administrative construct required Cypriot social actors to travel to Odessa in modern Bulgaria to voice their judicial appeals. However, as Barnish and colleagues (2001: 183-184) point out, soon after the creation of the *exercitus*, Justinian issued an edict allowing the Cypriots access to Constantinople's courts where they could receive an audience with one of the

[22] Slootjes (2006) has suggested that those pursuing a career in the civil militia may have had to hold several minor posts before serving as the governor of a more important province or advancing into the upper echelons of the administrative apparatus (*e.g.* vicar).

[23] Chrysos (1993: 7) suggests the John Lydus's comment regarding more wealthier of those provinces involved in this new administrative mechanism is "a description which of course applies to Cyprus much better than to either Caria or the Aegean islands".

quaestor's representatives[24]. This edict, they suggest, reflects a certain degree of sensitivity on behalf of the central administration to the needs of those social actors engaging with the system. On the other hand, those social actors engaging in minor litigation could use the Episcopal courts. Given the distance and cost of travel coupled with the mandatory court fees (*commoda*) and various tips (*sportulae*), it seems reasonable to suggest that those Cypriot social actors that need to engage in litigation but lacked in both material and social network (*e.g.* a patron with connections at court) resources would have opted for the local episcopal court system whenever possible[25]. It is also probable that the Episcopal courts would have remained the preferred option even after the abolition of the *quaestor exercitus* in the late sixth century AD.

The development of Cyprus' Byzantine Dark Age administrative structures between the establishment of the condominium in 688 AD and Nicephoros II's re-conquest and subsequent permanent annexation of the island in 965 AD remains particularly obscure. Putting the strategic dimension of this discussion to the side for the moment (see below §4.2.4), the available data, the best of which is predominantly derived from the island's sigillographic record, does identify, in a schematic way, the Byzantine administration's

[24] Approximately fifteen months elapsed between the creation of the *exercitus* and the establishment of the edict, which allowed Constantinople as the alternative court (Barnish *et al* 2001: 184).

[25] On this particular topic, Lokin (1984: 45-46) believes that "it is more than probable that this Episcopal court was preferred to the official court of the *counsularis*, which was tainted with corruption, and notorious for high fees, long waiting times and long dangerous journeys in case of appeal". For the possible cities where such an appeal might have taken place and a list of cities from the seventh century onwards that had a bishop, see Dikigoropoulos (1965-1966: 239) and Gregory (2001).

fundamental elements during this period. An Archon (a semi-military governor, with the dignity of Spatharius) and a Dioiketes (a civil and revenue official with the dignity of Hypatos) formed the basic Byzantine administrative unit on the island. At some point during the eighth, or possibly the ninth century AD, this administrative core expanded with the addition of a lieutenant governor, or Lieutenant general (Ek Prosopou) (Browning 1977-1979: 106; Kyrris 1984: 171; Jenkins 1953: 1008-1010)[26]. Later, the Cypriot population under Byzantine administration requested the presence of an additional civil official, a Basilikos Anthropos, to bolster the financial sector of their administration (Metcalf 2004: 71)[27]. Although the seal of the Kleisourarch Theodoros (a commander of a frontier pass or frontier region) does not have an exact provenance, nor does it provide the location of Theodoros's command, it does suggest that the imperial strategic planners and administrators were actively engaging with the island in some way during the middle decades of the ninth century[28]. The most probable location for the Byzantine administrative presence on the island is along the northern coast where, as Jenkins (1953: 1010) has pointed out, its lines of communication with the maritime Theme located in southern

[26] See Metcalf's (2004) seal # 156 for the seal of the *Ek Prosopou* Merkourios dated to the eighth or ninth century AD recovered from Klavidhia, Larnaca District.

[27] Metcalf (2004) points out that these officials are associated with imperial kouratoreiai (imperial estates) and often held the dignity of protospatharius.

[28] See Metcalf's (2004) seal # 212 for the Kleisourarch Theodoros dated to the ninth century AD.

Anatolia would have been shortest (Metcalf 2004: 69-72; Browning 1977-1979: 106-107; Megaw 1988: 145-146; Kyrris 1984: 171-172).

Even less is known about the Caliphate's administrative presence on the island after the removal of the Arab garrison from Paphos in 688 AD. Three main officials, based in Paphos, constituted the Caliphate's administrative presence on the island. These officials consist of an Emir, an Imam and a Hakem. The emir was the chief official within this structure and his responsibilities, undoubtedly executed through his agents, included collecting tax/tribute, monitoring the status of the treaty and disarming travelers (Megaw 1988: 145-146; Kyrris 1984: 171). Two officials, the Imam, drawn from the local Cypriot Arabs, and a Hakem, or judge-commissioner, aided the emir and were primarily responsible for various aspects of the civil and domestic administration. The presence of Islamic lead seals at Limassol, Lophou, Limnati and Paphos suggest that this apparatus may have had representatives dispersed across the southern half of the island[29] (Metcalf 2004: 69-72; Browning 1977-1979: 106-107; Megaw 1988: 145-146; Kyrris 1984: 171-172).

4.2.1.1 Ecclesiastic authoritative landscapes

As mentioned in Chapter 2, the institutional church contributed to one aspect of the manifold authoritative landscapes (as defined in §2.2.4) of Late Antiquity. Although a detailed account of the

[29] On this topic, Metcalf (2003: 400) states "…Islamic lead seals (which are very scarce in Cyprus), tend to come from the Limassol are (not, as one might have predicted, the Paphos area!)". See Metcalf's (2004) seal numbers I.1N, I.2N, I.3N and I.4N, respectively.

history of the Cypriot church is beyond the scope of the present work, what follows is necessarily limited to highlighting select aspects of the Cypriot church's authoritative landscape(s)[30]. By the time of St. Helena's alleged visit to Cyprus in 326-327 AD, which was a stop on her pilgrimage to the Holy Land, the sees of Paphos, Salamis and Tremithus already appear to have been established. Cypriot tradition has linked Helena's trip with the foundation of Stavrovouni monastery and the equiping of that institution with a relic: the Cross of the Penitent Thief[31]. Tradition also credits her with presenting a fragment of the True Cross to the Church of Tokhni. Nevertheless, Pohlsander (1995: 99-101) has argued that the main source for Helena's Cypriot foray, Leontios Machairas, is inconsistent and the evidence for her visit is at best equivocal. Similarly, Kyrris (1996: 162) maintains that the Cypriot Church either "invented or more probably elaborated" the details of Helena's visit in order to further their "effort to consolidate their ecclesiastic autonomy" by gaining imperial favour[32]. It is also important to note that the Cypriots had sided against Constantine I

[30] For a complete, but increasingly dated, account of the history of the Cypriot Orthodox Church up to the late 19th century, see Hackett (1901). For the Condominium centuries, see Dikigoropoulos(1965-1966). More recently, see the relevant sections in Englezakis's (1995) collected studies on the Church of Cyprus that cover the 4th through 20th centuries as well as Englezakis (1990). Gregory's (2001) article is also germane in this context. Also, see Metcalf (2009: 301-318, 351-359) for a recent discussion of the church's place in Late Antique Cypriot society.

[31] See Metcalf's (2004) for a seal of the monastery of Stavrovouni. Tradition also attributes Helena with ending a serious drought that lasted for the improbable length of 36 years (Chrysos 1993: 7).

[32] The Cypriots undoubtedly exploited the rift that had arisen between Constantine I and the Bishop of Antioch, Eutathius, because of an alleged incident involving Helena the bishop of Antioch during her travels in the East (Kyrris 1996: 162).

during the recent civil war. Therefore, it is likely that the Cypriot tradition surrounding Helena is an opportunistic, but calculated piece of public relations designed to reconcile the Cypriots with Constantine I, and forward and protect their own ecclesiastic authoritative landscape.

Throughout the fourth and most of the fifth centuries AD, the Cypriot church focused its attention on securing independence from the church of Antioch. The Cypriot Church largely charted a divergent course by becoming an orthodox anomaly in a primarily un-Nicean east during the dogmatic controversies of the fourth through seventh centuries AD (*e.g.* Monophysitism)[33]. This is not to say that Cyprus was free of heresies: Polybius of Rinococura records at least six that achieved a modest level of recognition on the island with the most popular being the Gnostic and the Marcionite heresies because of their popularity among the province's elites (Kyrris 1987: 104; Kyrris 1984). Nevertheless, the Cypriot Church increasingly voted out of step with the other eastern metropoles. For example, at the Council of Serdica (343-344 AD), the Cypriot delegates were the only eastern contingent that endorsed "the letter

[33] See Kyrris (1987) for a good synopsis of the activity and position of the Cypriot church in relation to these events. The historical development of the Cypriot role in the debates surrounding Monophysitism is particularly useful, see Kyrris (1987: 104-108). The level of chaos these debates generated is clearly described by Ammianus Marcellinus in his description of Constantius's involvement in theological matters: "The plain and simple religion of the Christians have obscured by a dotard's superstition, and by subtle and involved discussions about dogma, rather than by seriously trying to make them agree, he aroused many controversies; and as these spread more and more, he fed them with contentious words. And since throngs of bishops hastened hither and thither on the public post-horses to the various synods, as they call them, while he sought to make the whole ritual conform to his own will, he cut the sinew of the courier service" (Ammianus Marcellinus XX.16-18, trans Rolfe 1935-1939).

of the Western Bishops at the Council to Constantius demanding him to forbid all interventions of the civil authorities in church affairs" (Kyrris 1996: 162). The Cypriot church continued to resist established ecclesiastic protocols, and by the early fifth century AD, the Patriarch of Antioch informed Pope Innocent I that the Cypriots were openly electing their own bishops despite his protests: the situation devolved even further after the Cypriot bishops openly elected their own Archbishop. At the Council of Ephesus in 431 AD, the Cypriot Church, through the skills of the bishops of Kourion and Soli, won a strategic victory against Antioch. In 488 AD, during the second reign of Zeno (476-491 AD), the Cypriot Church achieved independence after the Archbishop of Cyprus, Anthemius, provided the emperor with the necessary evidence to support the claim that the Cypriot Church was an apostolic foundation. On this topic, Kyrris (1996: 168) states

> "…following a famous 'vision', according to Cypriot tradition, Archbishop Anthemius offered a manuscript of St. Mark's or St. Matthew's (?) Gospel discovered in the tomb of St. Barnabas to Emperor Zeno of Byzantium, who, in return, conferred on him and his successors everlasting imperial privileges –to wear an imperial red cloak in ceremonies, to carry an imperial sceptre and to sign in red ink-, thus confirming the autocephaly based on the apostolicity of the church of Cyprus. This

> was a landmark in its history and one of the cornerstones of its growing power and prestige and its increasing role in political and secular affairs. It is not clear how and why Zeno…decided to obviously displease his protégé Peter Knapheus (= the Fuller) Patriarch of Antioch…a Monophysite monk who accepted his *Henotikon*".

Thus, the Cypriot Church was able to achieve a very high level of independence by the late fifth century AD. Perhaps more importantly "the independent and autonomous election of the leaders of the apostolic Church of Cyprus meant that they were beholden to no-one outside the island" (Metcalf 2009: 255).The next major adjustment to the Cypriot church's authoritative structure occurred during the late seventh and early eighth century AD as a result of Justinian II's strategic use of the Cypriot population. Justinian II's policy resulted in the transfer of a substantial number of Cypriots as well as the island's Archbishop, John, to imperial territory (Thrace, Hellespont and Pamphylia). Although Justinian II's Cypriot project may not have fulfilled its maximum strategic potential in the way the emperor had originally envisaged, the Cypriot church did reap an exceptional benefit from it: the Council in Troullos's XXXIX Canon unequivocally established the autocephaly of the Cypriot Church

(Runciman 1990: 136-143; Kyrris 1996: 167-169; Kyrris 1987: 104-106; Dikigoropoulos 1965-1966: 253-255; Englezakis 1990: 12-18)[34].

Those settlements recognised as cities and that possessed the appropriate ecclesiastic infrastructures comprised the extensive nodal points within the Cypriot ecclesiastic landscape at the provincial scale (see below for these cities)[35]. However, as argued in the discussion of space and place presented in Chapter 2, the components of such manifold landscapes can exist at multiple scales: places that are nodal at the sub-regional scale may be *locales* at the provincial or regional scales. The Late Antique village sites of Kalavasos-Kopetra (Rautman *et al* 2003), Maroni-Petrera (Manning *et al* 2002) and Ayios Kononas (Fejfer *et al* 1995) illustrate this point. Of these, Kalavasos Kopetra is the most extensively excavated. The settlement site of Kalavasos Kopetra comprises an area of approximately 4ha and is situated on a ridge in the Vasilikos valley (modern Larnaca district) at a distance of approximately 2.5km from the coast. The site is also in close proximity to the Roman coastal road linking Amathus to Kition (Bekker-Nielsen 2004: 194-198; especially 197-198; Rautman 2001: 248), as well as the valley's main north-south axis of communication[36]. Several smaller and diverse Roman-Late Roman sites (settlement and productive sites) are within 4km of Kopetra. Two

[34] The council also made provisions for other bishops who could reside in their own sees because of barbarian invasion and occupation (Kyrris 1994-1998: 220-222; Cameron 1996: 30).

[35] Cypriot Bishops are attested in the conciliar lists "of Council of Nicea (325), Serdica (343), Constantinople (381), Epesus (431) and Chalcedon (451)" (Metcalf 2009: 353).

[36] For a discussion of the survey see Todd (2004 and forthcoming).

basilica churches located along the village's northern (Area V) and southern (Area II) outskirts frame the settlement: a third is located in the extra-village monastic complex to the main settlement's south at Sirmata (Area I) (Rautman *et al* 2003: fig. 2.4 p 19)[37]. Of these three churches, the south basilica (Area II) and monastic complex (Area I Sirmata) comprise the most extensively excavated areas of the site. The excavators have identified four sub-phases at the southern church before its destruction in the late seventh century AD. Both of the village basilicas and the monastic complex undoubtedly formed important monumental nodal points within the larger village landscape. Rautman and colleagues' comments on these structures are worth quoting at length. For the south church, they state

> "Standing on the S perimeter of the inhabited site, the south church was a key landmark for the Late Roman travelers approaching Kopetra from either the lower river plain or the ridge road. The rising mass of the nave was embraced by lower spaces on at least three sides, and other village buildings stood nearby. The building is the largest structure known on this part of the ridge and in late antiquity constitutes a visual anchor for area residents" (Rautman *et al* 2003: 118).

[37] The excavators (Rautman *et al* 2003: 238) have described Kopetra's layout as "nucleated" and positioned in the landscape "with an eye to defense".

For the monastic complex at Sirmata, they state

> "The monastery as *Sirmata* was one of the most conspicuous architectural features of the Vasilikos valley at the turn of the 7th c. The tall plastered walls of the basilica would have been familiar to travelers along nearby roads as well as inhabitants of the area. Opening to the west, the main doors of the church looked towards the nearby village, even as the lives of its occupants remained centered within the complex" (Rautman *et al* 2003: 89).

Borrowing a term from the discussion of Roman urbanism presented in Chapter 2, it seems reasonable to suggest that these monumental edifices formed a key component of the village's overall "armature" and were nodal points not only within the settlement but, more importantly, the surrounding landscape as well (Rautman 2003: 89, 118-119, 237-442, 254, figs. 2,4, 7.1; Rautman 2001: 252-254).

Additionally, based on the diversity of the fine ware and transport amphora sub-assemblages, the excavators (Rautman *et al* 2003; Rautman 2001: 247) have suggested that Kalavasos-Kopetra also served as a regional market centre. The sigillographic data from the Kalavasos area also supports the site's importance at the sub-regional level[38]. As a socially constructed place, it is reasonable

[38] See the 7th or 8th -century seal of the Consul Palladios (Metcalf 2004: seal # 736) and 6th or 7th -century seal of the Hypodektes (financial official) Kosmas (Metcalf 2004: seal # 189).

to conclude that Kalavasos-Kopetra was a *multilocal* nodal point within the sub-regional landscape and an important *locale* within the large civic territory of Amathus (Rautman 2003: 89, 118-119, 237-442, 254, figs. 2,4, 7.1; Rautman 2001: 252-254).

The settlement of Maroni-Petrera provides a similar example of this pattern. Maroni Petrera occupies an area less than 1ha on a low spur approximately 2km from the coast and is situated within the lower Maroni valley (modern Larnaca District). The site is also in close proximity to the southern Roman coastal road that links Amathus to Kition (Bekker-Nielsen 2004: 194-198; especially 197-198). Like Kalavasos Kopetra, several diverse Roman and Late Roman sites (*e.g.* LRA1 amphora production at Zygi Petrini and an anchorage at Vrysoundhia) surround Maroni Petrera (Manning *et al* 2000; Manning *et al* 2002). Based on the density of the surface scatters surrounding the basilica, the excavators (Manning *et al* 2002: 78) suggest the main settlement (which was not part of the salvage excavation's research design) was to the basilica's west; they have also identified an ancillary settlement located about 1km to the south at the locality of Phouches (Manning *et al* 2002: 78). Based on the diversity of the fine ware and transport amphora sub-assemblages, the excavators have suggested that this site also functioned as a market centre like Kalavassos-Kopetra in the neighbouring valley. The results of the intensive field survey in the lower Maroni valley indicate that Maroni-Petrera was one of the few sites with a tile roof in this sector of the valley. Manning and

colleagues (Manning *et al* 2002) have commented on the complexity and multilocality of this particular landscape:

> "*Petrera* basilica thus represented a number of things to the local community, and to any individual who might experience the church as a feature of the landscape. It articulated the Christian identity of the surrounding settlement. It represented the power and influence of the Christian law, and of the clergy. It also expressed a 'Romanness' that harked back to the pre-Christian buildings of the earlier empire, and served to legitimize the Church with back-reference to a strong monumental past. The Basilica, covered inside and out with thick white gypsum plaster, would have dominated the local landscape visually, catching light and gleaming across the valley" (Manning *et al* 2002: 79).

Thus, Maroni Petrera, like Kalavasos Kopetra in the Vasilikos valley, was a *multilocal* social construct and nodal point within the lower Maroni valley's landscape. Apart from serving as a nodal place at the local level, it also seems reasonable to suggest that the site would have been an important *locale* within Amathous's hinterland.

The settlement of Ayios Kononas provides an additional example of this process. Ayios Kononas is situated on a ridge in the western

Akamas and is approximately 1.7km from the coast in modern Paphos District. Apart from the project's field survey component, limited excavations were undertaken at the main site of Ayios Kononas in the basilica, several houses and the quarry, in addition to several "minor settlements which were considered of importance to the general understanding of the main site" (Bekker-Nielsen *et al* 1995: 20). The excavators (Fejfer and Mathiesen 1995: 78) estimated the settlement's overall area at approximately 1.4ha[39]. Like Koptera and Petrera, several smaller sites (*i.e.* an anchorage at Koni along with the farmstead sites of Sergis, Osia Maria and Dhamalospilios) surround Ayios Kononas (Bekker-Nielsen *et al* 1995: 16-20 and figure 3). The basilica at Ayios Kononas was the only edifice with a roof comprised entirely of tile (Fejfer and Mathiesen 1995: 83). This selective use of roofing tile for high status monumental edifices is also observable at the settlement site of Petrera. In situating the site of Ayios Kononas in the larger regional landscapes, the excavators (Bekker-Nielsen *et al* 1995: 19) believe that the settlement was "an important or possibly the most important site in western Akamas" during Late Antiquity (Bekker-Nielsen *et al* 1995: 16-20; Fejfer and Mathiesen: 1995: 73-77, 80-86). Thus, although the site was not a city, it seems reasonable to conclude that the settlement of Ayios Kononas was an important nodal space within the larger landscapes of the western Akamas.

[39] Fejfer and Mathiesen (1995: 78) state "The maximum extent has been calculated to about 14,000m^2 including open spaces, the quarry etc".

Apart from the direct presence of ecclesiastic physical infrastructure (*e.g.* rural and urban churches, baptisteries, chapels and rural and civic monasteries) in the landscape, the island's sigillographic record also provides a secondary index with which to measure the growth of this particular authoritative landscape within the province (as well as its external contacts/networks). Although the provenanced sub-assemblage of various ecclesiastic seals (*e.g.* archbishops, bishops and those of churches) is modest, it can be used in an exploratory way to examine aspects of this particular institution's spatial manifestations in both urban and rural contexts. Among the urban find spots, the ecclesiastic seal assemblages from both Amathus and Lampoussa/Kyrenia are particularly diverse. Apart from the seals of the city's own bishop or church (Metcalf 2004: seal # 434 and 479), Amathus's provenanced assemblage consists of seals of the bishop of Constantia (= Salamis) (Metcalf 2004: seal # 413), and several examples that do not record the bishop's see (Metcalf 2004: seal # 430, 441 and 461). These examples all date either to the sixth, seventh or eighth centuries AD. The sub assemblage also includes three seals of the Archbishop of Cyprus (Metcalf 2004: seal # 423, 452 and 454) that range in date to the seventh and eighth centuries AD. Similarly, the find spot of Lampoussa/Kyrenia's sub-assemblage also includes seals of the island's Archbishops (Metcalf 2004 seal # 417, 421 and 453) that date from seventh and eighth centuries AD. The sees of Soli and Lapithos recovered from these find spots provide a limited but suggestive view of the communication pattern among nodal spaces

within the same sub-region. The assemblage recovered from the excavations at Kourion's Episcopal complex include the seal of an unknown bishop attributable to the period between 550 and 700 AD (Dunn 2007: 527, catalogue # 1); the seal assemblage recovered from the excavations at Saranda Colones, Paphos, also include a seal of the Bishop Antonios (Dunn's catalogue # FC 3812c/2, Dunn *pers. comm.* 2007) attributable to the period between 550 and 650 AD. Finally, the small sub-assemblage consisting of five provenanced seventh-century AD seals of Ioannes bishop of Lapithos (Modern Karavas) (Metcalf 2004: seal #433) recovered from Constantia (1 seal), Kellia (1 seal; ancient Kelliake), Troulloi (1 seal) and Lamboussa/Kyrenia (2 seals), also provides a useful example of the intra-institutional communication networks that could exist between nodal points within this particular authoritative landscape.

Although the find spots of Khlorakas, Emba and Lemba (modern Paphos District) are not known to have been Late Antique urban centres, they have produced a surprisingly diverse sigillographic assemblage[40]. These find spots lay in close proximity to one another as well as to the nodal space of the city of Nea Paphos and the Roman coastal road that linked Nea Paphos with the nodal space of the city of Marion (Goodwin 1978: 284-285, 406-407, 504; Bekker-Nielsen 2004: 126-130, map 22). The ecclesiastic sub-assemblage from these find spots consists of the seals of an unknown bishop of the

[40] It is important to note that some fields surrounding the Khlorakas contain "'imported soil' which was spread over the normally-rocky terrain in the 1950's" (Goodwin 1978: 406-407). One possible direction for future research could involve a geophysical and intensive field survey of the more productive fields at these find spots.

sixth or seventh century (Metcalf 2004: seal # 666), Bishop Sergios dated to the fifth to seventh centuries (Metcalf 2004: seal # 352), Bishop Paulos (Metcalf 2004: seal # 438) dated to the sixth or seventh century, and Archbishop Epiphanios dated to approximately 680 AD (Metcalf 2004: seal # 423). Additionally, a seventh-century seal of the Metropolitan of Tyre, Theodoros, recovered from Khlorakas (Metcalf 2004: seal # 489) illustrates the spatially extensive contacts some of these non-urban find spots could have with nodal spaces from outside the province. Based on these find spots'over-all sigillographic assemblage compositions (*i.e.* ecclesiastic seals coupled with the seals of various *honorati* and functionaries) as well as their proximity to key infrastructure elements (*i.e.* main roads and major urban settlement) it seems reasonable to conclude that these find spots indicate the existence of nodal spaces in the sub-regional landscape and important *locales* within Nea Paphos's civic territory[41].

Several points emerge from this discussion. As mentioned above in Chapter 2, in a larger empire-wide context, researchers have suggested that the Episcopal institution was generally "city-friendly" (*e.g.* Holum 2005), and that the bishop was among the more important members of the Late Antique civic administrative structure rather than its leader (*e.g.* Rapp 2004, 2005). Nevertheless the

[41] Dignities and offices represented in the Khlorakas, Emba and Lemba sub assemblage include Honorary Eparch (eighth century AD, Metcalf 2004: seal 841), an Illoustrios (seventh-eighth century AD, Metcalf 2004: seal 189), a Patricius (eighth century AD, Metcalf 2004: seal 236), a Scribon (sixth-seventh century AD, Metcalf 2004: seal # 833), a Primiscrinirios (sixth-seventh centuries AD, Metcalf 2004: seal # 327) and a Strator (sixth-eighth centuries AD, Metcalf 2004: seal # 328).

church's growing institutional authority encroached on and could also potentially undermine various civic and provincial administrative protocols that had traditionally been the secular administration's responsibility (*e.g.* Slootjes 2006). Although it is probable that these developments occurred in Cyprus, they would have undoubtedly done so on a localized spatial and temporal trajectory. The complex and often hostile interactions between the church of Antioch and the church of Cyprus, and the various heresies, suggest that the Late Antique Cypriot ecclesiastic landscape was highly contested at the regional and sub-regional scales. The conflict between the Churches of Cyprus and Antioch also provides a particularly good example of the types of intra-institutional conflicts that could exist within a spatially extensive authoritative organization like the church. Similarly, the various heresies that are purported to have taken hold on the island (Kyrris 1984) indicate that this ecclesiastic landscape was also *multilocal* (as defined in §2.2.4) as well as contested at the provincial level. Based on the position that the Cypriot church adopted as a collective and corporate institution vis-à-vis the Church of Antioch, it also seems reasonable to suggest that the Cypriot church was able to draw upon and efficiently utilize both extensive and localized conduits and resources to resist its antagonist's efforts to colonize, that is to say infiltrate and subjugate at the abstract institutional level, this particular contested Cypriot landscape.

It is likely that the Cypriot church's authoritative landscape operated simultaneously at several spatial scales during Late

Antiquity as the settlements of Kalavasos Kopetra, Maroni Petrera, and Ayios Kononas as the provenanced seals indicate. It also seems reasonable to describe one aspect of this diverse process as that of a localized centre institutionally embodied by the urban bishop infiltrating the lived, or every day, space of a periphery comprised of those elements that constituted the civic and Episcopal see's hinterlands. In this context, the presence of institutional functionaries like the chorepiskopoi (Bishops with a limited mandate who operated as agents of the urban bishop that serviced rural and village communities within a given see) and the periodeutai (itinerant priests) in the landscape, I suggest, also represent a component in the infiltration of everyday spaces by the abstract authoritative institutional space embodied by the Episcopal establishment[42]. However, the process could act in considerably more subtle ways. Bowden (2003: 151) has made the general observation that "[t]he lower clergy, the presbyters and deacons, could be drawn from all ranks" and that many still practiced their "secular trades" after attaining their appointments within the church during Late Antiquity. This development, I suggest, allowed the institution to infiltrate, or colonize, the lived spaces of everyday life in both urban and rural contexts to a very high degree while simultaneously masking the intensity of this process.

[42] Consider, for example, Rautman's (2001: 255) statement "As in nearby Kalavasos in recent times, the resident priests and lesser clergy probably came under the jurisdiction of nearby Amathus and helped administer village affairs"which illustrates, in my opinion, the human aspect of the process of colonization. For the chorepiskopoi in Cyprus see Gregory (2001: 719-721) in passing.

It is important to note that this particular colonization process could also include other authoritative landscapes (*e.g.* administrative and military) and, in some cases, it was bi-directional. For example, Kyrris (1994-1998: 209) suggests that Cypriot bishops also performed military administrative functions within the province during the seventh century[43]. However, the situation Kyrris (*ibid*) is referring to could be interpreted in two broad ways: (1) as either the growing importance of the church in relation to the central (both military and civil) administrative apparatus' weakening presence on the island or (2) as the central administration's co-option of various localized ecclesiastic infrastructures (*e.g.* communication, material and human) for their use in regional geo-political strategic planning.

Heraclios's failed theological policy of Monotheletism is perhaps the most explicit example of the central government's strategic interests directly confronting the Cypriot Church's authoritative integrity. Most researchers (*e.g.* Kyrris 1987; Kyrris 1996) would agree that the central government selected Cyprus because of the comparatively peaceful relations that existed between the province's Orthodox and Monophysite populations, and the emperor's friendship with the province's Orthodox archbishop, Archadios. Despite the unfavourable reply from the island's Monophysites, Archadios accepted Monothelitism undoubtedly as a result of his friendship with the emperor rather than on any solid

[43] Kyrris (1994-1998: 209) states "Equally probable was the engagement of…bishops with civil and/or military tasks as inferred from such cases as *Epimachos bishop of Soli* who was *ex-consul*…and *Kyros* of Soli, a *stratelates* (7th c.).

theological grounds. Kyrris (1987: 105) states the following about the strategic objective of this particular policy

> "The possibility of success on a small scale in Cyprus might lead to unity throughout the empire as a whole, for which the example of Cyprus would serve as 'balm'. In that case the Greek community together with the Monophysite elements co-existing with it were expected to act as the mediating factor in the imperial policy of Constantinople: the reason of its failure to do so falls within the general conservative Orthodox attitude of the Cypriot Church in religious matters, and this despite the close relations of Heraclius with the island…"

Apart from a "conservative attitude" (Kyrris *ibid*), it seems reasonable to suggest that the Cypriot Church's ultimate rejection of Monotheletism is also linked to the institution's desire to remain free of external interferences and/or the competing interests and ensure the continued reproduction and legitimization of its own particular authoritative landscapes within the province. The need for the institutional Cypriot church to ensure the reproduction of its authority undoubtedly gained importance with the influx of various monophysite Christians into the province as a result of the Persian and subsequent Arab occupations of the Levant and Egypt and the establishment of state-sponsored Islamic communities on the

island from 653 AD onward[44]. Thus, apart from being *multilocal*, it is possible to conclude that this particular authoritative landscape was also contested on several spatial scales during Late Antiquity.

Researchers (*i.e.* Randsborg 1991) have argued in general terms that ecclesiastic building within a given region and socio-temporal trajectory can serve as an index of the economic strength or weakness of the host communities. On Cyprus, for example, Rautman (2001: 250) has employed this approach in his interpretive framework in the analysis of Kalavasos Koptera[45]. Rather than providing an alternate model, I suggest that the approach to Cyprus' ecclesiastic landscapes presented above, which also includes the relationship between abstract, lived and contested spaces in the landscape, provides an additional but necessary dimension to the general view that these edifices are indexes of rural economic strength (*e.g.* Rautman 2000, 2001, 2003)[46]. Additionally, as noted in Chapter 2 (§2.3.3), Bowden (1991; 2003) has identified several ways in which the institutional church could also remove wealth from communities. At this point, it is useful to reiterate several of the processes mentioned by Bowden(*ibid*); these include the extraction of localized wealth for the maintenance of clergy within the see and the use of

[44] These include several thousand Armenians settled in the island by Tiberios II in the late 570's (Charanis 1959: 30; Kyrris 1987: 105; Kyrris 1970: 157)

[45] Rautman (2001: 250) states "Farming, agricultural processing, and perhaps metalworking formed the base of Koptera's economy, whose scale can best be judged by the three identified churches. These tangible expressions of wealth donated to pious ends constitute the most conspicuous feature of the site". Clearly Rautman is arguing for direct correlation between monumental architecture and a given community's economic dynamism.

[46] For a general discussion of Cypriot Late Antique church architecture, see Megaw (1974) and Papageorghiou (1986).

non-local human and material resources in church construction. It is also probable that land donations to the church by members of the congregation would have also alienated productive land, and by extension wealth, from localized economies and the central administration.

Bowden's (2003) observation on this process is worth quoting at length. He believes "It does not necessarily follow that monumental architecture itself is indicative of a greater production of surplus *per* se, but rather that it is a sign of increasing control over existing resources by an emerging elite; in this instance the burgeoning hierarchy of the Christian Church" (Bowden 2003: 128). However, it is possible to augment Bowden's (*ibid*) model with the spatial framework advocated in Chapter 2 and include the differences between a given extensive authoritative institution's ability to control both localized and extensive surplus production, its ability to control various resource (both human and material), and its ability to direct their redistribution to various institutional organs. Within this context, it seems reasonable to suggest that this process is linked ultimately to the colonization of localized spatial systems (in this case economic spaces and lived spaces) by abstract institutionalized authoritative space (in this case the Church). Even though the edifices that constitute the Cypriot case studies mentioned above (Kalavasos Kopetra, Maroni Pertrera and Ayios Kononas) may not be as elaborate as their urban counterparts were, they do constitute monumental edifices within their own particular contexts (*e.g.* the village and surrounding valley

landscape)[47]. As such, they are the products, like all monumental architecture (§2.2.4.2), of the institutionalization of differential social relations, the control of both human and material resources, as well as the disproportionate consumption and distribution of these resources.

In sum, it is likely that the Cypriot ecclesiastic landscape was highly contested and diverse throughout Late Antiquity. As an authoritative institution, the Cypriot church efficiently infiltrated the provincial rural landscape by embedding itself into the fabric of Late Antique social actors' everyday routines, whether through environmental or direct interpersonal contact. It adopted policies and utilized both extensive and localized conduits and resources to resist effectively its various antagonists' efforts to challenge its spatial hegemony. It also seems reasonable to suggest that it drew upon the same diverse resource base to legitimize its presence and ensure the reproduction of its own structures in the landscape.

4.2.1.2 Cypriot elites: Roman and Late Antique

The preceding discussion has focused on one aspect of a manifold process involving institutional competition, however, such institutions could compete with various social groups such as the diverse stratum often identified as elites (see Chapter 2,

[47] Similarly, Manning and colleagues (2002: 77) state " The church/basilica at Maroni *Petrera*, and the associated structures such as the Paved Building, may only be a modest monument, but within the local valley context it nonetheless does symbolize an ability to control surplus resources and to engage in conspicuous consumption well beyond strict need (for the requirements of the liturgy).

§2.3.1.2). In Late Antiquity, the often competitive relationships between local landed elites, senatorial elites and abstract institutions like the city and central government also exemplify both the localized and extensive facet of this competition. Because the data pertaining to Cypriot Roman and Late Roman elites is disseminate, it is necessary to discuss these groups together. As mentioned in Chapter 2, the property system (particularly the transmission and acquisitions of property), the legal system and the occupation system (division of labour) constituted three general mechanisms that preserved and reproduced social inequalities during the Principate (Garnsey and Saller 1987) and, it is reasonable to suggest, during Late Antiquity as well. At the onset of direct Roman rule after the battle of Actium, some of these mechanisms undoubtedly continued along the trajectories established during the last phase of Ptolemaic and republican rule on the island. However, as the central government formalized Cyprus' position within its larger provincial geo-political landscape after 22 BC, it framed levels of possible engagement between upwardly mobile social actors and state level authoritative structures at the provincial level. In other words, this relationship delineated at least some of the channels of engagement between the various localized authoritative resources and those dispersed and stratified resources at the global scale that comprised the state's administrative apparatus.

One particular area where these trajectories intersected was in the state's awarding of Roman citizenship to provincial elites. Apart from the *conventus* of Roman citizens at Paphos and Salamis,

the available data (mostly epigraphic) suggests that very few Cypriots received Roman citizenship. As mentioned above, the imperial administration initially viewed the Cypriots in a pejorative manner and over the long term, it showed little interest in awarding the full or partial franchise to any of the island's cities, nor did it consider colonies in the province necessary or advantageous. However, such a trajectory, whether the result of implicit or explicit policy on the part of central government, would have ultimately created an environment that eliminated certain social resources and conduits from the various Cypriot elite landscapes. Recently, Potter (nd: 22-23, 33) has argued that there is a correlation between the limited overall career paths of the island's governors and the small number of socially mobile Cypriots that were able to acquire Roman citizenship. The central premise of his (*ibid*) argument is that those social actors that became governors of Cyprus did not possess the necessary influence and connections, or personal authoritative resource set (defined in Chapter 2, §2.5.5), to act as efficient benefactors and patrons for those Cypriot elites that, for example, wished to gain Roman citizenship or embark on political careers outside of the island. Thus, the senatorial social actors that became governors of Cyprus, Potter (*ibid*) concludes, would have been mostly inefficient "patrons" to the Cypriot elites. Although it is reasonable to include weak gubernatorial patronage among the factors that could potentially eliminate valuable social resources and pathways from the Cypriot elite landscape, it is probable that this factor's

overall importance would have diminished after the Caracalla's edict of universal citizenship in 212 AD, and would have experienced an even greater decline in Late Antiquity (see below).

Because of the limited state-level career options available to the Cypriots during the Principate, the relative importance of other mechanisms, such as imperial appointment (either from the emperor or a magistrate), marriage (Potter nd: 57) and to a lesser extent military service gained in relative importance for those upwardly mobile social actors that wished to acquire the franchise prior to 212 AD. Of these three, imperial appointment (whether directly by the emperor or in his name by a magistrate) and marriage constitute the two main mechanisms for disseminating the franchise on the island during this time. As in other provinces, military service provided a conduit for the dissemination of the franchise to social actors from an array of backgrounds (*i.e.* social actors that may be identified as *humiliores* rather than landed elites of curial status). However, the available evidence suggests Cypriot social actors did not utilize this particular mechanism extensively (Potter nd: 57-59; Mitford 1980). Nevertheless, by the mid first century AD (reigns of Claudius and Nero), the Cypriot elites "begin to have their prominence highlighted with grants of citizenship" (Potter nd: 58).

Although their access to the conduits that lead to social mobility and career paths outside the island were limited, the Cypriot elites successfully competed with one another on a

predominantly provincial-civic level[48]. Apart from localized competition within the province at the civic level, the *Koinon Kypriōn* provided the socially mobile with a comparatively more spatially extensive mechanism through which they could convert their material wealth into social capital. Mitford (1980: 1370-1371) has made the general observation that the *Koinon* increasingly honoured important provincial men and women rather than members of the central administration (*i.e.* proconsuls and other provincial officials, but it is important to note that the imperial family always remained popular) from at least as early as the late first century BC. This trend, he believes, is indicative of a growing sense of "Cypriot nationalism"[49]. Because Cyprus "had no Cypriarch to match, for example, the Asiarch, Lyciarch, Ciliciarch and Syriarch of the adjacent mainlands" (Mitford and Nicolaou 1974: 138), the highest provincial-level honour available to upwardly mobile Cypriot social actors was the provincial chief priesthood of the imperial cult, which was combined with the position of principal officer of the *Koinon*. This rotating annual post not only provided the office-holder with recognition at the provincial level but it could also provide possible routes of access to social actors engaged with the larger imperial system through spatially extensive activities like

[48] However, although imperial service was largely closed to them, several Cypriots did achieve a level of recognition outside of the province; see Mitford (1980) for examples. Those wealthier members of the civic elites could afford to hold several civic offices at once. For example, at Salamis, Heracleides served as both gymnasiarch in 21/22 AD and held the post of civic high priest of Zeus Olympios and the Augusti for life (Mitford and Nicolaou 1974: 128-129).

[49] Mitford (1980: 1372) states: "Something like a nationalism may then be detected, but of a gentle and a sentimental kind, far removed from the intensity of that other small people, the Jews".

embassies[50]. The career of Servius Sulpicius Pancles Veranianus, a citizen of Salamis who also attained Roman citizenship, provides a glimpse into the possibilities that existed at both the local (*i.e.* civic), provincial (*i.e.* service in the provincial assembly) and extra-provincial scales for the more prominent of the upwardly mobile Cypriot social actors. Pancles held both the posts of gymnasiarch and agonothete at his own expense and in perpetuity; he served as provincial chief priest of the imperial cult on three occasions and headed embassies to the Flavian Emperors while holding this office[51]. He also provided funds for the embellishment of Salamis's urban armature (*e.g.* he is credited with building a bathhouse and the theatre and erecting a number of statues in the city)(Mitford 1980; Mitford and Nicolaou 1974: 130-138; Potter nd: 50-52). Thus, it seems probable that service and advancement in the provincial assembly formed an important resource for the social negotiation and the legitimization of authority for the Cypriot elites: both of which were essential for the maintenance and expansion of their personal authoritative resource sets (as defined above in Chapter 2, §2.2.5).

The Cypriot provincial elites' heightened internal competition during the Principate is largely attributable to their position in relation to larger global administrative mechanisms. It also seems

[50] Potter (nd: 52) notes: "the fact that it changed hands every year reflects the fact that there was a demand for the chance to hold it (in theory- in practice a great individual such as Pankles might be priest whenever he wanted)".

[51] As Mitford and Nicolaou (1974: 135) note, Pancles would have to provide land and/or money to maintain the gymnasium's oil supply and oil for the games.

reasonable to suggest that before the grant of universal citizenship in the early third century AD, one facet of the Cypriot elite consisted of three overlapping and interrelated groups. These three consist of those social actors who possessed Roman citizenship, those that held offices for life and/or served in the provincial assembly, and those social actors of curial status. After the grant of universal citizenship, the first group's main means of differentiation (*i.e.* Roman citizenship) undoubtedly decreased in relation to other factors. However, the indifferent stance the Cypriots appear to have adopted when presented with Roman citizenship 212 AD is not necessarily indicative of a closed or introverted provincial worldview[52]. Rather, it seems reasonable to suggest that it is also indicative of the existence of a developed set of mechanisms that allowed those social actors who engaged with them to successfully pursue *philotimia* which, in turn, also suggests they were able to maximize the potential of localized authoritative resources for the conversion of material wealth into social capital on the one hand and the legitimization of their social capital and *potentia* (authority) on the other.

As discussed in Chapter 2 (§2.3.1.2 and 2.3.1.2.A) the reorientation and expansion of the state's administrative apparatus during Late Antiquity altered many of the established conduits and structures that framed the social practices of the empire's elites. At this point, it is useful to reiterate three of the more far-

[52] Michaelides (1982: 120-121) states "It would seem though, judging by the minimal reaction of the Cypriots, that, by AD 212, when Caracalla offered Roman citizenship to all free males living in the Empire, they had lost interest in obtaining it".

reaching and interrelated developments that resulted from this manifold process. The first is the central administrative apparatus's overall growth and increased demand for human resources drawn from a particular social stratum that traditionally entered into civic (local) service. The second is a transformation of civic administration in which the so-called "notables" eclipsed the constitutional mechanisms of civic government. The third interrelated component centres on the proliferation of senatorial *honorati* in the provinces. As noted above, it is possible to view this proliferation in terms of the centre, or at least certain aspects of the centre, colonizing the various landscapes of the provincial periphery. This process is particularly interesting on Cyprus precisely because of the predominantly localized character of elite competition within the province up until this time.

These empire-wide developments undoubtedly altered the established localized resource networks that had come to define various Cypriot elite landscapes (*e.g.* civic and provincial) during the early Roman period. At the provincial scale, the *Koinon Kypriōn* was among the more important and extensive localized pathways that lost its ability to provide upwardly mobile Cypriots with an efficient medium for the conversion of material wealth into social capital[53]. Upwardly mobile Late Antique Cypriot social actors, like their contemporaries in other provinces, could pursue careers in the imperial civil service or in the church. Both of these spatially

[53] As Mitford (1980) notes, the institution appears to trail off in the fourth century AD.

expansive institutions provided efficient mechanisms for both *philotimia* and the conversion of material wealth into social capital in ways that neither service in the curia nor the *Koinon* could match. Nevertheless, some researchers (*e.g.* Alastos 1976; Chrysos 1993) believe that the Cypriot church represents a social reorientation and Christian re-expression of the provincial *Koinon*[54].

This position, I suggest, is only partially and superficially true. Although the institutional church could and did consume human and material resources drawn from the curial classes, it also engaged with and consumed human resources drawn from other social strata in order to fill the lower clergy and functionaries in a way that the *Koinon* did not. However, unlike the *Koinon*, the institutional church possessed a considerably more extensive and diverse resource base and access to the state-level conduits through which these resources flowed. The institutional church also differed from the *Koinon* in its extensive hierarchical administration, its manner of issuing sanctions against non-compliance, and the mechanisms through which the institution legitimized itself. As a hierarchical institution, it was not as overly dependent upon those upwardly mobile social actors for its legitimization and reproduction as the *koinion* was. Thus, it seems reasonable to suggest that one pronounced difference between the *Koinon* and the

[54] Chrysos (1993: 5) states "…the leading social group in the cities, who traditionally were involved in local politics and in the activities of the *koinon ton Kyprion*, gradually – in greater numbers after the death of Julian in 363…associated themselves with the church". Similarly, Alastos (1976: 115) believes that "The *Autocephaly* of the Cypriot Church is a historical continuation of the *Koinon*, and like the *Koinon* it helped to prevent the national identity of the island from being swamped in by the tumultuous catastrophes of the coming centuries".

church centred on the distinction between a hierarchical organization with a corporate identity and efficient ability to pursue collective interests on one hand and the predominantly personal authority of the Koinon, on the other. The church also efficiently colonized the spaces of everyday life of a wider spectrum of Cypriot social actors in a way that *Koinon* could not. In sum, it seems reasonable to conclude that the common link between these two institutions does not reside in the promotion of a general Cypriot identity but in the corporate interests of select groups of Cypriot social actors.

As a socio-spatial phenomenon, most researchers would agree that the proliferation of various senatorial *honorati* in the provinces is characteristic of the changing authoritative landscapes of Late Antiquity. Although most of current available data for this process in Cyprus is equivocal, the sigillographic record, despite its limitations, provides the best evidence for this process within the province[55]. In a recent study, Metcalf (2004: 72, 76) has observed that seals of *illustres* are the second most frequently occurring seal type after those of Bishops within the province prior to the 690's AD. As mentioned above, although substantially inflated during the sixth century AD, the dignity of *illoustrios* identifies those social actors who attained it as members of the highest senatorial grade (they either received this dignity either as a result of holding or having held an office in the civil service or

[55] For a general discussion of these limitations, see Metcalf (2003: 394-397, 400). The most important limitation from the perspective of the present study is the lack of good provenance information for the majority of the Cypriot seals.

by receiving an honorific office). By the late sixth century, however, the title *illoustrios* could also indicate membership in "one of the palatine regiments" (Dunn 2007: 528). At the provincial level, it is important to note, those social actors who had achieved this dignity represented one particular diverse social stratum within a manifold landscape of elites. Their dignity, in addition to their rank, provided them with access to both provincial and state level authoritative resources that would have been beyond the personal resource sets available to most of their predecessors during the Early Imperial period.

Apart from the dignity of *Illustris*, the provincial sigillographic record includes individuals with the dignities of Consul (*e.g.* Metcalf 2004: seal #823, 736 and 619), Patricius (Metcalf 2004: seal# 20), Lamprotatos and Honorary Eparch (Metcalf 2004: seal #174), Honorary Eparch (seal # 178) and Honorary Consul (Metcalf 2004: seal #163), and Spatharios (*e.g.* Metcalf 2004: seal #832 & 837). Unfortunately, at present it is impossible to establish the directionality or origins for the vast majority of the various elites identified in the sigillographic record. However, based on a comparison of a Cypriot sub-assemblage comprised of eagle seals (*i.e.* a wide ranging class of lead seals with an obverse device that consists of an eagle with raised wings) with a sub-assemblage of the same type of seals from Constantinople, Metcalf (2003: 400) has made the general observation that "pre-700 seals were not carried to Constantinople in any significant quantity, as they were from 700

onwards”(see below)[56]. This, coupled with the fact that approximately 85 percent of the total provincial level sigillographic assemblage is comprised of pre-700 AD seals, indicates a comparatively high level of intra-provincial communication, as Metcalf (2003: 399-400) has argued[57].

The provenanced seals of two seventh-century AD *Illustres*, Petros (Metcalf 2004: seal #190) and Stephanos (Metcalf 2004: seal #192), as well as a sixth century AD seal of the *Illustrios* Petros (Dunn 2007: catalogue # 1) provide a view, albeit a limited one, of the potential scope of extensive intra-provincial (and potential extra-provincial) communication patterns at this time[58]. Of the six seventh century AD provenanced examples attributable to Petros, five seals are from Lambousa/Kyrenia and one seal is from Amathous; the sixth century AD seal is from Kourion’s Episcopal prescient[59]. Of the four provenanced examples attributable to Stephanos, two seals are from Lambousa/Kyrenia, one is from Amathous and one from Salamis-Constantia[60]. The seals of the Consul Palladios and the Honorary Consul Ioannes provide a further example of inter-provincial elite communication patterns. As indicated by seal #736 and #163 of Metcalf’s (2004) catalogue, Palladios had the need to undertake

[56] There appears to be a concentration of eagle seals in the Lamboussa area (Metcalf 2004: 100-101). Of the approximately 180 Cypriot eagle seals, nearly 140, or approximately 78 percent of the sub-assemblage, are stray finds (*ibid*).

[57] “Roughly 1,100 out of the 1,300+ seals recorded from Cyprus are pre-700 in date” (Metcalf 2003: 399).

[58] Metcalf (2004: 76) notes that of the 82 seals of Illustres only 22, or approximately 27 percent of the sub-assemblage have exact provenances.

[59] The remaining 20 examples come from the Petrakides archive (Metcalf 2004).

[60] The remaining 28 examples come from the Petrakides archive (Metcalf 2004).

correspondence with persons/institutions at both Kalavasos and Amathous while Ioannes had the need to undertake correspondences with individuals, groups or institutions at both Lythrankomi and Lambousa-Kyrenia. These patterns show on a limited scale and in a very simple way the interrelated and bi-directional relationship that existed between both elite urban and elite rural landscapes. As mentioned above, those seals of *illustres* attributable to the later sixth century AD may also be associated with social actors with links to the military.

It is probable that the reorientation and in some instances, simplification, of Cypriot authoritative structures (*i.e.* the administrative apparatus and local networks) during the jurisdictionally ambiguous condominium centuries would have created an environment in which the administrative utility of the island's elites would have undoubtedly increased in value from the imperial administration's point of view. The best example of this process comes from a context derived from the negotiations and diplomatic manoeuvring undertaken by Justinian II and Caliph Abd-al-Malik regarding the transfer and resettlement of the island's population during the first decade of the eighth century AD. During these diplomatic engagements, members of a prominent Cypriot family, known as the Phangoumeis, actively participated in the negotiations that in 706 AD led not only to the reestablishment of the treaty of 688's terms but also the return of those Cypriots transferred to the Hellespont by Justinian II and to Syria by Caliph Abd-al-Malik

(Browning 1977-1979: 107; Kyrris 1994-1998: 194-195)[61]. Although the Phangoumeis's dignity and office, if any, is not mentioned by Constantine Porphygenitus in *De Administrando Imperio*, it is very likely that they were members of the top echelon of the Cypriot elites who, as high-ranking *honorati,* would have had access to at least some components of the Late Roman state's extensive authoritative resources, like good contact(s) in the palatine service and undoubtedly close contacts with those imperial officials on the island. As such, they would have been the equals of those social actors like the honorary Eparchs Kosmas (Meatcalf 2004: seal # 321 & 841) and Ioannes (Metcalf 2004: seal # 737) identified in the Cypriot sigillographic record for the eighth century AD[62]. Such elites, it also seems reasonable to suggest, would have become the Cypriot "power elite" by exploiting the considerably more fluid authoritative structures that characterize condominium government and administration in general.

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[61] Constantine Porphyrogenitus (*De Administrando Imperio* = *DAI*) states "…the emperor [Justinian II] was moved to populate Cyprus again, and he sent to the commander of the faithful of Bagdad [Damascus, see Kyrris 1994-1998: 195)] three of the illustrious Cypriots, natives of the same island, called Phangoumeis, in charge of an imperial agent both intelligent and illustrious, and wrote to the commander of the faithful asking him to dismiss the folk of the island of Cyprus that were in Syria to their own place. The commander of the faithful obeyed the emperor's epistle, and sent illustrious Saracens to all the parts of Syria and gathered together all the Cypriots and carried them over to their own place. And the emperor, for his part, sent an imperial agent and carried over those who had settled in Romania, that is Cyzicus and in the Kibyrrhaiote and Thrakesian provinces, and the island was populated" (trans. Moravcsik and Jenkins 1967: 225). Based on the phrasing of the reLavant portion of the passage in the *DAI*, Kyrris (1994-1998: 195) argues that the "Phangoumeis were living in Cyprus at the time of dispatch of the delegation to Damascus".

[62] Metcalf (2004: 77) suggests that the dignity of Honorary Eparch may be more common on Cyprus during the first half of the eighth century. The Honorary Eparch Kosmas is well represented in the island's post 700 AD sigillographic record with six eagle seal coming from the same boulloterion (*ibid*).

4.2.2 Strategic contexts

This sub-section presents an assessment of the potential role Cyprus played in the Later Roman state's larger strategic mediations in the eastern Mediterranean. Because of the fragmentary and limited data available for the Late Roman period, it is necessary to start discussion in the Roman period and to trace the development of several general social themes before broaching specific Late Antique questions.

4.2.2.1 Roman and Late Roman

Apart from modifying the existing civic oligarchies to imperial requirements, the central administrative apparatus of the Principate never fully exploited Cypriot human resources (*e.g.* military service and administrative posts) in the same way as it had done in other provinces. Nevertheless, the epigraphic record provides clear evidence for the existence of at least one Cypriot Cohort, *IIII Cohors Cypria*, in the Roman army from at least the mid first century AD. The *IIII Cohors Cypria* served with distinction in the Dacian wars and received the franchise early as a reward at some point during the first decade of the second century AD (as indicated by the epitaph *Civium Romanorum* associated with this unit by 109 AD)[63]. On the other hand, Mitford (1980) believes that the presence of a *IIII Cohors Cypria* implies the existence of at least three other Cypriot cohorts. He suggests (1980: 1345-1347) that the initial

[63] Bekker-Nielsen (2002: 321) suggests the cohort was formed before 85 AD. Also, see Bekker-Nielsen (2002: n10, n17, n19) for references for the relevant inscriptions.

call-up would have required approximately 2000 Cypriot nationals[64]. He also believes that these cohorts would have drawn upon Cypriot human resources exclusively to maintain their strength. However, Bekker-Nielsen (2002) has recently challenged this interpretation. Based on the prevalent trend in legionary recruitment practices from the end of the first century AD recorded in other provinces, Bekker-Nielsen (2002) has reasonably argued that it is unlikely that the fourth Cypriot cohort drew exclusively on Cypriot human resources to replenish its ranks. He further suggests that the initial call-up would have required approximately 500 social actors rather than the 2000 Mitford (1980) suggests. Based on what is known about the naming conventions of contemporary legionary units, he believes the available evidence that supports the argument for the existence of additional Cypriot cohorts is ambiguous. Furthermore, he points out that after the auxiliaries who had won the epithet *Civium Romanorum* for the cohort retired, the epithet would have become part of its official title regardless of the current status of those individuals serving in it (Mitford 1980; Bekker-Nielsen 2002; Potter nd).

It would appear that the Cypriot cohort would have become increasingly less Cypriot in character throughout the course of its active service life. Thus, if Bekker-Nielsen's (2002) arguments are accepted, it is possible to conclude that military service played a minor role in the overall transmittal of Roman citizenship within the province, and was an unattractive option for those upwardly mobile Cypriot social actors, as it was for many others living in

[64] Mitford (1980) based this figure on four full strength 500-man cohorts.

interior provinces, that wished to attain the franchise. The *IIII Cohors Cypria* does not appear to have continued in service after the military restructuring of the early fourth century AD.

Apart from the ever-present hazards and disjunctions caused by seismic disturbances and climatic fluctuations like droughts (see §3.2.5 and 3.3), the only serious disruption the provincial administration had to deal with was the Jewish Revolt of 116-117 AD (under Trajan) which spread to several provinces (Egypt and Cyrene) in the Eastern Mediterranean. On Cyprus, which had a considerable Jewish population since the Hellenistic period (Kyrris 1992: 137; Potter nd: 38-39), the insurrection appears to have originated in or around Salamis[65]. Under its leader, Artemion, it focused its attention on undermining the province's municipal elites[66]. It is important to note that during the late republic, the *Koinon Kypriōn* had successfully shielded the province from the economic burden of sustaining a garrison by paying 200 talents to the governor of Cilicia (Potter nd: 46). The Cypriots continued to remain free from the economic burden of a garrison throughout the Principate. Apart from a small police force, the governor of Cyprus did not have immediate access to military resources in the case of either domestic or external threats, unlike the governors of frontier provinces. However, Artemion's revolt provides a particularly good

[65] According to Kyrris (1992: 137), the provinces Jewish population was primarily engaged in the "wine and copper trade". He (*ibid*) also notes that a number of Jewish refugees settled near Salamis and Golgoi after Titus's sack of Jerusalem in 70 AD.

[66] As a social movement, the revolt's main aim "was to annihilate or minimize the Greek influence in the empire" (Kyrris 1992: 137). On Cyprus, the revolt attempted to undermine the most visible element of the system: the municipal aristocracy (Michaelides 1990).

example of the provincial administration's inability to quell widespread internal civil disobedience on the island at this time[67]. The situation stabilized only after a legionary detachment had arrived on the island. The epigraphic record preserves both direct and indirect evidence for the movement of troops to the island during this conflict[68]. The first is a dedicatory inscription of the Cohors VII Breucorum discovered at the modern village of Knodara. The inscription's provenience, in turn, suggests that the VII Breucorum established its base of operations in the northern Mesaoria at the foot of the Kyrenia range. The second inscription comes from Berytus (modern Beirut) and records the epitaph of a military tribune of the VII Claudia who received a decoration for his service on Cyprus (Smallwood 2001: 414; Birley 1997: 74; Applebaum 1979: 299; Mitford 1980: 1345; Kyrris 1992: 137-139).

Although the account of large-scale destruction at Salamis and the reported deaths of approximately 240,000 persons across the whole island preserved in the documentary record (*e.g.* Cassius Dio) may be an exaggeration, several researchers (*i.e.* Potter nd; Michaelides 1990; Kyrris 1992) have argued that the historical data may also be an exaggeration. The administration's response, it also

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[67] Consider, for example Potter's (nd: 40) observation that governors of unarmed provinces, like Cyprus, had "to rely on the local police forces of the province, under the leadership of local dignitaries, to keep order". This situation clearly illustrates the constant need for the central administrative apparatus to acquire regular and accurate information from the provinces.

[68] Nikolaou (1966-1969: 50) mentions that excavations in Paphos recovered Legionary standards, an engraved gem as well as an inscription mentioning the XV Apollinarii legion. For other ambiguous quasi-military epigraphic data see, Mitford's (1980: 1364 n283) comments on *CIL* III 12109 and *CIL* III 217.

seems reasonable to suggest, illustrates the revolt's psychological impact within an otherwise peaceful province[69]. Although the operations of 116-117 AD must have reduced the overall number of Cyprus' Jewish communities, there is epigraphic evidence that indicates these communities continued to exist on the island after the uprising[70]. At Salamis, for example, Mitford (1980) suggests that two inscriptions dated to the late second or early third century and the third century AD respectively indicate the re-emergence, or the possible continuation, of Salamis's Jewish community[71]. Nevertheless, although the earlier evidence is somewhat ambiguous, by the fourth century AD, an inscription discovered at Lapethus associated with the dedication of a marble column by a rabbi, Atticus, indicates the greater visibility of the province's Jewish communities at this time[72]. Apart from a questionable threat posed by a Gothic feet in 269 AD, the province did not experience the widespread disruptions that engulfed most of the empire during the mid to late third century AD directly[73]. However, as Rautman (2003) has recently argued, it is almost certain that the province would have

[69] Hill (1940: 242-243) believes that because "Salamis was a very great city, and it had been calculated that the ancient aqueduct would service some 120,000 inhabitants; so that double the number for the slain throughout the island is not incredible". Mommsen (1996: 223), drawing upon Cassius Dio, states after the uprising "for Cyprus it is attested that henceforth no Jew might even set foot upon the island, and death there awaited even the shipwrecked".

[70] However, Birley (1997: 269) argues that campaign of 116-117 AD had "in effect wiped out" the Jewish populations of Cyprus, Egypt and Cyrenaica.

[71] See the inscriptions mentioned by Mitford (1980: fn 514).

[72] See the inscriptions mentioned by Mitford (1980: n143, n514 and n515).

[73] This questionable episode relating to the Gothic fleet's activity is mentioned in the *Scriptores Historiae Augustae Vita Claudii* (Loeb Trans. By Magie 1953).

experienced at least some aspects of the general economic dislocations that would have resulted from these disruptions (Michaelides 1990: 110-124; Mitford 1980: 1298, 1380-1381).

During the civil war between Constantine the Great and Licinius, the Cypriots supported the latter's claim, however, upon Licinius's defeat, Constantine did not punish the Cypriots. However, when the provincial governor, Calocaeros, who Constantine had dispatched to the island in 330 AD, rebelled in 332 AD, Constantine dispatched troops to the island under the command of his nephew, Dalmatius, who conducted a short campaign on the island from 332-333 AD. It is likely that Cyprus continued to remain unarmed, except, it seems reasonable to suggest, for a small provincial police force similar to that which had been in place under the Principate. Maurice, while still serving as Caesar, settled several thousand Armenians across Cyprus in 578 (Kyrris 1970: 157-158; Metcalf 2009: 375). However, an episode from the late sixth century AD (*i.e.* Maurice's reign) preserved in John of Nikiu's chronicle illustrates the continued dangers posed by the central government's lack of a military commitment on the island at this time and the degree to which the provinces could be susceptible to quick raids. This episode centres on civil disobedience in the Egyptian city of Aikelah that directly produced a negative outcome on Cyprus in the form of a raid. John's chronicle (XCVII.9-10) states

> "And when the inhabitants of the city of Aikelâh heard what had befallen, and likewise of the return of John to the city of

> Alexandria, they stirred up disquiet and strife throughout all the land of Egypt alike on sea and land. 10. And they sent one of their number, the daring Isaac with his freebooters, and these went down to the sea, and seized a large number of ships which were on the sea and they broke (?) them up. And they proceeded to Cyprus and captured much booty" (trans. Charles 1916: 158)[74].

This episode also illustrates the lines of communication and close ties between Cyprus and Egypt at this time. In the early seventh century AD, Cyprus became a contested space in the civil war between Heraclios and Phocas where the island occupied a strategic block along with Egypt and the northern Levant (Chrysos 1993: 4-7; Jones *et al* 1992: 719; Charles 1916: 157-159; Kaegi 2003: 46-49)[75].

Apart from the episodes preserved in the historical record mentioned above, it is useful to reiterate two points from the discussion of the Late Antique Cypriot ecosphere presented in Chapter 3: the historical climatological record, the archaeological record and the geoarchaeological record preserve data that indicate that the earthquakes of the "Early Byzantine Tectonic Paroxysm" (EBTP) caused extensive damage to the provincial infrastructure and the proxy climate (historical and scientific) data also indicates a

[74] The *Prosopography of the Later Roman Empire III* identifies Isaac as either a topoteretes or tribunus (Jones *et al* 1992: 719).

[75] For a recent discussion of the establishment of a min on Cyprus during Heraclios' revolt against Phocas, see Metcalf (2009: 375-378)

series of droughts that occurred on localized (*i.e.* occurring on Cyprus) and regional and super-regional scales (*e.g.* the Levant) or in combinations. It is reasonable to suggest that the droughts represented the most serious threat. Arguably, the most important point is that these phenomena could produce both spatially localized and spatially expansive disruptions that could place excessive strain on various aspects of the established social systems within a given region. Although the documentary record does not directly mention Cyprus in the sixth century AD accounts of the plague that spread across the empire during Justinian I's reign, and intermittently thereafter (*e.g.* 558, 573 and 592 AD), it is highly probable that the epidemic spread to the island because of Cyprus' nodal position within the communication network of the eastern Mediterranean (Chrysos 1993: 8-9)[76].

4.2.2.2 The 7th century AD

The general chronological framework for the initial period of the Arab raids until the establishment of the condominium during Justinian II's reign is well known, and several authorities (*i.e.* Kyrris 1984; Kyrris 1994-1998; Cameron 1996; Browning 1977-1979; Megaw 1986; Metcalf 2009) have discussed this period's overall issues in whole or in part. In assessing the quality of the available historical data dealing with Cyprus in this period,

[76] "Cyprus is not explicitly mentioned in the sources in relation to the plague. However, Procopius leaves little doubt that the island was affected too" (Chyrsos 1993: 8). For a discussion of the spread of the plague as well as other diseases during the Late Roman and the Early Byzantine periods, see Stathakopoulos (2004) and, more recently, the volume edited by Little (2007) entitled *The Plague and the End of Antiquity*.

Cameron (1996: 41) identifies several inherent limitations present in the material. Chief among them is the lack of direct references to local, that is to say Cypriot, conditions at the time of the events they are reporting. Perhaps an even larger hindrance to the effective use of the available historical data stems from discrepancies between the Arabic and Byzantine accounts that often differ in fundamental ways when purporting to describe the same event; this situation, however, is not unique to Cyprus (*ibid*)[77]. Despite these limitations, the main sequence of events leading up to the condominium's establishment is traceable in the available historical record.

Several authorities (*e.g.* Mitford 1980; Hill 1941) suggest that the initial Muslim Arab raid of 649 AD ended a long period of Cypriot security in which the sea provided an effective barrier against the Persian and the initial phase of the subsequent Muslim Arab invasions that threatened the Late Roman Near East during the sixth and early seventh centuries AD. Although several researchers (Hill 1941; Megaw 1986), and more recently Papageorghiou (1993:34), Bekker-Nielsen (2004: 63-64), and Metcalf (2009: 384) have either dismiss or expressed doubt about the possibility of an early seventh century AD Persian naval raids and occupation of Cyprus, evidence

[77] Cameron (1996: 41) points out that an analogous situation exists in the source material for the island of Arados; for a detailed discussion of this topic, see Conrad (1989). Kyrris (1984) provides excerpts of the various Arabic sources that mention the political situation in Cyprus. In addition, Whitby (1992) and Cameron (1992) provide general comments on the Late Roman Historiographic tradition. Haldon (1990: xxi-xxviii) provides a more specific overview of the problems associated with the source materials relating to the seventh century as a whole, which are equally applicable to the Cypriot material in a general way.

for other Persian naval activities during this period are not lacking (*e.g.* Foss 1975)[78]. Both Chrysos (1993: 12-13) and Foss (1975: 724) have drawn on information found in the *vita* of St. John the Almoner, which they believe supports the possibility that Cyprus did experience at least one Persian foray in the early seventh century. The two episodes cited as evidence by both Foss (1975) and Chrysos (1993) in the *vita* lay along a continuum, which has its poles fixed between direct and indirect reference. Regarding the more direct episode in the *vita*, which describes general Aspagourios's siege of Constantia-Salamis, Foss (1975: 724) argues "the narrative evidently describes a Persian attack on the island: the name of the general is Persian and his actions were hostile"[79]. Apart from Aspagourios's siege, Chrysos (*ibid*) also cites a second, though less direct, episode from the *vita* to support this view further[80]. The second episode centres on the return of a Cypriot

[78] Although Bekker-Nielsen (2004:64 n77) is unconvinced by Chrysos' (1993) arguments he does concede that if a Persian occupation did occur, it "would have been short-lived and localized to the Salamis area". Similarly, Metcalf (2009: 385) remains sceptical regarding the raid: "Possibly, but no more than possibly".

[79] The *PLRE III* (Jones *et al* 1992: 137) is vague regarding Aspagourios: "His dispatch to Cyprus had presumably some connection with the war against Persia; since the Persians had no fleet, he was perhaps intending to mount attacks from Cyprus on the Levant". Recently, Kaegi (2003) has presented Aspagourios as a Late Roman commander of Armenian extraction that was sent to Cyprus by Heraclios. He states "Unidentified dissidence on the key island of Cyprus at that time further exacerbated the defence of Egypt: Leontios speaks of the initial reluctance, assuaged by Patriarch John, of the local Cypriot population at the port capital of Constantia to receive Aspagourios, a Byzantine commander with an Armenian name, presumably dispatched by Heraclius to take control of it" (2003: 92-93).

[80] Both instances are in the vita Chapter 13 and Chapter 25 of the supplement to the *vita* by Leontius of Neapolis respectively (electronic text accessed March 2006: http://www.fordham.edu/halsall/basis/john-almsgiver.html).

prisioner as well as others prisoners to the island after their escape from the well-known Persian prison of *Lēthē* (oblivion)[81].

It is important to note in this context that the data concerning this particular episode in the *Vita* is unclear primarily because it does not explicitly mention the geographic location where the Persians allegedly captured this Cypriot. The implicit assumption regarding the location of capture, however, appears to be the island itself -perhaps the Salamis area as Bekker-Nielsen (2004: 64; n77) suggests. The lack of geographic precision in this reference opens up the possibility that the Persians captured this particular Cypriot outside of the island[82]. Despite the historical record's inherent ambiguities and limitations, when the episodes from St. John the Almoner's *vita* are viewed in conjunction with other data relating to contemporaneous Persian naval activities, the prospect for a raid on Cyprus would be neither unprecedented nor totally out of the realm of possibility. Furthermore, from a tactical perspective, a Persian occupation or neutralization of Cyprus would have eventually been required to consolidate their recently conquered territory in the Levant, southeastern Anatolia, and Egypt and to deprive the Late Roman State of a convenient base for the mounting of counter attacks in these areas. From this perspective, it is reasonable to suggest that the Aspagourios

[81] "A Persian invasion of Cyprus is indirectly confirmed by another episode preserved in the Life of St. John. He describes how Cypriots, who had been taken captives to Persia, succeeded in escaping from their prison and returning to their homes" (Chrysos 1993: 13).

[82] See Chapter 25 in the supplement to the *vita* by Leontius of Neapolis for this account. The text is available on line (electronic text accessed March 2006: http://www.fordham.edu/halsall/basis/john-almsgiver.html).

incident is better understood as a Persian intelligence gathering raid/probe designed to test Cypriot defensive and offensive capabilities.

A comparatively better class of historical data is available for the initial Arab raids[83]. The main raids of 649 and 653 AD along with the treaties of the late seventh or early eighth century AD (688 and 702 AD) represent a formative period in the development of the Cypriots' political identity that provided the foundation for their mode of operation in relation to both the Byzantines and the Caliphate after the official recognition of the island's neutrality and condominium government by both states in 688 AD. Unfortunately, the historical record is unclear as to the political ramifications that resulted from the initial 649 AD raid[84]. However, what does seem probable is that the Cypriot administrative apparatus (civil-military, ecclesiastic, imperial agents on the island, and the provincial power elites) did negotiate a set of terms with Muawiyah before his departure from the island following intelligence reports warning of a large imperial task force heading toward Cyprus[85]. The

[83] Kyrris (1984) and Kyrris (1994-1998) are indispensable resources for the general chronological framework of the early raids.

[84] Mango, Scott, and Greatrex (1997: 479, n1) state that "Two inscriptions recently discovered at Soli prove that the first invasion of Cyprus took place in 649 and the second the following year".

[85] For examples of the vague descriptions, see Theophanes's entry for the year 6140 in the Annus Mundi [Sept. 1 648 – Aug. 31, 649] which states: "In this year Muawiyah attacked Cyprus with 1,700 ships. He took and devastated Constantia and the whole island. When he heard the cubicularius Kakorizos was moving against him with a large Roman force, he sailed across to Arados" (trans. Turtledove 1982: 43). Additionally, the reconstituted chronicle of Dionysius of Tel-Mahre (paragraphs 95-97) states that Muawiyah and a detachment of troops advanced up to and then occupied Constantia and set up his command centre at that city's Episcopal palace while the remainder of his forces raided across the island (trans. Palmer 1993: 174-175). On the other hand, Al-Baladhuri (paragraph 153) states that the

historical record is equally unclear as to the raid of 653 AD's exact cause(s)[86]. However, it is reasonable to assume that the Caliphate considered the developments leading up to the 653 AD raid as tactically important enough to warrant another expedition to reassert its position on the island. One possible explanation is that imperial strategic planners had begun a military build-up on the island (see below, §4.2.3.1.C and 4.2.4). Muawiyah (mentioned by Al-Baladhuri), or the governor of Jordan, Abu l-Awar (mentioned by Dionysius of Tel-Mahre/Anonymous Syrian Chronicle), led the expedition in which Constantia was occupied for approximately forty days and Lapithus, or Paphos, was besieged and plundered[87]. Al-Baladhuri (paragraph 153, trans. Hitti 1916: 236) reported that the raid was in response to the Cypriots having provided the empire with ships for a naval expedition against the Arabs. In any event, some

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island's archon requested terms of capitulation from Muawiyah "which was considered unavoidable by the people"; the terms included an annual tribute of 7,200 *dinars* and the proviso that the Cypriots should keep the Arabs updated on Byzantine plans and remain neutral in the conflict (trans. Hitti 1916: 234-235)

[86] For example, Browning (1977-1979: 104) suggests that the raid of 653 AD's overall goal was to disrupt Byzantine operations between Cilicia and Syria rather than the breach of an earlier agreement.

[87] See the reconstituted chronicle of Dionysius of Tel-Mahre (paragraphs 98), which states the following "As soon as the ships were ashore, the invaders filled all the mountains and the plains, intent on plunder and slaves. They winkled the natives out of the cracks in the ground, like eggs abandoned in the nest. The general, Abū 'l-A war, went down to Constantia and stayed there for forty days, enslaving the population and eating the livestock head by head. At length, when they had had their way with the rest of the island, they all gathered against Lapethus. For several days they tried the effect of promises of peace, but finding the Cypriots unreceptive to these, they began eventually to bombard the city with catapults from all around. When the inhabitants saw that it was hopeless and that no help was on its way, they petitioned the general to proffer them his right hand in token of deliverance from death. He showed clemency readily and sent them the following instructions: 'The gold and silver and other assets which are in the city are mine. To you I give an amnesty and a solemn pact that those of you who so wish may go to Roman territory, and that those who wish to stay will neither be killed nor enslave'" (Trans. Palmer 1993:176-177).

scholars (*e.g.* Megaw 1988) have argued that raid of 653 AD ended in the installation of a garrison and the settlement of recently converted Syrian colonists (from Ba'albek) in and around Paphos, while others (*i.e.* Metcalf 2009: 285-287, 411-414) have remained sceptical of the presence of a garrison at this time[88]. It is important to note that this raid resulted in the Cypriots swearing an oath of neutrality. Nevertheless, if the settlement of troops and settlers in Paphos did occur, either during 653 AD or later, it is reasonable to suggest that it indicated a substantive change in the Caliphate's tactical and ideological use of Cyprus.

The 653 AD raid's affects produced differential levels of disruption and recovery. For example, at Soli, an inscription from that settlement's basilica notes that the "repairs were complete within two years" of the raid (Megaw 1986: 512). It seems reasonable to suggest that the diplomatic wrangling (movement of populations by both states and breaching the treaty of 680 AD) between Justinian II and Caliph Abd-Al-Malik in the last decades of the seventh and early

[88] Metcalf's (2009: 287) has based his scepticism largely on the numismatic data from Paphos. The key point of his argument is worth quoting at length: "Again, Megaw's belief that the Christian inhabitants were exiled from Paphos (which is pure supposition) from 654 until the withdrawal of the garrison comes up against the plentiful and clear-cut evidence of coins of Constans II minted in the 650s, excavated at Saranda Kolones, and also at the Odeion (i.e. the Forum), where stray losses are scattered widely over the site. There is among them a little hoard of five coins, all countermarked plus a sixth, dating from 659/60 or later. Byzantine coins could, in principle, have been changing hands among Muslim users, but there are, at least, coins minted in Constantinople and consigned to Cyprus after the Arab raids. Those with countermarks are, arguably, testimony to Byzantine taxation in Cyprus during the 650s. It would be quixotic if an Arab garrison handled money for day-to-day needs in the form of Byzantine coins, whereas Islamic coins circulated in Paphos soon after the garrison was withdrawn. More to the point, if an Arab garrison was not installed in Cyprus until *c.*663, the numismatic evidence takes on an entirely different complexion" (Metcalf 2009: 287).

eighth centuries AD represent a formative period in the development of both states' policies towards Cyprus. The treaties of the 680's (680-681, 688 AD) and 702 AD officially finalized what appear to have been several unofficial policies (from both the imperial and Caliphate's viewpoints) that developed since the initial raid in 649 AD. Perhaps the most important of these developments was the official recognition of Cyprus as a neutral buffer territory (along with Armenia and Iberia) that was taxable by both states[89]. Other stipulations included the repatriation of the Cypriots transferred to Roman territory by Justinian II and those resettled within the Caliphate by Yazid I (680-685 AD), as well as the withdrawal of Paphos' Arab garrison. Soon after, Abd-Al-Malik (685-707 AD) requested that Justinian II remove 12,000 Mardaites from Lebanon[90] (Kyrris 1994-1998: 189-190; Kyrris 1984: 115, 154-160; Browning 1977-1979: 103; Megaw 1988: 144-147; Metcalf 2009).

Regarding the reasons why both states were willing to accept Cyprus as neutral territory, some researchers (*e.g.* Browning 1977-1979; Kyrris 1994-1998) have argued that pragmatic concerns

[89] Theophanes *AM* 6178 [September 1 686 – August 31 687] states: "It was arranged on these terms: the Emperor would keep the Mardaites' troops out of Lebanon and their attacks, and Abd al-Malik would give the Romans 1,000 nomismata, a horse, and a slave each day. Also, both sides would share equally the tribute from Cyprus, Armenia, and Iberia" (trans. Turtledove 1982: 61).

[90] The reconstituted chronicle of Dionysius of Tel-Mahre (paragraphs 128, 136, Trans. Palmer 1993: 200, 205) mentions several of these events. Megaw (1988: 145) argues that the figure of 12,000 troops mentioned by the Arabic sources for the Paphos garrison "maybe treated as a symbolic figure". On the other hand, Kyrris (1994-1998) believes there is a correlation between the removal of the Paphos garrison by Yazid and the removal of 12,000 Mardaites from Lebanon, and their resettlement in the Kibyrraeotic theme by Justinian II. However, I suggest that the exact numbers are considerably less important than the fact that the garrison and the Mardaites were redeployed.

necessitated these states' willingness to implement and ratify policies that promoted Cyprus as a neutral territory. Browning (1977-1979) suggests that neither the Caliphate nor the Late Roman state wanted to incur the primary and secondary expenses that would have resulted from directly occupying and administering the island (*e.g.* garrisoning and associated naval support). Browning (*ibid*) also believes that both states recognized a strategic interest in keeping Cyprus a neutral entity. At the larger geo-political scale, Kyriss (1994-1998) has postulated that the unsuccessful siege of Constantinople (674-678 AD), in addition to internal dissention and the outbreak of plague within the Caliphate during the early years of Abd-Al-Malik's reign (685-705 AD), altered the balance of power in the Eastern Mediterranean and shifted the initiative to the Late Roman state. Based on the accounts preserved in both Theophanes *AM* and the reconstituted chronicle of Dionysius of Tel-Mahre, it is reasonable to suggest that Abd-Al-Malik's most pressing issue would have been the immediate problem of maintaining and insuring the continued reproduction of his administration's power base[91]. In this context, it is equally likely that a similar situation would have confronted Justinian II during the early stages of his second reign.

[91] Theophanes *AM* 6175 [September 1 683 – August 31 684], 6178 [September 1 686 – August 31 687] and 6181 [September 1 689 – August 690] reports the conflict that ensued after Yazid's death, and various revolts Abd-Al-Malik contended with during the early years of his reign (Trans. Turtledove 1982: 59, 61 and 63). Similarly, the reconstituted chronicle of Dionysius of Tel-Mahre (paragraphs 127-130, Trans. Palmer 1993: 199-201) records these same events. Apart from these issues, Kyriss (1994-1998) also includes the outbreak of plague in Syria as well as the activity of Mardriates in Lebanon on the list of issues confronting Abd-Al-Malik.

It is reasonable to suggest that each state's immediate tactical interests and medium term strategic goals would have influenced those social actors in the position to enact state level policies. It is also probable that strategic planners within both the Late Roman state and the Caliphate factored internal and broad geo-strategic issues into their particular policies toward Cyprus. Unfortunately, as mentioned above, the available historical sources provide limited data on the perceived status of Cyprus between the initial raid of 649 AD and empire, the caliph, and the Cypriot's full recognition of condominium status in the early eighth century. Because of the historical record's vagueness, scholars have postulated several possible political scenarios for the island during these decades. For example, Kyrris (1994-1998: 187-189) argues that after the conclusion of the proto terms of 649 AD, the Caliphate would have considered Cyprus at least partly under their "orbit of influence". Browning (1977-1979), in contrast, argues that Cyprus remained a Byzantine province after the 649 AD raid. However, there is a certain degree of scholarly consensus concerning the raid of 653 AD's outcome. Browning (1977-1979: 103-104) believes that the Caliphate would have considered Cyprus a conquered territory after the raid and terms of 653 AD, and particularly after the installation of the garrison at Paphos. Similarly, Kyrris (1994-1998: 160) believes that Muslim forces were in control of the island, but they chose to present it as a neutral territory for ideological reasons.

As mentioned above and in Chapter 2 (§2.4), the Late Roman state employed a sophisticated set of conceptual and practical tools for the extraction and processing of geographic data for use in its own strategic planning. Late Antique strategic planners' conceptions of what constituted a frontier underwent a reorientation, and one of the most important changes was the shift from territorial to population rights. The transfer of populations by both Justinian and Abd-al-Malik illustrates this shift from a Cypriot perspective. In this respect, both Justinian II and Abd-al-Malik recognised the tactical potential of Cypriot human resources, in addition to the potential strategic benefits of making this resource unavailable to their opponents. Apart from the general damage to the island's physical and human resources, the official removal of Cypriot populations would have also adversely affected the island's administrative, economic and physical infrastructure. Although it is beyond the present study's chronological limits, Papadopoullos' (1993: 17) recent discussion of the Arab-Byzantine frontier in Cyprus during the condominium centuries is instructive. He argues that the frontier did not constitute a clearly defined linear boundary during the condominium centuries but, rather, existed as a fluid but "operative" and "internal frontier of ethnic and religious significance". Papadopoullos's (*ibid*) observations are worth quoting at length. He states

> "Such an internalized frontier is operative in the every sense, invalidating the view, expressed by some historians, which makes of the island a neutral space

> between Byzantium and the Arabs. Let me remark that this internal frontier is impenetrable on both sides. The ethnic and, above all, the religious heterogeneity is so sharp, as to prevent, under normal conditions, ethnic amalgamation and religious assimilation. Yet such amalgamation and assimilation would be possible under conditions of prolonged and consolidated colonization. Enslavement, compulsory conversion, and intermarriage would certainly achieve partial, even total assimilation. The fact that no such effects were produced gives strength to the argument not only that the Arab intervention in Cyprus was not of the nature of a settled and permanent condition, but also that the internal Byzantine-Arab frontier was fluid and shifting, so that we cannot speak of an Arab domination of Cyprus, but only of Arab invasion and alternating and unstable political control" Papadopoullos (1993: 17).

Although Papadopoullos's assessment that Cyprus remained a contested space for both states throughout the condominium centuries and that Arab strategy did not include an intensive occupation and colonization component is plausible, I believe it is necessary to consider two additional components in any theorization of the frontier process in Cyprus. First, I suggest, neutrality is a purposeful multidimensional strategic practice and it is necessary to draw a distinction between official and unofficial policies that

resulted from geo-political strategies that promoted neutrality. Second, I suggest that the characterization of the internal frontier as "impenetrable on both sides" is misleading. Although the frontier as manifested on Cyprus during these centuries may not have fostered directional acculturation, it was certainly information permeable[92]. For example, Theophanes mentions an episode in which the Empress Irene dispatched a fleet to Cyprus in 789/790 AD after she had received intelligence reports that Arab forces were massing a fleet on the island[93]. As mentioned above, the sigillographic record indicates that although inter-and-extra island sealing activity may have diminished in absolute terms from the eighth century AD onwards, communications between Constantinople and Cyprus intensified during this period. It is also important to note that both inland and coastal contexts (*i.e.* Limassol, Lophou, Limnati and Paphos) have produced Arabic seals. Perhaps the best evidence that illustrates both the porous nature of the frontier and the process of strategic field intelligence gathering undertaken by the Byzantine state is exemplified by the archon Leo Symbaticius's orders to dispatch "reliable agents, or spies, to the Gulf of

[92] For more information on the complex topic of information transmission across frontiers in Late Antiquity, see Graham (2006) and Lee (1993).

[93] Theophanes(*AM* 6282, September 1, 789 – August 31, 790)states that "An Arab fleet had gone to Cyprus; as the Empress had foreknowledge of this, she assembled all the Roman naval forces and sent them against the Arabs. When they reached Myra, both Roman admirals doubled the cape of Khelidonion and entered the bay of Attaleia. The Arabs moved out from Cyprus and, since they had fair weather, turned about on the sea. When they reappeared, the Roman admirals saw them from land; mustering their forces, they made ready to attack. But Theophilos the general of the Kibyrhataiotai, a competent, powerful man, was overbold, and went out to engage them ahead of anyone else. They defeated him and brought him to Hauran…" (Trans. Turtledove 1982: 149).

Tarsus, Tripoli and Latakieh, in order to obtain naval intelligence" in the early tenth century AD (Jenkins 1953: 1010). As Jenkins (1953) notes, the passenger service between Cyprus and these ports provided the perfect means of gathering the required naval intelligence. Thus, it seems reasonable to conclude that the Cypriot frontier during the initial raids period of 649 to 706 AD and the subsequent condominium centuries was a *multilocal* and socially constructed phenomenon that possessed multiple fluid points of contact between the Cypriots, the Late Roman/Byzantine State, and the Caliphate. More importantly, although both states officially (*i.e.* by treaty) recognised Cyprus as a neutral entity, the island remained a contested space in practice.

4.2.3 Aspects of provincial infrastructure

This subsection explores Cyprus' Late Antique physical and productive infrastructure from a strategic prospective. In order to accomplish this goal, this subsection focuses on select aspects of the island's physical infrastructure such as its harbour, road, and defensive systems. Productive components of the infrastructure centre on what, for lack of a better descriptive term, comprised the provinces heavy industries such as ceramic production and mining. Subsection 4.2.4 explores these themes in relation to the wider geopolitical and strategic developments of the late sixth and seventh centuries AD from a Cypriot perspective.

4.2.3.1 Transport and communication

The aim of this subsection is to provide a discussion that highlights aspects of the province's transportation and communication infrastructures. It is divisible into two subsections, §4.2.3.1 and 4.2.3.2, that present data concerning the province's maritime and inland infrastructure and productive infrastructure respectively.

4.2.3.1.A Maritime

During Late Antiquity, as in the proceeding Hellenistic and Roman periods -contrary to Mitford's (1980) pessimistic appraisal of the Roman period- Cyprus straddled the major northern maritime trunk route that connected the Levant and Southern Anatolia and Egypt with the Aegean, Constantinople and beyond[94]. This trunk route "ran from Alexandria to Tyre or Beirut, then north to Antioch and west along the coast of Lycia or else the south coast of Cyprus, thence to Rhodes, Karpathos, and the south coast of Crete" (Pryor 1988: 7), and from there to points further west[95]. Researchers (*i.e.* Leonard 1995: 356; Bakirtzis 1995; Rautman 2000) have also suggested the

[94] For The Hellenistic and Early Roman periods, see Lund's (2006) figure 14. Based on the distribution of Rhodian amphorae from the island, Lund (2006: 44-45) has identified several routes linking the eastern Mediterranean with the Aegean. These include a route connecting Alexandria with the Aegean through Nea Paphos, Israel with the Aegean through Nea Paphos, Amathous and Kourion, Syrian and a route connecting Phonicia with the Aegean through Nea Paphos and Kition or Salamis.

[95] See McCormick's (2001) figure 20.2 which lists the shipping routes in the Late Antique and Early Mediaeval Mediterranean. Trunk routes 18 and 17 are of particular importance to the present discussion because trunk route 18, which covered the southern and northern Levant, flanks eastern and southeastern Cyprus and trunk route 17, which connected southern Anatolia with southeastern Aegean, flanks northern and northwestern Cyprus.

possibility of an alternate northern route that ran from Alexandria to western Cyprus and then to Rhodes. Based on the island's coastal wind patterns, Leonard (2005: 352-354; 361-364) has suggested that in general, the eastern and southern coastal waters would have provided mariners with a comparatively better environment in which to conduct localized shipping activities in comparison to the western and northern coasts where strong westerly, northwesterly and northeasterly winds would have pushed vessels towards land. However, Leonard (*bid*) also points out that despite the western and northern coasts' difficult sailing conditions, their local sea lanes would still have provided the most efficient means of linking these regions into the island's various networks (*e.g.* communication and economic). Sea transport, it is reasonable to suggest, was especially important in pre-Roman Cyprus because the island lacked a comprehensive road system to compliment this component of its transportation system.

Recent archaeological investigations (*e.g.* Leonard 1995; Leonard 1995a; Leonard 2005; Manning *et al* 2000; Giangrande *et al* 1987) of Cypriot coastal contexts have revealed a complex maritime infrastructure with roots that stretch back into the Iron Age and prehistoric periods in some cases. The elements that comprised this infrastructure's Roman and Late Antique phases ranged from quite simple anchorage complexes that served small (*e.g.* Potamos tou Liopetriou) and mid-sized settlements (*e.g.* Dhrousha Kioni and Maroni Vrysoudhia), to the more elaborate and extensive urban harbour complexes like those at Paphos (Leonard 2005: 420-423). A

recent survey of the available historical and the rather limited archaeological and geoarchaeological records supplemented by a limited fieldwork program conducted by Leonard (2005) indicates that by Late Antiquity, various natural and anthropogenic processes (*e.g.* silting and neglect) degraded many of the island's Hellenistic and early Roman period urban harbour facilities[96]. At the southern coast city of Amathous, for example, Leonard (2005: 538-539) notes that during the Roman period, the city's Hellenistic harbour fell out of use because of extensive silting and coastal uplift. Subsequently, during Late Antiquity, Amathous's reduced maritime facilities were better suited to support local coasting and shallow draught vessels rather than larger vessels engaging in long haul heavy shipping. Leonard (*ibid*) also posits that because of the developed coastal road system (see below), nearby Neapolis's maritime infrastructure, which was capable of handling larger ships, could have augmented Amathous's reduced Late Antique facilities. Researchers have also identified a similar overall pattern of use for Kition's maritime infrastructure (*e.g.* Leonard 2005; Nicolaou 1976; Morhange 2000), and it is probable that secondary settlements surrounding Kition would have augmented that city's maritime infrastructure.

For the non-urban components of the settlement system, the complex of sites around Evdhmiou Bay provides a good example of Cyprus' multi-component Late Antique landscape. Evdhimou Bay is located in the western half of Episkopi Bay and is approximately

[96] See Leonard (2005: 162-203; 1997: 170-188, 192-194) for an in depth discussion on the terminology used in the sources and their possible manifestations in a Cypriot Context.

4.5km from the Evdhimou-Alektora segment of the coastal perimeter road that linked Kourion with Paphos (Bekker-Nielsen 2004: road 1a). However, the site is less than 1km from a known minor road, road number 18 in Bekker-Nielsen's (2004: 217-218) catalogue, that linked the bay region with the main coastal perimeter road. The bay's maritime infrastructure consisted of either a small breakwater (Leidwanger 2007) or a loading quae (Leonard 2005). Leonard's (2005: 269-270) recent investigation at this location has identified a substantial scatter of Later Roman sherds on a seaward facing scarp in the western sector of the bay[97]. Diagnostic Late Roman sherds from this scatter consist of both fine wares and coarse wares; amphorae types included LRA1 (manufactured in the Eastern Mediterranean, including Cyprus) and LRA3 (Western Asia Minor). Leonard (2005: 269) suggests that this locus "may represent another LR1 production center". The assemblage recovered from a Late Antique wreck in Avdhimou Bay consisted primarily of LRA4 amphorae (Palestine) and some LRA1 type amphora (Leidwanger 2007: 308-309; 311; 2005: 274-275). Leidwanger (2007) also mentions a cluster of 3 Pompeian type millstone just off shore and in close proximity to the wreck site. Additionally, both Leidwanger (2007) and Leonard (2005) noted a comparatively dense scatter of Late Roman ceramics approximately 500m to the maritime complex's southwest on a flat headland at the locality of Viklaes/Vournes. Leonard (2005: 572) mentions LRA3

[97] Leonard (2005: 569) states: "At the far western end of the bay stands a small Moslem shrine or mosque on the top of a seaward-sloping scarp. Eroding out of this sandy slope can be seen a dense scatter of Late Roman (4^{th}-7^{th} c. AD) ceramic material extending ca. 30 m east and ca. 100 m west of the shrine".

sherds among the various Late Roman ceramics present at this location, which he interpreted as a farmstead. Thus, it is reasonable to suggest that the anchorage/small port and Late Antique wreck at Evdhimou exemplify the symbiotic relationship between the coastal segment of the road system, the maritime perimeter highway, and at least one elements of the province's productive heavy industrial infrastructure.

4.2.3.1.B Inland

Roads formed the next major component of the province's infrastructure. Recently, Bekker-Nielsen (2004: 221) has identified approximately 1,350km of Cyprus' road system from both the historic and archaeological records[98]. Bekker-Nielsen's (2004: 223) comments on the completeness of his study are worth quoting at length

> "…does this network correspond to the *entire* road network of ancient Cyprus? The answer is no. Many local roads have not been identified; even main routes may have been overlooked. Studying the map of the island's roads in the late Roman period…we see a quite close-meshed network in the eastern and southwestern part of the island, with a large open area separating them"

[98] To date, the most comprehensive survey of the island's road system is Bekker-Nielsen (2004). Also, see Mitford (1980), Bekker-Nielsen (1993) and Bekker-Nielsen (1995).

The main obstacles that hinder any attempt to fill this gap are both natural and anthropogenic: the forests of the Troodos massif and the intensive cultivation Mesaoria[99].

Based on the available data, it is reasonable to suggest that the Roman administration inherited a comparatively well developed overland transport system that provided them and their Late Antique counterparts with a highly adaptable and expandable base. Bekker-Nielsen (2004) has identified three main phases in the development of the island's Roman and Late Antique road network. First, by approximately 30 BC, the road system's fundamental components were already in place. These included the coastal perimeter road's main segments as well as several lateral roads that linked inland cities like Tamassos and Chythroi into the coastal highway system (β index value of 1.29) (Bekker-Nielsen 2004: 108-109, 225 fig. 14)[100]. By the early second century AD, the construction of several additional transverse roads greatly expanded the original late Hellenistic base system and increased the provincial road system's overall network complexity (β index value 1.52) (Bekker-Nielsen 2004: 111-112, 225, figs. 13 and 14)[101]. Additions from this period of expansion included new road alignments linking Kourion with Marion and with Laphithos,

[99] "In the Mesaoria, there must have been numerous tracks and roads, but they have not been recorded and cannot be identified in the field" (Bekker-Nielsen (2004: 223).

[100] For a discussion of the use of the modified β index, see Bekker-Nielsen (1993: 180-182; 2004: 224-225). In short, the index value calculated by dividing the number of edges (routes) by the number of vertices (intersections) less 1 [E/ (V-1)].

[101] Bekker-Nielsen (2004: 111) states that "By the early second century…we can see how the road network inherited from the Ptolemaic period had been supplemented by transverse links across the island".

the expansion of the Amathous-Tammasos road further north to Kyrenia, and the construction of a road alignment linking Chythroi to the road that linked Salamis with Trimithus. The Roman and Late Antique administration continued to invest in overland transport infrastructure, and by the mid-forth century AD, the island's main cities (in both coastal and inland contexts) "were connected to each other and to the political and economic centre, Salamis" (Bekker-Nielsen 2004: 112). This development resulted in an increase in the system's complexity (β index value 1.68). Additionally, it is important to note that during Late Antiquity, the provincial administration also linked previously isolated areas, like the Krommyakon and Pedalion promontories, into the provincial road system with a series of secondary and minor roads (Bekker-Nielsen 2004: 111-112, 225, figs. 15 and especially 16; Catling 1972: 1-5, fig. 1; Hadjisavvas 1997: 26-37, fig. 15). Thus, in its mature Late Antique phase, the Cypriot road system consisted of four components that included a perimeter coastal road, with a complex series of lateral, secondary, and local roads (which provides an overall β index value 1.42 for the full system). Bekker-Nielsen's (2004: 225) analysis also indicates that the main components of the island's Late Antique road system's level of network complexity is comparable to those of Syria and the Peloponnese.

Bekker-Nielsen (2004) further suggests that the number of routes converging on the island's major cities (nodes) also provides additional information on those cities importance within the network. It is possible to group the results of Bekker-Nielsen's

(2004: 226) analysis into four subgroups[102]. The first group consists of Constantia and Palaipaphos with centrality values of 7 and 6 respectively. The second group consists of Soloi, Kition and Kourion with centrality values of 5. The third group consists of Khythri, Marion, Tamassos, Tremethousa and Nea Paphos with centrality values of 4. The fourth group consists of Karpasia, Idalion, Lapethos and Amathous with centrality values of 3. Based on Bekker-Nielsen's (2004) figure 16, it is possible to calculate centrality values for the smaller settlements of Ledra in the Mesaoria with a centrality value of 1, as well as the settlements of Thronoi and Paleokastro (in the Pedalion and Krommyakon and promontories respectively) both with centrality values of 3. For example, at Thronoi (modern Ayia Napa-Tornos on the Pedalion promontory), researchers (Papageorghiou 1993: 40; Hadjisavvas 1997) have identified evidence for substantial buildings at the main site along with a water collection and distribution system, various secondary settlements, and tombs in close proximity to the main settlement[103]. Based on their position within their sub-regional road network, and in Thronoi's case its substantial physical remains, it is probable that these settlements would have functioned as nodal points within the

[102] Bekker-Nielsen (2004: 226 n5) excluded "Localities which have a number of converging routes because they represent road intersections".

[103] At the locality of Filina, which is approximately 1.5km northeast of Thronoi, Hadjisavvas (1997: 36) has identified a large reservoir with an accompanying aqueduct run as well as wheel rutted road segments. He concludes: "it is probable that this site was the water source for the town of *Thronoi*" (Hadjisavvas 1997: 36). At the locality of katalymata, which Hadjisavvas (1997: 31) identifies as a settlement, he mentions "great quantities of building material" and he identifies a basilica in the southeast of the settlement as well as an olive press at the settlement's west end.

sub-regional landscape and important *locales* at the regional level like the other Cypriot case studies presented above.

4.2.3.1.C Fortifications

Recently, Balandier (2002; 2004) has examined the development of Cypriot fortifications from the third century BC to seventh centuries AD. Her research indicates that although administrators undertook several coastal defensive projects (*e.g.* at Nea Paphos, Soloi and Lapithos) at the onset of Roman rule, the island's "dense and hierarchic" Hellenistic defensive network, it is important to note, "slackened" during the early Roman period (first century BC to third century AD). Later projects, like the mid-second century AD reconstruction of Lapithos' walls by Claudius Leontichus Illyrius, she argues, are the products of civic benefaction that would have had symbolic rather than practical value. However, during Late Antiquity (fourth to seventh centuries AD) her research (2004) has identified a renewed phase of fortification construction on the island. She believes that Cyprus did not benefit from Justinian I's refortification program and based on the "incessantly delayed or unfinished restoration of the Constantia aqueduct" (Balandier 2004: 265, n18), she has argued that the island may have been generally impoverished, possibly as a result of the plague, during the second half of the sixth century AD (Balandier 2004: 265). Although it is likely that Cyprus did experience an outbreak(s) of plague during Justinian I's reign as argued above, Balandier's (*ibid*) general characterization of the second half of the sixth century AD as a

time impoverishment may be an overstatement of the rather limited evidence derived from one particular urban context, Constantia (Balandier 2002: 335-337).

Conversely, Balandier (2004: 270) has argued that the Late Antique fortifications at Constantia, Karpasia, Kyrenia, Amathous, Laphitos and Paphos date to the four-year interval between the initial raid of 649 AD and the raid 653 AD[104]. However, Metcalf (2009: 276-279) has recently argued that the refortification of Constantia started nearly two decades after the initial raid of 649 AD[105]. In the case of Kyrenia, based on his investigations in that city's citadel, Megaw (1986: 513) plausibly suggests that the pentagonal towers and rampart his investigation uncovered is attributable to the reign of Heraclios. In any event, work at Arsinoe-Polis (Najbjerg *et al* 2002: 146) has uncovered a rectangular fortification/watch tower with a preferential alignment in relation to the surrounding Late Antique structures to its south. This tower, Najbjerg and colleagues (*ibid*) suggest, may have been part of a "larger stretch of circuit walls or, perhaps more likely, watch towers intended to enclose or defend the Late Antique settlement at its northeast boundary". It is important to note that these new Late Antique Cypriot fortifications were similar to Late Antique urban

[104] Balandier (2004: 270) believers that "The lifetime of these city-walls was rather brief, since they do not seem to have survived the second Arab raid of 653, except perhaps at Amathous, which seems to have been definitively abandoned at the end of the seventh century AD. A few fortified locations, notably those on the Keryneia chain may have been used somewhat longer according to the surface finds, but no defensive work was carried out again on the island until at least two centuries later".

[105] Arguing mostly on the numismatic data, Metcalf (2009: 279) suggests "...the new walls were begun in *c.*660 x 663, and took some years to complete".

fortifications from other areas of the empire: they consisted of either the refortification of existing defensible hard point areas (*e.g.* like Amathous's acropolis) or new limited areas that planners selected to serve as hard point defences within the existing urban topography (*e.g.* Paphos)[106]. Apart from the urban fortifications, researchers (Balandier 2004; Leonard 2005) have identified a number of extra urban defensive infrastructure elements such as watch towers and refuge/hard points in both inland (*e.g.* in the Kyrenia range)and coastal contexts on the island.

At Kalavasos Kopetra, for example, Rautman and colleagues (2003: 70-71) have identified a substantial square foundation (2.2m x 2.2m and 0.35m thick) constructed of gypsum blocks and bonded with gypsum mortar in the court yard area of Area 1. They plausibly suggest that this feature was the foundation for a watchtower or similar structure[107]. Given Kopetra's nodal position within the surrounding landscape (see above), the presence of a watchtower at the site, it is reasonable to suggest, indicates that those social actors in positions of authority deemed it desirable to have the

[106] Balandier (2004: 269-270) observes that "These new city-walls were limited to the most defensible part of the city (the acropolis of Amathous) or to a restricted area, easier to defend, of the ancient city (Constantia, Karpasia, Pafos)". For a general treatment of this phenomena, see Foss and Winfield (1986). Regarding the Late Antique (seventh century AD) fortification wall at Paphos, Megaw (1988: 144) suggests that "it seems a reasonable hypothesis that they formed part of a shorter, seemingly defensible Land Wall thrown up by the Byzantines in expectation of an Arab incursion". Alternately, Megaw (1988: 148) also suggests Paphos' seventh century AD Land Wall may have been constructed "to protect the garrison that Abu'l-Awar left behind". However, see Metcalf (2009: 285-288) for a detailed discussion where he argues against the notion of a garrison at Paphos following the raid of 653 AD.

[107] "In its original form this may have resembled the more elaborate towers or lookouts known from 6th- and 7th-c" (Rautman *et al* 2003: 70).

facility to conduct surveillance within the landscape. It is important to note in this context that towers can perform a variety of activities such as monitoring for external threats in addition to internal (disciplinary) surveillance. In the Malloura Valley, Toumazou and colleagues (1998: 176) have identified several Roman (or later) hilltop sites (5, 14, 23 and 24) which they believe could have functioned as look out or observation posts. It is also reasonable to suggest that these sites could have undertaken domestic surveillance functions as well.

The Pyla Koustsopetria Archaeological Project (PKAP) (Caraher *et al* 2007; 2008) has identified an elaborate Late Roman fortification at the coastal height locality of Vigla[108]. Intensive field survey identified considerable amounts of Late Roman material on the slopes below Vigla (+10000 artifact/ha) and in the plain (Koutsopetria) below. Caraher and colleagues (*ibid*) have also logged approximately 125 meters of this fortification on the height. Nearly 60 percent of the identified alignments, or 80 meters, had both its inner and outer face preserved. Based on those wall segments with both inner and outer face preserved, they estimate the fortification was approximately 2m thick. The wall's faces are comprised of medium sized stone (less than 1m) laid in irregular courses set around a core comprised of gypsum mortar bonded cobbles. Additionally, Caraher and colleagues (*ibid*) discovered a dry moat comprised of a pair of parallel cuts within the bedrock in the site's northern

[108] The project as well as several other preliminary field reports are available for download at www.pkap.org.

sector, as well as evidence for a semicircular tower in the southeast corner. At several points, they also noted the presence of a small segment of wall situated approximately 2 meters south of the southern face of the cut. Geophysical surveys of the Vigla hill also identified evidence for the presence of a substantial complex, possibly a Late Antique basilica, associated with this fortification. Given the Late Antique town of Koutsopetra's nodal position within its immediate landscape based on its relationship to both maritime and inland transport infrastructure elements, it is unlikely that the site would have been overlooked in strategic planning initiatives on both the provincial and regional scales[109]. The presence of military lead seals at Pyla further supports the hypothesis that imperial planners actively included this region in their planning operations (see below, §4.2.4).

Thus, the presence of a verity of both inland and coastal defensive infrastructure elements, I suggest, is the product of state sanctioned and localized initiatives. It is likely that the strategic planners for the Late Roman state, the Persians and then the Caliphate, recognized the important tactical role Cyprus could play in the Late Roman state's long term strategic planning in the Eastern Mediterranean –especially for the southeastern Anatolia and the northern Levant (see below, §4.2.4).

[109] Caraher and colleagues (2008: 88) state "The harbor at *Koutsopetria*, taking advantage of its location along a major road running inland, may have acted as the principal point of interaction between local farmers and a broader landscape of exchange".

4.2.3.2 Productive

Researchers (*e.g.* Leonard 2005; Winther-Jacobsen 2004; Rautman, Neff and Glascock 2003; Metcalf 2003; Rautman and Neff 2002; Papacostas 2001; Rautman 2000; Lund 1997; Raptou 1996; Michaelides 1996; Pitsillides and Metcalf 1995, 1997) have discussed aspects of the Roman and Late Antique Cypriot economy and productive infrastructure in varying degrees of detail. In general, it is possible to divide the literature on this topic into three groups that have adopted a specialist (based mostly on the archaeological record), a generalist (based mostly on the documentary record with limited use of archaeological data) or a combined perspective (embracing both the archaeological and documentary record). Recently, Raptou (1996) and Michaelides (1996) have examined the relevant textual data concerning the island's Hellenistic and Roman period economy in detail. Apart from agricultural products (*e.g.* grain, olives, grapes, flax, almonds, various medical plants) and their by-products, they also mention timber, copper, copper by-products (*e.g.* used for dyes, cosmetic and pharmaceutical), ship building (both commercial and military), ceramics, and various minerals and semi-precious stones as contributing to the economy[110]. However, most researchers would agree (Raptou 1996: 256; Michaelides 1996: 144, 146) that metal production and shipbuilding constituted

[110] For a distribution of these products by civic territory, see Leonard (2005: 945-950). Ammianus Marcellinus' reference to the island's ship building industry is well known. Michaelides (1996: 148 n91) suggests that Ammianus may have used an anonymous Greek author of the mid-fourth century A.D. whose work survives in a Latin translation as his source.

the island's main heavy industries[111]. The mines located within the civic territories of Soloi, Tamassos and Amathous remained active throughout antiquity. Apart from the mineshafts and galleries themselves, the large slagheaps at Skouriotissa, Kalavasos, Mitsero and Limni provide the most visible indicator of this component of the island's past industrial landscapes (Constantinou 1982: 19; Raptou 1996: 252-253, 255-256; Michaelides 1996: 144-147).

Recent work undertaken by the Sydney Cyprus Survey Project (Van Lokeren 2003: 223-226) in the vicinity of ancient Tamassos (modern Politiko, *e.g.* at SCY021, SIA 3 Mitsero Kouloupakhis; SCY024 Mitsero Sykamies) and excavations at Kalavasos Kopetra (Rautman *et* al 2003, contexts I-1, I-5 and I-28) have confirmed the continued exploitation of the island's reserves of copper sulphide ores in inland contexts during Late Antiquity. The chemical composition of Late Antique Cypriot slag, van Lokeren (2003: 223-226) notes, differ from those of earlier periods because they tend to have low levels of iron oxide, few copper prills in addition to high levels of manganese, which indicate the use of manganiferous (*i.e.* umber) flux during the smelting process[112]. Regarding the low frequencies of identified prills in those slag samples attributed to Late Antiquity, Van Lokeren (2003: 227) suggests that they "may indicate that even in the Late Roman period the final stages of smelting and

[111] Raptou (1996: 256) states that "Metallurgy and shipbuilding made up the 'heavy industry' of ancient Cyprus and the basis of its economy" and that "The production of copper and its by-products was the largest source of wealth for the island, and the most important export from prehistoric times to late antiquity".

[112] Constantinou (1982: 19) notes "The function of silica and manganese oxide in metallurgical operations, in lowering the melting point and regulating the viscosity of the melt, is well known".

refining were done elsewhere". At Kalavasos Kopetra, for example, the excavators (Rautman 2000) have identified two slag fragments (context I-28, courtyard collapse)with round bases from a mid-seventh century AD destruction context recovered from the Sirmata monastery complex's courtyard (Area I). The slag's round bases, Rautman (2003: 81-82) points out, are "from ceramic crucibles". This, in turn, suggests that late stage metal refining contributed to the settlement's overall productive output[113]. The slagheap at Skouriotissa and the small mining settlement of Xyliatos Mavrovouni (Winther-Jacobsen 2004: 146), both located in the Solea valley, and sites in the Vasilikos valley (mines at the localities of Petra and Spilios) and Amathous' hinterland (Rautman *et al* 2003: 246-247; Rautman 2001: 250), also provide evidence for the continued exploitation of the island's copper sulphide ores during Late Antiquity[114].

It is important to note that Late Antique mining and smelting operations could leave a long-term ecological footprint in the immediate landscape surrounding these sites. Recent environmental research at Limni's metalliferous spoil tips in the Polis area conducted by Pyatt (2001) provides clear evidence for the long-term environmental effects generated by protohistoic and historic exploitation of the island's copper sulphide ores. Pyatt's (2001: 62-63) study centred on examining the accumulation of carcinogens in

[113] See Rautman (2000: 81-82, table 3.8) for associated artifacts and related contexts, I-29 and I-30.

[114] Winther-Jacobsen (2004: 146) has described the settlement of Xyliatos-Mavrovouni as a smaller and less prosperous version of Kalavassos-Kopetra that "culminated in the sixth century AD".

the soil, and their bioaccumulation levels in Acacia and Eucalyptus plants growing on the spoil tips. This study's results indicate that the lead, manganese, copper and sulphur levels present in the metalliferous spoil from Limni are considerably higher than those from a control site located approximately 15km away. These elevated levels are also present in the modern vegetation growing in this environment[115]. It is reasonable to suggest that those past social actors who repeatedly engaged with this particular landscape would have developed various physiological complications because of their exposure to elevated levels of these carcinogens[116].

Undoubtedly, those institutions and social actors engaging with the island's metallurgical sector would have had to compete with the other segments of what can be loosely termed the island's heavy and light industrial sector (*e.g.* ceramic and shipbuilding) as well as civic institutions, rural communities and individuals for access to the island's timber resources. This situation has led some researchers (*i.e.* Papacostas 2001: 111) to hypothesize the existence of some type of institution that regulated how and to what degree various institutions/social actors had access to timber resources[117].

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[115] Pyatt (2001: 62) states, "The values for Cu, Pb, Mn, and S are massively enhanced in the soil tip environment compared with the control site located some 15 km to the south of the Limni spoil tip".

[116] "Ongoing research work on ancient copper spoil tips in southern Jordan …has suggested that those slaves involved with the extracting and processing copper during the Nabatean, Roman, and Byzantine periods would have been similarly weakened physiologically 'as a consequence of bioaccumulation of metals --- through trophic levels, together with the direct inhalation and ingestion of atmospherically transported pollutants" (Pyatt 2001: 62).

[117] Papacostas (2001: 111) believes that Cyprus avoided deforestation "through a policy of natural regeneration of forests (80-100 years) and presumably through a policy of careful forest management."

The amount of timber by-product in the form of charcoal required for the production of copper metal was considerable. Constantinou (1982: 22) has estimated that it would have required approximately 300kg of charcoal to produce 1 kg of copper metal. He (*ibid*) also suggests that primitive charcoal kilns would require approximately 20 cubic meters of pinewood to produce 1 ton of charcoal. From these figures, it is possible to conclude that one hectare of Cypriot pine forest (approximately 80 cubic meters of wood) would have yielded approximately 4 tons of charcoal that could have been used to produce approximately 13.33kg of copper metal[118]. These figures, I suggest, indicate that even small-scale operations, like those identified at Xyliatos Mavrovouni and at Ayios Kononas' Roman phase could drastically affect their sub-regional landscapes (see below, §2.5.2.3). For example, at Ayios Kononas, Fejfer and Mathiesen (1995: 80, fig. 10; 1995a: 65) have identified a Roman phase slag deposit associated with a Roman villa rustica complex at the northwestern end of the Late Antique settlement. The slag was high in manganese (Fejfer and Mathiesen 1995: 86 n17), and recovered charcoal samples provided an accelerated radiocarbon date of 220-390 AD for this complex. The excavators have estimated that this complex produced between 500-600kg of copper for the contemporary villa rustica also at the site. Based on the figures presented above, the production of the estimated 600kg of copper metal would have

[118] "For the production of 1 ton of charcoal, using sophisticated kilns, 12 cubic meters of wood are necessary, whereas, with primitive and less efficient kilns, 20 cubic meters of wood are required. The average production of a hectare of forest land in Cyprus is 80 cubic meters of pine wood" (Constantinou 1982: 22).

consumed approximately 45 hectares of pine forest or its equivalent biomass from around the site.

Apart from shipbuilding and copper mining and copper metal production, ceramic production formed another facet of the island's heavy industry. During the late Hellinistic and early Roman periods, Cypriot ceramic workshops exported both fine ware (*i.e.* Cypriot Sigilata) and coarse ware (*e.g.* copies of Mid-Roman 4 type III amphora). With the notable exception of Crete, Cypriot Sigillata had a limited distribution in the Aegean[119]. However, it did have an extensive distribution in the eastern Mediterranean (*i.e.* the Levant, Egypt and Rough Cilicia; see Lund 1997's figs. 3, 4 and 5). Unsurprisingly, researchers have identified imitation Cypriot Sigillata at a number of sites in the eastern Mediterranean (*e.g.* at Kôme el-Hawaga in Egypt and a kiln at Oboda, Isreal). According to Lund (1997: 207) and Hayes (1991: 38), Cypriot Sigillata exports peaked during the first half of the first century AD and then declined appreciably by the second half of the second century. Researchers have suggested workshops producing Cypriot Sigillata were located in western Cyprus (Polis area, Hayes 1967) or along the island's southern or eastern coasts (based on the clay compositional analysis, see §4.2.3.2). Based on the high frequency of finds and the chemical compositions of local clays, Lund (1997: 203) has suggested the Nea Paphos area as the most likely location for the workshops that produced Cypriot Sigillata (Lund 1997: 203-208; Hayes

[119] For example, Forster (2005: 129-130) notes the high proportion of Cypriot Sigillata at the Unexplored Mansion from Roman Knossos.

1967: 74-75; Hayes 1991: 37-39; Dark 2001: 118; Rautman 2004: 252-253).

During Late Antiquity, Rautman and colleagues (1999) have argued that the Cypriot ceramics industry was two tiered and centred on localized production and centralized production for products like fine wares and roof tiles. From the fifth century AD onwards, Cypriot Red Slip (CRS), or Late Roman D, replaced Cypriot Sigillata as the main fine ware produced by Cypriot workshops[120]. Researchers (*e.g.* Catling 1972; Manning *et al* 2000; Demesticha 2005; Demesticha and Michaelides 2001) have identified kiln sites in both coastal (*e.g.* Nea Paphos, Amathous, Zygi Petrini) and inland contexts (*e.g.* Dhiorios). Cypriot workshops also produced a series of coarse wares like amphora, roof tiles, and thin walled cookwares for both local consumption and export. At Anemurium in rough Cilicia, for example, both Cypriot Red Slip and Cypriot thin walled cookwares constituted a major component of the early Byzantine fine and common ware sub-assemblages (Williams 1989; Russell 2002). At the inland village of Sumaqa in modern Israel, Cypriot Red Slip wares comprised the majority of the fine ware sub-assemblage as well (Kingsley 2003; 1999)[121]. Investigations at the sites of Amathous, Kourion, Paphos and Zygi Petrini have produced evidence for the production of Late

[120] Researchers have not arrived at a consensus as to whether there is production continuity (Williams 1991; Meyza 1995; Rowe 2004) or a production gap (Hayes 1991) of approximately two centuries between Cypriot Sigillata's end of production and Cypriot Red Slip's beginning of production. Apart from this issue, Armstrong (2009) has recently argued that CRS production and exportation continued well beyond the widely accepted terminal production date of 700.

[121] Sumaqa is approximately 11Km from the coast (Kingsley 2003: 116). For Sumaqa in general, see Dar (1999).

Roman 1 and/or Late Roman 1A and the Aegean type Late Roman type 13 amphorae[122]. To date, most researchers (*e.g.* Winther-Jacobsen 2004: 144; Demesticha and Michaelides 2001: 292; Manning 2000: 235) would agree that Late Roman 1 is the most frequently occurring amphora type recovered from Late Antique sites on the island[123]. Conversely, the available data suggests that Cypriot workshops produced far fewer Aegean type LRA13 containers, and the type had a limited distribution on the island which, in turn, suggests these containers were exported rather than consumed within the province (Demesticha 2005: 176)[124].

Apart from the workshops mentioned above, it is reasonable to include three potential amphora production sites identified by Leonard and Demisticha (Leonard 2005; Leonard and Demisticha 2004) at Evdhmiou Bay (discussed above), the Alaminos-Latourou Chiftlik, and at Dreamer's Bay. At the Alaminos-Latourou Chiftlik site, apart from the villa rustica, Leonard and Demesticha's (Leonard 2005; Leonard and Demesticha 2004) investigations identified a seaside scatter, which they suggest, based on high density of LRA1 amphora

[122] To date, the majority of LRA1 production sites are located along the southern coast on Anatolia with the greatest concentration of production sites situated around the Gulf of Iskenderon (Williams 2005: 160-161, fig. 5). Early versions of LRA1 have been recovered from Kourion (Williams 2005; 1987) and recovered from the kiln site at Paphos: "There can be no doubt that what the Paphos kiln produced was a type of amphora known as LRA1 and found on most sites of the late Roman period" (Demesticha and Michaelides 2001: 291). For a distribution map of LR13 and LRA13, see Demesticha's (2003) fig. 1.

[123] "Some patterns are on the other hand clear, such as the complete domination or LR1 amphora at all Late Roman sites in southern Cyprus" (Winther-Jacobsen 2004: 143).

[124] Demesticha (2005: 176) states: "In Cyprus, it is clear that the potter made this vessel in small numbers for a specific purpose. It was not widely traded in the island".

sherds, represents the villa's storage facilities. Because of the observed LRA1 assemblage's uniform fabric, which is "not typical of LR1 fabrics already known" (Leonard and Demesticha 2004: 200), they (Leonard 2005) argue that it is likely that the villa also produced its own LR1 amphora[125]. The Dreamer's Bay site complex located on the southern tip of the Akrotiri Peninsula also produced evidence (in the form of over fired sherds and a waster) for the production of LRA1 amphora. The LRA1 fabrics observed at the Dreamer's Bay complex, like those identified at the Alaminos-Latourou Chiftlik, differ from those observed from workshops at Paphos, the so called ZA workshop, Zygi and Amathous (Leonard and Demesticha 2004: 199)(Williams 2005: 161; Manning *et al* 2000: 245-249; Demesticha and Michaelides 2001: 290-291; Leonard 2005: 459-463; 569-572; Leonard and Demesticha 2004: 195-197).

It is important to note, as Demesticha's (2005) work on LRA1/LRA13 production on Cyprus has shown, that Cypriot workshops produced an array of LRA1 amphora of different qualities in several fabrics. Workshops at Paphos and Amathous also produced Late Roman 13 amphorae in limited quantities. Regarding Late Roman 13 amphora, Demesticha (2005: 169) states "…the main features of the type can be traced on all examples: oval body with maximum diameter at the upper part, conical (rarely cylindrical) neck, everted rim, and horizontal lines or combed decoration around the shoulders". This amphora type's overall distribution, Demesticha (2005: 175) also notes, is

[125] "In addition to the warehouse, we should also consider the possibility of one or more kilns having once been located somewhere nearby"(Leonard 2005: 461).

"difficult to establish" at present because it has often been confused with LRA2. These kiln and potential kiln sites further illuminate the manifold relationships between productive and transport infrastructures (Demesticha 2005: 169-176; Williams 2005: 160-163, 166-167; Demesticha and Michaelides 2001: 292-293; Manning *et al* 2000: 245-249; Rautman 1998: 84-89, 96-98; Williams 1989: 2-3, 26-27,61; Russell 2002: 226-227; Kingsley 1999: 263-330; Kingsley 2003: 116-120).

It is also important to note that handmade/ slow wheel made utilitarian/cookware ceramics, often copying a few well know cookware forms, appear at rural sites (*e.g.* Kalavasos-Kopetra) prior to the mid-seventh century AD and in some urban sites by the mid-seventh to eighth century AD (*e.g.* Kourion; Amathous). These locally produced wares occur in association with both fine wares and thin walled cooking wares[126]. Rautman (1998) believes that the appearance of handmade wares varied regionally across Cyprus and between rural and urban contexts and was a response to fluctuations in supply generated by the geo-political instability of seventh century AD. Rautman's (*ibid*) view is worth quoting at length

> "The consolidation of rural settlement and urban life, decline of imported wares, and emergence of local pottery traditions, first in the countryside and then at coastal cities, appear as interrelated aspects of

[126] In his discussion of Late Antique (sixth-seventh centuries AD) handmade/slow wheel made ceramics from Cyprus, Rautman (1997: 89-90) mentions recovered examples from survey work in the Vasilikos Vallley, the settlement of Maroni Petera, the settlement of Ayios Konanas, the urban settlements of Salamis, Kourion, and Amathous.

> the same broad cultural transition. In this light the island's handmade pottery can be understood as a result of shifting economic concerns and narrowing patterns of exchange. Such external factors as plague, climate and foreign conflict helped destabilize the status quo, but the rise of alternate pottery traditions was ultimately an adaptive response offered by local communities to the economic and social realities of the day" (Rautman 1998:95).

In other words, individual components of the Cypriot settlement system reacted to disequilibrium in localized exchange systems caused by various multi-trajectory provincial and super-regional instabilities predominantly through localized initiatives (Demesticha 2005: 169-176; Williams 2005: 160-163, 166-167; Demesticha and Michaelides 2001: 292-293; Manning *et al* 2000: 245-249; Rautman 1998: 84-89, 96-98; Williams 1989: 2-3, 26-27,61; Russell 2002: 226-227; Kingsley 1999: 263-330; Kingsley 2003: 116-120).

4.2.3.2.A Production: The archaeological evidence

This subsection examines components of the province's Late Antique exchange systems. In order to accomplish this goal, the discussion presents general data concerning long distance exchange that predominantly draws on evidence provided by shipwrecks and the archaeometrical investigations of various artefact material classes recovered from inland and coastal contexts. Investigations in Dor's

harbour (approximately 13km north of Caesarea in Israel) have identified several Late Antique shipwrecks, Dor A, D, E, F, G and J, that date to the sixth and seventh centuries AD (Kingsley 2001: 52, table 3.2). For the present purposes, the most important wreck in this group is the Dor D[127]. The Dor D wreck dates to the last quarter of the sixth century AD, and the recovered assemblage (749 sherds) indicates that the ship was carrying a commercial cargo predominantly comprised of LRA4 and LRA5 amphorae (Kingsley 2003: 87-88)[128]. The wreck's orientation, the large amount of ballast - estimated at a minimum of 5.2 tons- and the assemblage's composition, Kingsley (2003: 88; 2002) argues, indicate that the Dor D was returning to port, perhaps directly from Cyprus, with a cargo of empty wine amphorae for resale in Palestine. Petrological analysis of the ceramics indicated a Cypriot provenance for some of the LR1 amphora sherds and the roof tiles recovered from the wreck; petrological analysis of the ship's ballast indicated that it originated from sources in western Cyprus (*i.e.* the Troodos Massif and Ayia Varvara region of Paphos)(Kingsley 2003: 88; 2003a: 128)[129].

Although researchers have not studied the Late Antique wrecks in Cypriot coastal waters to the same degree as the Dor D wreck, the

[127] For the site of Dor and the wreck of Dor D in general, see Kingsley and Raveh (1996), Kingsley (2002) and Kingsley and Raveh (1991). Kingsley (2003) is a corrective to Kahanov and Royal's (2001) discussion of the wreck.

[128] Kahanov and Royal (2001) have suggested a date for the Dor D that is later than the Yassi Ada (approximately 625 AD) that Kingsley (2003) has refuted. The recovered LR5 occurred in a verity of fabrics indicating that they were the products of several workshops (Kingsley 2003: 88).

[129] Leidwager's (2007: 314) recent comparison of the Dor D wreck with two Cypriot Late Antique wrecks identified by the Episkopi Bay Survey does not utilize Kingsley's more recent (2003) study that mentions the ballast's Cypriot origin.

available data does provide general information about the types of cargo that were in transit in Cypriot coastal waters during Late Antiquity. Parker (1992) lists 7 wrecks dating to the fifth to seventh centuries AD. These wrecks are located at Cape Kiti (1), Cape Andreas (5) and Thalassines Spilies (north of Paphos) (1)[130]. Identified artefacts from these wrecks include roof tiles, sarcopogai, and amphorae (globular, LRA1, LRA1a and LRA13? types). Recently, Leidwanger (2005; 2007) has identified two Late Antique wreck sites that date to the fifth through seventh centuries AD at Cape Zevgari (Akrotiri Peninsula) and in Evdhimou Bay. The assemblage from the Cape Zevgari wreck consisted of LRA1 amphorae (sixth-seventh century AD); the assemblage from the Avdhimou Bay wreck consisted primarily of LRA4 amphorae (5^{th}-6^{th} century AD) and some LRA1 type amphora (Leidwanger 2007: 308-309; 311; 2005: 274-275)[131]. Leidwanger (2007: 314) also mentions "examples of amphoras from Sinope on the Black Sea as well as a *spatheia* from the western Mediterranean" among the general Late Roman amphora types from Episkopi Bay. However, Leonard (2005: 572) has questioned the integrity of the Evdhimou wreck site and believes that the "amphora evidence appears to represent typical anchorage refuse" rather than a true wreck site. Additionally, Manning and colleagues (2002: 15) also note a possible Late Roman wreck (MTSB site 3) about halfway

[130] For Cape Kiti A, see Parker's (1992) catalogue # 212; For Cape Andreas A, B, C, E and F, see Parker's (1992) catalogue # 202, 203, 204, 206 and 207; For Thallasines, see Parker's (1992) catalogue # 1145.

[131] Leidwanger (2007: 312-313; 2005: 275) also mentions 3 Pompeian style rotary mills as well as several stone anchors from the immediate areas around the Evdhimou wreck site.

between Maroni Tsaroukkas and Maroni Vrysoundhia along Cyprus' west coast[132]. This possible wreck site and a potential Roman period wreck (MTSB 2) provide clear evidence for the exploitation of this particular stretch of coastline during Late Antiquity.

Compositional analysis of various materials including ceramics (Rautman and Neff 2002; Rautman *et al* 2003; Gomez *et al* 2002), glass (Freestone *et al* 2002; Freestone *et al* 2002a), and stone (Williams-Thorp and Webb 2002; Williams-Thorp *et al* 1991) have produced useful data for the exploration of both localized production and exchange within the province as well as exchange between the province and other regions of the Late Antique world. Freestone and colleagues' (2002; 2002a) compositional analysis (x-ray and inductively coupled plasma mass spectrometry) of a small sample of 19 glass sherds from Maroni Petrera's glass assemblage has identified two compositional reference groups for Petrera's glass: Levantine I and HIMT[133]. Geographically, the Levantine I reference group is associated with production centres in modern Israel and Lebanon, particularly at the production sites of Apollonia, Bet Shean, Dor, and Jalame in Israel. Chemically, "moderate soda…high lime and alumina" (Freestone *et al* 2002a: 64) characterize glasses derived from the Levantine I reference group. Conversely, comparatively elevated levels of iron, magnesium and titanium oxides characterize the chemical signature of

[132] Manning and colleagues (Manning *et al* 2002: 15) state: "At MTSB site 2 a number of stone anchors were noted, but also six amphora heads of Late Roman date were recovered. Accounts by local fisherman stated that a complete amphora had been recovered from the sea and there were many sherds of Roman date on the beach and in the surf zone".

[133] The acronym HIMT stands for high iron, manganese and titanium (Freestone *et al* 2002a: 265).

glasses associated with the HIMT reference group (Freestone 2002a). Morphologically, HIMT glasses tend to be "typically pale yellow-green to olive in colour and may thus be distinguished from Palestinian sources, which appear to have produced pale blue glass". At Petrera, glasses from the HIMT reference group are not as numerous as their Levantine I counterparts. As a general point, it is important to note that at present, researchers have not been able to identify the geographic provenance of the HIMT reference group[134]. Freestone and colleagues (2002a: 266) have also noted elevated levels of copper, zinc and lead from some of Petrera's glass, which they suggest is indicative of recycled glass. It is likely that the workshops producing this glass exported it in raw form rather than as finished vessels[135] (Freestone *et al* 2002: 64; Freestone *et al* 2002a: 265-271). Several sites (Soli, Ayios Philon, Kourion and Paphos) across the island have produced evidence for glass production[136]. At Kourion, excavations in the Episcopal complex have produced evidence for glass production (*i.e.* wasters, pontil wad and cullet) from several locations within the complex (Young 2007: 510-511, *e.g.* units 29, 16, 38b and the northeast portico). Future trace element analysis of the wasters, pontil wad and cullet recovered from these excavations will undoubtedly contribute to the discussion

[134] Freestone and colleagues (2002a: 269) note that in the eastern Mediterranean, glass belonging to this reference group is concentrated in the north Sinai.

[135] In general, Freestone and colleagues (2002: 270) argue the "archaeological evidence suggests a division of glass production between large primary factories and secondary fabrication workshops existed throughout Antiquity and into the early Islamic period".

[136] Young (2007: 511) provides a concise review.

on the origin (*i.e.* local Cypriot or imported) of the raw materials used at these sites. The research potential offered by the chemical analysis of glass cannot be underestimated because although it is clear that Cyprus had a glass industry during late antiquity, the island does not have deposits of pure silica required for the production of raw glass[137].

Most researchers would agree that the importation of granite columns in Cyprus reached a peak during the Roman period. Recently, Williams-Thorpe and Webb (Williams-Thorpe and Webb 2002) undertook a geochemical analysis (by a verity of techniques such as Instrumental Neutron Activation Analysis, INAA; Wavelength-Dispersive X-Ray Florescence Analysis, WDXRF; Magnetic Susceptibility) of 95 granite columns from Cyprus[138]. Their study indicates that the majority (97%, *n* = 93) of these columns originated from several quarries in western Anatolia (Williams-Thorpe *et al* 1991: 360). They propose that these columns would have entered Cyprus through the province's main Roman period ports, Paphos and Salamis[139]. Williams-Thrope and colleagues (1991 *et al*; Williams-Thrope *et al* 1993) undertook a geochemical analysis (Energy

[137] "Any discussion of glass production on Cyprus must note the fact that the island has no deposits of pure silica sands and the sandstones that do exist have such high levels of iron that they are not suitable for producing glass. Since Cyprus lacks one of the basic ingredients of soda-lime-silica glass used throughout antiquity, any manufacture of transparent glass on the island depends on the import of material from elsewhere" (McClellan 2003: 217).

[138] One sample comes from the Folk Art Museum at Nicosia (Williams-Thorpe 2002: 347, table 3).

[139] "The major ports of Salamis and Nea Pafos would have contained the necessary infrastructure for the administration and practicalities of importing and unloading large volumes of granite, and are the obvious points of entry for the columns into Cyprus" (Williams-Thorpe and Webb 2002: 360).

Dispersive X-Ray Fluorescence) of igneous millstones from the island. Their work indicates that during the Roman and Late Antique periods, workshops located in the Levant, particularly from Palestine, Jordan and Syria, exported Pompeian style mills to Cyprus[140]. Their work also indicates workshops at Nisyros also exported hopper-rubber mills to Cyprus, albeit on a comparatively lower level than exports from the Levant, during the Hellenistic and Roman periods (Williams-Thrope *et al* 1991: 30-32, 36-37, 56; Williams-Thrope *et al* 1993: 279-280, 294, 301, 303-304; Willimas-Thrope and Webb 2002: 346, 357-360).

Unlike glass, which is likely to have arrived in raw form, the workshops producing millstones appear to have exported finished products to the island. Williams-Thrope and colleagues (1991: 56, fig. 13) suggest that the Levantine Pompeian style mills, like the granite columns mentioned above, would have entered Cyprus predominantly through the ports of Salamis or Paphos. Although their geochemical signature is not presently known, it is probable that the 3 Pompeian millstones (*metae*) identified by Leidwanger (2007) just off shore in Evdhimou Bay originated in the Levant (Williams-Thrope *et al* 1991: 30-32, 36-37, 56; Williams-Thrope *et al* 1993: 279-280, 294, 301, 303-304; Willimas-Thrope and Webb 2002: 346, 357-360).

Perhaps the most well-known and widespread use of geochemical techniques (*i.e.* Neutron Activation Analysis) on Cyprus has been in

[140] The most important workshop, Williams-Thorpe and colleagues (1991: 55) suggest operated in the Lake Tiberias area.

ceramics analysis. Rautman and colleagues' (*e.g.* Rautman *et al* 2003; Gomez *et al* 2002; Rautman *et al* 1993; Rautman *et al* 1999) research focused on identifying the chemical compositions of a selection of Late Bronze Age White Slip Ware II, Cypriot Sigillata, Cypriot Red Slip and coarse wares (Laconian-style and Corinthian roof tiles, amphora and handmade pottery) from various sites across the island[141]. Their research framework also included an investigation of possible clay sources that could have provided past social actors with suitable resources for the production of these wares. Their work has identified locations in southwestern, south central, and eastern Cyprus, with clays that have similar geochemical signatures as these wares.

For the present discussion, it is important to note that their research has shown that the clays used in the production of Cypriot Sigillata and Cypriot Red Slip wares originated from sources associated with southwestern and southern Cyprus. At the site of Kalavasos Kopetra, red fabric Laconian-style roof tiles also share this chemical signature. Rautman and colleagues (2003: 270-271) have also identified a "varied yet distinctive composition" among the YT reference group which included yellow fabric Corinthian-style roof tiles as well as LRA1 amphora and unidentified amphora fabrics (KAmp1 and KAmp2) from Kopetra. The YT group, which is characterized by high calcium and low aluminium (*i.e.* calcareous), consists of 5

[141] The ceramic assemblage from the recent excavations at Kourion's Amathous gate cemetery is currently under study, and a sample of the coarse wares will be analyzed with Neutron Activation Analysis. The coarse wares are largely derived from a ceramic dump deposit (context 008) from Trench AI EE that was excavated by the present author in 1999 while he was an area supervisor for this excavation.

subgroups designated YT-1 through YT-5. Chemically, the YT-1, YT-3 and YT-4 are attributable to a clay sources in the lower Mesaoria valley, the Mesaoria plain and south central Cyprus respectively. The Corinthian-style tiles, KAmp1 fabric, and some LRA1 fabric variants belong to these subgroups[142]. However, subgroup YT-2 and YT-5's chemical signature suggest a provenience along the Anatolian and Syrian coasts. Sherds with this chemical signature include Late Roman Amphora 1 (fabric variants 2 and 3) and the KAmp2 fabric. Interestingly, the handmade cooking potsherds recovered from Kopetra are chemically similar to Late Bronze Age White Slip II and likely derive from a clay source in the Vasilikos valley. The chemical analysis of a small sample of ceramics from the site of Maroni Petrera produced comparable results to those of Kalavasos Kopetra (Rautman *et al* 2003: 212-213, 268-271; Gomez *et al* 2002: 27, 31-34; Rautman and Neff 2002: 55-56).

The south coast urban settlement of Kourion also provides a particularly good case study that illustrates the external links of a second order Cypriot polis. Unfortunately, the majority of the excavations at Kourion await final publication, and although the Episcopal complex is fully published, it is important to note that it represents one very specific type of urban spatial context that may not necessarily provide the most representative data for Kourion's general trajectory during Late Antiquity. With this limitation in mind, the discussion that follows is necessarily

[142] YT-1 = Late Roman Amphora 1 subgroup 1, LR1(1); YT-4 = Late Roman Amphora 1 subgroup 5, LR1(5); YT-3 and YT-2 = Late Roman Amphora 1 subgroup 3, LR1(3) (Rautman *et al* 2003: 170-171; 271).

preliminary. The ceramic, and to a lesser extent the glass, sub-assemblages from the excavations in Kourion's Episcopal complex support the claim that Kourion was well integrated into the province's exchange networks. According to Young (2007), the glass recovered from the Episcopal complex has strong Syro-Palestinian characteristics. However, Young (2007: 511) has also noted several ways in which the Kourion glass diverges from the Syro-Palestinian paradigm. These include, for example, a sparing use of trailing decoration and preference for simpler non-mould made vessel forms without cutting and engraving. Young (2007: 511) suggests that most of the glass was made either at Kourion or on Cyprus from local or imported materials[143]. As noted above, the compositional analysis of glass recovered from Late Antique sites in Cyprus has the potential to illuminate facts of the province's Late Antique trade networks. If the data presented above for Maroni Petrera is representative of a large provincial pattern, it is reasonable to suggest that Kourion's glass industry drew upon cullet sources derived from the "Levantine I" reference group and recycled sources.

Hayes' (2007: 436-437) study of the ceramics indicates that locally produced CRS constituted the majority of the fine ware assemblage recovered from the Episcopal complex and to a considerably lesser extent, PRS. CRS continued to appear at the site

[143] "It is reasonable to suppose that much of glass discussed here was made either at Kourion or elsewhere in Cyprus, either from local materials or from imported cullet. The local production would have included vessels of quality as well as obvious 'seconds' as wineglasses…" (Young 2007: 511).

in reduced numbers up until approximately 700 AD[144]. However, it is also important to note that the PRS component of the fine ware sub-assemblage was quite diverse[145]. ARS, in contrast, came "to the fore in the seventh century" (Hayes 2007: 436), with the latest imports dating to approximately the mid-seventh century AD. Hayes (2007) also suggests that the presence of ERS (Egyptian Red Slip) at the site indicates that Egyptian wares filled the void left by declining ARS availability and competed with the last-phase of CRS production. The presence of a comparatively small number of handmade ware sherds within the plain ware sub-assemblage may also indicate that at some point local demand may have outstripped available supply of wheel made utilitarian wares. Researchers (*i.e.* Rautman 1998) have plausibly interpreted the presence of handmade wares of this type in late seventh century AD contexts as symptomatic of the wider disruptions in the established exchange networks that resulted from the political reorientations of the seventh century AD. However, the presence of White Ware and shoe-shaped lamps of the late seventh or early eighth centuries AD also suggests that Kourion was still in contact with those channels that tied the city to the larger world and Constantinople. The presence of early Arab lamp forms executed in Cypriot buff fabrics (Hayes 2007a: 477) in addition to standard Arab lamp types associated with the final demolition phases, also

[144] Hayes (2007: 436) states "This confirms the pattern seen on other sites; continuity of production until close to AD 700 maybe indicated".

[145] Hayes (2007: 436) notes that the PRS sub-assemblage contained nearly all of the sixth century-AD forms for that ware.

suggests continued contact up until final abandonment (see, Hayes 2007a: catalogue #’s 29-38).

Thus, from the short review presented above, it is clear that the compositional analysis of a wide range of material classes derived from both inland and maritime contexts has the potential to make a considerable contribution to the study of multidimensional exchange systems at both the intraregional and regional levels. At a larger scale, the assemblages from the coastal wrecks and various components of the island’s maritime infrastructure (like anchorages) reinforce the image of Cyprus’ prominent position within the east Mediterranean’s Late Antique exchange networks. The chemical analysis of ballast, columns, millstones and select ceramics also reinforces this general pattern. As the research frameworks at Kalavasos Kopetra and Maroni Petrera have shown, the chemical provenience of raw material procurement sites in conjunction with analytical frameworks that utilize geochemical procedures in the ceramic analysis can contribute greatly to the study of the province’s internal and external exchange systems.

4.2.4 Discussion: Strategic assessment

The preceding subsections (§4.2 through 4.2.3.2.A) have provided data on a set of interrelated topics with which it is possible to frame a discussion of what can be termed the province’s tactical feasibility. First, it is important to note that the province’s maritime, overland and defensive infrastructures followed multiple trajectories that synchronized and diverged with one

another over time and space. From this perspective the concentration and upkeep of major maritime installations at a few locations within the province (*i.e.* Paphos and Constantia) during Late Antiquity may not necessarily indicate a lack of resources or indifference on the part of provincial administrators. Rather, it is very likely that civic and provincial planners aimed to eliminate redundant and/or outmoded infrastructure. This process has general parallels in urban contexts where redundant and outmoded components of the civic armature took on new and/or unrelated functions (*e.g.* civic baths converted to workshops) within an evolving late Antique urban image. As Leonard's (2005) research shows, Cyprus' Roman maritime infrastructure was multi-tiered. For the Late Antique period, it is possible to divide the province's maritime infrastructure into two tiers comprised of a few major installations that could accommodate heavy shipping and a series of secondary components capable of accommodating medium and light shipping. The assemblages identified and/or recovered through the survey and excavations of coastal and maritime sites (*e.g.* Leonard 2005; Parker 1992; Liedwanger 2005; 2007) that comprised this infrastructure support the view that the island's maritime installations not only provided the points of contact between the province's regional and interregional exchange networks, but also between its localized and sub-regional exchange networks (as evidenced by the Dor D wreck). Perhaps more importantly the series of ports and anchorages formed a maritime perimeter highway for the province.

It is reasonable to suggest that the maritime perimeter highway provided a fast track for the movement of both material and human resources that worked in tandem with a well-developed provincial road system by Late Antiquity. Although some Cypriot roads did not meet the official Roman standard (Bekker-Nielsen 2004: 80-100), the expansion of the road system during Late Antiquity represents a considerable investment in the province's infrastructure. Nevertheless, Bekker-Nielsen's (2004: 225) analysis has shown that Cyprus' Late Antique road system exhibited a similar level of network complexity as its militarized administrative superior, Syria, with β values of 1.42 and 1.68 respectively[146]. Another important aspect of this development is the expansion of the road network into previously disconnected areas. Archaeological survey in the Pedalion and Krommyakon promontories, two areas not directly connected to the main road system in the Roman period, indicate an increase of settlement density in these regions during Late Antiquity (Catling and Dikigorpoulos 1970; Hadjisavvas 1997; Fejfer *et al* 1995). Based on the limited archaeological data available from these areas, it is very likely that this increase in relative settlement density provided the catalyst for the road network's expansion into these areas during Late Antiquity. Future intensive field survey projects in these areas will undoubtedly clarify the strengths of this correlation. As mentioned above, the urban site of Amathous and the anchorage site at Evdhmiou Bay provide particularly good examples of the interrelated and symbiotic relationship that

[146] See §4.2.3.1.B for a discussion of the Beta value.

could exist between maritime, roads, and productive infrastructure components. Moreover, although the available data on Late Antique kilns from both rural and urban contexts in Cyprus is rather limited, their locations, which favour access to transport infrastructure, I suggest, also exemplify the interplay between maritime and inland transportation infrastructures and both urban and rural productive infrastructure during Late Antiquity. At Paphos, Demesticha and Michaelides (2001: 290) note that the LRA1 kiln they investigated was located outside the city walls, but close to the seaside in a suburban area that served as a cemetery until the third century AD. The kiln at Zyyi was positioned on the coast. The preference for placing productive elements, like pottery kilns, close to maritime infrastructure is a phenomenon observable in other areas of the Late Antique Mediterranean. For example, the Late Antique urban kilns at the North African cities of Leptiminus and Carthage, like the kiln(s) at Amathous, were both located close to the sea (Leone 2003: 270-272).

The detailed analysis of the Dor D wreck provides particularly good evidence for small scale shipping (non annona), the lateral cycling of amphorae, as well as the potential of other often-overlooked artefacts, like the ship’s ballast, to contribute to the analysis of Late Antique exchange systems. The LRA1 sherds, tile, and ballast not only indicate Cyprus’ position within the regional exchange networks of the eastern Mediterranean, but also suggest the possibility that Cypriot exchange networks may have possessed a

lateral cycling mechanism for amphorae[147]. Additionally, the concept of time lag has not received adequate attention in Late Antique archaeology in general and Cypriot Late Antique archaeology in particular. Nevertheless, for the present discussion, the picture that emerges from southern Cyprus, as Winther Jacobsen (2004: 144) notes, is one that indicates "that the world around the island had shrunk in the Late Roman period: apart from few fragments from the west, particularly from Tunisia, imported amphorae arrived mostly from the East". This pattern stands in contrast to the patterns identified by Lund (2006: 36, 46-49, figs. 5, 14 and 15) for the Roman period in which the island was divided into two general zones of circulation comprising western and southwestern Cyprus and central and southeastern Cyprus. The evidence used in this model indicates that Cypriot produced goods (*e.g.* Cypriot Sigillata A) and western imports tended to circulate in western and southwestern, while goods of eastern manufacture (*e.g.* Eastern Sigillata) tended to circulate in the eastern and central portions of the island.

It is also important to note that Cyprus undoubtedly benefited from the eastward shift in shipping that occurred in Late Antiquity and researchers (*e.g.* Leonard 2005; Bakirtzis 1995) have suggested that state subsidized shipping carrying the civilian annona (*annona civica*) from Egypt and the Levant would have used Cypriot ports and anchorages (*e.g.* Dreamer's Bay and Agios Georgios Peyia) as way

[147] Lateral cycling differs from recycling in that it "involves only a change in an artefact's user" (Schiffer 1987: 29) rather than a heavy modification or reduction of the artefact. For a recent discussion of the life cycle of Roman pottery in general and amphora in particular, see Peña's (2007) study.

stations while in route to Constantinople[148]. It is also reasonable to suggest that vessels carrying the military annona (*annona militaris*) as well as vessels engaging in non-state related shipping (*e.g.* private commercial and ferry services), which would have used the same sea-lanes as their counterparts carrying the civilian annona, would have used Cypriot maritime infrastructure also.

Additionally, the Late Roman state's temporary loss of the Levant and Egypt during the Persian wars of the late sixth century AD followed by their permanent loss to the Caliphate during the seventh century AD produced negative outcomes not only at Constantinople but also in those regions that relied on the secondary economic benefits derived from activities associated with the annona system. Regarding the potential economic benefits sub-regional economies could derive from their engagement with the *annona militaris* system, Kingsley and Decker (2001: 8) have argued that

> "Even such an onus as the payment of the *annona* had a potentially beneficial side. In peace time, the military was expected to shoulder at least part of the burden of transporting supplies using the imperial post (the *cursus publicus*). For landowners living in the interior of the Empire, the maintenance of this system was clearly advantageous: the army's presence stimulated surplus production and the government

[148] For a good general discussion of the possible reasons behind this eastern shift during Late Antiquity, see McCormick (2001:103-114) as well as Laiou and Morrisson (2007: 33-35).

> bought excess produce for which no other market existed locally. While the state generally forced low prices on cultivators' goods, this was not always the case…Furthermore, it is likely that some products that were acceptable as tax would have been difficult to market commercially…Following the conversion of the *annona* primarily to cash payments, Byzantine quartermasters spent their money locally, often procuring supplies at the source of production in exchange for coin, and undertaking the burdensome task of transport".

On Cyprus, for example, Bakirtzis (1995) believes that the west coast settlement of Ayios Georgios Peyia's decline and eventual abandonment during the seventh century AD resulted from the loss of maritime activity associated with the disruption of civilian annona shipments from Egypt brought on by the Persian occupation and the subsequent Arab conquest of Egypt[149]. However, because of Cyprus' general position within Late Antique trade networks, it is highly probable that imperial strategists and commercial shippers operating smaller ships, like the owners of the Dor D wreck, would have continued to use the island's maritime infrastructure. Returning to the aforementioned example of Ayios Georgios Peyia, although the site was a comparatively small settlement, it would have constituted

[149] Bakirtzis (1995: 250-251) suggests that inscribed Proconnessian marble ambo ("Most Blessed Sailors") recovered from basilica A at Agios Geogrios-*Peyia* was a votive dedicated by the sailors working on the grain ships that carried the annona from Alexandria to Constantinople. For a discussion of the ambo, see Michaelides (2001: 43-53) in Eds. Herrin *et al* (2002).

a nodal point within its immediate environment as well as an important *locale* in Paphos's hinterland. In this respect, Ayios Georgios Peyia could have functioned in a coastal context in much the same way the settlement of Ayios Kononas did in an inland context[150]. While acknowledging the prominent role maritime activity would have played in the Peyia's economy, Papacostas (2001: 120) has rightly questioned the strength of the relationship between the annona system's decline and Peyia's overall decline[151]. The civilian grain shipments would have constituted only one facet of what would have been a multidimensional economic/exchange system linking Peyia with its surrounding landscapes and with Paphos. Perhaps the reorientation of both localized and interregional exchange networks over the course of the seventh century AD is better suited to explain Peyia's gradual abandonment.

Turning to the island's productive infrastructure, although the "scale of Cypriot copper-production in late antiquity is unclear" (Rautman *et al* 2003: 246), in general, researchers (*e.g.* Matschke 2002) have suggested that the Late Antique mining industry became largely privatized. The state's role in mining increasingly centred on the collection of taxes based on the extraction and processing of various ores rather than on direct extraction[152]. However, the

[150] Both sites are located in the Akamas peninsula.

[151] Papacostas (2002: 120) argues: "That the settlement was indeed to a large extent dependent on the sea is beyond doubt, but whether this dependence took this particular form remains to be seen".

[152] Matschke's (2002: 117) comments are worth quoting at length: "…it seems clear that the tendency toward simpler organization forms, already evident in the early Byzantine period, intensified further and that mining was once again more closely linked to landownership and frequently was an activity that peasants pursued in the side. The state largely withdrew as a mining

decline of direct state level involvement in the production process does not preclude the involvement of other authoritative institutions such as the church and local government in the production process. Although the excavations at Kalavassos Kopetra have not revealed a specific metal/smelting workshop area within the excavated area of the site, the small concentration of slag recovered from the Sirmata monastic complex (contexts I-1, I-5 and I-28) suggests the possibility of an institutional role in the final stages of production if not in the actual procurement process[153]. Although the exact mechanisms of production remain obscure, the central government's interest in Cypriot copper, it is reasonable to suggest, came to the forefront on two occasions during the early decades (609/610 AD; 626-627) of the seventh century AD (Kaegi 2003: 46-48, 86; Hendy 2007: 402). The province's timber resources were also an important part of the productive landscape. Nevertheless, because other segments of society (institutional and individuals) would have also required access to the island's timber resources for their own purposes, it is probable the island's Late Antique administrators would have had a rudimentary interest in engaging with the potentially localized mechanisms that developed to insure

operator and limited itself essentially to controlling taxes and regulating the trade in precious metals. This led to an inevitable decline in public interest in mining. We hear nothing more about military activities aimed at safeguarding and acquiring ore beds, even if such activities may well have continued on a smaller scale".

[153] The slags from this area were not registered in the site catalogue. The associated artefacts from context I-1, the top soil, date the deposit to the sixth and seventh centuries. Context I-5 is associated with the construction of the monastic complex's basilica. The registered artefacts date this deposit to the late sixth century. Context I-28 is associated with a deposit of collapse form the complex's courtyard. This deposit dates to the mid-seventh century AD (Rautman *et al* 2003: 64, 70-74, 77 and 81).

the successful exploitation of this strategic resource. Because of the potential conflicts between various institutions and individuals, it is also reasonable to suggest that this facet of the Cypriot eco-industrial landscape was contested and operated at several spatial scales within Late Antique Cypriot society.

Turning to the province's larger strategic context, it has been argued (in Chapter 2) that the Late Roman state possessed a comparatively sophisticated set of geographic 'tools' through which it extracted and processed various types of geographic knowledge for use in its strategic planning. The linkage of Cyprus along with other comparatively wealthy provinces (Caria in Anatolia and the Cycladic Islands) with two Balkan provinces (Sythia and Moesia Seconda), which the central government wanted to augment economically, provides a particularly good example of the Late Roman state's ability to plan and execute strategic initiatives at an interregional scale. Although the temporal duration of this administrative structure remains obscure, it did strengthen Cypriot contacts with the Aegean and Black Sea regions (*e.g.* production of Aegean type LRA13 on Cyprus and an Aegean influence in Cypriot church architecture) that could have very well outlived this particular administrative construct. In this respect, it is reasonable to suggest that at least some facets of the world around Cyprus actually expanded in the sixth century AD. Future archaeometrical studies of amphorae (*e.g.* LRA1, LRA2/13) from sites in Scythia and Moesia Secunda have the potential to illuminate the

Cypriot contribution to these provinces' supply[154]. In all likelihood the establishment of Armenian refugees across the province by Maurice in 578 AD represents an attempt to bolster the provinces defensive human resources at this time.

Perhaps the most intensively studied aspect of Cypriot Late Antique social relations and the province's strategic value is the establishment of the condominium. However, even though the basic sequence of events leading up the establishment of the condominium is accessible in the existing documentary record, they do not offer particularly useful data on localized conditions in decades between the initial raid in 649 AD and the final establishment of the condominium in 702 AD. Conversely, the comparatively richer archaeological record is capable of contributing to our understanding of this complex period. Some researchers (*e.g.* Kyrris 1994-1998) have suggested that the geo-strategic mediations that were occurring between the Late Roman state and Caliphate would have reduced the Cypriots to pawns in these larger negotiations. Such a passive appraisal, I suggest, is only superficially true for the period between 649 and 706 AD. The documentary record, as mentioned above, indicates the Cypriots did have representatives, the Phangoumeis, present at the negotiations of 706 AD, and all three parties (*i.e.* the Cypriot representatives, the Late Roman state and the Caliph) agreed to the terms. More importantly, these negotiations led not only to the reestablishment of the treaty of

[154] For a good review of Eastern Mediterranean amphora in Scythia, see Opaiț (2004). For a review of LRA2 on the Danube in a military context, see Karagiorgou (2001).

688’s terms but also the return of those Cypriots transferred from the island and resettled in imperial territory and the Caliphate during the political sparing between Justinian II and Abd-al-Malik. Although this is the first time that Cyprus and its representatives are explicitly mentioned in the documentary record dealing with these events, it is equally probable that the island’s local ecclesiastic and secular elites would have been particularly active in the negotiations prior to those of 706 AD.

It is important to note that despite the central government’s various efforts to curb localized negotiations, the prevailing trend during the initial phases of the Islamic conquests was for individual communities to negotiate directly with the occupying/invading forces (Kaegi 1992: 251-254). The provincial sigillographic record preserves ample evidence for the presence of high-ranking *honorati* on Cyprus during the seventh century AD (see above for examples). It is probable that at least some of these Cypriot *honorati* would have had contact with those local imperial officials on the island and they would have played a part in formulating the various treaties established between the Cypriots and the Caliphate. At a larger scale, the treaty of 649 AD, Kaegi (1992: 253-254) argues, indicated that one important component of Heraclios’s foreign policy, the probation of localized negotiations not sanctioned by the state, was unsustainable[155].

[155] Kagaei (1992: 253) states “The Cyprus agreement of 648/9 is genuine and shows that (1) Heraclius did not succeed beyond his lifetime in imposing his policies of no unauthorized local negotiations, but also again shows (2) the perils of allowing local officials to make local special arrangements with the Muslims”.

The extent of direct military involvement (*e.g.* troop deployment on the island) in Cyprus during the late sixth and early seventh centuries AD remains open to debate. Among the better archaeological evidence for their presence within the province are the military belt buckles and spear tips attributable to the seventh century AD recovered from Amathous (Prokopiou 1995) and Arsinoe Polis (Najbjerg *et al* 2002). Unfortunately, the historical record is largely silent when it comes to the tactics employed by imperial military planners for the province's defence. However, the sources do mention several useful pieces of data. During the late sixth century AD(approximately 578), Theophylact Simocatta states that Maurice, while commander of imperial forces in the east, settled several thousand Armenian prisoners captured during campaigns in Arzanenein across Cyprus with the intent that they would serve as guards and troops (Kyrris 1970: 157-158)[156]. Several decades later, during Heraclios' usurpation against Phocas, forces loyal to the future emperor occupied Cyprus. This event provided a context in which the island would have experienced an influx of human and material military resources. During the Persian wars of the early seventh century AD, the Aspagourios incident suggests some level of

[156] Theophylact Simocatta states "(13) The Roman General Maurice, seeing that the barbarians had left Armenia and were engaged in ravaging on the eastern front, set out with his whole army and arrived in the land of the Persians; although his body was stricken by a fierce fever, he persisted in his labours in spite of his illness. (14) So the Romans invaded Arzanene and, since there was no resistance, they reduced the very strong fort whose name was Aphumon, razed some other forts, and administered great slaughter to the Persian state. (15) They took prisoners a total of one hundred thousand of the Persians, and men of the Army, by granting a third portion to Maurice the Roman general, made the wages of war incurable. And so the general signified the presence of the captives to the Caesar, but the Caesar distributed the booty on Cyprus" (Theophylact Simocatta iii.13-15, trans. Whitby and Whitby 1986).

military action on the island, however briefly it may have been. For the present discussion, the important point is not whether Aspagourios was a Roman or a Persian commander, but rather the fact that strategic planners recognized a need to dispatch an expeditionary force to the province to gain a tactical advantage. It is very likely that imperial strategic planners in the early seventh century AD would have regularly included Cyprus into their tactical calculations involving operations in Egypt, the Levant, Syria and southeastern Anatolia. Thus, contrary to Browning's (1977-1979: 102) assertion that Cyprus' took on strategic value after the battle of Yarmuk (638 AD) and surrender of Jerusalem, it is likely that imperial planners would have realized Cyprus' manifold strategic value before the late 630's AD[157].

Nevertheless, Browning (1977-1979: 102) mentions two events which could have provided a plausible context and a catalyst for the 649 raid: the successful imperial amphibious assault on Alexandria and continued imperial raiding along the Muslim occupied Levantine coast. Cyprus, with its multi-tiered maritime infrastructure (see above §4.2.3.1.A), would have provided the obvious base for these raids. The historical record provides comparatively better strategic and contextual data for the 653 AD raid. Paragraph 98 of the Reconstituted Chronicle of Dionysius of Tel-Mahre mentions the presence of Imperial forces in the province prior to and during the

[157] Regarding the consequences of the battle of Yarmuk and the surrender of Jerusalem to Caliph 'Umar for Cyprus, Browning (1977-1979: 102) states "These epoch-making events transformed Cyprus from a peaceful and unimportant province in the interior of the Byzantine Empire into a disputed frontier zone".

initial phases of the 653 AD raid. This passage is worth quoting at length:

> “They [the Arabs] had heard that it [Cyprus] was already as full of people as ever and that a large force of Romans had taken up residence there. The vessels were ready, the Arab forces embarked, and the journey began on a halcyon sea. Meanwhile, the Roman force on the island encouraged the populace, which had emerged from its hiding-places in the caves and mountains, to have confidence. ‘Stay where you are!’ they said, raising false hopes, “Do not panic! There is no need to worry!’ But when the Romans and the natives actually sighted the Arab ships on the horizon and saw their number, their courage deserted them and they took to flight. Some, being rich, possessed sailing vessels in which they escaped to Roman territory. Others attempted to avoid death or slavery by shutting themselves up in Lapethus [or Paphos], one of the cities of Cyprus. As for the Romans, on whom the islanders had depended, where they saw their own lives were in danger,…they took to their own ships and saved themselves from Arab aggression” (Trans. Palmer 1993: 176), bracketed comments my own.

Although this passage does not provide detailed logistical and strategic information like the numbers of imperial troops comprising the expeditionary force or their operational mandate, it does provide, albeit in an implicit way, several pieces of particularly interesting information for the present discussion. First, this passage implies that Muslim strategic planners were actively monitoring the flow of imperial human/material military resources entering the island. It also suggests that this particular military build-up occurred between 649 and 653 AD and consisted of a combined naval and ground force. It is also probable that imperial forces were involved with re-establishing internal security within the province after the disruptions caused by the 649 AD raid. As mentioned above (§4.2.3.1.C), Balandier (2004) believes that several Cypriot cities were refortified during the period between 649 and 653 AD, undoubtedly in response to the growing threat posed by expanding Muslim sea power. However, while it is reasonable to suggest that strategic planners on Cyprus would have refortified some urban centres following the initial raid, it is also very likely, as Dunn (1998) and Megaw (1986) note in the case of Kyrenia's pentagonal fortifications and rampart, that the those social actors responsible for the defence of the province may well have recognized the need to bolster the province's defences prior to the Arab raids. Perhaps more importantly, as the fortifications at Koutsopetria Vigla (Caraher *et al* 2007) and those identified in the Kyrenia range and elsewhere (Balandier 2004; Leonard 2005) indicate that the level of investment in security was spatially extensive and

not confined to the province's cities or coastal locations. Thus, while limited, the available data suggests two main points: (1) it introduces the possibility that strategic planners had begun to recognize and improve the island's defensive infrastructure prior to the 649 AD raid and (2) the level of investment was extensive and not limited to urban locations. Other facets of the archaeological record, such as the sigillographic and numismatic records also support this general position.

Aspects of the Cypriot sigillographic and numismatic records provide useful insights into the militarization processes on the island during the sixth, seventh and eighth centuries AD (see figure 4.2). For example, although the sub-assemblage is small, the 18 provenanced lead seals of Stratelatai, Drungarioi and Stratelatai-Drungarioi from Cyprus can provide an indication -albeit an undoubtedly limited one- of the extent of purposeful imperial involvement in the island's affairs at this time. Seals of Stratelatai, Drungarioi and Stratelatai-Drungarioi constitute 77.8 (*n* =14), 16.7 (*n* = 3) and 5.6 (*n* = 1) percent of this sub-assemblage respectively. Chronologically, approximately 72.2 percent (*n* = 13) of the seals in the sub-assemblage date to the sixth/seventh and seventh centuries AD; the majority (*n* =8), however, date to the seventh century[158]. Seals of Stratelatai, Drungarioi and Stratelatai-Drungarioi dating to the seventh/eighth and eighth centuries AD comprise approximately 27.8 percent (*n* = 5) of the total sub-

[158] Metcalf's (2004) catalogue numbers 52, 53, 55, 150, 152, 153, 154, 276, 279, 280, 281, 282, 287 and 290. Dr. Archibald Dunn (Pers comm 2008) informed me of the VII/VIII century AD seal of the Stratelates Avr[a]mamios recovered from the excavations at Saranda Kolones.

assemblage. Geographically, these seals come from both coastal (*i.e.* Limassol-Neaplois, Amathous, Paphos, Constantia, Emba, Lamboussa and Kyrenia) and inland contexts (Pyla, Kythrea-Chythroi and Politiko-Tammassos). The majority (66.7%, *n* = 12), however, come from coastal locations. Those seals from Amathous and Lamboussa-Kyrenia cumulatively comprise 38.9 percent (*n* = 7) of the coastal findspots. On the other hand, seals from Pyla comprise approximately 66.7 percent (*n* = 4) of inland contexts. Perhaps, more importantly, military officials were communicating with social actors at Politiko-Tammassos (Stratelates, Kyros, VII century AD) in the central lowlands (Mesaoria) and Kythrea-Cythroi (Stratelates-Droungarios, unknown, VII/VIII century AD) in the southern foothills of the Kyrenia Range[159]. From a tactical perspective, these settlements occupied key points within the fully developed Late Antique road system: Politiko-Tammassos controlled the junction between the north-south road linking Amathous to Kyrenia and the east-west road linking Soli to Constantia (see figure. 4.2). Similarly, Kythrea-Cythroi controlled the junction between the north-south road linking Larnaca-Kittion to Lambousa-Kyrenia and the northwest-southeast road linking Constantia to Lambousa-Kyrenia. Kythrea-Cythroi also controlled the main east-west route between Lefkosia–Ledra and Constantia. The strategic position within the provincial overland transport system and in some cases, their close proximity to the island's most agriculturally productive area (Lefkosia-Ledra) and copper resources (Politiko-Tammassos) would

[159] Metcalf's (2004) catalogue numbers 287 and 154.

have increased the tactical value of these inland settlements from the central government's perspective. Finally, almost all of the above mentioned seal find spots from both coastal and inland contexts are in close proximity to a segment of island's Late Antique road system. It is important to note as mentioned above (§4.2.1.2), some of the seals of *illustres* may actually belong to members of the palatine regiments. Those with known find spots come from Lambousa/Kyreana, Amathous, Kourion, and Constantia; they could reasonably augment the unambiguous military seals from these locations.

Those military and administrative seals solidly attributable to the eighth century are of particular importance to the present discussion because they indicate that the Late Roman state continued to perceive the island as tactically valuable during a period when both states officially recognized it as neutral territory. Of particular interest are the seals of Droungarios Lykastos recovered from Amathous and the Droungarios of the Kibrrhaiotes, Nicetas, recovered from Constantia[160]. Two general provenance seals of stratelatai also attest to the military's interests in the island at this time. The general provenance seals of two Kommerkiarioi, both dating to the eighth century AD, also attest to the presence of imperial officials that undoubtedly concerned themselves with monitoring and collecting duties and taxes from the island. It is likely that these officials engaged with the other imperial officials on the island (mentioned in §4.2) and worked with local

[160] Metcalf's (2004) catalogue numbers 152 and 150.

administrators and notables. As mentioned above, the number of post-seventh century AD seals that appear in both Cyprus and Constantinople indicates that communications between the island and the capital intensified during the early years of the condominium (Metcalf 2004).

Elements of the island's numismatic record also provide useful data on the militarization process. In general, researchers (*e.g.* Metcalf 2001; Metcalf 2003b; Pitsillides and Metcalf 1995; Hendy 2007) note that the majority of the stray coin finds dating from the seventh century AD recovered on the island consist primarily of issues attributable to Heraclios and Constans II. As mentioned above, the provincial mints were active during the early decades of the seventh century AD, but as Hendy (2007: 402) points out, the "issues involved may well have gone more or less straight off the island". Conversely, the copper folles of Constans II (642/3 AD), Metcalf (2003b: 31, 36) has argued, were shipped in bulk from Constantinople to the provincial capital, Constania, and then dispersed across the island. Most researchers (*e.g.* Metcalf 2001; Metcalf 2003b, Hendy 2007) would agree that the influxes of these issues are associated with increased military activity of one kind or another on the island[161]. Possible military contexts that could have contributed to the dispersal of these coins across the island,

[161] Regarding the issues attributable to Heraclios, Metcalf (2001: 135) states "Stray finds of coins of Heraclius are so plentiful, compared with those of Justinian and intervening reigns, as to suggest the hypothesis that the fall of Antioch to the Persians, followed by the loss of Cilicia and much else, gave the island a new strategic importance in the eyes of the central government, which led to the spending of (government) money in Cyprus, in other ways".

I suggest, would have included infrastructure projects (*e.g.* fortifications and storage facilities), local troop pay/maintenance and the acquisition of supplies for use by local troops and those in other operational theatres. Metcalf (2003b: 34) believes that the influx of coinage into the countryside would have been "quite disruptive and probably inflationary". It is probable that the volume of coinage entering the island decreased sharply during Constantine IV reign (668-685 AD). The countermarking of earlier folles under Constantine IV on Cyprus, Rautman (Rautman *et* al 2003: 159) argues, "can be interpreted as one symptom of the sharply reduced supply of coin to the island as well as continuing local demand"[162]. While the origin and production date of an imitation half follis of Heraclios (issue date of origional 625/6 AD) recovered from Panayia Ematousa (Destrooper-Georgiades 2006: 378, cat# C14) in southeastern Cyprus is not know, its appearance at this site seems to support the general theory that official issues were in limited circulation[163]. Thus, the provincial numismatic record for the seventh century AD is largely the product of the Late Roman state's larger geo-political mediations in the eastern Mediterranean.

The numismatic assemblages from Kalavasos Kopetra (*n* = 12; Rautman *et al* 2003: 159-161) and Maroni Petrera (*n* = 19; Ponting

[162] For an introduction to the economic structures of the sixth and eighth centuries AD, see Laiou and Morrisson (2007: 23-42), as well as Morrisson and Sodini (2002). For a discussion of economic and non-economic exchange, see Laiou (2002).

[163] It is important to note that imitations do not have to be contemporaneous with the original. For a discussion of imitative seventh century AD copper coins from Syria, see Pillips and Goodwin (1997). Their discussion also includes a discussion of Cyprus (1997, especially Pp. 76-82).

2002: 60-63) provide two case studies for examining the general trend mentioned above for nonurban contexts. In both cases, coins of Heraclios and Constans II comprise over 60 percent of the total assemblages[164]. At Kalavasos Kopetra, the majority (62.50%, *n* = 5) of the 8 coins securely attributable to Heraclios and Constans II were minted at Constantinople; the mints of Cyzicus (follis of Heraclios, 612/613 AD) and Nicomedia (follis Heraclios, 611/612) are also represented by one follis of Heraclios each[165]. Similarly, at Maroni Petrera, the majority (83.33%, *n* = 10) of the 12 securely attributable coins of Heraclios and Constans II were minted at Constantinople; issues attributable to Heraclios from unidentifiable mints comprise the remainder (16.20%, *n* = 2). Over struck/countermarked issues of Heraclios comprised approximately 33 percent (*n* = 2) and 17 percent (*n* = 2) of those issues attributed to that emperor at Kopetra and Petrera respectively[166]. Regarding the two counter marked issues of Heraclios recovered from Petrera, Ponting (2002: 63) notes that one example (MP.044g)had two instances of Heraclios' monogram in an oval and one case (MP.044f) had "a 'pie slice' shaped counter mark which may be of a type peculiar to Cyprus". Undoubtedly, future excavations at other Late Antique rural sites will reveal how representative this pattern is of the larger rural distripution.

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[164] For Kopetra, see Rautman's (2003: 160-161) cat# C5, C6, C7, C8, C9, C10, C11 and C12. For Petrera, See Ponting (2002: 60-62) cat# MP.004a, MP.004b, MP.004c, MP.038, MP.044a, MP.044b, MP.044c, MP.044d, MP.044e, MP.044f, MP.044g and MP.044h.

[165] See Rautman's (2003: 160) cat# C5 and C6.

[166] For Kopetra, See Rautman's (2003: 160) cat# C5 and C9. For Petrera, See Ponting's (2002: 62) cat# MP.044g and MP044f.

In conclusion, the orthodox view that “Cyprus was without history” (Hill 1941) and existed in “tranquil obscurity” (Mitford 1980) up until the mid seventh century AD is at best misleading. Perhaps the most important point derived from this discussion is that Cyprus’ strategic value was manifold. The comparative richness of the available archaeological (*e.g.* numismatic, sigillographic, architectural, ceramic, and small finds) data combined with the very limited historical data suggests Cyprus was a well-integrated province with a developed infrastructure that was comparable to neighbouring provinces (*e.g.* Syria). Arguably, imperial strategic planners realized Cyprus’ tactical value as early as Justinian I’s reign. The archaeological and historical records suggest elements of the Cypriot administration were in close contact with the central administration during the initial raids. The sigillographic record also indicates that imperial strategic planners never lost sight of the island’s tactical potential even when it was technically neutral. However, Cyprus’ geographic position made it tactically desirable for any power that wished to conduct operations in the eastern Mediterranean in general and operations in western Syria and southeastern Anatolia in particular.

4.3 The use of space at Kourion in Late Antiquity

This subsection provides a preliminary discussion of the use of urban space at the settlement of Kourion during Late Antiquity based on the analytical framework developed over several subsections presented in Chapter 2 (*i.e.* §2.2.4, 2.3.2.1.A and 2.3.2.1.B). Thus,

the present subsection approaches the Late Antique urban environment from a perspective that views it as a multifaceted social construct. As a component within the large landscape, urban landscapes as cohesive units, or cities, can represent a nodal space where abstract and lived spaces (as defined §2.2.4) intersect and compete with one another. They are also contested and ideological space and, perhaps more importantly, they are multi-scalar and *multilocal* space within the larger social landscape. Kourion would have been the most important Late Roman settlement within the Sotira Archaeological Project's project area (see Chapter 5). With the notable exception of Megaw and colleagues' (2007) publication of Kourion's Episcopal precinct, the available data from excavations conducted on and immediately around Kourion's acropolis is rather limited and preliminary (*e.g.* Christou 1996; McFadden 1938; Soren and James 1988; Soren 1988; Soren *et al* 1986; Soren and Davis 1985; Parks *et al* 1997; Parks *et al* 2000)[167]. Nevertheless, despite the available data's obvious limitations, it is still possible to explore and identify, albeit on a very basic level, several Late Antique urban spatial trends at Kourion. The multi-phase (Iron Age to Late Antique) south coast settlement of Kourion occupies approximately 26.06 hectares of an irregular (northwest-southeast axis) natural limestone hillock overlooking Episkopi Bay. Kourion is located approximately 2.5km to the southwest of the modern village of Episkopi. With a centrality value of 5, Kourion, along with Soloi

[167] For a concise summary of the survey and excavation work on Kourion's acropolis, see Bulle and Mavromatis' (forth coming) article in the *RDAC*.

and Kition, occupied a comparatively important position within the province's Late Antique road system (Bekker-Nielsen 2004). Several major and minor roads converged in close proximity to Kourion (see Map 1)(Bekker-Nielsen 2004: 201, 217-219, map 24, roads 1a, 18, 98, 99, 191), and these included routes running north to Soloi (road 98), southwest to Polis (99), east to Amathous and west to Paphos (road 1a). Kourion's civic territory extended north as least as far as the modern villages of Sotira and Souni, where the city drew upon fresh water springs at these locations, and as far west as Evdhimou and at least as far east as the Akrotiri Peninsula[168].

The results of limited survey work to the northeast of the city (A. Leonard 1987), around the locality of Yerokara, indentified several scatters and evidence for at least one substantial (monumental?) edifice in this area. Other important suburban complexes include the sanctuary of Apollo Hylates as well as a stadium, both of which fell out of use during the fourth and fifth centuries AD (Butrion-Oliver 1996; Christou 1996). However, during Late Antiquity, two extramural Basilicas, located in the harbour below the acropolis' southwestern sector and one on a prominent hill (At-Meydan) located just under 1km west of the Paphos gate, undoubtedly became important nodal points within the city's suburban landscape. Other important extensive urban infrastructure elements that continued into Late Antiquity include the city's aqueduct (Last

[168] J. Leonard (2005: 553) suggests "Kourion's bureaucratic reach appears once to have extended eastward to Akrotiri Peninsula, called 'Kourias' by Strabo". The limits of Kourion's western jurisdiction is attested to epigraphically in the form of a milestone recovered from the Evdhimou area (Mitford 1971, 1980).

1957) and harbour installation (Christou 1996, 1997; J. Leonard 2005; J. Leonard 1997). Strabo described Kourion's maritime facilities as an *hōrmos*, a term that J. Leonard has argued indicated the presence of "medium-sized or small harbours protected by artificial breakwaters or natural headlands" (J. Leonard 1997: 174) in Cypriot contexts. He (J. Leonard 1997: 178) believes that the area enclosed by this installation included large portions of the sandy flats and silt beach that extends from the base of the acropolis' southern slopes to the present shoreline. J. Leonard (*ibid*) suggests the acropolis' concave southwestern slopes defined the installation's western extent. Conversely, the breakwater remains that defined the eastern limits of the harbour consist of two segments: the first is approximately 68m long by 12m wide; the second is approximately 30m long with an irregular width. J. Leonard's (2005) investigation of this feature produced evidence which suggested two phases of construction[169]. This feature is orientated east/northeast – west/southwest and appears to have continued shoreward where he notes additional evidence for harbour side infrastructure[170]. J. Leonard's (2005: 563-564) research program at Kourion's harbour also included a small geological coring

[169] J. Leonard (2005: 562) states "The construction of the mole appears to consist of both squared and amorphous stones, possibly indicating two constructional phases: an initial phase in which the structure was founded with large ashlars, followed by a secondary phase on which rough stones of smaller dimensions were employed for repairs. The dates of these two possible phases remains unknown for the present".

[170] "…traces of an ancient wall of roughly squared stones were also observed in 1996, which appeared to have been founded directly on sand. This wall appears to belong to a structure that once stood on the inside of the alignment of the ancient breakwater (if one were to extend its present alignment inland) and probably represents a harborside support building such as a warehouse" (J. Leonard 2005: 564).

component[171]. Coring within the silted harbour's boundaries indicated that the shoreline had advanced approximately 25m from its Roman and Late Roman location and would have "appeared much as it does today" (in the late twentieth century) (J. Leonard 2005: 564)(see figure 4.3).

As mentioned above in Chapter 2, McDonald's (1986) *urban armature* approach, which includes connective and passage architecture and the main repertoire of civic buildings, and Lynch's (1960) *multi-scale urban image approach* offer a useful mid-level analytical procedure that provide a convenient starting point for the spatial analysis of Kourion's urban environment. Since modern investigations on the acropolis started in the late nineteenth and early twentieth centuries (*e.g.* Cesnola 1877; British Museum Expedition), various excavations (*e.g.* the University of Pennsylvania Museum, the British school at Athens, the Department of Antiquities, Cyprus and the University of Missouri) and survey projects (*i.e.* the Kourion Mapping Project, KMP; A. Leonard 1986) on the acropolis have explored/exposed several elements of what in the present context formed the city's Roman armature. These elements include the city's agora, baths-nymphaeum, fountain house, basilica(s), theatre, gymnasium, and walls/gates[172] (figures 4.4 and 4.5). However, there remains some debate as to whether the so-called

[171] The coring was undertaken in 1996 (Leonard 2005: 563).

[172] At present, the location of Kourion's gymnasium is unknown but its existence has been confirmed through epigraphic evidence (Mitford 1971: 172-173, inscription #92).

apsidal building and the extramural House of Achilles were private or public edifices (*e.g.* Christou 1996; See figure 4.4).

Regardless of the debate, these edifices would have formed important nodes and landmarks that would have played an important role in the formulation of Kourion's urban environmental image for those social actors actively engaging with this district of the city. Although their work awaits final publication, Soren and colleagues' (*e.g.* Soren and James 1988: 118-123, 137-147) excavations at and around the so-called Earthquake House in the city's southwestern sector have produced useful information (see figure 4.7). Their work at the "Earthquake House" indicates that the edifice was a middle class residence that was damaged at some point before the 365 AD quake and then sold or abandoned by its original residents. Similarly, they have also identified a substantial public building with a Roman "Baroque" façade to the Earthquake House's north, which, they suggest, was functioning as a neighbourhood market in the years before the 365 AD quake. It is reasonable to suggest that this edifice would have formed an important landmark and *locale* within this particular district of pre-365 AD Kourion. Soren and colleagues (*ibid*) also identified mosaic fragments on the surface to the north of the excavation and the KMP identified two patches (features 014 and 015) of mosaic pavement to the Earthquake House's west.

The majority of the excavated edifices at Kourion consist of armature elements and include the main repertoire of Roman civic buildings concentrated in the civic core. Conversely, archaeological

investigations of Kourion's connective and passage architecture are practically non-existent. Excavations have revealed small sections of street surfacing to the south of the "Apsidal Residence" (Kondoleon 1982) in the city's northwestern sector and around the Earthquake House in the city's southwestern sector. Excavations in the civic core sector revealed a portion of an extensive paved area (perhaps a plaza?) that predates the Episcopal basilica and subsequently "was redeveloped in such a way as to provide access to the church from the south via the east street" (Megaw *et al* 2007: 32-33). The exposed street surface at the "Apsidal House", for example, is 4.5 meters wide and consisted of "crushed stone set in mortar" (Kondoleon 1982: 105); a "layer of stone grit" (Megaw 2007: 32) formed the surface of the redeveloped late Antique east street near the Episcopal Basilica[173]. Undoubtedly, future excavations will expose more components of Kourion's connective and passage armature. However, based on what is presently known about Kourion's urban topography, it is reasonable to suggest that the city's connective architecture included at least two thoroughfares that would have linked the urban core with the Paphos and Amathous gates.

Fortification walls, as McDonald (1986) notes (see Chapter 2), helped frame a given city's armature. Apart from this, they also formed, to borrow Lynch's (1960) terms, landmarks and edges within a given urban environment. This is particularly true in cases, like Kourion, where the fortification walls regulated movement between

[173] Soren and colleagues (Soren and James 1988: 123) mention that their probes to the Earthquake House's west revealed a street attributable to the late first or early second century AD.

intramural and extramural (*e.g.* The House of Achilles) components and defined the extent of intramural urban districts (*e.g.* the northwestern sector) (see figure 4.4). During Late Antiquity, the latter aspect is particularly apparent, for example, at Amathous, Paphos and Constantia where new fortifications effectively redefined the relationships between the urban districts and their associated nodes and armature elements[174]. Parks and colleagues' (1996, 1997, 1998, 2000, 2001; Parks *et al* forthcoming) excavations in the Amathous Gate Cemetery (KAGC) have uncovered a very limited section (approximately 2.5m x 1.5m) of the settlement's fortification wall in Area A[175]. This particular section of wall had fallen out of use by the third century when those social actors using this portion of the site dumped a large amount of domestic refuse (including pottery, particularly coarse wares with carbon build up) over this feature[176]. Though partially excavated by the Department of Antiquities, the most substantial stretch of urban fortification wall discovered to date is located in the city's northwest sector (Kondoleon 1982: 101-102; Christou 1996: 55)[177]. This section of

[174] Perhaps the most well known and documented example of this phenomenon is the Late Antique fortification of Athens' agora (Frantz 1988). At Amathous, for example, the fortifications ran right thought the city's agora; at Paphos, the fortifications enclose the immediate environs surrounding the harbour (Balandier 2002).

[175] This small section of city wall was exposed in two excavation units in Area A: TRA I and TRAI EE. These excavation units' close proximity to the main road leading to the site precluded further exploration of this feature; see the present author's contribution in Parks *et al* (forthcoming) as well as Parks *et al* (2001).

[176] Apart from the general discussion of this particular context in Parks *et al* (2001), see the present author's discussion of excavation unit AI EE in Parks *et al* (Forthcoming).

[177] I had the opportunity to examine several exposed but overgrown sounding trenches placed along the northern face and the centre of this section of

fortification, which the KMP re-recorded as feature 033, forms a distinct ridge that runs on a northeast-southwest alignment for approximately 120m from the tower between the so-called “House of the Gladiators” and the “House of Achilles” to the so-called “North Gate”, which the KMP re-recorded as feature 043. The exposed section of casemate wall is approximately 5m wide with cut stone exterior and interior faces with rubble fill between the faces and casemate compartments (Kondoleon 1982: 102; Christou 1996: 55; *Pers. Obs.* 2007; see figure 4.4)[178]. KMP feature 043, the north gate (*ibid*), consists of a series of preferentially aligned and coursed large dressed blocks that are visible in the modern road cutting for the old Limassol - Paphos highway[179].

Other sections of fortification wall recoded by the KMP in the city’s northwestern sector include features 37 and 38 (Sollars *et al* 2006). Conversely, the city’s eastern approach, A. Leonard (1987) notes, would have been the more difficult to defend. It is likely that a tower would have protected the raised ramp/roadway that leads to the Amathous Gate from the plain below[180]. Several of the

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fortification wall while taking part in the Kourion Mapping Project’s 2007 season. (ed) H.Swiny’s (1982) figure 77 provides a good aerial photo of this section of this section of the site. Additionally, this stretch of fortification wall shows up particularly well in Google Earth, however, the forthcoming DEM of the acropolis, captured by the Kourion Mapping Project at a 10m grid interval and supplemented at 5m grid interval when necessary, reveals considerably more detail in this area of the site.

[178] For the Late Hellenistic period and early Roman period (first century BC to the third century AD), Balandier (2002: 336) states “nothing is known about the city-walls of Kition, Kourion, Soloi and Arsinoe”.

[179] Christou (1996) suggests that this area is also the location of the city’s Paphos gate.

[180] A. Leonard’s (1987: 97, figs. 43-44) feature 29a and 29b, rock cut steps leading to eastern approach to the city and a scatter of dressed block

acropolis' faces preserved evidence for faceting and it is particularly prominent in Area A of the KAGC as well as along the eastern edge of the Acropolis (*Pers. Obs.* 2000; see figure 4.6)[181]. At least one phase of the faceting from the KAGC study area (Area A) appears to be Late Antique because it bisected a Late Roman cist grave (*Pers. Obs.* 2000)[182]. Additionally, the KMP identified a potential tower foundation (feature 019) in the city's southwestern sector. It is important to note that this feature is not associated with a curtain wall (Given *et al* 2005). Like the Late Antique watchtower at Arsinoe Polis mentioned above (§4.2.3.1.C) (Najbjerg *et al* 2002: 146), Kourion's potential watchtower is located in a prominent topographical position and does not appear to have been associated with a curtain wall. As argued above (§4.2.4), Cyprus' strategic value to the Late Roman state steadily increased over the course of the late sixth and seventh centuries AD and this development, it is reasonable to suggest, provides one plausible context for the construction of an urban watchtower at Kourion at this time. A watchtower positioned at this particular location on the acropolis would have provided a convenient observation platform for monitoring east and westward sea traffic entering Episkopi bay as well as activity in the city's harbour.

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turned up through clandestine digging respectively, provide a likely location for a tower.

[181] For a brief discussion of Kourion's geology, see Bullard's (1987: 53-61) contribution in Soren (ed) (1987).

[182] For a detailed discussion of the relative phasing of the cemetery, see Parks *et al* (forthcoming).

The Roman city's monumental civic core (*i.e.* baths, nymphaeum, basilica, open squares/plaza, gymnasium(s) and agora complexes) is located on the acropolis' northwestern corner and formed a localized concentration of armature elements within Kourion's urban landscape(see figures 4.4 and 4.5)[183]. In this respect, it formed a distinct district within Kourion's urban environment. The civic core essentially divided Kourion's northwestern sector from the city's larger southwestern and southeastern sectors. As mentioned in Chapter 2, it is important to note that in a given Roman urban landscape, the monumental civic core formed the conceptual-symbolic centre of an urban environment regardless of its absolute position within that urban environment. One important armature element, the civic theatre, was, for instance, located in the settlement's southeastern sector. Recent topographic survey work conducted by the KMP indicates that the southwestern sector was densely built up (numerous building terraces, exposed wall alignments and cisterns)(Given *et al* 2005)[184]. In Kourion's northeastern sector, the KMP identified several features which include a 3- or 4-room complex and an associated cistern (features 041 and 040), a built drainage system (feature 042) in close proximity to the city wall, and a

[183] At present, the location of Kourion's gymnasium is unknown but its existence during the late second century has been confirmed epigraphically (Mitford 1971: 172-173, inscription 92). Mitford's (1971: 140-143) inscription # 76, which is Early Augustan in date, suggests that Kourion possessed several gymnasia and he notes that "It is of interest, however, to find that Kourion at this date was large enough to possess more than one gymnasium" (Mitford 1971: 143). Additional evidence for Kourion's Hellenistic gymnasium was recovered from the Episcopal Basilica (Michaelidou-Nicolaou 2007: 368, inscription 2).

[184] For example, KMP feature numbers: 007-009 (walls), 012 and 027 (walls) and 018 (cistern) (Given *et al* 2005).

series of walls (feature 051, 052 and 053) in close proximity to the so called “Triclinium House” (see figure 4.4).

Previous survey work (A. Leonard 1987: 81-82, figs. 43 and 44) along the acropolis’ southern slopes also found evidence for a section of *in situ* mosaic flooring in association with mortar bonded roughly worked blocks (Area F: features 16, fig. 45) in addition to stretches of wall and associated roof tiles and pottery in several other locations on the slope[185]. The results of the University of Pennsylvania Museum’s (McFadden) and the University of Missouri’s (Soren and colleagues) limited excavations at the Earthquake House in the city’s southwestern sector did not identify any significant indication of redevelopment in the immediate area following the 365 AD quake[186]. However, until more systematic subsurface sampling has taken place within this sector, the extent to which the observations at the Earthquake House hold true for the rest of the city’s southwestern sector must remain open to debate. Similarly, the sequence derived from the partially published excavations of the House of Eustolios and theatre may not be completely representative of the city’s southeastern sector.

As mentioned in Chapter 2, the re-allocation of space within the urban landscape is a defining characteristic of Late Antique urbanism. Among the various processes that characterize the Late

[185] A.Leonard’s (1987: 92-96) survey Area C: wall segment features 6, 7, 8; survey Area E: wall segment features 11 and 12; survey Area F: wall segment features 13, 14 and 15.

[186] Soren and colleagues (Soren and James 1988: 121) have identified “patches of lightly compacted sandy earth and traces of small fires” in room 11. In turn, they suggest that this may have been “a temporary campsite for some survivor or survivors of the earthquake” (Soren and James 1988: 121).

Antique urban environment, the colonization of formally public space by private and/or commercial space is a well-represented and spatially extensive phenomenon in the archaeological record. At Kourion, this process is apparent in both private and public (armature) edifices such as the forum, bath-nymphaeum and basilica and is divisible into two temporal components: those post-dating and pre-dating the 365 AD earthquake. Soren and colleagues' (Soren and James 1988) excavations in Kourion's southwestern sector at the so-called Earthquake House and the nearby comparatively richly decorated monumental public edifice, which they interpret as a market, have identified evidence that indicates this process was underway prior to the earthquake of 365 AD (see figure 4.7). Their work shows that those social actors using this building prior to its destruction modified some of the shop rooms to accommodate domestic activities as well (rooms 28 and 30). At the Earthquake House, they suggest that this comparatively middle to high-status Roman domestic structure had suffered seismic damage prior to 365 AD and subsequent spatial reorientation. Apart from the structural repairs, the most apparent of these changes was the reuse of the grand hall (room 8) as a workshop and the partitioning of a large room, possibly a tablinum, into two smaller rooms that consisted of (room 1) a bedroom and a stable (room 2) (Soren 1988: 43; Soren and James 1988: 88-98, 114-119, 137-150; Christou 1996; see figure 4.7).

As noted in Chapter 2, fully developed Roman period civic armatures could take decades to develop and they tended to absorb a considerable portion of a given city's budget. At Kourion, the

city's forum achieved its fully developed form during the mid-third century AD under the Severan emperors. After the earthquake of 365 AD, "a complex of ordinary rooms constructed of rough stones and pebbles" (Christou 1996: 45) replaced the forum during the early fifth century AD. The shift from public space to productive space is detectable in Kourion's bath-nymphaeum complex. These edifices followed similar use-life trajectories that included several phases of expansion and reorganization prior to the 365 AD earthquake. Following this quake, those social actors who appropriated the baths and nymphaeum converted it into private housing and workshops (including a bread oven in the baths). With the installation of limekilns in these edifices during the eighth century AD, this complex entered into the final stage of its Late Antique use-life as a productive/industrial space where decorative architectural elements from these and other edifices were recycled or underwent lateral cycling (Christou 1996: 43-51; Soren and James 1988: 192). As mentioned above, although excavations in the Episcopal prescient did not produce direct evidence for glassworks at this complex, it did produce indirect evidence for the manufacture of glass (*i.e.* wasters, a pontil wad and cullet) which, in turn, indicates that glass production was taking place within Kourion's civic core in close proximity to that complex (Young 2007).

However, during the late fourth century or early fifth century AD, the construction of the Eustolios complex, which was comprised of a bath and a comparatively large house, in the city's southeastern sector provided a new nodal point in Kourion's urban

environment and a landmark within that district. The complex "continued to be used as a public centre for bathing and social meetings until the mid-seventh century AD when it was destroyed during the Arab raids and was then abandoned" (Christou 1996: 32). It is interesting to note that the Eustolios complex represents an inversion of the general Late Antique trend in which private and/or productive spaces colonized public spaces. The Episcopal basilica complex's atrium also provides good evidence for the reuse of space during Late Antiquity (see figures 4.16). Megaw (2007: 121-140) suggests that the bread oven (*i.e.* south portico) and the limited repairs/shoring up of several rooms comprising the basilica's atrium along with their recovered floor assemblages (*e.g.* west portico, unit 6, unit 7, units 10-12), indicate a limited reoccupation of this complex (by demolition/salvage teams?) in the late seventh and eighth century AD (for more information see below, §4.3.1.2). Megaw (2007: 174-175) suggests that the Episcopal complex was severely damaged along with other elements of the city's Late Antique infrastructure/urban armature and suburban nodal points, like the harbour basilica, in the late seventh century AD by an earthquake or a series of earthquakes[187].

The changing use of space is also detectable in other non-urban contexts at Kourion. For example, Parks and colleagues' (Parks *et al*

[187] "There are signs of hesitation before Kourion was abandoned for a second time, understandable if an initial shock was followed by a worse one. Particularly suggestive was the introduction a large marble basin just inside the north door of the narthex…, probably used with water remaining in cisterns when the aqueduct supply to the phiale in the atrium failed. The exodus of the surviving citizens to the nearby village, where water from wells and the Kouris river was available, would not have been delayed" (Megaw 2007: 175).

2000) excavations at the Amathous Gate Cemetery (KAGC) have identified evidence for Late Antique quarrying and lime production. The excavators suggest that the limekiln identified in the eastern sector of Area A may be contemporary with similar operations identified within the city's urban core (*e.g.* at the baths/nymphaeum)[188]. For the present purpose, it is important to note that the heat spall and discolouring of the acropolis limestone incorporated into the limekiln's north wall indicate that its construction and use postdate the faceting and the mortuary phase in this area (as indicated by a cist tomb bisected by the faceting in Area A's eastern sector). At this point, it is useful to draw a comparison with the situation at Paphos (Demesticha and Michaelides 2001) in which a former Roman suburban funerary landscape was redeveloped for pottery production and thus became part of that city's productive landscape during Late Antiquity (Parks *et al* 2000: 306-309; Parks *et al* forthcoming).

The increasing visibility and growing complexity of Christian urban topography is another well-attested phenomenon in the Late Antique archaeological record. Based on the discussion presented in Chapter 2, it is reasonable to suggest that this process was not limited to urban landscapes but operated on multiple scales and trajectories. Earlier excavations (*e.g.* McFadden and colleagues' excavations in 1934-1935) at the complex had identified the existence of a substantial Roman public building under the Episcopal

[188] For a discussion on the quarrying at the site, see Given's contribution in Parks *et al* (forthcoming). Apart from the preliminary discussion of the kiln in Parks *et al* (2000), see the present author's discussion in Parks *et al* (forthcoming).

complex[189]. Megaw and colleagues' (2007) work at Kourion's Episcopal complex further clarified its extent and ground plan as well as its relationship to the structure/complex it superseded. Megaw (2007) concluded that the edifice the Episcopal complex replaced was a Roman period basilica. As Kourion's upwardly mobile inhabitants began to utilize other channels (see Chapter 2, §2.3) to maximize their personal authoritative resources (as defined in Chapter 2, §2.2) and Roman armature elements like the baths, nymphaeum and forum took on different use-life trajectories during Late Antiquity, Kourion's established localized authoritative conduits, it is reasonable to suggest, became unbalanced. This resulted in the transference of what had been important public urban space to the private sector. One highly visible material outcome of this authoritative reorientation was the construction of the Episcopal basilica complex over the remains of the civic basilica. The Episcopal complex's design not only continued the monumental building tradition within the former civic core, but also insured its position as a nodal point within Kourion's Late Antique urban fabric and as an important landmark in that sector of the city. The small silligoraphic assemblage recovered from the Episcopal complex also reinforces the importance and *multilocality* (as defined in Chapter 2 §2.2.4) of this particular authoritative space within Kourion's urban landscape[190]. Of particular interest is the seal of

[189] McFadden's results are discussed by Megaw (2007) in detail.

[190] The excavated seals include the seal of a bishop attributable to 550-700 AD (Dunn 2007: 527, inventory # 1), a seal of Petros the *Illoustrios* attributable to the sixth century AD (Dunn 2007: 527-528, inventory # 2), 3 seals with invocative monograms of Theotokos (Dunn 2007: 528, inventory

the *Illoustrios* Petros attributable to the sixth century AD, which indicates, depending upon which half of the sixth century AD the seal was in use, that either a member of the senatorial elite or a member of the palatine regiments (Dunn 2007: 528) found it necessary to correspond with Kourion's Episcopal institution.

Setting aside the Christian inscriptions from the Episcopal complex (Michaelidou-Nicolaou 2007: 381-383,385-386; inscription 23-30, 39-40), Mitford (1971) attributes 11 inscriptions (inscription numbers 201-208, 211-213) to the "early Christian period". The late fourth century AD inscriptions from the House/Annexe of Eustolios are particularly germane to the present discussion. However, Bagnoll and Drew-Bear (1973a; 1973b) have provided critical commentary on the restoration and interpretation of these and other inscriptions presented by Mitford (*ibid*). With the exception of Mitford's (1971: 353-354) inscription 202, from the annexe, which explicitly declares the "new faith", they (1973b: 237- 243) have argued that there is nothing particularly Christian about the inscriptions from the Eustolios complex, the Achilles House and the sanctuary of Apollo[191]. Bagnoll and Drew-Bear (1973b 240-241) are equally critical of Mitford's (1971: 356-358)' reconstruction of Eustolios' benefaction's inscription in which "Eustolios, although he lived

#'s 3, 4, 5 and 6) attributable to 550-650 AD, and 2 damaged or illegible seals (Dunn 2007: 258-259, inventory #'s 7 and 8).

[191] They (Bagnoll and Drew-Bear 1973b) are especially critical of Mitford's (1971: 366-367, inscription 211) restoration and interpretation of a very fragmentary inscription of four letters recovered from the Sanctuary of Apollo that Mitford believes provides evidence for the Christian rededication of the sanctuary. Rather, they argue "it seems both unnecessary and unwise to ascribe to these four letters such far-reaching religious importance and such a late date" (Bagnoll and Drew-Bear 1973b: 238).

abroad -and possibly had risen in Imperial service- when he saw the miseries of Kourion, did not forget the city of his birth”(Mitford 1971: 357) and presented the city with the baths and annexe. Regarding this inscription, they argue “there is no evidence that Eustolios lived abroad or anywhere but at Kourion; his imperial service is simply an invention; the miseries of Kourion are another fiction” (Bagnoll and Drew-Bear 1973b: 241). Indeed, Mitford (*ibid*) implicitly suggests that Kourion’s local government was practically non-existent at this time. Such a pessimistic interpretation is unwarranted particularly if the urban landscape at Kourion is viewed as a dynamic *multilocal* construct.

In sum, the spatial analysis presented in this subsection, while preliminary in character, indicates that this particular Cypriot urban environment/city experienced the same processes that were actively transforming other cities’ urban images during Late Antiquity. Mitford’s (1971; 1980) “miseries of Kourion”, it seems reasonable to suggest, are at best applicable to the conditions within the city immediately following the 365 AD quake. If the urban imagery used by Leontius of Neapolis in St. Symeon the Fool’s *vita* to describe Emesa (in Syria) is based on a composite model drawn from Cypriot cities familiar to Leontius at the time he wrote (which Krueger (1996: 5) dates to 642-649 AD), it suggests that the Cypriot cities of the first half of the seventh century AD possessed very active and textured urban landscapes. An array of citizens of diverse social standings (*e.g.* urban poor, slaves, rustics, village leaders, prostitutes, jugglers, teachers, middle class shop

proprietors, upper class residents, notables, monks, merchants, Cavalrymen, mule driver, and church officials) and religious backgrounds (*e.g.* Orthodox Christians, Monophysite Christina, and Jews) populate Leontius' Emesa (Krueger 1996: 151-154, 155-156, 158, 160, 162, 164-167). The *vita* also describes a number of what were undoubtedly common elements of Cypriot urban landscapes at the time which contributed to the formation of a common urban image at the time (*e.g.* city gate, baths, school, theatre, tavern, glassblower's workshop, basilica, cake/food shops, market area, and upscale residences)(Krueger 1996: 150-155, 160, 165-166). As argued above (§2.3.1.2 and 2.3.1.2.A), although the Late Roman state became the primary consumer of human resources that traditionally were primarily available for localized, or civic, use, it is unlikely that this process would have left Kourion completely without any local landed elites. Bagnoll and Drew-Bear's (1973b) arguments concerning Eustolious' status also supports this position. In short, although post-quake Kourion may have contracted in absolute area from its pre-quake incarnation, the city's urban landscape remained viable and created an environment that continued to accrete multiple and competing meanings for its inhabitants.

4.3.1 The archaeology of secondary occupation

As discussed above in Chapter 2 (§2.3.2, 2.3.2.1.A and 2.3.2.1.B), researchers have often approached the secondary occupation of urban armature elements or elite residences, for example, from a limited perspective. Most studies have focused on

the architectural (*i.e.* the main occupation phase) and aesthetic qualities of the subsequent phases of these edifices. However, although there are exceptions, as a socio-spatial phenomenon, secondary occupation has traditionally received limited methodological and theoretical attention in Late Antique archaeology and has often been dismissed as simple squatter occupation. Similarly, deposits classified as 'fill' or 'mixed contexts' have received even less theoretical and methodological attention. Regarding the first issue, LaMotta and Schiffer's (1999) discussion and observations on the formation processes of household floor (domestic) assemblages, I suggest, have wide reaching applicability for the analysis of various types of floor deposits in general[192].

First, they (1999: 20) reasonably argue that floor deposits are the result of not only accretion processes but also depletion processes (see below). They have further identified 3 main processes that contribute to the formation of floor contexts: primary deposition (*de facto* refuse), secondary deposition, and provisional discard. Artefacts from primary deposition contexts comprised of *de facto* refuse, they suggest, "enter the archaeological record at their location(s) of use, either through discard as 'primary' refuse or through accidental deposition as 'loss' refuse". They (1999: 21) also note that social actors maintain activity areas and the removal of refuse from a primary context and its transference to a "spatially remote location" secondary context, like a dump or midden, also form an important component in the overall maintenance

[192] Also, see Schiffer (1987: 89-98)for a discussion of these processes.

program. Provisional discard is an interesting process that also helps shape floor assemblages. Provisional discard, as defined by LaMotta and Schiffer (1999: 21), consists of a process by which worn-out, technologically obsolete and/or damaged objects are retained/cached "with the expectation that they will serve a useful purpose later". This process has several affinities with other reuse and recycling processes. They also suggest that under controlled abandonment conditions *de facto* refuse is subject to depletion processes through selective abandonment. Factors influencing the selective abandonment of objects include the level of difficulty associated with its transport and replacement as well as an object's overall utility. Conversely, although other activity and functional contexts (*e.g.* ritual) can produce diverse and rich floor assemblages, floor assemblages comprised of usable and/or valuable objects with high portability may indicate less structured or impromptu abandonment process (LaMotta and Schiffer 1999: 23). Moreover, a variety of post-depositional processes can also alter the composition of a given floor assemblage[193].

In order to discern between occupation surfaces, use-surfaces, and various fill contexts, one potential approach is to compare the proportions of various components of the ceramic sub-assemblages (*i.e.* fine, plain, cook and amphora) from within and between each context, and their associations with other features and artefacts' material classes. However, because sherd counts are heavily

[193] See Schiffer (1987: 121-140) for a succinct discussion of some of these processes.

influenced by the level of completeness and brokenness of a given vessel form and ware, most researchers would consider sherd counts as a biased measurement for the investigation of the proportions of different wares. Orton (1993: 169) has pointed out that "sherd counts are *biased* as measures of the proportion of types" for comparisons within and between assemblages[194]. However, although weight is biased too and is unsuitable for the analysis of within-assemblage proportions of types, it is suitable for between-assemblage comparisons of the same ware type (Orton 1993: 168-170). On the use of weights for this type of analysis, Orton (1993: 169) points out that because "the relative weights of different types stay the same", the bias remains constant which, in turn, makes it suitable for the analysis of multiple contexts.

This subsection explores this phenomenon from a Cypriot perspective based on select evidence drawn from three recent publications: the monastic complex at Kalavasos Kopetra, the church of Maroni Petrera and Kourion's Episcopal precinct. Because each site report differs in its manner of data presentation (*e.g.* the Kourion excavation report does not provide quantified contexts, while Kopetra and Maroni provide sherd frequencies and weights for select contexts, but do not provide estimated vessel equivalents), the following discussion attempts to maximize each report's data through employing several techniques. As a result, when feasible,

[194] Consider the following observation by Rautman *et al* (2003: 168) made about Kopetra's amphora assemblage: "The quantified data are conditioned by the limits of excavation – especially at Area III-V, where the recovery of multiple fragments of individual vessels has a significant effect on the summary tables…".

the analysis that follows uses weight as the main attribute for the quantitative comparison of the ceramic sub-assemblages. Although they are interrelated facets of larger site-level formation processes, I have separated the discussion of fill contexts from floor contexts for clarity's sake.

4.3.1.1 Fill contexts

Manning and colleagues (2002) have published two quantified groups, 1.4.1 and 1.4.2, from their excavations at the Late Roman Church at Maroni Petrera (see figure 4.8). The assemblage from their group 1.4.1, which they describe as "leveling deposits for the later church, with shred linkages present between layers" (Manning *et al* 2002: 44), consists of 559 sherds with a weight of 6797 grams from 3 contexts (14, 32 and 33) in trench 25. By frequency, fine ware, amphorae, pithos, cookware and table wares, and unclassified coarse wares sherds comprise 6.3 percent (*n* = 35), 33.6 percent (*n* = 185), 5 percent (*n* = 28) 17 percent (*n* = 95), 22.4 percent (*n* = 125) and 13.5 (*n* = 76) percent respectively[195]. Lamp fragments and unclassified sherds comprise the remainder. They note that "Cypriot Sigillata provides the form dating evidence for this group" (Manning *et al* 2002: 22), and they suggest a date between 100-150 AD (CS form P12) for this group. Based on the data presented by Manning and colleagues (2002: 44, table 6.1), it is possible to calculate the average sherd weight for the wares types in this group. Examination of the average sherd weight by ware from this group indicates that

[195] These are figures presented in Manning and colleagues' (2002: 44, table 6.1).

the fine wares, amphora and plainware sherds range between 10 and 15 grams[196]. Unsurprisingly, the pithos sherds from this group have the highest average weight at 27.32g. It is reasonable to suggest that the low overall weight and small number of the fine wares indicates that at one point these sherds were part of active surfaces or high traffic areas before joining their present context. The excavators also note that the sherds' "concreted surfaces" is suggestive "of redeposition from other building contexts" (Manning *et al* 2002: 45).

Conversely, their group 1.4.2, demolition fill from the well, consists of 128 sherds with a weight of 4855 grams from one context (layer 4) in trench 4[197]. By frequency, fine ware, amphorae, pithoi, cooking wares, and unidentified coarseware comprise 12.5 percent (*n* = 16), 66.4 percent (*n* = 85), 10.9 percent (*n* = 14), 0.8 percent (*n* = 1), and 6.3 percent (*n* = 8) respectively[198]. Unclassified wares comprise the remainder. They note that CRS form 1 is the predominant fine ware form from this group; however, they were unable to assign the recovered Gaza amphora sherds to a more precise age range because of their very fragmentary state. As a result, they believe "a date from the late 4th through the first half of the 5th century is preferred for this fill" (Manning *et al* 2002: 47). In comparison to group 1.4.1's average sherd weights, the average sherd weights from group 1.4.2 are considerably heavier. For example, on average, fine ware sherds from group 1.4.2 are approximately 54.09 percent heavier

[196] The average sherd weights are 10.31g for fine wares, 11.76g for amphora and 10.24g for plainware.

[197] For a discussion of this feature, see Manning and colleagues (2002: 29).

[198] Based on the figures presented in Manning and colleagues' (2002: 46) table 6.2.

than the fine wares from group 1.4.1. Similarly, group 1.4.2's amphorae sherds are approximately 40.91 percent heavier than their counterparts from group 1.4.1; pithos sherds from group 1.4.2 are nearly 75 percent (74.46%) heavier than those from group 1.4.1. Although this deposit is a fill, because of the comparatively heavier weight of the sherds from this group, it is likely that the ceramic material from this deposit is derived from materials/contexts that did not spend long periods on an active surface before entering their present depositional context[199].

At Kopetra, Rautman and colleagues (Rautman *et al* 2003) have identified several architectural phases at the Sirmata monastery complex (Area I) (see figure 4.9). The Sirmata complex, they note (Rautman *et al* 2003: 90), was "established as a single undertaking near the end of the 6th c., with some work continuing into the early 7th c". The excavators (*ibid*) have identified several mortuary/funerary spaces within the complex. Of these, the burial crypt located at the southern end of the basilica's narthex is the most secure; other potential mortuary spaces identified by the excavators include the south lateral space and the east lateral room. Other features consist of a potential tower foundation (see above §4.2.3.1.C) and a bottle cistern in the complex's courtyard. Rautman and colleagues' (2003) excavations indicate that during the first half of the seventh century AD those social actors utilizing this complex modified its spatial and functional configuration.

[199] Apart from weight and size, the level of sherd abrasion is also an important characteristic for determining the formation processes of various deposits.

Apart from the conversion of the north isle into a separate chapel, these modifications included the installation of several unmortared partition walls (stone and mud brick) within spaces II, III, IV and the basilica's narthex as well as the blockage of several of the complex's doorways (*e.g.* space II). After the collapse of the complex's basilica in the mid to late seventh century AD, those social actors still using the complex constructed a bread oven in space IV and a series of troughs, bins and hearths in other areas of the complex (*e.g.* Space II, court). The bread oven and troughs/bins, Rautman and colleagues (2003: 70-72) note, are attributable to the final phase of activity at the complex after the basilica fell out of use (Rautman *et al* 2003: 70-72).

Around the mid-seventh century AD, those social actors who were still using the site constructed a mud brick partition wall in the narthex's south bay that created a vestibule-like space for the crypt and a second tomb (with 3 internments) was also inserted into the crypt. The excavators, it is important to note, have also identified multiple individuals from the crypt's original tomb. Additionally, during the last phase of activity at the complex, the occupants used the bottle-shaped cistern within the central court as a tomb (Rautman *et al* 2003: 66-74, 90). The continued use of the crypt and the narthex's partial redevelopment as a vestibule for this feature exemplifies the continued functional memory associated with these particular spaces[200]. Thus, there appears to have been a

[200] Rautman and colleagues' comments are worth quoting at length: "The narthex crypt, clearly intended from the beginning but unparalleled on the island, recalls similar arrangements in Palestine and Syria, where burials

considerable amount of conceptual-functional continuity at this particular *locale* within the villagescape even after the basilica, which was a major component of the monastic complex, fell out of use. The burials in the cistern, while at one level reference the complex's past funerary associations, also provide a good example of the expedient reuse of features at this particular *locale*. The expedient reuse of cisterns for burials is well represented in the Cypriot Late Antique archaeological record and is paralleled at both Amathous and Geronisos island (Connelly *et al* 2002), for example.

Before examining the material from Lots I-28, 29 and 30, it is useful to present some general characteristics of Area I's assemblage. Area I's ceramic fine ware sub-assemblage consists of material drawn from 12 CRS, 13 LRC and 7 ARS forms, as well as number of sherds only identifiable to a ware[201]. The assemblage (Lots I-28, 29 and 30) from this complex's courtyard, I suggest, provides a good example of the secondary deposition of refuse at this particular area of the site. Rautman and colleagues (2003: 81-83) suggest a mid-seventh century AD TPQ for these deposits. Apart from those sherds attributable only to a ware type, fine wares from Lots I-28, I-29 and I-30 consisted of sherds attributable to 6 CRS forms (50% of the identified CRS forms from Area I), 5 LRC forms (38% of the identified LRC forms from Area I) and 1 ARS form (16.6% of the

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often are associated with cults of saints and martyrs. The presence of a long flanking space that may have been used as mortuary annex is well known in Cyprus. These burials, like others in the area, probably honoured members of the local community" (Rautman *et al* 2003: 90).

[201] CRS forms 1, 2, 3, 5, 7, 8, 9, 9A, 9B, 9C, 10, and 11; LRC forms 2, 3, 3C, 3D, 3E, 3F, 3G, 3H, 5, 9, 10, 10A and 10C; ARS from 93, 97, 101, 104C, 105 and 107 (Rautman *et al* 2003: 75, table 3.4).

identified ARS forms)[202]. The CRS, LRC and ARS from these contexts comprise just under 6 percent (5.86%, *n* = 714g) by weight of Area I's fine ware sub-assemblage[203]. Amphorae from these contexts comprise approximately 9 percent (9.24%, *n* = 17075g) by weight of Area I's amphora sub-assemblage. Plain wares and cook wares from this context comprise just over 4 (4.57%, *n* = 526g) and 8 percent (8.25%, *n* = 1045g) by weight of Area I's plainware and cookware sub-assemblage respectively. Pithos from these contexts comprise approximately 11 percent (11.29%, *n* = 7910g) of the pithos sub-assemblage from Area I.

Rautman and colleagues (2003: 75, table 3.4) have calculated the average sherd weights from Area I. They note that the average fine ware and plainware sherd from Area I is less than 20g (15.99g and 18.87g respectively) while the average amphora sherd from Area I was 26.35g. Unsurprisingly, with an average sherd weight of 109.96g, pithos sherds are nearly 5 times as heavy as fine ware and plainware sherds. At 6.89g, cookware sherds, in contrast, have the smallest average sherd weight. As mentioned above, low cookware sherd weights were also noted at Maroni Petrera (Manning *et al* 2002). With the exception of pithos (93.05g), the average sherds from Lots I-28, 29 and 30, are close to the average values for Area I with fine, plain, cook and amphora average sherd weights of 12.98g, 11.43g, 7.26g, and 26.43g respectively. Figure 4.14 presents Lot I-28, 29 and 30's

[202] CRS forms 1, 2, 9A, 9C 10 and 11; LRC forms 3, 3C, 3F, 3G and 10A; ARS form 97 (Rautman *et al* 2003: 82, table 3.8).

[203] These calculations are based on the values presented in Rautman and colleagues' (2003: 75, 82) table 3.4 and table 3.8.

average sherd weight by ware in relation to the average sherd weight by ware from Lots I-3, 6, 20 and 32 (expressed as a percent of difference from Lots I-28, 29 and 30). This figure indicates that the average sherd weights from Lots I-28, 29 and 30 differ considerably from the other quantified contexts from Area I. As a whole, the material from Lots I-28, 29 and 30 tends to be lighter than the average from Area I. This, in turn, I suggest indicates that the material from the courtyard fill derived from several types of contexts including *de facto* and secondary refuse deposits that originated from the spaces surrounding the activity areas. It is also likely that these spaces were subject to ad hoc maintenance as well.

At this point, it is useful to summarize some of the characteristics of the fills discussed above. One common characteristic between the fills from Kopetra and Petrera is low cookware sherd weights. Several processes could account for this phenomenon. Locally produced wheel-made Cypriot cookware during this period tends to be thin-walled. Given that utilitarian wares, such as cookwares, had high use frequencies, and thin-walled vessels are comparatively fragile, it is reasonable to assume that cookwares had a comparatively higher fragmentation rate and a comparatively high attrition rate in comparison to other ware types (*e.g.* pithos). The courtyard fill (Lots I-28, 29 and 30) from Kopetra exhibits another useful characteristic for identifying fills derived from (multiple?) secondary refuse deposits: wide date range of fine ware, and/or other wares. For example, the fine ware date range for the courtyard

fill lots is 250 years (CRS form 1 with an opening production date of 375 AD and CRS form 10 with an opening production date of 625 AD)[204].

4.3.1.2 Floor/surfaces

In Area VI of Kalavasos Kopetra, the excavators (Rautman *et al* 2003: 136-138) have identified several contexts that are interpretable as various occupation surfaces or destruction deposits (Lots VI-10,15; VI-5; VI-13, 14; VI-11; VI-12; VI-16) from 3 rooms (Room 1, 2 and 3) and 2 spaces (space 4 and 5)(see figure 4.13)[205]. Their analysis also suggests that the complex collapsed towards the middle of the seventh century AD (Rautman *et al* 2003: 138). According to Rautman and colleagues' (2003: 139, table 3.19) calculations, the average sherd weights from Area VI are 23.53g for fine ware, 29.81g for plainware, 33.73g for amphora, 21.64g for cookware, and 155.38g for pithos. Figure 4.15 presents Area I, II, IV, and V's average sherd weights by ware in relation to the sherd weight values from Area VI (expressed as a percent of difference)(see figures 4.10, 4.11, 4.12). With the notable exception of the average pithos sherd weight value from Areas II and V, fine ware sherd weight value from Area IV, and the plainwares from Areas IV and V, these figures indicate that Area VI's average sherd weights tend to be larger than the sherd weights from other areas. Conversely, Area IV, VI, and VI's fine ware sub-assemblages

[204] (Rautman *et al* 2003: 181; 183, catalogue # 1 and 27).

[205] The excavator (Rautman *et al* 2003) did not quantify these contexts in the site report.

consist of a comparatively limited range of forms. For example, Areas IV and VI's fine ware sub-assemblage consists of 4 CRS and 1 ARS form and 6 CRS, 4 LRC, and 2 ARS forms respectively[206]. Interestingly, over half (51.08%, *n* = 4840g) of the handmade cookwares by weight come from excavated contexts from Area VI. It is also interesting to note that the distribution of LRA1(1), which the excavators (Rautman *et al* 2003: 170) attribute to Cypriot production, follows a slightly different trajectory than the general LRA1 site-wide distributional trend. By weight, over half of LRA1(1) from the excavated areas of the site comes from Area VI. It is also important to note that the majority of LRA4 (44.59%, *n* = 8925g) and LRA5/6 (50.67%, *n* = 5110g) by weight also comes from area VI.

Turning to those lots which may comprise floor assemblages from Area VI (see figure 4.13), the present discussion uses data from rooms 2 and 3 along with space 4 to explore the formation of floor/use-surface deposits at this complex. The excavators have estimated room 2's interior area at approximately $30m^2$ and based on the lack of roof tile, they suggest that it may have functioned as an open courtyard. At a later stage, those social actors using this space constructed a rubble wall directly on its gypsum floor. The ceramic assemblage from Lot VI-5 (Rautman *et al* 2003: 141), a destruction deposit consisting of architectural collapse, included several sherds derived from a CRS form 9B, pithos, plainware jug/jar and a LRA1 amphora. This deposit also contained material derived

[206] Area IV's CRS forms: 2, 9A, 9C and 10; LRC form 104 (Rautman *et al* 2003: 135, table 3.18). Area VI's CRS forms: 3, 9, 9A, 9B, 9C, 11; LRC forms: 3, 3F, 3G and 10; ARS forms: 105 and 107 (Rautman *et al* 2003: 139, table 3.19).

from room 3's first floor (see below), and the excavator (Rautman *et al* 2003) has correlated it with Lot VI-6 from room 3. Recovered metal objects consist of a coin of Heraclios (629/630 AD), 2 small square iron nail fragments, a bronze handle, and a bronze handle guard. Recovered glass consists of several fragments derived from a glass flask, a stemmed goblet, and a hexagonal bottle. The assemblage derived from Lot VI-10, a deposit of ashy sediment overlaying the second phase use surface (Lot VI-15), consists of fragments of a hexagonal bottle and plain ware sherds derived from a basin and pitcher. The assemblage derived from Lot VI-15, which the excavators (Rautman *et al* 2003: 138, 142) have identified as a second-phase surface, consists of sherds derived from a CRS 9 vessel and a corroded small iron loop[207].

Room 3 also produced comparable data. Room 3 is located to the north of Room 2 and communicated with that space by a door located in the south. Architecturally, room 3's walls, the excavators (Rautman *et al* 2003: 138) note, consist of mortared gypsum fragments, which they suggest enclosed a ground floor area of approximately 12m^2. The ground floor surface consists of uneven rows of gypsum slabs positioned "at a level slightly above the surface of room 2" (Rautman 2003: 138). They also note that the "upper levels of architectural débris…included an uneven layer of gypsum slabs apparently from an upper story; this also spread into the N part of room 2 and is continuous Lot VI-5" (Rautman *et al* 2003: 138). It is

[207] The excavators (Rautman *et al* 2003: 138, 142) do not provide a discussion of the phase 1 surface or the materials recovered.

likely that those social actors using the upper storey above room 3 would have had a minimum of 12m^2 of activity space available to them. Lot VI-6, the upper part of a destruction deposit consisting of architectural collapse, also contained a coin of Heraclios (611-613 AD), vesicular basalt fragments, several sherds attributable to vessels of handmade cookware (fabric C), LRA1, plainware (mortarium), as well as glass fragments attributable to a hexagonal bottle (also in room 2, *e.g.* Lot VI-5), a stemmed goblet and a bottle. The excavators (Rautman *et al* 2003: 138) believe that the artefacts from Lot VI-11, the lower collapse, originated from room 3[208]. The assemblage from this context include sherds attributable to a plainware jar and bowl, LRA5/6, a cookware pot, a CRS 9C dish in addition to glass fragments attributable to a flask, a bottle and a stemmed lamp. Other objects include a bronze wick holder and a pierced gypsum disk, a gypsum plaster token, and fragments of vesicular basalt (Rautman *et al* 2003: 141). The excavators also identified two potential use-related deposits (Lot VI-13; Lot VI-14) below the lower collapse and overlying room 3's paved surface. However, the assemblage recovered from these contexts contained the following items: a storage jar sherd and two glass fragments attributable to a bottle and an unguentarium as well as a small bronze fragment[209].

[208] "The lower level of the ensuing collapse (Lot VI-11) includes objects presumably coming from room 3 itself…" (Rautman *et al* 2003: 138).

[209] This material comes from Lot VI-13, the excavators do not list the material from Lot VI-14 but they do state that its date is inconclusive (Rautman *et al* 2003: 142).

Space 4, an alleyway, is located to room 3's east. Space 4's surface consisted of irregular gypsum pavers. The excavators (Rautman *et al* 2003: 238) identified a stratigraphic sequence from this space that is similar to the sequence recorded in rooms 2 and 3: secondary occupation (Lot VI-16), lower collapse level (Lot VI-12) and upper collapse level with material derived from the room above space 3 (Lot VI-12). The assemblage recovered from Lot VI-16, material interpreted as secondary occupation, consists of sherds attributable to ARS forms 107 and 93 along with LRA1. The assemblage recovered from Lot VI-12, the lower portion of collapse, consisted of sherds from a CRS 9C vessel, an ARS 105 vessel, a plainware jug and dish and two glass fragments attributable to a stemmed goblet. The assemblage recovered from the upper portion of collapse, Lot VI-7, consists of sherds attributable to CRS 9B and 9C as well as 2 sherds attributable to handmade cookware (ware C) (Rautman *et al* 2003: 137—140).

Several general characteristics of Area VI's floor assemblages emerge from the data presented above. First, it is reasonable to suggest that (1) the small assemblages recovered from the surfaces identified in room 2 are the residual derivatives of primary activity refuse from the rooms/spaces surrounding it and (2) space 2 was also subject to periodic cleaning and refuse removal (*e.g.* during the construction of the rubble wall). It is likely that the recovered assemblage from room 3's potential use surface (Lots VI-13, 14) is largely the result of the same formation processes as in room 2. Low diversity and richness also characterize the assemblages

recovered from these surfaces. If the excavators' (Rautman *et al* 2003) interpretation of Lot VI-11 and Lots VI-5, 6 and 7's assemblage is correct, it is possible to conclude that they represent the final phase of activity within these rooms, and that similar activities were taking place on both the ground and first floors. The lack of joining sherds and reconstructable vessels from Lot VI-11's assemblage and the absence of features on the lower interface of the deposit indicates that this material is best viewed as the residual derivatives of primary activity refuse. Alternately, the lower collapse from Room 3 may be part of the same episode as the upper collapse. This, in turn, could indicate that the material from VI-11 is associated with the floor assemblage from the first floor and that the main living area of this complex was located on the first floor rather than the ground floor. It also suggests that the ground floor may have served as a more specialized activity area that was subject to regular cleaning.

At Kourion, Megaw and colleagues' (2007) excavations in that city's Episcopal precinct have identified good evidence for the reuse of space and secondary occupation at that site. As mentioned above (§4.3), the most apparent reuse of space, or perhaps better the reorientation of space, was the colonization of civic authoritative space by ecclesiastic authoritative space from the fifth century AD onwards. However, by the late seventh century AD, the excavator (Megaw *et* al 2007: 174-176) believes an earthquake severely damaged this edifice rendering it unusable. However, recently Metcalf (2009: 293-296) has argued, mostly on the

numismatic and sigillographic evidence, that earthquake may not have been as destructive as Megaw believes[210]. Nevertheless, the spaces comprising that complex's West End provide good general evidence for the dismantling/resue of this edifice and the secondary occupation associated with the final phase of systematic activity within the Episcopal Precinct (see figures 4.16, 4.17). The two architectural blocks formed by units 10-12 and 25-27 that surround the complex's atrium provide particularly clear sequences of secondary use and form the core of the discussion that follows. However, before presenting the data from these two blocks, it is useful to mention several other secondary activity areas from the units and spaces surrounding the atrium.

The excavator notes (Megaw *et al* 2007: 121-124; fig. 1.X, 1.Z; figure 4.17) that the south and west porticoes surrounding the atrium served as workshop areas for the salvage crews during the last phase of systematic activity at the complex. The installation of a bread oven in the south portico's west end is among the more obvious spatial reorientations that took place during this last phase of activity in this sector of the complex[211]. Those social actors using the west portico blocked several of its entrances and

[210] Metcalf (2009: 296) states "Megaw clung to the view that all of this could be accounted for in terms of the work of demolition men. But it became necessary to extend the hypothesis by speaking of 'the continuation of salvage and demolition into Leo's reign' i.e. from *c*. 686 until *c*. 720, or 35 years – during which time Byzantine lead seals attest a Christian population, and Islamic coins and pottery attest Muslim trade, while clay lamps and a funerary inscription attest Muslim residence. The demolition men were a necessary hypothesis for Megaw, because he believed that the earthquake had destroyed Kourion".

[211] The excavators note that the oven's floor was constructed from reused roof tiles over a gravel packing (Megaw *et al* 2007: 121).

redefined its patterns of access; under this new spatial arrangement, the west portico became two activity spaces. The presence of a masonry workbench and a pithos-hearth, the excavators (Megaw *et al* 2007: 123-124) believes, indicate that the south sector functioned as a workshop. Other finds from close to the floor level consisted of a cook pot and two lamps (Megaw *et al* 2007: 124). In the south sector, excavation uncovered two stone mortars at what may have been the room's floor surface level. However, the majority of the floor deposit, as Megaw and colleagues (Megaw *et al* 2007: 123) note, would have been disturbed during the removal of the pavers from that area. Although of unknown date, the limekiln located in the reoriented west portico is the best evidence for the industrial-productive use of this portion of the complex[212]. Conversely, there is abundant evidence for non-industrial activities from the units surrounding atrium. These include a kitchen in the northeastern quadrant of unit 16, a shower in unit 9, a latrine in unit 10 (see below) and a hearth in unit 25(see below) (see Megaw *et al* 2007: fig.1.X; figure 4.17). Unit 6, which served as a guardroom for the atrium in its main phase, the excavator (Megaw *et al* 2007: 128) notes, became a storage area during its later phase incarnation[213]. Thus, the preferentially orientated sheets of marble revetment along with a complete basalt table pedestal recovered from this space, I

[212] "…at an unknown date, a lime kiln had been installed in the west portico, for which a seemingly inexhaustible supply of marble was doubtless available" (Megaw *et al* 2007: 123).

[213] Regarding unit 6, the excavators believe that "During the salvage operations, this seems to have been regarded as a safe storage place" (Megaw *et al* 2007: 128).

suggest, provides a good example of provisional discard practices in this sector of the complex (see below for further examples of provisional discard)[214].

Turning to the court and its central phiale, the excavators (Megaw *et al* 2007: 125-126) note that the pavement to the phiale's north was removed prior to the final phase of occupation in this part of the complex. Those social actors who were utilizing the court installed troughs in the areas of the courtyard stripped of pavers. "The troughs were probably collected by the salvagers for their own use and then abandoned to those who later grazed their flocks among the ruins" (Megaw *et al* 2007: 125). The installation of troughs in the Episcopal precinct's courtyard is a feature that is not unique to Kourion. However, as noted above, the secondary occupation at Kalavasos Kopetra's Area I included the installation of cut troughs into the floor surface of that complex's courtyard when that space became orientated towards agricultural activities.

The architectural block comprised of Units 10, 11 and 12 originally consisted of a 2 bayed room with stone pavers and masonry benches and a partially covered drain. At a later stage in the complex's evolution, those social actors redesigning this architectural block added a third bay. The excavators (Megaw *et al* 2007: 130) plausibly suggest that the additional bay may have supported "a new partition in the upper story". Later, unit 10 became a latrine and after the destruction and collapse of the second storey, it served as an annex to the "workspace" in the west

[214] See Loverance (2007: 328) for the pedestal.

portico before falling out of use. Unit 11, like Unit 6, served as a storage area for provisionally discarded items (see figure 4.17). The excavators (Megaw *et al* 2007: 131) have also suggested that Unit 12 served as a washroom. Features and finds from this unit's floor surface include a pithos set into the pavement, a grinding stone, and pottery dating to the late seventh century AD. After the final collapse of a substantial portion of this (possibly from a seismic event?) architectural block's superstructure, those social actors still active in this portion of the complex levelled the rubble. Artefacts recovered from this use surface consisted of handmade cooking pot sherds, Umayyad amphora sherds, and coins attributable to the reigns of Constans II and Tiberios III (Megaw *et al* 2007: 131).

The next analytical block from this portion of the complex consists of Units 25, 26 and 27 and is located in the atrium's northern sector (see Megaw *et al* 2007: figure 1.X; see figure 4.17). This block is in close proximity to the kitchen activity area in Unit 16, which is located to this block's west, and Unit 28, which served as a main entrance to the Atrium area. Megaw and colleagues (Megaw *et al* 2007: 133-136) believe that this block of architectural units may have originally served as a waiting room and later served as the headquarters for the demolition/salvage operations. In its waiting room manifestation, they note these units were equipped with stone pavers and benches and, at a later phase, a staircase (in Unit 25). At the start of salvage operations, those social actors using this series of rooms stripped most of the stone pavers (with the

exception of Unit 27) and installed a hearth against Unit 25's south wall. Around this time, the excavators suggest that Unit 27 was detached and separated from units 25 and 26 with a partition wall and served "for the storage of salvaged materials such as timber" (Megaw *et al* 2007: 134)[215]. In Units 25 and 26, the eighth century AD use-surface associated with the latest activity overlaid a battered mosaic surface attributable to the 4th century; in unit 27, however, the correlated use-surface overlaid the original stone pavers (Megaw 2007: 134)[216]. Notable finds from this surface consist of coins attributable to Justinian II (Unit 25), Umayyad post-reform issue (Units 25 and 27), Leo III (Units 26 and 27), and Tiberios II (Unit 27)[217]. Other finds associated with this use-surface context include a bell, a wick holder, an open work disk and a Kornos Cave type lamp (Megaw 2007: 134). Apart from the material recovered from this surface, Megaw (2007: 134) notes that finds associated with the hearth from unit 25 consisted of "two lamps of the so-called Arab type, which are not earlier than the late seventh century". Additional finds from Unit 27 consist of two bronze buckles, a lamp and a coin of Justinian II as well as sherds dating to the mid-seventh century AD. Under the eighth century AD use-surface in Unit 27, Megaw (2007: 135) argues that the coin of Constans II (655/6 AD)

[215] Megaw states: "On reoccupation as a separate room the east bay (unit 27) suffered less than others, and the retention, here alone, of the greater part of the paving and of the masonry benches gives a good impression of the original state of the three-bay room" (Megaw 2007: 134).

[216] This use-surface was excavated as Layer 4 in Units 25 and 26 (Megaw 2007: 134-135).

[217] See Hendy's (2007) catalogue #'s 80, 83, 85 and 86; For the Islamic coins, see Brown's (2007) catalogue #'s 6 and 7.

recovered from a joint in the original pavers represents “a relic of the first reoccupation (following Abu’l-Awar’s incursion, which probably lasted for thirty years)”.

In short, several points emerge from the contexts discussed from this area of Kourion’s Episcopal precinct. First, these contexts, like the contexts from Kopetra and Petrera, embody many of the characteristics discussed by LaMotta and Schiffer (1999). The troughs and mortars recovered at floor level from units around the atrium and the courtyard provide a good example of selective abandonment practices in this sector of the site. The installation of various features, like pithos-hearths in unit 12, is indicative of the reuse of space as well as a reorientation of the formation process that contributed to these floor assemblages. The storage of damaged items (*e.g.* pedestal from unit 6) and architectural spolia (*e.g.* marble revetment and timbers from unit 27) provide clear evidence of preliminary discard, recycling, and secondary use practices in this area of the site. The coins recovered from these contexts, for example, provide good evidence for accidental loss in these spaces during routine activities (*e.g.* the coin recovered from the pavement joint in Unit 27).

In general, one characteristic of these surfaces, as at Kopetra, is moderate assemblage diversity. This, it is reasonable to suggest, is the result of regular maintenance practices within these activity spaces. The excavators (Megaw 2007: 137) also identified additional evidence for maintenance activities near the complex. Excavation to the atrium area’s north identified a late seventh

century AD dump of architectural debris, and fragmentary ceramic and fragmentary glass in close proximity to the complex's north gate. The excavators attribute this dump to the clearing and maintenance activities undertaken at the Episcopal precinct following a major earthquake[218]. Additional excavation also uncovered a ditch along the precinct north wall. "The approach was distinguishable as a broad U-shaped ditch filled with loose stones and dark earth of organic origin between banks of compact building debris on either side of it" (Magaw 2007: 135)[219]. It is reasonable to suggest that the organic rich sediment from this ditch may be secondary refuse derived from the activity spaces in the atrium.

4.4 Chapter summary

Several points emerge from the discussion presented above. While it is reasonable to view Cyprus as a minor interior province for most of the Roman period, it is misleading to think of Cyprus as a backwater as some researchers believe (*i.e*. Mitford 1980). Perhaps more importantly, over the course of the Roman and Late Roman periods, the provincial landscape was contested at several levels by various institutions (*e.g.* the corporate church), social groups and, later, states (*i.e.* Late Roman, the Persians(?) and the Caliph). Aspects of the provincial infrastructure, which had their origin in the Roman or Hellenistic periods, particularly its road system and

[218] "The dumping of this debris outside the north entrance late in the seventh century is a clear indication that it was a severe earthquake that led to Kourion's abandonment" (Megaw 2007: 137).

[219] Unfortunately, Megaw (2007) does not provide a full discussion of these deposits.

maritime components, indicate that Cyprus had achieved a comparable level of development to that of larger provinces (*i.e.* Syria). The archaeological evidence also indicates that Cyprus was well-integrated into the larger regional systems of exchange and production that characterize the Late Roman eastern Mediterranean. Arguably, the Late Roman state recognised the province's potential tactical value in larger strategic mediations by the early sixth century AD, when imperial planners created an administrative block in which Cyprus contributed to the defence of various Balkan provinces. Based on the available historical and archaeological data, it is likely that by the seventh century AD both the local provincial and central governments were actively involved in the militarization of the island. In this context, it is important to note that the fortification component of this build up was not limited to the province's cities, but also included hard points in rural contexts like the one on the Vigla hill discovered by the PKAP (Caraher *et al* 2008), and inland contexts like the Keryneia range (Balandier 2004). Though it is preliminary, the distribution of provenienced military lead seals also indicates that strategic centres in the interior of the island, like Tamassos and Kythrea, were also in contact with the military establishment and tied into the province's larger strategic and tactical trajectories.

Among the changes to the Late Antique urban environment observed in other parts of the Empire, the re-allocation of space within the urban landscape and the colonization of formally public space by private and/or commercial space is a well-represented and

spatially extensive phenomenon in the archaeological record. As argued above in §4.3, the south coast settlement of Kourion provides a particularly good example of this process on Cyprus. Among the various processes detectable within Kourion's urban landscape, perhaps the most important development, I suggest, was the colonization of institutionalized public authoritative space by ecclesiastic authoritative space. The excavations in Kourion's Roman urban core at the Episcopal Precinct provide compelling evidence for this process. Though changed, it is reasonable to suggest that Kourion's urban environment continued to remain viable throughout the Late Roman period until the mid-seventh to late-seventh century AD.

Figure 4.1 Select Cypriot Roman and Late Roman settlements.(Datum: WGS 84).

Figure 4.2 Distribution of lead seals in relation to the Late Roman Road System (Datum: WGS 1984).

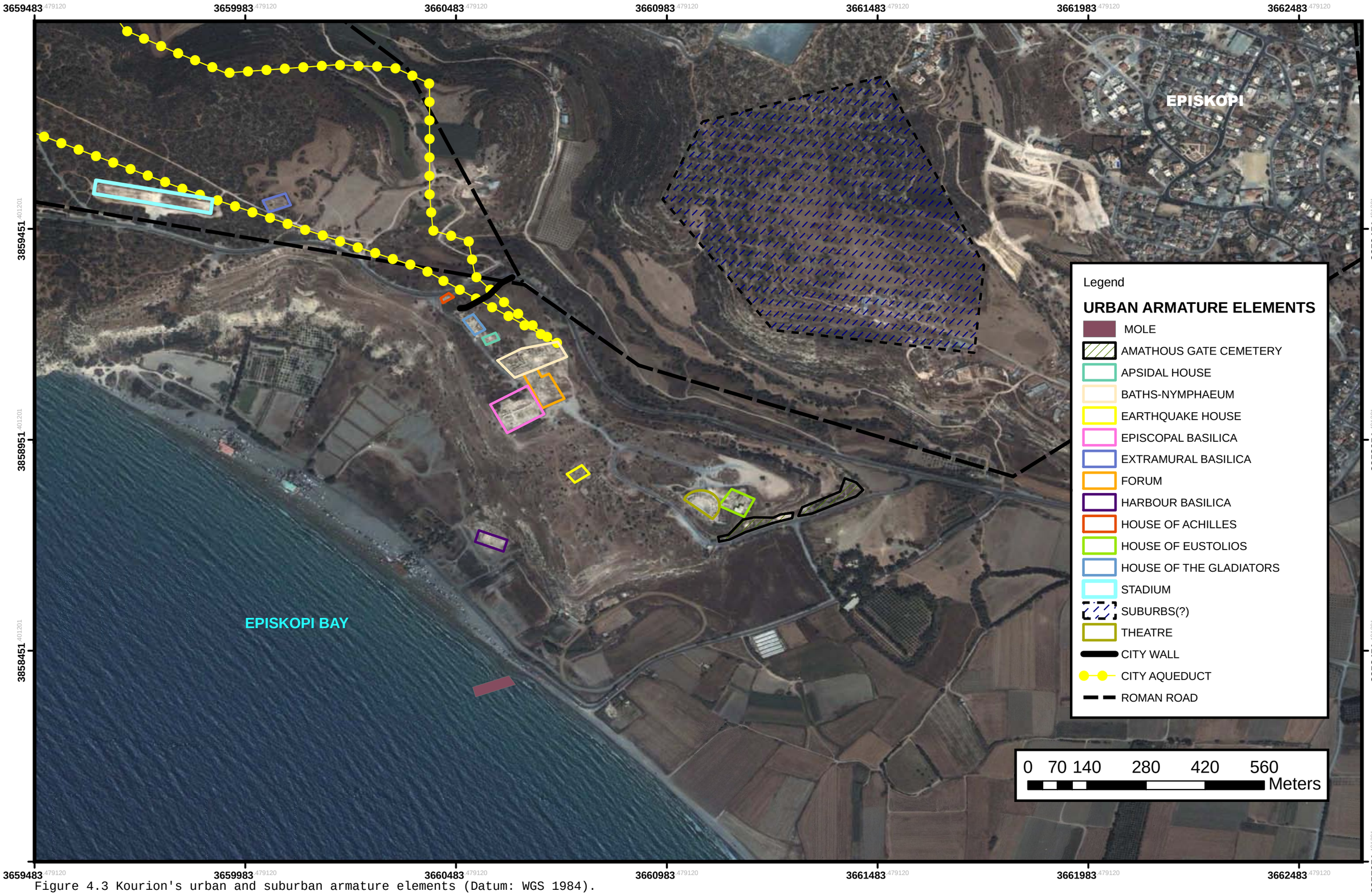

Figure 4.3 Kourion's urban and suburban armature elements (Datum: WGS 1984).

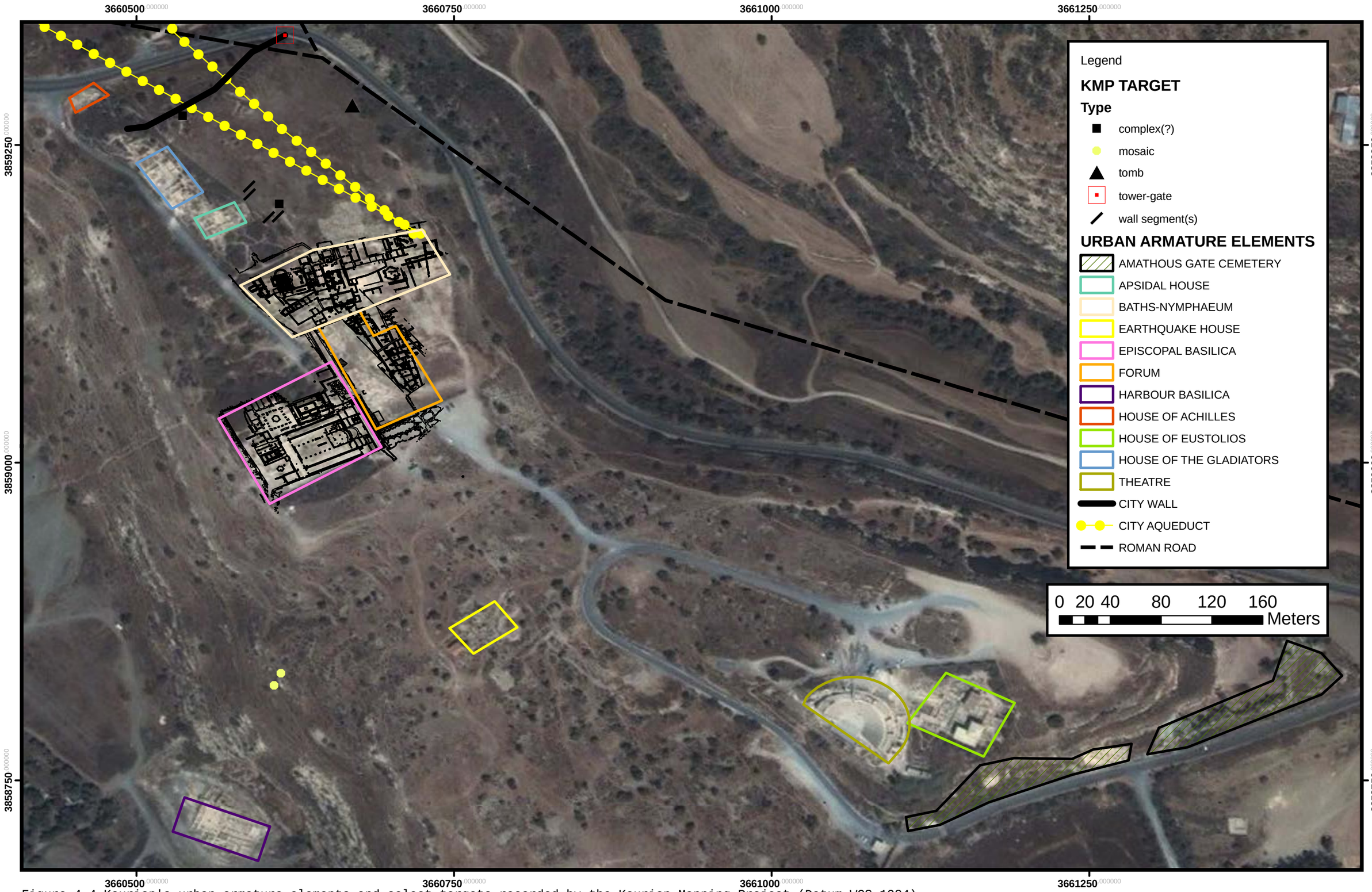

Figure 4.4 Kourion's urban armature elements and select targets recorded by the Kourion Mapping Project (Datum WGS 1984).

Figure 4.5. View NW. General shot across the Bath complex at Kourion.

Figure 4.6. Quarried arcosolium chamber tomb from Area B of Kourion’s Amathous gate cemetery.

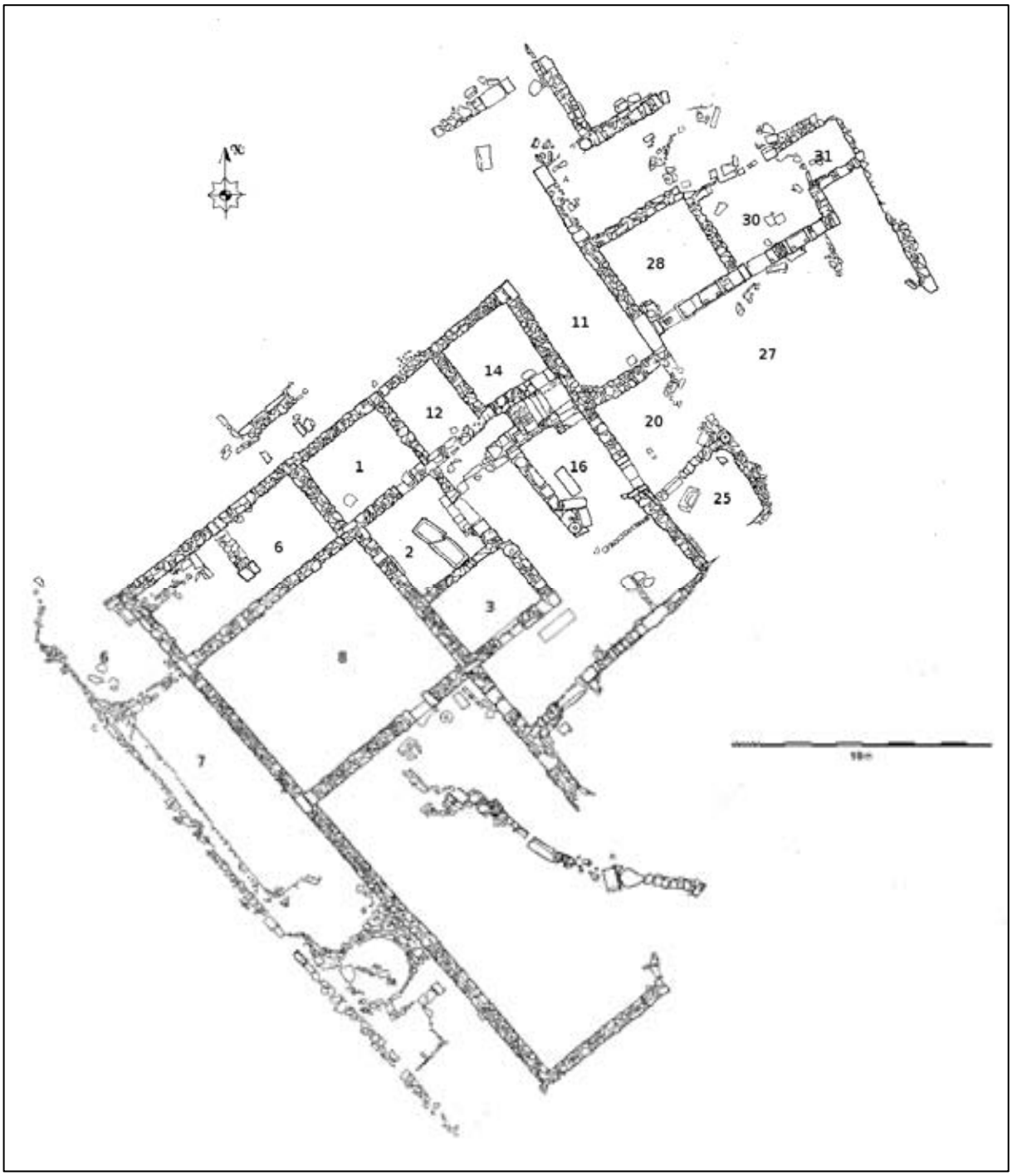

Figure 4.7. The so-called "The Earthquake House" at Kourion (adapted from the Kourion Mapping Project's 2007 revised plan of the edifice).

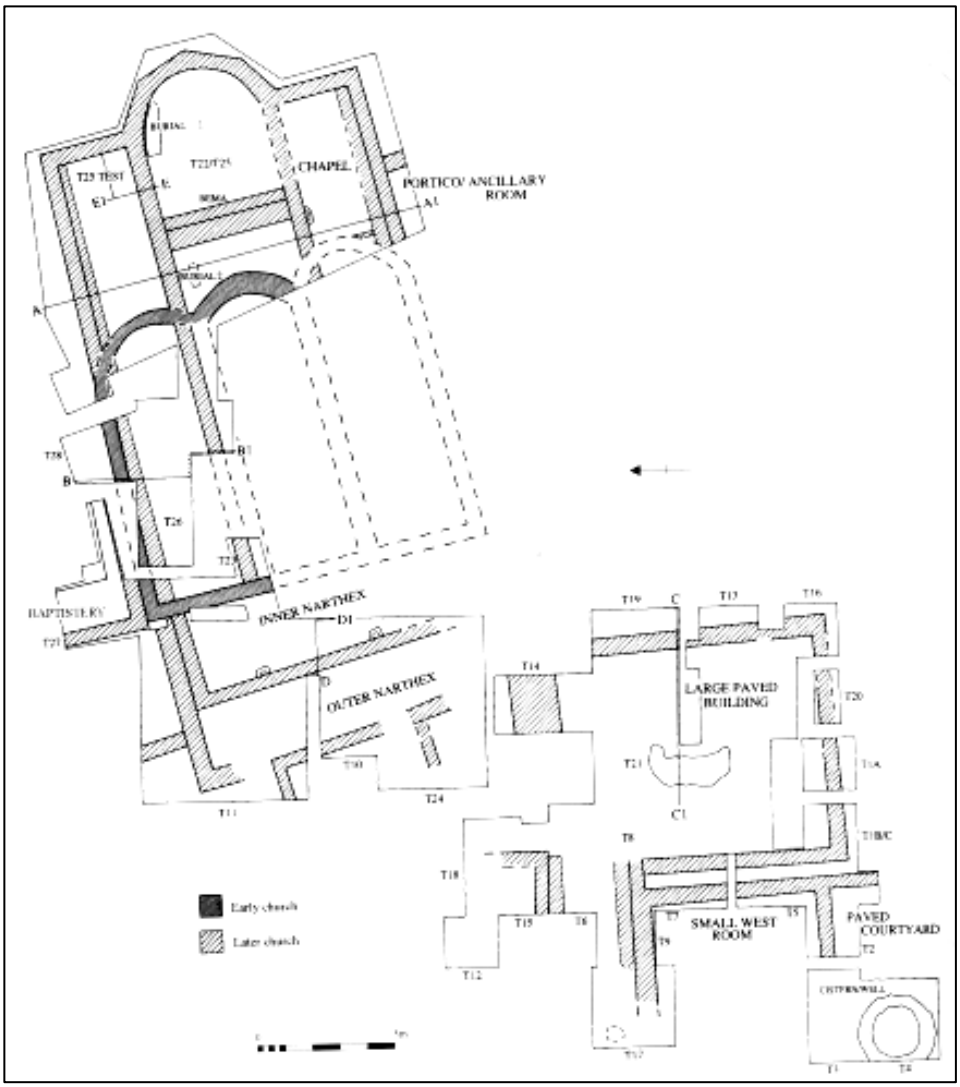

Figure 4.8. Phase plan of the basilica complex at Maroni Petrera (Manning *et al* 2002: 18, figure 3.1).

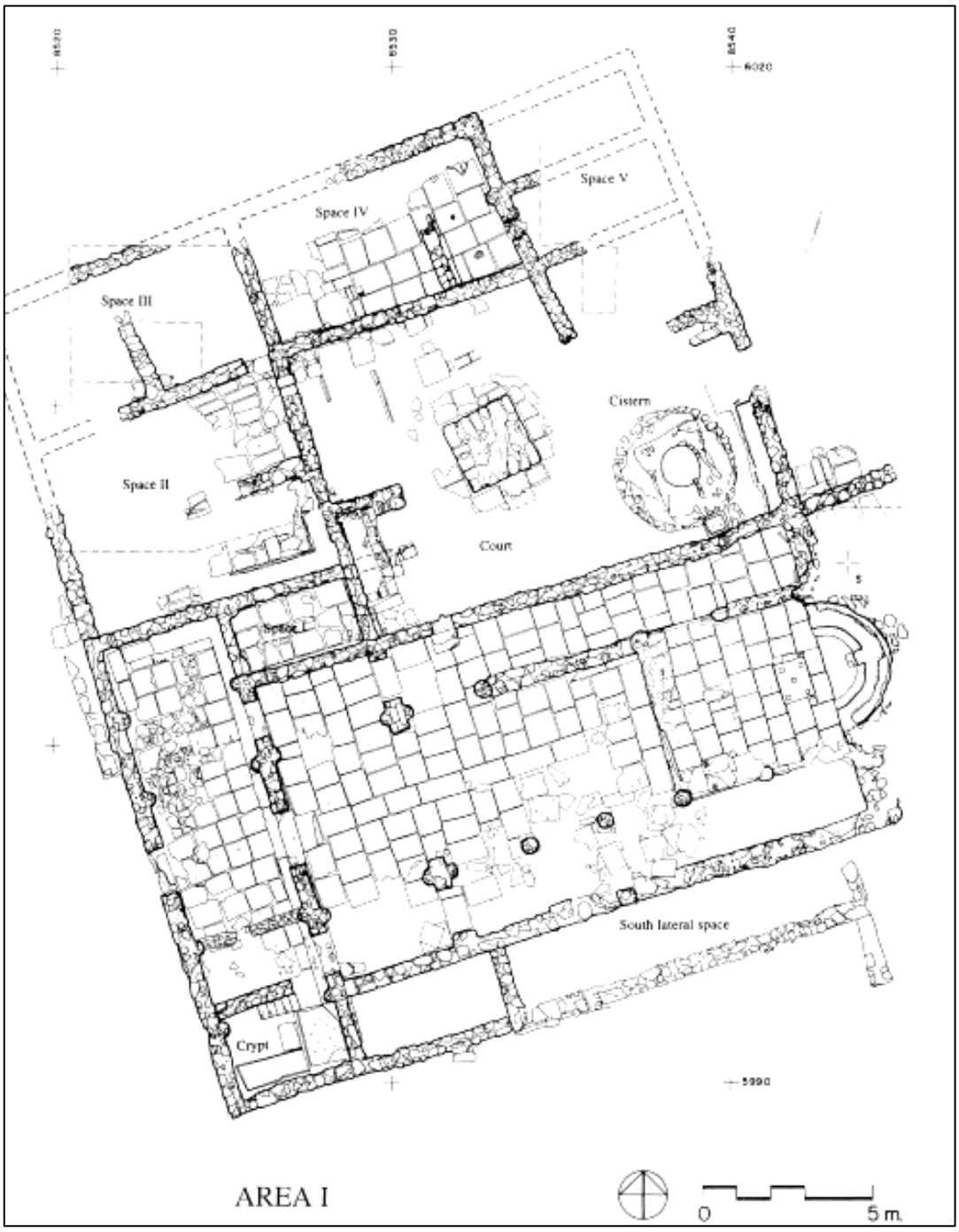

Figure 4.9. Complex from Area I at Kalavasos Kopetra (Rautman *et al* 2003: 57, figure 3.2).

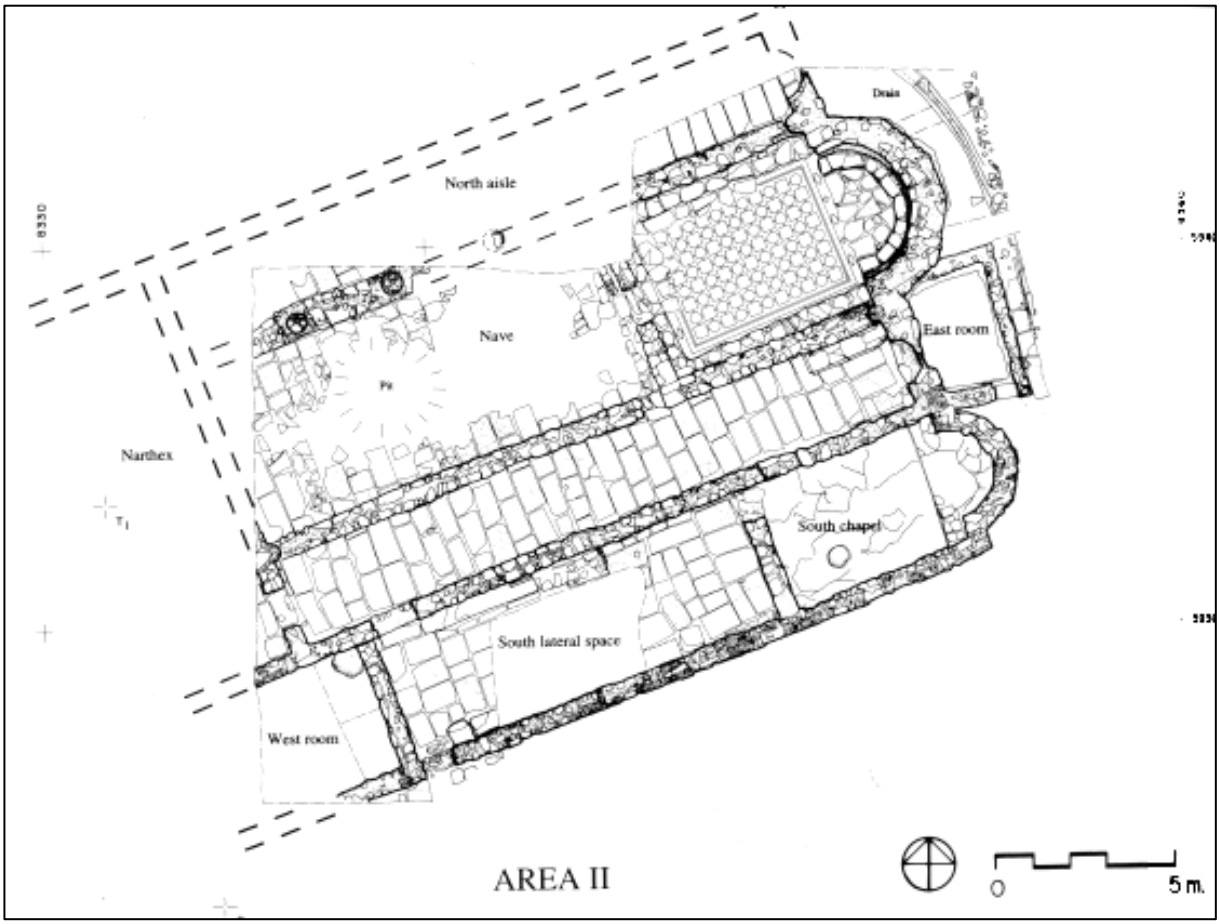

Figure 4.10. Basilica from Area II at Kalavasos Kopetra (Rautman *et al* 2003: 92, figure 3.28).

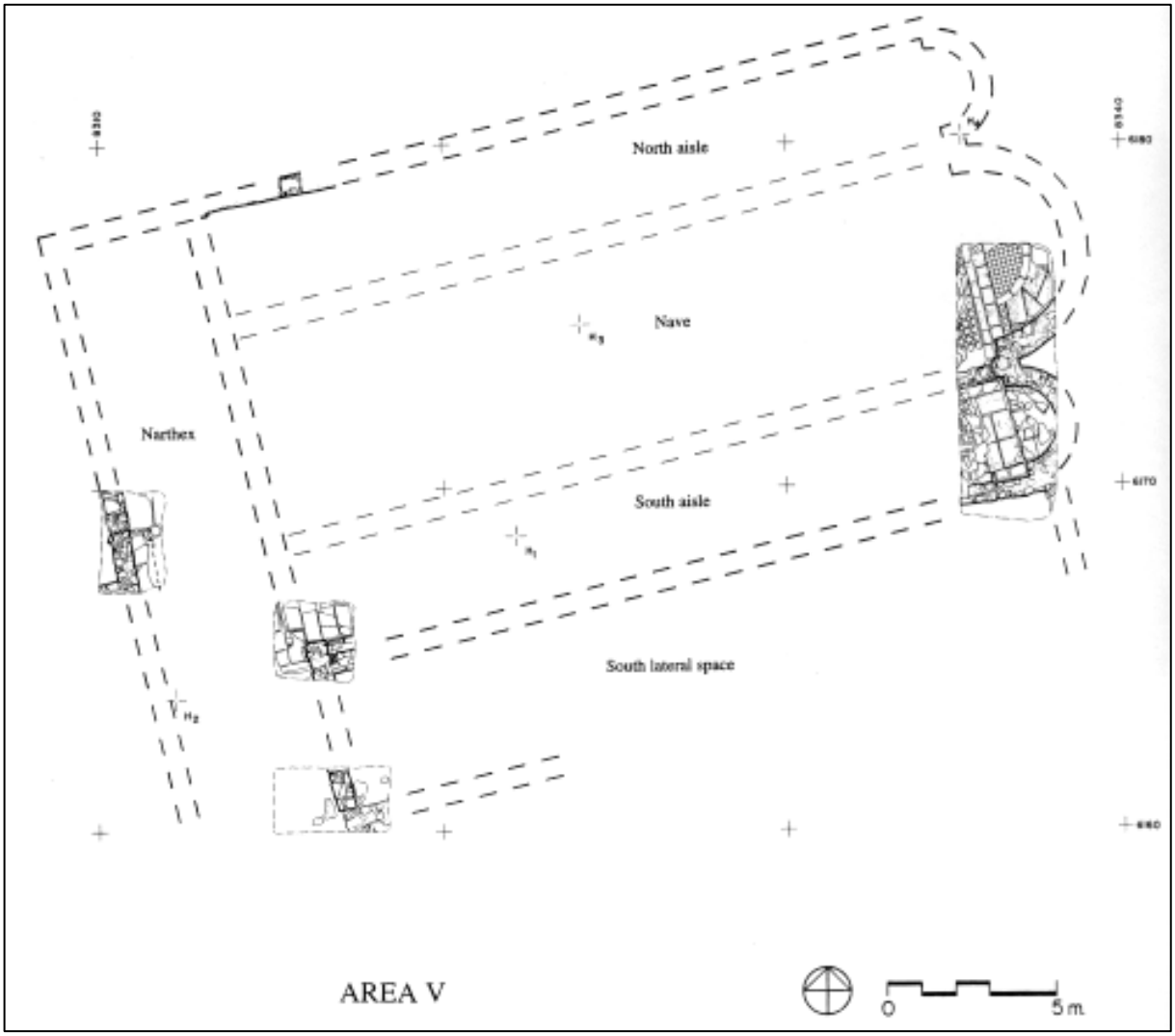

Figure 4.11. Basilica from Area V at Kalavasos Kopetra (Rautman *et al* 2003: 92, figure 3.28).

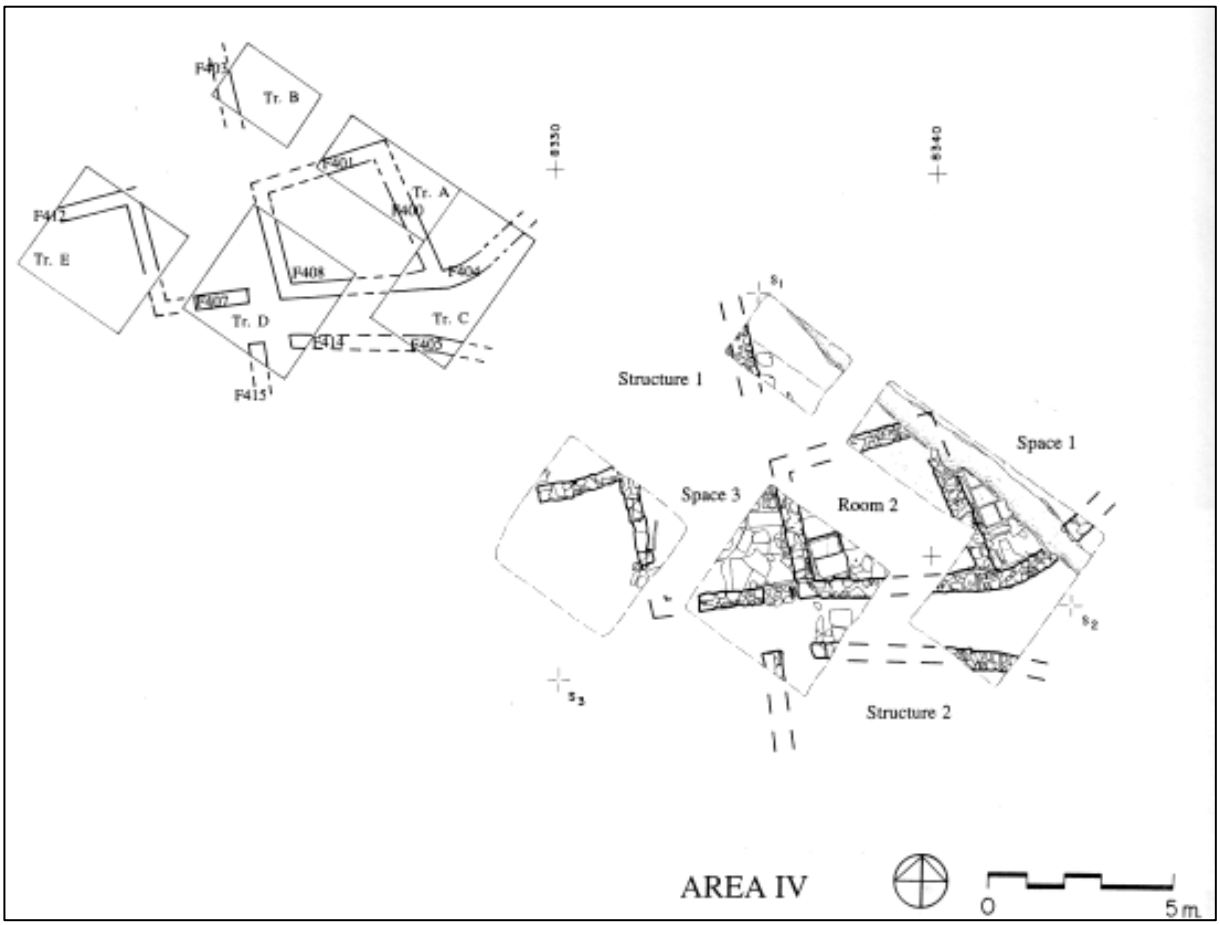

Figure 4.12. Structures from Area IV at Kalavasos Kopetra (Rautman *et al* 2003: 132, figures 3.56, 3.57).

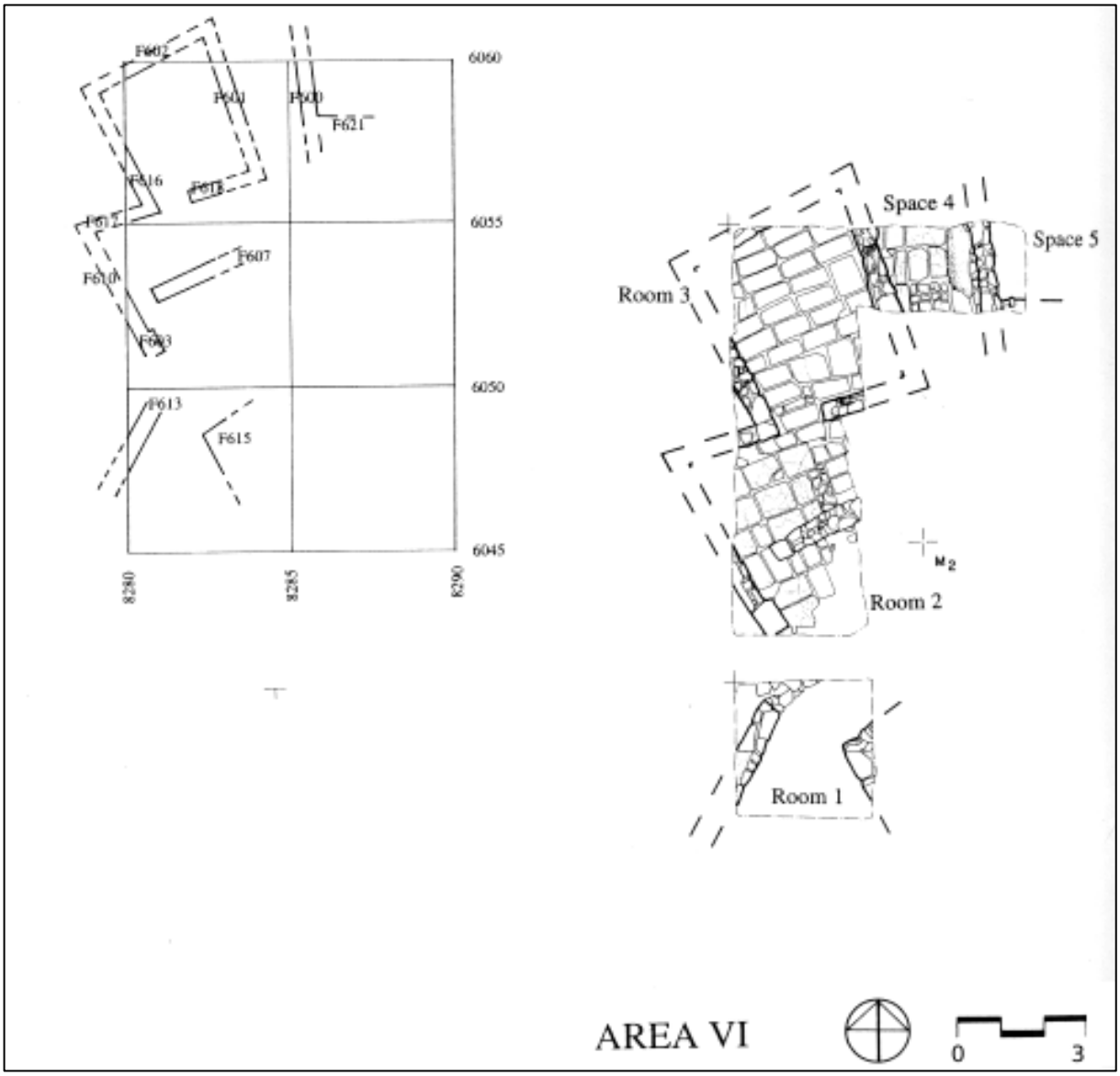

Figure 4.13. Structures from Area VI at Kalavasos Kopetra (Rautman *et al* 2003: 132, figures 3.61, 3.62).

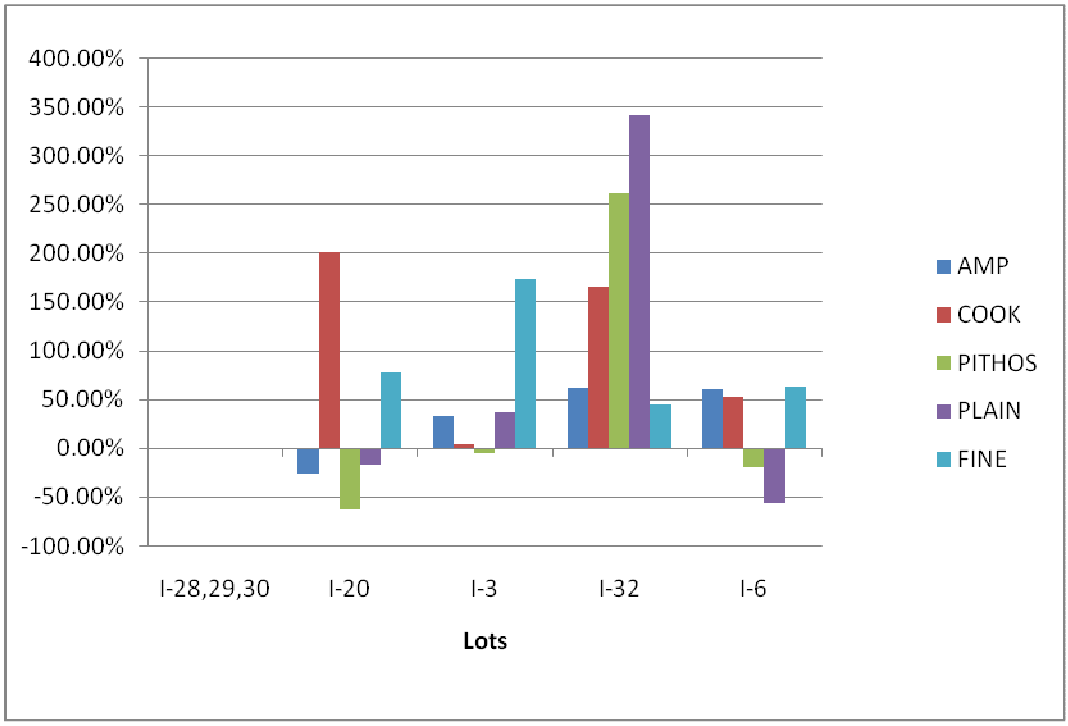

Figure 4.14. Ware weights expressed as a percentage of difference from lots I-28, 29 and 30 from Kalavasos Kopetra.

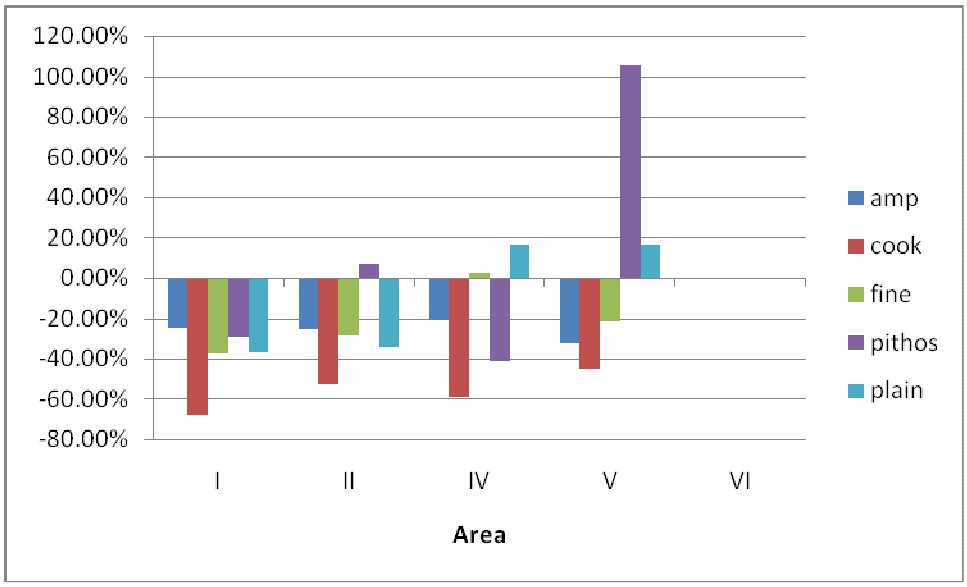

Figure 4.15. Ware weights by areas expressed as a percentage of difference from Area VI from Kalavasos Kopetra.

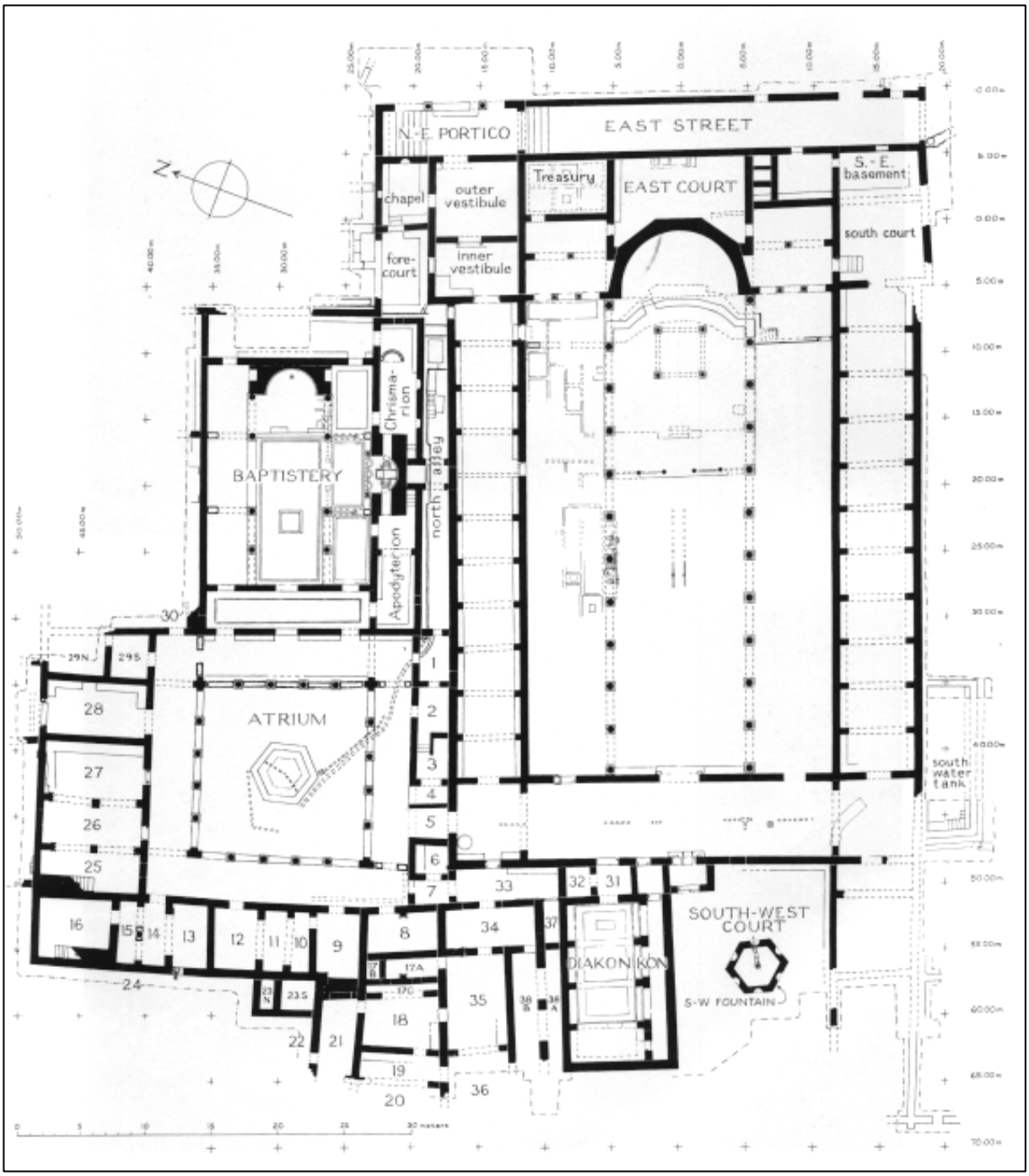

Figure 4.16. Plan of the Episcopal Precinct at Kourion (Megaw *et al* 2007: 75, figure 1.Z).

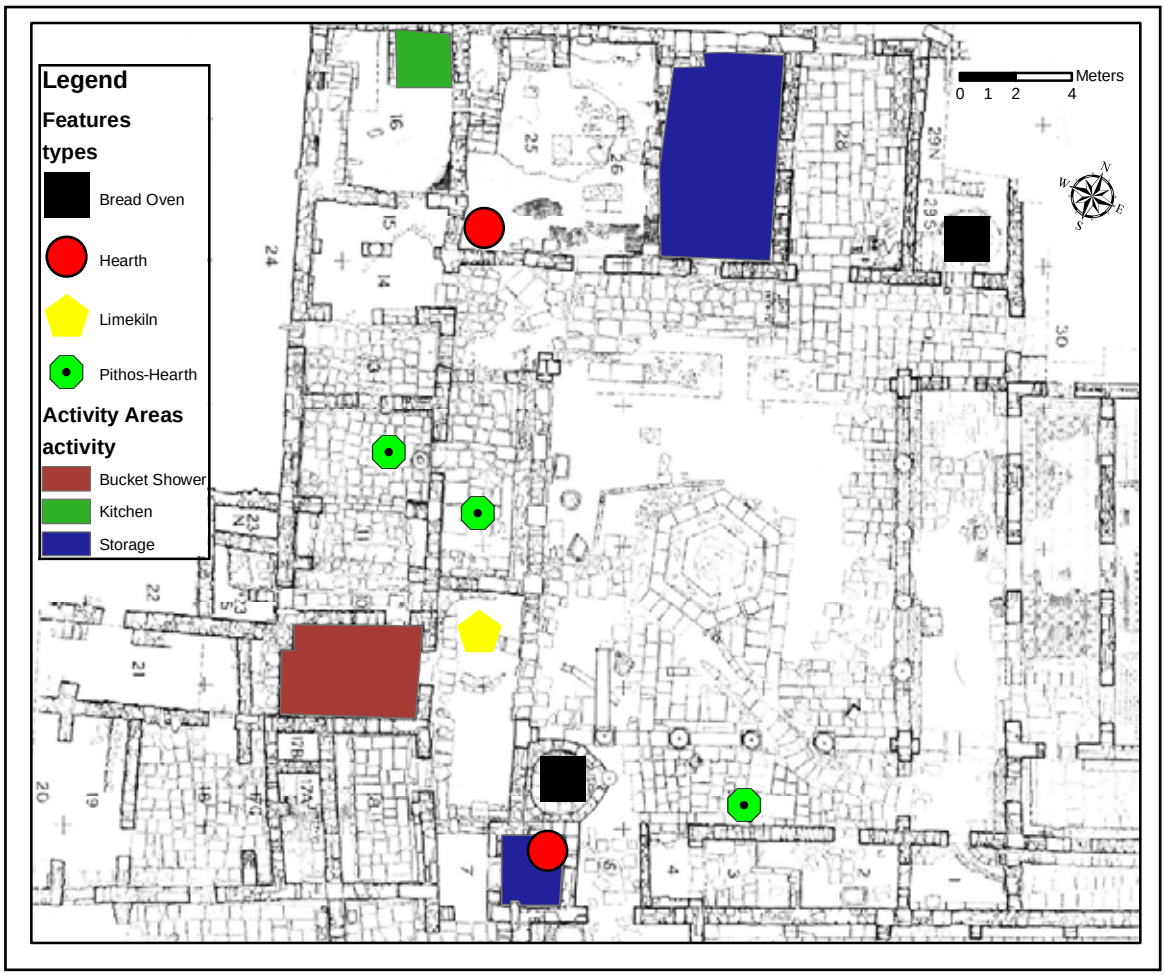

Figure 4.17. Secondary activity areas from the atrium area of Kourion's Episcopal Precinct (Modified from Megaw *et al* 2007: fig.1.X).

CHAPTER 5

The Sotira Archaeological Project

5.1 Chapter introduction

This chapter's main purpose is to present the methodology and the results of the Sotira Archaeological Project's (SAP) 1997 and 2004 seasons. In order to situate the SAP's methodology and research objective in a larger theoretical and methodological context, section 5.2 presents a brief discussion of select current archaeological field survey methodology on Cyprus. Section 5.3 and its associated subsections in turn present the SAP's field methodology as well as aspects of the SAP's project and study areas and those research projects that have had their study areas in the greater Kourion area or have explored select sites in Kourion's hinterland. Subsection 5.4 presents a general discussion of pre-Roman loci and a detailed discussion and analysis of the Roman and Late Roman loci identified by the SAP survey. Subsection 5.4 also includes a general discussion of the SAP results in relation to results of select Cypriot surveys. Finally, Chapter 5 concludes with a summary (§5.5).

5.2 Mediterranean survey: Aspects

This subsection presents a general discussion of relevant trends in archaeological field survey methodology from a Cypriot

perspective. The literature on Mediterranean “second wave” (Cherry 1994) archaeological surveys is voluminous, but the articles presented in several edited volumes (*e.g.* (eds) Athanassopoulos and Wandsnider 2004; (eds) Alcock and Cherry 2004; (eds) Papadopoulos and Leventhal 2003; (eds) Bintliff and Sbonias 1999; (eds) Gillings, Mattingly and van Dalen 2000; (eds) Pasquinucci and Trément 2000; (eds) Francovich and Patterson 2000) illustrate the main methodological and theoretical trends that have influenced surface survey strategy and interpretation over the last 20 to 30 years. Recently, Alcock and Cherry (2004) have identified several methodological procedures that have come to characterise intensive and systematic field survey as practiced in the Mediterranean over the last 30 years. Among the more important, they note (Alcock and Cherry 2004: 3) that survey research frameworks have become increasingly interdisciplinary (*e.g.* ecological and geomorphologic components), diachronic in scope (*i.e.* increased archaeological interest in previously marginalized post antique historical periods) and regionally based. They (*ibid*) also consider the widespread adoption of statistical sampling techniques, systematic and intensive field discovery methods (*i.e.* the recognition of the value of off-site archaeological record), as well as the use of standardized data recording and analysis techniques (*e.g.* recording forms, relational databases and GIS) as among the more important developments of the last several decades. However, most researchers (*e.g.* Terrenato 2004: 37; Bintliff 2000) would agree that the shift in emphasis from “site” based to “site-less” survey designs, which

"record the artefact as the basic unit of analysis" (Caraher *et al* 2006), and the resulting surge in intensity of coverage is the most important, and perhaps most controversial, theoretical development in Mediterranean survey archaeology in roughly the last two and a half decades. Nevertheless, it is important to note that many projects still take advantage of what may be termed "extensive" and "intuitive" techniques to gather information on their respective project areas during the elevation phase of fieldwork. Taken as a whole, the relative importance of these "new wave" themes within a given survey project's research design is largely the result of the project's aims and available resources (human and financial). In spite of the increasing popularity of systematic intensive pedestrian survey-based archaeological projects and the growing refinement of field methods (Cherry 2003; Alcock and Cherry 2004), there is little scholarly consensus in the literature on key issues, such as the level of compatibility between the results of various survey projects (*e.g.* Given 2004; Terrentato 2004), as well as the formation (*e.g.* manuring, rubbish dumping, ploughing) and the value of the off-site archaeological record within a given study area (*e.g.* Bintliff and Snodgrass 1988, Bintliff *et al* 2000; Bintliff *et al* 2007; Alcock *et al* 1994; Wilkison 1982, 1989; Fentress 2000; Given 2004; Terrentato 2004)[1]. Furthermore, researchers (*i.e.* Terrentato 2004; Fentress 2000) have also pointed out that one

[1] See, for example, Given (2004a: 15-19) and Tarrento (2004: 40-42) for a concise discussion of the various processes that can bias the surface record and hinder the accurate comparisons of sherd densities between survey projects. See Bintliff and colleagues (2007) for their most recent and up to date views on this phenomenon from their observations based on their work in Boeotia.

methodological trade-off for the increased level of intensity gained by counting "off-site" material has been a pronounced reduction in geographic coverage[2].

A series of articles by Bintliff and colleagues (1999; 2000; 2002) and Pettegrew (2001; 2002) provide a good example of the diverse perspectives scholars have adopted regarding the interpretation of variable sherd/artefact densities recovered by intensive surface survey. Based on a critical discussion of their work and experiences in Boeotia, Bintliff and colleagues (1999: 164-165) argue that the prehistoric landscape is largely "hidden" within the historic landscape. They believe that most prehistoric sites' "vestigial ceramic traces" are so slight that they usually do not produce noticeable density peeks in either larger historic surface sites or in the diffuse off-site scatters because the material has not survived and/or is not recognised as such during field investigation (especially the prehistoric coarse wares). This, in turn, they believe makes the prehistoric surface component of the surface archaeological record easy to miss during standard intensive pedestrian survey. They also suggest that "the majority of prehistoric settlements were small sites of farm or hamlet character, whose vestigial ceramic traces are usually not noted at all in intensive survey; if they are, through the double action of rare transect collection and indirect discovery within historical

[2] For example, Fentress (2000: 44) illustrates this point by comparing the landscape coverage from two intensive off-site surveys, Boeotia and Rieti surveys, which covered 45km and 22km in approximately 5 and 3 years respectively with the Albegna and Biferno surveys, which did not quantify off-site material and covered 220km and 400km in approximately 5 and 3 years respectively.

site collection, then numerically their contribution to surface density is so slight that their one- or two-piece presence on the surface as recorded attracts no special interest" (Bintliff *et al* 1999: 164-165). In order to compensate for this, they have transformed their older survey data by applying various corrective multipliers to their raw data; they also suggest that future projects may be able to avoid this bias by increasing their level of intensity. Although most researchers would agree (*e.g.* Mee and Cavanagh 2000) that some of the problems in the prehistoric component of Boeotia's surface record identified by Bintliff and colleagues (1999) is applicable for some areas of Greece but not others (Davis 2004), their use of various multipliers to increase this landscape's visibility has come under criticism (*e.g.* Thompson 2000; Schon 2000; Davis 2004)[3]. Nevertheless, Bintliff and colleagues' (1999) work alerts us to the possibility that the surface archaeological record at large historic sites may contain less obvious degraded evidence for the presence of prehistoric components at those sites.

In assessing classical attitudes toward the abandonment, recycling and discard behaviours from a wide perspective (*i.e.* using text, epigraphic and survey and excavation data), and the formation processes that can influence the household floor assemblages (*i.e.* Lamotta and Schiffer 1999; Schiffer 1987) in relation to the formation of their surface signature, Pettegrew (2001; 2002)

[3] See Bintliff and colleagues (2000) rejoinder to these criticisms. In particular, see their (2000) response to Schon (2000).

suggests that comparatively low-density (contra Bintliff *et al* 2002, for example) scatter sites of classical date could also represent the surface signatures of farmstead sites and is a comparable phenomenon to Bintliff and colleagues' (1999) "hidden landscapes" of the prehistoric period[4]. Perhaps more importantly, Pettegrew's (2001, 2002) model explicitly recognises the role various "depletion processes" can play during abandonment, post-abandonment and re-occupation processes, and their subsequent role in the creation of site assemblages and in the formation of these sites' surface signature[5]. While fully acknowledging the role geomorphologic processes can exert on surface scatters, he (2002: 271) also suggests that the differences in scatter sizes and densities may also reflect long-term (larger and dense scatters) and short-term (smaller and diffuse scatters) investment strategies and "stability" within a given landscape. Thus, Pettegrew argues that

> "In this view, the crucial difference between lower and higher density scatters would result from qualitatively different investment thresholds - large buildings, agricultural equipment (e.g. olive presses, wells), and personal ties to the land (e.g. rural cemeteries) among others - that created stronger bonds to particular places on the landscape, thereby making habitation exceedingly more stable and continuity (or

[4] See Bintliff and colleagues (2002) for critical review of Pettegrew (2001).

[5] See Schiffer (1987)'s Chapters 3 and 5 for a detailed discussion of these processes.

> reoccupation) of settlement increasingly more probable. Developed land would continue to attract and encourage investment, whereas land lightly invested and settled would not outlast generational household cycles or broader social and economic changes" (Pettegrew 2002: 271).

This view, particularly the emphasis on the role of social actors' personal ties with various components of a given landscape and its subsequent link with settlement stability, it is reasonable to suggest complements the particular theoretical perspective on space and place advocated in Chapter 2, in which place is viewed primarily as a *multilocal* and multi-scale socially constructed phenomenon. Nevertheless, most researchers (*e.g.* Cavanagh *et al* 2004; Pettegrew 2000; Bintliff *et al* 1999; Cherry 2004) would agree that many of the problems and ambiguities that are commonly associated with the interpretation of such small scatters could be resolved through "multi-scalar research, combining intensive surface collection with geophysical prospection, studies of soil phosphates and trace metals, and, where possible test excavation" (Cherry 2004: 29).

5.2.1 Survey on Cyprus: Methodological approaches

Large scale regional archaeological survey in Cyprus developed out of a different set of circumstances, for example, from those in Greece: large scale regional survey in Cyprus has its origins in the British-Colonial government's desire to create a sites and monuments register for the entire island (Iacovou 2004: 12-13; Cherry 2004:

27)[6]. From 1955 and 1959, the survey branch of the Department of Antiquities, the so-called Cyprus Survey, under Hector Catling, investigated the regions around Cape Kormakiti, Morphou to Dikomo, the coastal zone between Kyrenia and Liveras, as well as a section of the Yialias River valley which amounted to approximately 5 percent of the island (Hadjisavvas 2004: 37-38)(see figure 5.1)[7]. After independence, the Department of Antiquities continued to sponsor sporadic survey initiatives with substantial projects along north-northeast (between Akanthou, Komi and Ormedia), east (Ayia Napa) and west (Paphos) coasts (Hadjisavvas 2004: 39, fig. 2.2). However, apart from projects sponsored by governmental agencies, numerous academic research projects have employed strategies that have followed the dominant methodological and theoretical trends in Mediterranean survey[8]. This is particularly apparent in the evolving survey strategies employed by two of the longer running projects on the island, the Vasilikos Valley Project (VVP) (Todd 2004), which began fieldwork in 1976 and concluded fieldwork in 1989, and the Canadian Palaipaphos Survey Project (CPSP) (Rupp 2004), which began fieldwork in 1979 and completed fieldwork in 1992 (figure 5.1). Recent projects such as the Sydney Cyprus Survey Project(SCSP)

[6] Cherry's (2004: 27) observations are worth quoting at length: "...an important element in colonial statecraft and imperialist strategies is the documentation, measurement, and registration of assets, whether natural or cultural, for purposes of simplifying administrative arrangements. Such impulses may to some extent lie behind the apparent interest in surveying and inventorying archaeological and cultural resources, so as to create regional or national sites-and-monuments registers...The point is worth mentioning here, of course, in light of Cyprus's own colonial history...".

[7] Also, see Cadogan (2004)'s contribution in (ed) Iocavou (2004) for a discussion on Hector Catling's work with the Cyprus Survey.

[8] For the gambit of current survey practices on Cyprus, see Iacovou (2004)'s edited volume.

(Given and Knapp 2003), the Troodos Archaeological and Environmental Survey Project (TAESP) (Given *et al* 2001, 2002, 2003), and the Pyla Koutsopetria Archaeological Project's survey component provide particularly good examples of contemporary large-scale regional and urban interdisciplinary intensive survey projects on the island[9]. Apart from those projects with diachronic focuses, a number of projects, like the Lemba Archaeological Project's survey component (Bolger *et al* 2004) with its interest in pre-Bronze Age interregional exchange, and the Larnaca Hinterlands Project (A. Leonard 2000), which although diachronic in scope, primarily focused on various Bronze Age landscapes in that region, have investigated select facets of a multi-component landscape. These projects have also combined various intuitive-extensive and site-based intensive collection strategies in their research frameworks.

Turning to the Vasilikos Valley Project (VVP), which initially aimed at full survey coverage of the valley, combined both intuitive and systematic methods to investigate a 20 percent sample of the valley system (Todd 2004: 48)(figure 5.1). The VVP investigated its study area with 100m wide and variable length (1.5km – 4.5km) east-west (which cut across the valley) transects placed 400m apart from one another; later, the VVP also surveyed several small seasonal drainages with 100 percent coverage[10]. Todd (2004: 48) estimates that

[9] For the present purpose, the detailed unpublished reports for the TAESP provide a full account of the project's methodology. A list of the published articles as well as links to a series of detailed unpublished report are available for review on line at www.gla.ac.uk/departments/archaeology/research/projects/taesp/publications.

[10] Todd (2004: 48) states "While a transect system clearly does not reveal as many sites as total coverage of the area, it does provide a counterbalance

the combination of intuitive and systematic methods allowed the project to cover approximately 60 percent of the main drainage system. The project detected approximately 135 “sites” that ranged in date from PPNB (Pre–Pottery Neolithic B) to the mediaeval periods. However, Todd (2004: 48) notes that one of the most important prehistoric sites, Kalavasos Tenta, would have been missed by the transect survey “but the prominent position of that site suggests that it would have been recorded during a routine examination of outstanding geographical features”. This particular situation also provides a very clear example of one major drawback of the transect method (Bintliff 2000: 200-201)[11]. Thus, the VVP provides a particularly good example of the advantages afforded by combining intuitive, extensive and systematic methods.

Although the project’s final publication is not complete, Rupp (Rupp 2004: especially 66-67, table 5.1) has recently provided a detailed discussion of CPSP’s methodological development. The CPSP study area initially started as an investigation of a catchment with a radius of 7.5km (approximately 17671ha) centred on Kouklia in western Cyprus. Later, the study area expanded to approximately 665km^2 (approximately 66500ha) and covered four drainage systems

to the purely intuitive method which may well completely miss certain types of sites”.

[11] See Bintliff (2000; 2001) for other examples in which transect sampling methods missed a substantial regional site previously known from extensive intuitive methods. Bintliff (2000: 201) uses these examples to argue for the use of contiguous survey blocks with intensive combined with an intensive off-site counting/collection strategy. Bintliff argues further, “Because we cannot begin a regional survey with a ‘control population’ to base a sampling strategy on, the urge to take a shortcut in methodology via some supposedly ‘representative sample’ must be resisted at every opportunity” (Bintliff 2000: 201).

(Ezousas, Xeros, Dhiarizos and Kha) of which the project surveyed approximately 244km^2 (approximately 24400ha)(figure 5.1). Like the VVP, the CPSP used extensive-intuitive methods during its initial pilot investigation and later adopted a strategy based on a stratified sampling strategy. The study area was divided into a series of 1km^2 quadrats which, in turn, were divided into transects that ranged in size from 100m in width and 1000m in length with field surveyors walking at intervals of approximately 20-25m. Later, they reduced some quadrats to 0.5km^2 and walked at a tighter interval (10-15m). Rupp (2004: 69) notes that just over 10 percent of the study area was resurveyed with this increased resolution but has concluded that although "greater detail was achieved the overall results were not significantly different from our previous less intense approach" (Rupp 2004: 64-70).

The CPSP's sampling procedures also evolved over the course of the project (Rupp 2004: 66-67, table 5.1). For ceramics, these consisted initially of "grab samples" but "from 1980 onward", Rupp (2004: 69) notes, the collection methodology "was to pick up where possible a representative sample of 5-25 diagnostic sherds, a selection of kitchen and coarse ware fabrics and all probable imports" as well as more intensive collection strategies at known or suspected prehistoric sites (Rupp 2004: 67)[12]. The project identified 579 "sites" ranging from the Aceramic Neolithic to the mediaeval periods.

[12] For example, the procedures at known or suspected prehistoric sites consisted of collecting an area of 2m^2 at 10 meters intervals (Rupp 2004: 67, table 5.1).

The Sydney Cyprus Survey Project (SCSP)(Given and Knapp 2003) intensively investigated approximately 6.54km^2 (654ha) of a 65km^2 (6500ha) study area in the vicinity of ancient Tamassos in central Cyprus (figure 5.1). The project approached the landscape "as a more-or-less continuous distribution of cultural material generated by people in social space" (Meyer and Knapp 2003: 28) which could be redistributed by combinations of human and natural processes; from this vantage, sites are broadly interpreted and extrapolated from the density peaks of both single and multiple artefact classes within the landscape. Conversely, settlements are defined as sites over 1ha in size that are associated with architectural feature(s). For example, an isolated farmstead or industrial installation qualifies as a site but not a settlement[13]. Apart from settlements and sites, the project also employed an additional analytical tier that consisted of POSIs (Places of Special Interest) and SIAs (Special Interest Areas). The main difference between these two interpretative constructs, Meyer and Knapp (2003) note, is that SIAs have a more diverse assemblage, are multifunctional and spatially expansive (often extending more than 500m) in relation to POSIs (Given and Meyer 2003: 32-36; Meyer and Knapp 2003: 26-30).

The SCSP used a series of transects to sample its study area. In general, each transect was 50m wide and not longer than 100m and

[13] On the definition of settlements, Meyer and Knapp (2003: 28) state that "Whenever a dense scatter of sherds is accompanied by an equally dense spread of roofing tiles and building rubble that could indicate contemporary architectural remains, we tentatively regard such a combination of features as a settlement. This supposition, however, would have to be demonstrated by further field reconnaissance and more intensive sampling".

was comprised of a series of survey units. Field walkers recorded detailed information (*e.g.* topography, geomorphology, modern land use, slope, visibility) on standard forms. In uncultivated areas, the survey units were 25m wide (or 5 field walkers at a 5 meter interval) and their length was usually based on a natural division in the landscape (*e.g.* break of slope, change in vegetation, soil type). In cultivated fields, when the field was larger than the standard 25m wide units, the units followed the shape of the cultivated field[14]. Strategies for the collection and counting of artefacts were also tiered. For example, the collection strategy of ceramics involved field walkers collecting "one sherd of each discernible category of ceramics they found in their 5-m strip"; filed walkers counted all other artefacts from within their strip (Given and Meyer 2003: 34). One key objective of Meyer and Gregory (2003: 49) was to collect as few sherds as possible while achieving a representative sample of the visible material on the surface. Analytical procedures for collected material included an adjustment for field conditions (*e.g.* Background confusion and visibility) and the assignment of periods using the "chronotype" system and then weighted against the counts of pottery from the survey units to

[14] Given and Meyer (2003: 33-34) state "In cases where a field extended beyond the normal 25-m-wide unit, the extra portion was included in the survey unit, with some team members walking an extra strip to maintain the 5-m spacing. This was done only when 50% or more of the entire survey unit lay within the original survey transect. In cases where the transect crossed the edge of a very large field (that is, one in which the survey unit was less than 50% of the field), the survey units were confined to 25 m".

produce a “pottery index”[15]. The project also used different collection strategies at POSIs and SIAs. These consisted of “iron cross”, “fixed grid” and “gridded circles” for POSIs and “block survey” for SIAs. In total, the project identified 11 SIAs, 142 POSIs (Gregory 2004: 15-28; Meyer and Gregory 2003: 48-52; Given and Meyer 2003: 30-36).

5.3 The Sotira Archaeological Project Survey I

This section presents the results of the Sotira Archaeological Project Survey (SAP). It is divisible into four subsections. These include (1) a discussion of the Sotira Archaeological Project’s 1997 and 2004 field methods and their limitations, (2) a discussion of the physical characteristics of the SAP study and project areas, (3) a discussion of other projects in both the SAP’s study and project areas as well as these project’s main results and, finally, (4) a discussion and analysis of the Late Antique loci identified by the SAP.

5.3.1 S.A.P Field methodology and limitations

This subsection presents the field methodology used by the SAP during its 1997 and 2004 field seasons as well as a discussion of the various limitations and problems encountered during those two seasons of fieldwork. The SAP’s 1997 season consisted of six weeks

[15] These adjustments are complex, see Meyer and Gregory (2003: 48-52). For a more accessible account of these adjustment factors, see Gregory (2004: 29-30). For a competing approach, which also employs complex adjustments, see Bintliff and colleagues’ (2007: 18-23) discussion of their method of quantification.

of pedestrian (in June and part of July) field survey and a limited ecological survey sponsored by the University at Albany (Sate University of New York) under the direction of Dr. Stuart Swiny. The SAP employed a systematic survey strategy to investigate the 1997 study area, which consisted of approximately 15 (less quadrat 7) 1km x 1km quadrats, which in turn comprised approximately 10 percent of the 154 square kilometres that comprised the wider project area. The project logged approximately 1880 person hours of fieldwork over the course of the 1997 season. In total, field walkers investigated 88 transects of various lengths and widths (orientated either north-south or east-west) distributed over the 15 (less quadrat 7) quadrats that comprise the SAP's 1997 study area (see below, §5.3.2).

On average, the field crew consisted of a team of 10-12 field walkers and a 2-person ecological survey team. In most cases (see below for exceptions), field walkers were spaced at an interval of approximately 10m from one another within each transect, and assigned a swath number which corresponded to a subunit within the transect. Filed walkers were also equipped with a standard military-style lensatic sighting compass so that they could maintain their vector within each transect. Upon the completion of each transect, each field walker recorded a range of provenience, archaeological and environmental data onto a standardized recording sheet. The field recording forms contained sections for recording information such as the quadrat, transect and swath numbers, time of day, surface visibility conditions, topographical and physical setting,

modern land use, observed artefacts-features and interpretation(s) (see Appendix IV). Scanned sections of the widely available 1:5,000 standard Cypriot topographical maps served as the main field base maps for both the field walking and ecological teams. Apart from recording survey information on these base maps, targets were also logged with a 12 channel Magellan GPS receiver with ±10m accuracy, which equates to an error of ±2mm on the Easting and Northing coordinates for each target at the 1:5000 scale, and entered on to these base maps[16]. While not as accurate as DGPS (Differential Global Positioning System) the precision and accuracy afforded by this GPS unit in relation to the available base maps coupled with its ease of use made it a useful field recording tool given the project's overall aims and desired recording resolution. At the end of each fieldwork day, logged GPS data and survey forms were imported in the project's GIS and entered into the form databases respectively.

Although the SAP covered the study area in an intensive manner, the survey design did not include a systematic collection strategy from either the loci identified tentatively as settlements, sites or discrete scatters, or from off-site locations within the study area. Field sampling procedures were limited primarily to "grab samples" from within each transect, site, or discrete scatter. When taken, the samples collected from these transects primarily consisted of one sample from each unique artefact type/class encountered by the field walker from their particular swath within a given transect. These materials, in turn, were counted, noted and either discarded

[16] These targets were logged from their notional centre.

or retained for subsequent study. A similar sampling method was employed at loci identified as sites or scatters. Grab samples from sites and discrete scatters focused almost exclusively on diagnostics. In most cases the material from those loci was noted and discarded in the field. Boundaries for loci identified as sites and discrete scatters during the 1997 season were established by the following procedure: (1) field surveyors walked north-south and east-west transects from the notional centre of the survey target at a 5m interval, rather than the standard 10m, and (2) marked the locations within each transect where the relative density of artefacts (including building materials) noticeably fell off and (3) the target's perimeter was recorded with the GPS's tracklog feature. Most of the ceramic identification was undertaken by the project's principle investigator, Professor Swiny (see §5.3.1.1 for a discussion of the limitations of the 1997 field methodology).

The 2004 season differed from the 1997 season in several ways. First, the high pace of development throughout the island and the then (in 2002) recent disturbances at a multi-period site with a well-preserved Late Roman component (press block), Sotira Ambija, in the SAP project area indicated that at the very least a reinvestigation and intensive field collection of surface materials from the more exposed sites was needed to ensure the continued preservation of these cultural resources[17]. Thus, one key objective of the 2004 season was the reinvestigation of the loci (sites and

[17] Professor Stuart Swiny informed me of the disturbance at Sotira Ambija in 2003. A subsequent visit to the site revealed that the looters had removed the highly visible remains of a large press block from the site.

scatters) identified during the SAP's 1997 season, as well as several previously recorded sites that were outside the SAP's 1997 study area but were also under pressure from development. Pre-fieldwork preparation for the 2004 field season involved several main procedures. First, the present author redesigned the project's GIS database within the ArcGIS 8.0 desktop environment. In the new GIS database, the sites, finds and scatters from the 1997 season were re-coded and assigned new locus numbers. The locus numbers are composed of two parts: the first two digits indicate the field season and the digit(s) after the hyphen indicate the sequential locus number for that year (*e.g.* 97-1, 04-2). Apart from the relevant sections of the 1:5,000 topographic and 1:50,000 maps, the GIS also included data digitalized from relevant soil maps (at the 1:25000 scale), geological maps (at the 1:500000 scale) and the modern land-use/ pasture map (at the 1:50000 scale)[18].

The data derived from these sources was grouped into thematic layers which included modern infrastructure (*e.g.* modern towns and villages, paved roads and improved roads, reservoirs and toponyms), basic topography (contours and hydrology), archaeology (1) (which consists of the SAP's study area, sites and features) and archaeology (2) (which consists of other projects, sites and features in the Kourion area such as the Roman roads and the civic aqueduct[19]. Later, in 2005, the topographic data derived from the 1:5000 and 1:50000 topographic maps were augmented by the addition

[18] The aerial photographs for the study area were prohibitively expensive.

[19] Derived from Last (1975) and Bekker-Nielsen (2003) respectively.

of contours generated from remote sensing data captured by the Shuttle Radar Topography Mission (SRTM)(see map 1)[20]. Second, field maps were prepared with a 100m UTM grid (European Datum 1950) and printed out at a scale of 1:5,000. Additionally, each quadrat's boundaries and main topographical features (*i.e.* roads and trails) were converted to track logs and subsequently uploaded into a Garmin GPX 12 receiver prior to the field investigation of a given quadrat[21]. This, in turn, allowed the present author to use efficiently both the Garmin GPX 12 receiver, which was accurate to ±5 meters on average, in tandem with the prepared scaled base maps during field reconnaissance with minimum effort. Because the project did not have access to a survey grade DGPS or a total station, the collection-counting grids were laid out with a Brunton Hand transit (with 1° azimuth graduations) mounted on a non-magnetic tripod and 100 meter reinforced fibreglass tapes. Several control points within the grid or transect were also logged with the GPS. In general, the collection/counting grid was aligned with magnetic north and assigned an arbitrary origin of E2000 N1000. In cases where this proved impractical, grid north was based on an existing feature (*i.e.* a road or terrace wall) and the grid or gridded transects were laid out accordingly. Booked data was then entered by hand into AutoCAD. Larger features, like the disturbances caused by strip

[20] See the file reference: USGS (2004) Shuttle Radar Topography Mission 3 Arc Second scene SRTM_u03_n034e032.tif.gz. This data is freely available from the University of Maryland's Global Land Cover Facility's webpage: http://glcfapp.umiacs.umd.edu.

[21] This was accomplished through the freely available GPS utility program. See www.gpsu.co.uk/ for the newest version and release information for this program.

mining or field boundaries, for example, were recorded using the GPX 12's track log feature, and first uploaded into AutoCAD and then exported in the project's GIS.

Third, in order to achieve a balance between the project's limited time and resources (both financial and human) and the recognised need to gather further data on both site and off-site artefact distribution within the SAP study area, the author designed a two tiered supplementary sampling strategy. Given the 2004 season's limited personnel, which consisted of the author and one student, and the limited time available for fieldwork (12 work days), a 0.005 percent sample, or approximately 5.2ha, of 1040ha surveyed in 1997 was selected for off-site collection. The main purpose of this strategy was to expand the sample of ceramics from within the study area rather than record the artefact density across large blocks of the study area's landscape. On the ground, this sampling fraction equated to approximately 44 5m-radius circular collection units per 1km-by-1km quadrat. The intended distribution of these units within each quadrat, in turn, was based on distribution of soil types (Lithosols, Cambisols, Regosols and Fluvisols) within each quadrat (*i.e.* proportionally stratified samples). The sampling procedures for loci identified as sites and larger scatters during the 1997 season consisted of either a total collection/counting grid comprised of 5m by 5m collection/counting units or a series of circular collection/counting units laid out along offset transects or transects in a cross pattern.

However, upon arrival in Cyprus, professor Swiny informed me that the director of the Department of Antiquities, Dr. Pavlos Flourentzos, had informed him that I was not able to operate under the aegis of the Sotira Archaeological Project's permit or under the umbrella of the Sotira Kaminhoudhia excavation permit. As a result, I submitted a proposal for a separate permit to reinvestigate and surface collect the 1997 loci and perform off-site surface collection from locations within the SAP study area from the Department of Antiquities based on the field strategy presented above. On June 18 2004, the Department of Antiquities granted the author a limited survey permit that allowed site visits and photographic documentation of the sites within and around the SAP study area, but prohibited the collection of any surface materials either from the sites or at off-site locations that I had requested in my original survey permit proposal.

Because of these limitations, the 2004 field season's research objectives were modified and came to focus on 3 objectives. These consist of (1) to assess and record any cultural and environmental disturbances that may threaten each site's integrity, and immediately inform the then Limmasol District Archaeological Office and schedule field visits to the sites; (2) re-record each site's UTM coordinates and create a site gazetteer with updated locations, setting information, and provide a research potential and development impact assessments to the Department of Antiquities; (3) create a digital and photographic catalogue for those sites at risk of being destroyed by development or natural processes. When

feasible, select sites were gridded and artefact frequencies from each collection-counting unit were calculated (see §5.3.1.1 for a discussion of the limitations of the 2004 field methodology). The limiting factors (*e.g.* disturbances, poor visibility) at each locus that may have precluded certain types and favoured other types of collection-counting strategies are presented on an individual locus-by-locus basis in subsection 5.4.1.

5.3.1.1 Objectives, limitations, and terminology

This subsection provides a discussion of SAP's research objectives in relation to methods it employed to achieve them. The field methodology employed by the SAP survey provided a useful snapshot of the more apparent/visible archaeological loci in the study area. In terms of the ratio of person hours invested in the field to discovered targets, the 1997 SAP project logged approximately 65 person hours (total person hours/number of targets) for the recovery of each identified target. However, the lack of an intensive surface collection strategy for both site and off-site materials limits the analytical potential of this particular dataset in several ways. First, although there is little scholarly consensus (Given 2004) on the best way to conduct quantitative comparisons of survey data from different projects, most researchers would agree that material recovered from "grab sample" collection strategies produce data, particularly pottery assemblage data, that is difficult, if not impossible, to compare meaningfully with other sites from within a given survey area or sites from other surveys

with grab or intensive collection strategies. Regarding the use of "grab samples", Mattingly (2000: 9) succinctly states that "The problem with such collections is that they are unquantifiable, being impossible to amalgamate with material which was systematically collected". Although the use of "grab samples" precludes more complex comparisons between the SAP loci, other classes of data recorded by the survey, like location preferences (*e.g.* slope, aspect, soil, underlying geology), as Terrenato (2004: 45) notes, are less biased than artefact densities[22]. As a result, the present study attempts to maximize this class of data in the analysis present below in §5.4.2.

Secondly, the "grab samples" are unlikely to capture adequately the range of diagnostic sherds present at a particular site and, I suggest, such strategies favour the more visually prominent and easily recognisable diagnostic sherds (*e.g.* based on ground cover conditions as well as individual sherd size, level of abrasion, vessel part and colour). Third, the accurate delineation of site and scatter boundaries is problematic in the absence of controlled collection/counting. However, as mentioned above, although the procedure used to estimate the area of those loci identified as "sites" and "scatters" during the 1997 season produced usable results, it is important to note that such a qualitative approach is likely to have underestimated their actual areas at the time of

[22] Terrenato (2004: 45) states the following "Even summary statistics of locational preference…are not at a risk from macroscopic biases, since they do not require a complete sample, but simply a representative one. Even if only an unknown proportion of Hellenistic farms has been recovered, their locations are nonetheless informative of the productive and perceptive choices of the farmers".

discovery. I suggest that the figures presented in the analysis below (§5.4.2) that specifically deal with the variable locus area are best interpreted conservatively as representing the minimum rather than the maximum horizontal extent of these loci. Fourth, most researchers would agree that the lack of a systematic “off-site” sampling programme creates a recovery environment that privileges the identification of those loci with architectural remains at or above ground level, moderate to high building materials, comparatively dense distributions of tile and ceramics on the surface, but greatly diminishes the probability that small loci will be identified as distinct elements within the study area and disentangled from background “noise” during fieldwork. However, within the SAP study area, in most cases those loci interpreted as discrete scatters and sites noticeably contrasted with the low density background sherd scatter. In this respect, it is important to note that the SAP was able to identify several comparatively small discrete loci (sites and discrete scatters), as well as small individual sherd-sized off-site finds from within the diffuse background scatter of reddish monochrome sherds which was present across the majority of the study area and, in some cases, under fair to poor visibility conditions. For example, the SAP was able to detect an undated lithic scatter, locus 97-07, that was under 400m^2 ($\leq$ 0.04ha) and a small scatter of coarse ware sherd, locus 97-14, that was under 300m^2 (294m^2, 0.029ha), as well as several off-site and site finds (loci 97-23, 97-27 and 97-28).

Apart from its main objective of bolstering the sample of ceramics from the study area, it is unlikely that the "off-site" collection strategy proposed for the 2004 season, even if it was implemented, would have contributed in a significant way to the identification of additional small loci within the study area, primarily because of the small size and dispersed collection locations within each quadrat[23]. From the discussion presented above, it is reasonable to conclude that in terms of method and research objectives, the SAP survey complements the other small-scale intuitive survey programmes in Kourion's hinterland conducted by Swiny (1979) and Held (2003) (see below, §5.3.3). In relation to wider general Cypriot survey trends discussed above (§5.2), these projects, as well as the SAP, occupy the methodological middle ground between extensive/institutive and intensive survey. Arguably, the field methods employed by projects like the SAP are best suited to serve as a set of preliminary reconnaissance tactics within an overall survey strategy based on intensive site and off-site sampling.

5.3.1.1.A Terminology: Site, settlement, scatter, and chronological periods

Most researchers (*e.g.* Mee and Forbes 1997; Rupp 2004) would agree that defining obvious and substantial features like tombs, cemeteries, oil presses, towers, threshing floors and cisterns as a "site" is unproblematic; the identification of concentrations of artefacts without associated features is in theory the more

[23] Bintliff (1999), for example, advocates the intensive investigation of blocks of terrain in order investigate off-site distributions.

difficult interpretive task[24]. The present study has adopted the comparatively neutral term "locus" to describe a relatively wide selection of observed material manifestations of the surface archaeological record within the SAP study area. As used in this study, a locus represents a portion of the SAP study area's surface archaeological record isolated for further analysis. During the next level of analysis, each individual locus was designated as a site, settlement, a discrete scatter, or an isolated find. The criteria for identifying sites and settlements are similar to other Mediterranean surveys' working definition (*e.g.* Given and Knapp 2003; Mee and Forbs 1997; Rupp 2004), but reflects the SAP's specific methodological limitations. Given the reality that the modern landscape represents an array of surfaces comprised of varying dates (Terrenato 2004) and because the SAP did not have a geomorphological component to assess landscape stability within the study area, I have adopted several basic criteria for interpreting a locus as a "site". I suggest that sites consist of loci with either architectural features or comparatively discrete scatters of

[24] For the CPSP's procedure for defining sites, Rupp (2004) observed that "Isolated chamber tombs and plundered cemeteries, rock-cut features, Christian chapels, mining adits and slag piles, Medieval bridges or water mills and recent threshing floors (*alonia*) or charcoal kilns (*Kaminia*) do not represent the focus of these problems obviously. The identification of settlements ranging from isolated farmsteads and hamlets to large villages and towns is what is most problematic. The general absence on the surface of the walls of structures, of architectural members of roof tile (until the Medieval period in SW Cyprus) or of fortification walls meant that we had to rely primarily on such subjective and variable archaeological criteria as the presence, the extent, the physical discreteness and the relative density of a scatter as well as the functional homogeneity of the artifact classes within it". Similarly, for the Methana Survey, Mee and Forbs (1997: 36) state "In identifying and defining sites, those which have ancient remains *in situ* presented the least problem". They also note (1997: 36) that "When there is no architecture but only artifacts, identifying sites and defining boundaries in theory become more complex".

artefacts which often, but not always, are found in association with architectural debris (*e.g.* roof tile, worked architectural elements, bonded masonry, rubble building stone) or other architectural features (*e.g.* walls, cisterns, presses, tombs, industrial). In the absence of multiple visible architectural features like walls, the SAP distinguished settlements from sites primarily on spatial extent (≥1ha) and the relative density and composition of the observed surface assemblage.

Discrete scatters, I suggest, represent density peaks of artefacts without associated visible architectural features or architecturally derived debris. For example, a dense concentration of ceramic without visible associated architectural features or architecturally derived debris is classified as a discrete scatter. It is important to note that the lack of roof tile, bonded masonry, and worked stone only suggests the absence of an edifice(s) constructed of these particular type of materials and they in no way serve as an accurate indicator of the presence of an edifice constructed of less resilient composite materials like mud brick for walls and sod for roofs or expedient structures constructed of similar materials. Prehistoric ceramic scatters and lithic scatters presented special cases where the reliance on the above mentioned "site" indicators of architectural features and architectural debris may prove too rigid. For example, locus 97-07, an undated discrete lithic scatter (≤400m^2, 0.04ha), consists of cores and various debitage, but with no associated ceramics or architectural features; the homogeneity of the surface assemblage implies that this location

was a special purpose activity area like a lithic retouch and/or reduction station and in this context, I suggest, it is reasonable to reinterpret the locus at the higher analytical resolution of site rather than discrete scatter. However, additional fieldwork (*e.g.* test trenching, geophysical prospection, multiple intensive collections) at those loci interpreted as scatters by the SAP could generate additional data which could potentially result in the upgrading of their status. Thus, it is also reasonable to interpret discrete scatters as potential sites. Loci interpreted as isolated finds (an artefact without an association with a site or discrete scatter) did not readily lend themselves to higher levels of interpretation beyond presence-absence. Finally, in the higher-level analysis presented below (§5.4.2.2), several loci (*e.g.* sites and discrete scatters) were grouped together to form an additional multifaceted analytical group or AGs (*e.g.* AG-1).

The following conventions are used for the chronological periodization presented in the analysis presented below in §5.4:

- CN = Cypriot Neolithic, 7000 BC – 3700 BC (Aceramic Neolithic, 7000 BC – 5500 BC; Ceramic Neolithic 4000 BC – 3700 BC).
- CCH = Cypro-Chalcolithic, 3700 BC – 2300 BC;
- EC-MC = Early Cypriot – Middle Cypriot, 2400 BC – 1600 BC;
- LC= Late Cypriot, 1600 BC – 1050 BC;
- CG = Cypro-Geometric, 1050 BC – 750 BC;
- CA = Cypro-Archaic, 750 BC – 475 BC;
- CC = Cypro-Classical, 475 BC -325 BC;

- CH = Cypro-Hellenistic, 325 BC – 30 BC;
- ROM = Roman, 50 BC- 330 AD;
- LR-BYZ = Late Roman-Byzantine (Late Antique), 330 AD – 702 AD;
- Condominium (Middle Byzantine), 702 AD – 965 AD;
- MB, Middle Byzantine, 965 AD - 1191 AD;
- MED, Medieval, 1191 AD – 1571 AD, (Frankish, 1191 AD – 1489 AD; Venetian, 1489 AD – 1571);
- OTT, Ottoman, 1571 AD – 1878 AD;
- MOD, Modern, 1878 AD to present.

5.3.2 The S.A.P study area

The SAP survey universe is located in a naturally definable area of southern Cyprus. Morphologically the project area is located on the Limassol Plateau. As noted in Chapter 3, discontinuous small river plains characterize much of the Limassol Plateau's topography[25]. Quadrats 01 through 12 are located between the Paramali River in the west and the Kouris River valley in the east; quadrats 13-15 run south from old Paramali to the coast along the Farkonas/Paramali River plain (see Map 1)[26]. Quadrat 07 was excluded

[25] Swiny and Mavromatis (2000: 433) state "The intensive, systematic survey covered an area of approximately 154 square kilometers divided into one kilometer squares stretching from the Kouris river valley in the east to Paramali valley in the west. The location of the squares, or quadrats, was random in so far as the easternmost quadrat was located in what was judged to be a relatively undisturbed section of the Kouris valley. The remainder were placed in a non-probabilistic manner in relation to Quadrat 1".

[26] Quadrats 01-12 are located between easting coordinates (36s) 480000 – 492000 and northing coordinates (36s) 3840500 - 3842500. The quadrats south

from the 1997 SAP survey because it fell within both the bounds of Sotira village and the Sotira Kaminoudhia Survey's study area (see below §5.3.3). Nearly all of the quadrats are 1km by 1km (100ha); the only exception is quadrat 13, which is slightly larger due to a southern extension that ran to the coast[27]. The total 1997 study area consisted of approximately 1445ha. Approximately 72 percent (*n* = 1040.4ha) of the total study area was systematically field walked in 1997. The remainder was excluded from survey in 1997 because of dense vegetation and/or steeply sloping terrain (Swiny & Mavromatis 2000: 435). Figure 5.2 presents the ratio of surveyed hectares to excluded hectares for each SAP quadrat. Quadrats 02, 03, 06, 08 and 14 have the greatest amount of hectares excluded from the pedestrian survey and the excluded hectares from these quads cumulatively comprise approximately 85 percent (*n* = 347ha) of the total excluded hectares from the study area. However, given the interval between field walkers and the average 2m field of view of each field walker (Gregory 2004: 28), it is reasonable to estimate that between 20 and 22 percent of the ground surface (approximately 208-228ha) was actually scanned during field walking[28].

The entire SAP study area is situated on terrain below 500masl with the majority (approximately 92%, *n* = 1329ha) of the study area's terrain falling within the 0-399masl elevation range. Given

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of old Paramali village are located between easting coordinates (36s) 481000 – 482000 and northing coordinates (36s) 3836000 - 3839500.

[27] See, Swiny & Mavromatis (2000: 434 & fig 1).

[28] This is a standard variable factored into archaeological surface survey in Cultural Resource Management investigations in the Eastern United States (*Pers. Obs*).

the Limassol Plateau's morphology, it is not surprising that terrain with southern, southeastern and southwestern aspects cumulatively comprise over 65 percent (66.30%, *n* = 958ha) of the study area. Terrain with a northern aspect, in contrast, comprise less than one percent (0.42%, *n* = 6ha). Terrain with eastern or northeastern aspects cumulatively comprise 18.75 percent (*n* = 271ha) of the study area's terrain; terrain with western and northwestern aspects cumulatively comprise 14.53 percent (*n* = 210ha). Approximately 33 percent (*n* = 479.75 ha) of the project area is on slopes with a grade range of 0-9.9%. Slopes with a grade range between 0-19.9% cumulatively characterize well over half (67%, *n* = 986ha) of the total slope variability within the project area.

As mentioned in Chapter 3 (§3.3.5.1), the project area's geological substrata are part of the Pakhna formation, which consists of well-bedded chalks and limestone with various lenses in its upper layers as well as clastic facies with igneous rock detritus. The upper layers, which form the majority of the bedrock within the study area, consist of Episkopi chalk and chalky marls; surface exposures of gypsum are also common. Although other horizons can produce substantial amounts of water, the Kandou and Khalassa sandstones are the Pakhan formation's main water bearing horizons. Additionally, as mentioned in Chapter 3, it is important to note that recent over-pumping has substantially altered the Episkopi region's hydrological profile and caused several springs surrounding the study area to migrate down slope (*e.g.* in the Symboulos gorge).

Like much of Cyprus and the Mediterranean in general, the SAP study area has abundant seasonal drainages (see Map 1).

The soils within the project area tend to be gray or greyish-brown in colour, thin, immature or raw, azonal, either neutral or alkaline and have extremely low humus contents (below 5% on average). Additionally, terra-rossa, secondary limestone and patches of bare Kafkalla (secondary limestone) are common landscape features in the project area and within the study area (Thirgood 1987: 24; Swiny 1982: 2-3; Christodoulou 1959 fig. 2, 43-44; Rapp 2003: 463). Unfortunately, the available 1:25,000 soils series sheets cover 93 percent (approximately 1345ha, excluding quadrat 01) of study area. Based on the available data, lithosols comprise approximately 38 percent (38.92%, *n* = 523.29ha) of the soils within the study area. Tymbou series lithosols, which consist of exposed limestone, comprise approximately 95 percent (95.08%, n = 497.55ha) of the lithosols within the study area; exposed kafkalla comprise the remainder. Cumulatively quadrats 02, 03, 06 and 10 contain just over 50 percent (51.06%, n = 333.622ha) of the lithosols within the study area. Regosols and cambisols comprise approximately 31 percent (31.09%, *n* = 417.92ha) and 29 percent (29.74%, *n* = 399.76ha) of the soils within the study area respectively. Cambisols are the dominant soil types within quadrats 05, 13, and 15. Conversely, Fluvisols comprise less than one percent of the study area's soils and are concentrated in quadrat 12. However, they comprise less than 5 percent (3.56%, *n* = 3.43ha) of that quadrat's soils. As argued in Chapter 3, the project area's vegetational profile is largely the

product of early modern land use practices that favoured plantation agriculture in the lowland and intercropped agriculture on the upland plateaux (figures 3.3, 3.4).

5.3.3 Other projects in the vicinity of the S.A.P study area

Apart from the diverse set of sites from Kourion's immediate environs (*e.g.* (ed)H.W. Swiny 1982; Soren *et al* 1987), several projects (*e.g.* Last 1975; Swiny 1981; Held 1988; Leidwanger 2005, 2007; Jasink, Bombardieri and Menozzi 2008) have investigated aspects of Kourion's hinterland at various degrees of intensity[29]. While some research projects (*e.g.* Bekker-Nielsen 2004; Hadjisavvas 1992; Parks 1999; J. Leonard 2005) were not specifically concerned with Kourion or its hinterland, they have produced useful information on various facets of Kourion's multi-component hinterland. Their research, for example, has identified important productive and transport infrastructure components such as segments of the provincial Roman road system (Bekker-Nielsen 2004) as well as maritime and productive installations in Kourion's hinterland (Leidwanger 2005, 2007; J. Leonard 2005). Other projects (*i.e.* Last 1975) have investigated the presence of Kourion's civic infrastructure in its hinterland.

[29] See Swiny (1981; 1982; 2004) for information on site distributions to the south of both the SAP and SKS project areas and the sites in the immediate Kourion area. For additional survey information around Kourion, see Leonard (1987) in Soren (ed) *The Temple of Apollo Hylates at Kourion, Cyprus*. Tucson: University of Arizona Press and H.W. Swiny (ed) (1982) *Ancient Kourion Area*. Nicosia: Department of Antiquities, Cyprus. For Kourion city, see Chapter 4 §4.3. as well as Buell and Mavromatis (forthcoming). For environmental surveys in Kourion's hinterland other than the SAP's, which is presented in Chapter 3 §3.3.5.3.A of this thesis, see Burnet (2004) and van Warmelo (2003).

Last (1975)'s investigation of Kourion's aqueduct provides a good example of civic infrastructure penetrating into that city's hinterland. That research has identified two main conduits, a western, or Sotira conduit at the Ypsimasikarka spring, and an eastern, or Souni conduit, which lead to the main supply at the Platania locality (see Map 1; see Last 1975: 40, Map 1). The aqueduct's eastern conduit passes through the SAP study area in quadrat 11 and its western conduit passes through the western edge of the Sotira Kaminoudhia Survey's study area (Map 1). Last (1975: 54) has identified three successive pipes along the course of the western conduit. He believes that in its earliest phase, this conduit dates to approximately the second century AD and preceded the construction of Kourion's stadium. The eastern conduit, Last (1975: 54-55) argues, was installed later and had approximately four times the capacity of its western counterpart. It is important to note, as Last (*ibid*) points out, the eastern conduit incorporated one of the walls of the so-called "House of the Achilles Mosaic" into its course immediately before it entered Kourion[30]. It is reasonable to assume that the expedient use of this complex's ruined wall dates to some point after the earthquakes of the 360s AD; it is also likely that the eastern conduit is a product of the general rebuilding operations at Kourion following those quakes[31].

[30] Regarding the eastern conduit's date, Last (1975: 55) states "It is also later than the best period of the House of the Achilles Mosaic (*i.e.* the period of the Mosaic) since the aqueduct is built on top of one wall of this house. The mosaic is assigned to the third or fourth century A.D."

[31] Christou (1996: 58) believes that this complex's destruction and final abandonment was cause by "the earthquakes of the second half of the 4th century A.D.".

Last (1975: 43) also identified several interesting "settlements" along the route of the conduits. He notes (*ibid*) that these "settlements" tend to be located "at points along the routes of the conduits as well as elsewhere, usually at the heads of cultivable valleys", and he argues further that they "appear to have been farmhouses, but it may be surmised that the occupants helped in inspecting, maintaining and guarding the conduit in return, perhaps, for the privilege of drawing off water for domestic use". Last (1975: 44, 48) identified these sites at or around the localities of Kapsalia (farm, unidentified material), Konnides (Archaic to Roman material and a slotted press block), and Ayios Yeoryios (Roman material, foundations)[32]. A. Leonard (1986: 98)'s brief survey of the Yerokarka locality to Kourion's northwest identified several discrete scatters, the largest of which included finewares and architectural debris (*e.g.* worked blocks, column drums, marble veneering). His investigation also identified several rock-cut tombs near that locality. Interestingly, Last (1975: 59) also identified a chain of wells at this locality and notes "the remains of a settlement" near the remains of an early church. Last (*ibid*) believes that this feature may post-date the failure of Kourion's water supply but A. Leonard's (1986) survey indicates that this locality was occupied during the Hellenistic and Roman periods and this chain of wells may date to the Hellenistic period[33].

[32] Hadjisavvas (1992) also mentions the press block at Konnides in his survey of ancient olive oil production sites on Cyprus.

[33] A. Leonard (1986) also mentions at least 12 tombs with what appeared "to be very eroded inscriptions in Cypro-Syllabic" which pre-date the Hellenistic phase of activity.

As discussed in Chapter 4, Cyprus' road system (§4.2.3.1.B) and maritime facilities (§4.2.3.1.A) constituted a major interrelated element of the province's strategic infrastructure. Beckker-Nielsen (2004)'s survey of the province's Roman road system has identified 6 (catalogue #'s 1A, 19, 18, 98, 99, 191) road segments in the greater Kourion area. Of these six, 3 pass directly through the SAP's study area (see Map 1). Road 19 is "the oldest route linking Kourion to western Cyprus" (Bekker-Nielsen 2004: 201) and passes through quadrat 13[34]. Road 99, a main route that linked Kourion with Marion, passes through quadrat 08 and appears to have been in place by the second century AD. In the Sotira area, this road essentially follows the modern north-south road running through the Krommya valley to Sotira village[35]. Road 99 also passes through the eastern sector of the Sotira Kaminoudhia Survey's study area. It is likely that Road 98, a main route that linked Kourion with Lapethos, would have passed directly through or closely by SAP quadrat 12(Bekker-Neilsen 2004: 201-217, catalogue #'s 19, 98 & 99)[36].

Several researchers (*e.g.* Leidwanger 2005, 2007; Leonard 2005; Christou 1996) have investigated various aspects of the maritime infrastructure in Kourion's hinterland[37]. The Episkopi Bay Survey's

[34] At a later date, the road 1A replaced road 19 as the main westward route from Kourion (Bekker-Nielsen 2004: 201 and figure 14).

[35] Bekker-Nielsen (2004: 212) has identified chisel-marks and smoothed bedrock at the northern segment of road 99 between Sotira and the locality of Laona.

[36] Bekker-Nielsen (2004: 207) aptly points out that "It is not possible to identify the route of the road between Kandou and Alassa (Khalassa), as the area is intensively farmed and the valley is now partly submerged under the water table of the Kouris reservoir".

[37] See §2.5.3 and the references cited within for Kourion city's harbour infrastructure.

(Leidwanger 2005, 2007) Area I, which investigated the area from Evdhimou bay in the west to the mouth of the Kouris River in the east, produced interesting results. As argued in Chapter 4 (§4.2.3.1.A), Evdhimou bay provides a particularly good example of an interrelated infrastructure such as the Roman Road and the breakwater (Leidwanger 2005) or loading quay (J.Leonard 2005) and productive components, and the possible LRA1 production site and farmstead at the locality of Viklaes/Vournes (Leonard 2005; Leidwanger 2007). Leidwanger's (2005: 20) investigation also recorded a rock-cut passage with "Byzantine graffiti on the walls" leading down to a small anchorage at the coastal location designated Bay 3 in Area I of his study area.

Researchers have also explored select elements of the Kourion hinterland's productive and funerary landscapes. In his survey of Cypriot olive oil production in antiquity, Hadjisavvas (1992) mentions various elements of this productive landscape in the greater Kourion area. Hadjisavvas (*ibid*) has identified press features in and around the Sotira village (standing upright and built into a field boundary wall near the Early Bronze Age site of Sotira Kaminoudhia and at the locality of Kanjelin, see below, §5.4.4), at Sterakovou Phrachti (see below, §5.4.4.4) and in Episkopi at the localities of Agios Spyridon and Konnides (also mentioned by Last (1975)). In her analysis of Cyprus' Roman funerary landscapes, Parks (1999: 55-57, 385, 391) mentions chamber tombs in the vicinity at Kandou and Evdhimou. Perhaps, more importantly, she (1999) mentions the presence of two necropolises, one identified as

Roman, the other identified as Hellenistic-Roman, in the vicinity of Sotira village[38]. One potential location for the Roman necropolis is around the locality of Mandra tou Markou. At this locality, which is located about 1.5km to Sotira village's southwest, Mitford (1971: 304, # 160) has identified a funerary inscription attributable to the second century AD. Regarding the general presence of cemeteries in the landscape, Parks argues, "Cities and villages maintained their own cemeteries outside the settlement limits, while farmsteads probably set aside small tracts" for that purpose (Parks 1999: 378). Given the presence of these necropolises and the funerary inscription, it is reasonable to suggest that a substantial, but unidentified, Hellenistic-Roman settlement existed near Sotira. Additionally, the then Limassol District Archaeological officer, Dr. Eleni Prokopiou (*Pers. Comm.* 2004), informed the present author of several unpublished sites near the SAP's study area. These included tombs (possibly of Bronze Age date) and a small edifice (farmstead or chapel?) near Zanaja village. Other sites mentioned by Prokopiou (*ibid*) include a Late Roman ecclesiastical complex at the locality of Dhyo Ekklishes (two ruined edifices and a spring, near quadrat 11), a substantial site (estate centre?) at the locality of Ayia Napa (near SAP quadrat 12) and Roman period tombs at the locality of Dhiplomata (in quadrat 06).

The Kent State University Episkopi Area Survey (Swiny 1979; Swiny 1981; Swiny 1986; Swiny 2004) conducted an extensive

[38] Parks (1999: 392) notes that the Sotira necropolises are not published but are mentioned on the Cyprus Survey archive (unfortunately, no site number is provided).

pedestrian survey with a study area of approximately 85km^2 bounded by the Kouris River valley in the east and the Evdhimou valley in the west and Sotira village in the north during the late 1970's. Because of various constraints, the project did not attempt to investigate intensively the study area nor did it attempt "to establish a diachronic and comprehensive regional settlement pattern with nominal topographic information on each site" (Swiny 2004: 56). Rather, Swiny (*ibid*) notes that the "focus was on Early to Late Cypriot sites and the methodical recording of archaeological features, the collection of representative artefacts and pottery, and finally the detailed mapping of site boundaries". The project identified 21 prehistoric sites, however, one site, Anoyra Peralisithias, may actually be a Late Roman farmstead. The majority of the sites identified by this project are located to the west of the SAP's study area. However, several of the identified Bronze Age sites are in close proximity to the SAP quadrats 01 and 02 and include the sites/settlements of Hadjina, Pharkonia, Mandra tou Pouppou (Swiny 2004: 57; Swiny 1981). SAP Quadrats 13, 14 and 15 overlap with the Episkopi Area Survey's study area.

The Sotira Kaminoudhia Survey (SKS) (Held 2003) systematically and intensively investigated approximately 313ha surrounding Sotira village in the early 1980s. The SKS project area roughly corresponds to the location of what would have been SAP's quadrat 07. Apart from the Middle Cypriot (Bronze Age) settlement of Sotira Troulli tou Nikola and Early Bronze Age settlement of Sotira Kaminoudhia, Middle Cypriot, Late Cypriot and Cypro-Archaic ceramics are not

abundant in the SKS area. However, apart from discreet site scatters, Held (*ibid*) has noted the presence of a diffuse scatter of red monochrome sherds throughout that project's study area. The discreet scatters fall within the range of approximately 0.04-0.25ha. Nevertheless, the most important site in relation to the present study is SKS S25, Sotira Sternes, and those sites with Roman/Byzantine or later components (sites 18, 10, 04, 58, 85, 02, and a press block near Sotira Kaminoudhia) in the localities of Kaminoudhia, Arkolies, Plathkiastrata, Limnia and Arkappies. Sotira Sternes, interpreted as a large Byzantine farmstead or settlement, may be the precursor of the historically documented but archaeologically elusive mediaeval estate of San Chitino (see below). Sotira Sternes and the other sites with historical components comprise roughly 43.75% of the SKS's recorded sites. In general, the later (*i.e.* Roman-Mediaeval) sites are as close to the area's major springs as their prehistoric counterparts (Held 2003: 467-472, figure 15.1; see Map 1).

Recent work by the Italian Archaeological Mission (Jasink, Bombardieri and Menozzi 2007, 2008) has initiated an interdisciplinary intensive pedestrian survey (KVP) of the Kouris Valley corridor from Episkopi Bay to the southern slopes of the Troodos massif, as well as the western side of Limassol Harbour[39]. The KVP's research questions centre on identifying settlement

[39] A summary of the Italian Archaeological Mission in the Kouris valley's 2007 season is available on the Department of Antiquities website as well as the Databases about Aegean Subjects website. The web sites are www.antiquity.ac.uk/projgall/jasinik/index.html, www.mcw.gov.cy/mcw/DA/DA.nsf/DMLexcavat_en/DMLexcavat_en?OpenDocument and www.dbas.sciant.unifi.it/index.php?c=kouris.

patterns of all periods within the valley, as well as identifying the borders of the Bronze Age city kingdom of Alašiya. To date, their work has identified 14 sites on the Kouris' eastern and western banks. Along the western bank, they have identified two Hellenistic/Roman sites (sites 12 and 13); their investigations along the eastern bank have identified several Bronze Age sites (1, 2, 3 and 10) and necropolises with Bronze Age and later (Geometric, Archaic and Roman) materials. They also note the presence of a diffuse scatter of Classical, Hellenistic, Roman, Mediaeval and Post-Mediaeval materials throughout their study area. Limited trial excavations during the 2008 season at one site, Erimi Laonin tou Porakou (site 10), has revealed both Bronze Age and Hellenistic/Roman architecture. The southern portion of the KVP's study area overlaps with a small portion of the SAP study area in quadrat 12.

Additionally, according to the *Vita* of St. Spyridon, the Moni Symvolos was located in the Kourion area[40]. If the historical memory associated with both the location of the Apollo sanctuary and various toponyms that reference relic/non-existent landscape elements (*e.g.* §3.3.5.1 – 3.3.5.3) are any indicator of this phenomenon's general trend in the greater Kourion area, one potential location for this monastery that merits investigation is the area surrounding the former Symvoulos Chiftlik[41]. The area is just over 6km to the west of Kourion via Bekker-Nielsen (2004)'s

[40] The *vita* of St. Spyridon states that Theodore of Paphos was a monk at the Moni Simvolos near Kourion (Dikigoropolos 1965-1966).

[41] See UTM 3838 4830 on the 1:50,000 topographical map (sheet LII/LIII).

road 19 and is located in close proximity to the junction between Bekker-Nielsen (2004)'s roads 1a and 19 (see Map 1). The area now lies within the confines of Episkopi Garrison. The chiftlik area is also in close proximity to the SAP's quadrats 13 and 14. It is important to note that in quadrat 13 the SAP identified a built double cistern of Late Roman date (SAP locus 97-15) that is located approximately 1.5km to the west of the Chiftlik area. According to Goodwin (1978: 803), the Symvoulos Chiftlik formed the core of the Frankish fief of Sinbali[42]. J. Leonard (2005: 569) notes that in the early 20th century AD, the chiftlik's owner operated "his own local port at the bottom of the Symvoulos River Valley". It is reasonable to suggest that this small anchorage could have also operated in Late Antiquity in the same way as Evdihmou Bay did for its immediate area (see above § 2.5.2.2.A.i)[43]. However, the SAP's (Swiny and Mavromatis 2000) investigations of the Symvoulos River outlet's eastern bank (quadrat 13) did not reveal any discrete loci comparable to those observed at Evdihmou Bay by Leidwanger (2005, 2007) and J. Leonard (2005). Thus, although the presence of the cistern indicates Late Roman activity in the area, the issue can only be resolved through systematic investigation of the anchorage's surf zone as well as the Symvoulos River outlet's western bank and

[42] Goodwin (1978: 803) notes that the name Sinbali is a Frankish corruption of Symvoulos. Goodwin (*ibid*) states that the toponym means "one who gives advice".

[43] The CCS, J. Leonard (2005: 569) notes, did not investigate this area in See, J. Leonard (2005: 1002-1003) for a discussion of local shipping during the early 20th century AD at this location associated with the chiftlick.

additional systematic survey work at the former Chiftlik and its surroundings.

The historical record (text and cartographical) indicates that several mediaeval estates are located in close proximity to the SAP project area or are in the study area itself. In general, the location of these estates tends to correlate with the distribution of modern villages within the project area. Feudal estates from the project area include Kandou (Cantu), Zanaja (Zabaca), Episkopi (Piscopia), Paramali (Piramati), Evdhimou (Audimo), Khivides (Chivida), Sotira (San Chitino?) and Sterakovou (Cata?) (Goodwin 1978: 237, 244, 290-291, 369, 420, 663-664, 782, 795, 889-890; Stylianou and Stylianou 1980). This, in turn, suggests that the modern pattern of settlement in the SAP project area has its origins in the mediaeval period.

5.4. The Sotira Archaeological Project Survey II: Data Presentation

This subsection presents the loci identified by the SAP survey. It is divisible into two main sections: the first presents select data on the loci identified by the SAP, the second presents a general analysis (§5.4.2) of the data followed by more in-depth analysis of the Roman and Late Roman loci (§5.4.2.2). In 1997 the SAP identified 34 loci which consisted of 3 settlements, 20 sites, 6 discrete scatters, and 5 isolated finds or finds (see Map 1). These loci range in date from the Cypriot Neolithic to the modern periods. Because the results of the SAP's 1997 field season have been

published in a preliminary fashion by Swiny and Mavromatis (2000), this subsection presents the pre-Roman and modern loci in a general way but provides more detail on the Roman and Late Roman loci reinvestigated in 2004. However, because of the limitations mentioned above, the supplementary loci added during the 2004 season are presented in a very cursory way. The complete 1997 SAP settlement and site gazetteer is presented in appendix III.

The SAP identified 3 prehistoric settlements attributable to the Neolithic (97-20) and Bronze Age (Early Cypriot – Middle Cypriot) (97-13; 97-19), 1 discrete multi-phase Chalcolithic-Late Roman scatter (97-10), 3 discrete Bronze Age (Early Cypriot - Middle Cypriot) scatters (97-25; 97-26; 97-23), and 1 isolated Bronze Age find. Locus 97-20, a Neolithic settlement, is situated on a hilltop at approximately 46masl in quadrat 15. In 1997, field walkers first identified materials from this settlement in the cultivated fields below the hilltop. Subsequent investigation on the hilltop identified several unconnected badly preserved wall alignments and igneous quern fragments. This settlement is approximately 2.42ha and is situated on very shallow (0.10-0.25m) Sotira (SO) and Pakhna series (PA_1) soils. The nearest source of fresh water, the Paramali River, is over 500m to the west. The SAP identified a discrete scatter, locus 97-10, with Chalcolithic and Late Roman material in quadrat 12. This scatter is situated on a river bench in the Kouris River valley at approximately 108masl and is underlain by comparatively deep (≥1.00m) Zyyi series soil. The discrete scatter of ceramics covered an area of approximately 0.310ha across two (an

upper and lower) traditional agricultural terraces. Comparatively, the Chalcolithic materials outnumbered the Late Roman materials (*i.e.* a few sherds attributable to LRA1 and pithos); no roof tile or building materials were present at this locus. Between 1997 and 2004, large sections of the traditional terrace walls collapsed and deep rills developed across both terraces. Interestingly, at the time of reinvestigation in 2004, 97-10 lost approximately 65 percent, or 0.201ha, of its 1997 area. However, Chalcolithic sherds still comprised the majority of the surface assemblage in 2004; later ceramics consisted mostly of non-descript monochrome reddish brown wheel-made sherds.

The two Early Cypriot – Middle Cypriot (EC-MC, Bronze Age) settlements, loci 97-13 and 97-19, are located in quadrats 01 and 02 respectively. At approximately 10ha, locus 97-13 is the larger of the two EC-MC settlements and one of the largest loci discovered by the SAP. Locus 97-13 is located on a river terrace overlooking the Paramali River at approximately 184masl in quadrat 01. Tymbou (T) exposed limestone and very shallow/shallow (0.10-0.50m) Pakhan (PA_1; PA_2) series soils underlay this settlement. Ground visibility at this settlement was poor to moderate: dense scrub, and in some cases thick pine needle litter, obscured most of the abandoned agricultural terraces. The Paramali River is the closest source of fresh water and is within 500m of the settlement. Apart from lithic and ceramic scatters, investigation in the scrub revealed 3 looted tombs and several large saddle querns that had been incorporated into the traditional agricultural terraces in the settlement's

northern sector. Perhaps the most important find from 97-13 is a crucible fragment (locus 97-32) with residual copper prills adhering to its surface. This crucible fragment, Swiny and Mavromatis (2000: 435) argue, indicates the presence of "metal working...in this narrow but heavily populated valley".

The second EC-MC settlement, locus 97-19, is situated on a narrow ridge top at approximately 224masl overlooking the Paramali River, and a seasonal drainage in quadrat 02. The site is approximately 1.19ha; very shallow (0.10-0.25 m) Pakhna (PA1) series soils underlie this site. Apart from Tymbou limestone, the soils surrounding this settlement consist of shallow (0.10-0.50m) Sotira and Pakhna series soils. Though considerably smaller than locus 97-13, locus 97-19 produced a range of EC-MC fine wares and pithos, architectural debris (*e.g.* over 12 threshold blocks and rubble), mortars, rubbing stones, Senet gaming stones, querns and several fragmentary bridge spouted troughs (locus 97-33)[44]. Surface visibility at this settlement was fair; however, it is important to note that areas of the ridge were badly eroded. Unfortunately, already in 1997, stone miners were operating in this settlement's northern sector. The SAP also identified 3 EC-MC discrete scatters, loci 97-25, 97-26 and 97-23, located in quadrats 06 and 04 (see map 1). Topographically, these loci are all located on southern sector

[44] Regarding locus 97-19, Swiny and Mavromatis state that "The most striking aspect of Paramali-*Lochos* is the truly phenomenal number of saddle querns and rubbing stones littering the surface of the ridge; all of those from three randomly chosen 30 x 30m square were counted, the average being 20 pieces per square. If this number is extrapolated for the site as whole, around 1500 querns would litter the surface alone". For a discussion of Senet gaming stones, see Swiny (1981).

of the plateau formed by the Symbolos drainage and a tributary of the Farkanas-Paramali drainages. Tymbou limestone (*i.e.* 97-23) and very shallow (0.10-0.25m) Sotira series soils (*i.e* 97-25; 97-26) underlie these discrete scatters. These discrete scatters range in size from 0.0549ha to 0.4235ha. The assemblages from these loci are predominately composed of coarse wares and comparatively few fine wares. One possible interpretation is that these discrete scatters may represent activity areas or special purpose sites possibly associated with agriculture. Finally, the SAP identified one isolated find, Locus 97-30 a gamming stone, attributable to the Bronze Age, in quadrat 04 approximately 500m to the southeast of a discrete scatter of EC-MC material (97-23).

The Archaic through the Hellenistic periods are poorly represented within the 1997 SAP study area. Loci attributable to the Archaic period are concentrated in quadrat 12 and consist of two looted cemetery sites, Loci 97-11 and 97-12. Both of these sites are located in the Kouris River Valley on moderately sloping river terraces at approximately 135masl. Both were looted before 1997. Their estimated area is 0.223ha and 0.813ha respectively. Tymobu (T) and shallow (0.10-0.25m) Pakhna series soils (PA_1) underlie these sites. Apart from a Hellenistic horse and rider terracotta figurine fragment from Locus 97-02, a Late Roman farmstead site, in quadrat 11 (see below §5.4.1.2) the SAP recovered two isolated sherds loosely attributable to the Classical and Hellenistic periods in quadrat 06 (see Map 1, figure 5.3).

The SAP also identified several modern loci in quadrats 01 and 02. Loci 97-18 and 97-31, two modern olive crushing installations, are located in quadrat 01 and fall within the boundary area of the EC-MC settlement, locus 97-13, noted above. At the time of discovery in 1997, scrub covered these two activity area sites. In quadrat 02, the SAP located the remains of a badly preserved monumental (early?) modern threshing floor, locus 97-34, within the confines of the EC-MC settlement, locus 97-19, which occupies the ridge top at the locality of Lokhos. Recent (in 1997) stone quarrying along the ridge destroyed most of the threshing floor (see Map 1).

In 2004, the author had the opportunity to visit briefly six loci (04-01, 04-02, 04-03, 04-04, 04-05 and 04-06) outside the SAP study area. Several of these are presented in more detail below (§5.4.1.12). Among the more important of these are the multi-phase (LR olive oil production site and a modern limekiln) site of Sotira Ambelija (04-02), the multi-phase site (LR estate centre(?), Mediaeval chapel) of Ayia Napa in the Kouris Valley just to the south of quadrat 12, and the Late Antique farmstead/estate centre of Sotira Sternes (04-01). Other loci consisted of a Roman(?) period cemetery (04-05) and a potential farmstead (04-05) around Zanaja village, as well as the Roman or Late Antique tombs in quadrat 06, and the site complex at Dhyo Ekklishes just to the northwest of quadrat 11 mentioned by Prokopiou (*Pers. Comm.* 2004). However, due to time and fieldwork permit constraint, I was unable to record these loci in more detail (*i.e.* intensive surface walkover and photographs).

5.4.1 Roman and Late Roman loci revisited in 2004

For the reasons outlined above (§5.3), it was deemed necessary to reinvestigate several of the more exposed Roman and Late Roman loci discovered during the 1997 season. For clarity, the data is presented in two parts. The first group, subsections §5.4.2.1-5.4.2.10, present those loci interpreted as sites and the second group, §5.4.2.11, presents those loci interpreted as discrete scatters. SAP quadrats reinvestigated in 2004 included 01, 04, 05, 06, 11 and 15.

5.4.1.1 Locus 97-01

Locus: 97-01
Quadrat: 11
DLS 17: **53/**XX & XXI
Quadrat Cadastral plan: 36, 44, 37 and 45
Locality: Aspri Moutti
UTM: 36s E490638 N3842358
MASL: 306
Soil: Tymbou (lithosol)
Soils within 250m: Tymbou (T, lithosol), Sotira (SO, Regosol), Pakhna (PA_2, Regosol), Pissouri (PI_2, Cambisol) and Vasilia (VA;VA_2, Cambisol) series soils
Topographical Setting: Plateau, uncultivated field w/trees
1HA Slope Grade: 1%
Aspect: South
Estimated Area: 1853m^2
Suggested Date & Function: Site, LR-BYZ, Farmstead complex
Site condition: Excellent
Architectural features: Yes
Research potential: High
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004 and entered onto the Department's cadastral plan.

Locus 97-01, a farmstead site, is located at approximately 306masl on gently south sloping terrain in quadrat 11 (see figure 5.3). The mound that constitutes the site core is a highly visible

and distinct topographical feature in its immediate landscape. Apart from the Tymbou limestone that underlies this site, the 1:25,000 soils series map shows 4 additional soil types within a 250m radius of the site. These include Sotira, Pissouri, Pakhna and Vasilia series soils. Since 1997, brushfire(s) had killed the majority of the olive, carob and pine trees from the fields surrounding Locus 97-01. At the time of reinvestigation in 2004, several clusters of pine, carob and olive trees, scrub and grasses, still covered the small rise that constitutes the site (see figure 5.4). Unsurprisingly, the grasses, scrub and pine needles covering the architectural core produced poor ground visibility conditions at this locus. Several SAP loci, 97-22, 97-02 and 97-07, are in close proximity to locus 97-01. Additionally, this site is located approximately 415m east of the Souni branch of Kourion's aqueduct.

Locus 97-01's visible architectural features consist of several elements: a threshing floor on exposed rock, which is similar in size to locus 97-02's threshing floor, and the foundations of two rectangular rooms (designated A and B on the plan), and a stretch of irregular dry laid wall (see figure 5.5 and 5.6). As preserved, room A is approximately 30 meters long by 40m wide (approximately 1200m^2). Room B, located to the east of room A, is approximately 30 meters long by 10m wide (300m^2). The complex's interior area is 1500m^2. Room A's interior ground surface slopes slightly to the southwest and forms a depression within that room's southwestern quadrant. Approximately half of an ovoid (0.45m exposed width and 0.12m thick) perforated (0.10m socket) stone weight is visible above the fist-

sized rubble within the interior depression in room A (see figure 5.7). The complex's walls are composed of roughly worked blocks and irregular stones. On average, they are approximately 0.50-0.60m wide and stand to a preserved height of approximately 0.20m above the present ground surface level. Inspection of the more exposed sectors of the wall alignments in 1997 and 2004 did not reveal lime mortar or clay-bonding agents. A large (1.50m length by 0.60 width) threshold block (with a pivot?) is visible in room 2's southern wall (see figure 5.8). Although not in situ, a large grooved or slotted block was also visible at the convergence of the edifice's northern and western walls (see figure 5.9)[45]. In short, based on their similar construction and the uniform bonding between the individual wall alignment intersections, it is reasonable to suggest that both rooms belong to the same phase of the structure's use life.

The complex's threshing floor (C) is similar to locus 97-02's and was composed of the exposed Tymbou limestone. This feature's northern half is its best-preserved sector. Additionally, a small stretch (5m) of an irregular dry laid fieldstone wall (preserved maximum height 0.40m and a preserved maximum width of 0.50-0.60m) is also associated with the threshing floor. Unfortunately, at present, it is not possible to say with any degree of certainty whether this stretch of wall is contemporary with the 2-room complex to its north. Swiny (1979: 301) has identified a similar but much smaller

[45] The Department of Antiquities has removed this block from the site (Prokopiou *Perscom* 2004).

structure (approximately 500m^2) at Anoyra Peralisithias without an associated threshing floor.

In order to examine the distribution of surface materials at this locus, a total of 132 5m x 5m surface counting units distributed across 11 60m long transects were laid out across 97-01's architectural core (rooms A, B and the north half of the threshing floor(C)). This surface counting grid was orientated 5 degrees east of magnetic north, and the southwestern corner of the most southwestern unit was arbitrarily assigned a grid coordinate of E2000 N1000 (see figure 5.5 and figure 5.10). The surface assemblage consisted primarily of badly abraded dark reddish brown wheel-made body sherds, several pithos rims and one large base from a plainware vessel. Fine wares and roof tiles were not present within any of the counting units. In general, the surface ceramic assemblage from this locus is quite poor and diffuse. Similarly, chipped stone was not present within or around the threshing floor area. In 2004, stone scavengers/miners (as evidenced by the two bulldozer soundings to the east and north of the architectural remains) and a proposed road expansion project directly threatened this site's integrity[46].

5.4.1.2 Locus 97-02

Locus: 97-2
Quadrat: 11
DLS 17: **53/**XX & XXI
Quadrat Cadastral plan: 36, 44 ,37 and 45

[46] A large bulldozer swath is visible to the east of the site and several robbed out hollows are visible along the southern portion of the threshing floor's perimeter wall (*Pers. Obs.* 2004). Eleni Prokopiou (*Pers. Comm*. 2004) informed me of the now delayed roadwork project at the CARRI workshop (2004).

Locality: Aspri Moutti
UTM: 36s E490782 N3841313
MASL: 224
Soil: Pissouri (PI_3, Calcaric Cambisol)
Soils within 250m: Pissouri (PI_3, Calcaric Cambisol), Tymbou (T, lithosol), Sotira (SO, Regosol), Zyyi (ZY, Calcaric Cambisol) series soils
Topographical Setting: Mid-slope bench
1HA Slope Grade: 20%
Aspect: Southwest
Estimated Area: 2401m^2
Suggested Date & Function: Site, LR-BYZ, Farmstead w/Hel–RO component?
Site condition: Poor
Architectural features: Yes
Research potential: Low
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.

Locus 97-02, a farmstead site, is located on a moderately southwest sloping mid-slope bench at approximately 224masl in quardat 11 (see figure 5.3). Apart from the moderately deep 0.50-0.75m) Pissouri series soil that underlies this locus, the 1:25,000 soil series map shows 3 soils within a 250m radius of this locus. These include Zyyi and Sotira series soils as well as Tymbou limestone. In 2004, the area immediately surrounding this site showed clear signs of recent mechanical disturbance. The landowner informed the Limassol District officer that he had bulldozed the remains of several edifices around locus 97-22 and 97-02 because he believed that they were early “modern structures”. The landowner’s activities also included the levelling of several traditional terraces to the site’s north, as well as the in filling of several gullies to the site’s west. As preserved in 2004, 97-02 still consisted of several visible elements that included a small concentration of ceramics, the remains of one circular threshing

floor and the disarticulated and heavily eroded remains of a rectangular structure. It is important to note that the terrain surrounding the site consisted of exposures of Tymbou limestone and incised runoff channels and rills (see figure 5.11). Locus 97-02 is in close proximity to loci 97-22 and locus 97-01 in quadrat 11. Locus 97-02 is also located approximately 500m west of the Souni branch of Kourion's aqueduct.

The rectangular structure's east wall is approximately 0.50m in height and ranges in thickness from 0.80-1.00m; it has a preserved maximum length of 4.40m (see figure 5.12). The southern wall is 0.45m in preserved height, ranges in thickness from 0.80-0.90m, and has a preserved maximum length of 13.00m. The structure's estimated area is approximately (length 20m width 13m) 260m^2 and its interior consists mostly of exposed Tymbou bedrock and small patches of (recent?) colluvial sediment. The associated circular threshing floor is located approximately 25m to the rectangular structure's north. The threshing floor's associated southern wall segment stands to a preserved height of 0.80m and is 0.70m wide. Its interior surface consists of exposed Tymbou limestone in the east and a moderate scatter of fist-sized rubble on top of a thin deposit of colluvial sediment in the west.

Observed artefacts from within the confines of the threshing floor consisted of 5 badly abraded reddish brown wheel-made body sherds and two igneous stone fragments. Observed artefacts from within the rectangular structure's reconstructed bounds consisted of one white chipped flint flake. Roof tiles or finewares were not

present within the reconstructed bounds of either the rectangular structure or threshing floor. However, about 20m to the northwest of the architectural remains, the frequency of visible ceramics began to increase steadily around a small, but noticeable, rise in the micro relief. Investigation of this area with 10 2m circular counting units orientated along a north-south (magnetic north) transect at an interval of 5m identified 20 coarse ware pithos and non-diagnostic wheel-made thin walled brownish red body sherds and a fragment of a terracotta horse and rider figurine attributable to the Hellenistic or early Roman periods[47]. It is important to note that the mechanical disturbances mentioned above truncated this scatter's northern sector.

5.4.1.3 Locus 97-07

Locus: 97-07
Quadrat: 11
DLS 17: **53/**XX & XXI
Quadrat Cadastral plan: 36, 44, 37 and 45
Locality: Pefkeri/Aspri Moutti
UTM: 36s E490553 N3842461
MASL: 314
Soil: Vasilia (VA_2, Cambisol)
Soils within 250m: Tymbou (T, lithosol), Sotira (SO, Regosol), Pakhna (PA_1, Regosol), Pissouri (PI_2, Cambisol) and Vasilia (VA_2, Cambisol) series soils
Topographical Setting: Plateau edge, uncultivated field
1HA Slope Grade: 9%
Aspect: Southeast
Estimated Area: less than $400m^2$
Suggested Date & Function: Site, UNK (LR?), lithic reduction and/or retouch station
Site condition: Destroyed before 2004 but after 1997
Research potential: None
Digital/Regular Photographs: Yes
Status: -

[47] Eleni Prokopiou (*Pers.* Comm. 2004) collected this item and brought it to the Limassol museum.

Locus 97-07, a small-undated discrete lithic scatter site, is located on a relatively flat plateau edge overlooking a seasonal drainage at approximately 314masl in quadrat 11 (see figure 5.3). Apart from the shallow (0.25-0.50m) Vasilia series soil that underlies this site, the 1:25,000 soil series map shows 4 additional soils within a 250m radius of this locus. These include Tymbou limestone, shallow Sotira, and Pissouri series soils. The assemblage consisted primarily of flakes attributable to secondary stage reduction. Unfortunately, at some point prior to the 2004 season, mechanical soil mining destroyed this locus in its entirety. It is reasonable to suggest that this locus may have served as a lithic retouch workstation. It is also possible that this locus is contemporary and associated with loci 97-01, 97-02 and 97-22. Alternately, 97-07 may represent modern activity within the landscape such as the production of doukani blades, for example.

5.4.1.4 Locus 97-22

Locus: 97-22
Quadrat: 11
DLS 17: **53/**XX & XXI
Quadrat Cadastral plan: 36, 44,37 and 45
Locality: Aspri Moutti
UTM: 36s E490910 N3841768
MASL: 288
Soil: Zyyi (ZY, Calcaric Cambisol)
Soils within 250m: Pissouri (PI_3, PI_2 Calcaric Cambisol), Tymbou (T, lithosol), Sotira (SO, Regosol), Zyyi (ZY, Calcaric Cambisol) series soils
Topographical Setting: Field
1HA Slope Grade: 7
Aspect: Southwest
Estimated Area: 3404m^2
Suggested Date & Function: Site, LR-BYZ, structure/estate centre(?)

Site condition: Poor/bulldozed
Research potential: Low
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004.

Locus 97-22, a probable estate centre, is located below a hill in a slightly southwestern sloping field at approximately 288masl in quadrat 11 (see figure 5.3). Apart from the Zyyi (ZY) series soil that underlies the site, the 1:25,000 soil series map shows 3 additional soil types within a 250m radius of this site. These include shallow (0.25-0.50m) and moderately deep (0.50-0.75m) Pissouri and Sotira series soils as well as Tymbou limestone. In 1997, the moderately dense scatter of building material, ceramics, and roof tile covered a comparatively large area. The field had a high level of visibility in 1997 because the plot's owner had recently bulldozed this field. Investigations in 1997 identified open form body sherds with a reddish-brown fabric with a deep red slip and roulette decoration (CRS?), as well as open form sherds in a light red fabric with a reddish slip (LRC?), which were not attributable to a particular form. Other observed artefacts included Corinthian-style roof tile fragments, a LRA4 flat bottom base and pithos sherds[48]. By 2004, the field containing 97-22 had very poor surface visibility; grasses and scrub also covered the fields to the north and south of locus 97-22. In 1997, 97-22's surface area was approximately 0.34ha; by 2004, it had lost nearly 90%, or 0.31ha, of its 1997 area. As a result, no systematic counting of surface artefacts was undertaken within the field. This locus also had a

[48] The base is similar to Rautman and colleagues' (2003) figure 5.11 #150.

large diffuse elliptical (the long axis orientated north-south) halo that was primarily concentrated to the site's north. Perhaps the most surprising development in 2004 was the almost total disappearance of this large diffuse halo scatter.

Additionally, inspection of the less overgrown sections of a nearby northern terrace wall in 2004 revealed several ashlars and roughly worked blocks incorporated into it (see figure 5.13). It is likely that these blocks are reclaimed materials that originated from the ruined structure (with architectural remains above the plough zone) that occupied the field prior to bulldozing in 1997. Other loci in close proximity to 97-22 are 97-01, 97-02 and 97-07 and the Souni branch of Kourion's aqueduct.

5.4.1.5 Locus 97-05

LOCUS: 97-05
Quadrat: 05
DLS 17: **53/**XVIII
Quadrat Cadastral plan: 34 and 42
Locality: Drousha tou Lakkou
UTM: 36s E484561 N3841720
MASL: 350
Soil: Vasilia (VA_2, Calcaric Cambisol)
Soils within 250m: Vasilia (VA; VA_2, Calcaric Cambisol), Sotira (SO, Calcaric Regosol)
Topographical Setting: Plateau, uncultivated field
1HA Slope Grade: 8%
Aspect: South
Estimated size: 6515m^2
Suggested Date & Function: Site, LR/BYZ, Farmstead/Estate centre complex
Site condition: Excellent
Research potential: High
Digital/Regular Photographs: Yes
Status: Immediate danger, site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.

Locus 97-05, a farmstead/estate centre site, is situated on a slightly south-sloping uncultivated field with poor to moderate visibility at approximately 350masl in quadrat 05 (see figure 5.14). Like Locus 97-01, the mound that constitutes Locus 97-05's core forms a distinct topographical feature in its immediate landscape, and is approximately 40m to the east of a north-south trail that runs across the western portion of the plateau and into quadrat 06. Apart from the shallow (0.25-0.50) Vasilia soil that underlies the site, the 1:25,000 soil series map shows shallow Sotira and very deep (≥1.00m) Vasilia series soils within a radius of 250m of the site.

Grasses and several olive and carob trees covered the site's core in 1997; by 2004, low scrub also covered portions of the site mound. In 1997, a distinct debris halo of sherds and small rubble extended out about 100m from the mound's centre (see figure 5.14). However, in 2004, this halo was no longer fully discernable because the fields surrounding the site mound were not cultivated. Perhaps more importantly, the owner(s) of the fields to the site's north and east mechanically stripped off the top soil and began quarrying the underlying bedrock[49]. Five depressions, similar to those observed at Sotira Sternes (Held 2003: SKS's S25), and Sotira Ambelija, are visible among the visible well-constructed wall alignment at the site (see below, §5.4.1.11). A large square-like depression (10m x 12m) is also visible at the site's north-western edge. Several large

[49] I witnessed this activity first hand. Upon my approach, the JCB operator turned off his machine, ran off to a nearby car, and departed the site before I could talk to him. Later, Eleni Prokopou informed me that the area is designated as a environmental preserve and that quarrying is forbidden.

blocks, possibly from a press, are located at the site's northern edge. Almost all of the visible surface artefacts were partially imbedded in the sediment covering the mound. These consisted of a limited amount of small sherds attributable to an open form vessel with a reddish-brown fabric and a deep red slip (CRS?), roof tiles, pithos rims, body sherds as well as coarse and plainware sherds[50]. The loose artefacts on the mound's surface consisted of roof tile and coarse and plainware sherds (see figure 5.16). Additionally, investigations around the base of the site mound indentified a bluish-grey igneous ground stone fragment attributable to a shallow basin, which can reasonably be associated with olive oil prodcution (see figures 5.17). However, at the time of reinvestigation in 2004, stone miners from Khividhes directly threatened the site's integrity[51]. These mining operations have differentially impacted the site's eastern and northern edges (see figure 5.18). Undoubtedly, these mining activities have destroyed the northern and eastern portions of the site's halo. Locus 97-05 is in close proximity to Locus 97-06 and locus 97-24, both of which are in quadrat 05.

5.4.1.6 Locus 97-06

Locus: 97-06
Quadrat: 05
DLS 17: **53/**XVIII
Quadrat Cadastral plan: 34 and 42
Locality: Drousha tou Lakkou
UTM: 36s E484926 N3841524
MASL: 362

[50] One plainware rim sherd had a similar profile to a sherd from Kalavasos Kopetra (Rautman *et al* 2003: 190, fig. 5.8 #97).

[51] Prokopiou (*Pers. Com.* 2004)

Soil: Vasilia (VA_2, Calcaric Cambisol)
Soils within 250m: Vasilia (VA; VA_2, Calcaric Cambisol), Sotira (SO, Calcaric Regosol)
Topographical Setting: Plateau, uncultivated field
1HA Slope Grade: 8%
Aspect: South
Estimated size: 1682m^2
Suggested Date & Function: Site, LR/BYZ, Farmstead
Site condition: Poor
Research potential: Low-moderate
Digital/Regular Photographs: Yes
Status: site visited by Limassol District officer on June 26 2004.

Locus 97-06, a farmstead site, is located in a slightly south sloping uncultivated field at approximately 362masl in quadrat 05 (see figures 5.14, 5.19). Like locus 97-05, the mound that constitutes locus 97-06's core forms a distinct topographical feature in its immediate landscape and is approximately 190m east of the main unimproved road leading to Sterakovou village. Apart from the shallow (0.25-0.50m) Vasilia series soil that underlies the site, the 1:25,000 soil series map shows 2 additional soils types within a 250m radius of the site. These soils consist of shallow Sotira and very deep (≥1.00m) Vasilia series soils. Dense grass, several trees and bushes covered the site mound during investigations in 1997 and 2004 (see figure 5.19). Unfortunately, bulldozing severely damaged the site's central and southern sector prior to 1997 and created a large "u" shaped depression in the site mound's centre. Inspection of an exposed and bisected section of the edifice's northern wall revealed a carefully constructed alignment approximately 0.60m thick and preserved to a height of approximately 1.10m composed of roughly worked limestone and rubble bonded with a pale yellowish mortar (see figure 5.20). The site's north-eastern

sector is better preserved; a depression, like those found at loci 97-01, 97-05, and Sotira Sternes (Heald 1988), occupies this sector of the site. It is reasonable to suggest that this depression is a cistern. During walkovers of the site core in 1997 and 2004, building rubble, a worked block, pithos, amphora, and a few fine ware body sherds (light red fine grain fabric with a light red slip, LRC?) were visible on the surface surrounding the bulldozed cut in the structure's centre (see figure 5.21). In 1997, investigations in the field to this locus's south identified an abundant elliptical smear of building material (long axis orientation east-west) that extended about 50-60m south from the site's centre. It is likely that this debris smear was the product of bulldozing at the site prior to 1997. However, by 2004, a systematic walkover in the now uncultivated field to the site's south revealed that this debris smear consisted of a small concentration of rubble. Because of the very poor surface visibility conditions at this locus in 2004, no further work was undertaken. Locus 97-06 is in close proximity to loci 97-05 and 97-24, both of which are in quadrat 05.

5.4.1.7 Locus 97-04

Locus: 97-04
Quadrat: 06
DLS 17: **53/**XVIII & XIX
Quadrat Cadastral plan: 34, 35, 42 and 43
Locality: Vathkia Jilla
UTM: 36s E484896 N3841081
MASL: 318
Soil: Sotira (SO, Calcaric Regosols)
Soils within 250m: Kafkalla (K, Calcaric Lithosol), Tymbou (T, Calcaric Lithosol), Sotira (SO, Calcaric Regosol)
Topographical Setting: Plateau edge, uncultivated field
1HA Slope Grade: 10%

Aspect: Southwest
Estimated size: 3579m^2
Suggested Date & Function: Site, LR/BYZ, Farmstead/Estate centre
Site condition: Fair
Research potential: Moderate
Digital/Regular Photographs: Yes
Status: Immediate danger, site visited by Limassol District officer on June 26 2004 and entered on the cadastral plan.

Locus 97-04, a farmstead site, is located in an intercropped, slightly sloping field at approximately 318masl in quadrat 06 (see figure 5.22). The site is located at the transition between a plateau to its north and a ridge to its south. Apart from the shallow (0.25-0.50m) Vasilia series soil that underlies this locus, the 1:25,000 soil series map also shows Sotira series soil and exposed Kafkalla within a 250m radius of this locus. Unlike the sites in quadrat 05, locus 97-04 did not have a central mound. However, it is important to note that recent mining activities around the site have altered its surrounding landscape to a very high degree. In 2004, quarry spoil directly covered or obscured approximately 90 percent (about 1513m^2) of 97-06's surface area as recorded in 1997. Additionally, the movement and parking of heavy equipment (bulldozers, JCBs and dump trucks) at this locus also truncated its surface signature (see figure 5.23). At the time of investigation, heavy equipment occupied the spoil free section of the locus. Because of these conditions, it was not possible to reinvestigate this site in a more systematic manner. However, limited investigations at the site's more accessible portions revealed concentrations of building and architectural debris, including roof tile fragments and worked stone, as well as a few

coarse ware sherds (pithos sherds) (see figure 5.24). Locus 97-04 is in close proximity to 97-05, 97-06 and 97-03 as well as the Roman period tombs at the locality of Dhiplomata (*Pers. Comm.* Eleni Prokopou 2004) and a discrete scatter attributed to the Late Roman period at the same locality.

5.4.1.8 Locus 97-03

Locus: 97-03
Quadrat: 06
DLS 17: **53/**XVIII & XIX
Quadrat Cadastral plan: 34, 35, 42, and 43
Locality: Kyparissovounos
UTM: 36s E485135 N3840581
MASL: 282
Soil: Sotira (SO, Calcaric Regosol) and ridge of Kafkalla (K, Calcaric Lithosol)
Soils within 250m: Sotira (SO, Calcaric Regosol), Kafkalla (K, Calcaric Lithosol)
Topographical Setting: Ridge overlooking uncultivated field
1HA Slope Grade: 1%
Aspect: Southwest
Estimated size: 3303m^2 tombs along ridge; 13303m^2 with debris in field to the west ridge
Suggested Date & Function: Site, LR, Cemetery (complex?)
Site condition: Poor, looted
Research potential: Moderate
Digital/Regular Photographs: Yes
Status: site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.

Locus 97-03, an extensively looted (pre-1997) cemetery with 10-12 visible cist tombs, is located on the western face of a small (100m) north-south curving ridge at approximately 282masl in quadrat 06 (see figure 5.22). The cist tombs located along the ridge's comparatively steep western slope overlook an unploughed field (see figure 5.25). Shallow Sotira series soil and exposures of Kafkalla underlie this site and are the main soil types within a radius of

250m of the site. In general, visibility at the site was poor to moderate in 2004; the movement of heavy machinery across the ridge top caused moderate to heavy disturbances and subsequent erosion.

The ceramic assemblage from both the northern and southern sectors of the ridge consisted of a few unidentifiable, badly abraded reddish brown sherds as well as sherds attributable to a plainware jug/pitcher; no diagnostic ceramics were observed (see figure 5.26). The most notable find identified from the ridge sector is a large intact limestone sarcophagus lid with a drafted medial margin (length =2.20m, width= 0.95m, thickness= 0.25m, margin width= 0.10m) (see figure 5.27)[52]. Because of the disturbances mentioned above and the thick grasses-scrub that covered the field below the ridge, the site was not systematically gridded. Examination of the spoil that the looters piled up by the tombs and within the field did not reveal human remains or any associated grave goods. However, examination of the spoil and the terrace walls in the lower field's northern sector revealed architectural elements such as a column capital and a sarcophagus lid fragment. Additionally, several other fragmentary worked architectural blocks are visible in a field to the site's west (see figure 5.28). One trapezoidal limestone block (mullion), also preserved the traces of a battered illegible inscription followed by a vegetal motif (see figure 5.29). The site terminates in the south with a rectangular cist tomb (length =3.50m, width= 1m) orientated on an east-west axis. Based on what is exposed, a small chamber appears to be opening off the tomb's east

[52] The Department of Antiquities removed this lid in 2004.

wall at approximately 0.90m below surface level (see figure 5.30). The British military also used several of the southern tombs as machinegun nests during their training exercises. Based on the amount and quality of the architectural remains at the site, it is reasonable to suggest that a funerary basilica or chapel was also part of this site. Like locus 97-04, Locus 97-03 is in close proximity to 97-05, 97-06 and 97-04, as well as the Roman period tombs at the locality of Dhiplomata (Eleni Prokopou *Pers. Comm.* 2004) and a discrete scatter attributable to the Late Roman period at the same locality.

5.4.1.9 Locus 97-08

Locus: 97-08
Quadrat: 04
DLS 17: **53/**XVIII & XVII
Quadrat Cadastral plan: 33, 34, 41 and 42
Locality: Sterakovou Village
UTM: 36s E483352 N3841367
MASL: 290
Soil: Sotira (SO, Calcaric Regosol)
Soils within 250m: Sotira (SO, Calcaric Regosol), Tymbou (T, Calcaric Lithosol), Vasilia (VA_2, Calcaric Cambisol)
Topographical Setting: Mid-slope bench, field
1HA Slope Grade: 12%
Aspect: South
Distance to water: less than 500m to spring
Estimated Area: 476m^2
Visible Feature(s): Low wall
Suggested Date & Function: Site, LR-BYZ, activity area (?)
Site Condition: Poor
Erosion: Moderate
Research Potential: Low
Surface Assemblage: Poor
Digital/Regular Photographs: No
Status: -
Comment: - Associated scatter has eroded away

Locus 97-08, an activity area site, is located in a moderately south sloping field situated on mid-slope bench at approximately 290masl overlooking Sterakovou village in quadrat 04 (see figure 5.31). Apart from the Sotira series soil that underlies this site, the 1:25,000 soil map also indicates that shallow (0.25-0.50m) Vasilia and Tymbou limestone are present within a 250m radius of the site. Locus 97-08 is less than 500m to a source of freshwater. In 1997, Sterakovou village was still largely uninhabited and the British military conducted training exercises in and around the village. As recorded in 1997, locus 97-08 consisted of a small discrete scatter of coarse wares concentrated around the remains of what appeared to be a broken and battered press block built into a dry-laid stonewall of an animal pen[53]. However, by 2004, villagers from Khividhes, who own the fields around Sterakovou, began to cultivate and develop some of the plots surrounding the village core. In 2004, the small scatter of material that constituted locus 97-08 was no longer visible and much of the ground surface consisted of exposed Tymbou limestone. Thus, apart from a systematic walk over, no further work was undertaken at this site in 2004.

5.4.1.10 Locus 97-09

Locus: 97-09
Quadrat: 04
DLS 17: **53/**XVIII & XVII
Quadrat Cadastral plan: 33, 34, 41 and 42
Locality: Dhiplojilaa
UTM: 36s E483375 N3840510
MASL: 230
Soil: Sotira (SO, Calcaric Regosol)

[53] The animal pen is visible on the 1:5,000 topographical map.

Soils within 250m: Sotira (SO, Calcaric Regosol), Tymbou (T, Calcaric Lithosol), Kafkala (K, Calcaric Lithosol), Vasilia (VA, Calcaric Cambisol)
Topographical Setting: Plateau edge, cultivated intercropped field
1HA Slope Grade: 16%
Aspect: South
Distance to water: Over 500m to spring
Estimated Area: 448m^2
Visible Feature(s): Walls & architectural blocks, press stones
Suggested Date & Function: Site, LR/BYZ olive press complex
Site Condition: Poor, bulldozed post 1997
Erosion: none
Research Potential: Low
Surface Assemblage: Moderate
Digital/Regular Photographs: Yes
Status: -
Comments: Published by Hadjisavvas (1992), press stones are still visible in farmyard along with sherds and roof tiles fragments. Large architectural blocks are still visible in the bulldozed spoil immediately east and west of the farmyard (*Pers. Obs.* 2004).

Locus 97-09, a farmstead/olive oil press instillation site, is situated at the intersection between two trails in a sloping field at approximately 230masl in quadrat 04 (see figure 5.31). The site is located approximately 650m south of Sterakovou village. Apart from the Sotira series soil that underlies this site, the 1:25,000 soil series map shows Tymbou limestone, exposures of Kafkala and Vasilia series soils within a 250m radius of the site. Like locus 97-01, locus 97-09 formed a distinct topographical feature within its immediate micro landscape. However, in 1997, the debris halo surrounding this locus was comparatively small and only extended approximately 25-35m from the mound and press components that constituted the site core. Reinvestigation in 2004 revealed that the field's owner had fenced in, bulldozed and levelled the low mound that occupied the field. Examination of the fence line revealed a smear of material consisting of disarticulated architectural elements, lime bonded rubble and abundant roof tile. However, the

remains of two large press components were still visible within the fenced in portion of the field (figure 5.32). Because of the lack of access to the field, no further work was conducted at the site in 2004.

5.4.1.11 Discrete scatters reinvestigated in 2004

Apart from locus 97-10 mentioned above (§5.4), which had both Chalcolithic and Late Roman ceramics, in 2004 an attempt was made to relocate the discrete Late Roman scatters from quadrats 05 and 06. In 1997, locus 97-24 in quadrat 05 consisted of a diffuse discrete scatter that covered approximately 1.24ha (12428m^2). The surface assemblage did not include building materials or roof tile. However, by 2004, the scatter lost approximately 70 percent (8699.6m^2) of its surface area because of the same mining operations that directly threatened locus 97-05's integrity (see above §5.4.1.5). Unfortunately, secondary mining activities associated with the main mining and stripping operations at this locality (*i.e.* ruts caused by the movement of heavy equipment) impacted what remained of locus 97-23. It is reasonable to associate this scatter with locus 97-05, an estate centre/farmstead site, which is located approximately 200 meters to the south. It is likely that this scatter represents that site's infield agricultural plots or an activity area. In this context, it is important to note that roof tile and building materials were not present in locus 97-05's surface assemblage. Locus 97-29, a discrete scatter attributable to the Late Roman period in quadrat 06 (at the Dhiplomata locality), had a surface

area of approximately 0.38ha (3807m^2). In 1997, the scatter consisted predominately of badly abraded wheel-made sherds and a few red fabric thin-walled plainware sherds. Building materials, roof tile and fine wares were not present on the surface in 1997 or 2004. However, it is interesting to note that in 2004, this scatter covered an area of approximately 0.23ha; this equates to a 40 percent (0.2284.2m^2) loss in area from its 1997 incarnation. It is likely the decrease in area is the result of a decline in overall surface visibility at this location. It is important to note that this locus is in close proximity to Roman period tombs at the locality of Dhiplomata (Prokopiou *Pers. Comm.* 2004). Aspects of the Late Roman landscape are discussed in more detail below.

5.4.1.12 Loci 04-01, 04-02, and 04-03

As mentioned above, in 2004, the author had the opportunity to visit several additional loci within the project area and record several very basic pieces of information about them (see Map 1). Locus 04-01, Sotira Sternes, which corresponds to SKS's S25 2003), is underlain by Sotira series soils and situated at approximately 334masl on moderately sloping terrain. This site is within 100m of the second century AD Roman road that linked Kourion with Marion (Bekker-Nielsen 2004's Road 99). It is important to note that in the Sotira area, this road essentially follows the modern north-south road running through the Krommya valley to Sotira village. In relation to modern infrastructure, the site is approximately 20m east of the main road linking Sotira and Zanaja villages. This site

is like several of the Late Antique loci identified in the SAP study area; the low mound that constitutes the site's core formed a distinct topographic feature in the localized landscape. The site has an estimated area of approximately 0.5ha (5000m^2). At the time of investigation in 2004, numerous pine trees, grasses and scrub covered the low mound that formed the site's architectural core. Visible features consisted of a partially exposed plaster lined cistern (approximately 1.5m x 2m) or a well (as Held (2003) believes). The majority of the visible roof tile, ceramics and architectural rubble did not consist of loose material on and around the mound, but were partially protruding out of the mound's surface. The debris halo was quite small and extended approximately 30-50m around the mound. These conditions are similar to those observed at several of the Late Antique sites identified by the SAP in 1997 and 2004. The ceramics that were loose on the mound's surface and were within a 100m radius from the mound's notional centre consisted primarily of badly abraded wheel-made red monochrome sherds, a few buff-coloured plainware body sherds, pithos fragments and coarse ware sherds. Additional artefacts from around the mound included several ground stone igneous quern fragments. Apart from Sotira series soils, the 1:25,000 series soil map also shows deep (0.74-1.00m) Pissouri, deep (0.74-1.00m) Vasilia and very deep (≥ 1.00m) Zyyi series soils and exposed Tymbou limestone within a 250m radius of the site's notional centre. Apart from the cistern, the only other source of freshwater is over 500m to the site's west (near the Aceramic Neolithic site of Sotira Teppes).

Locus 04-02, Sotira Ambelija, a multi-phase (Roman-Late Roman and Modern) site is located at approximately 264masl on comparatively flat terrain approximately 50m north of the modern road that links Sotira and Kandou villages. Apart from the moderately deep (0.50-0.75m) Pissouri series soil that underlies the site, the 1:25,000 soil series map shows moderately deep (0.50-0.75m) Vasilia and very shallow (0.10-0.25m) Sotira series soils, as well as exposed Tymbou limestone within a 250m radius of the site's notional centre. The visible architectural elements at the site consist of a large limestone press block attributable to the Roman or Late Roman periods, and an early modern limekiln (similar limekilns were noted in quadrat 01 and 12 and at Sotira village). The site is more than 500m from a fresh water source. Unfortunately, at some point prior to reinvestigation in 2004, looters extensively disturbed the site. The most visible damage was the removal of the large press block, which was clearly visible from the Sotira–Kandou road, and a series of small robbers' pits that crossed the site[54].

Locus 04-03, a multi-phase Late Roman and Mediaeval site, is located at 124masl and spreads across two traditionally terraced and cultivated field on a river terrace on the western bank of the Kouris River. The site is underlain by deep (0.75m - 1.00m) Zyyi series soils; the 1:25,000 soil series map shows very deep Alassa and very deep (≥1.00m) Sinda series soils and exposed Tymbou

[54] The author officially informed the then Limassol district archaeological officer of this site's condition in 2004.

limestone within a 250m radius of the site's notional centre[55]. Quadrat 12, which is the closest SAP quadrat, is located approximately 250m to the site's north. This site is less than 500m from its nearest source of freshwater, the Kouris River. In 2004, the site covered an area of approximately 0.75ha (75158m^2). In the east field, the visible phases consist of the upstanding mediaeval chapel of Ayia Napa. Limited excavations around the chapel by the Department of Antiquities revealed a substantial Late Antique edifice (Prokopiou *Pers. Comm.* 2004; *Pers. Obs.* 2004). The surface assemblage from around the chapel and the east field consisted of abundant red fabric root tiles, buff fabric utility body sherds (amphora), wheel-made open form body sherds in a reddish-brown fabric with a deep red slip (CRS?), LRA1 rim/neck sherds and thin-walled wheel-made reddish fabric plainware sherds from open (*i.e* cook pot) and closed vessels (*i.e.* jug). Rubble building materials, while comparably less frequently occurring than ceramics, were concentrated within an 80m zone surrounding the upstanding chapel. Unfortunately, just before the site visit in 2004, the owner of the field that constituted the site's western sector (traditional terraced field) bulldozed it. Inspection of the spoil dumped at the northern end of the field revealed the partially exposed remains of a limestone press block (exposed dimensions: 0.65m x 0.85m x 0.40m). Further inspection of the spoil revealed several ridged amphora body sherds of probable seventh century date, several red slipped (CRS?)

[55] The 1:25,000 soils series map does not provide a depth range for the Alassa series soil (ALc). Alassa series soils develop on alluvium.

body sherds, two rim small sherds attributable to a CRS 9C or 10 form vessel and a red slipped rim sherd with roulette decoration (PRS form 3E?).

5.4.2 Data analysis

Although quantifiable surface assemblage data from the SAP Loci and off-site locations is not available for the reasons outlined above (§5.3.1.1), the survey still produced useful location data. However, in this context, it is important to note that Swiny and Mavromatis (2000: 435) have estimated that "[i]n many areas an average of three sherds may be recorded by each surveyor over a distance of 500m., representing one sherd per 160m" within the SAP study area. The analysis presented in this subsection is divisible into two main parts. The first part focuses on exploring the general trend of the SAP data, particularly the location data; the second part (§ 5.4.2.2, 5.4.2.2.A, 5.4.2.2.B and 5.4.2.2.C) narrows down the focus of the discussion and centres on the Late Antique component of SAP landscape.

5.4.2.1 General trends in loci location

As mentioned above, over the course of two field seasons, the SAP identified and recorded 34 loci in or immediately around the 1997 study area. Based on the 29 loci (settlements, sites and discrete scatters) discovered in 1997 with area data, the mean estimated locus area is approximately 0.73ha with a standard deviation of 1.86ha (n = 29, $\bar{x}$ 7343m^2, *S.D.* 18642.40m^2). However,

the three larger prehistoric settlements (97-10, 97-13 and 97-19), which are obvious outliers, account for the subsample's high standard deviation. Recalculation excluding these outliers produces a considerably lower mean value of approximately 0.30ha with a standard deviation of approximately 0.36ha (n = 26, $\bar{x}$ 2953.27m^2, SD 3578.26m^2). However, recalculation of the mean estimated area for modern, historic and prehistoric loci (without the 3 prehistoric settlements) indicates that modern loci have a mean area of approximately 0.04ha (n = 3, $\bar{x}$ 404.68m^2, SD 93.10), historic loci have a mean surface area of approximately 0.35ha (n = 19, $\bar{x}$ 3476.79m^2, SD 3987.31m^2) and prehistoric loci have a mean area of 0.24ha (n = 4, $\bar{x}$ 2376.00m^2, SD 1621.65m^2).

Twenty-eight of the 29 loci identified as either settlements, sites or discrete scatters fell within the area covered by the available 1:25,000 soil series maps for the project area. Only locus 97-18, a modern olive oil crushing station, located in quadrat 01's western half fell outside the coverage provided by these maps. Just over 42 percent (n = 12, 42.86%) of the 28 loci that comprised this subsample are underlain by soils classified on the 1:25,000 soil series maps as Regosols (*i.e.* Sotira and Pakhna series soils). Loci underlain by soils classified as Lithosols (*i.e.* Tymbou and Kafkalla) and Cambisols (*i.e.* Pissouri, Vasilia and Zyyi series soils) comprise approximately 32 (n = 9, 32.14%) and 25 percent (n = 7, 25.0%) of the subsample respectively. Based on these figures, it is hypothesized that the distribution of these settlements, sites and discrete scatters is consistent with the proportion of Regosols,

Lithosols and Cambisols distributed across the SAP study area. However, because the soil series maps did not provide complete coverage for quadrat 01, it was excluded from the calculations of soil types within the study area presented in subsection 5.3.1. Therefore, in order to compare accurately the distribution of soil types underlying sites, settlements and discrete scatter with the overall proportions of these soil types within the study area, it is necessary to exclude quadrat 01's loci as well. The result of a Chi-Squared goodness of fit test (DF= 2, α = 0.05, χ^2= 1.49) supports the general conclusion that the distribution of settlements, sites and discrete scatters from the 1997 season is consistent with the distribution of the main soil types found within the study area.

Cumulatively, approximately 72 percent (*n* = 21, 72.41%) of the 29 loci identified as settlements, sites and discrete scatters in 1997 with aspect data are situated on terrain with either a southeastern, a southern or southwestern aspect. Loci situated on terrain with an eastern aspect comprise approximately 21 percent (*n* = 6, 20.69%) of the subsample. Loci situated on terrain with a western and/or northwestern aspect comprise the subsample's remainder (*n* = 2). Topographically, 66 percent (*n* = 4, 66.67%) of the loci identified as discrete scatters occupied either plateau sides or ridge sides. The remainder (*n* = 2) occupied foot slopes or hillsides. Conversely, 55 percent (*n* = 16, 55.17%) of loci identified as sites tended to occupy plateau, plateau edges or mid-slope and mid-slope bench terrain. Nearly 60 percent (*n* = 17, 58.62%) of the discrete scatters, sites and settlements discovered

in 1997 are over 500m away from a visible source of fresh water; the remainder (*n* = 12) are less than 500m from a fresh water source. However, as noted in Chapter 3 (§3.3.5.2), modern agricultural practice and over pumping has taxed the project area's hydrological resources and it is unlikely that it can provide an accurate proxy for the study area's antique hydrological regime. Thus, the data pertaining to this particular variable must be interpreted cautiously. At the time of discovery in 1997, loci with low to moderate levels of erosion cumulatively comprised nearly 90 percent (*n* = 29, 89.66%) of the identified sites, settlements and discrete scatters. Nearly 7 percent (*n* = 2, 6.90%) exhibited no visible signs of erosion and only one loci (*n* =1, 3.45%) exhibited high levels of erosion. All (*n* = 6) of the discrete scatters and 35 percent (*n* = 7, 35%) of the sites exhibited moderate levels of erosion in 1997.

5.4.2.2 Late Roman loci

The majority (*n* = 16) of the 29 loci discovered in 1997 are attributable to the Roman and Late Roman/Early Byzantine periods. These include 13 sites and 3 discrete scatters. It is important to note that nearly all of the 13 sites had visible architectural features at the time of discovery in 1997. Functionally, the majority (*n* = 6, 46.15%) of these sites are interpretable as farmsteads/estate-centres and include loci 97-01, 97-02, 97-04, 97-05, 97-06 and 97-22. Other loci with productive functions identified in the SAP study area included two activity areas associated with olive oil production, loci 97-07 and 97-09 (both in quadrat 04) and

one potential outbuilding/field house, locus 97-14 (in quadrat 01). While acknowledging the multifaceted character of these loci, it is also reasonable to consider them in their productive and exploitative capacities. Taken together, these productive sites comprise just under 70 percent (*n* = 9, 69.22%) of the Roman/Late Antique sites discovered in the study area. On the other hand, two quadrats illustrate the funerary/commemoration aspect of the Late Antique landscape within the SAP study area. In quadrat 06, the cemetery (97-03) and the tombs at the Dhipomata locality (not recorded in 1997) (Prokopiou *Pers. Comm.*) provide the best example of this particular landscape component within the SAP study area (see below, §5.4.2.2.B). Another small cluster of tomb sites (97-16, 97-17) attributable to the Roman and Late Antique periods are located in quadrats 04 within the bounds of Sterakovou village (see below, §5.4.2.2.C). In this context, it is reasonable to include locus 97-15, a small cluster of tombs of probable Roman or Late Antique date, from quadrat 15 as part of the commemorative/funerary landscape in the SAP study area.

The Roman/Late Antique subsample of sites and discrete scatters have a mean estimated area of approximately 0.345ha (*n* = 16, $\bar{x}$ 3425m^2, SD 4111.14m^2). A comparison between the estimated area values for sites and discrete scatters produced the following results: the 13 sites have a mean estimated surface area of 0.27ha (*n* = 13, $\bar{x}$ 2727.77m^2, SD 3718.19m^2), while the 3 scatters have a mean estimated surface area of 0.64ha (*n* = 3, $\bar{x}$ 6446.33m^2, SD 5192.18m^2). The smallest site, 97-14, an outbuilding from quadrat 01, is

approximately 0.0294ha while the largest site, locus 97-04 a farmstead/estate centre, is approximately 1.36ha. In relation to underlying soil types, the distribution of these loci follows the general pattern identified above (§5.4.2.1). Leaving the discrete scatters to the side for the moment, approximately 31 percent (*n* = 4, 30.77%) of the sites are located on shallow (0.10-0.25m) Sotira (SO) series soil; surprisingly, an equal number of sites are underlain by lithosols (*i.e.* Tymbou exposed limestone and Kafkalla). Functionally, the sites underlain by lithosols include a cemetery (97-03) and a farmstead (97-01). Approximately 15 percent (*n* = 2, 15.38%) of these sites are underlain by moderately deep (0.50-0.75m) Pissouri (PI_3) series soils or very deep (≥1.00m) Zyyi (ZY) series soils. The discrete scatters are distributed evenly among Sotira and Zyyi series soils and the lithosols within the study area.

Approximately 85 percent (*n* = 11, 84.62%) of the sites comprising this subsample are located on terrain with a southerly aspect; the remainder are located on terrain with either a northwestern or eastern aspect. Topographically, just under 50 percent (*n* = 6, 46.15%) of the sites are located in plateau or ridge settings. In general, within the SAP study area those particular topographic contexts were less favoured during other periods: for example, of the 10 prehistoric, Archaic and modern sites and settlements identified during 1997, only 3 were situated on either a plateau or ridge. Finally, approximately 70 percent (*n* = 9, 69.23%) of these sites are over 500m from a freshwater source. Surprisingly, two of the sites (97-16, 97-17) that are less than 500m to a source

of freshwater are the tombs from within the bounds of Sterakovou village. For the most part, the 2004 Roman/Late Antique loci follow similar trends in location preference as their 1997 counterparts.

5.4.2.2.A Analytical Group-1 (AG-1)

Analytical Group-1 (AG-1) consists of loci 97-01, 97-02, and 97-22 in quadrat 11 and locus 04-07, which is located just outside the northwest boundary of quadrat 11, and a section of the Souni branch of Kourion's civic aqueduct (see figure 5.33 and Map 1). The sites and features in this analytical group illustrate aspects of both the authoritative and productive components of Kourion's Late Antique hinterland. Locus 04-07, a Late Antique ecclesiastic complex (Prokopiou *Pers. Comm.* 2004) at the locality of Dhyo Ekklishes, along with that segment of the civic aqueduct, which cuts across quadrat 11's western sector along a north-south axis, comprise AG-1's authoritative landscape components. The aqueduct is less than 500m from the loci comprising this analytical group (§5.3.3, 5.4.1.1, 5.4.1.2, 5.4.1.3, 5.4.1.4). The relatively loose association between the sites (loci 97-01, 97-02, and 97-22) situated in the relatively flat fields to the east of the comparatively steep valley in which the aqueduct is located complements Last's (1975) general observation on the relationship between the aqueduct and other elements of the settlement system (see above §5.3.3). Last (1975) believes that the owners of those sites that were in close proximity to the aqueduct may have been involved with its maintenance in exchange for water rights. In this

context, it is also possible to view the aqueduct as an extension of Kourion's civic landscape into its rural hinterland. The Late Antique ecclesiastic complex at the locality of Dhyo Ekklishes (04-07) (Prokopiou *Pers. Comm.* 2004) represents AG-1's second authoritative component. This site complex provides a good example of one type of authoritative *multilocal* site that was present in Kourion's Late Antique hinterland. On average, this authoritative *locale* is 870m from the 4 sites in quadrat 11. It is likely that this site complex would have formed a nodal point within its immediate landscape, which would have also included the fields east of the gorge, and an important *locale* within Kourion's hinterland. Perhaps more importantly, it is reasonable to suggest that the aqueduct and the ecclesiastic complex would have provided those Late Antique social actors that operated in this landscape with readily identifiable landmarks to organize their mental maps of this particular facet of the sub-regional landscape.

Loci 97-01, 97-02, and 97-22, I suggest, comprise the productive, but equally *multilocal*, component of AG-1. Of these sites, only 97-22 had roof tile, amphora and fine wares (CRS and LRC?) as well as comparatively well worked ashlar blocks (identified in a nearby traditional terrace wall, see above §5.4.1.4). It is likely that this site was an estate centre and as such, it would have formed an important nodal point in the sub-regional landscape and in its immediate environment. On average, 97-22 is 381m from the sites surrounding it. Conversely, the lack of roof tile at 97-01 and 97-02 does not necessarily preclude the

possibility that these edifices were roofed with perishable (*e.g.* wood) materials like those still observable on the roofs of traditional village houses. It is important to note that several researchers (*e.g.* Manning *et al* 2003; Rupp 2004) working in other parts of the island have commented on the lack of roof tile at sites within their study areas. In the case of the sites in AG-1, I suggest the lack of roof tile and the presence of threshing floors at both 97-01 and 97-02, a press weight at 97-01 as well as the coarse ware sherds and pithos sherds at 97-02 indicate that these sites were part of a specialized productive agricultural landscape. For example, it is also reasonable to suggest the presence of a threshing floor and a press weight at 97-01 indicated that this facility was equipped to process both olives and grain. Thus, given their specialized functions, it is likely that 97-01 and 97-02 represent seasonally occupied/utilized facilities that were associated with a more a permanent site or settlement, like 97-22. The mean interval from 97-22, the estate centre(?), to 97-01 and 97-02 is approximately 395m. Topographically, all of these sites occupied the comparatively level terrain situated between the valley in the west and the hilly relief to the east. Interestingly, one of the deepest soils in the study area, Zyyi series soil, underlies the estate centre, 97-22.

Undoubtedly, the relationship between these specialized productive sites (97-01, 97-02), the estate centre (97-22), and the ecclesiastic complex (04-07) is multifaceted. If, for example, the 1997 sites are contemporaries, and given the comparatively small

distances between the estate centre (97-22) and the specialized sites (97-01, 612m; 97-02, 160m), one plausible interpretation is that the specialized sites represent both infield and outfield activity areas for the estate centre. However, equally plausible is the interpretation that these edifices were the property of the Late Antique ecclesiastic complex at the locality of Dhyo Ekklishes (04-07). Unfortunately, at present, and with the current data, it is not possible to model accurately the relationship between AG-1's sites. Thus, it is not possible to know if these sites were all contemporary, overlapped with one another or represented a succession of broadly contemporary sites that exploited a desirable ecological patch. In order to do so, the chronology of these sites needs to be refined further. Given the poor quality of the surface assemblages from the 1997 loci, it is likely that limited test excavations would be required at each of the 1997 loci in order to clarify their occupational biographies.

5.4.2.2.B Analytical Group-2 (AG-2)

Analytical Group-2 (AG-2) consists of loci 97-05, 97-06 and 97-24 from quadrat 05 and loci 97-04, 97-03 and 97-29 in quadrat 06 (see figures 5.34 and Map 1). AG-2 occupies the southeastern sector of a plateau bounded by the Symbolos drainage in the east and a tributary of the Paramali-Farkonas River in the west. The sites (97-03, 97-04, 97-05 and 97-06), and discrete scatters (97-24 and 97-29) that comprise this analytical group provide the best example of commemorative/funerary and productive landscape components in

Kourion's Late Antique hinterland. Loci 97-03, a Late Antique cemetery, and the Roman period tombs at Dhiplomata (Prokopiou *Pers. Comm.* 2004), both located in quadrat 06, comprise AG-2's commemorative component. Topographically, these sites are located on similar terrain: a ridge/hill side comprised of exposed Tymbou hard limestone (Dhiplomata tombs) or Kafakalla (97-03) with little or no soil cover. This particular terrain setting is consistent with Park's (1999: 118-119) general observation regarding rural cemetery locations during the Hellenistic and Roman periods: (1) a preference for marginal lands "such as rocky outcrops with little soil cover" and (2) tomb orientations tended to follow the overall orientation of the hillside. The shift in focus from the Roman period cemetery at Dhiplomata, which is located at approximately 250masl on the northern slopes of a small ridge in a valley created by a seasonal tributary of the Symvolos River, to a ridge located approximately 500m to the west and approximately 30m higher, increased the visibility of this particular component. Based on the presence of architectural remains (from a funerary chapel of basilica?) at this site, the Late Antique cemetery would have had a considerably more monumental material expression than its Roman forerunner in the valley below and it is also likely that it would have formed a *locale* and landmark within its immediate landscape. Perhaps more importantly, the succession of commemorative/funerary sites, I suggest, indicates that the communities that created them maintained a relatively stable presence in the landscape during the Roman and Late Antique periods. It is likely that this site serviced the

estate centre to the north and possibly an unidentified hamlet or small settlement in the vicinity (possibly on the plateau to the south?).

Comparatively, AG-2 provides a more nuanced example of the productive component within Kourion's hinterland. Each of the 3 sites had an array of architecture features (mostly wall alignments) as well as abundant roof tile. At 0.65ha, the estimated area of the larger site, 97-05, is nearly twice (approximately 1:1.82) as large as 97-04 and nearly 4 times (approximately 1:3.87) as large as 97-06. Because of its size and the presence of Late Antique finewares, it is reasonable to suggest that 97-05 functioned as an estate centre. The mean interval between 97-05 and the outlying sites (97-04 and 97-06) is approximately 345m, slightly less than the value of 395m for AG-1's estate centre to its outlying sites. Topographically, 97-05 and 97-04 are located in the southern sector of a comparatively large plateau that opens to the west and northwest of these sites. These sites would have had immediate access to comparatively flat terrain underlain by very shallow (0.10-0.24m) Sotira as well as shallow (0.25-0.50m) and very deep (≥1.00m) Vasilia series soils. Given the relatively flat relief on the plateau, it is likely that these sites would have been highly visible features in their immediate environments. Locus 97-24, a large discrete scatter (1.24ha) of Late Roman material, is located approximately 175m to 97-05's northwest. It is probable that this discrete scatter represents repeated intensive infield activity associated with the estate centre. Similarly, locus 97-29, a

considerably smaller discrete scatter (0.38ha) of Late Roman material located in quadrat 06 (approximately 612m east of from 97-04 and 800m southeast of 97-05), may represent an outfield building constructed with perishable materials (*e.g.* mud brick) or an activity area associated with the sites on the plateau above (*i.e.* quadrat 05 and 06). Taken together, it is reasonable to suggest that these sites and discrete scatters indicate the existence of a developed productive landscape in this sector of Kourion's hinterland in Late Antiquity.

5.4.2.2.C Analytical Group-3 (AG-3)

Analytical Group-3 (AG-3) consists of loci 97-08, 97-09, 97-16 and 97-17 in quadrat 04 (see figure 5.35 and Map 1). The sites that comprise this analytical group provide an additional but qualitatively different example of the commemorative/funerary and productive landscape components in Kourion's Late Antique hinterland. AG-3 occupies the southwestern sector of a plateau bounded by the Symbolos drainage in the east and a tributary of the Farkanas-Paramali River in the west. Loci 97-16 and 97-17, tombs attributable to the Roman and Late Roman periods respectively from within the bounds of Sterakovou village, form AG-3's commemorative/funerary component. These sites are approximately 140m from one another and overlook a seasonal drainage and a spring. Like AG-2, the succession of commemorative/funerary sites, I suggest, indicates a comparative degree of occupational stability in the landscape during the Roman and Late Roman periods. However, the

modest size of these tombs (2 and 3 visible interment units respectively) suggests that these were family plots rather than a cemetery servicing a hamlet or settlement[56]. Undoubtedly, family plots such as these would have been ubiquitous features of the commemorative landscapes not only in Kourion's hinterland but also across Late Antique Cyprus in general because, as Parks (1999: 122) notes, "working farms and villas" of the Roman period "possessed their own burial grounds". This general observation, I suggest, is equally valid for the Late Antique period. In this context, it is highly probable that these tombs are associated with a farmstead or estate centre in the vicinity.

Loci 97-08 and 97-09, an activity area probably associated with olive oil production and an olive press complex respectively, constitute AG-3's productive component. These loci, I suggest, provide a particularly good example of small (≤0.05ha, 500m^2) specialized sites/activity areas within Kourion's Late Antique hinterland. Locus 97-08 is located in fields directly to the north of Sterakovou village while the press complex, locus 97-09, is located approximately 650m to that village's south; the interval between these two sites is approximately 900m. Locus 97-09, like the majority of the sites discussed in AG-1 and AG-2, formed a distinct topographical feature in its immediate landscape. Abundant roof tile, coarse wares and architectural debris suggests that this edifice had both productive and storage capacity. Based on 97-08's

[56] In 1997 and 2004, these tombs were filled with modern rubbish and goat carcasses (*Pers. Obs.* 1997 and 2004).

low surface assemblage diversity, it is reasonable to suggest that this site represents a specialized activity area like an olive press. Given the presence of the spring, one reasonable location for the farmstead/estate centre is within the bounds of Sterakovou village. Interestingly, if Sterakovou village is used as the location of a hypothetical farmstead/estate centre, it produces an interval of 466m, which is comparable to the 395m interval for AG-1 and 345m for AG-2. Like AG-1 and AG-2, these sites occupy the edge areas of AG-3's sector of the plateau.

5.4.2.3 Discussion: Kourion's multi-component hinterland

Several characteristics of Kourion's Roman and Late Roman hinterland emerge from the discussion presented in subsection 5.4.2. The three analytical groups captured not only facets of the *multilocal* and multi-scale (as defined in Chapter 2) productive, authoritative and commemorative landscapes in Kourion's Roman and Late Roman hinterland, but also aspects of their interrelatedness. It appears likely that the spatial co-occurrence of Late Antique productive sites with successive Roman and Late Antique commemorative sites is the result of rural settlement stability created by long-term investments in Kourion's hinterland. This is particularly apparent in the case of AG-2 and AG-3. At a larger scale, AG-2 and AG-3 provide a limited window into Late Antique activity on the southern end of the plateau defined by the Symbolos drainage in the east and a tributary of the Frankanas River in the west. As argued in Chapter 4 (§4.2.1, 4.2.1.1), the institutional

church’s expansion in both urban and rural contexts is a complex phenomenon that contributed to the formation of the multidimensional authoritative landscapes of Late Antiquity. In general, these elements are not well represented in the SAP or the SKS study areas. Apart from the archaeologically elusive Moni Simvolos (see below), the complex at Dhyo Ekklishes provides the only secure example of this institution’s presence near the SAP study area. Arguably, the Late Roman cemetery in AG-2 may also represent this institution’s presence in Kourion’s Late Antique hinterland.

Surprisingly, those quadrats that sampled the Kouris (quadrat 12) and the Paramali/Frankanas (quadrat 01, 13, 14 and 15) River valleys produced comparatively limited evidence for Late Antique activity at those locations. In quadrat 12, the presence of the Late Roman scatter (97-10) on the Kouris’ eastern bank can be explained by its close proximity (approximately 450m to the southwest) to locus 04-03, the multiphase Late Roman and Mediaeval site on the western bank of the Kouris River. In this context, it is likely that the scatter in quadrat 12 is derived from outfield activity (manuring?) associated with locus 04-03. Similarly, it is likely that locus 97-14 in quadrat 01 also represents an outfield activity area, from an out building(?), associated with an as of yet unidentified farmstead or estate centre. A likely location for this estate centre is on the comparatively flat terrain to Prastio village’s east and immediately to quadrat 01’s north (see Map 1).

In the lower part of Paramali River valley, the SAP discovered only one site, a double cistern (locus 97-15), attributable to the

Late Roman period. This is particularly surprising because one of the oldest segments of the provincial coastal perimeter road (Bekker-Nielsen 2004: 201, road 19) that linked Kourion to western Cyprus passed directly through quadrat 13[57]. As argued above (§5.3.3), this cistern may be associated with the Moni Simvolos, which is known to have existed in the greater Kourion area. Furthermore, given the fact that Paramali village was a feudal estate, the lack of discrete concentrations of material attributable to that period in quadrats 13, 14 and 15 is also curious. However, it is important to note that the SAP noted a similar lack of artefacts attributable to the medieval period in quadrat 04 around Sterakovou village (in AG-2), which was also the likely location of a Mediaeval estate (see above §5.3.3).

Taken as a whole, the selection of Late Antique landscape components identified by the SAP are considerably more diverse and nuanced than the Late Antique landscape components identified by the Sotira Kaminoudhia Survey (SKS)(Held 2003). The SKS securely identified only one Late Antique estate centre site, Sotira Sternes (SKS S.25; SAP 04-01), and 3 scatters with Late Roman or Roman material (SKS #s 18, 9 and 4) within their 313ha study area. Like the situation in the SAP's quadrat 13, the SKS identified one site near the Roman road that linked Kourion to Marion (Bekker-Nielsen 2004, road 99) that bisected their study area. On average, the SKS scatters are approximately 1,123m from Sotira Sternes, which is

[57] Locus 97-15 is approximately 250m south of Bekker-Nielsen (2004)'s road 19.

considerably larger than the average interval for the SAP AGs mentioned above. Interestingly, the Roman-Late Antique press block located near the Early Bronze Age site of Sotira Kaminoudhia is less than 500m to the west of Sotira Sternes and the press complex at Sotira Ambelija (SAP locus 04-02) is located approximately 1,300m to Sotira Sternes' southeast. These productive sites can reasonably be attributable to the same localized productive landscape as the Sternes estate centre. In this context, it is reasonable to suggest that they may represent outfield activity areas associated with the Sotira Sternes estate centre. The SAP's investigation of the relatively flat terrain with very shallow (0.10-0.25m) Sotira and deep (0.75-1.00m) Vasilia series soils located to the east of Sotira Sternes, which roughly corresponds to SAP quadrat 09, did not reveal the existence of any Late Antique components either. Although the Mediaeval estate of San Chitino was located in the Sotira area, the SKS recorded only very slight secure evidence (Glazed sherds; SKS 4 and 11) for Mediaeval activity in its study area. The paucity of Mediaeval material from around a known feudal estate is consistent with the results of the SAP's investigations around Sterakovou and Paramali villages.

Nevertheless, taken together, the majority of the settlements, sites and discrete scatters identified by both the SAP and SKS are attributable to either the prehistoric or the Late Roman periods. In contrast, the undoubtedly complex landscapes of the Archaic, Classical, Hellenistic and Mediaeval periods remain largely hidden in the SAP and SKS study areas. One possible explanation is that

those social actors engaging with Kourion's hinterland adopted dispersed and nucleated settlement strategies with comparative peaks of intensity in the Bronze Age (EC-MC) and the Late Roman periods. However, the lack of clear material signatures in the landscape does not directly equate with a secession of activity in the landscape; rather, I suggest, it can indicate a shift in intensity and strategy (*e.g.* decrease in intensive agriculture with a corresponding rise of transhumance and less intensive agricultural strategies). Additionally, there are several potential methodological reasons that could contribute to this situation. As mentioned in Chapter 3, modern intensive plantation agriculture on the lower Paramali River plain and to a lesser extent, the Kouris River, has altered these landscapes to a considerable degree. The SAP lacked a geomorphologic component and was unable to assess the effect of various geomorphological processes, such as overbank sedimentation and erosion, on the surface archaeological record of its study area. Thus, until researchers model the histories of the fluvial systems in Kourion's hinterland, it is not possible to rule out geomorphologic processes, particularly in those SAP quadrats that included the portions of Paramali River plain, as a factor contributing to the invisibility and poor delectability of these periods in that particular topographic context. It is also important to note that the SAP did not intensively record off-site material within its study area. Thus, for example, one question raised by the SAP and SKS data, that detailed off-site data could potentially illuminate, is if the low-level background scatters of red

monochrome sherds that are ubiquitous throughout the SAP study area have obscured diffuse Late Antique scatters in both study areas.

5.4.2.3.A The productive potential of the S.A.P Late Antique loci

In general, most researchers (*e.g.* J. Leonard 2005; Given and Knapp 2003; Michaelides 1996) agree that Cyprus produced a number of agricultural and non-agricultural products during the Roman period. In briefly discussing the productive component of Kourion's hinterland during the Roman period in a synthetic way, J. Leonard (2005: 948) suggests that "Kourion's hinterland produced primarily wine and olive oil; nuts including almonds; some fruits and vegetables; and some wool". Regarding the productivity of Cypriot calcareous soils, Lüken and Grivas (1988: 38) have observed that under dry land conditions, calcareous soils on a verity of slopes are the most suitable land for the cultivation of vines on Cyprus[58]. According to the FAO, the calcaric cambisols, which comprise approximately 29 percent of the SAP study area, are good soils for arable agriculture (see §5.3.2). The FAO classifies regosols, which compromise approximately 31 percent of the SAP study area comprise, as suitable for low volume grazing and irrigated farming. Lithosols, which comprise nearly 40 percent of the soils in the SAP study area, in contrast, are the least suitable for arable farming. For the Roman and Late Antique periods, the archaeological record preserves ample evidence for olive oil production (*e.g.* press elements) in and

[58] "…calcareous land with gentle to steep slopes…has been and will remain the most suitable for vine growing under dryland conditions" (Lükens and Grivas 1988: 38).

around the Kourion area (J. Leonard 2005: 839-845; Hadjisavvas 1992; SAP AG-2 and AG-3). Given the presence of press remains at several estates and farmsteads within the SAP study area (*e.g.* 97-01, 97-05, 97-08, 97-09 and 04-02) and project area (*e.g.* in Sotira village) it seems reasonable to suggest that olive oil production was an important agricultural and economic activity in Kourion's Late Antique hinterland. Like their Bronze Age predecessors (*e.g.* 97-19, 97-25 and 97-26), it is highly probable that the estates and farmsteads that comprise SAP AG-2 (§5.4.2.2.B) and AG-3 (§5.4.2.2.C) would have also cultivated various grains on the comparatively flat terrain that formed a substantial portion of their immediate landscape. Apart from olive remains, archaeobotanical investigations of late fourth century AD deposits from Kourion city (Soren and James 1988: 145), which have identified charred grains attributable to "domesticated wheat, barley, rye and oats", also support this general hypothesis. The faunal remains recovered from late fourth century AD urban deposits included "cattle, pigs, sheep and goats" (Soren and James 1988: 147) as well as rabbit; these remains preserved clear evidence that indicated they were butchered for food.

If the present distribution of soils and vegetation types (*i.e.* regosols; see figure 3.4 and Map 2) in the SAP study area is representative of their distribution in antiquity, it is also likely that small-scale stock (*i.e.* sheep and goats) breeding was an important activity in Kourion's hinterland. It is also likely that those social actors living on the estates/farmsteads in Kourion's

hinterland would have kept stock for both their primary and secondary products (*e.g.* wool). It is important to note, however, that modern pasture and soil classification schemes may not parallel late Roman/Early Byzantine views on land quality and productivity; ethnographic evidence suggests that seemingly marginal lands can produce an array of useful products[59]. With this in mind, apart from olives and grain, it is also reasonable to suggest that those Late Antique social actors residing in Kourion's hinterland would have exploited several commonly occurring vegetation taxa for a variety of primary and secondary products (*e.g.* medical, dyes, perfumes, resin/gums, timber, browsing and fruit)[60]. Unfortunately, at present, without detailed excavation and scientific analysis (*e.g.* phosphate analysis and flotation), it is not possible to assess the contribution each of these activities may have made to the overall productive capacity of the estate centres/farmsteads identified by the SAP. Additionally, as argued in Chapter 3 (3.3.4), the environmental proxy data (historical and scientific) suggests that climatic oscillations during Late Antiquity were common. The broad trend indicates that the Levant began experiencing a general shift towards desiccating conditions perhaps as early as the sixth century AD that continued for several centuries. The impact this had on the productive components of Kourion's hinterland, and for Cyprus in general, remains poorly studied and understood. It is reasonable to

[59] See, for example, Dunn (1992: in particular section III and VI), Forbes (1976); Rackham (2001).

[60] For a discussion of the various taxa present in the Kourion's hinterland see Chapter 3 (§3.3.5, especially 3.3.5.3.A) as well as Burnet (2004) and Van Warmelo (2003).

suggest that the unstable climatic regime coupled with the socio-economic disruptions of the mid-seventh century AD created conditions which may have caused Late Antique Cypriot social actors to abandon intensive agricultural strategies for their marginal agricultural lands in favour of less intensive ones.

5.4.2.3.B The S.A.P survey results compared to select Cypriot surveys

At this point, it is useful to compare the trends identified in the SAP survey data with the results of several select Cypriot survey projects. For the reasons outlined earlier in this chapter (§5.2, 5.3.1) it is not possible to compare the SAP's results with those of other projects directly. Consequently, the discussion presented in this subsection will focus on comparing the qualitative attributes and general trends identified by these surveys.

The preliminary results of survey work in the western Akamas by the Danish Akamas Project (DAP)(Fejfer and Hayes 1995b: 66-67; Hayes 1995: 174-175, 183) have identified several periods of intensive activity in their study area. These include the Chalcolithic, Hellenistic, and Late Antique periods; less intensive periods identified within the DAP study area consist of the Archaic, Roman, Mediaeval and Modern periods. During Late Antiquity, the estate centre or small hamlet of Ayios Kononas developed into a small village that became one of the most important sites in the western Akamas. By the early seventh century AD, the construction of a basilica at Ayios Kononas, Bekker-Nielsen and colleagues (1995: 24) argue, "confirms that it was already a flourishing community" by

that time. The DAP's investigations have also identified three sites interpretable as farmsteads (*i.e.* Osia Maria, Sergis and Dhamalospillos) attributable to the Late Antique period within 2.5km from Ayios Kononas (see figure 5.36). On average, these farmsteads are approximately 1.50km from Ayios Kononas; they range in distance from approximately 300m (Sergis) to 2.5km (Dhamalospillos)[61]. One characteristic of Late Antique agricultural intensification in the DAP study area is the reclamation of areas of moderately sloping terrain (approximately 4-7 degrees according to the DAP classification scheme). Unsurprisingly, the more level terrain within the study area, like that at locality of Aloupia for example, provided evidence for intensive utilization. The DAP identified roof tile at a limited number of locations within its study area and the basilica at Ayios Kononas appears to have been the only edifice within the study area equipped with a roof composed entirely of tile. Fejfer and Hayes (1995; 1995b) believe that Ayios Kononas' abandonment was a gradual process which began as early as the late seventh century AD and continued into the eighth century AD. The abandonment process identified at the permanent settlements, they suggest, also signalled a shift from intensive cultivation to a "much less intensive system run by people living outside the immediate are" (Fejfer and Hayes 1995: 68). Thus, according to the DAP's results, intensive agricultural production in this sector of the Akamas began to decline by the mid-sixth century AD and ended by

[61] Of the three farmsteas, Sergis and Osia Maria are located within a 2km of Ayios Kononas.

approximately 700 AD (Bekker-Nielsen *et al* 1995: 24-25; Hayes 1995: 182-183; Fejfer and Mathiesn 1995: 77-83)[62].

While still preliminary, the Canadian Palaipaphos Survey Project's (CPSP) results provide useful data on the Late Antique landscapes in southwestern Cyprus (Rupp *et al* 1986; Rupp *et al* 1984; Rupp *et al* 1992; Soren and Rupp 1993). Lund's (1993) analysis of the recovered ceramics has identified a steady increase in activity that started in the mid-fourth century AD and reached its zenith in the mid-sixth century AD. As mentioned above, the DAP identified a similar trend in their study area. Of the 577 sites listed by Rup and colleagues (1986: 32, table 1), approximately 7.6 percent (*n* = 44) are attributable to their "Later Roman" (approximately 250-400 AD), "Later Roman/Earlier Byzantine" (approximately 300-500 AD) or "Early Byzantine" (approximately 400-900 AD) periods. Out of the four drainages (Ezousas, Xeros, Dhiarizos and Khapotam) investigated by the CPSP, the Ezousas drainage contained the highest proportion of Late Antiques sites (32 of 319, or 10%); investigations in the Dhiarizos drainage produced comparable results (12 of 157, or 7.64%)(see figure 5.39).

Similarly, the results of the Maroni Valley Archaeological Survey Project (MVASP)(Manning and Conwell 1992; Manning *et al* 1994; Manning *et al* 2002) have identified several periods of intense activity within their study area. Intensive periods of activity in the valley include the Neolithic, Chalcolithic, the Bronze Age (*i.e.*

[62] "Around 700, however, cultivation of the land seems to have been almost totally abandoned, and nothing suggests that the landscape was ever cultivated on a large scale again (Bekker-Nielsen *et al* 1995: 24).

LBA settlement and tombs), the Late Antique, and the Mediaeval periods[63]. In contrast, Hellenistic and Roman material, Manning and colleagues (Manning *et al* 2002: 11) note, "is thin on the ground in the Maroni Valley". The complex Late Antique landscape in the lower Maroni Valley consisted of several terrestrial loci situated in both upland and coastal topographical contexts (Moroni Petrera, Phouches, Vrysoudhia/Limni, Aspres; Zyyi Petrini) and three probable wreck (anchorage?) loci (MTSB sites 1-3) that lie immediately off the coast (see Manning *et al* 2002: 13-15 figures 2.10, 2.11; see figure 5.37).

Prior to the Late Roman period the multi-period (LBA, Iron Age, and Roman) site of Aspres provides the best evidence for occupation stability in this sector of the valley. Nevertheless, by the Late Roman period, Manning and Colleagues' (2002) research indicates that the focus of the lower valley moved further inland to the site of Petrera. Geophysical prospection combined with test trenching identified *in situ* architectural remains at Aspres (walls and floor surfaces) and Petrera (basilica complex). Pedestrian survey at the coastal site of Vrysoudhia revealed the remains of walls, floors, and a well/cistern eroding out of a coastal scarp (Manning *et al* 2002: 11-15). Given the presence of several wrecks along the coast (MTSB sites 1-3), it is reasonable to suggest that the coastal sites like Vrysoudhia formed support/transport nodes in the larger network of coastal production/transport sites, like Zyyi Petrini slightly

[63] Manning and colleagues (2002) do not provide a detailed discussion of the Mediaeval data.

further down the coast to the west at the head of the Vasilikos valley (see below).

The distribution of roof tiles within the project area indicates that apart from the basilica complex at Petrera, very few structures had tiled roofs. Unfortunately, bulldozing/development activities severely truncated Petrera's stratigraphy (as well as several other MVASP sites). As a result, Manning and colleagues (2002: 41) were able to identify only two closed ceramic groups, which comprised approximately 10% (*n* = 8,252.1g) of the total recovered ceramics from Petrera. With this limitation in mind, identifiable Late Roman fine wares recovered from the slavage excavations at Petrera consist primarily of locally produced CRS (43% of all fine wares by weigh). Imported Late fine wares consist primarily of ARS (2.5% of all fine wars), PRS (4% of all fine wares by weight) and Aswan Red-sipped ware (less than 1% of all fine wares by weight) (Manning *et al* 2002: 41-44; also see §4.3.1.1). Similarly, locally produced fine wares constitute the majority of the early Roman fine ware assemblage as well. Cumulatively, Cypriot Sigillata and CRS comprise 58% by weight of the total recovered fine ware assemblage. While the Late Roman amphora assemblage recovered from the site is comparatively more diverse (LRA1-7, Peacock and Williams classes 52-3, 36-7) than the Late Roman fine wares, one fabric, LRA1 (21% of the assemblage by weight), is the dominant element in that assemblage; LRA4 (Gaza, 10% by weight) form the second most important element. The excavated coarse ware and tile assemblage exhibits a similar trajectory as the fine wares: a

preference for vessels in locally produced Cypriot fabrics (Manning *et al* 2002: 41-44; Rautman and Neff 2002: 55). Thus, based on the ceramic evidence from Petrera, it would appear that the lower Maroni valley predominantly relied upon locally produced Cypriot goods regardless of the access the region had to various transportation infrastructure (*i.e.* the Roman Road system and the anchorage). Despite the difficulties in establishing the directionality of the LRA1 recovered from within the MVAPS, Manning and colleagues (2002:77) reasonably suggest that based on the amount of "millstones, querns, mortars, basins" recovered from the vicinity of Phouches and Petrera and elsewhere in the valley, it is possible that locally produced amphora "were being filled before they left the valley". Finally, the presence of handmade cooking wares attributable to the seventh century AD at Petrera also indicates that the lower Maroni valley's established Late Antique trade networks experienced localized (sub-regional) and extensive (regional) dislocation in the later seventh century AD[64].

Although the results of the Vasilikos Valley Project (VVP)(Todd 2004; Rautman 2003; Rautman *et al* 2003) are partially published, the data that is currently available (*e.g.* Rautman *et al* 2003; Rautman 2003) indicates that the valley had a comparatively complex Late Antique landscape (see figure 5.38). In discussing this landscape, Rautman (Rautman 2003; Rautman *et al* 2003) has pointed out that over half (n = 23) of the 32 sites attributable to the first and second

[64] See Manning and colleagues' (2002: 52) catalogue numbers 92, 93, 94, and 95. For a detailed discussion of Late Antique handmade potter in Cyprus, see Rautman (1998).

centuries AD were also active in Late Antiquity. Perhaps more importantly, Rautman (Rautman *et al* 2003: 237-242; Rautman 2003: 202-203) notes that of the 44 site attributable to the Late Roman period identified by the VVP, nearly half (*n* = 21) were new establishments. The sites and settlements in the upper valley (*i.e.* above Kalavasos), Rautman (Rautman *et al* 2003: 237-240; Rautman 2003: 203-204) reasonably suggests, geared their productive orchards, vineyards, and mining activities (*e.g.* Spilios). Those in the lower valley (*i.e.* below Kalavasos), Rautman (*ibid*) argues, were primarily agricultural and contained at least two regional centres (*i.e.* Kopetra and Sokopra) and a seasonal market centre (*i.e* Pamboules). The frequency of smaller sites and activity areas around the main Late Antique settlements illustrates the intensive utilization of valley during this period. For example, Rautman and colleagues (2003: 239) note "over a dozen contemporary sites" are within a 2km catchment surrounding Kopetra in the lower valley (*i.e.* 17 sites: 7 within 1km and 10 sites within 2km). Interestingly, a similar pattern is also detectable within a 2km catchment surrounding the mining settlement of Spilios in the upper valley (*i.e.* 16 sites: 5 sites within 1km and 11 sites within 2km)(see figure 5.38). Turning to the coast, Manning and colleagues' (2000) comparatively non-invasive investigation of Zyyi Petrini has produced suggestive evidence for the production of LRA1 and LRA1a at the site[65]. Their investigations along a wave eroded coastal scarp

[65] Manning and colleagues (2000: 245) state "...the circumstances deny proof that this material was necessarily produced in the kiln (and it could be the result of subsequent dumping, or erosional deposition), however, it

have identified the remains of a kiln, which apart from LRA1a, appears to have produced other coarse wares (*e.g.* roof tiles and basin) in a similar fabric. Sites like Petrini, it is reasonable to suggest, formed key links in the communication/economic web that sites like Kopetra and Petrera relied upon for their access to regionally and extensively produced goods and provided the outlet for locally produced products (in this case mostly agricultural, but possibly mineral/metals in the case of Kopetra)

The recovered fine ware assemblage from the excavations at Kopetra, like the fineware assemblage from Petrera, consists primarily of CRS followed by PRS, ARS, and ERS[66]. Other locally produced ceramic goods include roof tile, amphorae, coarse and cooking wares. While the standard Late Roman amphorae types (LRA1-7) are all present at the site, LRA1 comprise the majority of Kopetra's amphorae assemblage. Interestingly, the LRA1 recovered from Kopetra predominantly consists of fabrics associated with production centres in Syria and Cilicia (Rautman 2003: 163-179). Using the excavated ceramic data from Kopetra to examine the vitality of the lower Vasilikios valley in Late Antiquity suggests that the valley actively took part in both localized Cypriot and larger region economic networks. Interestingly, like the lower Maroni valley, handmade wares at Kopetra appear in contexts attributable to the second half of the seventh century AD and can reasonably be viewed

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seems likely that these finds are indicative of the production of the Late Roman amphorae type 1 in the kiln, and especially the LRA1a".

[66] "Residual Sigillata and other unidentified red fabrics make up less that 5% of the fine wares" (Rautman *et al* 2003: 166).

as an indicator of economic dislocation, or perhaps more specifically a disruption of external and internal trade networks, in the lower Vasilikios valley towards the end of Late Antiquity.

Moving to inland, the Athienou Archaeological Project's (AAP) survey component (Toumazou *et al* 1998; Kardulias and Yerkes 2004) has also identified moderate Late Antique activity in the Malloura valley, which is located on the south side of the Mesaoria in central Cyprus (see figure 5.40). Over the course of two field season in the early 1990s (1991 and 1992) the AAP systematically investigated approximately 67.5 percent (n = 13.5km^2) of a 20km^2 study area (Toumazou *et al* 1998: 170)[67] and identified 30 discrete loci ranging in date from the prehistoric to modern periods (Toumazou *et al* 1998: table 2 and table 3). During the Roman and Late Antique periods (50BC-647AD), a "substantial rural settlement" (Toumazou *et al* 1998: 175) occupied the site of Malloura (site 1). Excavations by the AAP have identified the remains of two edifices attributable to the Roman and Late Roman periods (in Excavation Units 5 and 3). Recovered Roman and Late Roman fine wares from these excavations consisted of Pompeian Redware, ARS and PRS. Toumazou and colleagues (Toumazou *et al* 1998) suggest that Malloura's Late Antique inhabitants abandoned their settlement during the seventh century AD, possibly because of Arab raids[68]. Other traces of Roman

[67] Regarding the AAP's field methods, Toumazou and colleagues (1998: 170) state that the survey employed variable length linear transects (40, 50 and 100m) and teams of 11 surveyors spaced at a 10m interval to cover the study area.

[68] Regarding the edifice uncovered in EU 3, they suggest it "may have been burned in the mid-seventh century, early in the period of Arab-Byzantine conflict" (Toumazou *et al* 1998: 175).

and Late Antique activity consist of two scatters (sites 16 and 30) in the project area's northern and western sectors as well as several scatters (14, 23 and 24) of probable Roman and/or post-Roman data situated on hilltops and the lower elevation around these locations (sites 22, 25 and 26) from the study area's eastern sector. Interestingly, Toumazou and colleagues (1998) have interpreted several small hilltop scatters as the possible locations of sentry posts. The results of a subsequent viewshed analysis by Kardulias and Yerkes (Kardulias and Yerkes 2004: 156-159) confirmed the prominent and commanding view these sites would have had of their immediate landscape. Other Roman and Late Antique sites include Roman period tombs (AAP site 2) as well as indirect evidence (*i.e.* grave goods) for the presence of Late Antique (attributable to the Late Roman and Early Byzantine periods in their chronological divisions) tombs around the settlement of Malloura (Toumazou *et al* 1998: 167). In this context, it is reasonable to suggest that the succession of commemorative components (*i.e.* tombs) and sacred components (*i.e.* the Archaic through Roman phases of the sanctuary) indicates the presence of a comparatively stable social and productive landscape in Malloura valley from the Archaic through the Late Roman periods.

The Sydney Cyprus Survey Project's (SCSP) (Given and Knapp 2003; Knapp and Given 2004; Given 2004) investigation of the important inland settlement of Tamassos's (modern Politiko) hinterland has identified a complex Roman and Late Antique landscape (see figures 5.41 and 5.42). As a whole, during the Early Roman

period (100BC-300AD as defined by the SCSP,) locally (*i.e.* Cypriot) produced cookwares formed the majority of the identified Roman ceramics. Surprisingly, their investigations identified only six diagnostic (Pseudo-Koan) amphora sherds attributable to this period[69]. On the other hand, Moore (2003: 279) notes that fine wares comprised the majority of the recovered Roman period ceramics and, like the cookwares, were predominately of local (*i.e.* Cypriot) manufacture. Taken together, Moore (2003: 279) reasonably suggests, "the Mitsero-Politiko area relied primarily upon local production to meet most of its needs, with minimal import of bulk goods". Perhaps more importantly, Moore (2003: 279) notes that whatever province-level commercial activity that did occur within the SCSP study area appears to have been with "areas that had strong eastern and weak western connections".

During the Late Roman period (300-700 AD as defined by the SCSP), Moore (2003: 280) notes that the majority of the identifiable sherds consisted of coarse wares followed by amphora (LRA1) and the usual range of Late Roman fine wares (*e.g.* CRS, ARS, PRS, ERS). In contrast to the preceding period, cook wares comprised the smallest portion of the identifiable sherds. Moore (*ibid*) notes that as in the preceding period, the majority of the fine ware was locally produced (*i.e.* Cypriot) CRS. Locally produced fine wares, Knapp and Given (2004: 83) note, "peaked somewhat later, in the 6th century, and declined slowly towards the 7th century". However, the level of

[69] Moore (2003: 278) states, "field walking produced only six diagnostic pieces dated to the Early Roman period".

imported fine wares increased steadily from the fifth century AD before declining towards the seventh century AD. Apart from LRA1, the SCPS identified very few imported amphora sherds and no examples of LR2 sherds (Moore 2003: 279-282).

Around Tamassos, the SCSP has identified an intensive zone of agricultural activity extending approximately 6km from the city. Thus, apart from variable sized Roman sherd carpets from manuring on the geomorphologically stable alluvial land, the SCSP has identified a series of contemporary estates and farmsteads (*e.g.* SCY101, SCY 132, SCY 214) that operated within this particular segment of the landscape[70]. Given and colleagues (Given 2004: 175; Knapp and Given 2003: 316-318; Moore 2003: 282) believe this indicates that these estates would have traded any surplus they produced with Tamassos for prestige goods like imported fine wares. However, the absence of amphora sherds, Moore (2003: 282) believes, "weigh against the theory of large-scale, organized support centers dedicated to cultivating crops for the inhabitants of Tamassos". Interestingly, the SCSP has identified the fourth to sixth centuries AD as a period in which copper production also reached a production peak (see Chapter 4, §4.2.3.2, 4.2.3.2.A). Taken together, Given and colleagues (*ibid*) believe that these trajectories indicate that the productive component of Tamassos's hinterland was geared towards mass production[71]. Perhaps more importantly, the SCPS identified

[70] Regarding these Roman period sherd carpets, Given (2004: 171, 172) notes that they usually had a density of approximately "0.5 sherds/m^2" and could be quite extensive ("anything up to 3 km across").

[71] Given (2004: 175) states "The landscape of the Roman period, and especially the Late Roman period, was devoted to mass production".

minimal activity in the study area's more remote areas outside of the alluvial plains (Given 2004: 171-175; Knapp and Given 2003: 316; Given *et al* 2003: 305-310; Moore 2003: 281-282).

Based on the short review of select Cypriot survey projects presented above, it is reasonable to suggest several common characteristics that they share with the SAP. Perhaps the most significant commonality that all the above mentioned projects share is the identification of a reduced material signatures in all of the study areas for the periods that bracket the comparatively more intensive Late Roman period (*i.e.* roughly the Hellenistic/Early Roman and Early Mediaeval periods). However, it is also important to note that sub-regional variations are readily apparent. Nevertheless, one characteristic of this intensive reutilization of the landscape centres on the establishment of a nested webs of nodal, productive, ritual/commemorative, and transport/storage sites in the Cypriot countryside. The elements comprising this web, I suggest, are multi-scalar. The Late Antique sites surrounding Kopetra in the Vasilikos, Petrera in Maroni valleys, Agios Kononas in the Akamas, and the SAP's AGs (see above §5.4.2.A-5.4.2.2C) provide a particularly good examples of multi-scalar landscapes in which localized nodal sites can become important locales at middle level scales. Rautman (2001: 235), adopting a slightly more rigid landscape paradigm, has described Kopetra's position in the Vasilikios valley's Late Antique settlement pattern "as a second-order central place within a dendritic, sub-regional hierarchy". Furthermore, Rautman and colleagues (2003: 239-241) have observed

the 2.5km interval between two of the more important villages in the Vasilikos valley, Kopetra and Sokopora, is comparable to the interval between modern Cypriot villages. This pattern is also detectable within the DAP survey area (see above); the extent to which this observation is applicable to Kourion's hinterland remains to be proven as no loci interpretable as a village were identified by the SAP. The SAP data on the other hand, does provide reasonable insights on the next settlement level below that of the village and indicates that outbuildings tended to be within 1km of an estate centre. As mentioned above, the SCSP's investigations in Tamassos' hinterland have identified an intensive 6km zone on the alluvial plains around that city. On average, the estate centres/farmsteads identified by the SAP are approximately 7km from Kourion and are predominantly located in upland contexts, rather than alluvial plains, and are underlain by comparatively thin but productive soils (one exception is 04-03 in the Kouris valley, for example). Although investigations in Kourion's immediate hinterland (*i.e.* 3km radius) have been limited, the estate centre (or possible suburban settlement) identified by Last (1975) and A. Leonard (1986) at the locality of Yerokarka, located approximately 1.5km to Kourion's east, mentioned in Chapter 5 (§5.3.3) suggests the possibility that Kourion's immediate hinterland may also follow the pattern identified at Tamassos. However, additional focused field survey is required to test the validity of this pattern for Kourion's hinterland. In short, the general pattern identified by the SAP in

Kourion’s hinterland is concurrent with the results of projects from other regions of the island.

5.5 Chapter summary

It is reasonable to suggest that from a methodological perspective, the SAP’s field procedures represent the middle ground between extensive and intensive survey procedures. While this methodology was able to identify comparatively small concentrations of artefacts in the mostly uncultivated terrain that formed the majority of the SAP study area, it was not sufficiently sensitive to identify the less pronounced non-primary indicators of landscape utilization identifiable through the analysis of off-site material. Nevertheless, based on the results of the SKS and SAP, it is clear that during the early/middle Bronze Age (EC-MC) and the Late Antique periods, Kourion’s hinterland experienced comparatively elevated levels of activity. The analysis of AG-1, AG-2 and AG-3 indentified the presence of a multi-component, multi-scale, and *multilocal* Late Antique landscape in Kourion’s hinterland. Arguably, AG-2 and AG-3, both located on the southern edge of the plateau formed by the Symbolos drainage and a tributary of the Farkanas-Paramali River in the west, provide the best example of the interconnectedness of the productive and commemorative components of the Landscape. Furthermore, the pattern identified by the SAP and SKS in Kourion’s hinterland is in general accordance with the larger provincial trajectory characterized by (1) contraction in the Early Roman followed by (2) a comparative boom of intensive occupation

strategies in the Late Antique period and (3) then a return to less intensive occupation strategies towards the end of Late Antiquity and the early Mediaeval period.

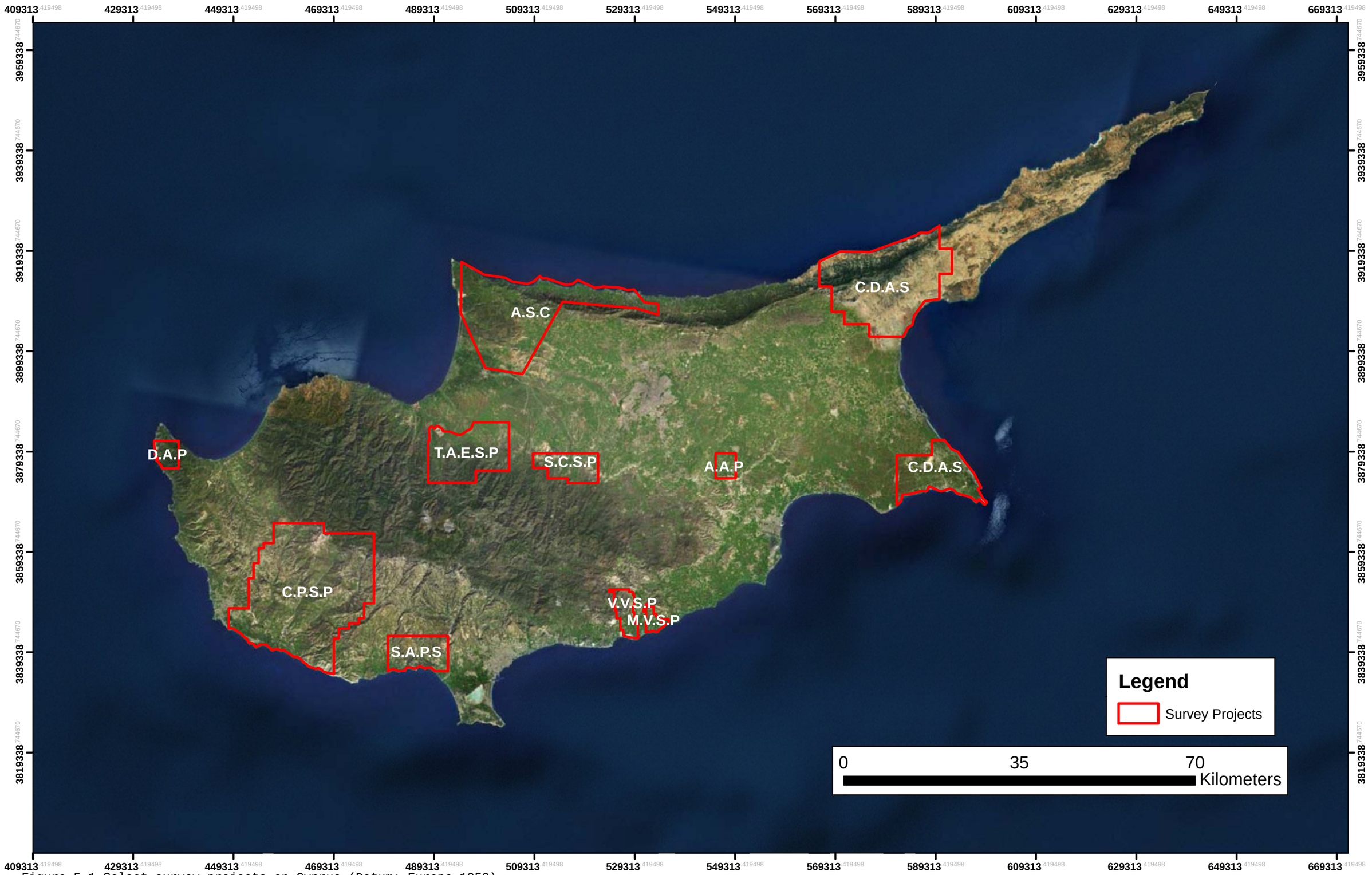


Figure 5.1 Select survey projects on Cyprus (Datum: Europe 1950).

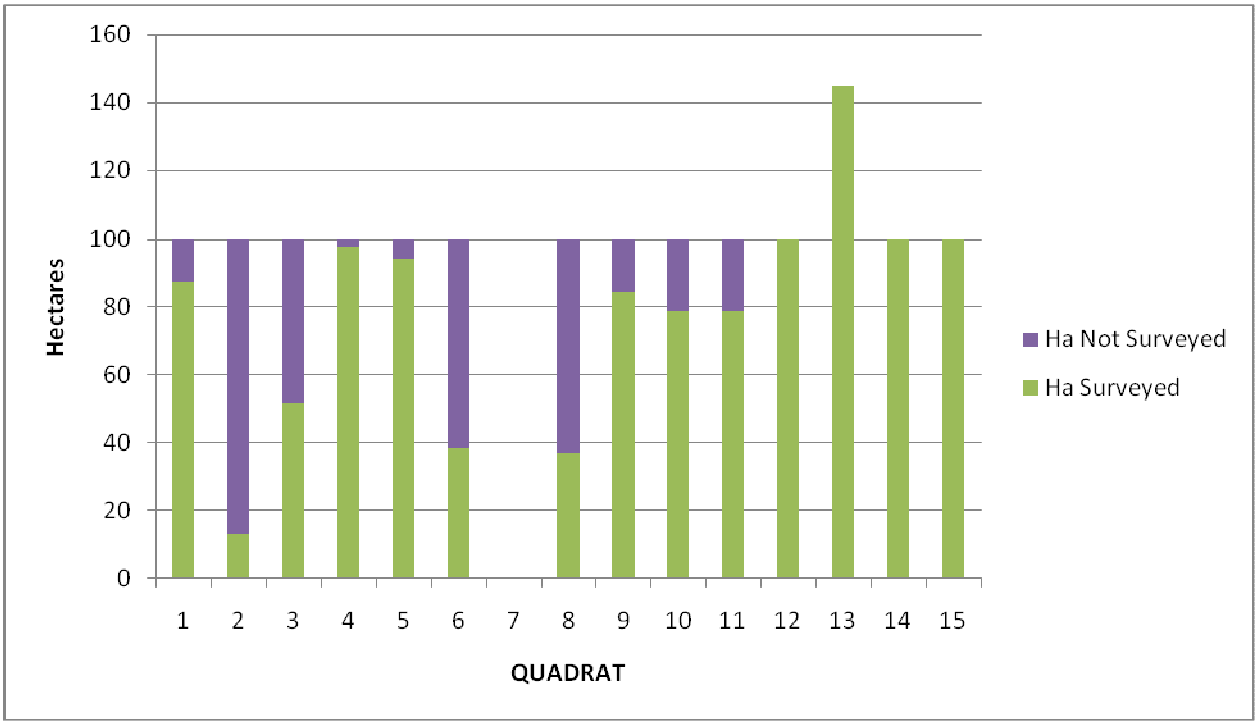


Figure 5.2. Hectares surveyed and not surveyed in each SAP 1997 quadrat.

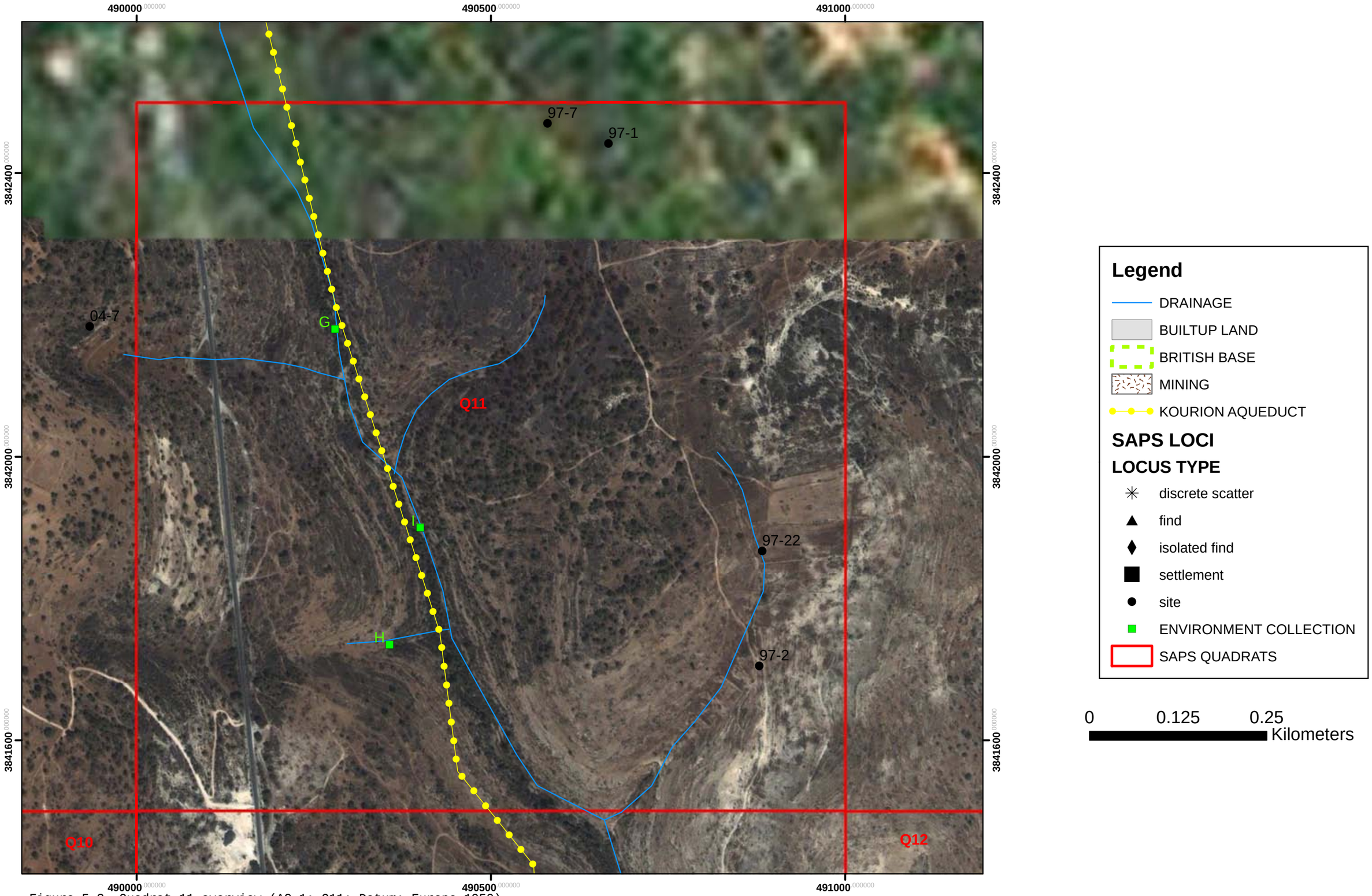


Figure 5.3. Quadrat 11 overview (AG-1: Q11; Datum: Europe 1950).

Figure 5.4. View: SW. General view across locus 97-01.

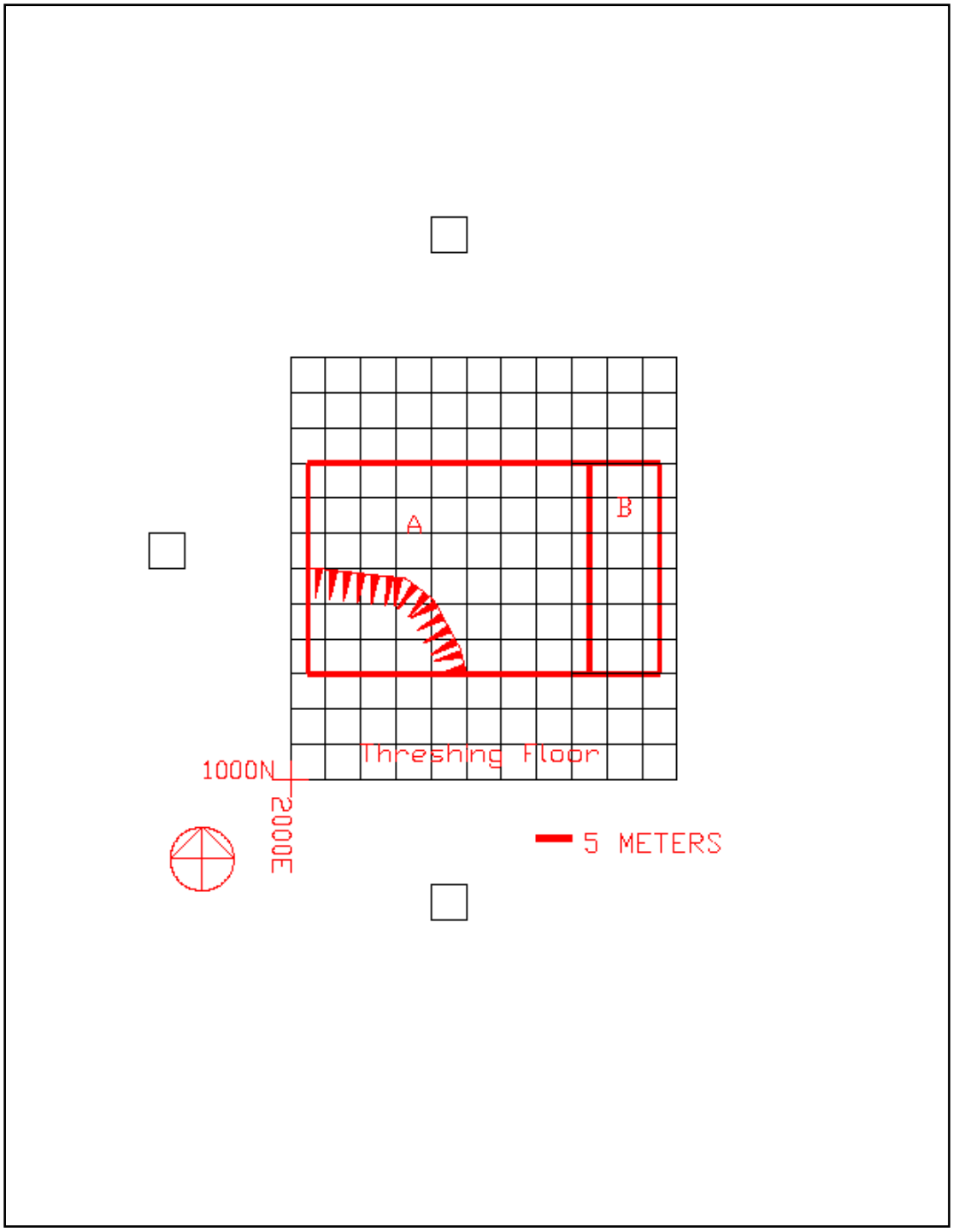


Figure 5.5. Sketch plan of locus 97-01.

Figure 5.6. View: W. Scale: 1m. Locus 97-01 wall alignments.

Figure 5.7. View: SW. Press weight (B) in room A and eastern interior wall (A) from locus 97-01.

Figure 5.8. View: S. Scale: 1m. Threshold block in eastern wall alignment from locus 97-01.

Figure 5.9. View: W. Scale: 1m. Slotted block and northern wall alignment from locus 97-01.

Figure 5.10. View: SW. Grid units (red flags) across locus 97-01.

Figure 5.11. View: N. Terrain around locus 97-02.

Figure 5.12. View: NW. Scale: 1m. East and west wall alignments from the rectangular structure at locus 97-02.

Figure 5.13. View: N. Scale: 1m. Worked blocks in terrace wall at locus 97-22.

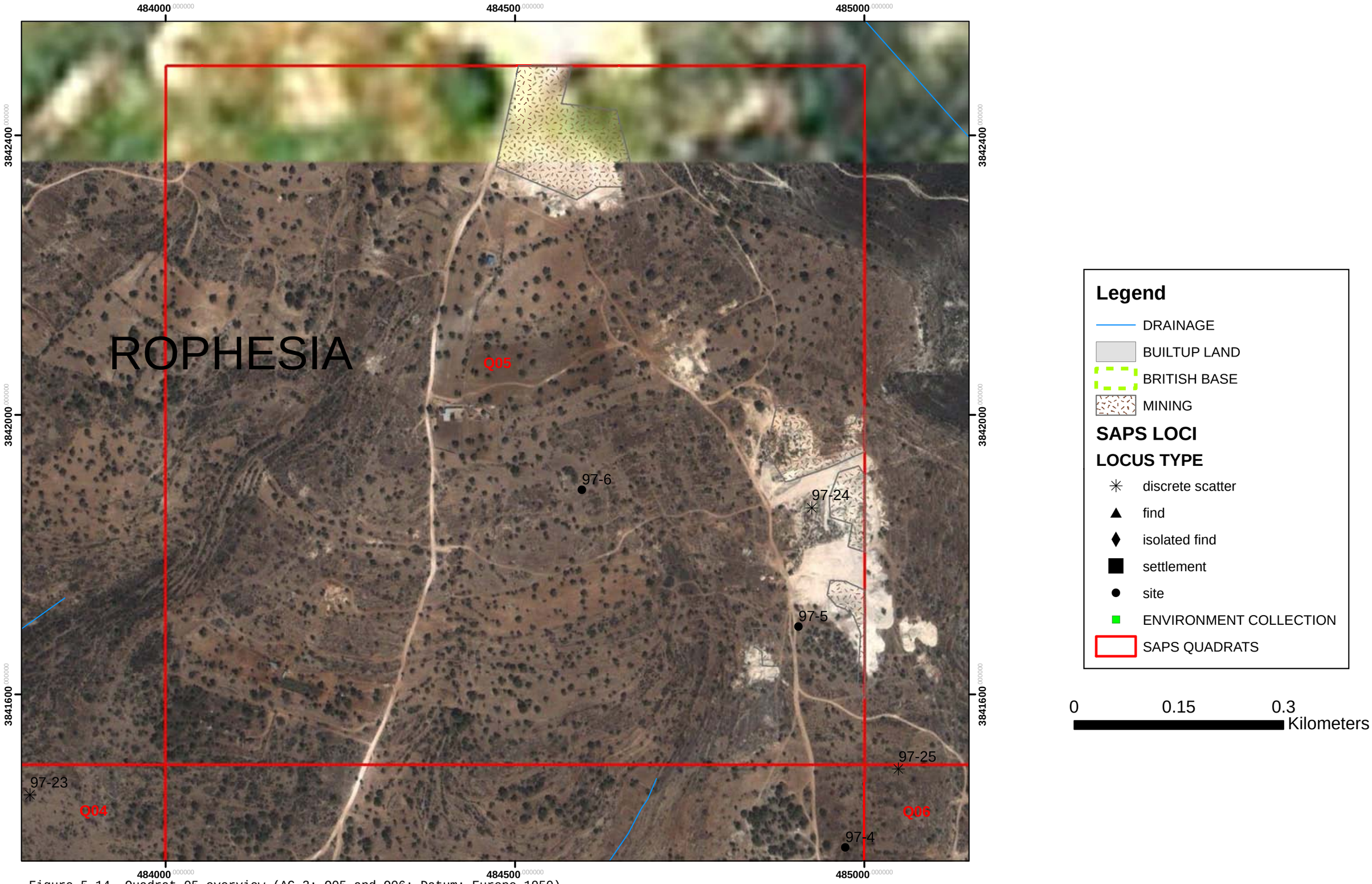


Figure 5.14. Quadrat 05 overview (AG-2: Q05 and Q06; Datum: Europe 1950).

Figure 5.15. View: S. General view across locus 97-05.

Figure 5.16. Scale: 0.10m. Selection of ceramic artefacts (amphorae handle, pithos sherds, and tile fragment) from locus 97-05.

Figure 5.17. Scale: 0.25m. Stone basin fragment (for olive crushing?) from locus 97-05.

Figure 5.18. View: NE. General view to the north and east of locus 97-05 illustrating the extensive disturbances caused by mining in 2004.

Figure 5.19. View N. General view of locus 97-06 illustrating pre-1997 disturbances in the site’s central sector.

Figure 5.20. View: E. Scale: 1m. Locus 97-06's bisected north wall.

Figure 5.21. Scale: 0.10m. Selection of ceramic artefacts (pithos rim, fine ware base, body sherds, and amphorae handle and sherds) from locus 97-06.

Figure 5.22. Quadrat 06 overview (AG-2: Q05 and Q06; Datum: Europe 1950).

Figure 5.23. View: NE. General view across locus 97-04 illustrating the disturbances caused by mining in 2004.

Figure 5.24. Scale: 0.10m. Selection of ceramic artefacts (pithos rim, tile fragment, and plain body sherds) from locus 97-04.

Figure 5.25. View: SE. General view across locus 97-03 from lower field sector illustrating the location of the northern group of tombs and looters spoil.

Figure 5.26. Selection of ceramic artefacts (coarse and plain ware sherds) from locus 97-03’s northern and southern sectors.

Figure 5.27. View: S. Scale: 1m. Limestone sarcophagus lid from locus 97-03’s ridge sector.

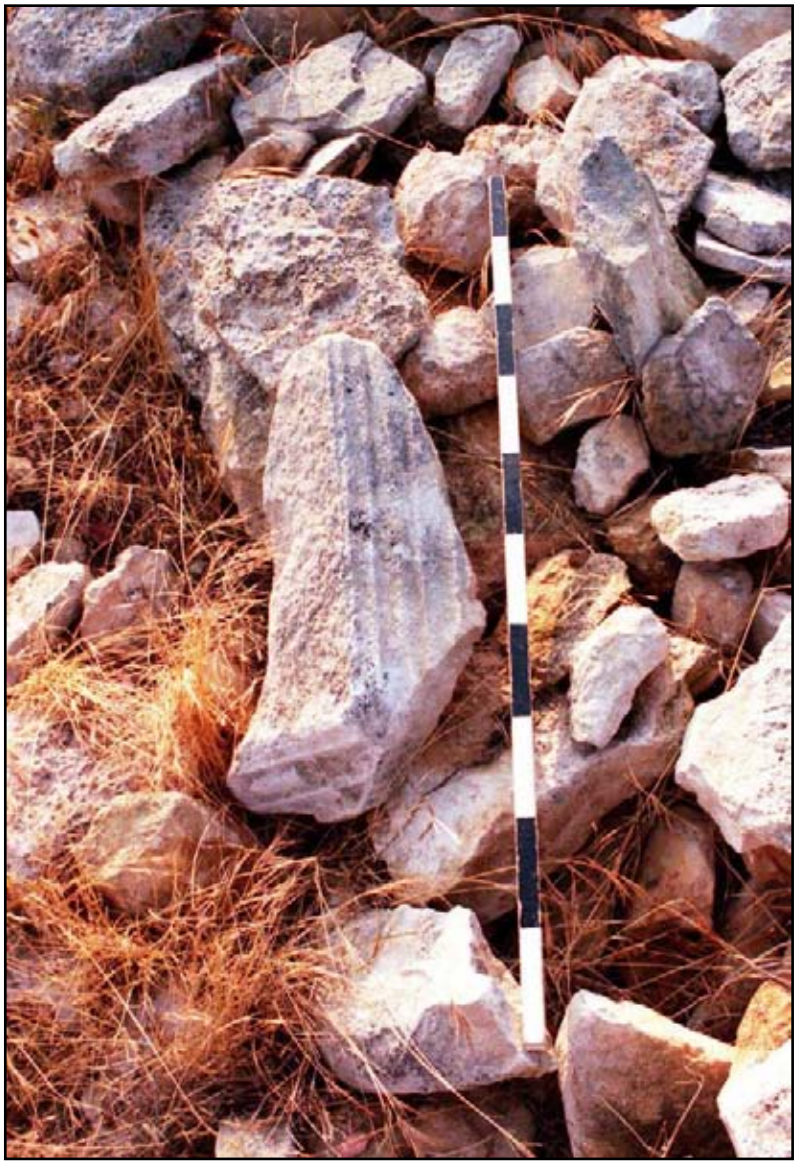


Figure 5.28. View: W. Scale: 1m. Architectural element from locus 97-03’s lower field sector.

Figure 5.29. Scale 0.60m. Monumental door or window mullion with battered inscription followed by vegetal motif from locus 97-03's lower field sector.

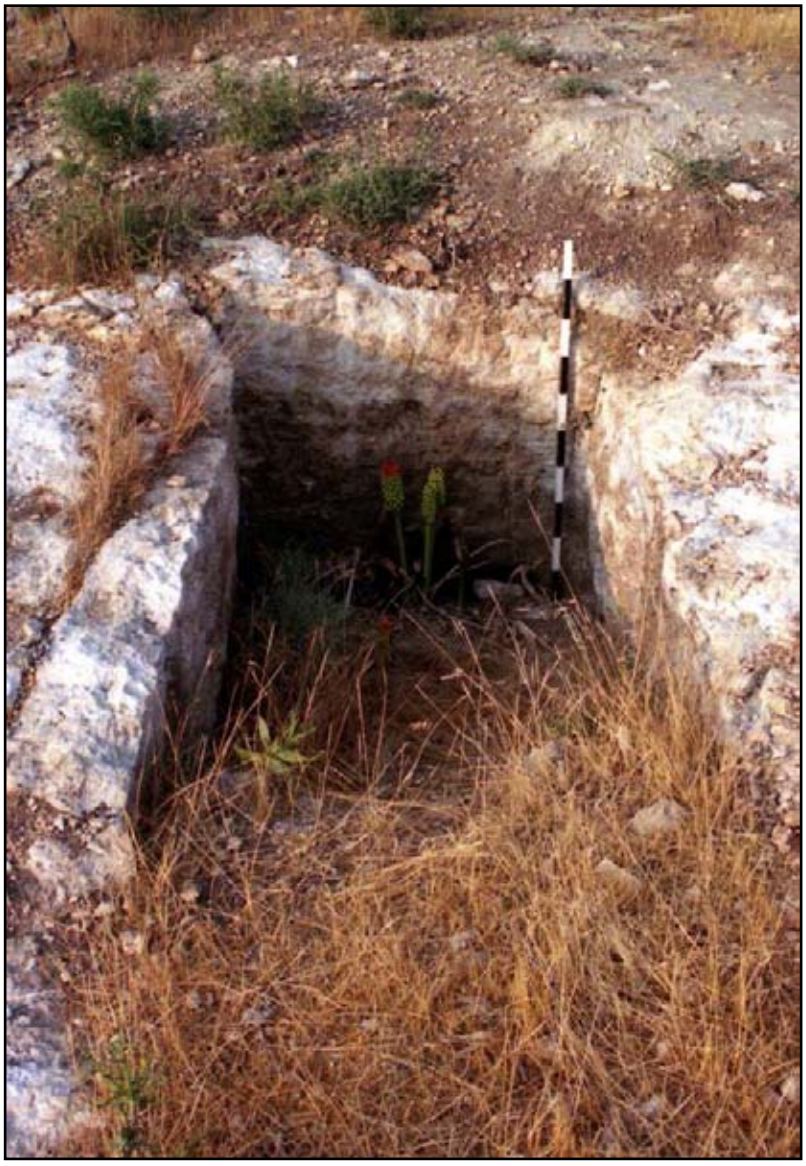


Figure 5.30. View: E. Scale: 1m. Cist tomb from the southern end of Locus 97-03.

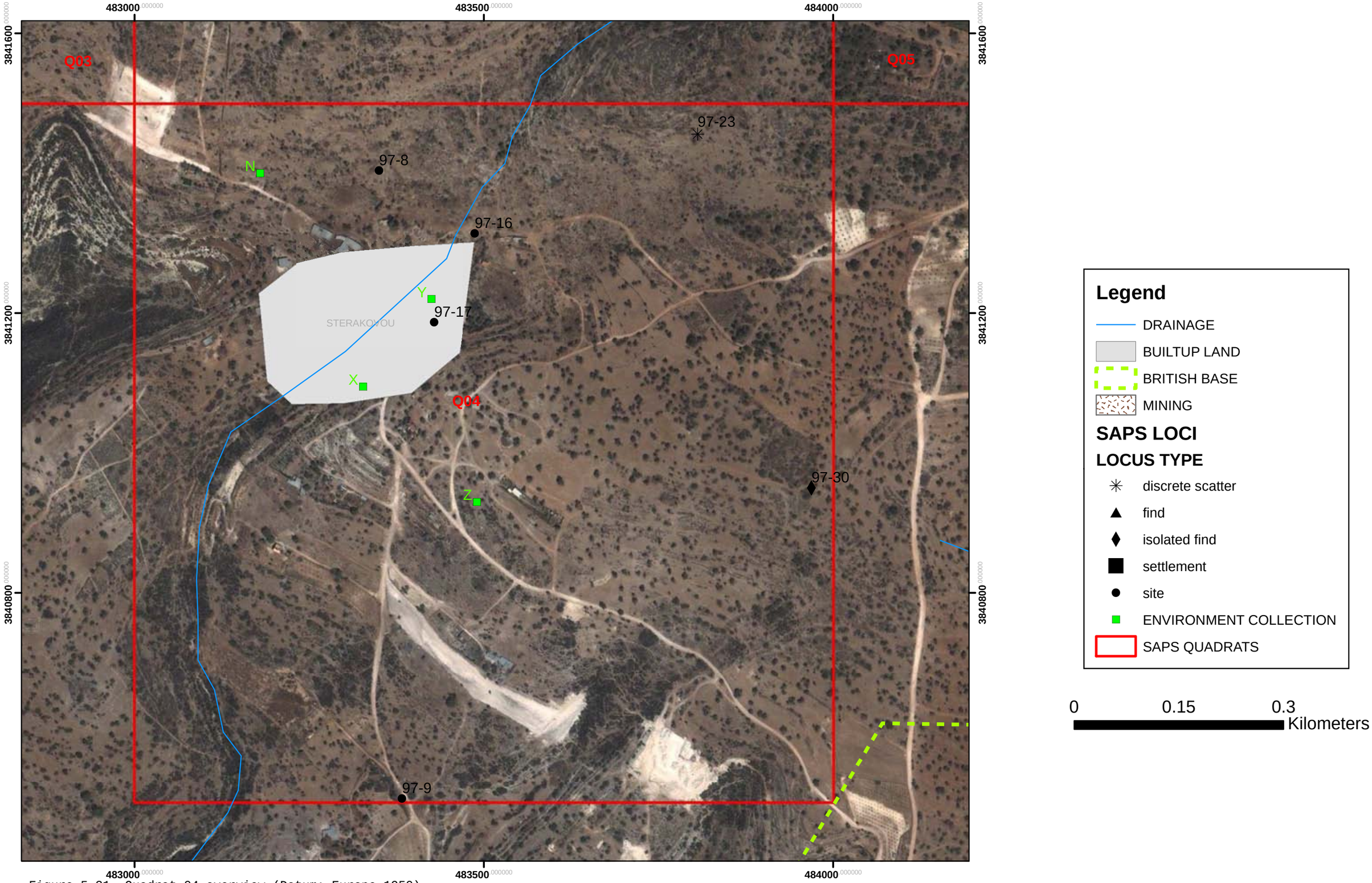


Figure 5.31. Quadrat 04 overview (Datum: Europe 1950).

Figure 5.32. View: N. Press block and architectural rubble from locus 97-09.

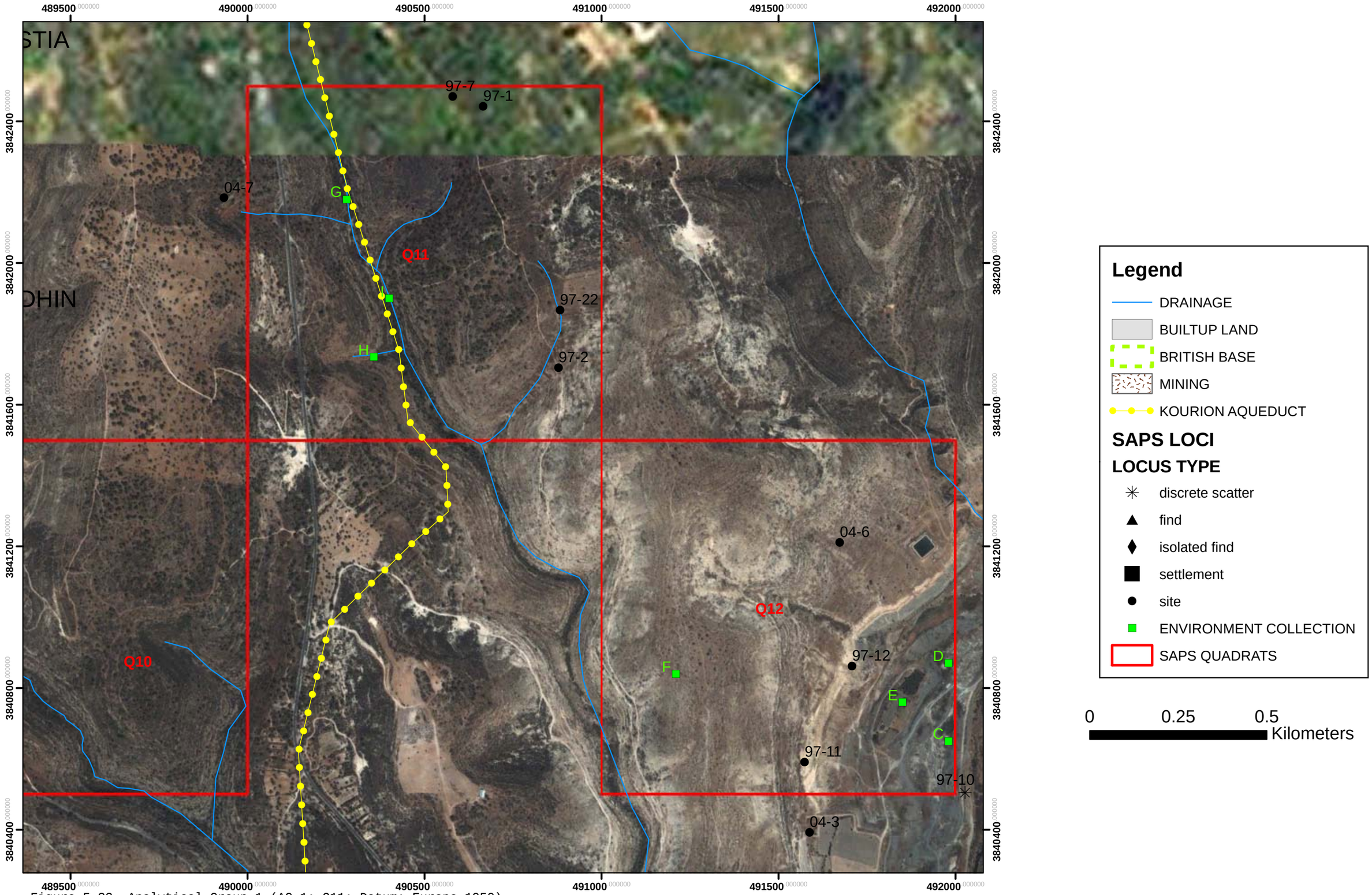


Figure 5.33. Analytical Group-1 (AG-1: Q11; Datum: Europe 1950).

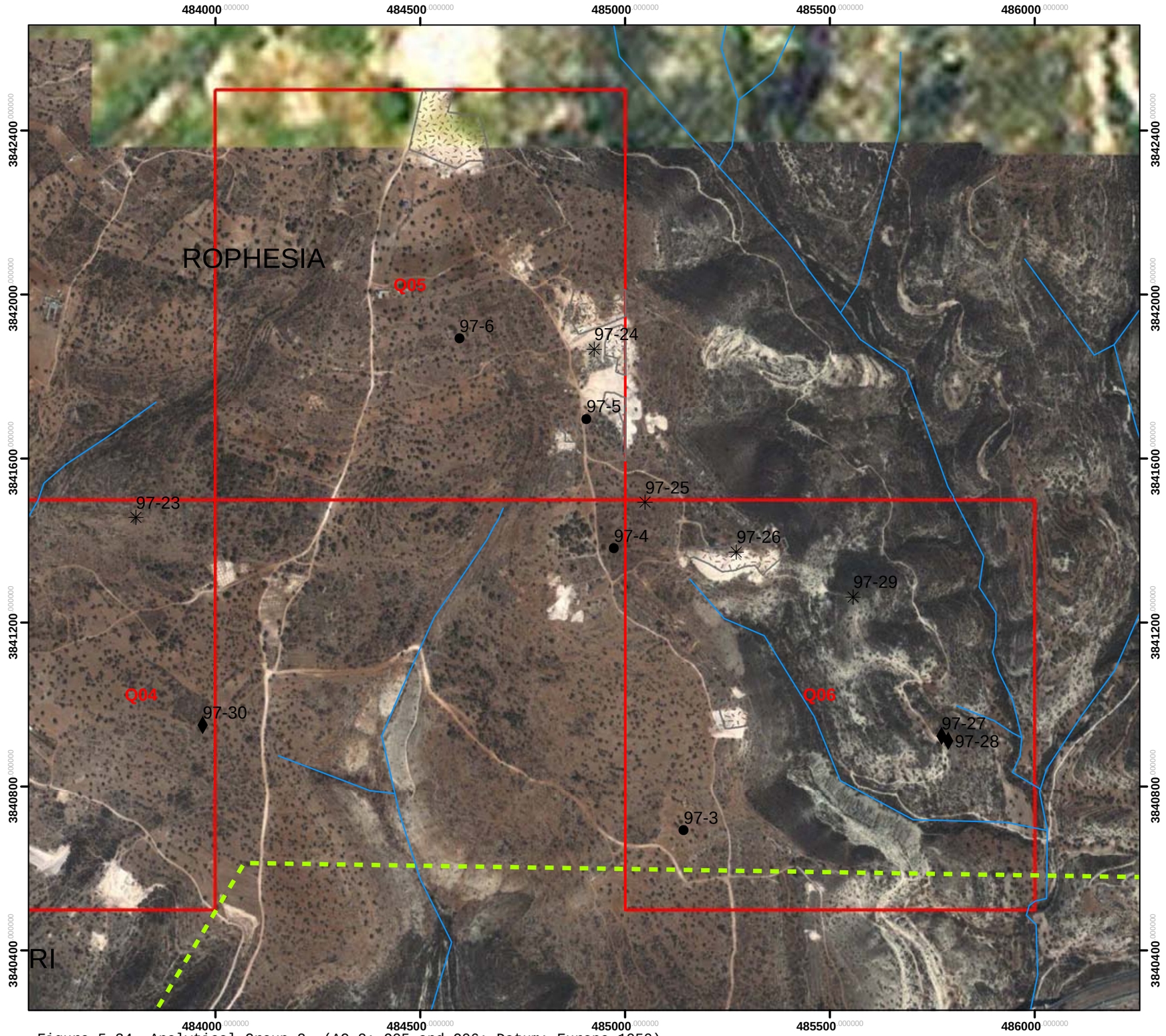
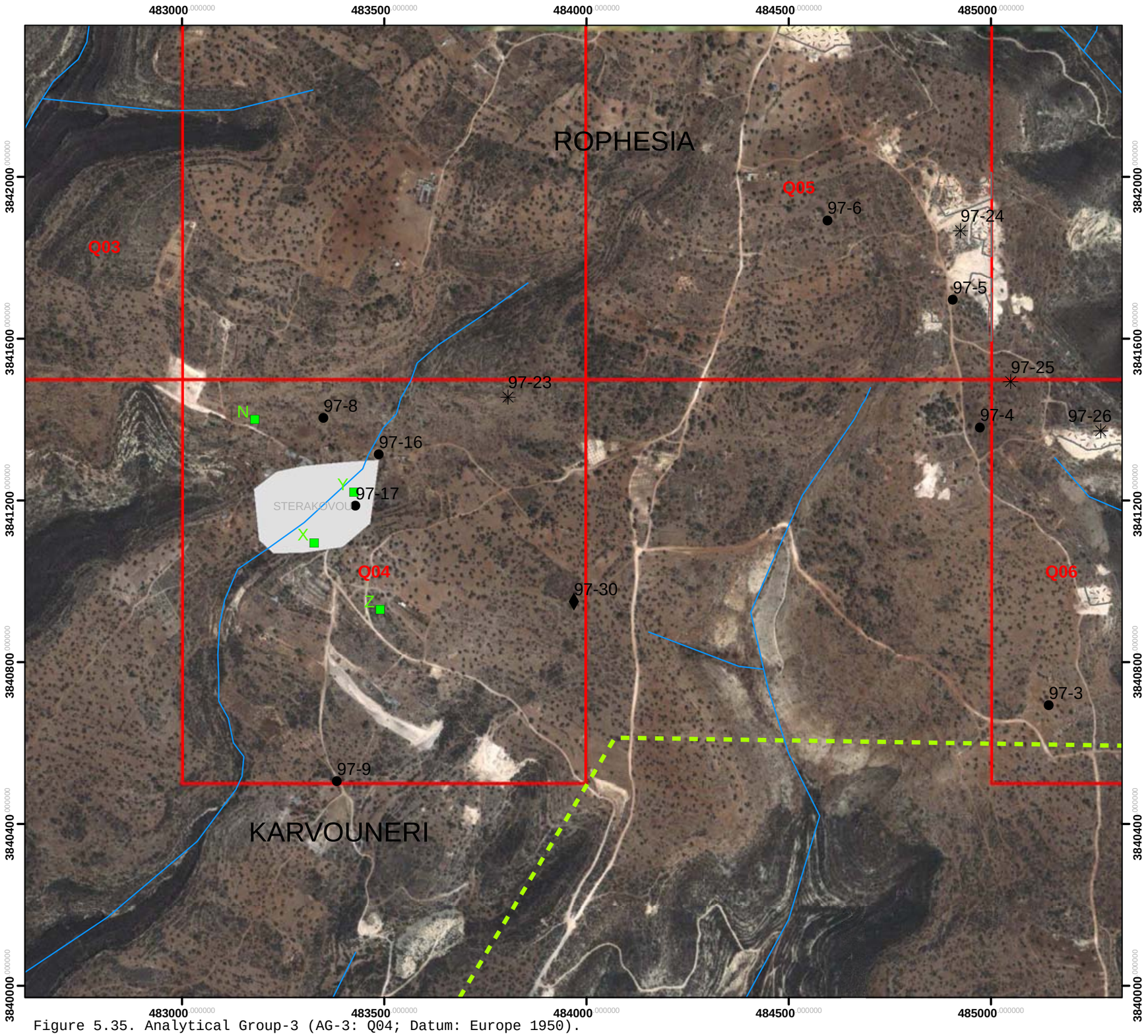


Figure 5.34. Analytical Group-2 (AG-2: Q05 and Q06; Datum: Europe 1950).



Legend

- DRAINAGE
- BUILTUP LAND
- BRITISH BASE
- MINING

SAPS LOCI

LOCUS TYPE

- ✳ discrete scatter
- ▲ find
- ♦ isolated find
- ■ settlement
- ● site
- ■ ENVIRONMENT COLLECTION
- SAPS QUADRATS

0 0.25 0.5 Kilometers

Figure 5.35. Analytical Group-3 (AG-3: Q04; Datum: Europe 1950).

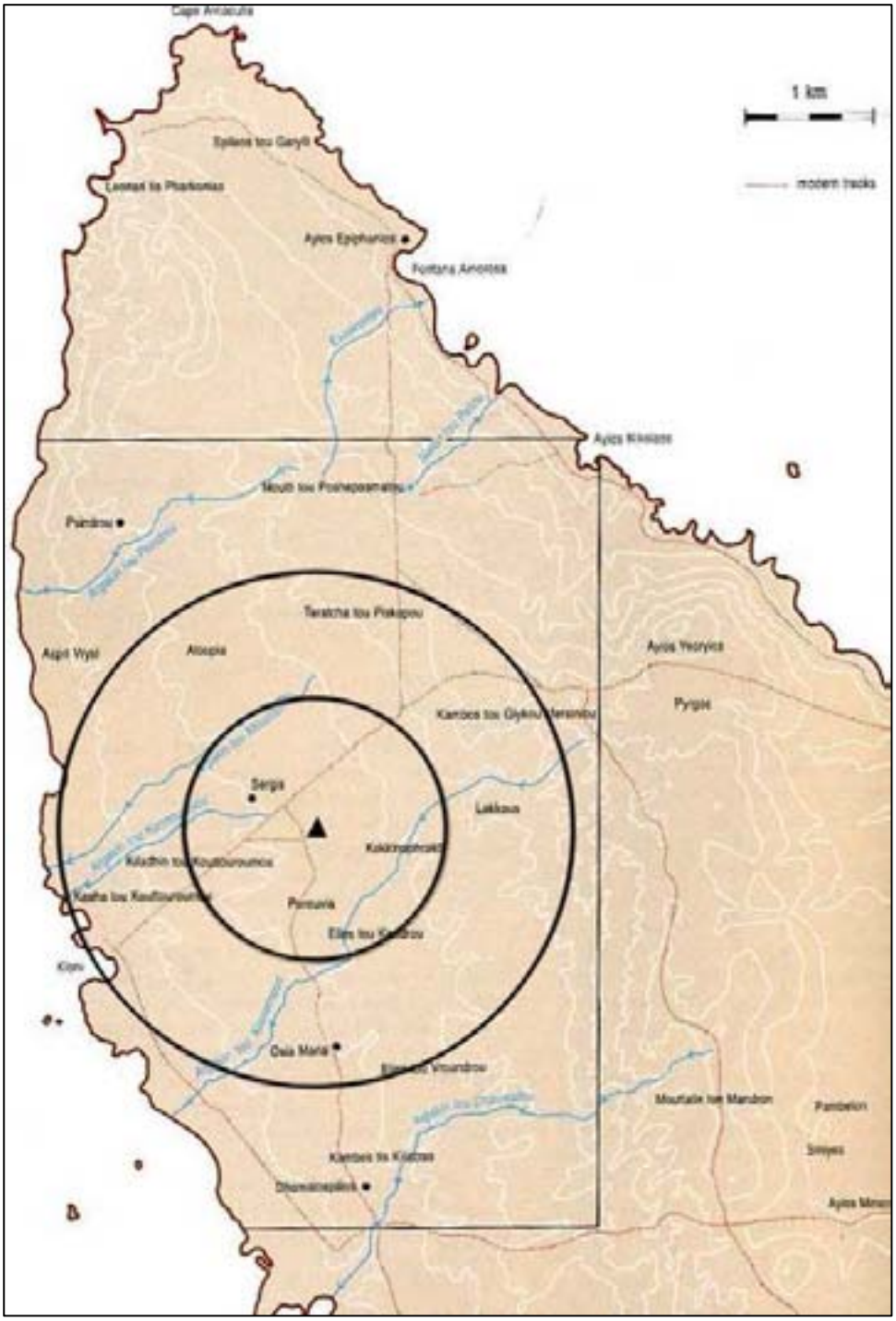


Figure 5.36. The DAP study area and select sites (adapted from Fejfer(ed) 1995: 18, figure 3).

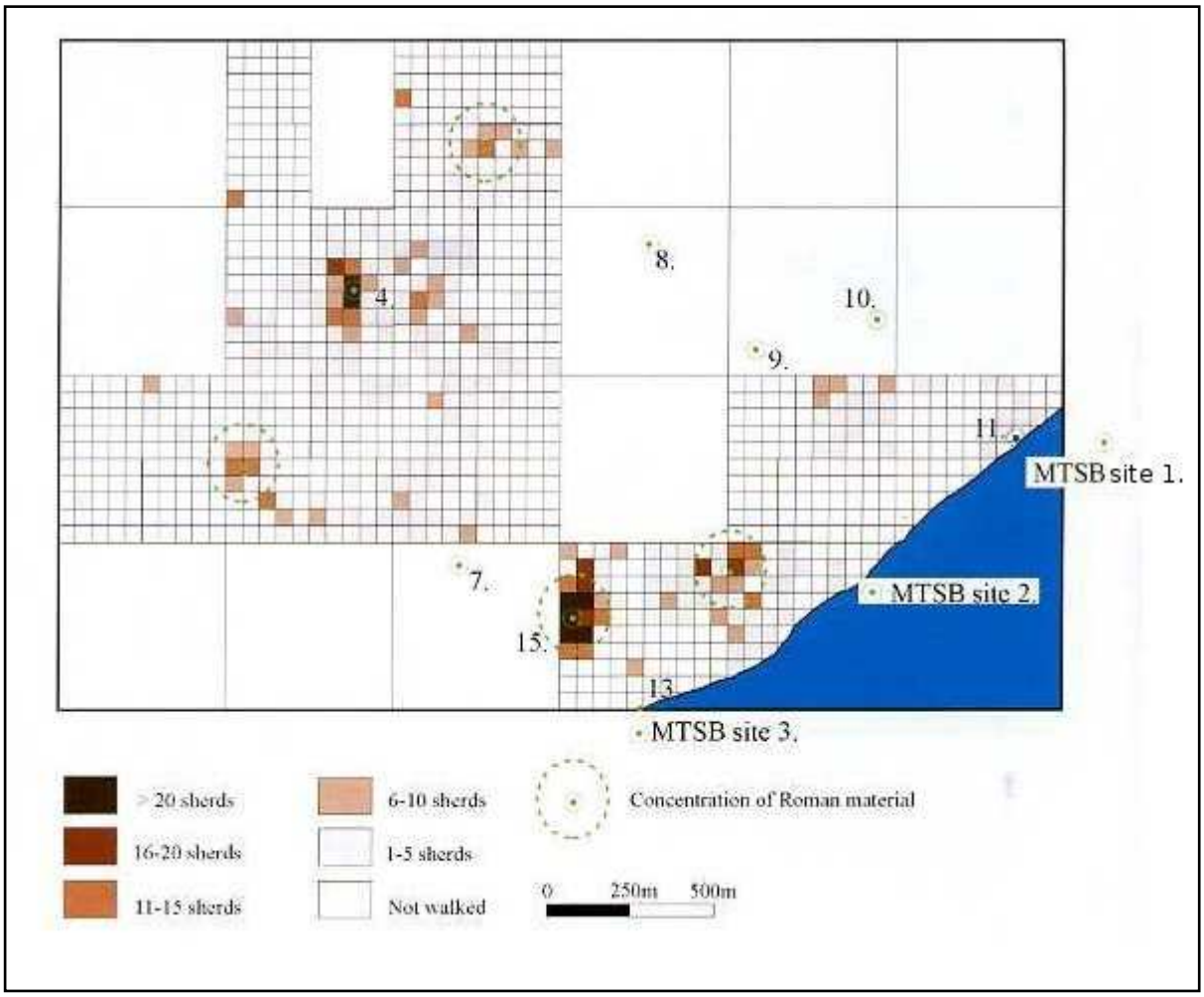


Figure 5.37. Late Antique sites in the Lower Maroni Valley (4 Petrera, 7 Phouches, 8 Kapsouloudhia, 9 Aspres, 10 Vournes, 11 Tsaroukkas, 13 Vrysoudhia)(Manning *et al* 2002:14, figure 2.11).

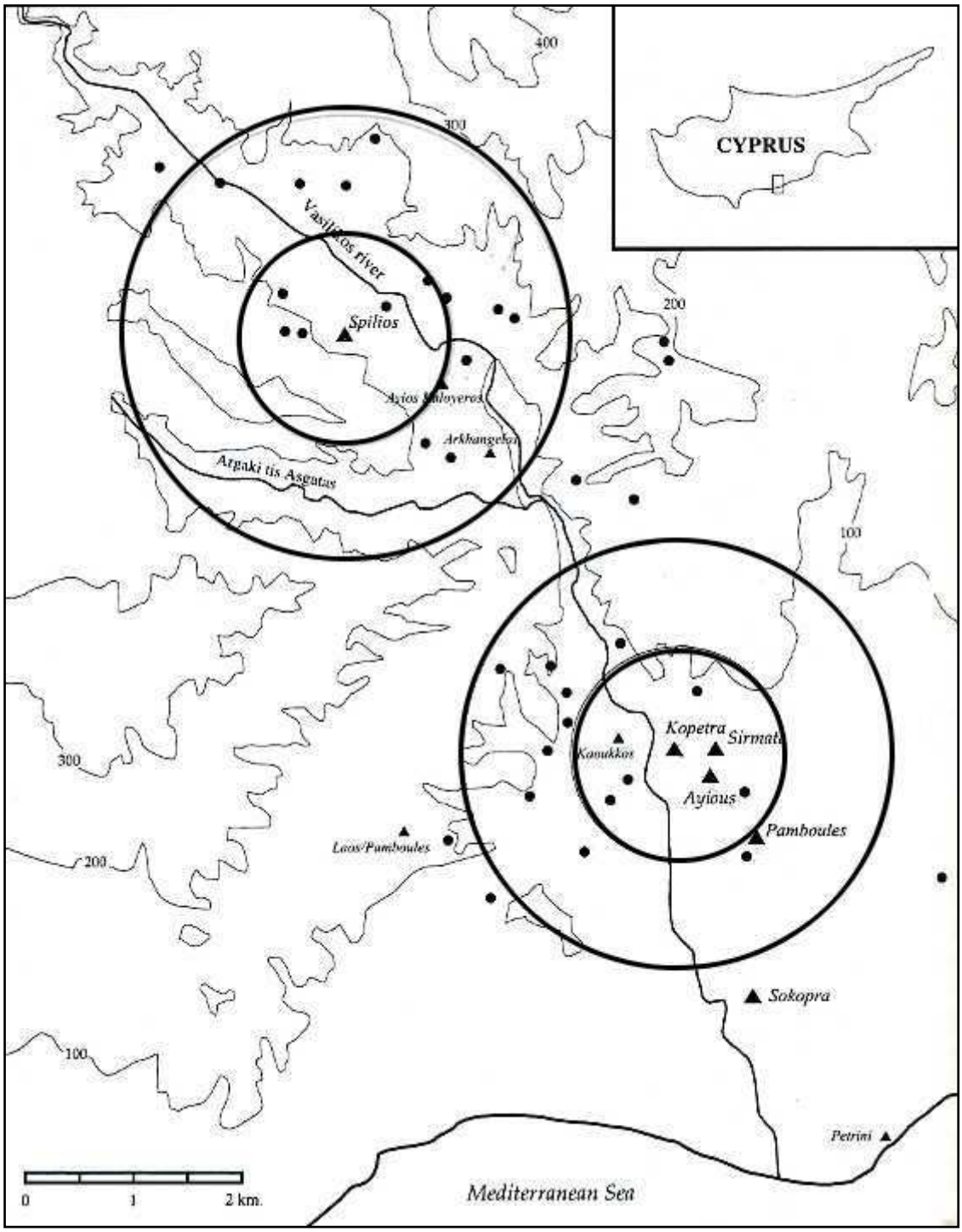


Figure 5.38. Late Antique sites in the Vasilikos Valley (adapted from Rautman *et al* 2003: 238, figure 7.1).

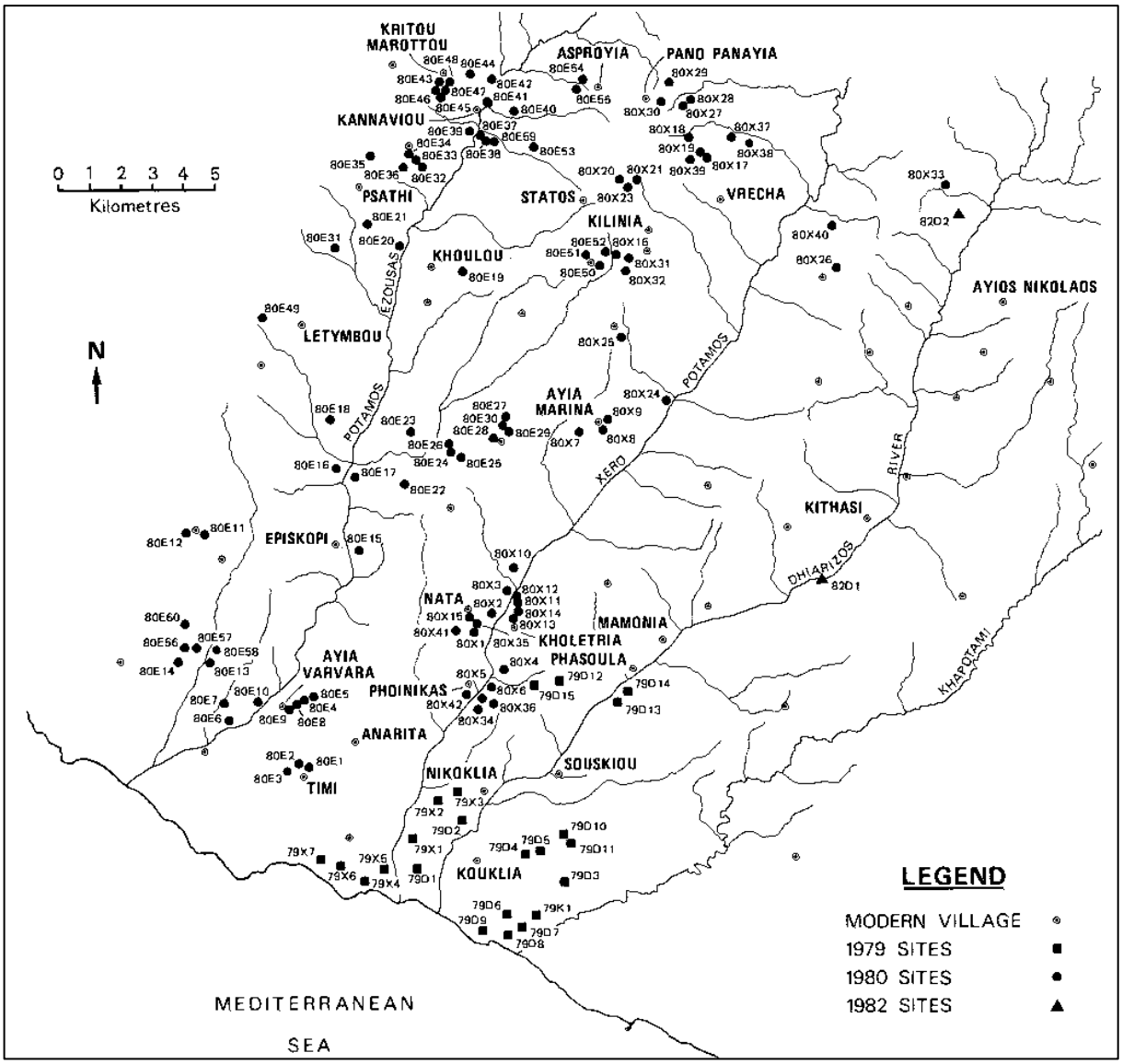


Figure 5.39. Distribution of select sites identified in the CPSP study area (Rupp *et al* 1984: 137, figure 4).

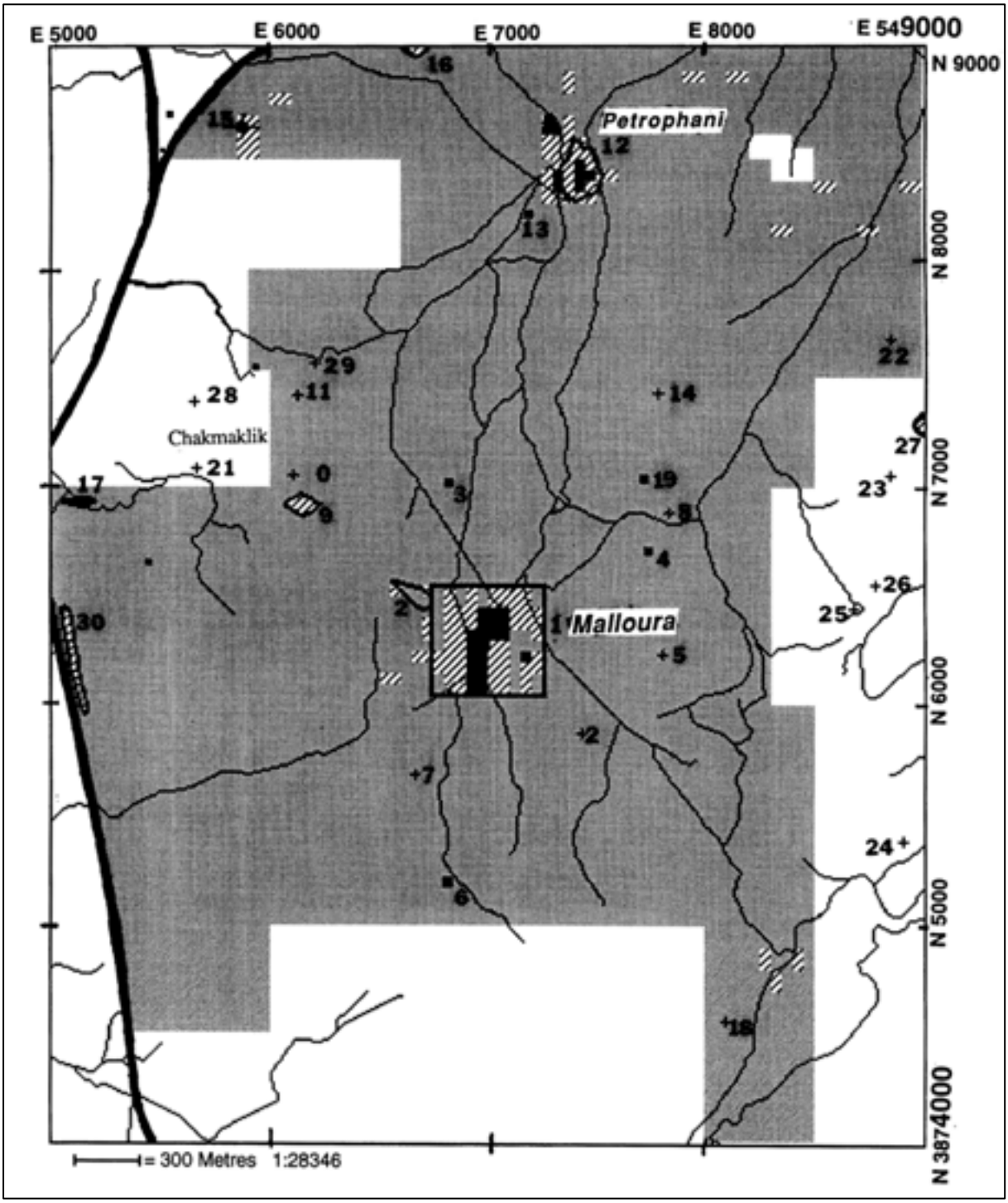


Figure 5.40. Sites in the AAP study area (Toumazou *et al* 1998: 171, figure 4)

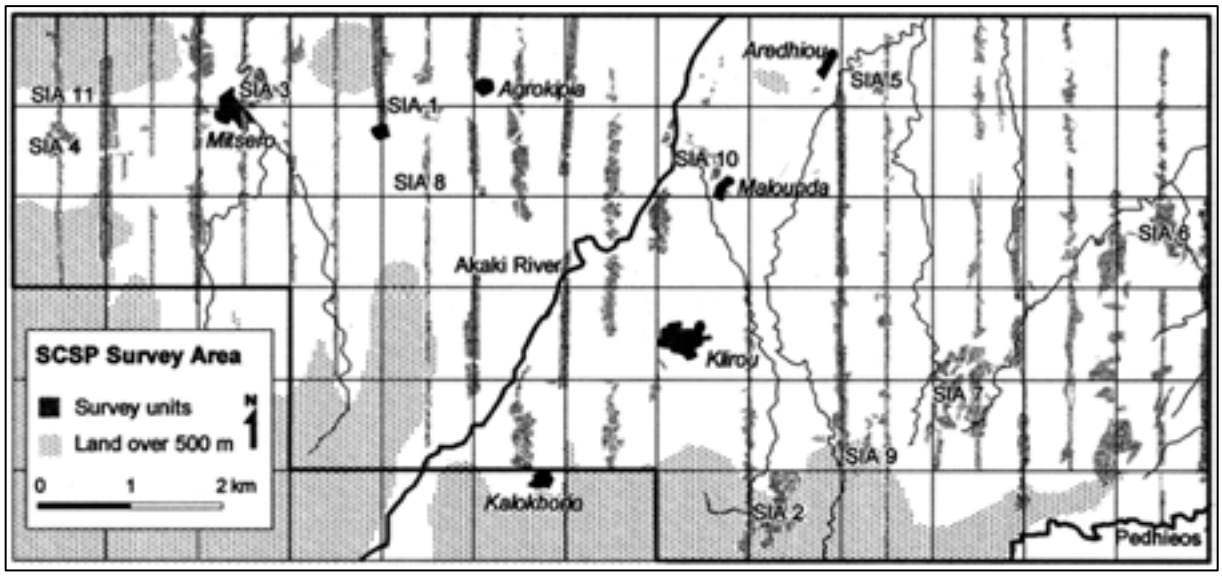


Figure 5.41. Detail of the SCPS survey area, transects, and SIAs (Given *et al* 1999: 23, figure 2).

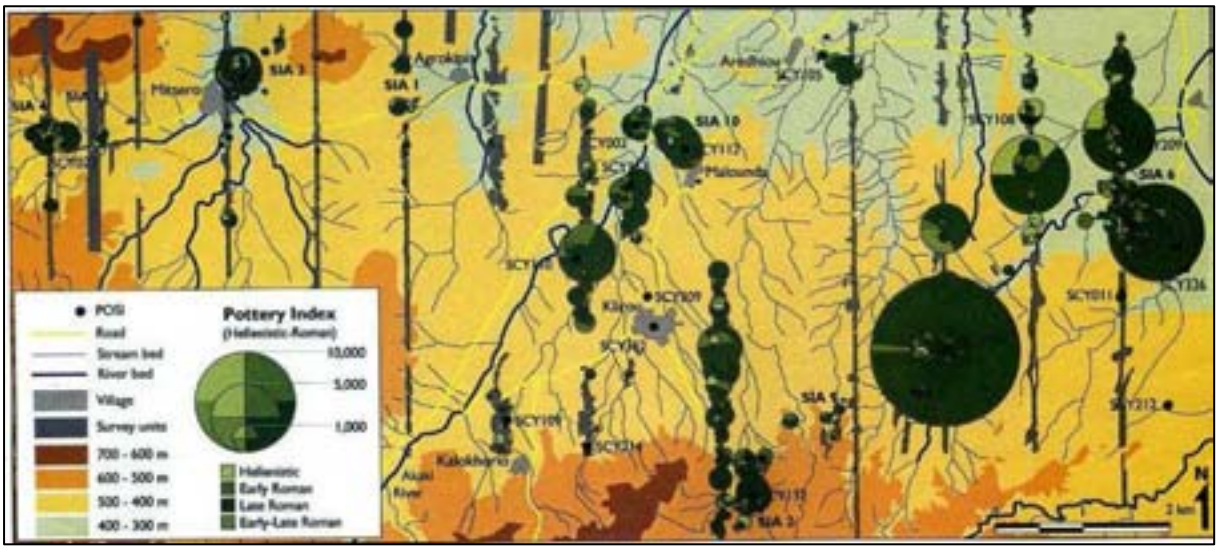


Figure 5.42. Hellenistic through Late Roman ceramics, PSOIs, and SIAs recorded by the SCPS (Knapp and Given 2004: 87, figure 6.6).

CHAPTER 6

Conclusions

6.1 Introduction

This chapter's main purpose is to provide possible answers to the general questions proposed in the introduction to this thesis by drawing on the inferences developed in Chapters two through five. These questions essentially centre on whether aspects of Cyprus' provincial infrastructure (*e.g.* transportation, productive) and social makeup (*e.g.* provincial elites) indicate that it was either a marginalized or a well integrated province in Late Antiquity. At this point it is useful to reiterate several sub issues that contribute to the more general question as to whether Cyprus was a well integrated province in Late Antiquity. These include

- To what extent did the central government recognise Cyprus' tactical value during the sixth and seventh centuries AD?
- Based on the case study of Kourion, to what extent did this urban landscape remain viable during Late Antiquity; is the development best characterised as decline, continuation, or transformation?

- To what extent did Cyprus experience intensification in rural production during Late Antiquity? To what extent, if any, is this process detectable in Kourion's hinterland?

Section 6.2 provides a contribution to the development of these topics. Section 6.3 provides recommendations and objectives for future targeted field survey in Kourion's hinterland in relation to the model of Cypriot Late Antique hinterlands presented in subsection 6.2.4.1.

6.2 Late Roman Cyprus: A well-integrated province?

Over the last decade, researchers (*e.g.* J. Leonard 2005; Parks 1999; Bekker-Nielsen 2004; Metcalf 2009) have successfully challenged the long held view (*e.g.* Hill 1949; Mitford 1980 and Potter ND) that Roman Cyprus, and by extension, Late Antique Cyprus, was a marginal and unimportant province within both the early and Late Empire. This thesis is a contribution to this revisionist view. Several interesting perspectives on Late Antique Cyprus emerge from the discussions presented in the preceding chapters (especially Chapters 4 and 5). Current archaeological research derived from an array of sources such as the sigillographic record, regional surveys as well as rural and urban excavations (*e.g.* Metcalf 2004; Megaw *et al* 2007; Rautman *et al* 2003; Rautman 2004; Rautman 2000; Given and Knapp 2003) are increasingly producing data that indicates that Cyprus was well-integrated into the larger social, economic and strategic trajectories of the Late Antique eastern Mediterranean

(§4.2.3.2.A; §4.2.4). Cyprus, like other economically developed provinces, possessed extensive maritime (Leonard 2005) infrastructure (ports, harbours, and anchorages) and a developed road system (Bekker-Nielsen 2004) which reached its zenith in Late Antiquity. Interestingly, the Cypriot road system was comparable to its eastern neighbour and administrative superior, Syria. The complex of sites around Evdhimou bay (§4.2.3.1), for example, clearly illustrates the symbiotic relationship between transport infrastructure and the productive components of the Cypriot Late Antique landscape. It is also likely that the expansion of the road system into remote areas like the Akamas and Krommyakon promontories reflect the increasing intensification of agricultural activity in previously marginalized sectors of the landscape during Late Antiquity.

The expansion of the province's transportation infrastructure during Late Antiquity, it is reasonable to suggest, contributed to the continuation and expansion of several Roman period heavy industries (*e.g.* pottery production and copper production: see §4.2.3.2 and 4.2.3.2.A) and rural expansion during this period. While the scale and organization of copper production on Cyprus remains unknown during Late Antiquity, researchers have identified continued Late Antique exploitation of this resource at several locations (*e.g.* Solea valley, Vasilikos valley, around Tamassos) across the province (§4.2.3.2). For example, based on the slag recovered from fill contexts in the monastery complex's courtyard at Kalavasos Kopetra (Area I) (Rautman 2003), it is reasonable to

suggest that at least in the lower Vasilikos valley, the institutional church was involved in some stage(s) of the productive process if not the procurement process as well. Based on the discussion presented in Chapter 4 (§4.2.3.2), it is also likely that even localized metallurgical processes would have produced noticeable change in the landscape. A community's access to timber resources directly controlled that community's ability to process and produce copper. For example, based on the figures presented in Chapter 4 (§4.2.3.2), the 500-600kg of copper produced at a Roman period villa rustica near Ayios Kononas (Fejfer and Mathiesen 1995: 80, fig. 10; 1995a: 65) would have consumed approximately 45 hectares of pine forest, or an equivalent biomass, from the immediate environment around this site. At more extensive and long-lived copper mining and production sites, the environmental impacts were undoubtedly greater.

Cypriot workshops also produced a series of coarse wares like amphora (LRA1, LRA13), roof tiles, and thin walled cookwares for both local consumption and export. At present, geochemical analysis (*e.g.* Rautman *et al* 2003; Gomez *et al* 2002; Rautman *et al* 1993; Rautman *et al* 1999) has identified likely clay sources for these wares in southwestern, south central, and eastern Cyprus. Their research also indicates the clay used for the production of CRS originate in southwestern and southern Cyprus. Rautman and colleagues' (2003) analysis of tiles from Kopetra indicate that the Cypriot tile industry used clays from derived from sources located in the lower Mesaoria valley, the Mesaoria plain and south central

Cyprus. The distribution of Late Antiques Cypriot wares was extensive. At Anemurium in rough Cilicia, for example, both CRS and Cypriot thin walled cookwares constituted a major component of the early Byzantine fine and common ware sub-assemblages (Williams 1989; Russell 2002). At the inland village of Sumaqa in modern Israel, Cypriot Red Slip wares comprised the majority of the fine ware sub-assemblage as well (Kingsley 2003; 1999). The ceramic assemblage from the Upper Zohar fort, which functioned as a lookout, in the northern Negev contained CRS forms attributable to the late sixth and seventh centuries AD (Harper 1995) suggests that Cypriot wares also circulated widely in non-urban and village contexts[1].

6.2.1 The Late Antique Cypriot elites

I have suggested at several points in this thesis that various social groups and institutions actively created a dynamic, contested, multi-scale, and *multilocal* provincial landscape in Cyprus during the Roman and the Late Antique periods. As a result of the reorientations of the state's administrative apparatus during the fourth through the sixth centuries AD, Cyprus, like other provinces (Chapter 2, §2.3.1.2; Chapter 4, §4.2.1.2) experienced a proliferation of senatorial *honorati* which increased pressure on the local mechanisms that insured the smooth operation of civic government. At the localized level of the individual city, these *honorati* increased their personal authoritative resource sets at the expense of their former social equals, the curials, and their city's

[1] Identified CRS forms consist of 9A and 9B (Harper 1995: 23-24).

interests. Nevertheless, if repeat legislation is an accurate indicator of curial services' growing undesirability, it appears the central government's attempt at social engineering was poorly received in the provinces (§2.3.1.2.A)[2]. At a larger scale, it is reasonable to interpret this process as one facet of a manifold phenomenon in which aspects of the socio-political centre increasingly penetrated the provincial periphery. This development undoubtedly altered the established localized conduits and structures that had define Cypriot elite competition during the Roman period: service in local civic government and participation in the provincial assembly. Extensive institutions, like the state and church, now offered upwardly mobile Late Antique Cypriots a considerably more robust means of transforming their material wealth into social capital, which in turn, allowed them to increase their personal authoritative resource sets well beyond the scope of their Roman forerunners.

Some researchers (Alastos 1976; Chrysos 1993) have suggested that the Cypriot Church provided the provincial elites with a similar social conduit as the provincial *Koinon* had during the Roman period. However, in Chapter 4 of this thesis (§4.2.1.2) I have suggested this is only partially true because the *Koinon* and the corporate church differed in the ways they reproduced and legitimised their authority. The institutional church possessed a considerably more extensive and diverse resource base and access to

[2] See Harries (1999) and Barnish and colleagues (2001) for a more optimistic interpretation of repeat legislation; see Arjava (1988) for examples of social engineering.

the state-level conduits through which these resources flowed than the *Koinon*. The church used an extensive hierarchical administration and was capable of issuing sanctions against non-compliance. Perhaps more importantly, unlike the *Koinon*, it was not as overly dependent upon one particular social stratum for the legitimization and reproduction of its position in Cypriot society. This social plurality enabled the church to engage efficiently with the everyday lives of a wider spectrum of Cypriots in a way that *Koinon* could not. Based on these characteristics, it seems reasonable to suggest that main difference between the *Koinon* and the church centred on the distinction between a hierarchical organization with a corporate identity and the ability to pursue collective interests and provide sanctions for noncompliance on one hand and a loosely structured organization that predominantly relied on personal authority, on the other.

Arguably, as in other parts of the empire, the province's bishops became important civil functionaries from approximately the late fourth century AD onwards (§2.3.1.1). In general, the Cypriot bishops, like bishops across the empire, "were called on to defend the secular interests of their flock" (Metcalf 2009: 355). There is evidence to suggest that upwardly mobile Late Antique social actors viewed the Episcopal office as any other office that could provide social prestige. In relation to the limited tenure of a provincial governor, researchers (*e.g.* Slootjes 2006; Metcalf 2009; Rapp 2005) have argued that a bishop's lifetime appointment placed them in a position which enabled them to plan and execute long term

initiatives (*e.g.* construction projects) in a more efficient manner than the provincial governor. Apart from the practical advantages lifetime appointments afforded bishops, Cypriot bishops, who more often than not originated from within the province, undoubtedly had a firmer understanding of the key players that constituted the provincial power elites and local political priorities. The institutional church also took on a number of civic-social functions, particularly in the legal arena where Episcopal courts served as an alternative lower court to the standard provincial court system. On Cyprus during the sixth century AD, it is reasonable to suggest that the Episcopal courts would have presented an attractive option to those of the state[3]. On the other hand, as the Episcopal office's mandate overlapped with what traditionally had been the domain of the secular authorities, it undoubtedly created tensions between these institutions (Slootjes 2006)[4]. As an authoritative institution, the corporate Cypriot Church in its fully developed Late Antique incarnation successfully defended its corporate interests against external influences (*e.g.* Antioch until late fifth century AD; influx of various Monophysite Christian refuges during the late sixth and seventh centuries AD) and with state level policy (*e.g.* Monotheletism). These successes insured the continued reproduction and maintenance of the corporate Cypriot Church's own prominent position within the multifaceted

[3] For a recent discussion on the growing role of Cypriot bishops' in provincial administration, see Metcalf (2009: 355-359).

[4] As mentioned in §2.3.1.1, by the reign of Justinian I, the central government also relied on the bishop to report any misadministration.

authoritative landscape of Late Antique Cyprus. Based on an analogy with the Persian and the early stages of the Muslim occupation of other eastern provinces, it may reasonably be assumed that Cypriot church's administrative apparatus, embodied by the distribution of bishops across the province, would have augmented and possibly superseded the importance of the provincial apparatus at the localized level during periods of political-military dislocation[5]. Therefore, it is likely that the archbishop and provincial notables (or those that remained in the province) and local bishops in concert with local notables (or what remained of them) would have taken over much of the day to day policy making decisions within a province that was rapidly transforming into a contested territory, from the late seventh century AD[6].

6.2.2 Cyprus' tactical value

Although scholarly opinion remains divided, it is reasonable to suggest that the Roman state could process geographic data, however crudely, from specific geographic areas and then devise specific tactics to achieve its large strategic objectives (§2.4). From this perspective it is probable that the Late Roman state recognised Cyprus' tactical value in economic terms as early as the mid-sixth century AD (Justinian I's reign) when the province, along with

[5] "On many occasions the municipal council (together with the metropolitan or local bishops) apparently had to replace the central government of the past" (Tsafrir and Foerster 1994: 109-110). Also see, Mayerson (1963).

[6] It is reasonable to assume the partnership between provincial notables and the bishops of Cypriot origin remained relatively stable until the ninth century AD when imperial appointees from outside Cyprus increasingly take control of Cypriot Sees. Metcalf (2009: 306) suggests this development may be a result of "a shortage of well-qualified candidates locally".

several other comparatively wealthy provinces, contributed material resources for the defence of several Balkan provinces (§4.2.3). The settlement of several thousand Armenians in 578 AD by Maurice (while still serving as Caesar) across the island (Kyrris 1970; Metcalf 2009) indicates that, at least on a general level, the central government was aware of the potential threat the Persian occupation of the mainland posed to Cyprus' security. However, if the piratical-like raid recorded in John of Nikiu's chronicle during Maurice's reign is accurate (trans. Charles 1916), it is reasonable to assume that either the force at the governor's disposal was still inadequate and/or the raid's speed outpaced the response speed of the provincial defence force. Regarding the movement and exchange of information, it is highly probable that refugees fleeing to Cyprus from the Persian and then the Muslim occupation of the mainland brought an array of valuable tactical information with them which would have been useful to tactical planners in the provincial and imperial governments. Thus, by the late sixth or early seventh centuries AD, based on the limited historical evidence and the comparatively richer archaeological evidence (*e.g.* coins, fortifications and sigillography), it is very likely that both the provincial and central governments were actively taking steps to bolster Cyprus' defensive capabilities.

As incomplete as the distribution of military lead seals' find spots from the province is, what is available appears to indicate that strategic planners were in contact with individuals and institutions in coastal and, perhaps more importantly, inland

regions (figure 4.2). Regardless of whether the late phase of urban fortifications identified at several cities, date to the interval between the raids of 649 and 653 AD or after 653 AD (*i.e.* Najbjerg *et al* 2002; Balandier 2004; Metcalf 2009), what is important, I suggest, is the level of investment in various types of fortifications like hard point/refuges and lookouts that were not restricted to urban contexts or the coastal zone. The refuge fortifications at Vigla, hard points in the Keryina Range, and lookouts at Kopetra(?) and in the Malloura valley clearly illustrate this trend (*e.g.* Caraher *et al* 2007, 2008; Balandier 2003; Rautman *et al* 2003; Toumazou *et al* 1998). At the large geo-strategic level, several researchers (Rautman 2003; Cameron 1992) have suggested that after the loss of Arados, imperial planners abandoned the eastern Mediterranean in favour of protecting the Aegean core[7]. While this strategy is plausible, those military/administrative seals solidly attributable to the eighth century AD (Metcalf 2004) indicated that apart from the tactical withdrawal of troops, imperial planners continued low-level and intelligence gathering operations on Cyprus (§4.2.4). Such operations undoubtedly occurred in conjunction with similar operations in southeastern Anatolia. In short, it is unlikely that imperial strategic planners would have lost sight of the island's tactical potential even when it was technically neutral.

[7] "Following the loss of Arados (Arwad) in 650, Constantinople effectively abandoned the region in order to concentrate its defenses in the Aegean" (Rautman 2003: 260-261).

6.2.3 Cypriot urban landscapes: Kourion in Late Antiquity

In general, while most scholars would agree that the material and social expressions that defined the Roman urban environment underwent significant changes during Late Antiquity, scholarly consensus remains divided as to whether these changes constitute a decline or transformation (§2.3.2). However, regardless of what position is adopted regarding continuity, transformation, or decline, what does remain constant is the “city” under both the early and late empire continued to remain a highly abstract concept in the sense that various social groups and authoritative institutions approached and engaged with the urban environment from differing, and often competing, perspectives. The accretion of different meanings created *multilocal* spaces within the urban landscape, which in turn, contributed to the creation of multiple overlapping urban images for a given city. A comparison of a so-called sixth century AD imperial “administrative city”, like Justiniana Prima in Serbia, with cities like Kourion or Scythopolis, for example, illustrates this phenomenon’s range of diversity. Arguably, a city like Justiniana Prima also provides a very clear example of the near total ascendancy of what Lefebvre (1991) has termed “abstract” space, which in this instance equates to the institutional authoritative space within this designed environment.

However, in the case of cities with developed Roman urban armatures, it is also probable, given the considerable time cities needed to acquire their armature components and their differing use biographies in the urban landscape, that over several generations at

least some of these components would have become redundant and/or would have lost their wider cultural relevance. The shops at Sardis (Crawford 1990; Harris 2004), which used part of a bath-gymnasium complex, as well as the installation of pottery and glass kilns in the bath complex at Leptiminus (Leone 2003) provide a good example of the way outmoded public space became productive spaces within urban landscapes during Late Antiquity. Along similar lines, the installation of a pottery factory (10 kilns and storerooms) in the derelict theatre and the conversion of a derelict bath into a textile factory at Scythopolis (Bet Shean) as well as the conversion of the defunct Artemis temple complex at Jerash into an industrial pottery factory indicate the growth of productive sector of the urban landscapes during the seventh and eight centuries AD (Walmsley 2007: 348-349; Tsafrir and Foerster 1994: 113; Zeyadeh 1994: 120-121). The growth of productive space is also detectable in the residential component of Late Antique urban environments. For example, the residents of the so-called House of the Olive Press at Salamis Constantia, which researchers (*e.g.* Ellis 2000: 125) have described as “a regular peristyle house with an apsidal reception chamber” installed a press in the former apsidal reception hall during Late Antiquity. Similarly, the Late Antique residents of the so-called “House of the Achilles Mosaic” at Kourion also installed an olive press in that edifice (*Pers. Obs.* 1997). The installation of wine and oil presses in urban contexts also finds a parallel at Ptolemais and Tocra in modern Libya (Wilson 2001). The process of urban ruralisation is detectable in places like Apamea in Syria,

which increasingly began to resemble a large village during the Islamic period (Foss 1997: 265-266). Often, researchers have viewed these monumental public edifices redevelopment and expedient reuse as productive or residential spaces during Late Antiquity as evidence of urban decline rather than urban spatial reorientation and economic diversification and expansion (*i.e*. a paradigm shift from a consumer to productive city). Conversely, the increasing monumentality of villages is also a well attested and spatially extensive phenomenon. For example, Varinlioğlu (2007: 297-299) has noted the presence of so-called "*komopolis*" settlements that occupy the middle ground between cities and villages in Rough Cilicia.

Turning to Cypriot urban landscapes, if the conditions described in the *Vita* of Saint Symeon The Fool (trans. Krueger 1996) accurately represent contemporary urban conditions on Cyprus during the second quarter of the seventh century AD, it is reasonable to suggest that the province's urban landscapes were socially dynamic during the first half of the seventh century AD. The epigraphic data attributable to the fifth through seventh centuries AD from Korykos in neighbouring Rough Cilicia (Trombley 1987) indicates the existence of an economically active Late Antique citizenry that engaged in an array of occupations. For example, citizens involved in construction trades comprise approximately 6 percent of the 456 inscriptions (Varinlioğlu (2007: 295-296); 40 percent of the inscriptions attest to citizens working in "clothing manufacture and minor handicrafts, in seafaring trades, wine import, pottery manufacture and retail" (Kingsley 2003: 122). Unfortunately, to

date, there is no comparable database for Cyprus, but if the data from Korykos' necropolis is indicative of a larger trend in Late Antique urban industries, it is reasonable to assume that Cypriot cities were equally as economically diverse.

Nevertheless, the spatial analysis of Kourion presented in Chapter 4, (§4.3), while preliminary, indicates that the larger socio-economic currents that were transforming the urban images of other cities across the eastern empire were equally active on Cyprus during this period. The findings of this analysis offer an alternate view to the pessimistic appraisal of Late Antique Kourion advocated by Mitford (1971; 1980). Arguably, Mitford's (*ibid*) interpretation and characterization of Late Antique Kourion is at best applicable to conditions in the city immediately following the mid-fourth century AD quake(s). Perhaps more importantly, although post-quake Kourion may have contracted in relation to its pre-quake incarnation, the analysis presented in Chapter 4 strongly suggests that the city's urban landscape remained viable and continued to accrete multiple and competing meanings for its inhabitants at least into the early eighth century AD. Kourion, like several other coastal cities (*e.g.* Paphos, Constantia, Amathous), also provides evidence, albeit limited in scope, for external contacts into the eight century AD[8]. The installation of a bread oven, domestic units, and shops in several defunct public edifices in Kourion's civic core (*e.g.* the forum and bath-nymphaeum complex) captures important

[8] For a discussion of continuity at various cities (mostly numismatic data) from these sites, see Metcalf (2009: 269-298).

stages in the emergence of Kourion's new Late Antique productive urban image. It is also probable that Kourion's glass industry, based on evidence recovered during excavations in the Episcopal complex, was close to, if not in, the civic core. Presently, at Kourion, detailed published data is only available for the Episcopal Basilica (Megaw 2007). Data derived from the atrium's secondary occupation sequence indicates that domestic activity in this sector of the complex continued into the eight century AD. Megaw (2007) has directly associated this occupation with the presence of salvage workers at the complex. Arguably, based on the analysis presented in chapter 4 (§4.3, 4.3.1.2) there is nothing explicit in the assemblage that indicates what the occupants' occupations were, but recovered coins (including some Arabic issues) indicate that activities requiring monetary exchanges also occurred in this area. The selective provisional discard and curate behaviour observed in this sector of the complex are at best equivocal on this topic. The reuse of the complex's structurally sound elements for domestic and/or productive activities other than salvage operations would not be out of step with the pragmatic approach to architectural reuse identified at Kourion's other monumental edifices (*e.g.* baths, forum) or the larger trend identified across the Late Empire.

Apart from the limited glimpse provided by the preliminary publications derived from the excavations at the so-called "Earthquake House" (§4.3), very little is known about the components that comprised a typical neighbourhood at Kourion prior to the 365 AD quake and even less is known about this topic for the centuries

leading up the settlement's apparent abandonment during the eight century AD. Correlate to this, apart from the evidence from the so-called "Earthquake House", there is very little published archaeological data available for Kourion's middle class or marginalized urban social groups, like the urban poor. This, of course, raises an important general methodological question that centres on the ability of sequences derived from special purpose complexes, like Kourion's Episcopal Precinct, or the basilicas and monastery complexes at village sites, like Kalavasos Kopetra, to provide reliable indicator of a settlement's overall vitality and, perhaps more importantly, accurately represent marginalize social groups. The pejorative term "squatter" has often coloured researchers' interpretations of datasets derived secondary occupation phases at monumental sites (both urban and rural). For Kourion, future tightly controlled stratigraphic excavations that preferably target the city's residential districts will undoubtedly provide a more balanced view of Kourion's abandonment as well as provide much need data on the social make-up of the city's inhabitants in Late Antiquity. The same critique is equally applicable to other urban excavations on Cyprus[9].

6.2.4 Rural expansion in Late Antique Cyprus

The climatic proxy data (isotopic, geomorphological, and historical) presented in Chapter 3 (especially §3.2.5, 3.3.4)

[9] The excavations at Sagalassos are a particularly good example of a modern urban excavation, see Sagalassos III (eds. Waelkens and Poblome 1995), IV (eds. Waelkens and Poblome 1997), and VI (eds. Degryse and Waelkens 2008).

indicates that by approximately the mid-sixth century AD conditions in the eastern Mediterranean, especially in the Levant, began to shift away from the relatively moist and stable climatic that had characterized the Roman period to a comparatively unstable regime that lasted for several centuries that was characterised by frequent periods of aridity. The present dearth of climatic proxy data for Cyprus in general, and Late Antiquity in particular, makes it extremely difficult to gage accurately the extent to which models developed for the Levant accurately represents Cypriot conditions at this time (see §3.2.5, 3.3.4). Nevertheless, it is reasonable to suggest that Cyprus would have experienced a similar climatic regime as the Levant during Late Antiquity given their geographic proximity and the interrelatedness of atmospheric systems. Thus, we may reasonably assume that by the mid-sixth century AD the Cypriot climate also began to degrade in a comparable way.

In contrast, the results of several regional archaeological surveys on the island and rural excavations, including the SAP presented in Chapter 5 (see §5.4.2.3), indicate that Cyprus experienced an increase in rural production at this time[10]. Interestingly, it is precisely during this period that many other eastern provinces experienced rural expansion. This, in turn, suggests that climatic oscillations, while an important factor, could not solely account for the apparent recession of intensive agricultural practices towards the end of Late Antiquity.

[10] Rautman (2003: 247-255) provides a succinct summary of the major survey projects on Cyprus.

Nevertheless, the results of these surveys (see §5.4.2.3) also suggest that the Cypriot countryside exhibited considerable sub-regional variation. This is apparent in the trends identified by DAP (ed. Fejfer 1995) and CPSP (Rupp *et al* 1986; Rupp *et al* 1984; Rupp *et al* 1992; Soren and Rupp 1993) that indicate rural activity peaked by approximately the mid-sixth century AD followed by a gradual decline in the seventh century AD within their respective study areas in Paphos' hinterland (see figures 5.36, 5.39). This apparent recession in western Cyprus is likely the result of several factors. As mentioned in Chapter 3, the proxy data (*e.g.* Telelis 2004; Issar 1998; Bookman *et al* 2004) for the Levant indicates erratic weather patterns, including droughts, perhaps as early as the sixth century AD, and a dust-veil event in 536 AD (Stothers 1999), which undoubtedly would have exacerbated any climatic instability for several years. While the historical record does not preserve any data on the spread or affects the plague had on Cyprus, the island's prominent position in the communications network insured it would not have remain unaffected for very long. It is reasonable to suggest that the disruptions to agricultural productivity caused by climatic fluctuations and a reduced labour force (from disease) would have resulted in a shift in agricultural strategies on marginal lands (like the Akamas), if not their outright abandonment. The trend identified by the SCSP in Tamassos' hinterland, in contrast, indicates that the amount of Cypriot produced (CRS) fine wares peaked in the in the second half of sixth century and slowly declined towards the seventh while imported fine ware steadily

increased from the fifth century AD before declining in the seventh century AD (Knapp and Given 2004; Moore 2003). Based on the chronological distribution of fine wares, Moore (2003: 281) notes the peak in the SCSP study area occurred approximately one century(*i.e.* 550-650 AD) later than in the CPSP and DAP study areas. Similarly, the fine ware data from Kopetra in the Vasilikios valley indicates the settlement, and we may reasonably conclude in the valley as well, peaked during the second half of the sixth to the mid-seventh centuries AD (Rauman *et al* 2003: 209)[11]. Data (*i.e.* finewars) derived from the excavations at the rural site of Panayia Ematousa (eds. Sorensen and Jacobsen 2006: 184-186) indicates that after a period of low-level activity spanning the mid-second to mid fourth centuries AD, the level of activity picked up again during the late fourth century AD and reached its peaked in the early seventh century AD. Activity at the site began to fall off again towards the middle of the seventh century AD. In other words, although the aggregate trend indicates agricultural intensification during Late Antiquity, it is unlikely that the peak and recession of this activity was a synchronous event across the island. Leaving Cyprus for the moment, micro regional differences are also detectable in the towns in the Negev, Cilicia, and parts of Roman Arabia. For example, investigations at the Negev towns of Mampsis, Elusa, and Avdat indicate that these settlements were abandoned prior to the mid-seventh century AD while Nessana, Subeita, and

[11] If Armstrong's (2009: 166) extension of CRS's production dates (form 9) into the eight century AD is correct, Kopetra and several sites in the valley may continue into the late seventh and eighth centuries AD.

Beer-Sheba continued to be occupied (Rosen 2000: 52-53). However, the decline identified in the towns does not always have a rural correlate. Rosen (2000: 53) has noted that during the Ummayad and early Abassid periods, the Negev experienced "a rural florescence". The pastoral sector and segments of the agricultural settlement system showed the greatest continuity[12]. The survey conducted as part of the Limes Arabicus Project (Smith *et al* 1997; Parker 1999; Clark *et al* 2006), on the other hand, indicates that Roman port of Aila's hinterland experienced a general decline in activity which included the abandonment of fortifications during their Late Byzantine period (500 – 636 AD) but with a continued presence at several settlements far from the desert fringe. The project also noted an increase in the numbers of Late Byzantine sites in some areas, like Kerak (with 109 sites attributable to the fourth and fifth centuries and 133 sites attributed to the sixth and seventh centuries AD)(Clark *et al* 2006: 45-49). In western Cilicia, Blanton's (2000) investigation of Iotape, Selinus, Nephelion, Cestrus, and Antiochia's hinterlands has identified Roman period rural landscapes characterized by villages but few farmsteads[13]. Based on the transport amphora recovered from within the study area, Blanton (2000: 61) argues that during Late Antiquity, "more goods were being imported" than in the preceding Roman period[14].

[12] "Whilst the late Byzantine period saw an urban decline in the Negev, the early Islamic period seems by contrast to have seen a rural renaissance" (Rosen 2000: 54).

[13] Blanton (2000: 70) states "Most rural population resided in nucleated villages as opposed to isolated residences".

[14] Blanton (2000: 61) notes that the densities of imported finewares and transport area were greatest at Nephelion.

6.2.4.1 A multi-component Late Antique Cypriot landscape

Based on the discussion of Cypriot surveys presented in Chapter 5 and select data from outside Cyprus, it is possible to present a generalized multi-scale model of the more apparent material aspects of the agricultural productive components contributing to the formation of Late Antiques Cypriot hinterlands. The adoption of a multi-scale framework for the construction of this model, I suggest, allows for the modular analysis of the often incomplete distribution (*e.g.* the SAP did not identify village settlements within its study area) of heterogeneous elements (though different, both Kopetra and Ayios Kononas are villages), or components, that contribute to a specific landscape or sector of that landscape. The preliminary model consists of three main tiers: urban settlements, village settlements and their associated secondary sites, and estates/farmsteads along with their secondary sites.

Returning to the case of Tamassos, Given (2003) has argued that the surplus derived from the estates identified by the SCPS would have supported elites in Tamassos. In relation to the immediate landscape surrounding urban settlements, it is interesting to note that the SCSP has identified a 6km intensive zone composed of estate centres/farmsteads surrounding Tamassos that exploited the alluvial soils within this zone (see above). Similarly, Bintliff and colleagues (Bintliff *et al* 2007: 159-164) work in Thespiai's hinterland (Boeotia) has also identified an intensive inner agricultural zone of approximately 2.3km surrounding that city. They suggest that those social actors residing in Thespiai cultivated

this “inner chora” while villas/estates occupied and exploited the outer zone. Like the estates surrounding Tamassos, Bintliff and colleagues’ (2007: 163) have suggested that Thespiai’s Late Roman rural sites were positioned in the landscape to take advantage of “the lowland alluvio-colluvial soils...which were ideal for legumes and fodder crops”. Thus, it is reasonable to assume that farmers residing in Cypriot urban centres predominantly cultivated the land within a similar catchment surrounding their home city.

Based on the pattern identified above, it is likely that village settlements would have become more common beyond the 6km buffer surrounding urban settlements. Unfortunately, to date, village excavations on Cyprus have suffered from the same biases as their urban counterparts, that is to say, the excavators have focused their attention on the monumental edifices at the expense of the settlement’s residential sectors (*i.e.* at Kopetra where only 3 rooms attributable to residential architecture were partially excavated)[15]. Nevertheless, with this limitation in mind, it is still possible to sketch, however roughly, some aspects of village level settlements and their associated support sites on Cyprus. Turning to the Vasilikios Valley, Rautman and colleagues (Rautman *et al* 2003) have commented on the frequency of smaller sites and activity areas (*i.e.* Rautman *et al* 2003’s secondary Late Roman sites) surrounding the nodal settlements of Koperta, Sokopra, and Spilios. They note

[15] The DAP’s (Fejfer 1995) investigations at Ayios Kononas investigated several houses around the basilica, but the final publication is still in preparation. While the excavations at Panayia Ematousa produced Late Antique architecture, it state of preservation was very poor and was amiable to higher level analysis (Sorensen and Jacobsen 2006).

“over a dozen contemporary sites” (Rautman *et al* 2003: 238, figure 7.1) within a 2km catchment surrounding Kopetra (*i.e.* 17 sites: 7 sites within 1km and 10 sites within 2km, see figure 5.38). The same pattern is also detectable with a 2km catchment surrounding the mining settlement of Spilios in the upper valley (*i.e.* 16 sites: 5 sites within 1km and 11 sites within 2km; see figure 5.38). Rautman and colleagues (2003: 241) have also noted that the interval 2.5-5km interval between Kopetra and Sokopra is similar to that of modern Cypriot villages (3-5km) identified by Christodoulou (1959). Similarly, the farmsteads (Osia Maria, Sergis and Dhamalospillos) identified by the DAP are also within 2.5km of Ayios Kononas (see figure 5.36). Interesting, the so-called dead villages which occupy the hinterlands of both Antioch and Apamea are also located approximately 3-5km from another with territories 3-10km^2(300 to 1,000ha) (Foss 1997: 198-199) which contained an array of installations. Thus, it reasonable to assume that on average Late Antique Cypriot villages were distributed 3 to 5kms from one another and controlled a corresponding territory of approximately 706.85 to 1,963.5ha.

Village settlements formed *locales* within the civic territory within which they fell; they also provided the civic administration, elites, and authoritative institutions with a conduit that allowed them to engage with the rural sector and represent their interests in this context. These institutions presence in villages insured non-urban segments of the provincial populations recognized them in the landscape. However, at the local level, villages comprised nodal

spaces in their own immediate settings and controlled satellite activity sites and areas (*e.g.* presses, storehouses). Villages often represented the monumental (*e.g.* churches, monastery) in their own localized environments. The growing monumentality of village level settlements is another spatially extensive phenomenon (*e.g.* Syria (Foss 1997); Palestine (Hirschfeld 1997); Rough Cilicia (Varinlioğlu 2007)) associated with rural expansion in Late Antiquity. Based on what has been excavated at Kopetra and Ayios Kononas, they arguably provide good examples of villages which gained their monumental character from authoritative architecture associated with the church (*i.e.* basilicas and monastery). Therefore, it is reasonable to assume that at least some villages on Cyprus had comparatively developed monumental armature-like elements and would have resembled the "*komopolis*" type villages identified in Rough Cilicia (Varinlioğlu 2007). In the Negev, Hirschfeld (1997: 63) has pointed out that it is likely that village notables would have constructed their dwellings in close proximity to churches or synagogues. However, it is important to note that these large villages in the Negev, Syria, Rough Cilicia, did not possesses clearly defined monumental market areas. Rather researchers (*e.g.* Hirschfeld 1997; Varinlioğlu 2007; Rautman 2003) have suggested commercial activity was conducted in private village shops, at seasonal fair grounds, and by travelling salesmen. Other villages in the Negev possessed baths and meeting halls (Hirschfeld 1997: 64-65).

On the other hand, the village of Pyla Koustsopetria provides an example of a qualitatively different type of Cypriot Late Antique

village in that the settlement has associated defensive features (dry moat and circuit wall) located on the heights above it (Caraher *et al* 2007; 2008). Geophysical prospection has identified a possible basilica inside the upper fortifications (*ibid*). The associated fortifications in combination with the settlement's proximity to the sea and its position in the Late Antique road system indicate the village had a pronounced strategic dimension that is not readily detectable at Kopetra, Panayia Ematousa, or Ayios Kononas. Koustsopetria, it is reasonable to suggest, provides a good example of the way the state's strategic interests could alter sub-regional settlement dynamics below the urban tier. Arguably, a fortified village like Koustsopetria occupied a shifting middle ground between cities and villages like Kopetra, Ayios Kononas and Panayia Ematousa.

At the next level down, the estate centres, activity sites, and activity areas identified by the SAP and discussed in Chapter 5 (§5.4.2.2, 5.4.2.2.A-5.4.2.2.C) provide a useful case study for constructing the sub-components that comprised this tier of the model. In general, the Late Antique farmsteads/estate centres identified by the SAP are approximately 7km from Kourion. The analytical groups (AG's) used in the interpretation of these sites, I suggest, capture localized aspects of the intensification process. Arguably, the sites and site-complexes comprising this tier of the model provide the most pronounced material expression of intensive landscape occupation during this period. Like the pattern suggested for villages, estate centres/farmsteads required support sites and

activity areas (*e.g.* press, storage), which in turn, tended to be located in close proximity to the main estate centre/farmstead. The secondary activity areas and sites were located less than 1km from the estate centres/farmsteads in the SAP AGs. Similarly, in the Methana peninsula (Greece), Bowden and Gill (1997: 88) have also noted an apparent linkage (less than 1km distance) between small and medium sized sites in their study area during the Late Roman period[16]. Nearly all of the Roman and Late Roman farmsteads identified on Methana had associated pressing equipment for olives and grapes (Foxhall 1997: 262). The same holds true for the SAP AGs. Nevertheless, at the micro level, the estate centre/farmstead formed nodal spaces in their immediate landscape due to their topographic locations. The SAP data also demonstrates the interconnectedness between commemorative components of the landscape, like cemeteries and tombs, with productive components (*i.e.* AG-2 and AG-3). The presence of successive commemorative components in the landscape arguably provides a proxy for both landscape stability and, in the case of small clusters of family tombs associated with farmsteads, intensive occupation as well.

The extent and proportions to which the main Late Antique cash crops (*e.g.* olive, wine, and grain) dominated the Cypriot productive landscape during this period remains open to debate. Data from Methana in Greece, Kasserine in Tunisia, and Djebel near Lepcis

[16] For example, site MS19, a Roman/Late Roman farmstead had a selection of fine wares, amphora, and cook wares as well as wall segments and a press bed 200m to the site's north; MS20, located approximately 500m to MS19's east, also had fine wares, amphora and cook wares, as well as a trapetum base (Mee *et al* 1997: 131-132; Bowden and Gill 1997: 88-89).

Magna have produced olive press densities of one press per 3.2km^2, one press per 2.75km^2, and one press per 2km^2 respectively (Foxhall 1997: 262). The scale of wine production in Palestine, for example, was substantial. Kingsley (2001: 46-47) has suggested that Palestine Prima, Secunda, and part of Tetria required "73 million litre of undiluted wine" per annum to meet the dietary needs of approximately 1 million persons. Investigations in the territory to Jerusalem's north have identified abundant evidence for wine production attributable to the fourth to seventh centuries AD in the form of presses; some of these presses' collection vats are capable of holding upwards of 26,000 litres. For example, Mayerson (1985: 77) has estimated the vat capacity of several press complexes from the Gaza region as ranging between 2.60m^3 – 8.80m^3, or approximately 2600 – 8800 litres. Production output ranges at these levels equate to approximately 98 - 332 large capacity (26.5 litre) LRA5 and approximately 162 - 550 small capacity (16 litre) LRA5 amphorae[17]. As rudimentary as these figures are, they do illuminate the economic links between agricultural production and amphora production.

The distribution of presses attributed to the Late Antique period compiled by Hadjisavvas (1992) in conjunction with the omnipresent distribution of LRA1, and to a lesser extent LRA1 kilns, suggests that Cyprus had a relatively developed oil industry. However, without more archaeometrical based studies of amphora assemblages and specific types of amphora, like the LRA1, it is difficult to establish the directionality of the flow of goods at

[17] For the LRA5 capacities, see Kingsley (2001: 49-50).

any particular site or sub-region. The lateral cycling of amphora within regions and at sites also complicates the picture. For fine wares, it is also reasonable to include time lag as another bias, which is capable of producing chronological distortions, that has not received adequate attention in the interpretation of ceramic assemblages. Nevertheless, with these limitations in mind, the aggregate trend identified by the SAP, SCSP, DAP, and, to a lesser extent, the VVAP, for example, suggest a provincial landscape geared towards the generation of surplus agricultural commodities. The presence of coastal amphora kilns, like Zyyi (VVAP; Manning *et al* 2000), that were located in close proximity to areas that exhibited signs of intensive cultivation during Late Antiquity also suggest that surplus commodities were shipped out of these areas to larger urban centres within the province and beyond. Future survey work at inland locations within Cyprus may also produce evidence of kiln sites in close proximity to both agriculturally productive land and transport infrastructure.

If the impression found in several Egyptian archives (Banaji 2001) captures a trend in landholding patterns that have general applicability to the eastern provinces, it seems that by the seventh century AD senatorial *honorati*, along with the church, had become the main landholders across the province. It is reasonable to assume that some of these elites' large discontinuous estates would have included property in provincial districts other than their own[18].

[18] Banaji's (2001: 128) comments are worth quoting at length: "The clear implication of these figures is that by the seventh century the aristocracy had enormously tightened its grip over landholding and (by implication)

Taking Tamassos as an example, it is also reasonable to suggest that the church and non-local members of the provincial power elite (*e.g.* senatorial *honorati*) could have owned some of these estates and other productive (*e.g.* mining related) sites around Tamassos. With this in mind, it is also conceivable that while activity in the productive sector of Tamassos' landscape intensified, landlords residing in other parts of the province could remove wealth in the form of surplus from this host area and redistribute it in another other spatial contexts. Thus, as components of both the productive and authoritative Late Antique provincial landscape, estates, like monasteries, could remove wealth from their local community. This, in turn, suggests that the civic hinterlands could also be contested spaces at multiple scales. Undoubtedly, these phenomena actively contributed to the social dynamic in Kourion's Late Antique hinterland as well.

Several survey projects (DAP, SCSP, and VVP) have also illuminated the link between the authoritative and productive components of the Late Antique landscape. Settlements like Kalavasos Kopetra in the lower Vasilikos valley and Ayios Kononas in the Akamas not only served as sub-regional economic centres but also served as nodes and *locales* within both the secular and ecclesiastic

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over society as a whole. It is striking fact that the middle strata (*politeumenoi*, *bouleutai*, middle and lower bureaucracy, etc.) have all but disappeared from the seventh-century landholding structure". Banaji (2001: 128) continues "At a purely historical level, the crucial question this rises is whether the late empire saw established landowning families moving into imperial service or families essentially connected with imperial administration accumulating land to become powerful landed proprietors. It is my view that second of these possible evolutions is a truer reflection of the process which actually occurred...".

provincial authoritative landscapes. Regarding the interplay between the authoritative and productive landscape components in the western Akamas, Bekker-Nielsen and colleagues (1995) believe that the growth of the institutional church influenced the distribution of the region's agricultural surplus during Late Antiquity. They (1995: 24) argue that what may have been an "outward looking society" became essentially "insular and church-orientated" in focus[19]. Arguably, while the authoritative colonization of the western Akamas's agricultural productive landscape resulted in the intensification (*i.e.* expansion in comparatively marginal zones) of that particular landscape's agricultural output, it also appears to have homogenised it and limited exchange in this region. This, I suggest, also provides a good example of the ways in which extensive authoritative institutions can influence localized trajectories (in this case productive/economic) at the sub-regional and individual settlement levels. The presence of estates in the landscape could also homogenize productivity by primarily focusing on cash crops for export.

As this point it is useful to explore some possible causes that could account for the apparent downturn of intensive agricultural strategies in Cyprus at towards the end of Late Antiquity. First, one outcome of rural intensification undoubtedly resulted in the asymmetrical distributed of wealth across the spectrum of Cypriot

[19] Bekker-Nielsen and colleagues' (1995: 24) views on this topic are worth quoting at length: "...it is also arguable that the growing social importance of the church led to a profound change in the use to which the territory's agricultural surplus was put. Perhaps a formerly outward-looking society, orientated toward exports, through the harbour, became more insular and church-orientated".

society. Second, we may reasonably assume that dislocations in the political and economic spheres contributed to the downturn. It is important to draw a distinction between Cyprus and the Levant in that the former became a contested territory while the later region was absorbed in the Caliphate. Third, it is probable that the downturn was asynchronous across the island and it would have also produced differentiated outcomes across the spectrum of Cypriot society. It is likely that those Cypriots operating closest to subsistence level would have experienced less disjunction over the long term than those more reliant on complex economic networks. Thus, it is reasonable to suggest that the continued investment in maintaining the complex agricultural landscape which defined Late Antique Cyprus would have resulted in diminishing marginal returns as established trade networks across the eastern Mediterranean faltered and entered into a state of flux. Arguably, the reorientation and simplification of the administrative structures and the abandonment of the majority of the island's coastal urban settlements was an appropriate response to Cyprus' new role as a buffer zone.

6.3 Recommendations for further work in Kourion's *chora*

Given the comparatively high pace of development and the lack of intensive survey projects over the last decade (1997-2007) in the greater Kourion area, it is clear that additional intensive archaeological survey is urgently needed to help manage the finite cultural resources within the SAP study area and beyond. Ideally,

future projects should adopt a two-fold interdisciplinary research strategy that uses methods employed by projects like the SAP as a set of preliminary reconnaissance tactics within an overall survey strategy based on intensive site and off-site sampling techniques. For the Late Antique period, several very basic, but important, questions still remain unanswered: (1) is the settlement pattern in Kourion's inner hinterland different from the pattern in its outer hinterland like that observed at Tamassos, for example? (2) Is there a pattern of village level settlements in Kourion's outer hinterland that conforms to the pattern identified in the Vasilikos Valley? (3) Are there kiln sites within Kourion's hinterland and, if so, are they associated with intensively occupied sectors of the landscape and transport infrastructure or nodal points, like villages and estates? Thus, with these research questions in mind, it is reasonable to suggest that future projects should examine Kourion's inner hinterland (5-6km radius from the city) and the plateaux to the north of the SAP study area. Intensive off-site investigations could also address an additional question raised by the SAP and SKS's results: could the low-level background scatters of red wheel-made monochrome sherds that are ubiquitous throughout the both the SAP and SKS study areas have obscured diffuse but discrete Late Antique scatters. In short, Kourion's hinterland remains a prime case study for the investigation of an array of issues that could contribute in a substantive way to the Cypriot Late Antique archaeological record.

Appendix I

SAP 1997 Environmental Survey Data (1)

Collection Box A

- Location
  - Quadrat: 9
  - Transect: 7
  - UTM: 36s E0488660 N3841900
  - DSL 17 53/xix & xx
  - Locality: Pefkos tou Mikhali
  - MASL Range: 300-399
  - Date: July 10 1997
- Topography
  - Slope: slight
  - Aspect: SE
  - Morphology: plateau
- Climate
  - Wind Direction: SW
  - Temperature Celsius: 7:30AM, 24 in sun, 23 in shade
- Soil
  - On 1:2500 Soil Series: Sotira
  - Sample: yes
  - Type: terra rossa; thick crusts
  - Color: 10YR 6/3 pale brown
  - Fertility: moderate
  - Depth: deep
  - Moisture: poor
  - Temperature Celsius: 24 at 5cm depth
  - PH: 7 (Alkaline)
  - Structure: granular
- Land Use: exposed bedrock, scattered trees, regeneration
- Vegetation
  - Potential: forested
  - Observed: carob, pine, thyme, spiny burnet, lentisc
  - Riparian Buffer: absent
  - Seed Bed Condition: good
  - Ground Litter Depth: moderate
  - Surface Cover: dense
  - Damage: goat paths
- Comments: Area slopped down toward a lower wide valley. Several large stones blocked erosion.

Collection Box B

- Location
  - Quadrat: 9
  - Transect: 7
  - UTM: 36s E0488890 N3841985
  - DSL 17 53/xix & xx
  - Locality: Pefkos tou Mikhali
  - MASL Range: 200-299
  - Date: July 10 1997
- Topography
  - Slope: steep
  - Aspect: S
  - Morphology: hill side
- Climate
  - Wind Direction: SE
  - Temperature Celsius: 8:45AM 28 in sun, 26 in shade.
- Soil
  - On 1:2500 Soil Series: Sotira
  - Sample: yes
  - Type: chalk and terra rossa
  - Color: 10YR 6/3 pale brown
  - Fertility: moderate
  - Depth: moderate
  - Moisture: poor
  - Temperature Celsius: 36 at 2.54 cm depth
  - PH: 7 alkaline
  - Structure: granular
- Land Use: scattered trees
- Vegetation
  - Potential: maquis and garigue
  - Observed: carob, pine, thyme, spiny burnet, lentisc, moss
  - Riparian Buffer: absent
  - Seed Bed Condition: moderate
  - Ground Litter Depth: none
  - Surface Cover: dense
  - Damage: none
- Description: box located at the merging of two hillsides with a gully. Approximately 50cm thick bed of moss running along the bottom of the box in a 2m strip.

Collection Box C

- Location
  - Quadrat: 12
  - Transect: 1
  - UTM: 36s E0491980 N3840650
  - DSL 17 53/xxi
  - Locality: Kokkinospilios
  - MASL Range: 100-199
  - Date: July 13 1997
- Topography
  - Slope: flat
  - Aspect: -
  - Morphology: riverbed
- Climate
  - Wind Direction: -
  - Temperature Celsius: 8:17AM, 28 in sun, 24 in shade
- Soil
  - On 1:2500 Soil Series: NA, Water
  - Sample: yes
  - Type: clayey sand
  - Color: 2.5YR 7/2 pale red
  - Fertility: moderate
  - Depth: shallow
  - Moisture: poor
  - Temperature Celsius: 23 at 5cm depth
  - PH: 7 (Alkaline)
  - Structure: not recorded
- Land Use: irrigated cultivation, gravel quarry
- Vegetation
  - Potential: regeneration
  - Observed: reeds, pistacia, gorse, reeds, oleander, moss
  - Riparian Buffer: present
  - Seed Bed Condition: -
  - Ground Litter Depth: -
  - Surface Cover: dense
  - Damage: pollution, human interference, quarrying
- Comments: Located in Kouris River bed are has been severely impacted by modern agricultural and quarry activity.

Collection Box D

- Location
  - Quadrat: 12
  - Transect: 1

    - UTM: 36s E0491980 N3840870
    - DSL 17 53/xxi
    - Locality: Kokkinospilios
    - MASL Range: 100-199
    - Date: July 15 1997
- Topography
    - Slope: slight
    - Aspect: SW
    - Morphology: riverbed
- Climate
    - Wind Direction: SW
    - Temperature Celsius: 9:10AM, 33 in sun, 32 in shade
- Soil
    - On 1:2500 Soil Series: NA, Water
    - Sample: no
    - Type: clayey sand
    - Color: -
    - Fertility: poor
    - Depth: denuded
    - Moisture: poor
    - Temperature Celsius: -
    - PH: 7 (Alkaline)
    - Structure: -
- Land Use: exposed bedrock
- Vegetation
    - Potential: secondary growth, regeneration
    - Observed: lentisc, pistiacia, gorse, reeds
    - Riparian Buffer: absent
    - Seed Bed Condition: ash
    - Ground Litter Depth: none
    - Surface Cover: bare
    - Damage: wildfires, pollution, quarrying
- Comments: Located in Kouris River Valley. Severely bulldozed and artificially raised. Large amount of bulldozed igneous stones quarried from the riverbed for gravel.

Collection Box E

- Location
    - Quadrat: 12
    - Transect: 1
    - UTM: 36s E0491850 N3840760
    - DSL 17 53/xxi
    - Locality: Kokkinospilios
    - MASL Range: 100-199
    - Date: July 13 1997
- Topography
    - Slope: flat

    - Aspect: -
    - Morphology: riverbed
- Climate
    - Wind Direction: -
    - Temperature Celsius: 9:32AM, - in sun, 21 in shade
- Soil
    - On 1:2500 Soil Soil Series: Alassa
    - Sample: yes
    - Type: imported soils -terra rossa; loam
    - Color: 10YR 3/2 very dark grayish brown
    - Fertility: good
    - Depth: deep
    - Moisture: excellent
    - Temperature Celsius: 33 at 5cm depth
    - PH: 8 (Alkaline)
    - Structure: blocky
- Land Use: irrigated cultivation
- Vegetation
    - Potential: plantation
    - Observed: citrus grove, apple, fig, olive, peach, apricot
    - Riparian Buffer: absent
    - Seed Bed Condition: -
    - Ground Litter Depth: none
    - Surface Cover: bare
    - Damage: completely man made environment
- Comments: Located in Kouris River bed on an artificial raised cultivated field. Nearby spring tapped and pumped.

Collection Box F

- Location
    - Quadrat: 12
    - Transect: 3
    - UTM: 36s E0491210 N3840840
    - DSL 17 53/xxi
    - Locality: Khortotpin
    - MASL Range: 200-299
    - Date: July 13 1997
- Topography
    - Slope: slight
    - Aspect: SW
    - Morphology: plateau
- Climate
    - Wind Direction: SW
    - Temperature Celsius: 4:30PM, 36 in sun, 33 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: no

    - Type: mottled terra rossa
    - Color: -
    - Fertility: poor
    - Depth: denuded
    - Moisture: poor
    - Temperature Celsius: 45 at 5cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: exposed rock; scattered trees olive, pine
- Vegetation
    - Potential: secondary growth
    - Observed: regeneration, pine, wild wheat, lentisc, gorse, thyme
    - Riparian Buffer: absent
    - Seed Bed Condition: ash
    - Ground Litter Depth: none
    - Surface Cover: sparse
    - Damage: wild fire
- Comments: expose bedrock shelf eroded by flash flood. Plateau drops off steeply to north. Trees consist mostly of Turkish pine. Also observed a felled wild olive tree.

Collection Box G

- Location
    - Quadrat: 11
    - Transect: 3
    - UTM: 36s E0490280 N3842180
    - DSL 17 53/xx & xxi
    - Locality: Aspri Moutti
    - MASL Range: 200-299
    - Date: July 15 1997
- Topography
    - Slope: slight
    - Aspect: S
    - Morphology: gully
- Climate
    - Wind Direction: -
    - Temperature Celsius: 5:25PM, 35 in sun, 34 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: no
    - Type: clay
    - Color: -
    - Fertility: -
    - Depth: denuded -
    - Moisture: excellent
    - Temperature Celsius: 31 at 5cm depth

    - PH: 5
    - Structure: -
- Land Use: exposed rock
- Vegetation
    - Potential: maquis
    - Observed: oleander, reeds, star reeds, lentisc, myrtle, oak, wild olive
    - Riparian Buffer: dense
    - Seed Bed Condition: -
    - Ground Litter Depth: -
    - Surface Cover: moderate
    - Damage: -
- Comments: there is a large amount of observable evidence for wildlife such as frogs, tadpoles, dragonflies, and fox due to presence of water. The area was considerably dried out on second visit, however.

Collection Box H

- Location
    - Quadrat: 11
    - Transect: 6
    - UTM: 36s E0490351 N3841735
    - DSL 17 53/xx & xxi
    - Locality: Aspri Moutti
    - MASL Range: 200-299
    - Date: July 16 1997
- Topography
    - Slope: steep
    - Aspect: NE
    - Morphology: gully
- Climate
    - Wind Direction: SW
    - Temperature Celsius: 3:30PM, 45 in sun, 35 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: no
    - Type: loam
    - Color: 5yr 3/3 dark reddish brown
    - Fertility: moderate
    - Depth: moderate
    - Moisture: poor
    - Temperature Celsius: 51 at 5cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: exposed rock; scattered trees, olive
- Vegetation
    - Potential: natural, maquis, garigue

    - Observed: rock rose, wild wheat, carob, gorse, garigue, maquis
    - Riparian Buffer: absent
    - Seed Bed Condition: moderate
    - Ground Litter Depth: slight
    - Surface Cover: dense
    - Damage: goat, moderate erosion.
- Comments: this area is heavily damaged by goat paths.

Collection Box I

- Location
    - Quadrat: 11
    - Transect: 6
    - UTM: 36s E0490400 N3841900
    - DSL 17 53/xx & xxi
    - Locality: Aspri Moutti
    - MASL Range: 200-299
    - Date: July 16 1997
- Topography
    - Slope: very steep
    - Aspect: S
    - Morphology: gully
- Climate
    - Wind Direction: -
    - Temperature Celsius: 4:50PM, 35 in sun, 28 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: no
    - Type: -
    - Color: -
    - Fertility: -
    - Depth: -
    - Moisture: -
    - Temperature Celsius: -
    - PH: -
    - Structure: -
- Land Use: exposed rock
- Vegetation
    - Potential: natural
    - Observed: carob, lentisc, oleander, oak, pistachio, ferns, fig trees
    - Riparian Buffer: dense
    - Seed Bed Condition: -
    - Ground Litter Depth: -
    - Surface Cover: dense
    - Damage: -
- Comments: Most lush box visited in project area near small deep stream/gully. Detailed investigation of this Box was impossible

because of thick vegetation cover and steep terrain. Comparatively large trees in this area.

Collection Box J

- Location
  - Quadrat: 01
  - Transect: 2
  - UTM: 36s E0480462 N3841810
  - DSL 17 52/xxiv
  - Locality: Khoglaka
  - MASL Range: 200-299
  - Date: July 21 1997
- Topography
  - Slope: slight
  - Aspect: SW
  - Morphology: plateau
- Climate
  - Wind Direction: SW
  - Temperature Celsius: 9:00AM, 38 in sun, 31 in shade
- Soil
  - On 1:2500 Soil Soil Series: UNK
  - Sample: yes
  - Type: terra rossa with stones
  - Color: 5yr 3/4 dark reddish brown
  - Fertility: poor
  - Depth: shallow
  - Moisture: poor
  - Temperature Celsius: 32 at 4cm depth
  - PH: 7 (Alkaline)
  - Structure: granular
- Land Use: scattered trees olive, pine
- Vegetation
  - Potential: garigue and maquis
  - Observed: carob, lentisc, pistacia bushes, wild wheat, olive thistle, gorse
  - Riparian Buffer: absent
  - Seed Bed Condition: poor
  - Ground Litter Depth: none
  - Surface Cover: sparse
  - Damage: wild fire, goat paths
- Comments: box located on a long flat plateau in the Paramali area. Evidence for wild fire approximately 2-4 years prior to visit. Close proximity to Box K

Collection Box k

- Location
  - Quadrat: 01
  - Transect: 2
  - UTM: 36s E0480458 N3841745
  - DSL 17 52/xxiv
  - Locality: Khoglaka
  - MASL Range: 200-299
  - Date: July 21 1997
- Topography
  - Slope: slight
  - Aspect: NW
  - Morphology: plateau
- Climate
  - Wind Direction: SW
  - Temperature Celsius: 11:00PM, 41 in sun, 31 in shade
- Soil
  - On 1:2500 Soil Soil Series: UNK
  - Sample: yes
  - Type: mottled terra rossa
  - Color: 5yr 3/4 dark reddish brown
  - Fertility: moderate
  - Depth: shallow
  - Moisture: poor
  - Temperature Celsius: 40 at 5cm depth
  - PH: 7 (Alkaline)
  - Structure: granular
- Land Use: scattered trees olive, pine
- Vegetation
  - Potential: natural, garigue
  - Observed: thyme, small bush lentisc, small bush pistacia, carob, gorse,
  - Riparian Buffer: absent
  - Seed Bed Condition: moderate
  - Ground Litter Depth: slight
  - Surface Cover: moderate
  - Damage: wild fire
- Comments: Close proximity to box J. Thyme is the most abundant in the box.

Collection Box L

- Location
  - Quadrat: 01
  - Transect: 3
  - UTM: 36s E0480875 N3841870

    - DSL 17 52/xxiv
    - Locality: Hajina
    - MASL Range: 100-199
    - Date: July 24 1997
- Topography
    - Slope: moderate
    - Aspect: N
    - Morphology: hillside
- Climate
    - Wind Direction: -
    - Temperature Celsius: 7:30AM, 34 in sun, 30 in shade
- Soil
    - On 1:2500 Soil Soil Series: Pakhana
    - Sample: no
    - Type: chalky terra rossa
    - Color: -
    - Fertility: moderate
    - Depth: shallow
    - Moisture: poor
    - Temperature Celsius: 33 at 5cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: exposed rock; scattered trees olive
- Vegetation
    - Potential: natural, maquis, wild wheat/barley
    - Observed: regeneration, gorse, thyme, wild olive, bush carob, lentisc, wild wheat/barley
    - Riparian Buffer: absent
    - Seed Bed Condition: poor
    - Ground Litter Depth: none
    - Surface Cover: dense
    - Damage: wild fire, sever erosion
- Comments: old olive trees shows signs of old fires.

Collection Box M

- Location
    - Quadrat: 01
    - Transect: 3
    - UTM: 36s E0480980 N3842025
    - DSL 17 52/xxiv
    - Locality: Hajina
    - MASL Range: 200-299
    - Date: July 24 1997
- Topography
    - Slope: slight
    - Aspect: SE
    - Morphology: plateau
- Climate

    - Wind Direction: -
    - Temperature Celsius: 8:00PM, 35 in sun, 31 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: no
    - Type: chalky
    - Color: light brown
    - Fertility: poor
    - Depth: denuded
    - Moisture: poor
    - Temperature Celsius: 27 at 3cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: exposed rock; scattered trees olive, carob (both wild and domestic)
- Vegetation
    - Potential: natural
    - Observed: rock rose, thyme, lentisc, pistacia, gorse, wild carob, carob bush, wild olive, domestic olive, domestic carob, oleander
    - Riparian Buffer: light
    - Seed Bed Condition: poor
    - Ground Litter Depth: none
    - Surface Cover: dense
    - Damage: goat, moderate erosion
- Comments: expose bedrock shelf eroded by flash flood. Box located to the east of a western branch of the Evdhmiou River.

Collection Box N

- Location
    - Quadrat: 04
    - Transect: 1
    - UTM: 36s E0483180 N3841400
    - DSL 17 53/xviii & xvii
    - Locality: Sterakovou Village
    - MASL Range: 200-299
    - Date: July 24 1997
- Topography
    - Slope: moderate
    - Aspect: S
    - Morphology: plateau
- Climate
    - Wind Direction: SW
    - Temperature Celsius: 7:00AM, 28 in sun, 25 in shade
- Soil
    - On 1:2500 Soil Soil Series: Sotira

    - Sample: no
    - Type: terra rossa
    - Color: -
    - Fertility: moderate
    - Depth: shallow
    - Moisture: poor
    - Temperature Celsius: 27 at 6cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: exposed rock; scattered trees, olive, pine
- Vegetation
    - Potential: garigue, wild wheat/barley
    - Observed: stunted growth olives, lavender, rock rose, thyme, pine, small gorse, coppiced carob, wild wheat/barley
    - Riparian Buffer: absent
    - Seed Bed Condition: ash
    - Ground Litter Depth: none
    - Surface Cover: sparse
    - Damage: goat
- Comments: in Sterakovou village, goats trample and browsing damage, and coppicing. Much of the vegetation is stunted. Pine trees in cluster.

Collection Box O

- Location
    - Quadrat: 13
    - Transect: 1
    - UTM: 36s E0481400 N3837600
    - DSL 17 53/xxv
    - Locality: Eliophorin
    - MASL Range: 0-99
    - Date: July 31 1997
- Topography
    - Slope: slight
    - Aspect: E
    - Morphology: riverbed
- Climate
    - Wind Direction: -
    - Temperature Celsius: 7:00AM, 24 in sun, 21 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: yes
    - Type: clay with surface crusts
    - Color: 10YR 7/2 light gray
    - Fertility: good
    - Depth: deep

    - Moisture: poor
    - Temperature Celsius: 22 at 3cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: grass pasture; fallow not ploughed; olive orchards; wild and cultivated olive and carob
- Vegetation
    - Potential: agricultural, regeneration
    - Observed: both domestic and wild olive and carob, wild garlic, spiny burnet, pistacia, thistle, fennel, large carob and olive, regeneration vegetation
    - Riparian Buffer: light
    - Seed Bed Condition: poor
    - Ground Litter Depth: none
    - Surface Cover: moderate
    - Damage: goat paths, limited erosion
- Comments: Paramali River area. Box is located in an extremely lush area with many old olives and carobs of considerable height

Collection Box P

- Location
    - Quadrat: 13
    - Transect: 2
    - UTM: 36s E0481250 N3837850
    - DSL 17 53/xxv
    - Locality: Jelia
    - MASL Range: 0-99
    - Date: July 31 1997
- Topography
    - Slope: moderate
    - Aspect: SE
    - Morphology: hillside
- Climate
    - Wind Direction: SW
    - Temperature Celsius: 8:00AM, 30 in sun, 28 in shade
- Soil
    - On 1:2500 Soil Soil Series: Sotira
    - Sample: no
    - Type: -
    - Color: light brown
    - Fertility: good
    - Depth: -
    - Moisture: poor
    - Temperature Celsius: 26 at 5cm depth
    - PH: 7 (Alkaline)

    - Structure: granular
- Land Use: exposed bedrock; olive orchards; wild and cultivated olive and carob
- Vegetation
    - Potential: agricultural, maquis, garigue
    - Observed: both domestic and wild olive and carob, regeneration vegetation, large juniper (approximately 3M), gorse, lentisc, lavender, broom, thistle, asparagus, thyme, wild wheat/ barley
    - Riparian Buffer: absent
    - Seed Bed Condition: poor
    - Ground Litter Depth: slight
    - Surface Cover: dense
    - Damage: extensive goat or sheep paths
- Comments: Paramali area. Sheep have been grazing in area as attested to by the presence of wool clumps on several prickly bushes.

Collection Box Q

- Location
    - Quadrat: 13
    - Transect: 4
    - UTM: 36s E0481250 N3838000
    - DSL 17 53/xxv
    - Locality: Jelia
    - MASL Range: 0-99
    - Date: July 31 1997
- Topography
    - Slope: flat
    - Aspect: -
    - Morphology: plateau
- Climate
    - Wind Direction: SW
    - Temperature Celsius: 8:30AM, 34 in sun, 27 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: yes
    - Type: loam
    - Color: 7.5YR 3/2 dark brown
    - Fertility: poor
    - Depth: denuded
    - Moisture: poor
    - Temperature Celsius: 30 at 2cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: exposed bedrock; scattered trees

- Vegetation
  - Potential: pasture, agriculture
  - Observed: wild barley, carob
  - Riparian Buffer: absent
  - Seed Bed Condition: poor
  - Ground Litter Depth: none
  - Surface Cover: sparse
  - Damage: extensive goat paths, moderate erosion
- Comments: Paramali River area, Goats eating wild barley. Clasping terraces causing erosion.

Collection Box R

- Location
  - Quadrat: 13
  - Transect: 7
  - UTM: 36s E0481040 N3838113
  - DSL 17 53/xxv
  - Locality: Jelia
  - MASL Range: 0-99
  - Date: July 31 1997
- Topography
  - Slope: moderate
  - Aspect: W
  - Morphology: hillside
- Climate
  - Wind Direction: SW
  - Temperature Celsius: 9:30AM, 34 in sun, 29 in shade
- Soil
  - On 1:2500 Soil Soil Series: Pissouri
  - Sample: no
  - Type: -
  - Color: -
  - Fertility: poor
  - Depth: shallow
  - Moisture: poor
  - Temperature Celsius: 27 at 1cm depth
  - PH: 7 (Alkaline)
  - Structure: granular
- Land Use: exposed bedrock, scattered trees, wild olive and carob
- Vegetation
  - Potential: maquis, garigue, wild wheat/barley
  - Observed: thyme, large juniper (approximately 3m), lentisc, pistacia, gorse, wild wheat/barley
  - Riparian Buffer: absent
  - Seed Bed Condition: poor

    - Ground Litter Depth: slight
    - Surface Cover: dense
    - Damage: goat paths, limited erosion
- Comments: Paramali area, hillside not terraced. Thyme is abundant.

Collection Box S

- Location
    - Quadrat: 15
    - Transect: 6
    - UTM: 36s E0481579 N3835920
    - DSL 17 53/xxv
    - Locality: Armirithkia
    - MASL Range: 0-99
    - Date: August 6 1997
- Topography
    - Slope: moderate
    - Aspect: S
    - Morphology: coastal plain
- Climate
    - Wind Direction: -
    - Temperature Celsius: 7:30AM, 25 in sun, 22 in shade
- Soil
    - On 1:2500 Soil Soil Series: Zyyi
    - Sample: yes
    - Type: sand
    - Color: 10YR 6/4 light yellowish brown
    - Fertility: moderate
    - Depth: moderate
    - Moisture: poor
    - Temperature Celsius: 24 at 9cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: river mouth
- Vegetation
    - Potential: natural coastal maquis
    - Observed: lentisc
    - Riparian Buffer: light
    - Seed Bed Condition: -
    - Ground Litter Depth: -
    - Surface Cover: moderate
    - Damage: goat paths, limited erosion
- Comments: Box Located at end of valley with soil outcrops in some scrub areas and seaweed ground cover.

Collection Box T

- Location
  - Quadrat: 13
  - Transect: 1
  - UTM: 36s E0481050 N3836050
  - DSL 17 53/xxv
  - Locality: Prolimnos
  - MASL Range: 0-99
  - Date: August 6 1997
- Topography
  - Slope: slight
  - Aspect: S
  - Morphology: river mouth, coastal plain
- Climate
  - Wind Direction: SW
  - Temperature Celsius: 8:30AM, 23 in sun, 22 in shade
- Soil
  - On 1:2500 Soil Soil Series: Zyyi
  - Sample: no
  - Type: sand
  - Color: red, blue. Black, green, yellow, gray
  - Fertility: poor
  - Depth: shallow
  - Moisture: poor
  - Temperature Celsius: 22 at 5cm depth
  - PH: 7 (Alkaline)
  - Structure: granular
- Land Use: grass pasture; fallow not ploughed; olive orchards; wild and cultivated olive and carob
- Vegetation
  - Potential: natural
  - Observed: reeds, bamboo, gorse, juniper, wild garlic, fennel, shrubs
  - Riparian Buffer: dense
  - Seed Bed Condition: poor
  - Ground Litter Depth: slight
  - Surface Cover: dense
  - Damage: moderate erosion, slight human activity
- Comments: Pharkonias River mouth area, abundant wild life: lizards, birds, foxes, snakes, mouse and shrew.

Collection Box U

- Location
  - Quadrat: 15
  - Transect: 6

    - UTM: 36s E0481650 N3836425
    - DSL 17 53/xxv
    - Locality: Vateri
    - MASL Range: 0-99
    - Date: August 6 1997
- Topography
    - Slope: slight
    - Aspect: S
    - Morphology: coastal plain
- Climate
    - Wind Direction: SW
    - Temperature Celsius: 9:00AM, 30 in sun, 28 in shade
- Soil
    - On 1:2500 Soil Soil Series: Zyyi
    - Sample: yes
    - Type: loam
    - Color: 10YR 7/2 light gray
    - Fertility: good
    - Depth: deep
    - Moisture: poor
    - Temperature Celsius: 25 at 7cm depth
    - PH: 7 (Alkaline)
    - Structure: blocky and granular in some places
- Land Use: ploughed/ dry cultivation, irrigated cultivation, vineyard, citrus, alfalfa, plantation
- Vegetation
    - Potential: coastal maquis
    - Observed: vineyard, citrus, alfalfa, Cypress, reeds
    - Riparian Buffer: absent
    - Seed Bed Condition: moderate
    - Ground Litter Depth: none
    - Surface Cover: dense
    - Damage: -
- Comments: 84 vines are located within the 30m x 30m box. The vines are 2m apart on average. Cypress trees serve as a windbreak between the intercropped blocks.

Collection Box V

- Location
    - Quadrat: 15
    - Transect: 9
    - UTM: 36s E0481969 N3835797
    - DSL 17 53/xxv
    - Locality: Mouzomena
    - MASL Range: 0-99
    - Date: August 6 1997
- Topography

    - Slope: steep
    - Aspect: SW
    - Morphology: coastal plain
- Climate
    - Wind Direction: -
    - Temperature Celsius: 9:40AM, 32 in sun, 26 in shade
- Soil
    - On 1:2500 Soil Soil Series: Tymbou
    - Sample: no
    - Type: exposed bedrock with very thin soil
    - Color: -
    - Fertility: -
    - Depth: -
    - Moisture: -
    - Temperature Celsius: -
    - PH: -
    - Structure: -
- Land Use: exposed bedrock, scattered scrub
- Vegetation
    - Potential: secondary growth, garigue
    - Observed: juniper, rock rose, thyme, gorse, lentisc, wild carob
    - Riparian Buffer: absent
    - Seed Bed Condition: poor
    - Ground Litter Depth: none
    - Surface Cover: sparse
    - Damage: storm damage, erosion, wind damage
- Comments: Located on a small peninsula along coastal plain east of the Pharkonias River. This site lies just to the west of the WSBA. In general, the maquis is taller toward the sea.

Collection Box W

- Location
    - Quadrat: 15
    - Transect: 5
    - UTM: 36s E0481900 N3835900
    - DSL 17 53/xxv
    - Locality: Armirithkia
    - MASL Range: 0-99
    - Date: August 6 1997
- Topography
    - Slope: slight
    - Aspect: E
    - Morphology: coastal plain
- Climate
    - Wind Direction: -
    - Temperature Celsius: 7:00AM, 24 in sun, 23 in shade

- Soil
  - On 1:2500 Soil Soil Series: Zyyi
  - Sample: no
  - Type: mottled loam
  - Color: -
  - Fertility: good
  - Depth: deep
  - Moisture: poor
  - Temperature Celsius: 22 at 7cm depth
  - PH: 7 (Alkaline)
  - Structure: blocky
- Land Use: fallow, dry cultivation, citrus, plantation
- Vegetation
  - Potential: costal maquis
  - Observed: wild wheat
  - Riparian Buffer: absent
  - Seed Bed Condition: moderate
  - Ground Litter Depth: none
  - Surface Cover: sparse
  - Damage: limited erosion
- Comments: lemon citrus plantation.

Collection Box X

- Location
  - Quadrat: 04
  - Transect: 1
  - UTM: 36s E0483327 N3841095
  - DSL 17 53/xviii & xvii
  - Locality: Sterakovou Village
  - MASL Range: 200-299
  - Date: August 13 1997
- Topography
  - Slope: moderate
  - Aspect: S
  - Morphology: streambed, by spring head
- Climate
  - Wind Direction: SW
  - Temperature Celsius: 10:15AM, 29 in sun, 26 in shade
- Soil
  - On 1:2500 Soil Soil Series: Sotira
  - Sample: yes
  - Type: Chalky
  - Color: 10YR 6/3 pale brown
  - Fertility: -
  - Depth: denuded
  - Moisture: poor
  - Temperature Celsius: -
  - PH: 7 (Alkaline)

    - Structure: granular
- Land Use: scattered trees
- Vegetation
    - Potential: maquis
    - Observed: large carob, olive, lentisc
    - Riparian Buffer: absent
    - Seed Bed Condition: poor
    - Ground Litter Depth: none
    - Surface Cover: bare
    - Damage: goat, human use
- Comments: spring which supplies Sterakovou village.

Collection Box Y

- Location
    - Quadrat: 04
    - Transect: 4
    - UTM: 36s E0483425 N3841220
    - DSL 17 53/xviii & xvii
    - Locality: Sterakovou Village
    - MASL Range: 200-299
    - Date: August 13 1997
- Topography
    - Slope: moderate
    - Aspect: NW
    - Morphology: hillside
- Climate
    - Wind Direction: N
    - Temperature Celsius: 10:45AM, 33 in sun, 30 in shade
- Soil
    - On 1:2500 Soil Soil Series: Built up land
    - Sample: yes
    - Type: chalky
    - Color: 10YR 4/2 dark grayish brown
    - Fertility: poor
    - Depth: denuded
    - Moisture: poor
    - Temperature Celsius: 40 at 1cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: exposed bedrock, scattered trees, low scrub
- Vegetation
    - Potential: agricultural, regeneration
    - Observed: carob, lentisc, rock rose, spiny burnet,
    - Riparian Buffer: absent
    - Seed Bed Condition: poor
    - Ground Litter Depth: none
    - Surface Cover: sparse

    - Damage: goat, limited erosion, wild fire, human use
- Comments: 30m from spring in collection box X.

Collection Box Z

- Location
    - Quadrat: 04
    - Transect: 5
    - UTM: 36s E0483490 N3840930
    - DSL 17 53/xviii & xvii
    - Locality: Makries
    - MASL Range: 0-99
    - Date: August 13 1997
- Topography
    - Slope: slight
    - Aspect: SW
    - Morphology: hillside
- Climate
    - Wind Direction: NW
    - Temperature Celsius: 11:15AM, 31 in sun, 29 in shade
- Soil
    - On 1:2500 Soil Soil Series: Sotira
    - Sample: yes
    - Type: chalky
    - Color: 7.5YR 5/2 brown
    - Fertility: poor
    - Depth: shallow
    - Moisture: poor
    - Temperature Celsius: 38 at 2cm depth
    - PH: 7 (Alkaline)
    - Structure: granular
- Land Use: grass pasture; olive; wild cultivated olive and carob, scrub
- Vegetation
    - Potential: regeneration, maquis
    - Observed: olive and carob, spiny burnet, lentisc, gorse
    - Riparian Buffer: absent
    - Seed Bed Condition: poor
    - Ground Litter Depth: none
    - Surface Cover: moderate
    - Damage: goat paths, limited erosion
- Comments: Sterakovou village.

Appendix II

SAP 1997 Environmental Survey Data (2)

Flora

1) Alkanna iehmanii Boraginaceae (dyer's alkanet/alkanna asteria, vaphoriza)
2) Allium ampeloprasum (wild leek/agrioprasso)Ceratonia siliqua (carob tree/charoupia)
3) Calycotome villosa (prickly broom/raksi)
4) Capparis spinosa (caper/kapparka)
5) Cardopatium corymbosum (cardopatium/opyros)
6) Cistus
    a. Cistus supp (rock rose/psistraks)
    b. Cistus monspeliensis L. cistaceae (rock rose/xystarka)
    c. Cistus villosus certicus (rock rose/xystarka)
7) Convolvulus althaeoides (mallow-leaved bindweed/potiraki)
8) Eryngium creticum (eryngo/pangallos)
9) Ficus carica (fig tree/sykia)
10) Genista sphacelata (gorse/raksi)
11) Helichrysum stoechas Compositae (everlasting sun gold/thakria tis panagias)
12) Heliotrope europaeum (helitrope/heliotropia)
13) Juniperus phoenicea (Phoenician juniper/cupressaceae)
14) Lavendula stoechas (French lavender/myrofora)
15) Nerium oleander (oleander/arodaphne)
16) Olea europea (olive tree/elaia)
17) Origanum dubium (oregano/rigani)
18) Pinus Bruta (Aleppo or Calabrian pine/agriopevkos)
19) Pistacia lentiscus (lentisc/shinos)
20) Pistacia terebinthus (terebinth/kokkorevithia)
21) Polygonum aviculare L. (knotgrass/polygonatos)
22) Ptilostemon chamaepeuce (chamapeuce/kirsio)
23) Rhamnus oleoides (buckthorn/akoumeni)
24) Rubus Sanctus (bramble, blackberry/vatos, vramos)
25) Sarcopoterium spinosum (spiny burnet/mazi)
26) Scolymus hispanicus (Spanish oyster plant/chrisangatho)
27) Teucrium micropodiodes Labiatae (germander/miteres)
28) Thymus capitatus (thyme/throumbi)
29) Thymus integer (wild thyme/livanitis)
30) Trifolium purpureum Lois (purple clover/agrio triphylli)
31) Trifolium stellatum (star clover/triphylli)

Thistle

1) Carlina corymbosa (carline thistle/karlina)
2) Carlina pygmaea (dwarf carline thistle/Karlina)
3) Centaurea pallescens (yellow pale star thistle/athratsides, triskida)
4) Echinops viscosus (viscous globe thistle/kamilangatho)
5) Notobasis syriaca (purple Syrian thistle/aginarohorto)

Reptiles and Amphibians

1) Agama stellio (agama)
2) Chamaeleo chamaeleon (chameleon)
3) Coluber cypriensis (Cyprus whip snake)
4) Coluber jugalaris (large whip snake)
5) Hyla savignyi (savigny's tree frog)
6) Lacerta laevis (wall lizard)
7) Malpolon monspessulanus (Montpellier snake)
8) Ophisops elegans (snake-eyed lizard)
9) Rana ridibunda (marsh frog)
10) Telescopus fallax (cat snake)
11) Vipera lebetina (blunt-nosed viper)

Mammals

1) Acomys mesiotis (Cyprian spiny mouse)
2) Crosidura russula Cyprian (Cyprian shrew)
3) Erinaceus auritus (hedgehog)
4) Lepus cyprius (Cyprian hare)
5) Lepus europaeus (brown hare)
6) Mus musculus gentilis (house mouse)
7) Ovis ammon orientalis (Cyprus moufflon)
8) Rattus rattus (ship rat)

Insects

1) Allancastria cerisy cypria (eastern festoon)
2) Ammophila sp. (digger wasp)
3) Anthocharis cardaminse (orange tip)
4) Chazara briseis larnacana (the hermit)
5) Colias croceus (clouded yellow)
6) Cynthia carduri (painted lady)
7) Glaucopsyche Paphos (Paphos blue)
8) Hipparchia pellucida cypriensis (Cyprus grayling)
9) Lasiommata maera (large brown wall)
10) Maniola cypricola (Cyprus meadow brown)
11) Papilio machaon giganteus (swallowtail)

12)Pararge aegeria (speckled wood)
13)Pieris brassicae (large white)
14)Polyommatus icarus (common blue)
15)Vanessa atalanta (red admiral)

Birds

1) Alectoris chukar (chukar)
2) Apus Apus (swift)
3) Buteo buteo (buzzard)
4) Columba livia (rock dove)
5) Columba palumbus (wood pigeon)
6) Falco eleonorae (eleonora’s falcon)
7) Falco tinnunculus (kestrels)
8) Hirundo daurica (red rumped swallow)
9) Hirundo rustica (swallow)
10)Oenanthe pleschanka (pied wheatears)
11)Pernis apivorus (honey buzzard)
12)Pica pica (magpie)
13)Streptopelia turtur (turtle dove)
14)Turdus merula (blackbird)

Appendix III

SAP 1997 Loci Catalogue

Locus: 97-01

Quadrat: 11
DLS 17: **53/**XX & XXI
Quadrat Cadastral plan: 36,44,37 and 45
Locality: Aspri Moutti
UTM: 36s E490638 N3842358
MASL: 306
Topographic Setting: Plateau, uncultivated field w/trees
1HA Slope Grade: 1%
Aspect: Southwest
Distance to water: Over 500m to stream
Estimated Area: 1853m^2
Visible Feature(s): Walls, architectural blocks and a mill stone
Suggested Date & Function: LR-BYZ, Farmstead complex
Site Condition: Excellent
Erosion: none
Research Potential: High
Surface Assemblage: Poor
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.
Comments: -

Locus: 97-02

Quadrat: 11
DLS 17: **53/**XX & XXI
Quadrat Cadastral plan: 36,44,37 and 45
Locality: Aspri Moutti
UTM: 36s E490782 N3841313
MASL: 224
Topographical Setting: Mid-slope bench
1HA Slope Grade: 40%
Aspect: Southwest
Distance to water: Over 500m to stream
Estimated Area: 2401m^2
Visible Feature(s): Walls
Suggested Date & Function: LR-BYZ, Farmstead w/Hell-ROM component?
Site Condition: Poor
Erosion: High

Research Potential: Low
Surface Assemblage: Poor
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.
Comments: -

Locus: 97-03

Quadrat: 06
DLS 17: **53/**xviii & xix
Quadrat Cadastral plan: 34,35,42 and 45
Locality: Kyparissovounos
UTM: 36s E485135 N3840581
MASL: 282
Topographical Setting: Ridge overlooking uncultivated field
1HA Slope Grade: 1%
Aspect: Southwest
Distance to water: Over 500m to spring
Estimated Area: 3303m^2
Visible Feature(s): Architectural blocks
Suggested Date & Function: LR-BYZ, Cemetery
Site Condition: Looted
Erosion: Low
Research Potential: Low
Surface Assemblage: Poor
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.
Comments: -

Locus: 97-04

Quadrat: 06
DLS 17: **53/**xviii & xix
Quadrat Cadastral plan: 34,35,42 and 43
Locality: Vathkia Jilla
UTM: 36s E484896 N3841081
MASL: 318
Topographical Setting: Plateau edge, uncultivated field
1HA Slope Grade: 10%
Aspect: Southwest
Distance to water: Over 500m to spring
Estimated Area: 3579m^2
Visible Feature(s): Walls & architectural blocks
Suggested Date & Function: LR/BYZ, Farmstead
Site Condition: Fair, in danger from stone miners

Erosion: Low
Research Potential: Moderate
Surface Assemblage: Moderate
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.
Comments: -

Locus: 97-05

Quadrat: 05
DLS 17: **53/**xviii
Quadrat Cadastral plan: 34 and 42
Locality: Drousha tou Lakkou
UTM: 36s E484561 N3841720
MASL: 350
Topographical Setting: Plateau, uncultivated field
1HA Slope Grade: 8%
Aspect: South
Distance to water: Over 500m to spring
Estimated Area: 6515m^2
Visible Feature(s): Walls & architectural blocks
Suggested Date & Function: LR/BYZ, Farmstead
Site Condition: Excellent, in danger from stone miners
Erosion: low
Research Potential: High
Surface Assemblage: Excellent
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004 and entered onto cadastral plan.
Comments: -

Locus: 97-06

Quadrat: 05
DLS 17: **53/**xviii
Quadrat Cadastral plan: 34 and 42
Locality: Drousha tou Lakkou
UTM: 36s E484926 N3841524
MASL: 362
Topographical Setting: Plateau, Uncultivated field
1HA Slope Grade: 8%
Aspect: South
Distance to water: Over 500m to spring
Estimated Area: 1682m^2
Visible Feature(s): Walls & architectural blocks
Suggested Date & Function: LR/BYZ, Farmstead

Site Condition: Poor, bulldozed
Erosion: low
Research Potential: Low-moderate
Surface Assemblage: Moderate
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004.
Comments: -

Locus: 97-07

Quadrat: 11
DLS 17: **53/**xx & xxi
Quadrat Cadastral plan: 36, 44, 37 and 45
Locality: Pefkeri/Aspri Moutti
UTM: 36s E490553 N3842461
MASL: 314
Topographical Setting: Plateau, uncultivated field
1HA Slope Grade: 9%
Aspect: Southeast
Distance to water: Over 500m to stream
Estimated Area: Less than 400m^2
Visible Feature(s): -
Suggested Date & Function: UNK, Lithic reduction and/or retouch station
Site Condition: Destroyed, bulldozed
Erosion: Low
Research Potential: None
Surface Assemblage: None
Digital/Regular Photographs: No
Status: -
Comments: -

Locus: 97-08

Quadrat: 04
DLS 17: **53/**xviii & xvii
Quadrat Cadastral plan: 33, 34, 41 and 42
Locality: Sterakovou Village
UTM: 36s E483352 N3841367
MASL: 290
Topographical Setting: Mid-slope bench, field
1HA Slope Grade: 12%
Aspect: South
Distance to water: Less than 500m to spring
Estimated Area: 476m^2
Visible Feature(s): Low wall
Suggested Date & Function: LR/BYZ, Farmstead (?)

Site Condition: Poor
Erosion: Moderate
Research Potential: Low
Surface Assemblage: Poor
Digital/Regular Photographs: No
Status: -
Comment: - Associated scatter has eroded away

Locus: 97-09

Quadrat: 04
DLS 17: **53/**xviii & xvii
Quadrat Cadastral plan: 33, 34, 41 and 42
Locality: Dhiplojilaa
UTM: 36s E483375 N3840510
MASL: 230
Topographical Setting: Plateau edge, cultivated intercropped field
1HA Slope Grade: 16%
Aspect: South
Distance to water: Over 500m to spring
Estimated Area: 448m^2
Visible Feature(s): walls & architectural blocks, press stones
Suggested Date & Function: LR/BYZ, Farmstead with olive oil press installation
Site Condition: Poor, bulldozed post 1997
Erosion: none
Research Potential: Low
Surface Assemblage: Moderate
Digital/Regular Photographs: Yes
Status: -
Comments: Published by Hadjisavvas (1992), press stones are still visible in farmyard along with sherds and roof tiles fragments. Large architectural blocks are still visible in the bulldozed spoil immediately east and west of the farmyard (*Pers. Obs.*).

Locus: 97-10

Quadrat: 12
DLS 17: **53/**xxi
Quadrat Cadastral plan: 37 & 45
Locality: Stayrolremmos
UTM: 36s E492001 N3840304
MASL: 108
Topographical Setting: Foot slope above river terrace
1HA Slope Grade: 12%
Aspect: West
Distance to water: Less than 500m to Kouris River

Estimated Area: 3104m^2
Visible Feature(s): -
Suggested Date & Function: Chalco settlement w/LR-BYZ component
Site Condition: Poor
Erosion: Moderate
Research Potential: Low
Surface Assemblage: Moderate
Digital/Regular Photographs: Yes
Status: -
Comments: The Chalco material outnumbers the LR material approximately 4:1. Several terrace wall segments are visibly eroding out of the slope (*Pers. Obs.*).

Locus: 97-11

Quadrat: 12
DLS 17: **53/**xxi
Quadrat Cadastral plan: 37 & 35
Locality: Khortotopin
UTM: E491574 N3840590
MASL: 132
Topographical Setting: Mid-slope
1HA Slope Grade: 31%
Aspect: East
Distance to water: Less than 500m to Kouris River
Estimated Area: 2238m^2
Visible Feature(s): Tomb shafts
Suggested Date & Function: CA, Cemetery
Site Condition: Poor, looted
Erosion: Moderate
Research Potential: Low
Surface Assemblage: Poor
Digital/Regular Photographs: no
Status: -
Comments: -

Locus: 97-12

Quadrat: 12
DLS 17: **53/**xxi
Quadrat Cadastral plan: 37 & 35
Locality: Khortotopin
UTM: E491673 N3840910
MASL: 140
Topographical Setting: Mid-slope
1HA Slope Grade: 12%
Aspect: Southeast

Distance to water: Less than 500m to Kouris River
Estimated Area: 8139m^2
Visible Feature(s): Tomb shafts
Suggested Date & Function: CA, Cemetery
Site Condition: Poor, looted
Erosion: Moderate
Research Potential: Low
Surface Assemblage: Poor
Digital/Regular Photographs: no
Status: -
Comments: -

Locus: 97-13

Quadrat: 01
DLS 17: **52/**xxiv
Quadrat Cadastral plan: 40 & 48
Locality: Pharkonia & Hajina
UTM: E480919 N3841999
MASL: 184
Topographical Setting: Mid-slope, river terrace & man-made terraces
1HA Slope Grade: 21%
Aspect: East
Distance to water: Less than 500m to Paramali River
Estimated Area: 99999m^2
Visible Feature(s): -
Suggested Date & Function: EC-MC, Settlement and tombs
Site Condition: Moderate, looted
Erosion: Limited
Research Potential: Low-moderate
Surface Assemblage: Moderate
Digital/Regular Photographs: No
Status: -
Comments: Several querns are visible in nearby terrace walls.

Locus: 97-14

Quadrat: 01
DLS 17: **52/**xxiv
Quadrat Cadastral plan: 40 & 48
Locality: Hajina
UTM: E480917 N3842465
MASL: 208
Topographical Setting: Mid-slope, river terrace & man-made terraces
1HA Slope Grade: 14%
Aspect: East
Distance to water: Less than 500m to Paramali River

Estimated Area: 294m^2
Visible Feature(s): -
Suggested Date & Function: LR-BYZ, Farmstead/outbuilding
Site Condition: Poor
Erosion: Moderate, abandoned dilapidated terraces
Research Potential: Low
Surface Assemblage: Moderate
Digital/Regular Photographs: Yes
Status: -
Comments: Large scatter of coarse ware and large pithos body, base and rim sherds spread out across two terraces. Many sherds are eroding out from sections of the collapsed terraces (*pers obs*).

Locus: 97-15

Quadrat: 15
DLS 17: **53/**xxv
Quadrat Cadastral plan: 49 & 57
Locality: Vathkia
UTM: E481757 N3836719
MASL: 12
Topographical Setting: Foot slope, overlooking agricultural fields
1HA Slope Grade: 24%
Aspect: South
Distance to water: Over 500m to Frakonas River
Estimated Area: 506m^2
Visible Feature(s): Cistern construction material
Suggested Date & Function: LR-BYZ, Cistern
Site Condition: Poor
Erosion: Low
Research Potential: Low
Surface Assemblage: Low
Digital/Regular Photographs: No
Status: -
Comments: Large lintel or threshold block is built into nearby terrace wall. A small scatter of monochrome sherds around is visible around the cistern.

Locus: 97-16

Quadrat: 04
DLS 17: **53/**xviii & xvii
Quadrat Cadastral plan: 33, 34, 41 and 42
Locality: Sterakovou Village
UTM: E483489 N3841310
MASL: 284
Topographical Setting: Mid-slope, field

1HA Slope Grade: 10%
Aspect: Southwest
Distance to water: Less than 500m from spring
Estimated Area: 500m^2
Visible Feature(s): Loculi
Suggested Date & Function: LR, Rock cut loculi
Site Condition: Poor, partially quarried
Erosion: Moderate
Research Potential: Low
Surface Assemblage: None
Digital/Regular Photographs: No
Status: -
Comments: -

Locus: 97-17

Quadrat: 04
DLS 17: **53/**xviii & xvii
Quadrat Cadastral plan: 33, 34, 41 and 42
Locality: Sterakovou Village
UTM: E483433 N3841184
MASL: 270
Topographical Setting: Mid-slope
1HA Slope Grade: 20%
Aspect: Northwest
Distance to water: Less than 500m from spring
Estimated Area: less than 500m^2
Visible Feature(s): Tomb
Suggested Date & Function: ROM, Chamber tomb
Site Condition: Moderate
Erosion: None
Research Potential: Moderate
Surface Assemblage: None
Digital/Regular Photographs: No
Status: -
Comments:-

Locus: 97-18

Quadrat: 01
DLS 17: **52/**xv & xv
Quadrat Cadastral plan: 40 & 48
Locality: Hajina
UTM: E480708 N3842097
MASL: 360
Topographical Setting: Mid-slope, man-made terrace
1HA Slope Grade: 19%

Aspect: Southwest
Distance to water: Less than 500m from Paramali River
Estimated Area: Less than 500m^2
Visible Feature(s): Architectural blocks and crushing stone
Suggested Date & Function: MOD, Olive oil installation
Site Condition: Moderate
Erosion: Moderate
Research Potential: Moderate
Surface Assemblage: Low
Digital/Regular Photographs: No
Status: -
Comments: -

Locus: 97-19

Quadrat: 02
DLS 17: **53/**xvii
Quadrat Cadastral plan: 33 & 41
Locality: Lokhos
UTM: E481658 N3841310
MASL: 224
Topographical Setting: Ridge top, narrow plateau
1HA Slope Grade: 10%
Aspect: South
Distance to water: Less than 500m from Paramali River
Estimated Area: 119589m^2
Visible Feature(s): Walls & architectural blocks
Suggested Date & Function: EC-MC, Settlement
Site Condition: Moderate, partially quarried in north
Erosion: Low
Research Potential: Moderate
Surface Assemblage: Excellent
Digital/Regular Photographs: No
Status: Visited by district officer in July 1997
Comment: See Swiny and Mavromatis (2000)

Locus: 97-20

Quadrat: 15
DLS 17: **53/**xxv
Quadrat Cadastral plan: 49 & 57
Locality: Moulla Oglou
UTM: E481973 N3836145
MASL: 46
Topographical Setting: Hilltop, overlooking agricultural fields
1HA Slope Grade: 31%
Aspect: Southwest

Distance to water: Over 500m to Frakonas River
Estimated Area: 24218m^2
Visible Feature(s): -
Suggested Date & Function: CN, Settlement
Site Condition: Moderate
Erosion: Low
Research Potential: Moderate
Surface Assemblage: Moderate
Digital/Regular Photographs: No
Status: -
Comments: Moderate amounts of material eroding from slope crest down to slope foot.

Locus: 97-21

Quadrat: 13
DLS 17: **53/**xxv
Quadrat Cadastral plan: 49 & 57
Locality: Zalakas
UTM: E481447 N3838121
MASL: 44
Topographical Setting: Mid-slope
1HA Slope Grade: 18%
Aspect: Southeast
Distance to water: Less than 500m to Frakonas River
Estimated Area: 3586m^2
Visible Feature(s): -
Suggested Date & Function: UNK, Tombs/cemetery
Site Condition: Moderate
Erosion: Low
Research Potential: Moderate
Surface Assemblage: Low
Digital/Regular Photographs: No
Status: -
Comments: -

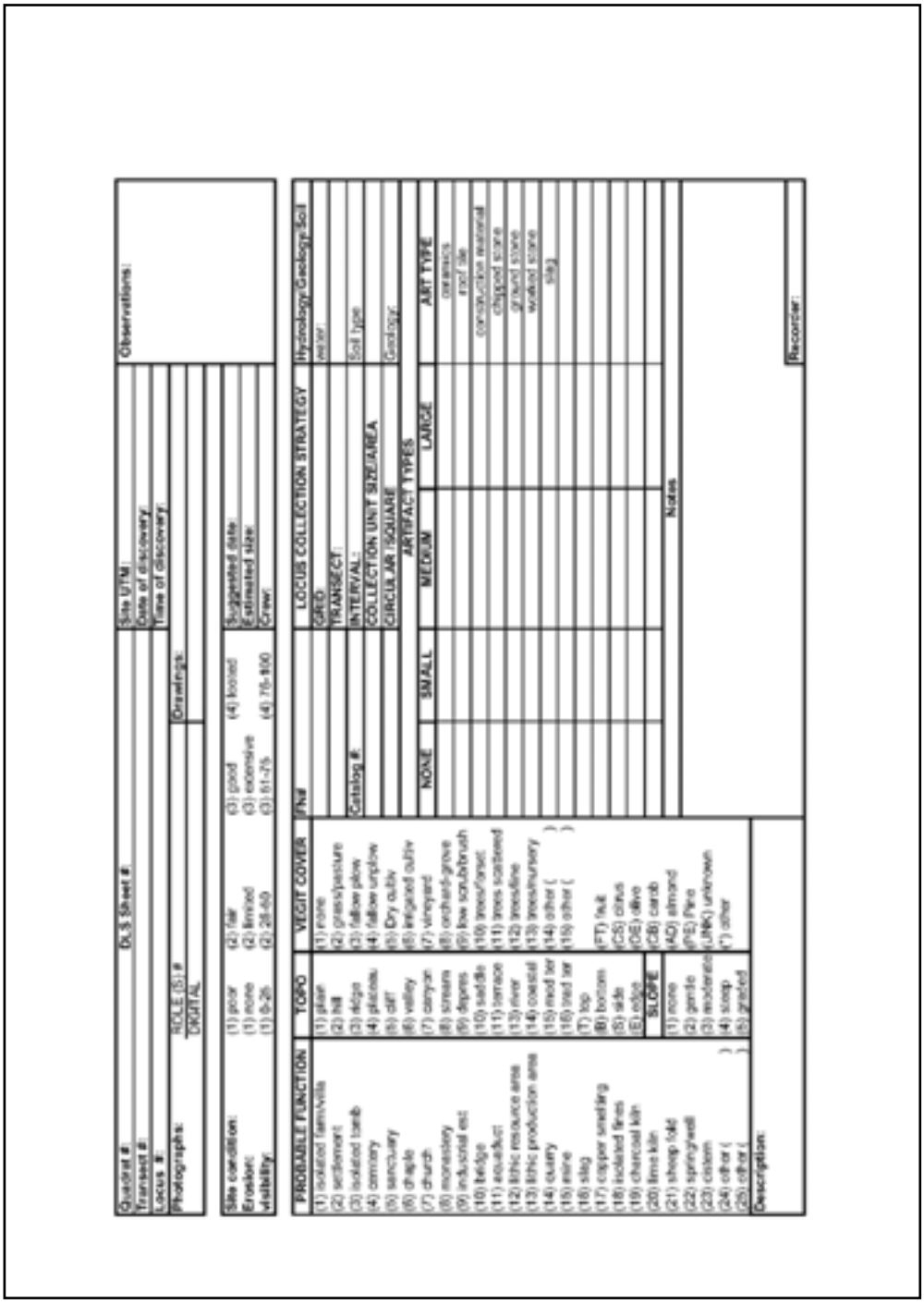
Locus: 97-22

Quadrat: 11
DLS 17: **53/**XX & XXI
Quadrat Cadastral plan: 36,44,37 and 45
Locality: Aspri Moutti
UTM: 36s E490782 N3841313
MASL: 274
Topographical Setting: Field
1HA Slope Grade: 7%

Aspect: Southwest
Distance to water: Over 500m to stream
Visible Feature(s): Architectural blocks
Estimated Area: 3404m^2
Suggested Date & Function: LR-BYZ, Farmstead
Site Condition: Poor, bulldozed
Erosion: low
Research Potential: Low
Surface Assemblage: Poor-Moderate
Digital/Regular Photographs: Yes
Status: Site visited by Limassol District officer on June 26 2004.
Comments: Several worked ashlars built into nearby terrace and one still in the field.

Appendix IV

SAP 1997 Loci Field Form



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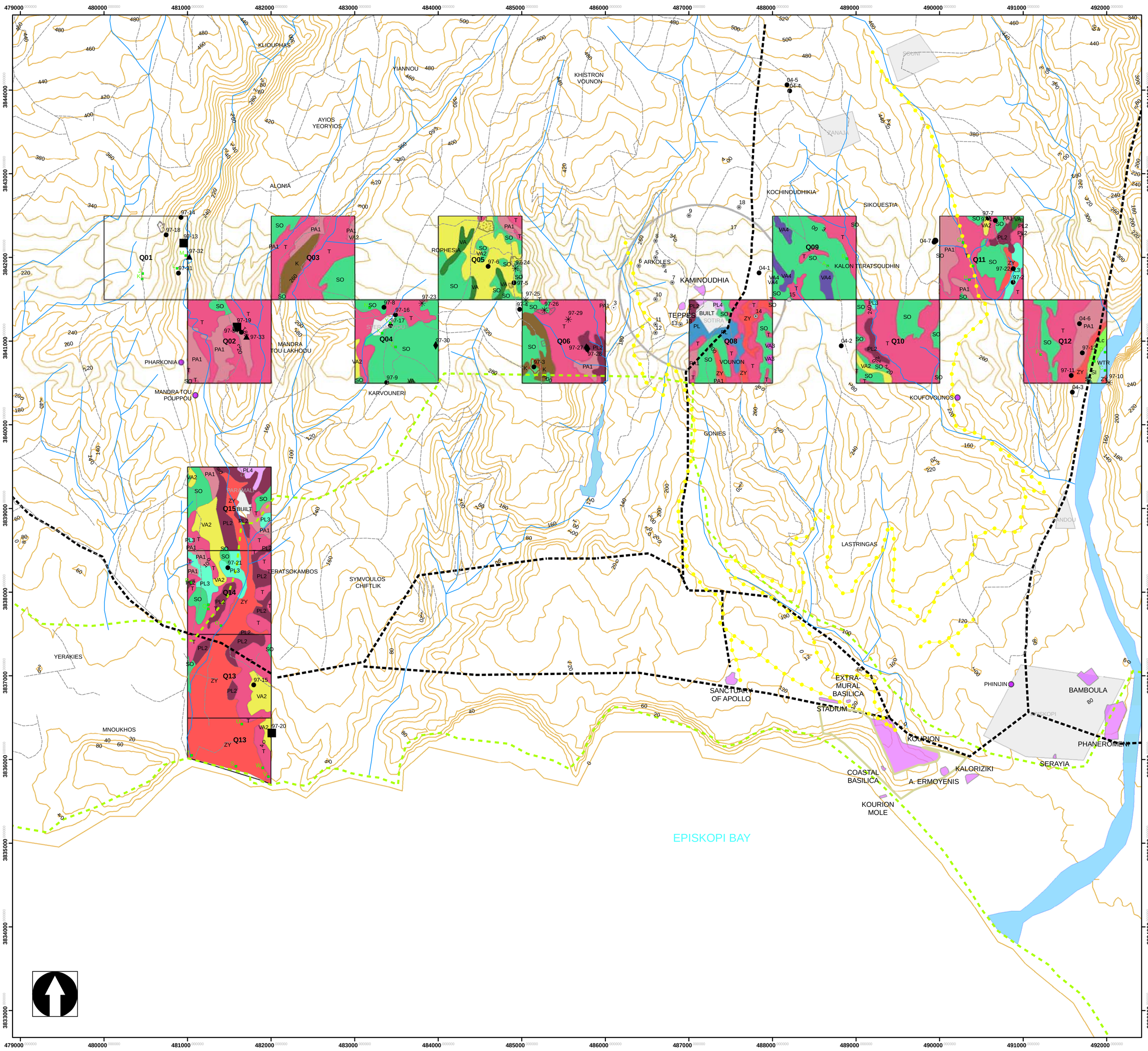
SOTIRA ARCHAEOLOGICAL PROJECT SURVEY



EUROPEAN DATUM 1950

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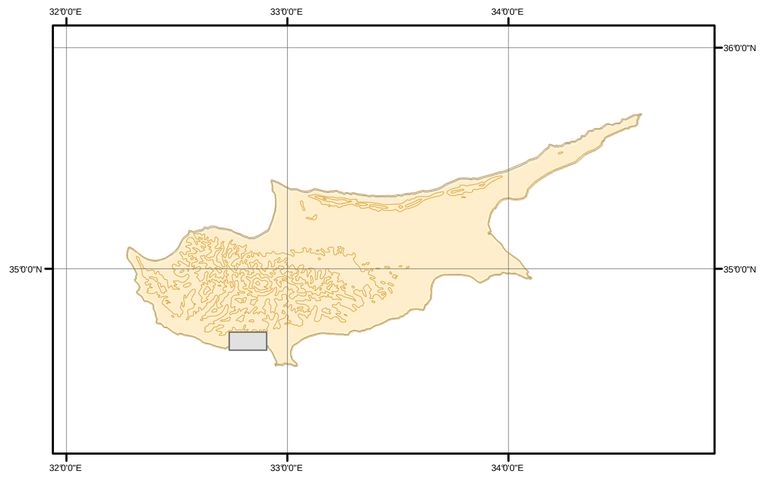


TOPOGRAPHIC
- TRAILS
- DRAINAGE
- BRITISH BASE
- MINING
- BUILTUP LAND
- 20m contours

ARCHAEOLOGY
- LEONARD'S SURVEY AREA
- ENVIRONMENT COLLECTION

SKS LOCI

LOCUS TYPE
- building
- scatter
- settlement, cementery
- terrace wall

SAPS LOCI

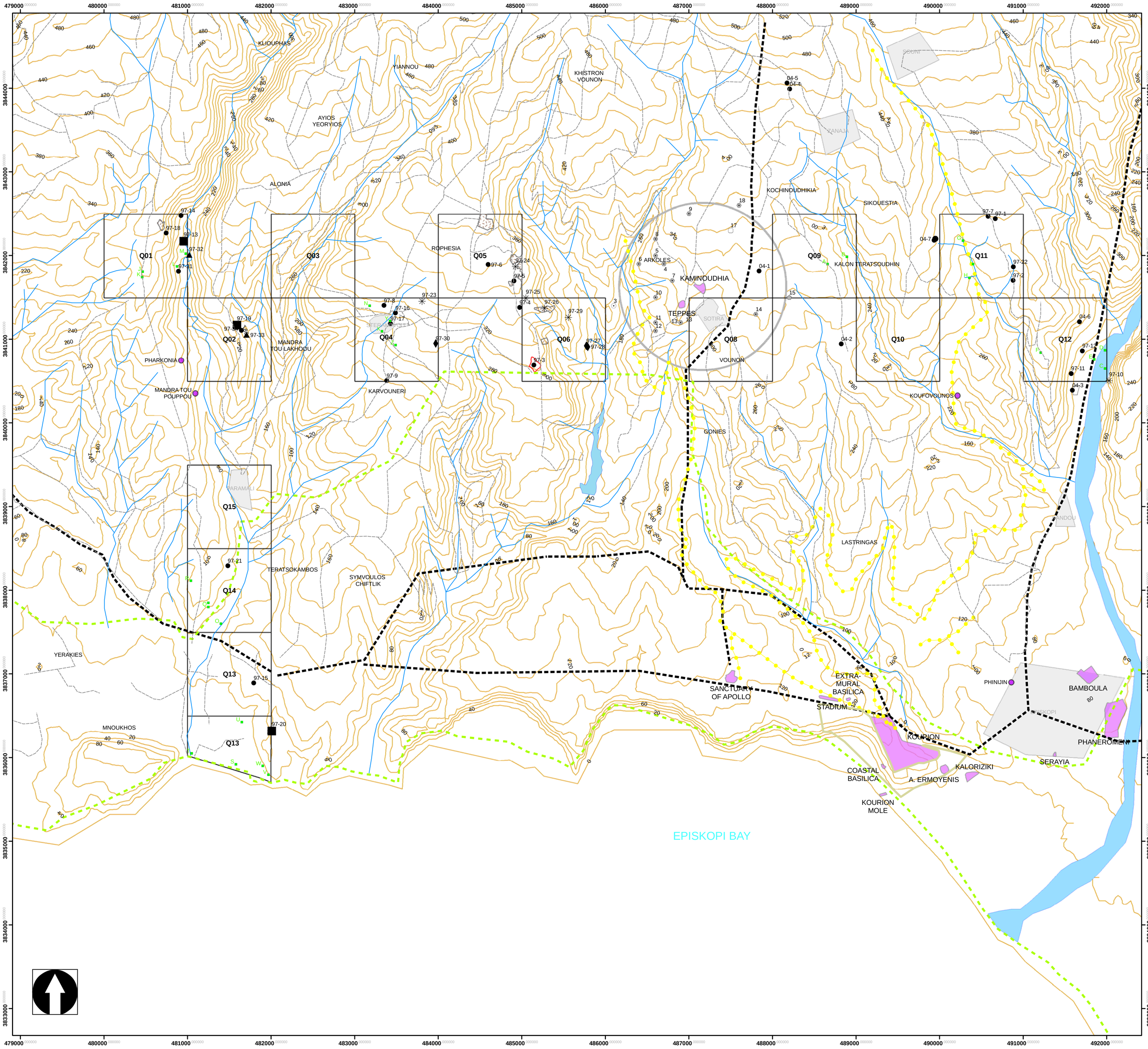
LOCUS_01
- discrete scatter
- find
- isolated find
- settlement
- site
- ROMAN ROAD
- KOURION AQUADUCT
- SAPS QUADS
- OTHER SITES (AREA)
- OTHER SITES (POINT)
- SKS PROJECT AREA

SOILS

Soil Order,Soil Type
- CAMBISOLS, ALc
- CAMBISOLS, PL
- CAMBISOLS, PL2
- CAMBISOLS, PL3
- CAMBISOLS, PL4
- CAMBISOLS, VA
- CAMBISOLS, VA2
- CAMBISOLS, VA3
- CAMBISOLS, VA4
- CAMBISOLS, ZY
- FLUVISOLS, S2
- FLUVISOLS, SI
- LITHISOLS, K
- LITHISOLS, T
- LUVISOLS, T
- REGOSOLS, PA1
- REGOSOLS, SO

MAP 1

SOTIRA ARCHAEOLOGICAL PROJECT SURVEY



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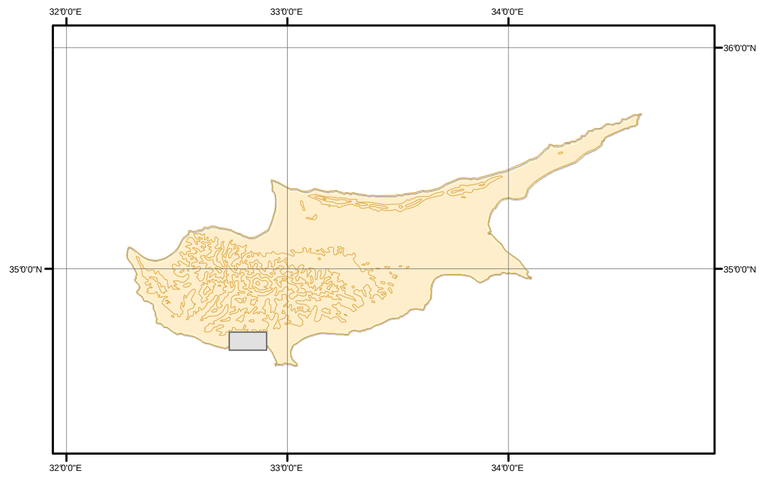

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- OTHER SITES (POINT)
- SKS PROJECT AREA

MAP 2